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# Hawke's Bay Private Water Supplies Project

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PUBLIC



## Summary Report



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## Executive Summary

### Introduction

The Government has introduced new drinking water legislation. The Water Services Act (2021) Act requires more of councils and private drinking water suppliers:

- An amendment to the Local Government Act requires councils to undertake drinking water service assessments for their communities to determine water supply demand, safety, quality, and any potential risks. Assessments include communities who receive drinking water services from councils and other drinking water suppliers and arrangements. Assessments must be completed every three years; the first one is due by November 2023.
- Anyone who supplies drinking water to more than a single domestic house is now a drinking water supplier. This is a significant change from the Health Act, where only those that supplied at least 25 people were a water supplier.
- By 2028, all unregistered drinking water suppliers will need to meet the requirements of the new Water Services Act, drinking water standards, and rules, or be using an acceptable solution.
- There are also new obligations registered drinking water suppliers need to meet, including submitting a new water safety plan to Taumata Arowai (the new water regulator) by 15 November 2022.

Wairoa District Council, Napier City Council, Hastings District Council and Central Hawke's Bay District Council are working together to prepare for these changes and wanted to engage with private drinking water suppliers to help understand what this means for the councils and their communities.

WSP and its social research subconsultant FOLKL were commissioned in July 2021 by the four councils to undertake the Hawke's Bay Three Waters Private Water Supply Project. Its purpose was to engage with a sample of private water suppliers and assess the risks to their water supply (quality and quantity), so that the Hawke's Bay councils can:

- Understand how best to assess private water supplies when undertaking their assessments of drinking water services
- Support their communities to provide safe drinking water
- Influence the way these assessments are carried out across the rest of New Zealand
- Understand their potential liability with under-performing private water supplies.

During the project Taumata Arowai released draft Drinking Water Quality Assurance Rules and draft Acceptable Solutions for drinking water supplies. This became a focus of the project in its later stages and the insights from this project informed the Hawke's Bay councils' submission on the draft Rules and Acceptable Solutions.

### Project methodology and key findings

Known and possible private water supplies were identified through interviews with key stakeholders, reviewing previous water and sanitary services assessments and applying a logical process to interpret multiple GIS data sources. It is estimated that there are between 3,900 and 6,900 private water supplies in Hawke's Bay.

Three communities in each district were selected to undertake engagements with private water suppliers. Contact was made with 186 people and 50 engagements with private water suppliers were held (see Figure 1 for a map).

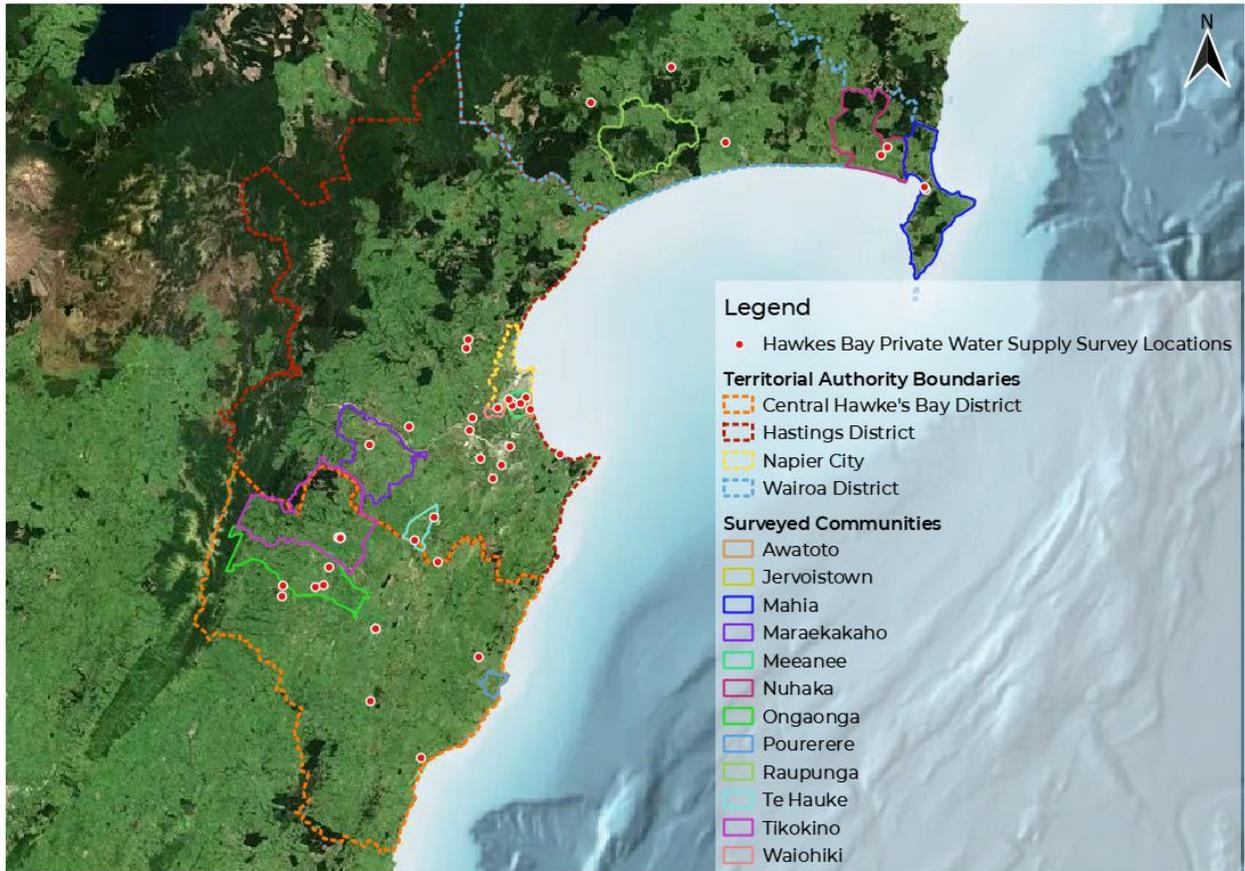


Figure 1: Map showing location of all engagements

The political context influenced the way that the project was delivered. The project began while the Water Services Act was still the Water Services Bill, and the wider Three Waters Reform programme was undergoing debate about the future ownership of council water supplies. There was uncertainty as to what qualified as a private water supply and there was hesitancy and distrust among some project participants.

The engagement method was a face-to face semi-structured interview along with a technical questionnaire. An app was used to capture the technical information about the water supply on a tablet or phone. Capturing data in a standardised format increased the efficiency of the site visits and resulted in more consistent outputs. It also enabled analysis of the data to gain insights from the 50 surveys that were undertaken.

Due to a lack of existing information on private drinking water supplies, there was an extensive learning process to develop a system which streamlined the identification and engagement process. Finding suppliers willing to engage in the project took a significant amount of time and effort. This will be much more straightforward once all supplies are registered in 2024; however councils need to complete their first water services assessment by 2023.

Suppliers were generally hesitant to participate, due to concern with the Government's Three Waters Reform programme, a perception that the councils were looking to enforce the proposed changes for suppliers, and that by giving consent, that their private information would be provided to Government. Most suppliers did not understand the changes being proposed and the new obligations for drinking water suppliers and councils. After participating, almost all suppliers found the experience useful and appreciated understanding their obligations and the implications for their supply.

Key findings about the 50 water supply systems that were assessed were:

- Almost all the supplies were either a very small supply (serving <50 people) or small supply (serving 50-500 people) as defined in the draft Rules. Only one was a large supply (serving >500 people).
- 70% of supplies used bore or spring water, with most of the remainder using roof water. Only one surface water source was assessed.
- 42% of suppliers did not have an alternative water supply that they could connect to if they lost access to their water supply.
- 67% of the water supplies did not treat the water. Treatment was more common on bore supplies (50%) but was uncommon on roof water and spring water supplies.
- The most common forms of treatment were cartridge filtration and UV disinfection. Only one supply had any other form of treatment, which was the one that used surface water.

Extrapolating the results to the Hawke's Bay region indicates that there could be between 2,600 and 4,600 private water supplies with untreated water. The estimated cost of installing a treatment system which complies with the draft Rules or Acceptable Solutions ranges from \$36,000 to \$259,000 depending on the size of the supply, the source water and whether the Rules or Acceptable Solutions are used. The estimated annual operating and maintenance costs range from \$3,000 to \$15,000 per water supply.

The estimated cost to Hawke's Bay communities to comply with the draft Rules and Acceptable Solutions could therefore be between \$150 million and \$890 million for currently untreated supplies, plus an annual operations and maintenance cost of \$18 million - \$48 million. This does not include the cost of upgrading water treatment plants to meet the draft Rules and Acceptable Solutions or other improvements such as replacing poor condition storage tanks. It should be noted that Taumata Arowai is making significant changes to the Rules and Acceptable Solutions following consultation – particularly for supplies serving fewer than 500 people – and these changes will significantly reduce these estimated .

In some cases, it may be more cost effective and resilient to extend the council's water supply reticulation to service properties on the outskirts of town, or to provide a water supply scheme for a community rather than having many small treatment systems.

The nature of this project and aspects of the research process, particularly the qualitative research and engagement components, represent a 'snapshot' in time and must be recognised and situated against the wider socio-political context that the research has been completed within. As such, the recommendations and information contained in this report should continue to be reflected upon and remain adaptive and responsive as new information and clarity around the Act evolves, so that councils can continue to improve how they undertake water services assessments in the future.

### **Recommended approach for water services assessments**

Taking the learnings from this project, we recommend that the councils take the following steps for their water services assessments under the amended Local Government Act:

- 1 Identify communities using groups of statistical meshblocks. Prioritise communities to focus on those with the greatest need, using council and stakeholder knowledge and key census data (e.g. deprivation index, population, household density). Identify known and possible private drinking water supplies using the GIS tool developed for this project.
- 2 Engage with communities to understand any issues they have with the quantity and quality of their drinking water, and to improve the understanding of private drinking water supplies in those communities.

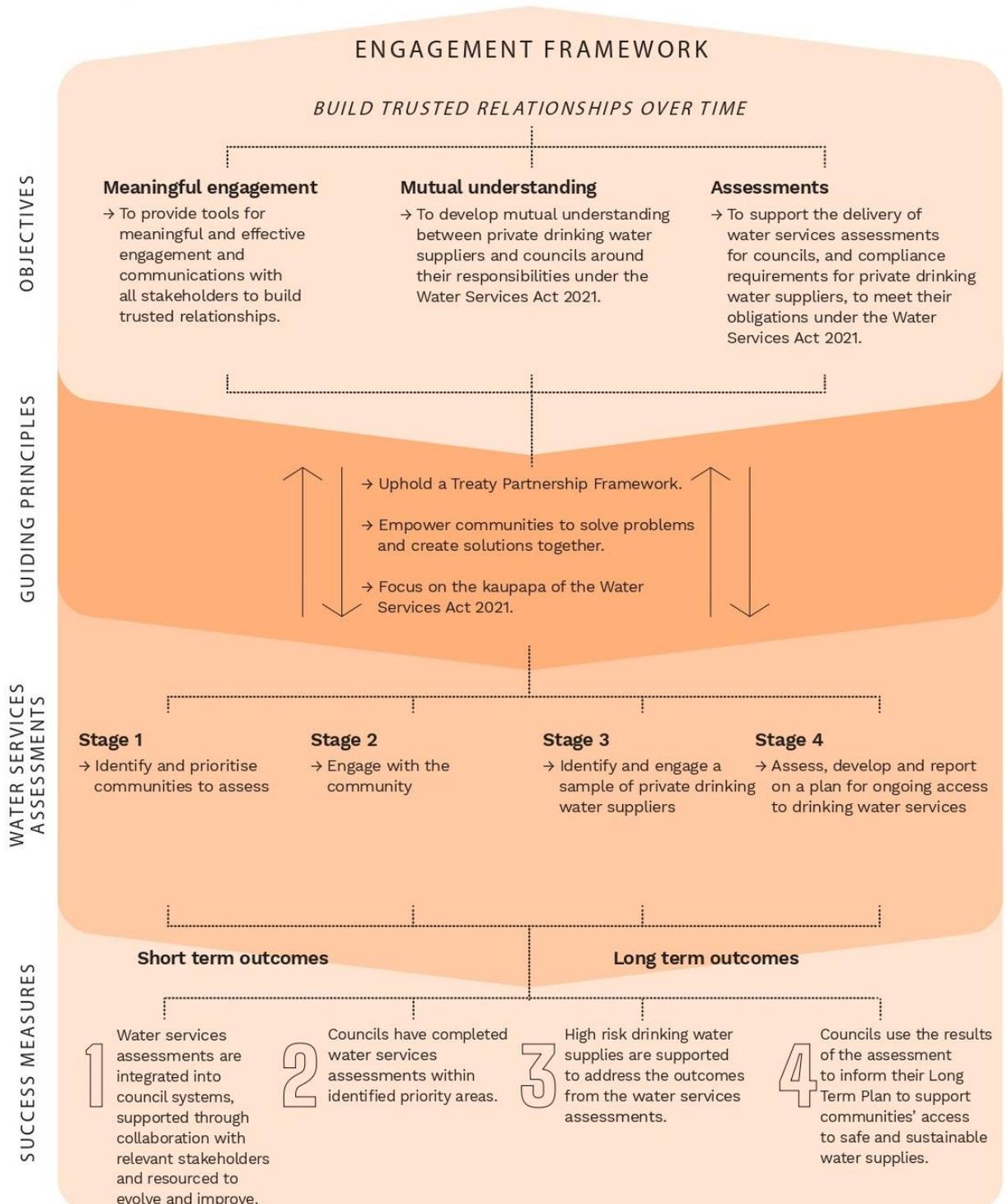


- 3 Engage with a sample of private drinking water suppliers in those communities to gain a deeper understanding of the safety and sufficiency of water in those communities.
- 4 Summarise the findings in a report, highlighting any water quality or quantity risks for each community, and recommendations to address these risks. Report back to communities on the plan on the results of the water services assessment and how they can be supported to provide access to safe and sufficient water for their community (e.g. funding, education). The recommendations in the water services assessment report can be used to inform councils' Annual Plans and Long Term Plans. An engagement framework has been developed to support this recommended approach and is shown in Figure 2.

## Engagement Framework.

STRATEGIC DIRECTION: Stakeholder Engagement; Communications Strategy; and Assessment Framework.

PURPOSE: The purpose of this Engagement Framework is to provide guidance and a strategic approach for communication and engagement with private drinking water suppliers who are not registered under the Water Services Act 2021. The focus is on very small and small suppliers relating to council obligation to undertake water services assessments.



*Engagement methods, communications and other relevant information, tools and template examples are provided in the Communications and Engagement Strategy.*

Figure 2 – Recommended engagement framework for water services assessments



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Appendix K: Community prioritisation workflow

## Disclaimers and Limitations

This report (**'Report'**) has been prepared by WSP exclusively for Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council (**'Client'**) in relation to the findings of the Hawke's Bay private water supplies project (**'Purpose'**) and in accordance with the Conditions of Contract for Consultancy Services with the Client dated 27 July 2021. The findings in this Report are based on and are subject to the assumptions specified in the Report. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

In preparing the Report, WSP has relied upon data, surveys, analyses, designs, plans and other information (**'Client Data'**) provided by or on behalf of the Client. Except as otherwise stated in the Report, WSP has not verified the accuracy or completeness of the Client Data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this Report are based in whole or part on the Client Data, those conclusions are contingent upon the accuracy and completeness of the Client Data. WSP will not be liable in relation to incorrect conclusions or findings in the Report should any Client Data be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

# 1 Introduction

The Hawke's Bay Three Waters Private Water Supplies Project was established in July 2021 with a purpose to engage a sample of private drinking water suppliers and assess their water supplies (in terms of the risks to water quality and the quantity of water) so that the Hawke's Bay councils can:

- Understand how best to assess private water suppliers when undertaking their assessments of drinking water services under the amended Local Government Act (LGA)
- Support their communities to provide safe drinking water
- Potentially influence the way these assessments are carried out across the rest of New Zealand
- Understand their potential liability under the amended Local Government Act (LGA) Part 5, section 127 if suppliers face significant problems with water supplies.

This report presents the project findings and documents the agreed project deliverables stated as the research objectives for this project.

## 1.1 Regulatory context

In early 2019, the Hawke's Bay councils (Napier City Council, Hastings District Council, Wairoa District Council, Central Hawke's Bay District Council and Hawke's Bay Regional Council) began working together to review the current and potential service delivery options for drinking water, wastewater and stormwater for Hawke's Bay. This project aligned with the five councils' strategic priority for the 2019-22 triennium: water safety, security and planning.

The Hawke's Bay councils recognise that the Water Services Act 2021 (Act)<sup>1</sup> requires more from both local authorities and private drinking water suppliers.

The Water Services Act extends the definition of a drinking water supply to the infrastructure that supplies drinking water to anything other than one domestic self-supplied dwelling. The previous definition under the Health Act was a drinking water supply that supplied at least 25 people for at least 60 days per year. There were 2,300 registered water supplies under the Health Act and before this project started, Taumata Arowai estimated that there were 75,000 drinking water supplies in New Zealand that would be covered under the Water Services Act<sup>2</sup>. Based on the population of Hawke's Bay, this indicated that there could be around 2,700 private water supplies in the region. This project found that there are likely many more, estimating there to be between 3,900 and 6,900 private water supplies.

The Water Services Act (2021) also made amendments to the Local Government Act (LGA)<sup>3</sup>. Section 125 requires territorial authorities to complete drinking water supply assessments for their districts every three years. The purpose of these assessments is to understand and assess the nature, demand, safety and quality of their communities' drinking water services. The requirements of this assessment are much more extensive than the previous version of s125. The Local Government Act 2002 section 125 (2) states:

*An assessment of drinking water services must—*

*(a) identify each community that receives a drinking water service; and*

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<sup>1</sup> Water Services Act 2021:

[https://legislation.govt.nz/act/public/2021/0036/latest/LMS374564.html?search=ts\\_act%40bill%40regulation%40deemedreg\\_water+services+act\\_resel\\_25\\_a&p=1](https://legislation.govt.nz/act/public/2021/0036/latest/LMS374564.html?search=ts_act%40bill%40regulation%40deemedreg_water+services+act_resel_25_a&p=1)

<sup>2</sup> Small Drinking Water Supplier Analysis - Report (Beca, February 2021)

<sup>3</sup> Local Government Act 2002: <https://legislation.govt.nz/act/public/2002/0084/latest/DLM170873.html?src=qs>

- (b) describe the nature of existing drinking water services to the community; and*
- (c) describe the characteristics of the community; and*
- (d) assess the extent to which the community is currently receiving, and will continue to receive, a sufficient quantity of drinking water, including a consideration of—*
  - (i) the community's existing access to drinking water services; and*
  - (ii) any reasonably foreseeable risks to the community's access to drinking water services in the future; and*
  - (iii) the current and estimated future demands for drinking water services within the community; and*
- (e) describe the safety and quality of drinking water currently being supplied to the community, using information collected and made available by Taumata Arowai and any other organisations that the territorial authority considers relevant; and*
- (f) identify and assess any other public health risks relating to the drinking water services supplied to the community; and*
- (g) include an assessment of wastewater and sanitary services in accordance with [section 128](#); and*
- (h) based on the assessment under paragraphs (b) to (g),—*
  - (i) assess the consequences if the community loses access to drinking water services in the future, or is provided with drinking water services that are deficient in any way, including the implications for that community's public health; and*
  - (ii) outline a plan to provide for the community's ongoing access to drinking water services.*

Under the amended section 126 of the LGA, after undertaking drinking water service assessments, councils are required to notify Taumata Arowai of any drinking water system that is not meeting its statutory obligations (or is at risk of not meeting them), any absence or deficiency in a drinking water service, and any drinking water suppliers that are at risk of ceasing to provide a service.

Under the amended section 127 of the LGA, if a supplier is facing a significant problem or potential problem, Taumata Arowai may direct the territorial authority to work with the supplier, or in some instances take over that supply.

With this change in territorial authority and drinking water supplier responsibilities, the Hawke's Bay's four territorial authorities (Central Hawke's Bay District Council, Hastings District Council, Napier City Council and Wairoa District Council) established the Hawke's Bay Private Drinking Water Supply project.

## 1.2 Project approach and methodology

This project was delivered on the basis of six key stages to appropriately consider the unknown aspects that were recognised at the beginning of it. These stages were:

**Stage 1:** Project set-up to establish the project direction and confirm the project objectives.

**Stage 2:** Identify known and possible private drinking water suppliers.

**Stage 3:** Define communities to determine their extent and nature, case study areas, communication messaging and incentives and engage with private drinking water suppliers that were not connected to a council water supply network (secondary supplies).

**Stage 4:** Prepare a communications and engagement framework to support the project engagements with standalone private water supplies.

**Stage 5:** Field work to assess a sample of standalone private drinking water supplies, in terms of to water quality and the quantity of water.

**Stage 6:** Prepare this final written report to collate the information to deliver on the established research objectives (this report). Provide a GIS database that the councils can continue to use and update in future drinking water assessments.

The methodology of this project was designed and founded on:

**A community-up approach** based on developing relationships within communities, to ensure researchers developed a strong sense of understanding on the research topic itself. This approach included building knowledge based on a respect for people and the intrinsic value of participants' understanding of the investigation and respective objectives. Meaningful engagement was established through meeting people face-to-face, on their own terms, where one-on-one interviews at individuals' properties became the primary method for engagement.

**Qualitative methods** which used 'thick data' (evidence of themes created through words and observations) as a basis to construct knowledge and build understanding around a given direction of inquiry. A qualitative analysis helps to establish both broad contextual knowledge and a deeper understanding of a given topic, and in this case, the topic of private water suppliers and their water supplies within each district and as a region.

**Quantitative methods** which used objective measures and data points to inform research to identify private drinking water supplies in the region including collating and developing a GIS database. A questionnaire was developed to assess and report quantitative information on a sample of drinking water supplies.

The purpose and scope of the project in Appendix A of the Conditions of Contract provide further detail on each stage of the project (see Appendix A of this report). The Project Definition Document explains the research design methodology (see Appendix B). The remaining sections and appendices of this report deliver on the project research objectives and success measures outlined below.

### 1.3 Project research objectives

A project start-up hui held with staff from all four councils on 6 August 2021, and following this, research objectives were established, project scope determined, and the subsequent research methodology was developed to meet the agreed objectives which are outlined below.

The research objectives were:

- To capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawke's Bay region
- To develop a repeatable methodology for undertaking assessments of private water supplies
- To develop and validate a communications and engagement framework for future private water supply assessments
- To explore the communities' values and perceptions of water and private water supplies within the Hawke's Bay region to inform the communications and community engagement approach

- To understand the expectations and needs of private water suppliers and their supplies within the Hawke's Bay region
- To investigate private water suppliers' understanding of safe and accessible drinking water within the Hawke's Bay region.

## 1.4 Project success measures

The start-up hui provided an opportunity to better understand the key measures of success for the project which were:

- To gain an improved understanding of private water supplies, thus giving councils and communities a better understanding of risks and opportunities.
- The data and insights supplied will inform future programmes to deliver safe, accessible and reliable drinking water.
- Develop a sustainable approach for future private water supply assessments and engagement.
- Private water suppliers participating in the project have an improved understanding of their current and proposed responsibilities with respect to providing safe drinking water.
- Deliver meaningful and effective community engagement and communications to all stakeholders to establish and build on relationships with the sample of water supplier communities.

Longer term success measures (outside of project scope) are:

- Cultural, environmental, social, economic and public health requirements are identified to help the Hawke's Bay communities to provide safe and sustainable water supplies.
- Private water suppliers are able to identify their council's role and their own responsibility within the broader Three Waters Reform programme at a Government level.
- Engaged communities will be clear in their understanding and awareness around the purpose and implications of the Three Waters Reform programme. The private water supply communities are aware of and engaged in their responsibilities as private water supply entities, with a good level of understanding around the management and operational requirements to comply with regulatory standards.

## 1.5 Project evolution

The scope of the project and the methodology for engaging with private water suppliers changed throughout the project due to external factors.

### 1.5.0 Three waters reform

Central Government is undertaking an extensive programme of Three Waters Reform. There are three pillars/pou in this reform: establishing a new water regulator (Taumata Arowai), making regulatory changes (e.g. Water Services Act and revising the drinking water standards) and creating four new publicly owned water services entities (WSE) assuming the responsibility for the service delivery of water, wastewater and stormwater from local councils.

The proposed water services entities have been politically contentious on a national scale and there was concern that the wider reform, and the potential for confusion could negatively impact this project.

To reduce this risk, there was no publicity for the project and private water suppliers were only engaged with directly. This was a significant shift from the original plan, which was to engage much more broadly and using a variety of engagement methods.

### *1.5.1 Enactment of Water Services Act (2021)*

At the start of the project, the Water Services Bill included secondary supplies in the definition of a drinking water supplier (i.e. networked supplies such as ports, airports, retirement villages connected to a council water supply). The original intent of the project was to engage with a sample of these suppliers and to use the insights from these engagements to refine the approach for engaging with standalone private water suppliers.

The Water Services Act was gazetted on 15 November 2021, approximately halfway through the project. Secondary supplies were not included in the definition of a water supplier in the Act and this interpretation was confirmed by Taumata Arowai. This meant that we no longer needed to engage with this type of water supplier and so the focus turned to standalone private water suppliers.

### *1.5.2 Draft Drinking Water Quality Assurance Rules and Acceptable Solutions*

In September 2021, Taumata Arowai published exposure drafts (i.e. drafts for information but not consultation) of documents to replace the Drinking-Water Standards for New Zealand (2005, revised 2018). These were draft Operational Compliance Rules, Acceptable Solutions (for rural agricultural, roof, and spring and bore water supplies), Drinking Water Standards (maximum acceptable values) and Aesthetic Values (guideline values). This was of direct interest to the private water suppliers that we were engaging with, so we took the opportunity to discuss these draft regulations with them and to explore the implications for their water supply.

In January 2022, Taumata Arowai started public consultation on draft Drinking Water Quality Assurance Rules (which replaced the draft Operational Compliance Rules), Acceptable Solutions, Drinking Water Standards and Aesthetic Values. The Hawke's Bay councils decided to make a joint submission on these draft documents and wanted to use the findings of this project to inform their submission. The impact of these draft regulations therefore became a relevant focus of later engagements in the project.

## 1.6 Report structure

The structure of this report and the research objectives relevant to each section are described in Table 1-1. Some research objectives are addressed in multiple sections.

Table 1-1 : Report structure and research objectives

Section	Content	Relevant Research Objectives
1	Introduces the intent of the project, the approach, its scope, objectives, and measures of project success	N/A
2	Describes the methods used to identify potential private water suppliers	To capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawke's Bay region
3	Presents the engagement framework and the methodology that was used to identify and assess both registered and unregistered private drinking water supplies	To develop and validate a communications and engagement framework for future private water supply assessments
4	Provides a breakdown of the private drinking water supply assessments to understand the range of water suppliers that were engaged with	To capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawke's Bay region
5	Presents the themes and insights from the engagements and supply assessments with the sample of private drinking water suppliers, highlighting their values, perceptions and understanding of safe and accessible drinking water, expectations and needs, as well as the range of drinking water systems to gain an improved understanding of suppliers and their supplies	To capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawke's Bay region To explore the community's values and perception of water and private water supplies within the Hawke's Bay region to inform the communications and community engagement approach To understand the expectations and needs of private water suppliers and their supplies within the Hawke's Bay region
0	Recommends a repeatable methodology and associated engagement approach along with a high-level communications and engagement framework for guiding future drinking water assessments	To develop a repeatable methodology for undertaking assessments of private water supplies

## 2 Identifying private drinking water supplies

Stage 2 of the project was to identify as many private drinking water supplies as possible in Hawke's Bay, to understand who the suppliers are and where their water supplies are located.

### 2.1 Methodology

The key methods to identify private drinking water suppliers were:

- 1 Drawing on the knowledge of the councils' project team at the project start-up workshop
- 2 Reviewing previous Drinking Water and Sanitary Services Assessments
- 3 Interviewing stakeholders, including a range of staff from the councils and the District Health Board
- 4 Using geospatial analysis to identifying locations of known and potential private drinking water supplies.

This stage is summarised briefly here, please refer to Appendix C for more details on the project methodology.

The project start-up workshop helped to formulate the foundational knowledge around what was and was not understood about private drinking water suppliers in the Hawke's Bay region. This step helped to develop the interviews with key stakeholders and determine key documents and GIS data that could be used to identify potential private water supplies.

The previous sanitary survey assessments provided a good overview of water services in each district and identified some private water supplies in Hawke's Bay. They helped to inform locations to focus on for this project. They described methods that could be used for assessing drinking water supplies at a higher community level than individual supplies.

A series of interviews were held with relevant council staff, Te Kupenga (the Māori Advisory Group of the five Hawke's Bay councils), Hawke's Bay District Health Board staff and Taumata Arowai staff. These interviews identified additional private water suppliers. They also strengthened the foundational knowledge about private drinking water suppliers and helped to guide and build the approach for engagement.

Multiple data sources were used to identify private water supplies, in addition to information provided by council staff during interviews. The full list of data sources and the GIS process used to identify private water supplies is in Appendix E and is summarised here. The key data sources used were:

- Registered water supplies – the address of the water supply was used to locate the water supply. Council and school water supplies were removed, as these are not private water supplies. The number of people served was divided by 2.6 people per house (occupancy rate) to estimate the number of properties served. The nearest properties were assumed to be served by that supply.
- Properties that are connected to a council supply – properties that are rated for water were excluded from the analysis, as they are not private water supplies.
- Resource consents for water takes – information on all water permits in the Hawke's Bay region was obtained. The permits were manually filtered to exclude those that were clearly not for drinking water (e.g. dewatering, monitoring).
- LINZ building layer – this was used to identify whether there was a building on the property and if so the area of the building. It was assumed that properties with no buildings or buildings with a footprint of less than 40 m<sup>2</sup> would not have a drinking water supply.
- Water supplies known to the Hawke's Bay District Health Board – the HBDHB maintains a GIS database of known private water supplies. This includes the address of

the source location and the number of people served. As for the registered water supplies, the number of people served was divided by 2.6 people per house to estimate the number of properties served. The nearest properties were assumed to be served by that supply.

- Marae – it was assumed that any marae that are not on a council water supply would be a private water supplier.
- Buildings near a known or potential private water supply – it is well known that neighbours often share a water source. If a building was within a set distance of a known or potential water supplier, it was assumed to be served by the neighbouring water supply. It was unknown over what distances neighbours would share a water supply, so a range of distances were used (150 m, 500 m and 1 km).
- Proximity to council water supply mains – the data for properties rated for water was difficult to use in the format that it was originally provided by some councils. The GIS analysis included scenarios which assumed that any property within 150 m of a council water supply main would be connected to that supply and therefore was excluded from the analysis. Better data about properties rated for water was provided by councils later in the project, so these scenarios are now less relevant.

The process logic used to identify known, potential and assumed private water supplies is shown in Figure 2-1. Six scenarios were run in GIS to identify private water supplies, as described in Table 2-1. As we now have better GIS data for properties connected to council water supplies, Scenarios 2, 4 and 6 are most relevant. Refer to Appendix C for maps of each of the scenarios for each district.

Table 2-1 : GIS Scenarios for Identifying Private Water Supplies

Scenario	Method for excluding properties connected to council water supplies	Distance assumed for buildings on neighbouring properties
1	Properties within 150 m of a council water supply main	150 m
2	Properties rated for water supply	150 m
3	Properties within 150 m of a council water supply main	500 m
4	Properties rated for water supply	500 m
5	Properties within 150 m of a council water supply main	1,000 m
6	Properties rated for water supply	1,000 m

The definitions of each type of private water supply are:

- Registered private water supply: recorded on the water supply register and not a council or school water supply
- Identified private water supply: identified during interviews with council and District Health Board staff, marae, Kāinga Ora properties with a non-council water supply
- Assumed private water supply: properties with a bore or resource consent to take water
- Potential private water supply: properties with at least two buildings that have a footprint of more than 40 m<sup>2</sup>.

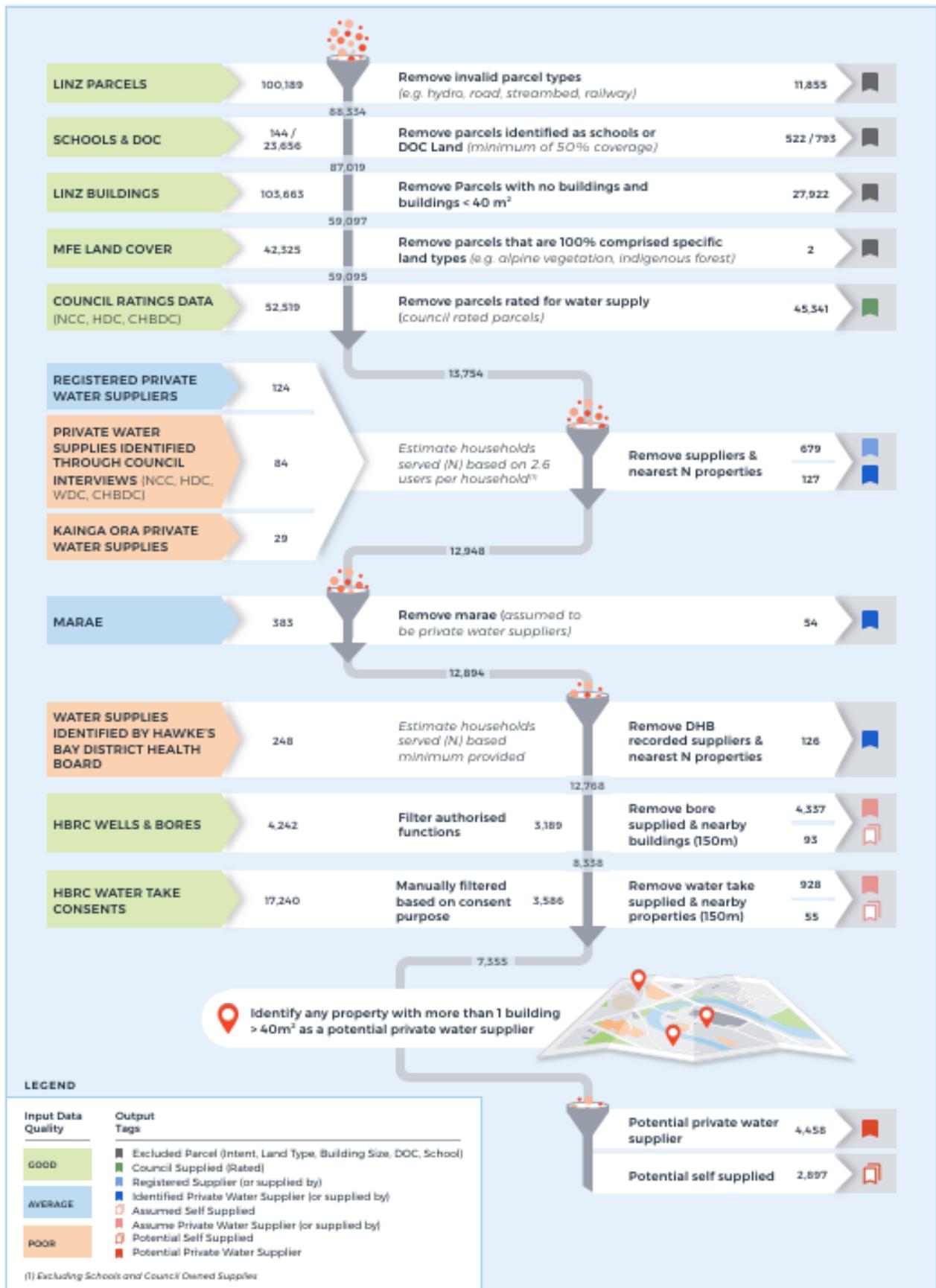


Figure 2-1 : Process for locating possible private water supplies in GIS (estimated number of supplies are on right hand side)

## 2.2 Results

The estimated number of private water supplies in Hawke's Bay is between 3,900 and 6,900. This is much higher than the 2,700 supplies estimated by pro-rating the estimate by Taumata Arowai.

The number of private water supplies identified in each district for each scenario is shown in Figure 2-2. Hastings District has the largest number of private water supplies (1,900 – 3,600), followed by Central Hawke's Bay (1,200 – 1,900), then Wairoa (700 – 1,000) and Napier (150 – 370).

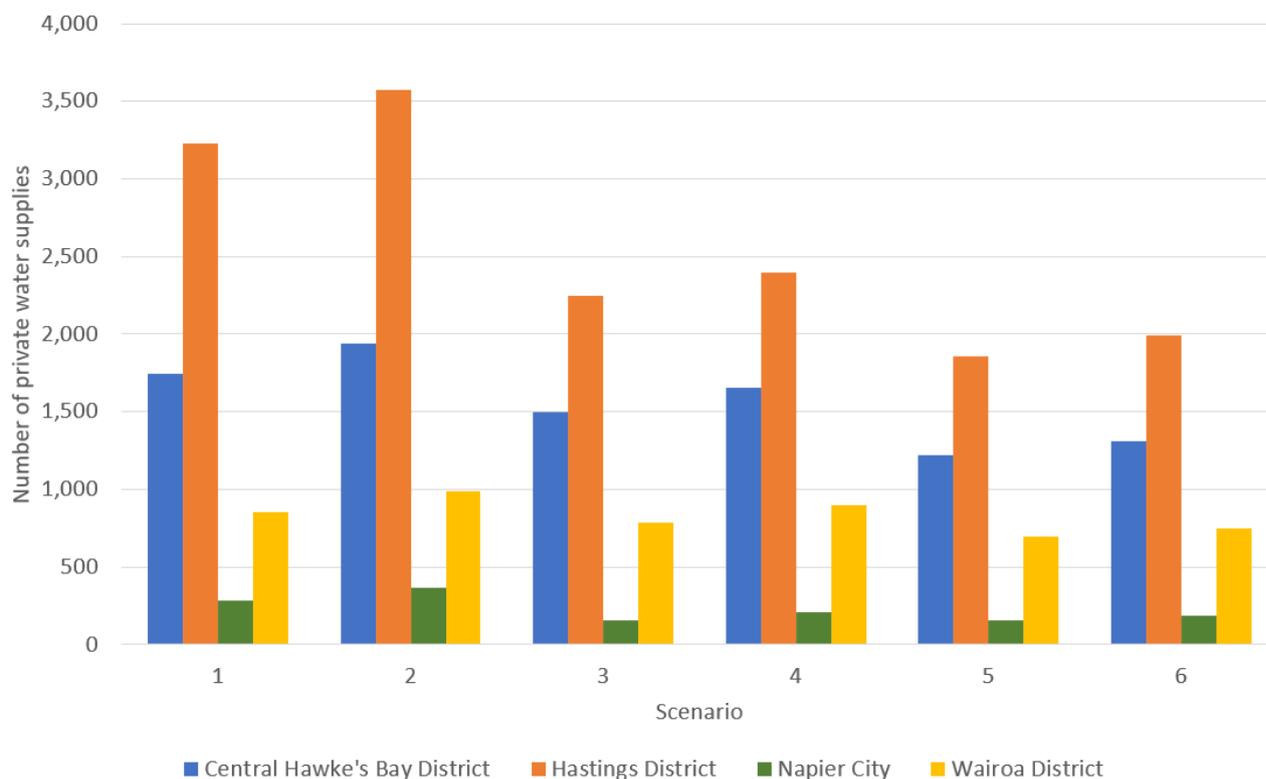


Figure 2-2 : Number of private water supplies identified in each scenario in each district

The number of registered and private water supplies is similar for all scenarios, which is to be expected as there is good confidence in this data.

The number of assumed and potential private water suppliers is larger for those scenarios that use council water supply ratings data to exclude properties connected to a council water supply (Scenarios 2, 4 and 6), compared with those scenarios where it was assumed that any property within 150 m of a council water main would be connected to that supply (Scenarios 1, 3 and 5). This is to be expected, as using a 150 m buffer around council mains effectively increases the area of the council supply and captures properties on the outskirts of town.

The number of private water supplies decreases as the distance over which neighbours are assumed to share a water supply increases. This could be because a small distance results in many very small supplies being identified (just one or two neighbours) whereas a larger distance results in a smaller number of water supplies, each covering a larger area.

**Insight:** It is estimated that there are between 3,900 and 6,900 private water suppliers in Hawke's Bay. The level of uncertainty in the data is significant and highlights the challenge and scale of the work required to identify and support private water suppliers.

Of the 186 potential private water suppliers contacted, 56 (30%) advised that they were not private water suppliers. The main reasons for this were because they were a domestic self-supply, a secondary supply connected to a council network, or are covered by the Food Act or Wine Act rather than the Water Services Act.

This means that the number of assumed and potential private water supplies could be overestimated by 30%. This is counterbalanced by the additional private water supplies that were identified by project participants and not identified in the GIS data.

The other problem related to the GIS data was that it was not linked to contact details for property owners. This meant that a manual process was required to find contact details for a possible private water supplier. It is recommended that councils add contact details fields to the property layer in their GIS systems. This would be useful for many of the functions that councils carry out.

***Insight:** GIS is a useful tool to identify possible water supplies. However, it relies on many assumptions and so the confidence in the results is not high. It is important to check the GIS analysis by engaging with communities and gathering information about their private water supplies.*

An example map for Scenario 2 for Napier is shown in Figure 2-3, see Appendix C for maps for all districts for the six scenarios.

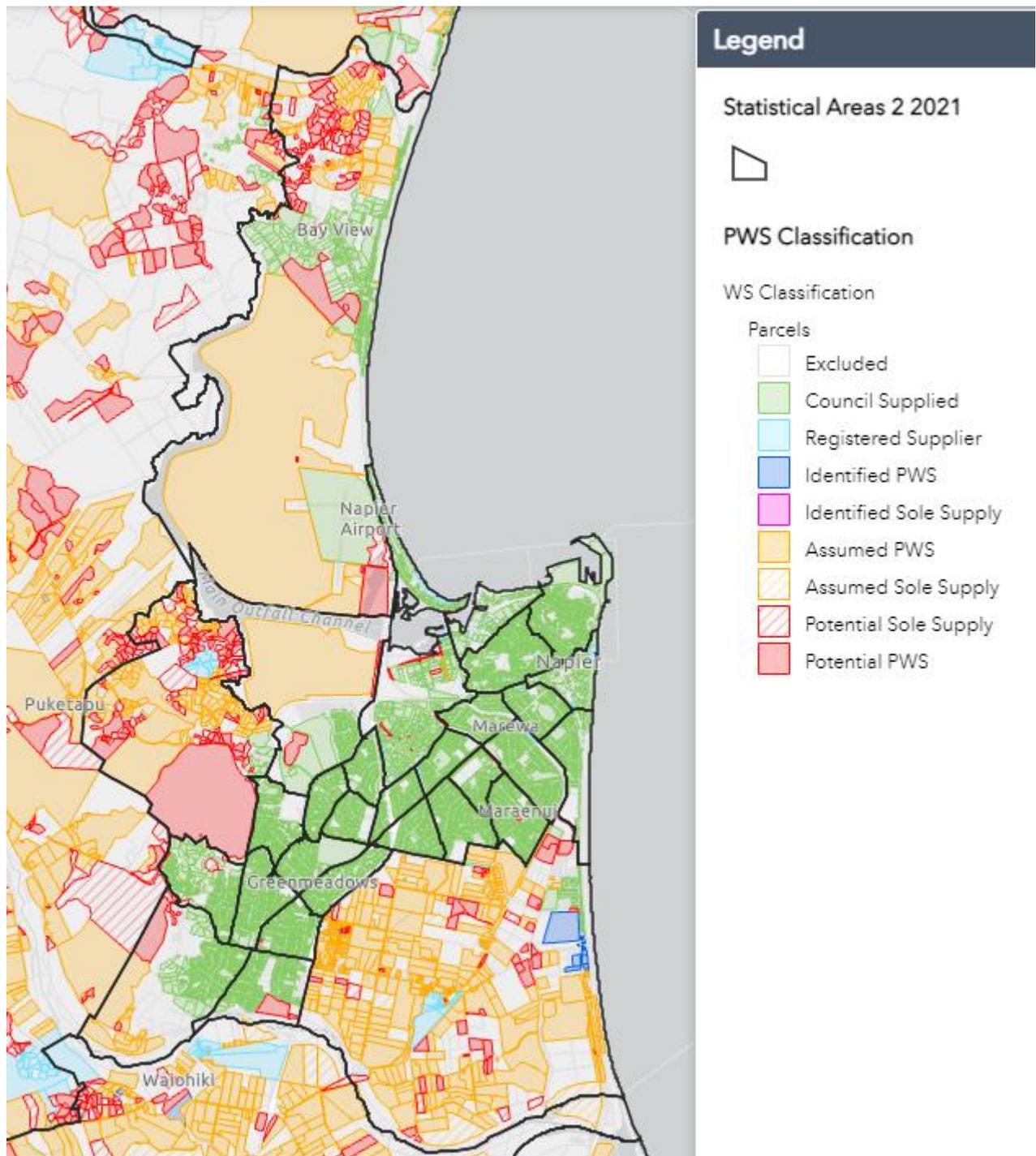


Figure 2-3 : Map of known and possible private water supplies (PWS) in Napier City (Scenario 2)

## 3 Engaging with private water suppliers

This section summarises the engagement approach and methodology designed to identify and assess registered and unregistered private drinking water supplies. For more detail, please refer to Appendix C.

The section describes:

- The nature of the project and the approach used to develop the steps to engage with private drinking water suppliers and assess their water supplies
- Challenges and key learnings that came with embarking on a project with multiple unknowns and the evolving political and legislative environment
- The communications and engagement framework that was validated through undertaking the project
- The rationale for the engagement approach, and reflection on the two engagement phases.

Section 4 and 5 provide the project results and insights from the engagements with private water suppliers.

### 3.1 Project engagement approach

The project was complex, as an in-depth project exploring the practical implementation of water services assessments under the revised s125 of the LGA had not yet been undertaken at a regional scale. A significant level of care was required to arrive at the preferred engagement approach. This is embedded in the project approach and methodology in the Project Definition Document (see Appendix B) which explains the need to build relationships and engage with people on their own terms to reach truly meaningful engagement and a deeper understanding of people's needs, concerns, constraints and the implications of the Act with given contexts and communities.

### 3.2 Project complexities

New Zealand councils that had conducted community drinking water supply assessments via a postal survey had received low response rates. It was therefore important to explore other methods and to begin building relationships with water suppliers and an understanding of their water supplies.

The nature of this project and aspects of the research process, particularly the qualitative research and engagement components, represent a 'snapshot' in time and must be recognised and situated against the wider socio-political context that the research has been completed within.

A range of potential engagement techniques were investigated. These included focus groups, town hall<sup>4</sup> settings, and using community champions<sup>5</sup> to connect and engage with supply communities in a meaningful, trusted and mutually beneficial way. However, there were a number of risks and challenges that were identified and continually reflected on during the project. These included:

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<sup>4</sup> A 'town hall' is an organised public meeting typically held in a community venue to discuss a topic of interest or to discuss specific legislation or regulation. It can include presentations from the organising body and opportunity to openly discuss the topic with leaders such as councillors or council staff.

<sup>5</sup> A 'community champion' is a person that hold relationships, roles, or leadership positions in their local community and who takes on an issue or project to raise awareness, take action and support towards a shared cause.

### **The legislative environment changed during the project.**

When the project began, the Water Services Bill included networked supplies connected to council supplies (e.g. ports, airports, private subdivisions) in the definition of water supplier. Secondary supplies were not included in the definition of a water supplier in the Act in November 2021. This had previously been a large focus area for the project that became redundant.

Another key change was that public consultation for the draft Drinking Water Quality Assurance Rules and Acceptable Solutions for drinking water supplies occurred late in the project (January – March 2022). The Hawke's Bay councils wished to provide a joint submission on this, and the impact of these draft regulations became a focus of engagements later in the project. See Appendix G for a copy of the parts of the submission that related to private water supplies.

### **The contentious wider Three Waters Reform debate that was playing out had the potential to disrupt the intent of the project.**

Central Government plans to centralise the delivery of Three Waters services into four new publicly owned water supply entities. There was concern that suppliers would confuse the project with the proposed reform of how water services are delivered and/or spend a significant amount of interview time discussing the matter.

This confusion had the potential to increase distrust in the project's intent and make it difficult to find people willing to participate in the study. It could also create further public backlash around the Three Waters Reform conversation if the intent of the project was unclear or misconstrued.

### **The definition of 'community' was unclear.**

Although the amendment to section 125 of the LGA requires councils to inform themselves about the access that each community in its district has to drinking water services by undertaking an assessment of drinking water services every three years, it was unclear what is meant by the term 'community'.

### **The number of private drinking water suppliers in Hawke's Bay was likely to be much higher than Taumata Arowai's estimate.**

When the Water Services Bill was initially drafted, Taumata Arowai estimated that there may be 75,000 private water supplies across the country. Based on the population of Hawke's Bay, this indicated that there could be around 2,700 private water supplies in the region. This project has now estimated that there are between 3,900 and 6,900 private water supplies. However, the actual number is still very uncertain.

### **It was challenging to find and encourage people to participate in the project.**

Contact details were not readily available for potential participants and council staff had very limited capacity to contact private water suppliers to ask if they would like to participate in the project.

There was little incentive for private drinking water suppliers who are not registered to self-identify and share information about their drinking water systems. Some potential participants were hesitant to be involved because of distrust of the council and/or government, concerns about the privacy of their information and concerns about their water supply being assessed. The formality of the written consent also led to a significant amount of hesitancy to participate.

### **There was confusion by some suppliers about the role the Hawke's Bay councils have with respect to private water supplies.**

Taumata Arowai, the new water services regulator for Aotearoa, had been recently established, but had done little communication or engagement with private drinking water suppliers at the time.

While it was not the councils' responsibility to audit private drinking water supplies on drinking water compliance, it was identified that suppliers could have this perception. This had the potential to create further scepticism and unwillingness to engage in the project and disclose information about the state of their drinking water systems.

**There was a risk that suppliers would cut off their drinking water supplies if they were informed of their obligations without sufficient clarity, information and support.**

A significant change with the Water Services Act, compared to the previous drinking water requirements in the Health Act, meant that it applied to water supplies serving fewer than 25 people. These had previously not been defined as drinking water supplies under the Health Act, nor had they been required to meet compliance requirements that specified penalties for offences.

Perhaps the most serious risk was that suppliers would disconnect the water supply to others to avoid potential liability and costs of complying with the Act. Some suppliers said that they were considering this.

### 3.3 Engagement approach

A two-staged engagement approach was designed to address the complexities of the project. The stages were:

- 1 Developing a methodology to identify, contact and engage with a small **test sample** of private drinking water suppliers. The intent was to engage with 12 private drinking water suppliers (3 different types of suppliers within each of the 4 districts).
- 2 Reflecting on the learnings from the test sample and improving the engagement delivery for the **larger sample**. The intent was to engage with 70 suppliers (16-17 suppliers per district) and to engage with a wide variety of different types of supply and supplier.

#### 3.3.1 Key aims of the engagement

Key aims of the engagement were to:

- Build rapport and connect with the private drinking water supplier community to develop a repeatable methodology for drinking water assessments.
- Provide information to suppliers on the new obligations and understand and review how the new regulations (including the draft Rules and Acceptable Solutions) could be implemented (from a council and community perspective).
- Answer questions that suppliers may have.
- Gain a better understanding of the private drinking water supplier, their expectations, needs and their supply.

Individual 'interview' style engagements were undertaken at the location of the private drinking water supply and, wherever possible, at a time that suited them. This included providing options to meet in the evening and over the weekend.

The engagement approach also sought to use pre-existing relationships through those who were already connected with a particular community.

A cross section representing different types of supplies was identified to understand the views of a variety of drinking water suppliers.

#### 3.3.2 Defining the types of private drinking water supplies and their suppliers

A private drinking water supply matrix (see Figure 3-1) was developed to help organise and understand the different type of drinking water supplies that may exist in the communities, what the needs of a variety of drinking water suppliers may be and how best to engage with

them. The broken and solid arrows in Figure 3-1 represent the likely motivators for each type of supply identified.

SELECT:					
Registration	Registered		Unregistered		
SELECT:					
Category	Very small (<50 people)	Small (50 - 500 people)	Large (>500 people)	Specifically declared supplier	
SELECT:					
Motivator	Ohanga/ Commercial	Tangata Hapori/ Social	Ritenga Māori/ Cultural	Te Taiao/ Environmental	
SELECT:					
Type	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Business Organisations</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Accommodation Facilities</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Retirement Homes</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Farmers</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Horticulturalists and Viticulturalists</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Community Facilities</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Privately-owned Community Based</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Beach Communities</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Rural Settlements</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Urban Infill</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Papakainga</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Kaumātua Flats</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Marae</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Unbuilt Marae</div> <div style="margin-left: 100px;">-----&gt;</div> </div> <div style="margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Community Water Filling Stations</div> <div style="margin-left: 100px;">-----&gt;</div> </div> </div>				
	SELECT:				
	Source water	Groundwater (bores)	Roof water	Spring/ surface water	

Figure 3-1 : Private water supplier matrix development process

### 3.4 Engagement methodology

This section describes the engagement methodology used for engaging with private water suppliers. A 'closed' engagement approach was used, where potential participants were contacted directly, rather than via a wider public campaign. This was to mitigate the political risk associated with Three Waters Reform, and to effectively manage the project complexities and timeframes.

There were four steps in the engagement method:

- 1 Selecting communities
- 2 Identifying known and possible private water suppliers within those communities
- 3 Contacting water suppliers to invite them to participate in the project
- 4 Engaging with private water suppliers

These steps are described below.

#### 3.4.1 Step 1 - Selecting communities

Three communities were selected for each district in consultation with the council's Infrastructure Lead (see Table 3-1)

*Table 3-1: Community focus areas for each district*

Community Focus Areas	Napier	Hastings	Central Hawke's Bay	Wairoa
1	Jervoisstown	Maraekakaho	Tikokino	Mahia
2	Meeanee	Te Hauke	Onga	Ngā Nuhaka
3	Awatoto	Waiohiki	Pourerere Beach	Raupunga

#### 3.4.2 Step 2 - Identifying known and possible water suppliers

The second step was to identify known and possible water supplies within the three communities. As many water suppliers as possible were identified in the first community before moving onto the second and then third communities.

The engagement sought to select a variety of different types of private drinking water suppliers based on the private drinking water supplier matrix (for example, farmers, accommodation facilities, papakainga and marae).

#### 3.4.3 Step 3 - Contacting water suppliers to invite them to participate in the project

Contact with known private drinking water suppliers often relied on existing council or project team relationships with people in the community.

Council staff were asked to follow a step-by-step process (see Appendix F) to make initial contact and seek consent from the supplier to participate in the project.

The test sample revealed that not all people contacted were actually private water suppliers. In one case, it was a domestic self-supply and in another it was a non-potable supply.

Therefore, a verification stage was added for the larger sample to check that suppliers met the definition of a private drinking water supplier. Even with these additional steps there were still some engagements with people who turned out not to have a drinking water supply.

The test sample also showed that it was important that the person making the initial contact had a good understanding of Three Waters Reform, the Water Services Act and why the councils were undertaking the project, as many people contacted had questions about these matters.

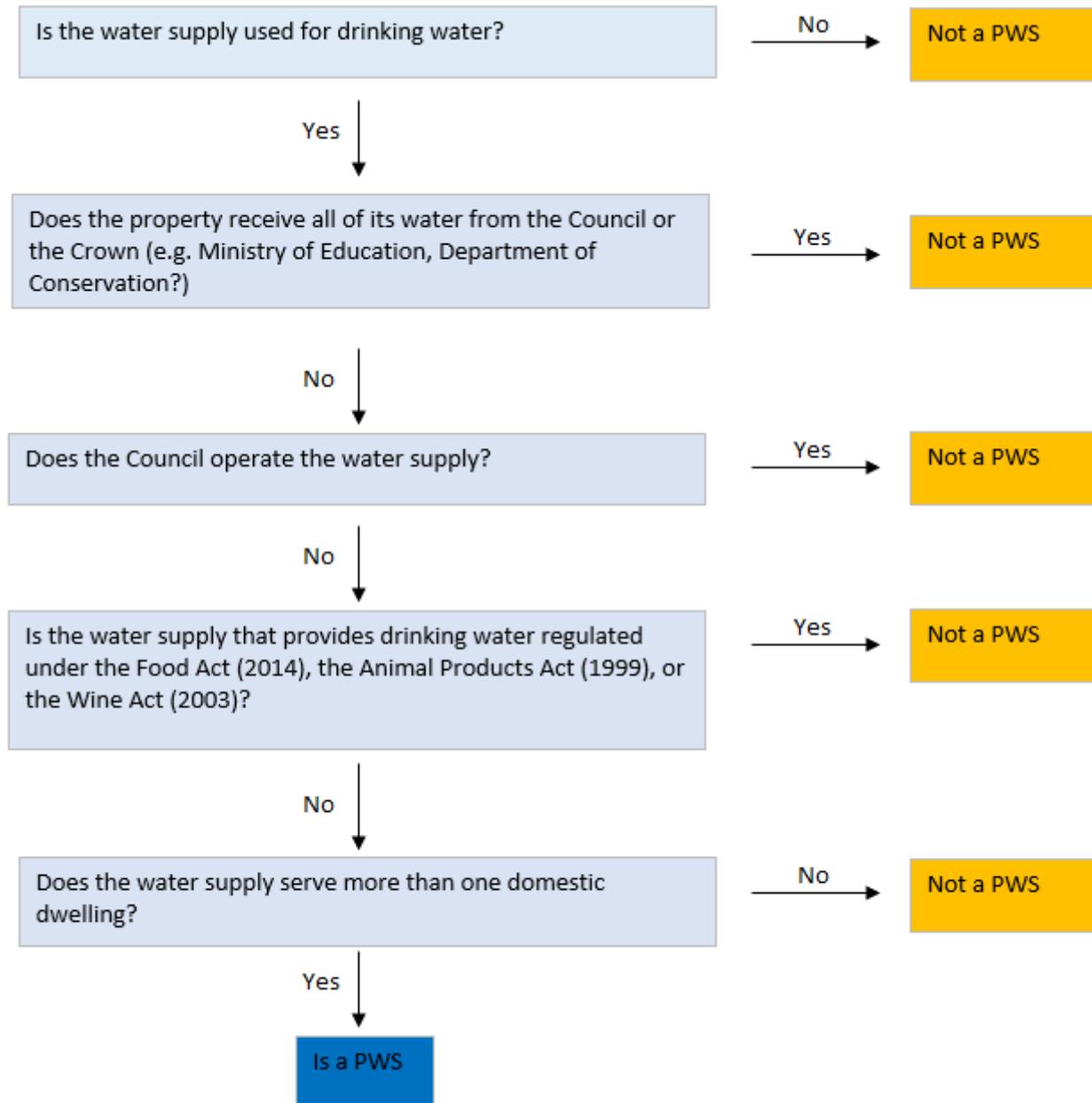


Figure 3-2 : Process for checking if someone is a private water supplier (PWS)

#### 3.4.4 Step 4 - Engaging with private water suppliers

The engagement method used was in-person semi-structured interviews to gather qualitative data and a standard set of questions about the drinking water supply to gather quantitative data.

The structure of the engagement was split into two parts. In the first part, the project was introduced and open-ended research questions were asked. Qualitative data was gathered in the form of field notes which underwent thematic analysis including inter-coder reliability testing between field researchers.

In the second part, the supplier was asked to provide technical information about their drinking water supply and a site walkover was undertaken. Quantitative data about the water supply was captured using a standardised questionnaire in the Survey 123 app. The questions sought to understand key aspects of the water supply and to form the basis of a future water services assessment. A copy of the questionnaire is included in Appendix H.

The engagements took place at the location of the drinking water supply and typically lasted between 1 - 1.5 hours.

The use of a standard questionnaire enabled data to be analysed to draw insights from the project (see sections 4 and 5). It also meant the information could be provided to councils at the end of the project in a GIS and database format, for use in future water supply assessments. For privacy reasons, the information about individual supplies is not included in this report.

### 3.5 Experiences and reflections from engaging with the test sample

The following insights were gained from engaging with the test sample of private drinking water suppliers in Stage 3 of the project:

- The engagement setting varied depending on the situation and space available on-site. Interviews were held at dining room tables, in working sheds or offices, and in a car.
- Attitudes and opinions on the project ranged from very open and eager to participate, to very hesitant to participate. Rapport was built with all participants, who became more comfortable with the purpose for the project.
- Suppliers often had a reasonable to high level of technical knowledge about their water supplies and were able to answer the assessment questions or knew where they could obtain the right information. However, they generally had very limited knowledge about the legislative changes.
- The process of identifying private water suppliers and scheduling visits was labour intensive and inconsistent for the project team and council staff in terms of what was communicated to participants about the project and engagement purpose.
- Hesitant participants found the consent form to be intimidating; they were concerned about what the assessment information would be used for, and what their obligations would be if they decided to participate in the engagement.
- Participants were interested and, in some cases, concerned about what their obligations would be. All participants wanted to ensure that their water was safe to drink.

The Insights and Analysis from the Test Sample provides the full detail, including the recommended changes for the full sample size (see Appendix I).

### 3.6 Communication and Engagement Strategy

Stage 4 of the project was to develop the Communications and Engagement Strategy for engaging with the wider sample of private water suppliers. This was developed for the project and was tested, informed and verified by engaging with the test sample and amended for the wider sample of 50 participant engagements. A copy is provided in Appendix F.

### 3.7 Full project sample

Engagement with the full test sample of private drinking water suppliers was undertaken between 18 January and 23 February 2022.

There was a target to undertake 70 engagements in total (around 17 engagements per district). The project contacted 186 known and possible private water suppliers over the phone, which led to 50 engagements. The shortfall in the assessment targets were due to constraints around time, resource, cost and a lack of momentum at start (see section 4.1 for further information).

*Insight: By the end of the project, unsolicited requests were being received from private water suppliers wanting to participate in the project. This demonstrates the appetite of private water suppliers to better understand their obligations and what it means for their supply.*

## 4 Results of engagements with private water suppliers

This section provides an overview of the private water suppliers that were engaged with. It describes the key learnings and insights from the project as a regional engagement exercise, the unique district settings and individual communities that were engaged with in each district.

### 4.1 Results on which suppliers participated

Table 4-1 shows the number of contacts that were made and the number of engagements that were undertaken for this project, broken down by district. Of the 186 known and potential water suppliers that were selected, 11 refused to participate (6%), 25 did not respond (13%) and 56 advised that they were not a private water supplier (30%). 50 engagements were undertaken, which was 27% of those identified. This demonstrates that a significant effort was required to get private water suppliers to participate in the project.

Figure 4-1 shows a map of the water suppliers that participated in the project.



Figure 4-1 : Map showing location of all engagements

Table 4-1 : Contacts made and engagements held with known and possible private water suppliers

Stage	Hastings District Council	Napier City Council	Central Hawke's Bay District Council	Wairoa District Council	Total	Comment
Assessments completed	17	6	11	16	50	Private water supplies assessed to date including those assessed during the test sample
Contacted, to be scheduled	2	0	0	4	6	Initial phone calls completed, pre-engagement emails sent, to follow up with booking assessment dates
Contacted, to follow up	6	7	2	5	20	Expressed willingness to participate but requested more time to confirm for various reasons
Contacted, no response	12	2	6	5	25	Initial phone calls attempted (up to three each) but no pickup, followed up by voicemails and emails but no return response
Declined to participate	5	2	4	0	11	Refused to participate
Not a private water supplier	11	17	25	3	56	Identified as a possible private water supplier on GIS, however found not to be via initial phone call verification. The 3 in WDC were verified during scheduled site visit
Not contacted	1	8	9	0	18	Identified as possible private water supplier on GIS, however no contact number available on the council system
<b>Total</b>	<b>54</b>	<b>42</b>	<b>57</b>	<b>33</b>	<b>186</b>	

## 4.2 Regional, district and community insights

This section reflects the key learnings:

- As a regional engagement exercise
- From the unique district settings
- From individual communities within each district.

#### 4.2.1 *Regional engagement reflections*

- Completing individual face-to-face engagements provided extremely valuable data on the variety of different private water suppliers and their supplies.
- Councils would benefit from continuing to include face-to-face engagements for future water services assessments to extend their understanding of drinking water suppliers and respond proactively to their obligations under the LGA.
- Taking the time to meet people and discuss the project helped to establish trust and build relationships. This strengthens councils' ability to undertake future communication and engagement with those suppliers.
- The engagement method reduced political risks and misinformation during the project where possible. However, challenges did arise, where an organisation without full understanding of the project contacted its members to discourage them from participating.
- Due to the project's complexities and a lack of existing information on private drinking water supplies, there was an extensive learning process to develop a system which streamlined the identification, contact, verification, consent and scheduling of each engagement visit with the supplier.
- Thus, engaging with communities took a significant amount of time, resource and effort, reflected in the cost to achieve the number of engagements that were conducted.
- In particular, the process to gain consent was particularly difficult. Some felt that by consenting to the engagement, they could have more to lose than gain. Others expressed that their verbal consent meant more than their written consent (this was particularly prominent with whānau on marae who participated). In some cases, people were happy to participate but did not want to consent to their information being part of the research. In these cases, the participants were comfortable to have the conversation and their sentiments listened. This strengthened the project team's understanding of private water supplies, but their information was not documented.
- The project team held a wide range of skill sets, including water engineers, council representatives, engagement specialists and administrators who played critical roles in providing the right level of support and information to suppliers.

#### 4.2.2 *District and community engagement reflections*

Three areas per district were selected (as described in section 3.4.1) to provide insights into specific regional communities. However, engagements were also scheduled in other communities to pursue the target number of engagements (which could not be entirely achieved within the preferred areas). The qualitative research was designed to focus on the nature, values and concerns of individual private drinking water suppliers (to meet the project objectives) rather than the characteristics of geographic communities. However, the data provides an opportunity to draw observations on the communities that were visited.

These findings do not constitute a drinking water services assessment, but they can guide future assessments in each area. Nor does this reflection provide a detailed community description as the reflection was limited to the ability to arrange engagements at the identified locations. This ranged from one to five supplier engagements per community. However, conversations with all those contacted over the phone (including those who decided not to participate) were also reflected upon.

##### 4.2.2.1 *Wairoa District*

Wairoa residents are strongly connected to water, with communities primarily located near coastal, spring and river environments. Engagements within this region were mainly with a mix of farmers and suppliers to beach communities and marae. Suppliers were not overly difficult to find once the engagements began, as community connections within Wairoa communities appeared to be relatively

strong. This was demonstrated through the success in a 'snowball' research method where word-of-mouth, or suppliers providing contacts for other suppliers helped to increase participation. However, it was logistically difficult to efficiently schedule site visits that suited the suppliers (who were often very busy) and the project's schedule (as the team was based in Napier).

### **Māhia**

Many Māhia residents do not live in this community permanently, and houses are often used as rented holiday accommodation or holiday houses. Therefore, it was often difficult to engage with suppliers within the project timeframe because many people were not living there.

In some cases, and with the supplier's permission, the project team visited the drinking water system separately from the in-person engagement, as it was more convenient to meet the supplier in Wairoa for example, where they lived or worked.

The supplies were generally accessible, many being bores or water tanks located within easy walking distance.

*The Māhia community appears to be growing, which could increase water supply demand. Historical water supplies may continue to be used as new homes are built.*

### **Ngā Nūhaka**

Ngā Nūhaka is a remote location, mostly made up of farming, rural housing and marae.

Wairoa District Council's Māori Relationships Manager was present at each marae visit to provide guidance around tikanga.

The supplies ranged from rainwater tanks through to multiple springs located in hard-to-reach places across the high country, often making it impractical to view the source of each supply point. In some cases, four-wheel drive vehicles and side-by-side motorbikes were required to access the drinking water source.

*The remote nature of Ngā Nuhaka community makes it particularly important for access to the right professional water supply services for those who need them (such as marae), while others such as farmers often held the necessary skills to address supply issues relating to their farms.*

## Raupunga

Raupunga is a small, isolated village. Its people rely heavily on the community-based water supply scheme, including a marae, kaumatua flats and has the capacity for 40 homes to connect into the supply. A papakainga is also located adjacent to houses on the supply, however, their water supply will be via individual rainwater tanks at this stage (development was still underway at the time of this project).

Council and supporting stakeholders hold strong and supportive relationships with this community which made the meetings particularly accessible and very valuable engagements.

*The ability for the Raupunga community to continue to financially support their community's drinking water supply is particularly challenging. They rely heavily on grant applications, which are not a guaranteed source of income. It is vulnerable to regulatory change, as many people do not have the means to fund upgrades to the supply.*

### 4.2.2.2 Napier City

As much of Napier is made up of urban areas with reticulated water, it was more difficult to find private drinking water suppliers to engage with. Most suppliers use bores, which made it challenging to determine from the GIS mapping whether it was a private water supply. The smaller geographical and rural areas (which typically held more private drinking water supplies), limited information about who was responsible for supplies and NCC staff capacity constraints further narrowed the ability to achieve the target number of engagements for Napier City.

Engagements within this area were varied and suppliers included orchardists (supplying to workers or neighbouring properties), urban and rural subdivisions (supplying to neighbours), accommodation providers and corporate entities. During the phone contact stage, there was a mix of hesitancy from people willing to participate, while a large portion stated that they were not private drinking water suppliers.

## Jervoistown

The Jervoistown community is a semi-urban residential settlement, where suppliers share their bore supplies with close neighbours. In some cases, suppliers discussed and wanted to include their neighbours who were on the supply at the engagement, as they saw it as a shared discussion.

The main difficulty to engage with suppliers was their limited time available to participate.

Suppliers expressed their concern around the potential future connection to a council water supply system stating the value of their outstanding and untouched water quality.

*The Jervoistown community appear to be particularly passionate about their independent water source and deliberately choose to live in a community that manages its own water supply.*

## Meeanee

The Meeanee community is made up of a range of businesses and rural residential suppliers using bore water.

Initially the attitude from suppliers were somewhat frustrated and mistrustful of any changes that put an onus on them.

*It appears from the limited engagements undertaken, that members of the Meeanee community are open to discussing Napier City extending the existing reticulated network to properties that are currently private drinking water supplies.*

## Awatoto

The Awatoto community was largely industrial and rural supplies using bore water.

*Members of the Awatoto community have an established relationship with Napier City Council and can continue to work together around shared issues and goals.*

### 4.2.2.3 Hastings District

Engagements within the Hastings district made up the largest portion of the project's engagements, where a large number of rural supplies contributed to the success in reaching the target number of engagements for this district. The Council had a strong list of identified supplier contacts which assisted with the ability to contact a large number of suppliers. The effort made to provide the required staffing to organise the engagements assisted in meeting the target.

There was naturally a particular awareness of the Havelock North water supply contamination in this district, although people remained confident in the quality of their own water. There were a wide range of supplier types, including marae, papakainga, accommodation providers, farmers, corporate entities, rural subdivisions and orchards.

## Maraekakaho

The Maraekakaho community is in a rural area, where many suppliers have long-standing inter-generational connections to their land primarily through family farming.

The engagement experience found some suppliers were very happy to talk, while others felt they had too much going on (e.g. due to Covid) and declined to participate. Others did not participate because they were not a drinking water supplier (e.g. because they are covered by the Food Act).

*The strong sense of community and recognition of established groups/relationships that exist in the Maraekakaho community could provide a strong platform and opportunity to progress initiatives to collaborate with a supply group around how a water services assessment could be delivered.*

## Te Hauke

The Te Hauke community has marae and papakainga at the heart of its community. The engagement success was completely reliant on talking with people who held an existing relationship within the community, which was strongly built around the engagement method to identify community champions within a given community.

This technique quickly led to successful engagements with three significant suppliers within a short period of time (within a week of contacting the supplier).

Appropriate tikanga (cultural practices) were supported by the Māori Principal Advisor Relationships from Hastings District Council during marae visits, which formed an important aspect of the engagement process. This included bringing kai (food) to the hui (meetings) and completing opening and closing karakia (prayer).

The community relies significantly on a limited number of supply types including an informal community supply which is used to supplement most of the surrounding homes who rely on individual roof water tanks (the supply has a sign which highlights the source as non-potable). There is a bore that supplies the hub of the community – the marae, kohanga reo, kaumatua flats and residential homes.

*In the past the Te Hauke community, driven by the marae, had investigated the potential to establish a community supply for all residents so that there would be a secure access to safe drinking water. There was appetite to restart this conversation as suppliers recognised the benefit for this community to have a centralised network for everyone.*

## Waiohiki

The Waiohiki community is a semi-rural community, near to the urban area of Taradale in Napier and the suppliers include marae, papakainga and rural residential properties.

Water supplies include bores and water takes from the nearby Tutaikuri River, which has the Omarunui Landfill 2 km upstream. Issues have been raised around contaminated water during floods events, with little to no treatment in some situations.

*There is an opportunity to support and work with the Waiohiki community to accurately detect and address drinking water supply issues for suppliers, which a particular focus on those larger community hubs such as marae or vulnerable supply groups.*

### 4.2.2.4 Central Hawke's Bay District

Much of Central Hawke's Bay is rural with satellite settlements dispersed throughout the district. Suppliers interviewed were within the categories of rural subdivisions, marae, farmers, private community-based supplies, horticulture and golf courses. Council staff had dedicated resources which contributed to the engagement process. For many Central Hawke's Bay suppliers, having their own water supply was often a drawcard for why they had bought their properties. However, many suppliers noted the shift in the wider challenges they faced with levels of irrigation in the area increasing, and some instances of drought.

The increased development and growth were also common themes mentioned in relation to issues around limited access to water supplies. The engagement

experiences varied from participants willing and eager to have information around changes that could affect suppliers directly, to very hesitant participants that in some cases were outraged that such a level of intrusion on their private supplies had been considered. In these instances, it was beneficial to have anticipated potential conflicts and include local people or trusted community members to be present at such engagements.

### **Tikokino**

The Tikokino community is a settlement which is surrounded by largely rural farming and horticultural activities. Suppliers primarily had large sections, but surrounding houses were in reasonably close proximity, often a result of previous subdivision from an original homestead that had a bore.

Some suppliers only supplied to one other household, while others may supply up to ten or more other properties.

The systems were often installed or largely maintained and fixed by the owners themselves, but when new owners bought the property and took over the responsibility as the supplier, this sometimes caused issues either in running costs or repair issues.

Suppliers often mentioned that the Tikokino community has experienced drought in the past and at times people have gone without water.

*There is an opportunity to work with the Tikokino community to look at options that could support securing access to drinking water supplies during droughts.*

### **Onga Onga**

The points presented above relating to the Tikokino community were also relevant to Onga Onga.

*There is also an opportunity to work with the Onga Onga community to look at options that could support securing access to drinking water supplies during droughts, which is now an issue for Onga Onga.*

### **Pourerere Beach**

The Pourerere Beach community is primarily a farming and beach community, often with multigenerational families inheriting supplies.

Most water supplies use spring water or roof water and it appeared that drought was less of an issue than in the Tikokino and Onga Onga communities.

There are also privately owned community-based water supply schemes, which serve a dual purpose to supply water for agricultural processes and as either households' primary or back up drinking water supply.

*Existing groups in the Pourerere Beach community could be engaged to work together to determine how a practical and sustainable water services assessment could be undertaken, and to support private drinking water suppliers in meeting their obligations.*

## 5 Themes and insights from interviews with private water suppliers

This section presents the themes and insights from the engagements with suppliers and their drinking water supplies. This section is broken into two key areas:

- 1 The private drinking water supplier engagement themes and insights
- 2 The private drinking water supply systems themes and insights.

This section of the report delivers on the following research objectives:

- To capture data and information on private water supplies and suppliers to understand the current state (performance and risks)
- To explore the community's values and perceptions of water and private water supplies
- To understand the expectations and needs of private water suppliers and their supplies
- To investigate private drinking water suppliers' understanding of safe and accessible drinking water.

The insights and analysis presented in this section are provided to the Hawke's Bay councils to build a greater understanding of private drinking suppliers and the state of their drinking water supplies. Further insight on suppliers and their supplies are provided in Appendix 1 of the Hawke's Bay Council submission to Taumata Arowai (Appendix C of this report) which adds additional context on this project related more specifically to the implications of the draft Rules and Acceptable Solutions that were being consulted on at the time.

### 5.1 Engagement themes and insights

This section begins with the overarching key themes that were identified relating the following aspects of the project:

- Suppliers' knowledge of and understanding around their obligations as a drinking water supplier under the Water Services Act, and the draft Drinking Water Quality Assurance Rules (Rules) and Acceptable Solutions
- Implications of the Water Services Act and draft Rules and Acceptable Solutions for private drinking water suppliers and their key concerns
- Suppliers' understanding and perception of safe and accessible drinking water
- Future engagement with communities.

#### 5.1.1 *Suppliers' knowledge of the Water Services Act, draft Drinking Water Quality Assurance Rules and Acceptable Solutions*

People were often deeply connected to their water systems and valued water as a lifeline to their communities. However, there was very little awareness of the Water Services Act and draft Rules and Acceptable Solutions by those who were engaged.

***Insight:*** All private drinking water suppliers need to be made aware of their obligations under the Act and what this practically means for them. Clear guidance needs to be provided about who is responsible where multiple parties are involved in a water supply.

### 5.1.1.1 Lack of awareness

Before being contacted for this project, the vast majority of the private water suppliers had no knowledge of the Water Services Act, the new (expanded) definition of a drinking water supplier or Taumata Arowai. These suppliers did not realise that they have (or will have) new responsibilities as a drinking water supplier. 98% were not aware of the consultation on the draft Rules and Acceptable Solutions that was occurring during the project.

Only three suppliers had read the draft Rules and Acceptable Solutions (and two only read these as a result of engaging in this project). Some suppliers had limited information on the Act that they had obtained from varied sources, namely word-of-mouth from friends and/or family or communications from organisations such as Federated Farmers.

Quotes from suppliers included:

*"We didn't realise this would apply to us - thought it was for water bottling companies."*

*"We didn't know about the Act and have since done some digging. We're still quite unsure about the changes."*

*"It's good to have notice of these changes before they are sprung on us."*

*"Knowledge is important so better to be ahead of the game than bury our heads in the sand."*

### Case study: Horticulturist was unaware and unhappy

A horticulturalist supplied water to their family home on their property, to pickers who worked on their orchard, and also to a property next door. They had gone through a costly and drawn-out process with Council to gain resource consent for the activity on the adjacent property.

They were initially very hesitant to engage in the project and were particularly closed and defensive as the meeting began.

The supplier said that they had not known about the Act, felt they already adhered to strict compliance obligations through their business as a fruit exporter and the resource consent process. Now they were being 'prosecuted for doing a neighbourly good'. They said that if they knew such regulation like this was going to happen, then they would have never spent the time, money and effort to go through the consent process for the property next door.

However, as they found out more about the intention of the project and had a discussion in-person, they were more trusting and forthcoming with information.

As the engagement progressed, they were suggesting channels to engage with other horticulturalists in the conversation around the Water Services Act and supporting regulations. At the conclusion of the meeting, they mentioned that knowledge is important, and it was better to be 'ahead of the game' than to 'bury their heads in the sand'.

This was a clear example of a supplier feeling more comfortable with the process as transparency increased and they had more specific information about how they would be affected. It also provided a safe channel for their questions to be addressed.

#### 5.1.1.2 Clarifying responsibilities

A key area suppliers sought clarification on was exactly who was responsible for the supply and therefore liable to comply under the Act. The nature of drinking water supply arrangements varied widely, and many were complex. These included those that served multiple properties and had easements in place, informal handshake agreements, formal structures, and inherited agreements that property owners would prefer to get out of. In some cases, the participant simply allowed others to take source water from their property but had no other involvement in the water supply.

Community schemes, trustees and volunteer committees expressed concern about having to assume legal responsibilities and liabilities for the supplies. Suppliers where the supply was based on historical 'handshake agreements' felt they were now being disadvantaged despite providing a 'community good' to their neighbours and communities.

Quotes from suppliers included:

*"If something happened and if we supply free water, surely neighbours wouldn't get angry but they might, then they could try and take me [to*

*court]. It might not even be the neighbours who would want to, but it could be... other people who will be obligated to prosecute”.*

*“I have an easement with the one neighbour but... the other neighbour beside me, wanted access to my bore water - and he made an agreement with the neighbour who just takes a hose to fill his tank as well. Am I legally responsible for it?”*

### 5.1.1.3 Valuing water’s natural state

People were often extremely proud of their ‘fresh, clean’ water that came straight from the source and were concerned about the effects that the Rules and Acceptable Solutions would have on the quality of their water, such as a need for chlorination. To some, it seemed like a counter-intuitive step that devalued what the environment offered. Suppliers explained:

*“A resident here is a descendant of this land and he has lived here all his life. He credits his health and longevity to the [local] water for its fresh, pure, untreated qualities.”*

*“We have some of the best water in the world. Straight from the ground. If it is already fresh water coming from the ground and has been tested, then why would we need to add treatment?”*

### 5.1.2 Implications of the Act on private drinking water suppliers

Once suppliers had been introduced to the changes, they immediately turned to how this would apply in their own situation. Conclusions were quickly drawn as to the potential costs and legal ramifications and what this might mean for the people to whom they supplied water.

***Insight:** People were concerned about the cost and legal implications that the Act could have on their decision to provide water to others. Most people provided their water supply to others (either formally or informally) as the ‘right thing to do’ rather than for any economic benefit. However, these changes have driven suppliers to rethink what the implications of the Act would mean in the future.*

### 5.1.2.1 Levels of investment

There was significant concern that meeting the Act, draft Rules and Acceptable Solutions would require a level of investment that many would be unable to afford. Some had already invested significantly in their systems and hoped their system would meet the new Rules and Acceptable Solutions.

Almost all suppliers had questions about what exactly each aspect of the system would cost, and if they would have support to access equipment and services, for which there is likely to be unprecedented demand. The need for support to access funding and capability to work through the requirements were also raised.

A common sentiment was that business owners such as farmers saw selling their business to be a more viable option as the number of compliance requirements were seen as ‘overwhelming’.

Quotes from suppliers included:

*“The cost for people is frightening.”*

*"If he has to implement these standards to every property, it is not practical and would be hugely expensive."*

*"I'm glad to be getting out of farming - we have enough to worry about."*

#### **Case study: Remote rural community supply would struggle to afford to comply**

A remote rural community uses surface water to supply its community. This reticulated water supply was installed in 2017 using funding from the Ministry of Health and grants. It includes a comprehensive treatment system and the operator is a volunteer. Families connected to the water supply are asked to pay a koha of \$1 per day.

Prior to the reticulated water scheme being installed, the community was reliant on roof water, which was an unreliable source due to the dry climate in Hawke's Bay. Many households simply did not have enough roof space to collect sufficient water to last through the drier months. When that ran out, many simply couldn't afford to buy trucked-in water. Instead they carted from the local stream to top up the tanks.

Having a safe and reliable source of drinking water has been life changing for this community and it is seen as an example to others.

However, the cost of complying with the draft Drinking Water Quality Assurance Rules (continuous monitoring and maintaining a consistent chlorine residual in the network) is beyond the means of this community, which has an average annual income of \$22,000.

#### **5.1.2.2 Compliance costs**

People found it hard to justify the ongoing cost of compliance, especially when many believed they had never had issues with their water source and wished to know exactly what the costs would be. While those interviewed wanted to ensure they were providing safe drinking water to their workers and families, the vast majority were concerned about the financial costs associated with compliance.

Larger scale commercial businesses found it easier to plan for the Act, draft Rules and Acceptable Solutions than small businesses, as they had the staffing resource and financial means to plan and adapt.

People asked if registering their supply would cost them money, and subsequently, whether costs would be passed onto water suppliers for auditing and compliance purposes. They advised that this has the potential to lead to increased rent on properties who use the supply.

Another concern was that people who had historical handshake or informal arrangements to supply water may not want to enter into formal agreements with those they supply, as it will lock any future owners into this responsibility which could be a deterrent for resale purposes. They felt that these regulations have the potential to devalue property prices.

Many suppliers have cartridge filtration and UV treatment systems that would not meet the requirements of the draft Rules and Acceptable Solutions (e.g. because the UV unit was not validated against one of the approved standards), adding more costs for an upgrade when they felt they were already managing the safety and quality of their water adequately.

Quotes from suppliers included:

*"I'd have to get someone external to do this, which will cost".*

*"Legislation is written to the landlords, but it will affect the tenants [referring to the Health Homes Standards]. This is similar in that it will be a hugely significant consequence as it could result in people being without water or having to pay for it in one way or another."*

### 5.1.2.3 Supplies as a 'community good' at risk

Community supplies have provided life-changing improvements that could become unsustainable with draft Rules and Acceptable Solutions.

Often suppliers came to be providing water to assist others such as neighbours, family, friends or the wider community as a 'community good'. However, the proposed Rules and Acceptable Solutions have caused them to rethink this due to the implications that this would have on them personally and financially.

In the case of community-run schemes, volunteers have invested significant time and effort into building and maintaining systems, some to a very high standard, but the draft Rules and Acceptable Solutions raised doubts over whether some of these would have the resources - time or money - or be prepared to accept the liability to continue.

This has serious, and in some cases, life changing, implications particularly for rural communities who have had experiences of living without reliable access to a supply of water for their daily needs.

One supplier explained that "under the World Health Organisation guidelines, they hold the importance of access to water higher than water safety."

*"Before the water [4 years ago], this is no exaggeration, you would save your bath water, everyone would use the same bathwater, you would use your bathwater for your washing... Sometimes you didn't have a bath. Sometimes you had to choose what clothes you would wash. And everyone had long drops. So, what the water does now, a wash day is only 9am - 12pm not 9am - 7pm at night. That's no exaggeration. It used to take that long. So just its life changing, and it has improved their lifestyle and living standard. A few less smelly people around now."*

Another quote from a supplier was:

*"After the legislation came out, the lawyer said to go home and cut it off."*

### 5.1.2.4 Increased tension

There was significant concern that the Act, draft Rules and Acceptable Solutions could create tensions between suppliers and receivers of drinking water supplies as they tried to make sense of their responsibilities.

Some suppliers already had issues with these agreements, or had inherited them unwillingly. Formal agreements such as covenants and easements over land were also difficult to navigate, as was subsequent subdivision on neighbouring land that connected existing water supplies. This increased levels of responsibility without necessarily having control over who it was they were supplying to.

Those that receive water were also concerned as they have little control over the supply of water to them. In rural communities, water is their lifeline for the people and their businesses. There was concern that these new legal requirements could create tension, resentment or disagreements among neighbours and communities

as they tried to make sense of how they were going to be impacted, what the cost would be, and who might be responsible for certain aspects of each supply.

Quotes from suppliers included:

*"It's terrifying for people who are told during 30-degree weather that they are going to get their water turned off."*

*"We are the ones who have to live in this community."*

#### 5.1.2.5 "Unnecessary" interference

Many suppliers expressed that the current requirements do not make logical sense for their supply and were resistant to changing their system when they did not know, nor potentially trust, how the Act, draft Rules and Acceptable Solutions had been developed. The majority of this sentiment came from the farming or horticulture sectors, as well as marae. They generally have an intimate understanding of their source and supply and how it works within the surrounding environment, in some cases for generations.

They felt that the Act created an unnecessary level of interference in their system, and some stated that they were offended, frustrated and, at times, angry at having to engage with the process (even at this early stage). Others felt that their neighbours or other water suppliers they knew would feel the same way, or may not be willing to engage at all. This sentiment could also be linked to people being unwilling to engage in the pilot project and share information about their system and supply.

Quotes from suppliers included:

*"We are on a Māori Reservation - enacted to protect our people. We have rights on our land, why do we have to take on this legislation too?"*

*"It is offensive to see this."*

*"The people who are making these rules have no idea of the reality of this."*

#### 5.1.3 Suppliers understanding and perception of safe and accessible drinking water

There was a strong sense that all suppliers wanted to ensure that water they provided to others was safe, and people spoke passionately about the importance of having access to water for their daily and business needs. Many were knowledgeable of their own water supply operations, or had access to services that supported their water supply operations such as plumbers. However, suppliers were often frustrated as to why these obligations were necessary to the level of compliance that is proposed.

**Insight:** People have a diverse level of understanding about the safety of their water supplies, but most are able to either fix their systems, or know who to contact when issues arise. In some instances, it is the water receiver who takes on this role.

#### 5.1.3.1 Safety and access to drinking water

All suppliers wanted to ensure they were providing safe water to people and had a range of approaches to assessing the safety of their water.

More broadly, a small number of suppliers discussed water safety at an environmental level, making clear links between the state of the environment and the safety of their water. These included levels of pollution affecting bodies of water

or groundwater – issues such as unexpected droughts, and pressures placed on water sources by irrigation, for example.

Many suppliers relied on water quality testing services to assess the quality and safety of their water. Reasons for testing more frequently included compliance requirements followed by businesses such as farms, event spaces, and orchardists, the type of people served (e.g. children and elderly people), or due to advice from contractors or knowledgeable neighbours.

A significant number of suppliers based the quality of their water purely off its look, taste, and smell, using these as indicators of the water being safe to drink. Some suppliers had previously tested their water when they sensed a level of risk (e.g. when they had children, or after the 2016 gastroenteritis outbreak of Havelock North drinking).

The majority of the suppliers who did not test their supply regularly expressed that they had not experienced issues with, or illness from, their supply. This gave them a sense of confidence that testing was not required, however the majority were open to having their water tested and were interested to see the results.

Quotes from suppliers included:

*"We have to do a lot of compliance through Global Gap, which has very high standards so we feel we are doing everything pretty strictly."*

*"We haven't had it tested in donkey's years - since the kids were little."*

*"I don't think too much about it day to day as long as testing is all correct."*

*"My elderly mum drinks it with no issues, so it must be alright!"*

### 5.1.3.2 Respecting tikanga

Suppliers discussed their concern that the Water Services Act failed to sufficiently incorporate Te Ao Māori approaches to caring for water and people.

In the context of Marae and Papakainga, the obligations in the Act and the proposed regulations were seen to conflict with people's rights under Te Tiriti o Waitangi to determine how they protect their own taonga and acknowledged water as an important taonga to Māori. Some stated that water is a part of their whakapapa and that tikanga on the marae is used to protect water supplies, as well as applied to ensure that everyone is safe.

Suppliers mentioned that marae would not be able to demonstrate something as basic and normal as manaakitanga (the ability to host and care for your family and visitors) if people had the potential to get sick from their water supply. Therefore, Tikanga is not only applicable in a traditional and cultural context, but can also be applied in a pragmatic context for well-being of marae whānau and mana whenua.

Many marae are located on Māori Reservation land, and people felt they collectively held the responsibility to make decisions around the protection of their water supplies. People wanted to continue the practices that their tipuna had taught them and ensure that tamariki will continue these important practices as kaitiaki into the future.

Quotes from suppliers included:

*"It's our way of life here - we have our own tikanga that protects our water sources".*

*"Water is a part of our whakapapa - it is Rangī and Papa."*

*“Māori don't have the problem, we stand firm with how we look after our water - it's all those around us, this big business that take the mauri.”*

*“Our tīpuna owned their water, it was for everyone. And if we are in turn, a Supplier, as a trustee, then we are only just the caretakers for all. How can we be privately owned...? To who? Everyone in our hapū has this ownership.”*

### 5.1.3.3 Other standards and regulations

Often global standards, legislative requirements, and local bylaws for drinking water already exist for many suppliers.

Many private water suppliers were part of existing accreditation or regulatory systems that required them to meet multiple levels of compliance. For example, farmers and horticulturalists who export have their water monitored through Fonterra and Global Gap respectively. This ensures they uphold a very high standard of practice which is often accompanied by extensive documentation.

Others mentioned they already had to comply with all the council standards, for example to obtain building consent for a papakainga development, or their water supply information went directly to council databases anyway and people were reluctant to add another level of compliance or monitoring on top of these obligations.

Quotes from suppliers included:

*“Just another thing' to add to the pile of compliance standards.”*

*“Would prefer to sell than go through difficulty of complying.”*

### 5.1.4 Future engagement with communities

The water services assessments require councils to have an understanding of the drinking water supplies in their communities. This suggests a level of engagement and participation with people in order to do this. The suppliers engaged through this project provided valuable feedback on how and what their contribution could look like.

**Insight:** *People felt passionately about their need to truly participate and contribute in a constructive way toward the future operation and management of their private drinking water supplies. This was expressed through a desire to empower communities and uphold the principles of the Treaty.*

#### 5.1.4.1 A Treaty partnership framework

Some private drinking water suppliers challenged the public consultation process adopted by Taumata Arowai for the draft Rules and Acceptable Solutions. They also challenged the way in which the draft Rules and Acceptable Solutions have been developed and written. They stated that acting in a Treaty Partnership model is about equity and to look at the means through which people can contribute and respond on equitable terms and in their own way. Equity is about acknowledging place and difference and so engagement should not be generic, but rather specific and local to a particular context such as a marae and its hapū.

The supplier communities need to work alongside Taumata Arowai and council to coach each other on how to respond to the challenges of drinking water supplies together, and this needs to be understood within the context of the bigger narrative around water.

Quotes from suppliers included:

*"Take a look at this from a Treaty Partnership Lens. Partnership Framework is about equity - that everyone has the right amount of resources to respond to and create the outcomes that are needed for them."*

*"We are kaitaki, we are sciences too and should be listened to in regards to the knowledge we hold about our place."*

*"We are kaitiaki - work freely and honestly to keep a hold of how we see the world - we don't have the resources".*

### 5.1.5 Empowering communities

Suppliers felt that the requirements of the Act disproportionately overloaded those drinking water suppliers who worked in a volunteer capacity or who supplied water as a 'community good'. Furthermore, many who have managed their own supplies for long periods of time – over generations in many rural farms or marae settings – felt that the current approach for supplies disempowers people. This is because it adds layers of bureaucracy and regulations that do not account for the nuanced approaches and knowledge that people have around determining their supplies are safe.

Where schemes were run by knowledgeable volunteers or retirees, people were seriously concerned and expressed hesitancy or unwillingness to be subjected to the increased responsibilities and personal liabilities imposed by the Act. Others felt that the Act, draft Rules and Acceptable Solutions set requirements, obligations and costs beyond what could be reasonably expected of community supplies. This all led to questions about whether some of these schemes could feasibly continue.

Farmers described how they had learned to find solutions to complex problems, with many spending decades building up knowledge of their water sources and systems. In these cases, and many others, being directed on what to do, meeting training requirements, or having to outsource work to a contractor was seen as disempowering, and contradicted their skills, expertise, values and approach to work.

Quotes from suppliers included:

*"This is coming and it's going to be a lot more responsibility, my daughter just told me to get rid of [the water supply]. But no one else is going to want to take this responsibility on".*

*"My father would be upset if he was being told what to do with their water."*

*"It is just bad business if we don't supply safe drinking water to our workers. We don't want to have unsafe drinking water, from a health perspective, and a farm and business perspective it doesn't make sense either."*

*"We look after the supply for our own health, our families and the workers"*

### 5.1.6 Focus on the kaupapa of the Water Services Act

The purpose of the Act is to ensure that drinking water suppliers provide safe drinking water to consumers. However, some suppliers expressed that the draft Rules and Acceptable Solutions had gone too far and asked too much of them. The intention was to reduce the risk to an acceptable level but some felt the cost outweighed the benefit of implementing these proposed standards versus the positive changes that they would make to people lives and the quality of their drinking water.

Requiring more has the potential of unintended negative social, economic, cultural and environmental impacts to suppliers and the people to which they supply. Refer to Appendix G of this report which provides comprehensive detail on the impacts on community social, cultural, economic and environmental well-beings in the Taumata Arowai Submission.

Many private drinking water suppliers theorised scenarios where people were unable or unwilling to meet regulations. Some also conducted a cost benefit analysis and decided against continuing as a private drinking water supplier because it was not worth the hassle. This was further compounded when people did not see any issues with the current supply and felt that this would incur large ongoing costs and increased workloads, with people often stating that they had never seen anyone become sick as a result of the water.

Potential consequences included people either cutting off supplies, discontinuing rental agreements associated with the supply, or passing on costs to tenants. Comments were made that this increased cost would only be making marginal public health gains for many small suppliers, who could not spend that money on other goals such as paying off debt or affording activities for their children.

Quotes from suppliers included:

*"They are making marginal gains with water safety and that is not going to necessarily have better outcomes for our people. This is money we could have used to pay off our mortgage, or for whānau activities or our children's piano lessons."*

*"The supply doesn't change, it's never changed".*

*"This new regulation is similar to the new Healthy Homes Standards; it will result in unintended consequences on a massive scale."*

*"The only way we can understand this is to understand... the bigger picture than just this."*

*"When was the last time people got sick from their water in the rural areas?"*

## 5.2 Drinking water systems themes and insights

This section presents the key findings from the assessments of drinking water systems. It delivers on the project objective to capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawke's Bay region.

### 5.2.1 Overarching questions

The vast majority of water supplies were unregistered (89%, see Figure 5-1) and most did not have a resource consent to take water (63%, see Figure 5-2).

Almost all supplies served fewer than 50 properties and provided water to an average of 84 people (see Figure 5-3 to Figure 5-5). Most were very small supplies (serving <50 people) or small supplies (50-500 people) as per the definitions in the draft Drinking Water Quality Assurance Rules (see Figure 5-6). Only one supply was a large supply. The total population covered by the 50 assessments was 3,700 people.

Around a quarter of suppliers had a formal or informal agreement to supply others with water (see Figure 5-7). A significant proportion of supplies (39%) were rural/agricultural (see Figure 5-8).

Around a quarter of suppliers knew how much water was consumed (see Figure 5-9). Just under a quarter of suppliers expected to use more water in the next ten years, mostly because they were expecting increased development or irrigation (see Figure 5-10).

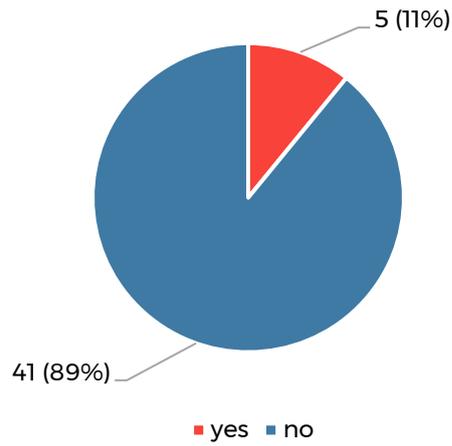


Figure 5-1 : Registered versus unregistered water supplies

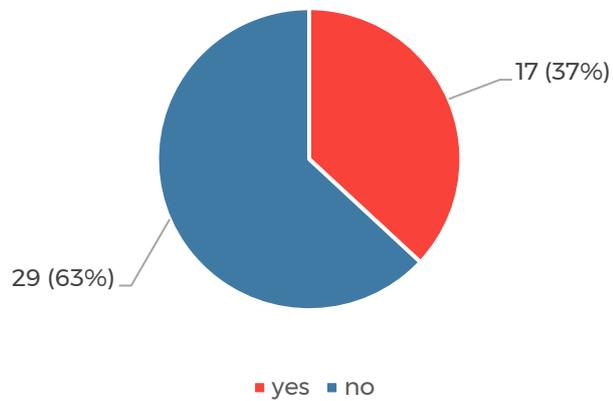


Figure 5-2 : Water supplies with and without resource consents

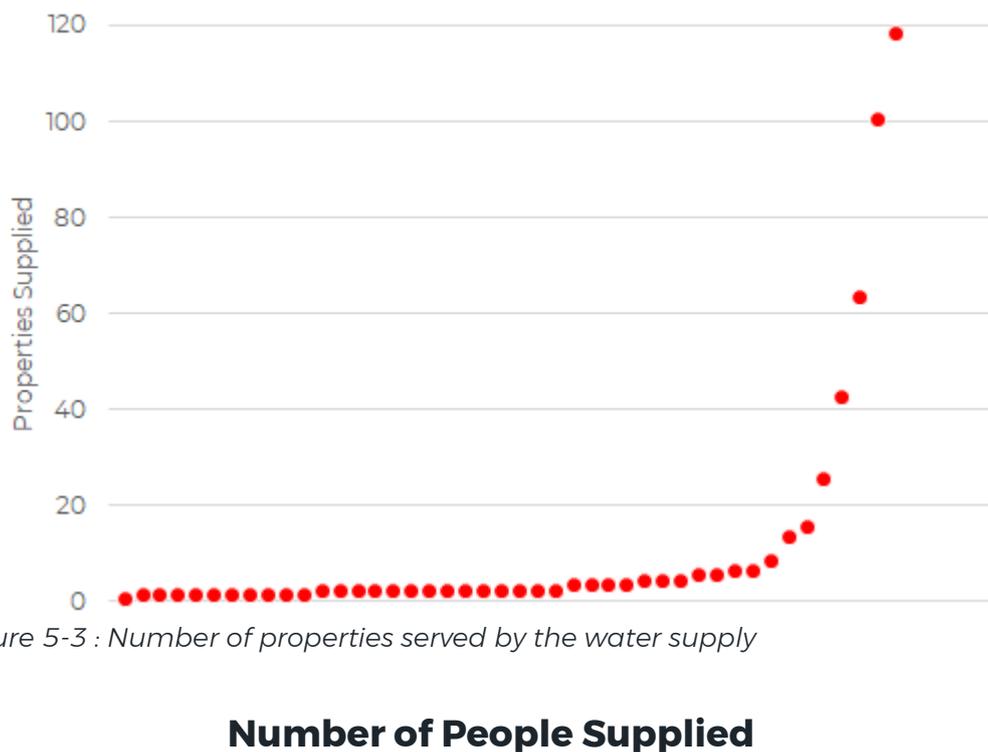


Figure 5-3 : Number of properties served by the water supply

### Number of People Supplied

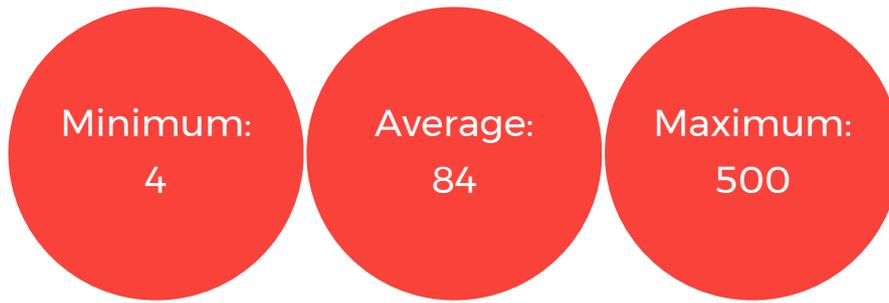


Figure 5-4 : Population served by the water supply

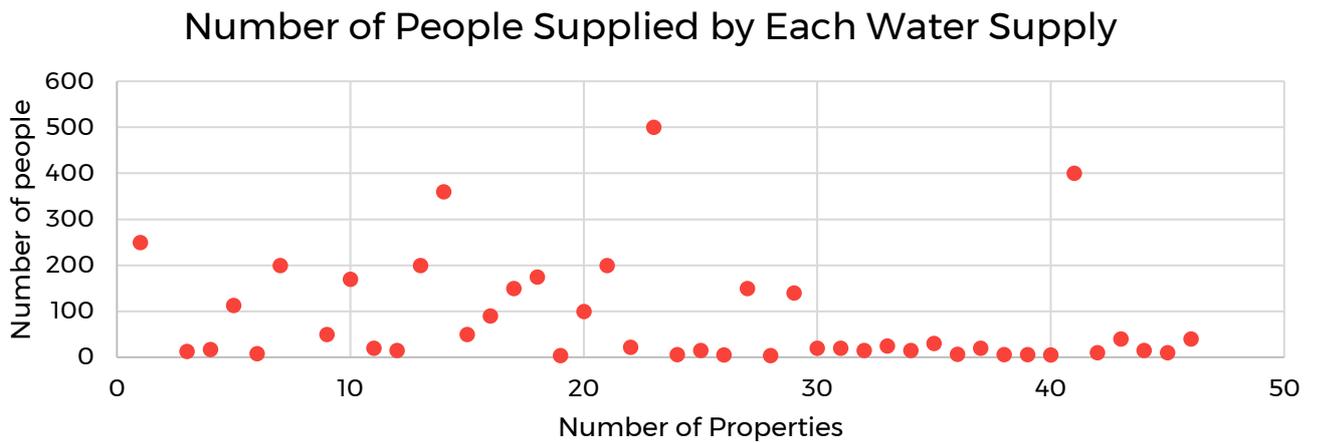


Figure 5-5 : Population served versus the number of properties served by the water supply

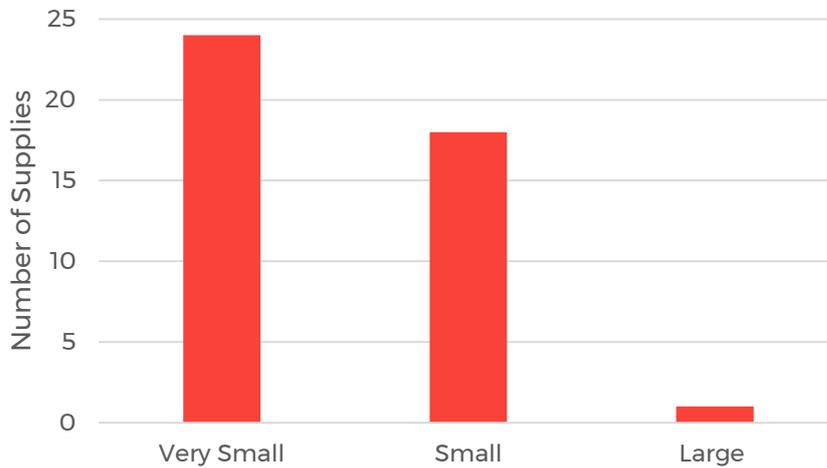


Figure 5-6 : Water supply size category as in the draft Drinking Water Quality Assurance Rules (Very Small <50 people, Small 50-500 people, Large >500 people)

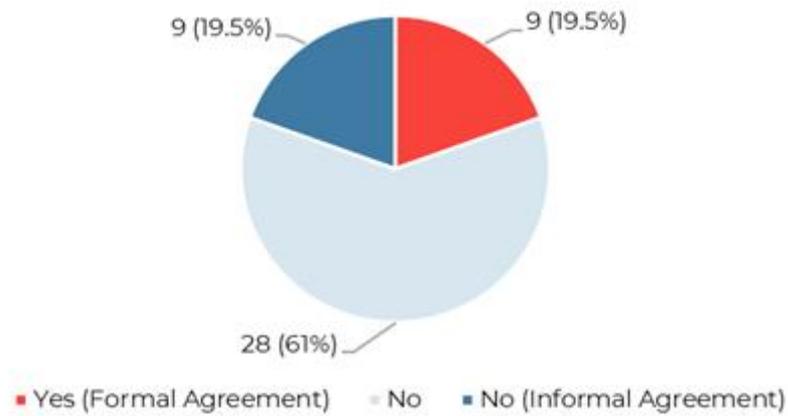


Figure 5-7 : Do you have an agreement to supply water to others?

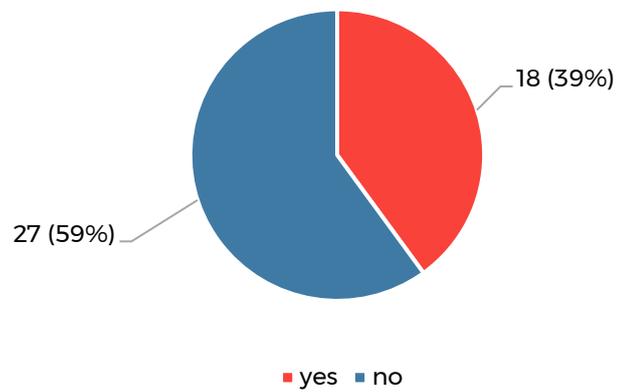


Figure 5-8 : Is it a rural/agricultural water supply (at least 65% of water used for non-domestic purposes as in the draft Acceptable Solution for Rural/Agricultural Water Supplies)

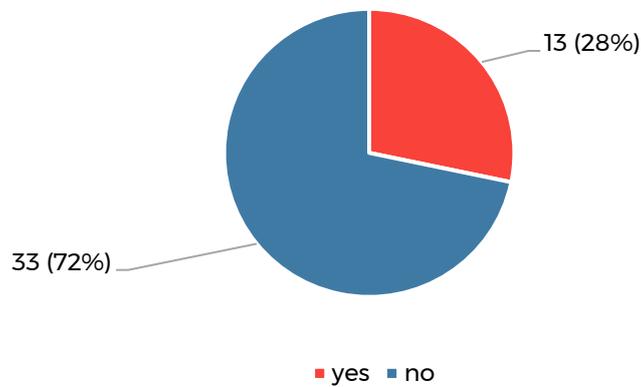


Figure 5-9 : Do you know how much water is used?

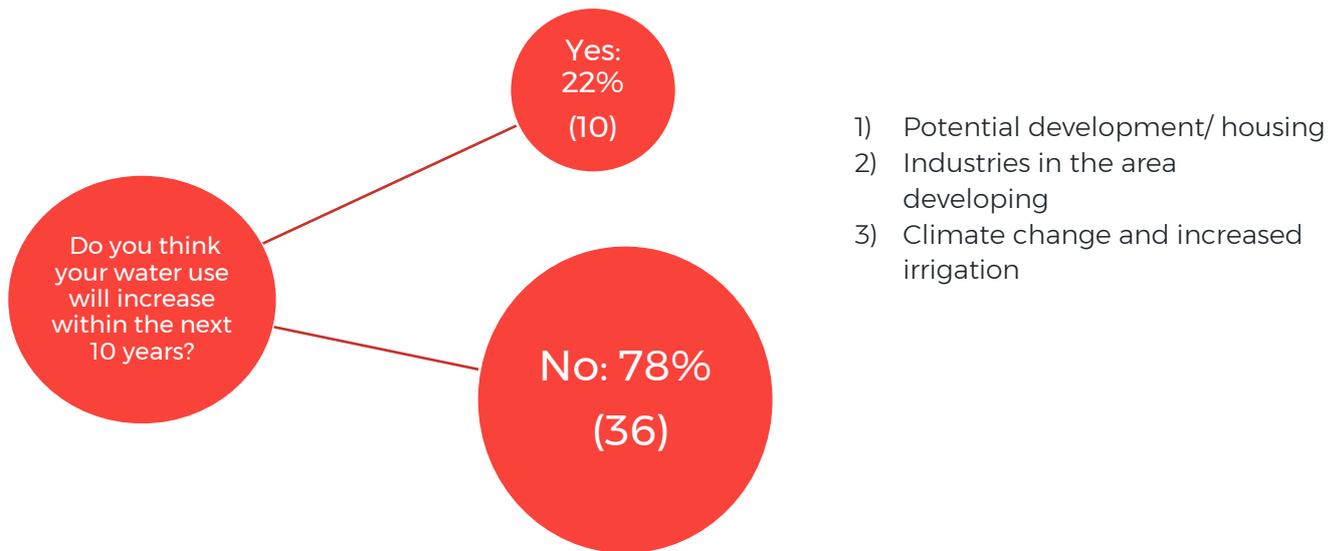


Figure 5-10 : Is water consumption expected increase in the next 10 years?

### 5.2.2 Source water

Table 5-1 shows the different types of source water used by private water suppliers. 70% were bore or spring water supplies with most of the remainder using roof water. Only one surface water source was surveyed. This is to be expected, as groundwater and spring water is generally better quality and surface water is more difficult to treat. Some suppliers used a combination of sources. Figure 5-11 shows example photos of source water and intake structures.

42% of suppliers did not have an alternative water supply that they could connect to if they lost access to their water supply (see Figure 5-12). Figure 5-13 describes some of the key impacts that would be felt if they lost access to their supply.

Table 5-1 : Types of source water

Water Source Type	Count	Percentage
Bore	36	60%
Roof	11	18.3%
Spring	6	10%
Surface	1	1.7%

Table 5-2 : Size of supply by source water

Water Source Type	Very Small (<50 people)		Small (50-500 people)		Large (>500 people)	
	Count	Percentage	Count	Percentage	Count	Percentage
Bore	15	47%	16	50%	1	3%
Roof	7	78%	2	22%	0	-
Spring	5	83%	1	17%	0	-
Surface	0	-	1	100%	0	-

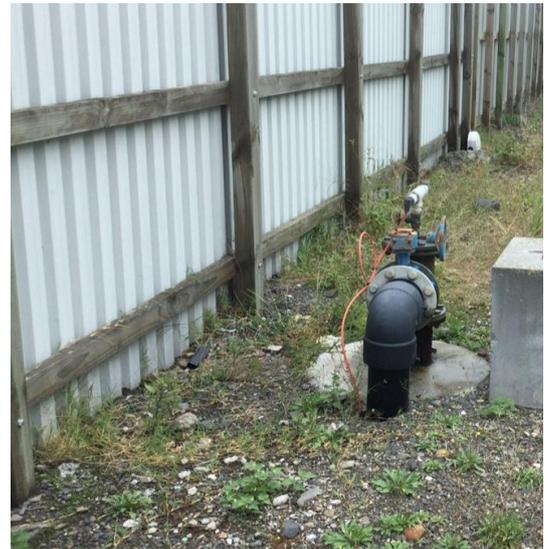


Figure 5-11 : Photos showing examples of water sources

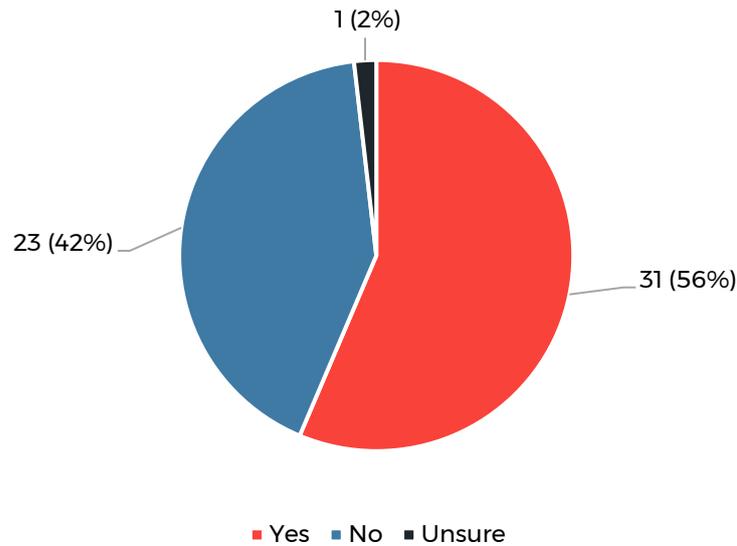


Figure 5-12 : Are there any alternative water sources that you could connect to?

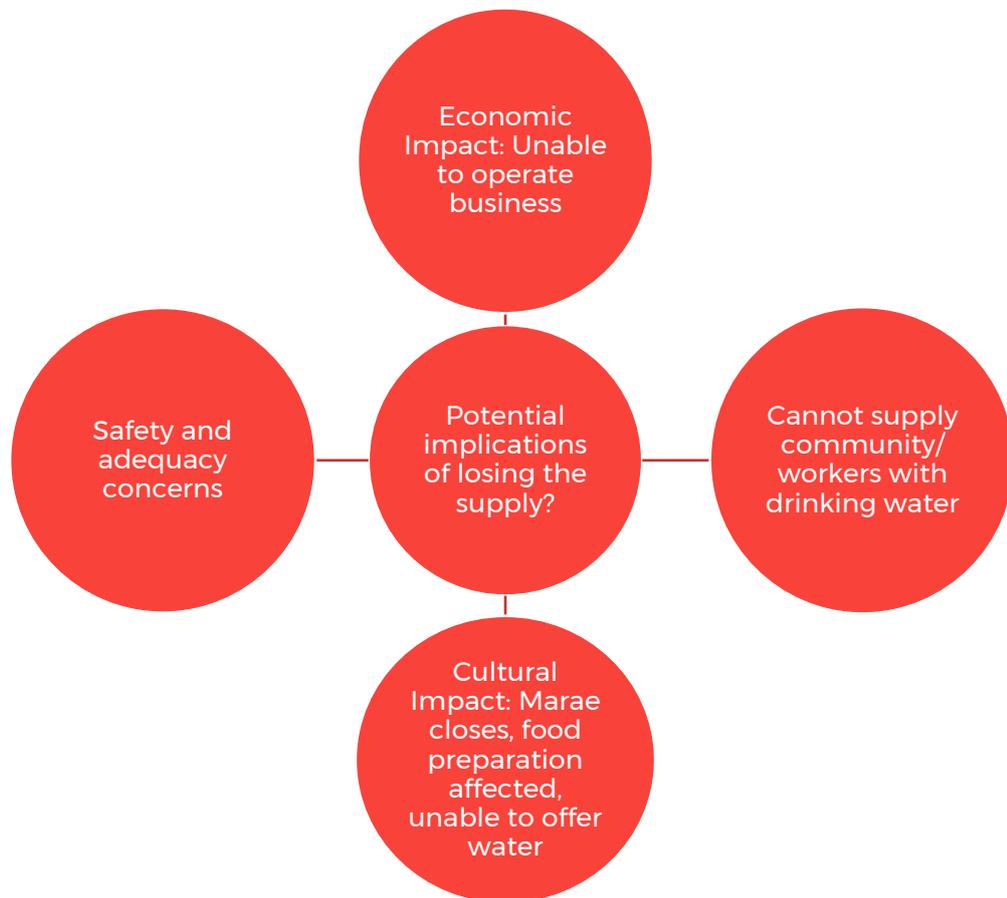


Figure 5-13 : What are the potential implications if you lost access to the water supply?

Figure 5-14 and Figure 5-15 show the responses to the questions relating to **roof water supplies**. It can be seen that in most cases the condition of the paint was in good or excellent condition and there were no overhanging trees or spraying nearby (all potential sources of contaminants). However, nearly half of the roof water supplies had a chimney nearby, which could result in contamination of the water supply from the products of combustion (e.g. polyaromatic hydrocarbons).

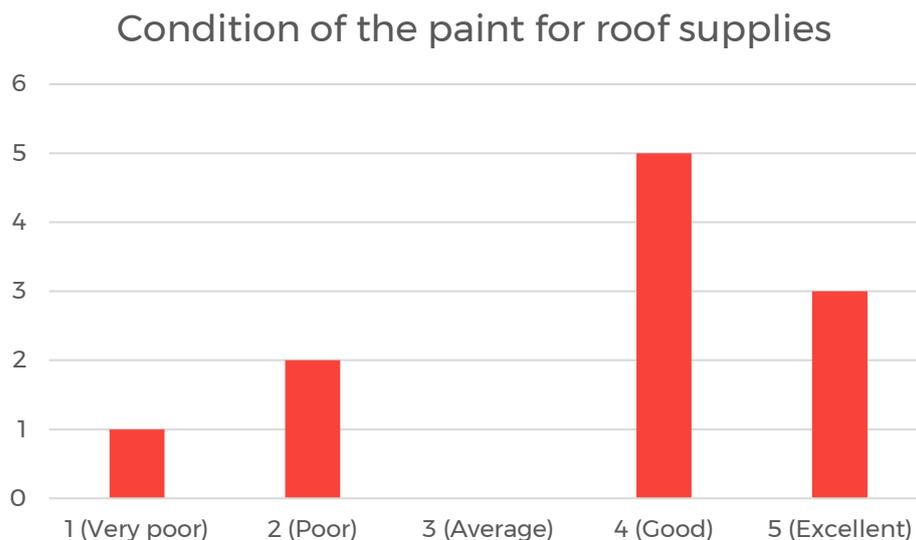


Figure 5-14 : Condition of roof for roof water supplies

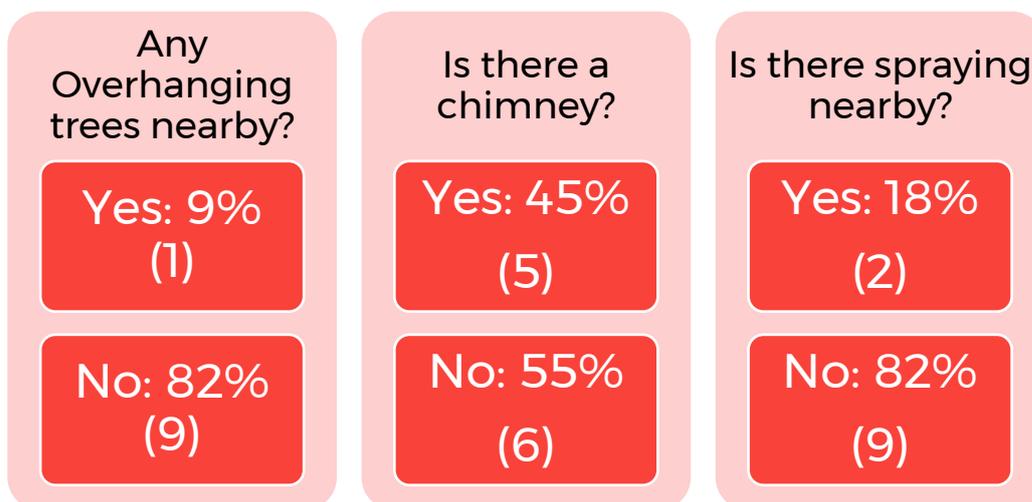


Figure 5-15 : Potential contaminant sources for roof water supplies

For **bore water supplies**, the vast majority (94%) had an above ground bore head (see Figure 5-16). Based on a visual observation, the bore heads were mostly in average to excellent condition, though nine were in poor or very poor condition (see Figure 5-17). There was a wide range of bore depths, from 4 - 95 m deep (see Figure 5-18).

One of the pre-qualifying criteria for using the draft Acceptable Solution for Spring and Bore Water Supplies is that the bore is not in limestone terrain. Figure 5-19 shows the geology of the Hawke's Bay region (with limestone shown in pink) and Figure 5-20 shows the bores along with the geology.

There are many bores in Hawke's Bay that are in limestone terrain and therefore would not be able to use the Acceptable Solution for Spring and Bore Water Supplies as drafted. The number of private water supplies that may be affected in each district is shown in Table 5-3. Over 500 are potentially affected, most of which are in Hastings District (400 supplies).

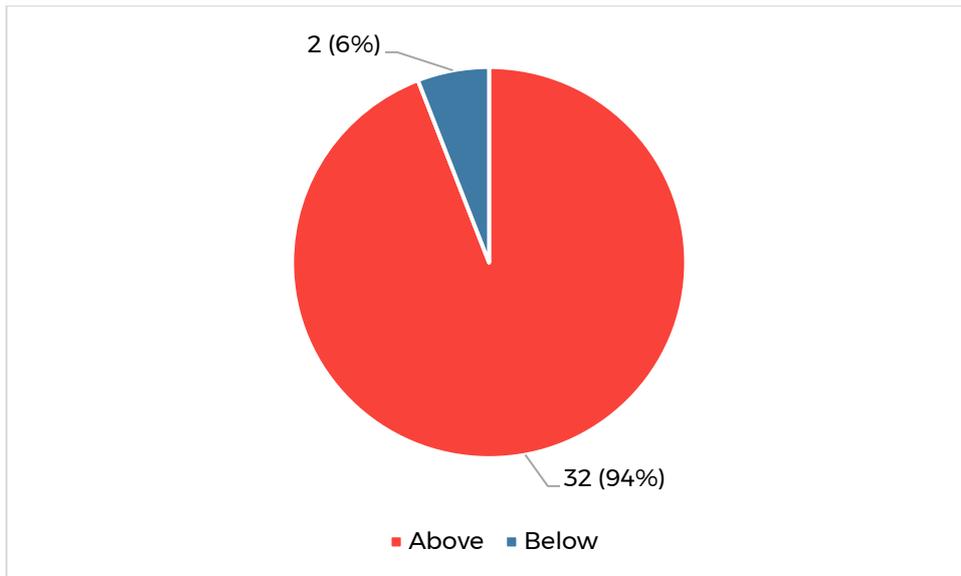


Figure 5-16 : Is the bore head above or below ground?

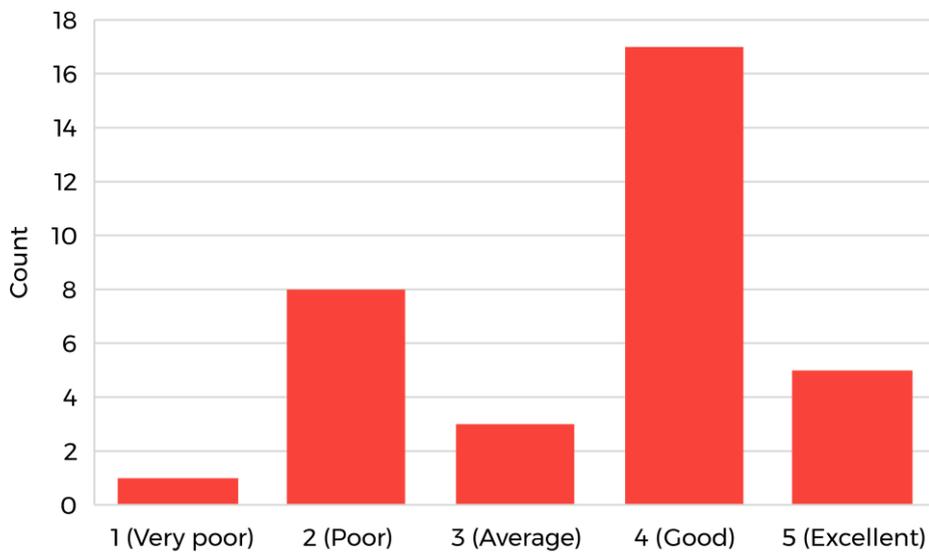


Figure 5-17 : Condition of bore head

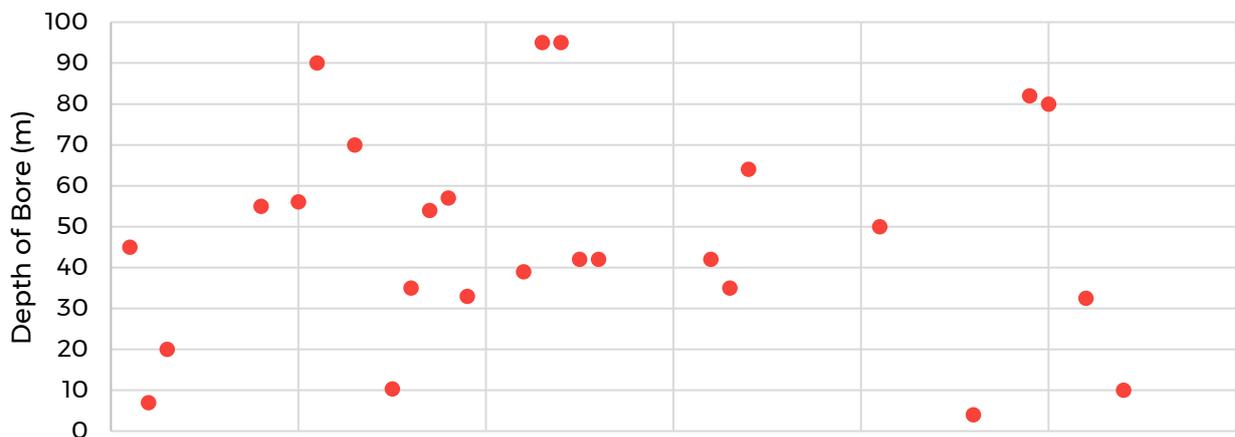


Figure 5-18 : Bore depth

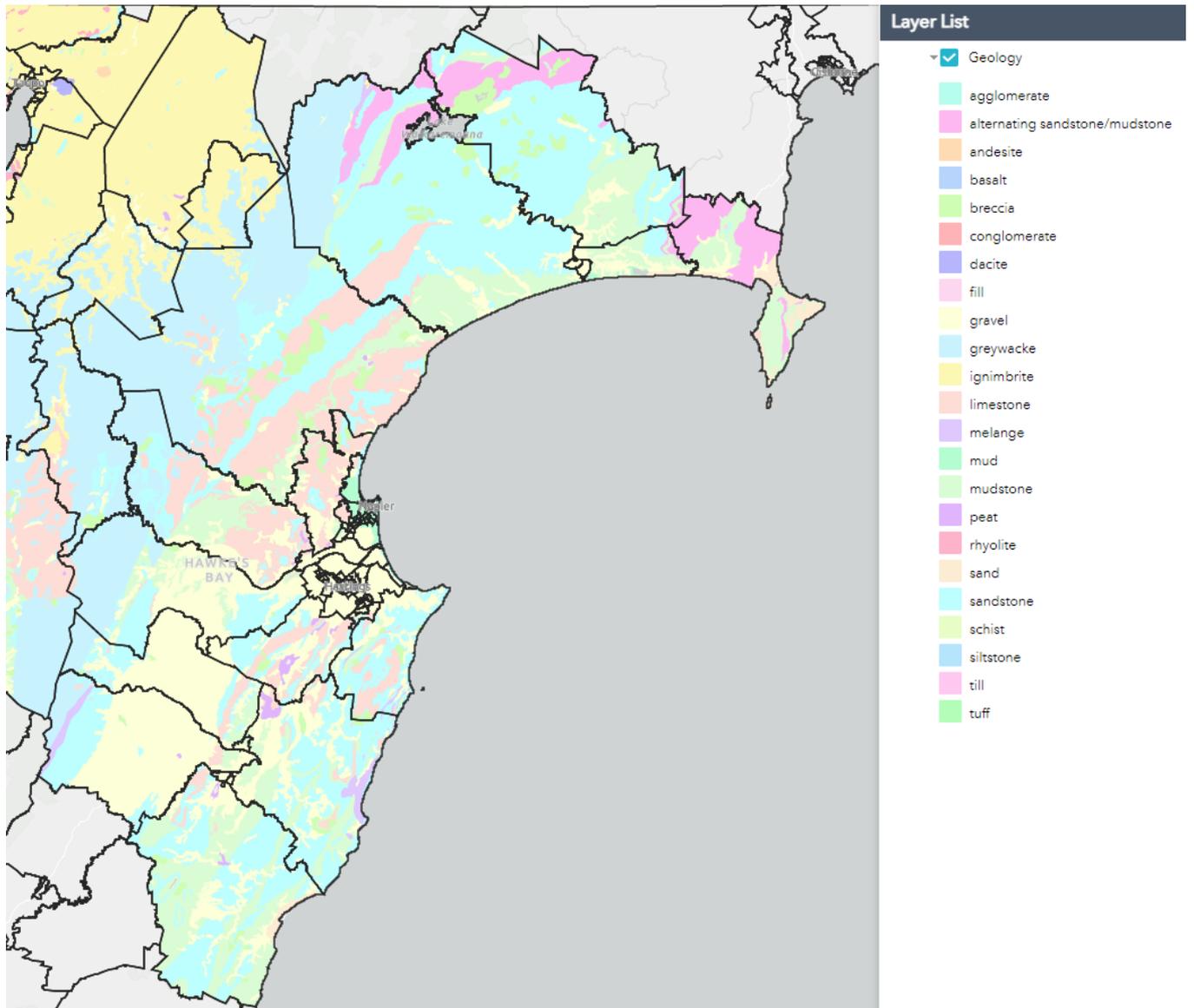


Figure 5-19 : Hawke's Bay Geology

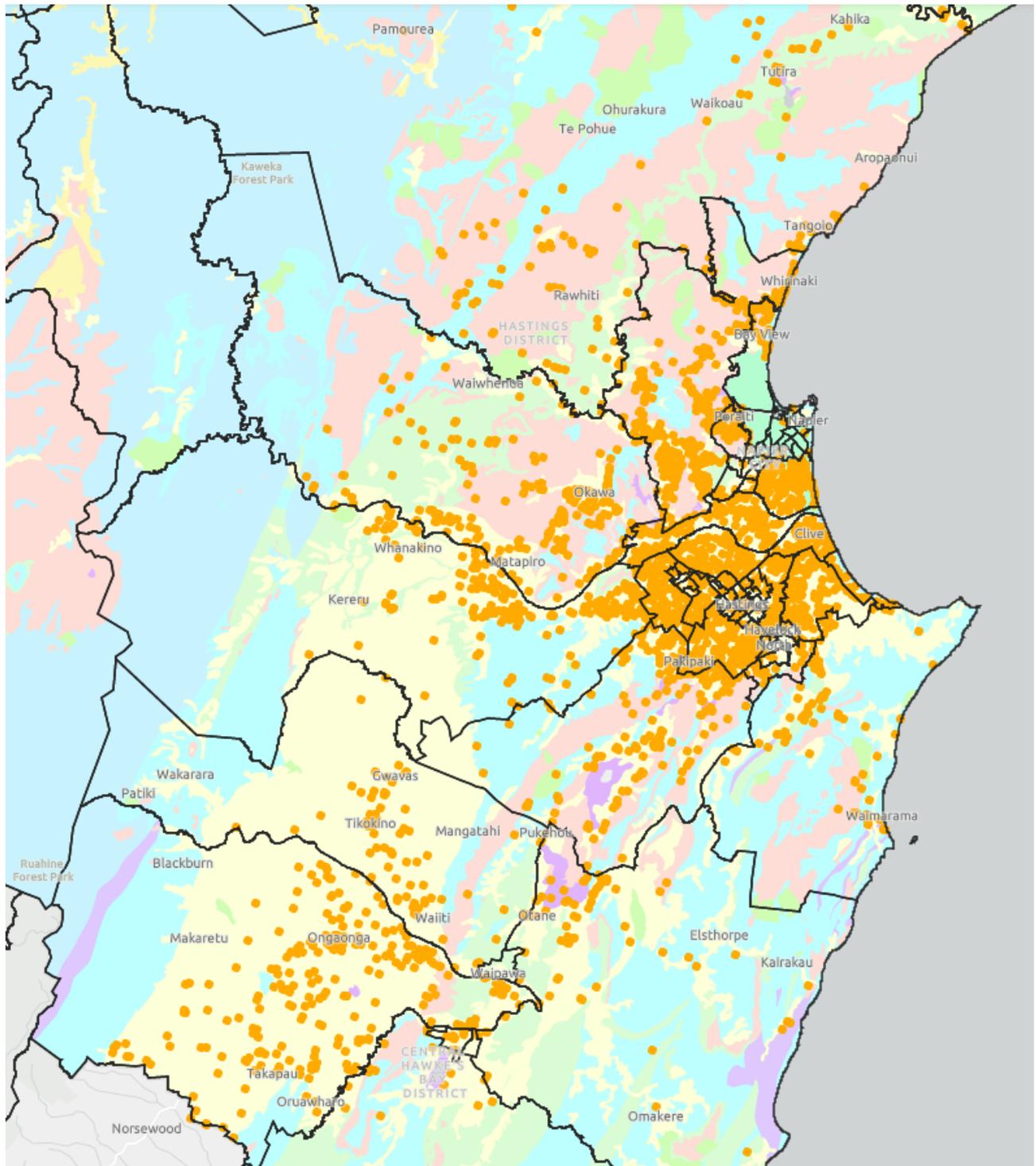


Figure 5-20 : Bores (orange dots) and geology (limestone areas in pink – see legend on Figure 5-19)

Table 5-3 : Number of known and possible private water supplies in limestone terrain (Scenario 2)

	Central Hawke's Bay District	Hastings District	Napier City	Wairoa District	Total
Registered Supplier	1	8	1	1	11
Identified PWS	0	17	0	5	22
Assumed PWS	7	226	59	1	293
Potential PWS	28	153	0	9	190
<b>Grand Total</b>	<b>36</b>	<b>404</b>	<b>60</b>	<b>16</b>	<b>516</b>

### 5.2.3 Treatment systems

Approximately one third of water supplies surveyed had a water treatment system (see Figure 5-21). This was most common for bore water supplies; nearly half of these are treated. However, it was uncommon for roof water and spring water supplies to be treated. The one surface water supply that was surveyed had a comprehensive treatment system (see Figure 5-22).

Very small supplies and unregistered supplies were much less likely to have a treatment system. Three quarters of very small supplies and two thirds of unregistered supplies had no treatment (see Table 5-4 and Table 5-5).

The most common forms of treatment were cartridge filtration and UV disinfection (see Table 5-6). Only the supply which used surface water as its source had any other form of treatment. One papakainga, which was under construction at the time of the visit, had end-point treatment plants for its bore water supply, as required by the district council for its building consent.

Figure 5-23 shows the year the treatment plant was installed, if this was known by the water supplier. Most (83%) had been installed in the last ten years. Figure 5-24 shows example photos of water treatment plants from the assessments.

### Is the water treated?

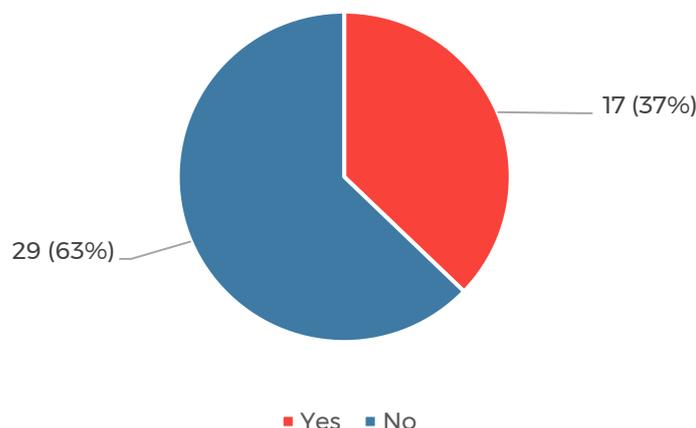


Figure 5-21 : Is the water treated?



Figure 5-22 : Treated vs untreated water by source type

Table 5-4 : Treated versus untreated water by supply size

Supply Size	Treated		Untreated	
	Very Small	6	22%	21
Small	9	56%	7	44%
Large	1	100%	0	0%

Table 5-5 : Treated versus untreated water supplies by registration status

	Treated		Untreated	
	Registered	3	60%	2
Unregistered	14	34%	27	66%

Table 5-6 : Form of water treatment

Form of water treatment	Count	Percentage
Cartridge filtration	12	75%
UV light disinfection	11	69%
Residual Chlorination	1	6%
Second-stage filtration	1	6%
Slow sand filtration	1	6%
Water Softener	1	6%
Carbon Filter	1	6%
Backwashable Filters	1	6%

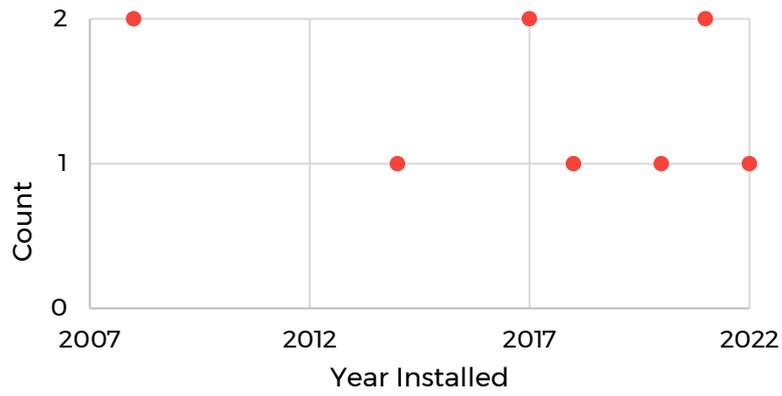


Figure 5-23 : Year water treatment plant was installed

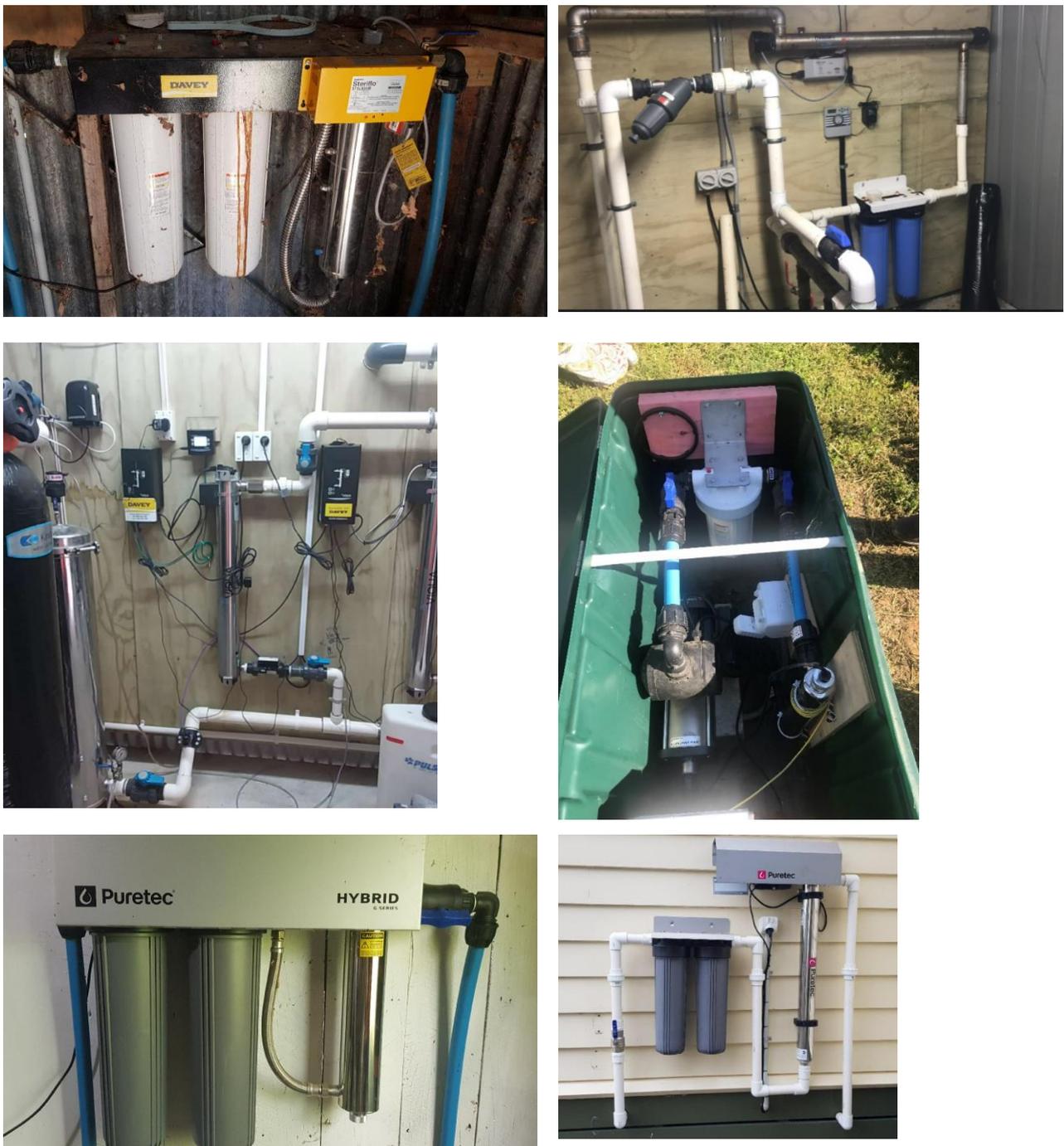


Figure 5-24 : Photos showing examples of water treatment plants

### 5.2.4 Pipes

The most common pipe materials used were PE (polyethylene, 46%) and PVC (polyvinyl chloride, 46%) (see Figure 5-25). Most pipes have been installed in the last 40 years, though one supply had pipes which were approximately 100 years old (see Figure 5-26). Most water suppliers (87%) had not had any issues with their water supply pipes (see Figure 5-27).

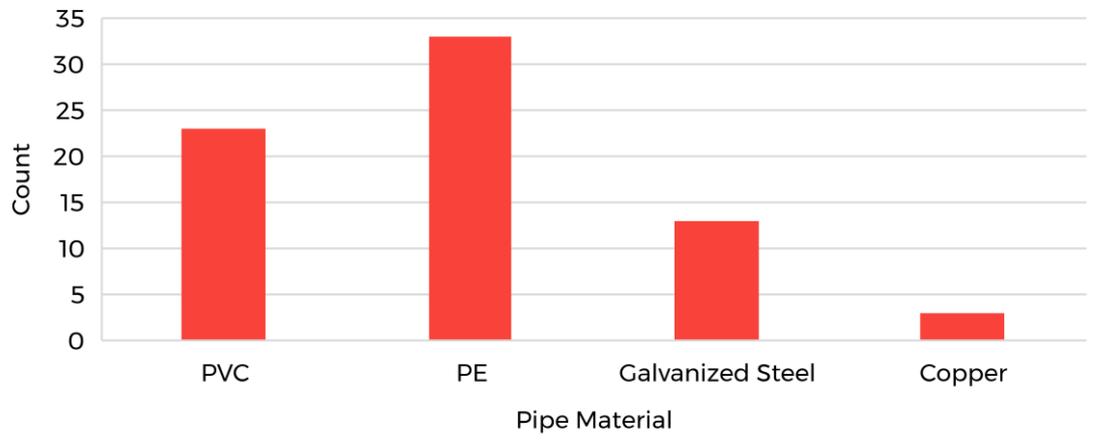


Figure 5-25 : Type of pipe material

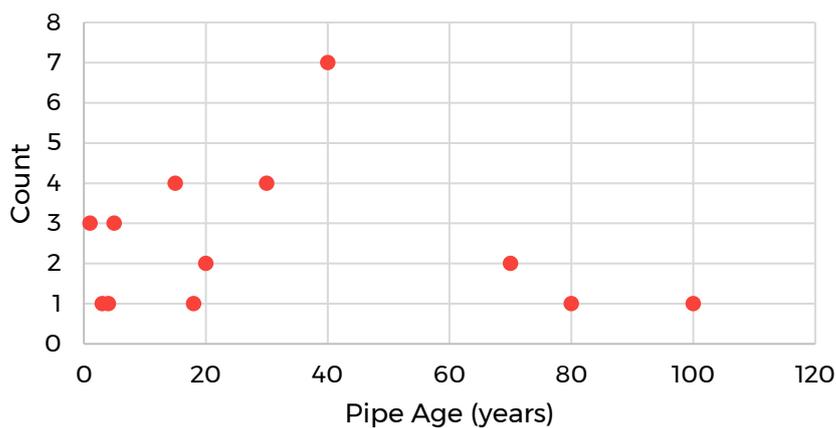


Figure 5-26 : Age of pipes

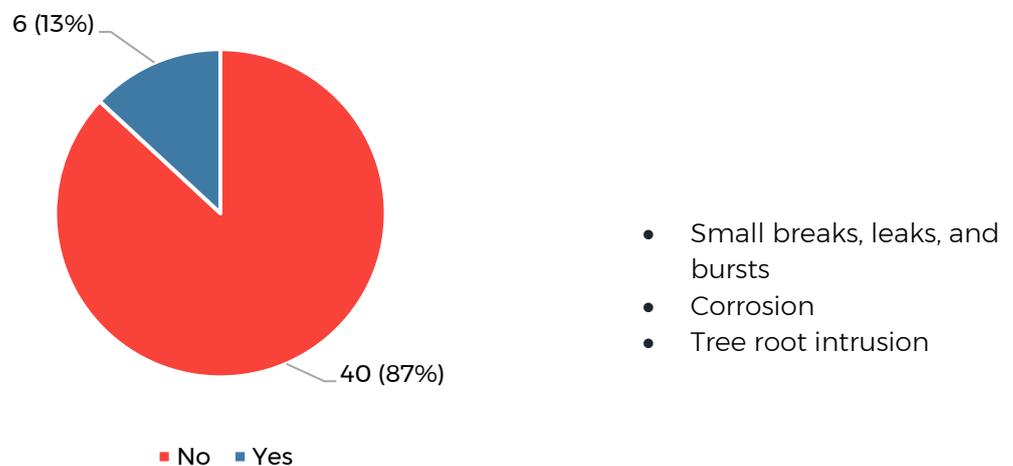


Figure 5-27 : Have you had any problems with the pipes?

### 5.2.5 Storage tanks

Most water supplies had at least one storage tank, although ten supplies did not. Most supplies had between one and three tanks, but some supplies had a large number of tanks (eight to 20 tanks) (see Table 5-7). See Figure 5-28 for photos showing examples of water storage tanks that were surveyed.

Table 5-7: Number of storage tanks

Number of Storage Tanks	Count
0	10
1	10
2	4
3	11
4	5
8	1
15	1
20	1





Figure 5-28 : Photos showing examples of water storage tanks

Most tanks (83%) were used to store untreated water (see Figure 5-29). The tanks were generally in average to excellent condition, with only four tanks in poor or very poor condition (see Figure 5-30). However, only 21% had adequate vermin protection, an overflow and an air vent, so the majority of tanks are vulnerable to contamination (see Figure 5-31).

Tank volumes ranged from 1,000 L to 40,000 L, and the most common size was 25,000 L (see Figure 5-32). The draft Acceptable Solution for Roof Water Supplies requires 96 hours of untreated water storage. Assuming 235 L per person per day, all but two roof water supplies met this draft requirement (with only 20 and 28 hours of storage) (see Figure 5-33).

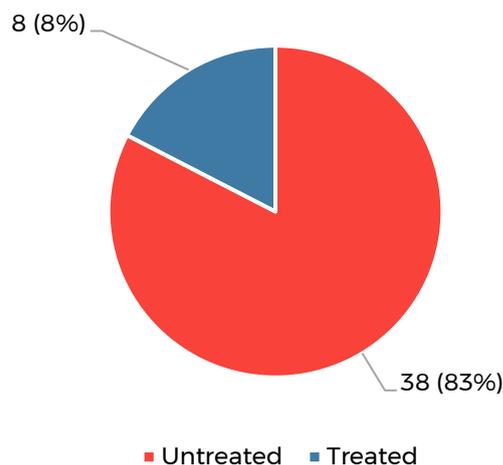


Figure 5-29 : Is the tank used to store untreated or treated water?

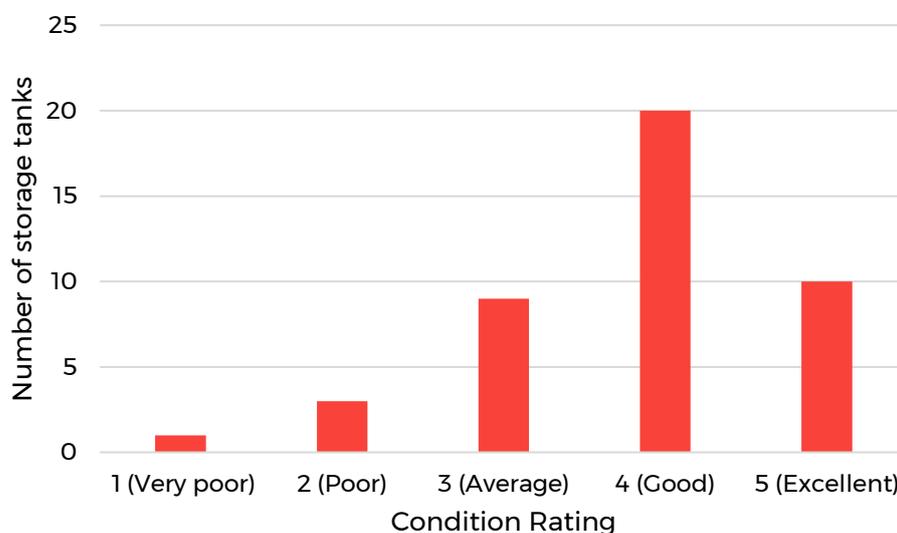
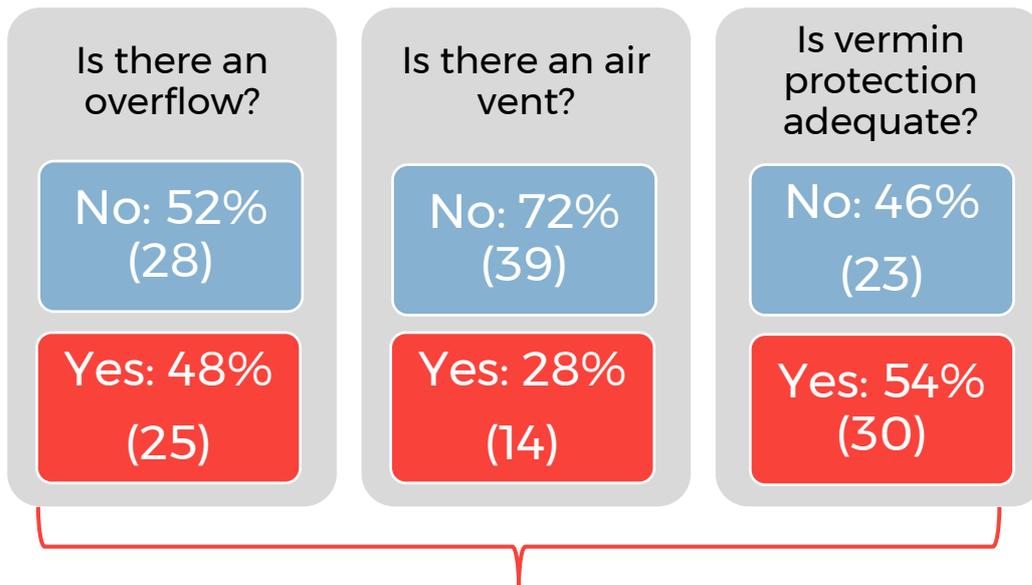


Figure 5-30 : Condition of storage tanks



**Yes, to all: 21%**

Figure 5-31 : Are key elements in place to prevent contamination of storage tanks?

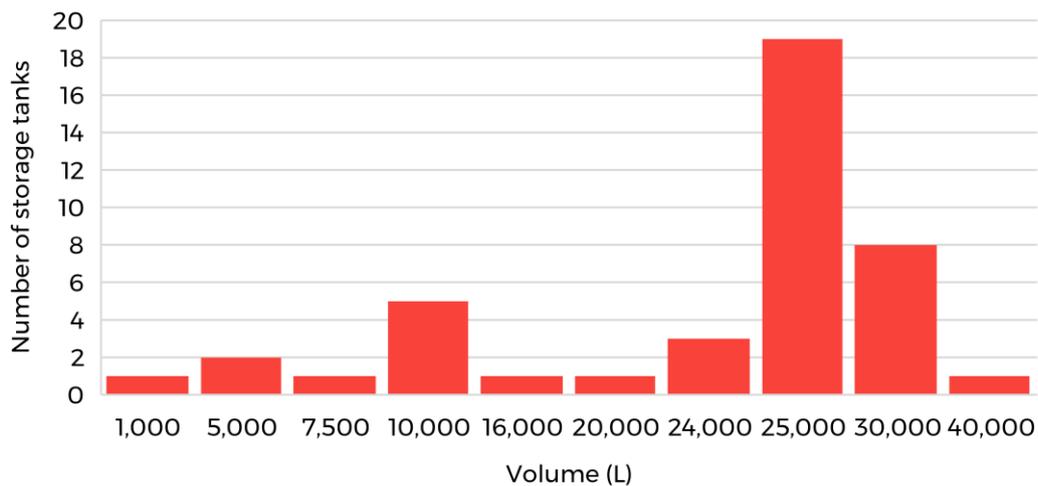


Figure 5-32 : Volume of storage tanks

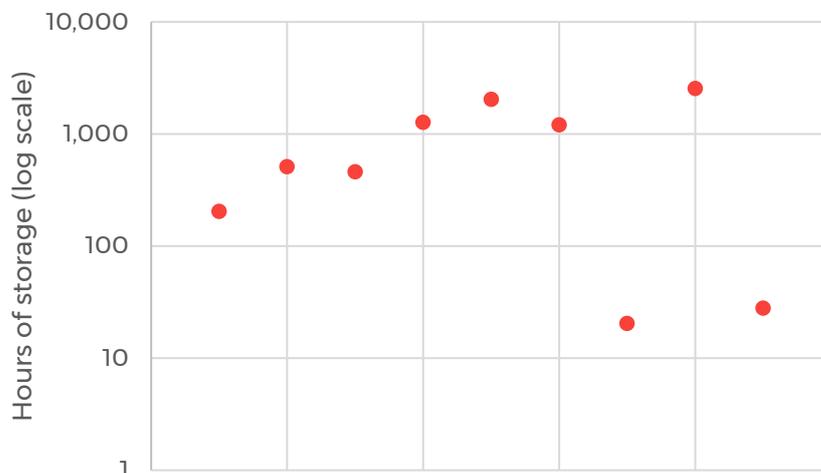


Figure 5-33 : How many hours of storage is provided at average flow for roof water tanks?

### 5.2.6 Backflow prevention

The draft Rules and the Acceptable Solutions for Spring and Bore Water Supplies and Rural Agricultural Supplies all require backflow prevention. While the Acceptable Solution for Roof Water Supplies does not require backflow prevention, if there is a hazardous activity on site, this would be required under the Building Code.

Just under half of the water supplies had an activity on site which is a backflow risk (see Figure 5-34). Four of these were high risk (18%) and around half were medium risk (see Figure 5-35). Of those that had a backflow hazard, 65% had a backflow prevention device and three quarters of these were appropriate for the hazard when compared with the requirements of Clause G12 Water Supplies of the Building Code<sup>6</sup> (see Figure 5-36 and Figure 5-37).

Around half the water supplies visited have a backflow hazard that is not adequately managed under the Building Code, either because there is no backflow prevention device or because it is inadequate. The types of backflow prevention devices used are summarised in Table 5-8.

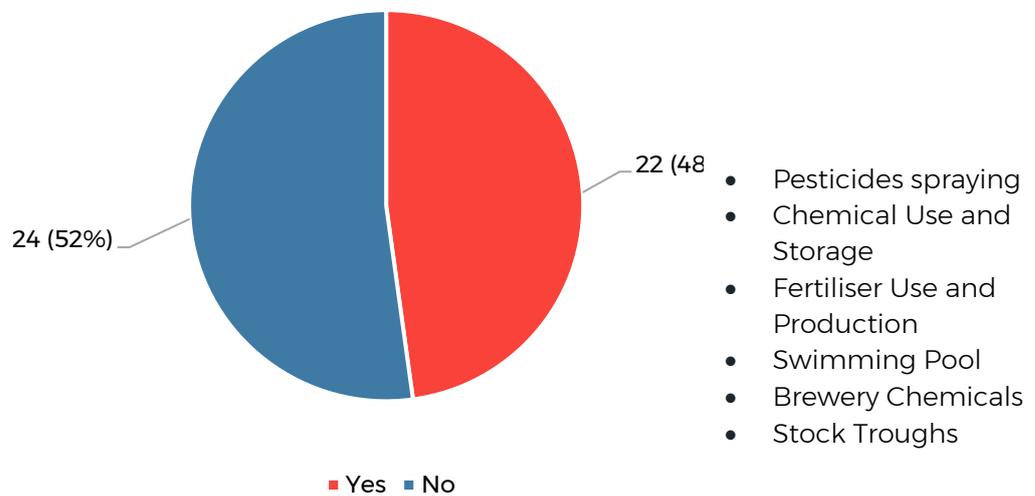


Figure 5-34 : Are there any hazardous activities that present a backflow risk?

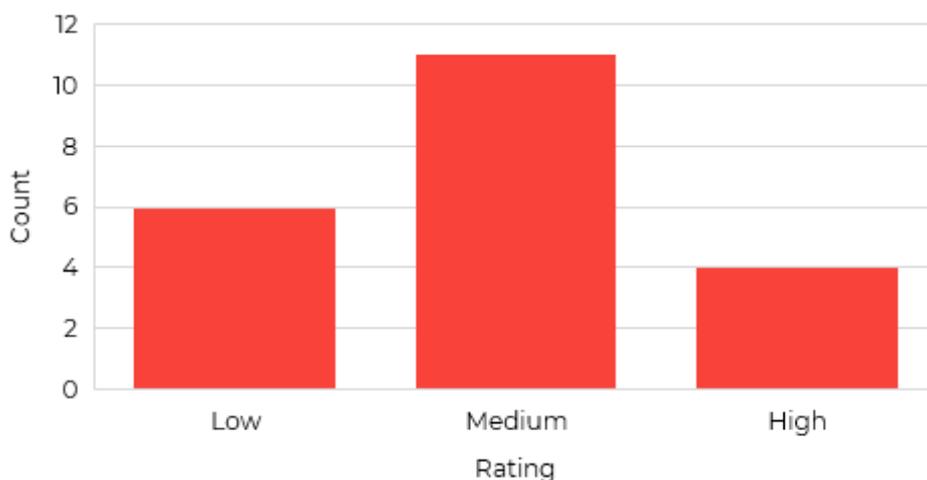


Figure 5-35 : Backflow risk rating

<sup>6</sup> Building Code Clause G12 Water Supplies <https://www.building.govt.nz/building-code-compliance/g-services-and-facilities/g12-water-supplies/>

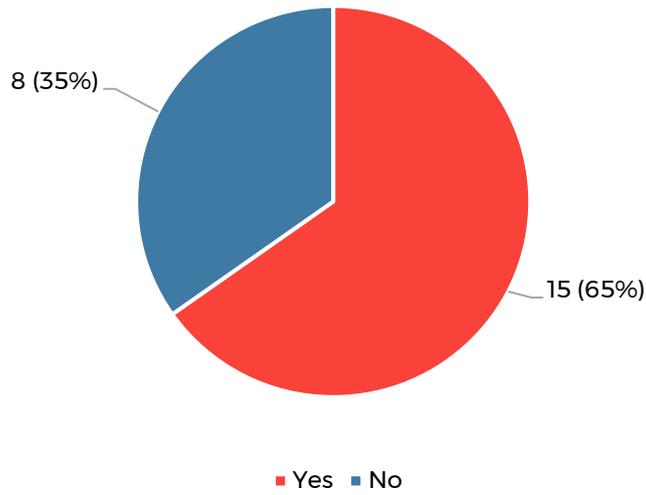


Figure 5-36 : Is there a backflow prevention device?

Table 5-8 : Types of backflow prevention devices

Type of Device	Count
RPZ	2
Non-testable Dual Check Valve	1
Air Gap	5
Single Check Valve	1
Pressure Reducing Valve	1
Simple Check Valve	2
Double non-return valves	1
One Way Device	1

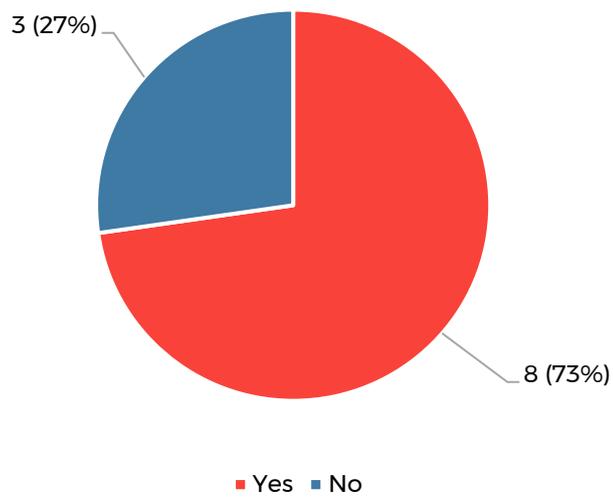


Figure 5-37 : Is the backflow prevention device appropriate for the hazard?

### 5.2.7 Water quality monitoring

Approximately half of the supplies had tested their source water (see Figure 5-38). Of those that had tested their water, only three supplies had parameters that exceed the applicable maximum acceptable value or guideline value in DWSNZ. The exceedances were for *E. coli*, arsenic, manganese and iron.

Of those that had treatment plants, 70% had tested their treated water (see Figure 5-39). Only one supply had a parameter that exceed the applicable maximum acceptable value or guideline value in DWSNZ, with elevated levels of arsenic.

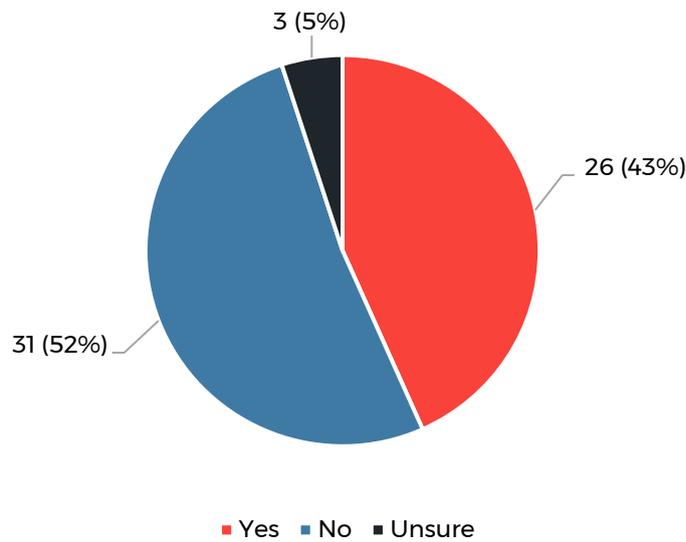


Figure 5-38 : Has the source water been tested?

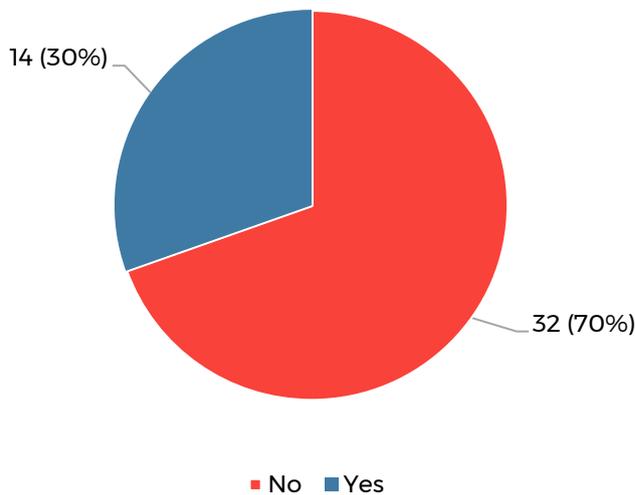


Figure 5-39 : Has the treated water been tested?

### 5.2.8 Operations and maintenance

A range of people look after the private water supplies that were visited. The responses to this question included the supply owner, scheme directors, engineer, farm owner, worker or manager, local plumber, marae trustees, business maintenance team, neighbour and community.

They were generally confident in operating and maintaining their water supply, although only 12% had received any formal water supply training (see Figure 5-40 and Figure 5-41). In many cases, knowledge of the water supply had been passed down through generations, particularly in marae and farm settings.



Figure 5-40 : How confident is this person to operate and maintain your water supply?

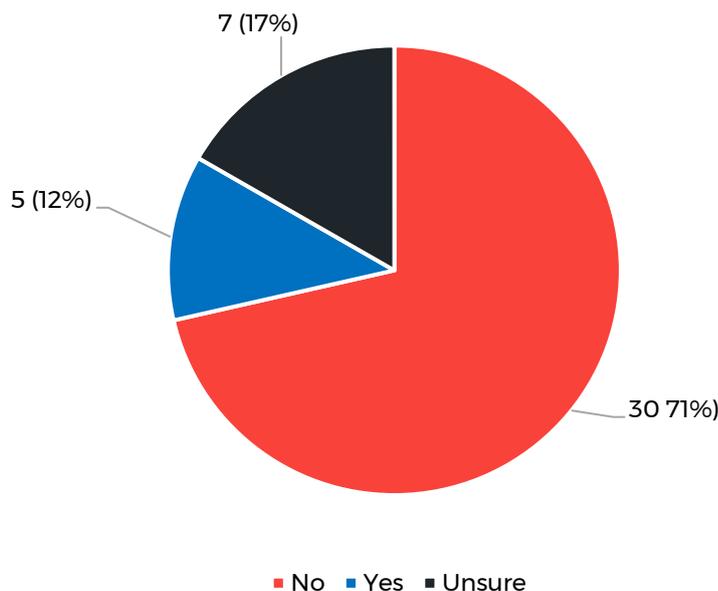


Figure 5-41 : Has anyone involved in your water supply received formal training relating to it?

### **Case study: Farmers considering cutting off supply to neighbouring property**

Owners of a farmed property also own the neighbouring property, which is tenanted. Roof water from the main house supplies both the main house and the tenanted house.

The water supplier is unregistered. The water is untreated and has never been tested.

The roof water collection tank was built in 1914 and does not have leaf screens, first flush filter, a calmed bottom inlet or a floating outlet. However, a concrete sediment trap is installed on the inlet to the roof water tank.

The roof water tank is not vermin proof. There is no seal at the roof wall joint and the roof has lifted away from the wall at various points.

The roof from where water is collected was in relatively good condition.

The owners maintain the water supply system and have never received any formal training related to it.

The owners were aware of the 3 Waters Reforms but did not know that the Water Services Act 2021 had been passed. They were concerned about the cost of registering and the cost of bringing their water supply up to standard. They were particularly concerned that additional costs could bankrupt the family.

They indicated that they would stop supplying their rental property with water, if they can, to avoid registering as a water supplier. Otherwise they would require clear and simple guidance on how to meet the standards along with funding assistance.

#### **5.2.9 Extrapolating the results for the Hawke's Bay region**

There are 45,341 parcels connected to a Council water supply. Assuming 2.6 people per property, this equates to a population of 117,900. The population of Hawke's Bay is 181,500<sup>7</sup>, so approximately 60,700 people are either served by a private water supply or are self-supplied. This project has surveyed 50 private water supplies and the total population covered by this project is around 3,700 people.

This project has estimated that there are between 3,900 and 6,900 private water supplies in Hawke's Bay. 67% of the water supplies that were surveyed for this project did not treat the water. This means that there could be between 2,600 and 4,600 private water supplies with untreated water.

#### **5.2.10 Cost estimates**

The high level estimated capital cost of installing a treatment system which complies with the draft Rules or Acceptable Solutions is summarised in Table 5-9. The estimated operations and maintenance costs are shown in Table 5-10. See Appendix J for a detailed breakdown of the cost estimates. Key assumptions are:

- The treatment plant would consist of cartridge filtration and a validated UV disinfection unit.
- In addition, chlorination would be required for small supplies using the draft Rules and any sized supply using the Acceptable Solution for Spring and Bore Water Supplies.

<sup>7</sup> Estimated 2021 population of Hawke's Bay region by Statistics NZ:  
<https://infoshare.stats.govt.nz/ViewTable.aspx?pxID=58d2299b-c7d9-4a49-b69c-56e51efbaf36>

- There is no provision for upgrading existing treatment plants which do not comply, or for replacing poor condition storage tanks.
- There is no provision for a new building to house the treatment plant, it is assumed that a suitable building is already available on site.
- For parameters which require daily monitoring, continuous online water quality analyser was assumed, as this would be easier than the water supplier taking daily samples. Calibration would be by an instrument technician.
- For groundwater supplies, some improvements to the bore head are likely to be required to prevent contamination from surface water.
- Allowances are included for professional fees (10%), preliminary and general (15%) and contingency (30%).
- For parameters monitored less frequently than daily, a calibrated instrument or lab analysis was assumed.
- Calibration of instruments would be by an instrument technician.
- Routine maintenance (e.g. replacing UV lamps and filters) would be by a plumber or water technician.

The one-off operations costs for training and documentation are shown in Table 5-11. These include:

- For supplies using the Rules, preparing a drinking water safety plan and source water risk management plan.
- For supplies using an Acceptable Solution, preparing an operations and maintenance manual and an incident and emergency response plan.
- Training in the operations and maintenance of the water supply.
- Contingency allowance (30%).

Not included in the cost estimates are:

- GST
- Escalation
- Staff time
- As only one surface water source and one large supply were assessed and both were treated, the cost of treating any untreated surface water sources or large supplies is not included. Individual cost estimates would be more appropriate for these.

The cost of installing compliant treatment systems on all untreated private water supplies in Hawke's Bay was estimated by multiplying the percentage of each source and size of supply by the cost per supply. This means that the capital cost to the region could be in the order of \$150 million - \$890 million, plus an annual operations and maintenance cost of \$18 million - \$48 million.

It should be noted that Taumata Arowai is making significant changes to the Rules and Acceptable Solutions following consultation – particularly for supplies serving fewer than 500 people – and these changes will significantly reduce the cost of compliance.

*Table 5-9 : Capital cost estimates for complying with the Draft Rules and Acceptable Solutions for untreated supplies*

	Estimated capital cost of complying with draft Rules	Estimated capital cost of complying with draft Acceptable Solution
Very small bore water supply	\$36,000	\$236,000
Very small roof water supply	\$36,000	\$117,000
Small bore water supply	\$156,000	\$259,000
Small roof water supply	\$156,000	\$123,000

*Table 5-10 : Operating and maintenance cost estimates for complying with the Draft Rules and Acceptable Solutions*

	Estimated operating and maintenance cost of complying with draft Rules	Estimated operating and maintenance cost of complying with draft Acceptable Solution
Very small bore water supply	\$3,000	\$12,000
Very small roof water supply	\$3,000	\$9,000
Small bore water supply	\$15,000	\$13,000
Small roof water supply	\$15,000	\$10,000

*Table 5-11 : One-off operating cost estimates for complying with the Draft Rules and Acceptable Solutions*

	Estimated one-off operations cost of complying with draft Rules	Estimated one-off operations cost of complying with draft Acceptable Solution
Very small bore water supply	\$21,000	\$9,000
Very small roof water supply	\$21,000	\$8,000
Small bore water supply	\$21,000	\$9,000
Small roof water supply	\$21,000	\$8,000

*In some cases, it may be more cost effective and resilient to extend the council's water supply reticulation to service properties on the outskirts of town, or to provide a water supply scheme for a community rather than having many small treatment systems.*

## 6 Recommendations for future water services assessments

This section recommends a methodology for councils to undertake an assessment of drinking water services for the communities in their district alongside a proposed engagement framework to assist with these assessments.

Drawing on the insights and research findings from this project, the intent of this methodology and framework is to provide the strategic direction for future assessments with private drinking water supply communities and key stakeholders, looking particularly at the small and very small drinking water supply categories. Similar to the experiences from the project delivery, the assessment approach acknowledges that the proposed steps will need to remain flexible and adaptive at each step to allow the team to engage and address any community or stakeholder concerns or programme complexities as they arise.

It is expected that the final assessment methodology and framework will be validated in collaboration with council staff (such as the engagement and communications teams and council project teams) and key stakeholders so that the recommended approach aligns with councils' responsibilities.

### 6.1 Rationale for methodology and framework approach

The Hawke's Bay councils acknowledge that the Government's Three Waters Reform Programme aims to improve public health and environmental outcomes. Discussions with council staff and other technical experts during this research highlighted that the Act brings the issue of safe drinking water to the fore and provides a platform for suppliers and receivers of drinking water to discuss their systems. However, the research uncovered community sentiment that the current proposals (such as the draft Rules and Acceptable Solutions) have 'gone too far, too fast' and demonstrated that there needs to be adjustments to ensure that the legislation is 'workable' for small suppliers (Appendix G). The Minister for Local Government, the Hon. Nania Mahuta, has stated that "It needs to be cost effective and easy to comply with."

Elements of the Act are open to interpretation. Throughout the research, clarity on the definition of private drinking water supplies and the roles and responsibilities for councils and suppliers (not connected to a municipal system) were sought from Taumata Arowai. However, the scale of water services assessments that would need to be completed by councils remained unclear. For example, it was difficult to understand whether councils would be required to assess individual private drinking water supplies, or what the definition of 'community' was in this context.

The definition of community under the Local Government Act is defined by geographic indicator, and this is therefore taken as the definition for 'community' in relation to councils' requirements to undertake water services assessments.

### 6.2 Engagement framework

The engagement framework shown in Figure 6-1 has drawn on field research, stakeholder engagement and desktop research to provide a high-level visual aid to undertake water services assessments. The intention is that this framework remains a flexible 'living document' to adapt to ongoing situations as more knowledge is gained about supplies, suppliers and the processes to undertake assessments. It is also anticipated that key stakeholders relevant to water services assessments be included in the evolution of this framework and recommended assessment steps so that a collaborative and shared understanding of future assessments can be achieved.

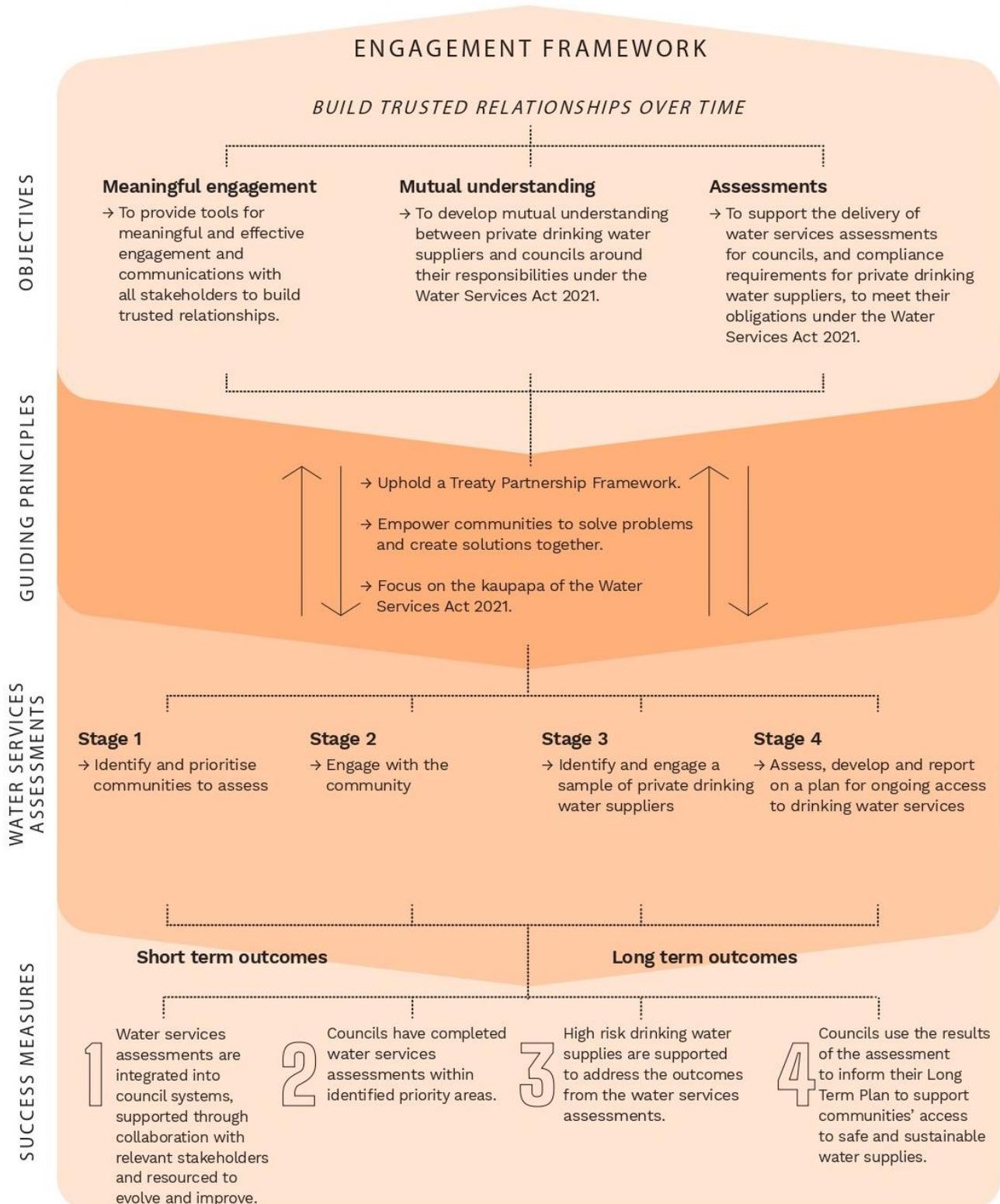
**Therefore, much like the experience of this project, it is important that water services assessments continue to take a reflective and collaborative approach that is guided by the Engagement Framework outlined below.**

This will provide the best opportunity to continue to take the necessary care and the proactive response that is needed so that water services assessments remain fit for purpose and adaptable to the changing regulatory and community demands.

## Engagement Framework.

STRATEGIC DIRECTION: Stakeholder Engagement; Communications Strategy; and Assessment Framework.

PURPOSE: The purpose of this Engagement Framework is to provide guidance and a strategic approach for communication and engagement with private drinking water suppliers who are not registered under the Water Services Act 2021. The focus is on very small and small suppliers relating to council obligation to undertake water services assessments.



*Engagement methods, communications and other relevant information, tools and template examples are provided in the Communications and Engagement Strategy.*

Figure 6-1 : Engagement framework

## 6.3 Suggested method for undertaking water services assessments

The four steps outlined below incorporate the assessment criteria in section 125 of the Act and propose the method and engagement techniques to undertake water services assessments. The four steps are:

- 1 Identify and prioritise communities to assess
- 2 Engage with the community
- 3 Identify and engage a sample of private drinking water suppliers
- 4 Prepare a report which includes recommendations to address water quality and quantity risks. Report back to communities on the findings and where appropriate use the recommendations to inform the councils' Long Term Plans.

### 6.3.1 Step 1 - Identify and prioritise communities to assess

Due to the large number of private water suppliers, it would be extremely difficult to assess every private drinking water supplier in an entire district every three years, due to resourcing and cost constraints and difficulty gaining consent and access to water supplies. A strategic focus on different areas may need to be taken every three years, that requires other areas not to be assessed in such detail.

This step seeks to satisfy section 125(2) (a), (b) and (c) of the LGA.

Section 125 of the LGA requires each territorial authority to 'inform itself about the access that each community in its district has to drinking water services by undertaking an assessment of drinking water services'. There has been much discussion during the project about what the term 'community' means in this context.

The Local Government Act defines 'community' in terms of a physical area under Schedule 6 'Constitution of communities' section 2(2) that states:

*The boundaries of a community must coincide with the boundaries of the statistical meshblock areas determined by Statistics New Zealand and used for parliamentary electoral purposes.*

Furthermore, section 2(1) states that an Order in Council or resolution must:

- (a) fix the boundaries of the community and describe them in a manner that makes them readily capable of identification; and*
- (b) assign a name to the community.*

With the guidance above, our view is that a community for a water services assessment could be defined using the statistical meshblock areas (formerly known as census meshblock areas) determined by Statistics New Zealand. Adjacent meshblocks can be grouped where these represent a single community (see

Figure 6-3 for an example). Engaging with the community in Step 2 can provide further opportunity to define the community boundary from their perspective.

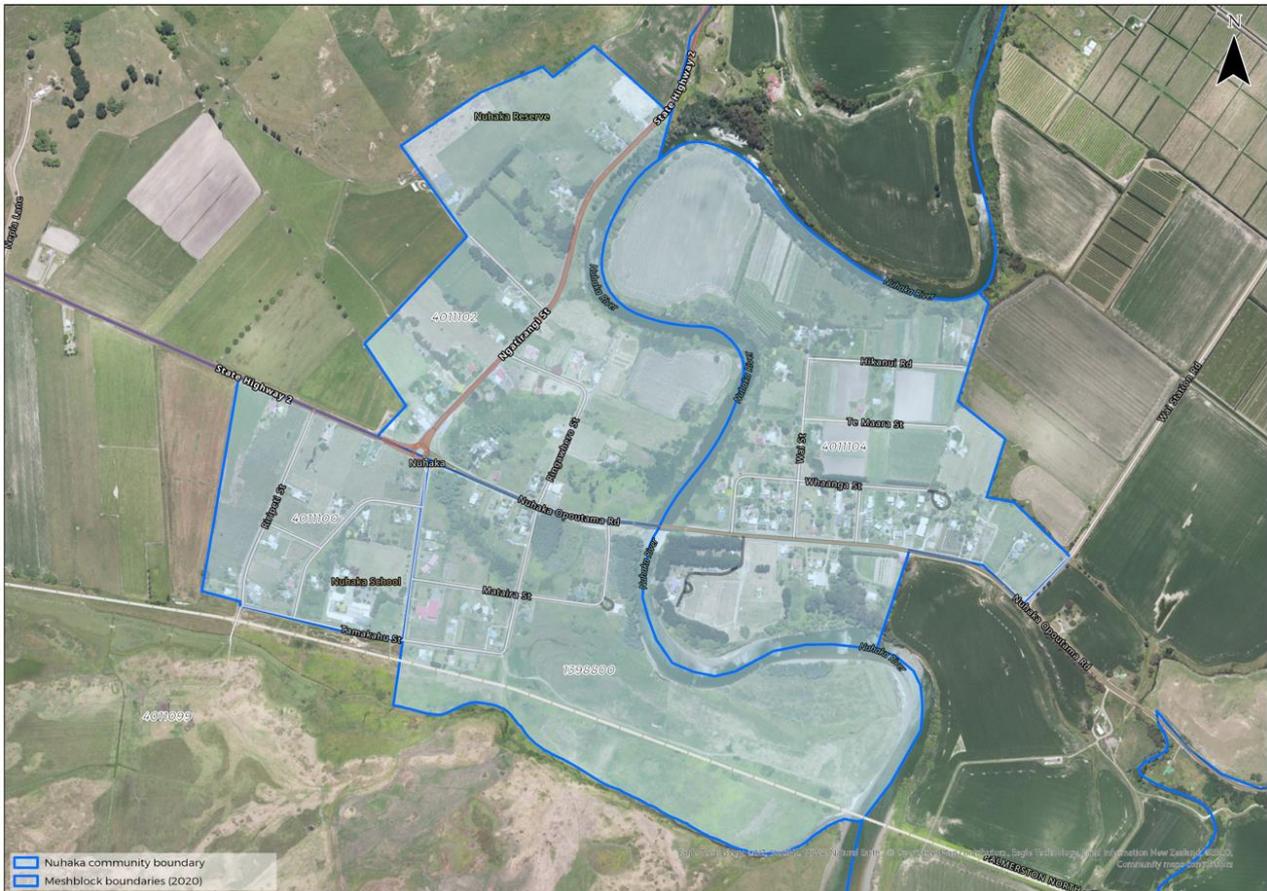


Figure 6-2 : Example community – Nuhaka

To determine future assessment areas, it is recommended that a high-level needs assessment of each community's drinking water is undertaken for each district. The purpose of this is to direct the strategic priority of assessment for each district and the region as a whole. This could be informed by the findings of this project, previous water and sanitary services assessments, supplies with known issues identified by key stakeholders and council information on reticulated and unreticulated service areas.

Key census data could also be used to prioritise communities (e.g. deprivation index, household density, population).

Figure 6-3 to Figure 6-10 show these statistics for the communities in each district (where the size of each bubble indicates the population) along with maps that show the eight largest communities in each district that do not have a council water supply (see Appendix K for the workflow for this analysis). It is recommended that this or a similar approach is used to prioritise communities for assessment.

It is suggested that the methodology in the Hastings Sanitary Assessment is used as an additional guide for undertaking a water services assessment at a community level.

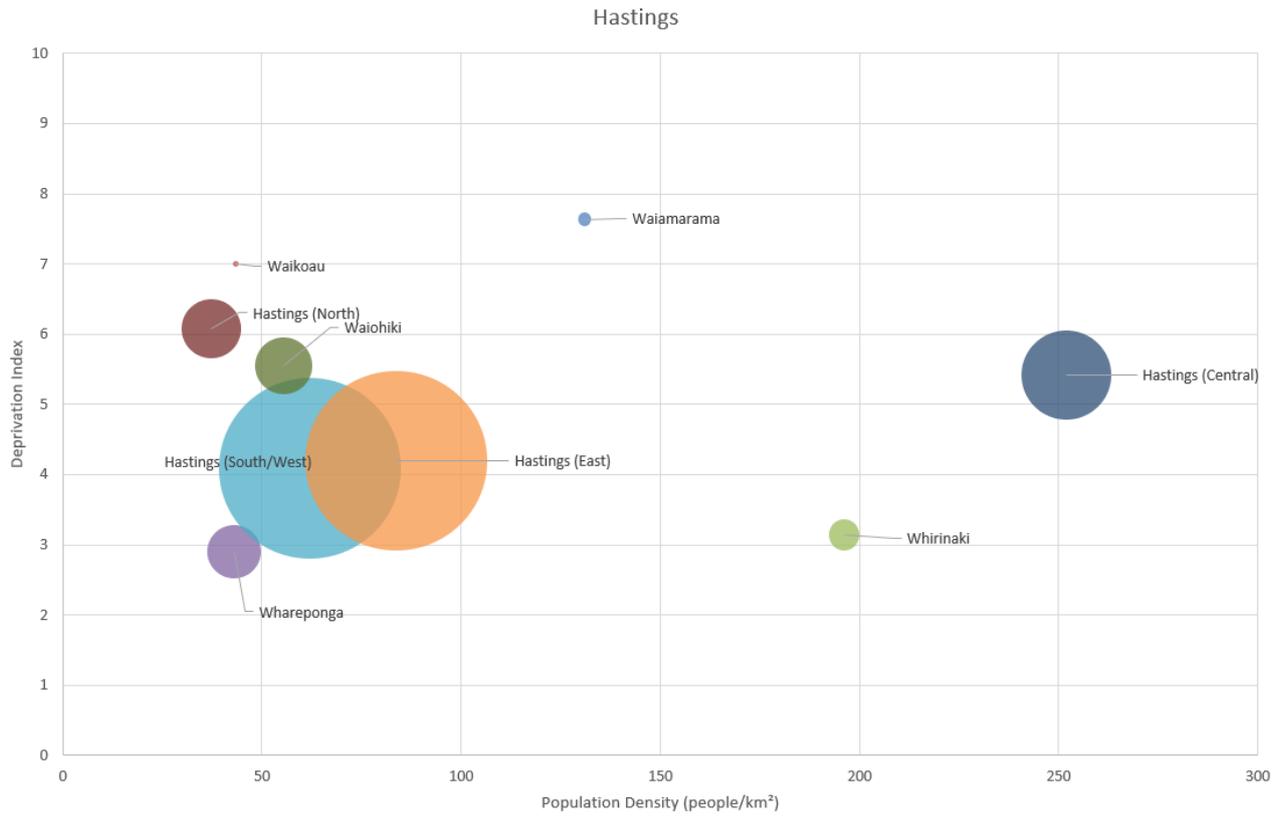


Figure 6-3 : Population, deprivation index and household density for communities in Hastings District

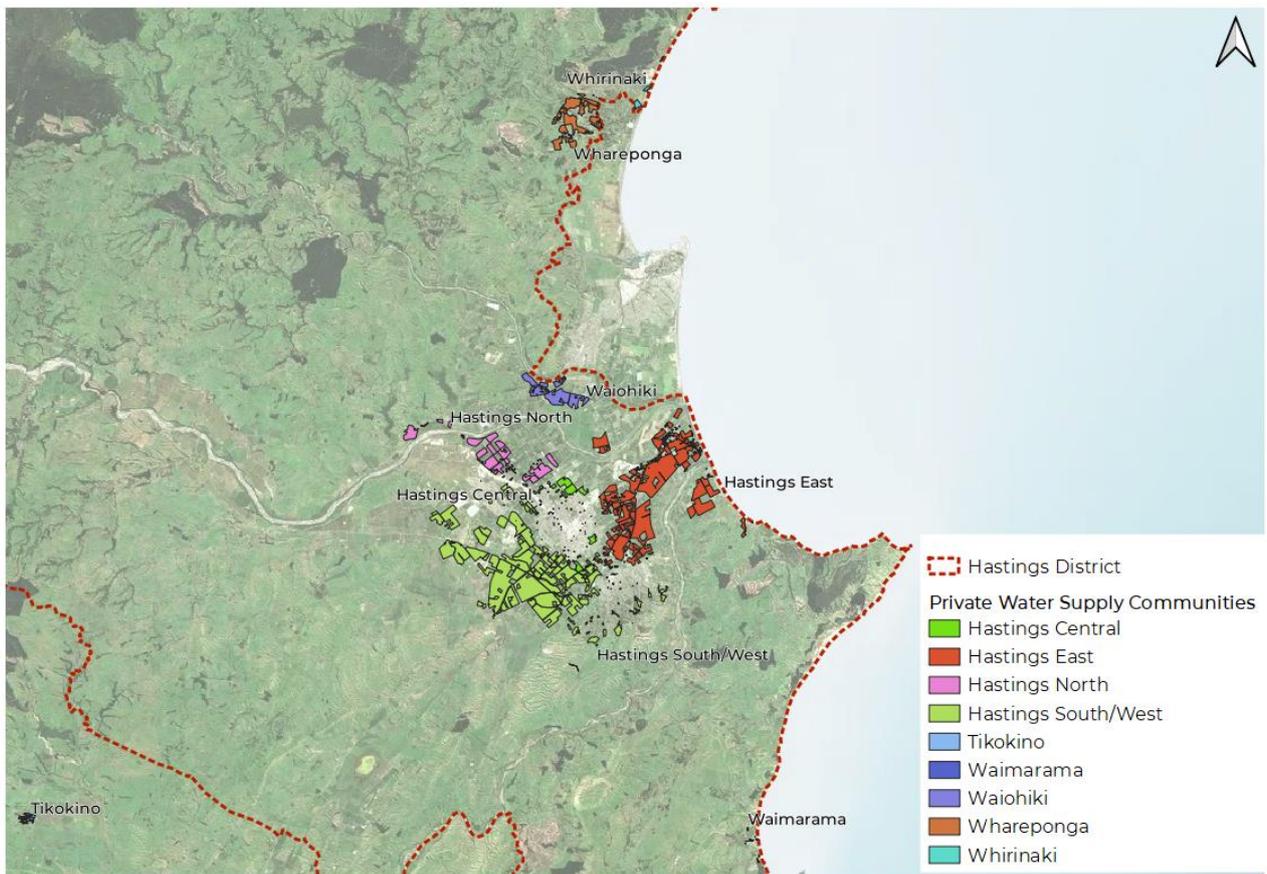


Figure 6-4 : Communities without a council water service in Hastings District

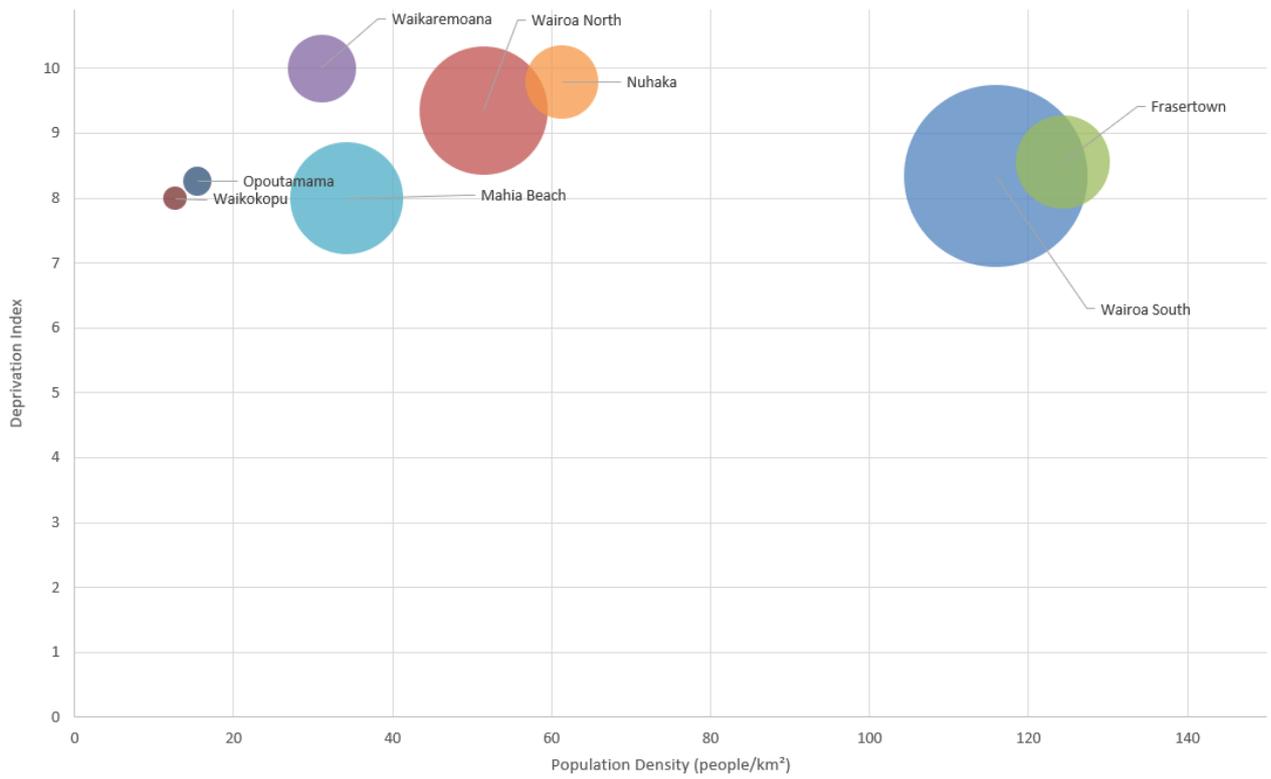


Figure 6-5 : Population, deprivation index and household density for communities in Wairoa District

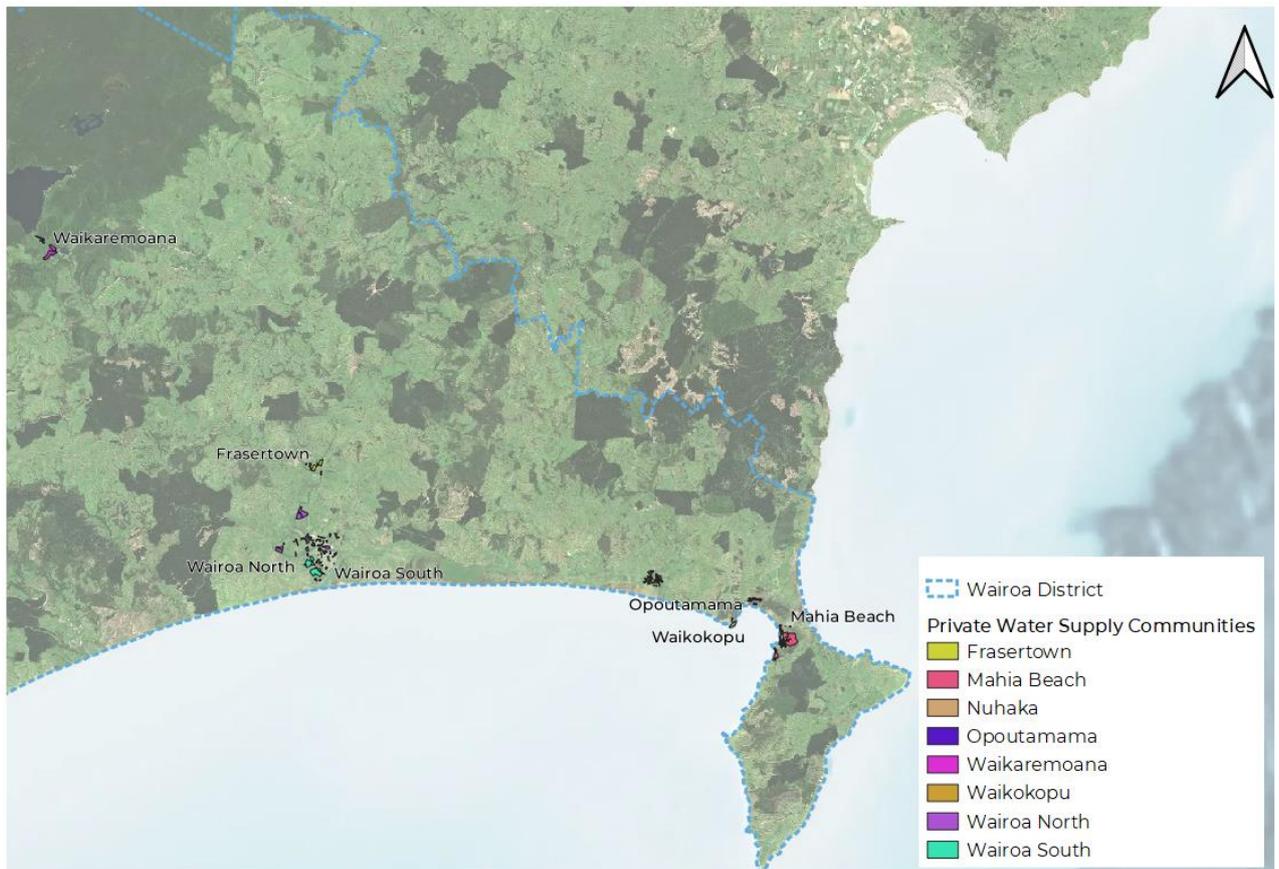


Figure 6-6 : Communities without a council water service in Wairoa District

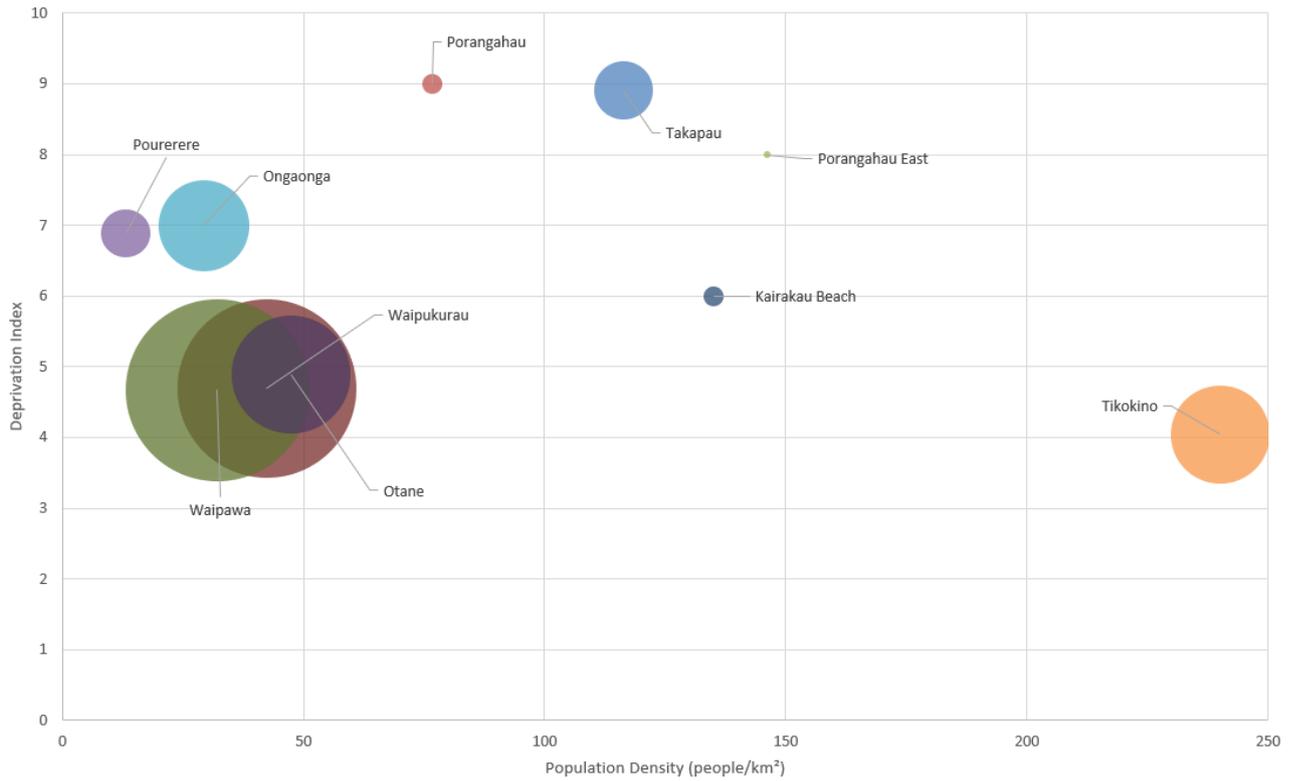


Figure 6-7: Population, deprivation index and household density for communities in Central Hawke's Bay District

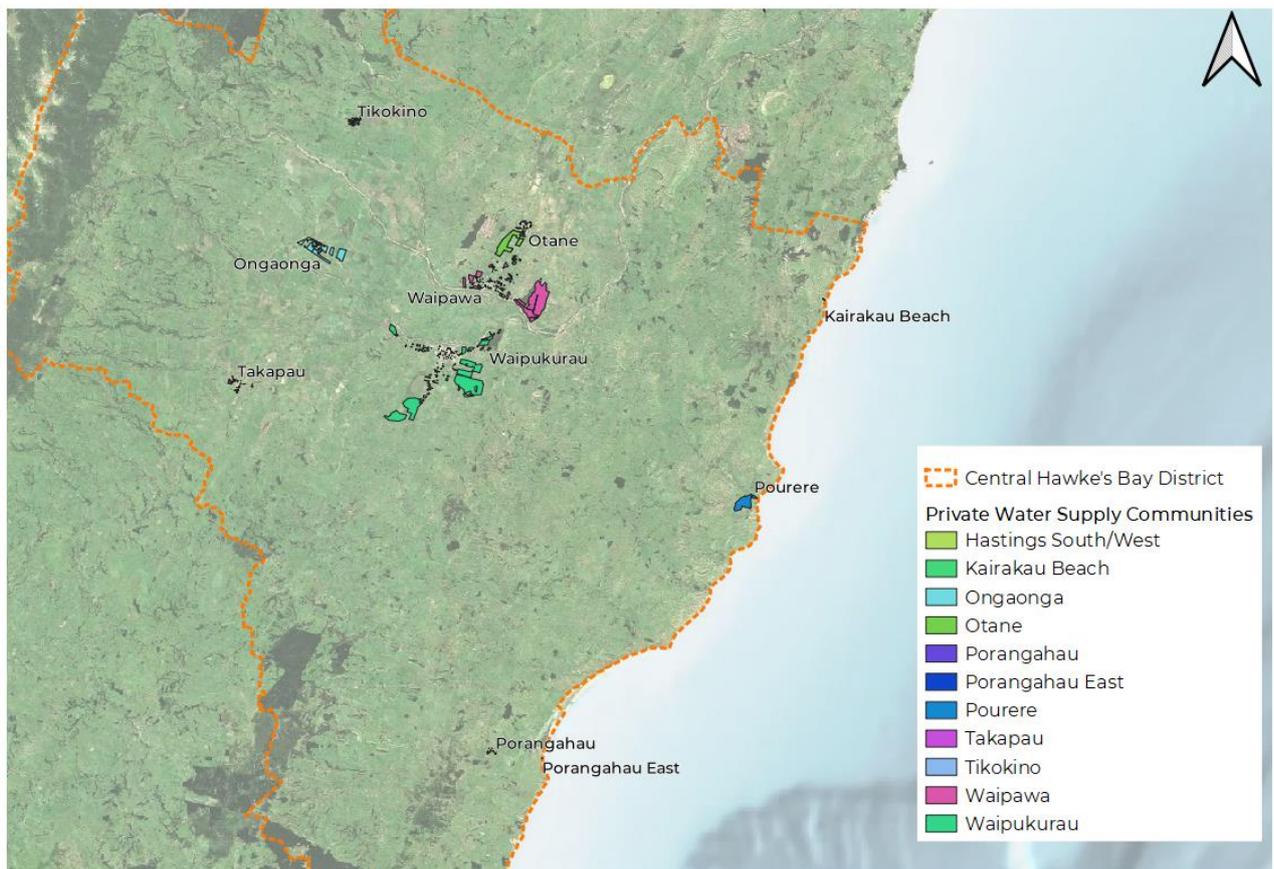


Figure 6-8: Communities without a council water service in Central Hawke's Bay District

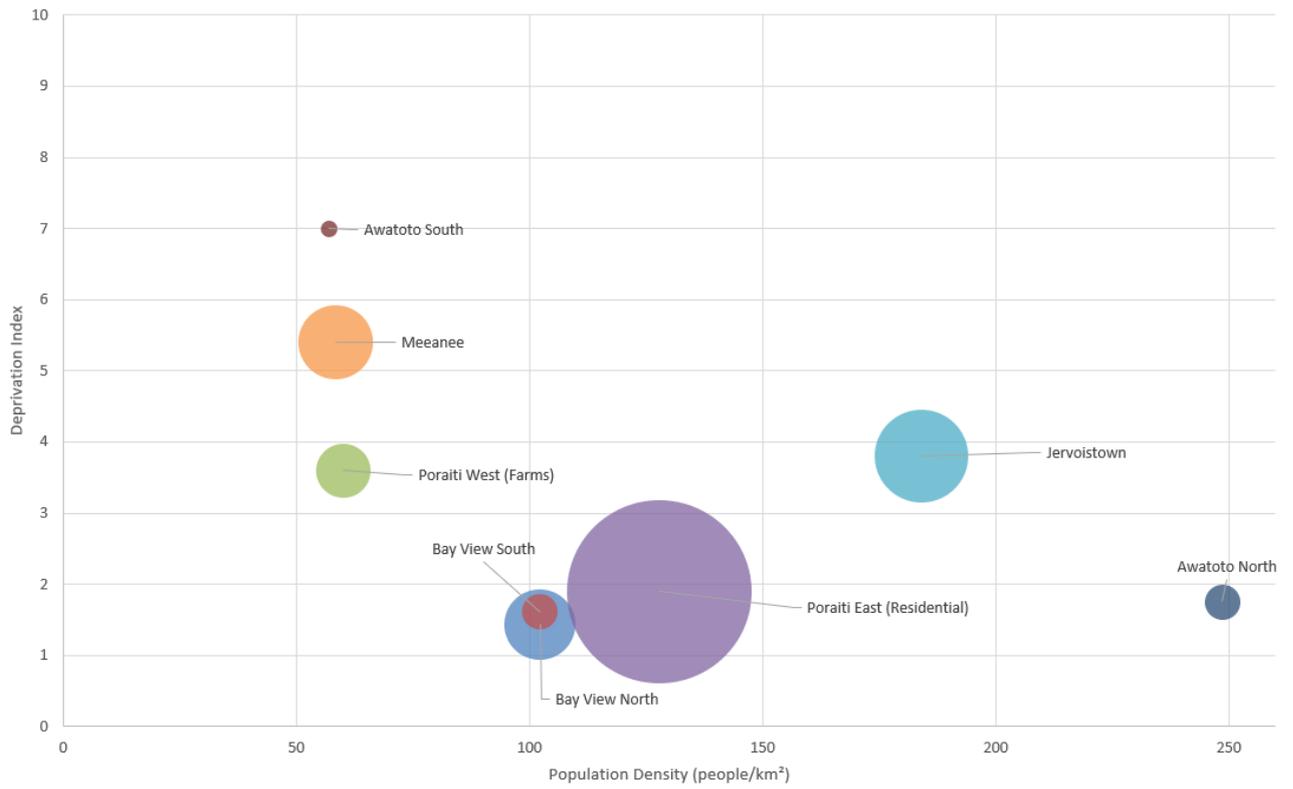


Figure 6-9 : Population, deprivation index and household density for communities in Napier City

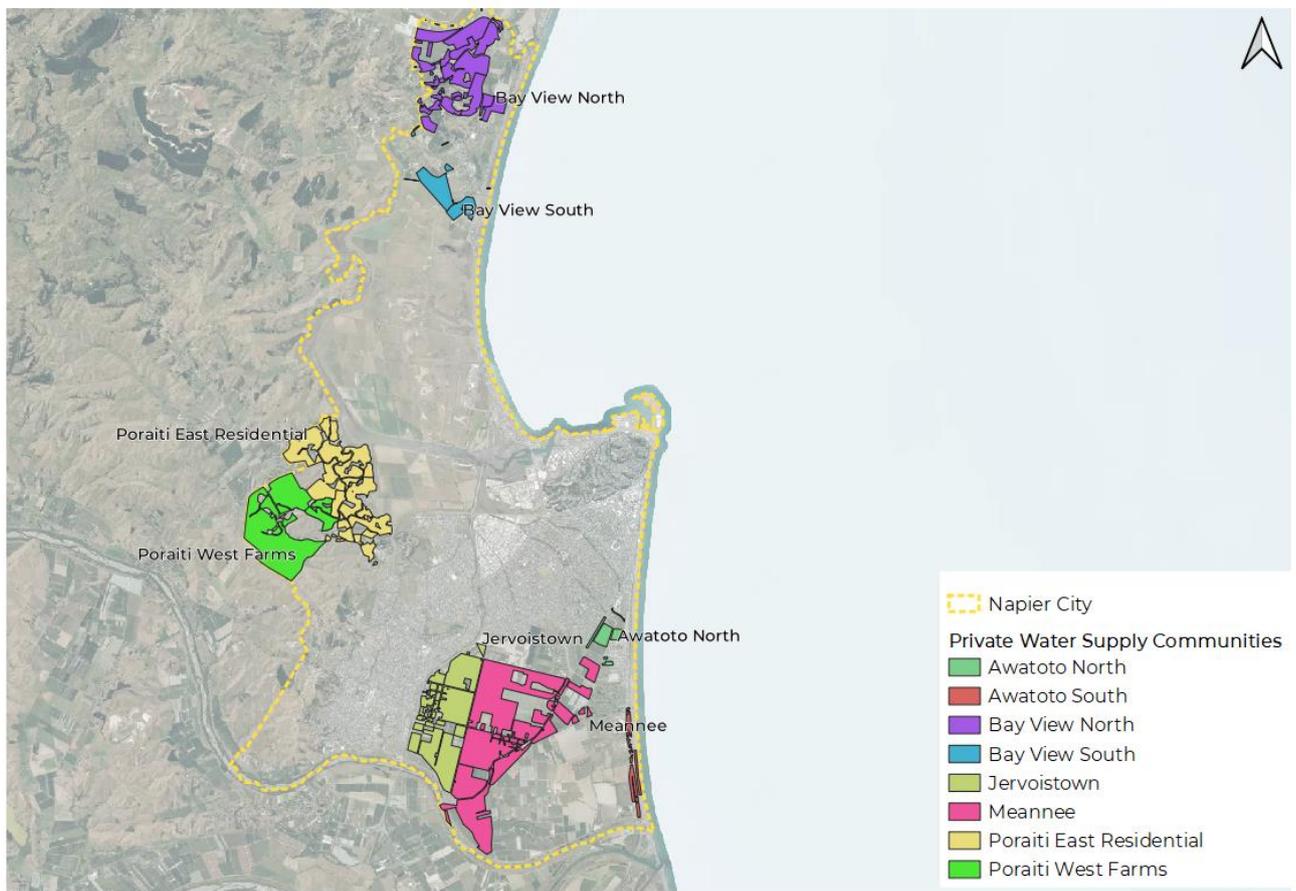


Figure 6-10 : Communities without a council water service in Napier City

To obtain the information on the nature of the services and characteristics of a community itself, a greater understanding of each community is required. To gain this and to create ongoing, sustainable assessments, there is value in working with the people in the community who will be impacted. Therefore, as part of this step, developing a plan to communicate and engage early and with transparency with communities will be an essential part of the water services assessment.

With more clarity on private water supplies, the enactment of the Water Services Act and a methodology for undertaking water services assessments, there is value in strengthening the relationships with key stakeholders and the community.

The Communications and Engagement Strategy (Appendix F) documents the approach and process for engaging with private drinking water suppliers and completing their supply assessment. This was developed for the pilot study and provides guidance that can be used along existing council communication plans to develop community specific Communication and Engagement Plans for council to undertake assessments.

The selected communities will need to be informed of the council's obligation to undertake an assessment of the community's drinking water services. This will require information on:

- Why council intends to do the assessment
- How the assessment process will be completed
- What that will mean for the community
- How they can find out more information

### *6.3.2 Step 2 - Engaging with the community*

As outlined in Step 1, councils have an opportunity to identify and prioritise communities to assess water suppliers by informing them about the Act and council's intent to assess their community's drinking water supply. It is also an opportunity to discuss the Rules and Acceptable Solutions and what this means for them and their water supplies. This could be done in collaboration with Taumata Arowai. It also will help to build knowledge of who private water suppliers are and where their supplies are located. Therefore, Step 2 focuses on further identifying private water suppliers and satisfying section 125(2)(d) of the LGA to determine the extent to which the community is receiving drinking water.

It is suggested that engaging with the community is via a 'town/community hall' style engagement. The event could include information on the Act, Rules and Acceptable Solutions. Breakout groups could be used to discuss the nature of supplies and characteristics of the community, along with an opportunity for suppliers to provide information to the council on their supply locations and register their interest in participating in the sample of private drinking water supplier programme. Incentives for participating could include drinking water testing and a supply assessment with high-level improvement suggestions.

The process could include a series of communications and engagement techniques such as:

- Letter drop to known, potential and assumed private drinking water suppliers (identified on the GIS tool) and an invitation to the town/community hall meeting.
- Pamphlet in rates notices
- Advertising in relevant media such as, newspapers, social media, in local shops and online groups about the water services assessment and an invitation to the town/community hall meeting.
- Town/community hall event undertaken as an opportunity to meet the community face-to-face and, in their community and to provide information and answer questions that they may have. A town/community hall engagement provides a space to begin to connect with and build relationships with suppliers and interested community members.

Identifying individual private drinking water suppliers, and the communities that they supplied drinking water to, was a complex task during the project. Therefore, when a supplier and those they supply to are identified, it will be important to obtain and document this information. For example, contact details and key features of the drinking water supply. This will help to identify those supplies that may be at higher risk and the council can start engaging with the supplier.

Discussions could be around their safety and access to drinking water, with the goal being to create pathways so that they are informed, connected and supported. For example, the information could be collected by interested parties during community/town hall events and provide a platform and support for the supply group to discuss their situation.

By taking a community approach to understanding people's water supplies, a picture of the wider extent of the community's drinking water can be established and assessed by councils. It can also connect members of the community and direct specific supply group towards solutions for both individuals and the wider group of people who rely on a particular source of drinking water.

Offering advice and support will help to build trusted relationships and identify private drinking water suppliers, as supplier groups discuss what is available. It will also assist with the process of registering suppliers under the Water Services Act in the future as well, as people understand the benefits of registration. Communications and engagement methods could include:

- Information that is easy to find and understand (e.g. website, printed material)
- Online portal for private water suppliers to notify the council of their interest in participating
- Working with 'community champions' and key people within communities to create communication between councils and water suppliers and their consumers

Identifying (including potential high risk) private water supplies and building a list of water suppliers (and perhaps also their consumers) to participate in individual drinking water supply assessments, provides a basis to understand particular cases at a more granular level. This step address LGA s125(2)(d) (i) - (iii) (community's access to sufficient water at present and in the future).

### *6.3.3 Step 3 - Identify and engage with a sample of private drinking water suppliers*

Undertaking a water services assessment at a community level without including engagement with individual suppliers may not be a completely effective approach. This is because it may miss the level of detail required to gain a better understanding of the types of suppliers and the people that they supply drinking water to. It also provides a limited understanding of the specific needs of those supplies and the nuances of each group.

Much of the project focused on creating an approach to assess an individual private drinking water supply which helps to understand the extent to which a community is receiving enough, quality drinking water.

Therefore, Step 3 involves completing an engagement with a sample of private water suppliers in a community to satisfy the assessment of safety and quality of drinking water and to help identify and assess any other public health risks relating to the drinking water services supplied to the community under section 125(2)(e) and (f) of the LGA.

Knowledge of the location and extent of private water supplies has improved with this project and will continue to improve over time as the assessments are undertaken. Once all suppliers are registered (by November 2025), identifying private water suppliers in a community will be straightforward. However, the first water services assessment is due to be completed by November 2024 and this project and others around Aotearoa have demonstrated the challenges with finding private water supplies.

Identifying private water suppliers became easier as the project progressed, as the word spread amongst the water supplier community, with unsolicited requests to participate being received by the end of the project. Many water suppliers were keen to understand their new and upcoming obligations and what this means for their water supplies. While they were initially hesitant to participate, almost all suppliers said that they found the assessments useful and informative. Harnessing this momentum, there is an opportunity to ask participants in this project to reach out to other private water suppliers that they know and invite them to participate in the process.

As information about the location and extent of private water supplies is gathered, the GIS database can be updated. The extents of private water supplies that were assessed under this project have been mapped (replacing the assumed number of houses nearest to the source). Those that were confirmed by the project team not to be a private water supply are in a separate layer, as are those where the contact person advised that they were not a private water supply, including the reasons why.

The confidence in the location and extent of private water supplies would be improved if the Hawke's Bay councils (including the regional council) captured data about private water supplies as part of the building consent and resource consent process (e.g. subdivision consents and water permits). Questions could be added to application forms to find out more information about those supplies not connected to a council supply, such as:

- What is the water source for this property – council reticulated supply, roof water, bore water, spring water or surface water?
- If it is not a council reticulated supply, does this source supply more than one domestic dwelling?
- If it supplies more than one domestic dwelling, list the properties which are connected to this water supply and attach a map.

It is recommended that councils add contact details fields to the property layer in their GIS systems. This would help the process for contacting private water suppliers and many other council functions.

#### *6.3.4 Step 4 - Assess, develop and report on a plan for ongoing access to drinking water services*

The results of the water services assessments will help to understand people's access to sufficient and safe drinking water. They can assist with identifying the best option to support the community where identified risk or defects have been found. Step 4 satisfies the final requirement for a council to assess drinking water services (section 125(2)(h) of the LGA) and seeks to work in partnership with the community to establish a plan for their ongoing access to drinking water services.

The information gathered in Steps 1 – 3 can be used to draw conclusions on communities' drinking water services, including identifying any concerns with access or safety of a supply.

It is important during the water services assessment (with the community at large) and with the sample of individual private drinking water suppliers, that people are informed about the outcomes and what the council and the community will do about it. Each community will be different and may have varying capabilities or capacity to be involved, which can be identified during the assessment steps and supported accordingly.

In the case of individual engagements with the sample of private drinking water suppliers, this could be in the form of an email as described in the Communications and Engagement Strategy, providing the high-level findings and potential support (or funding if applicable) for that supply.

In the case of the community as a whole, a second community/town hall or smaller workshop group could be held to develop a plan to address any findings that require ongoing work.

During the project, it was found that many suppliers wish to be a part of the solution and kept informed on any decisions that may impact them. Therefore, it is suggested that the councils partner with the private drinking water supply communities and stakeholders to design plans to address and support the conclusions drawn from the water services assessment. This could include:

- Advisory working groups
- Summary reports back to the community through letter drop, notice boards, online websites and community meetings
- Encouraging Taumata Arowai to develop tools or systems that automate water supply reporting and testing data through exploring monitoring and phone application platforms

By completing the communications and engagement 'loop' on the outcomes of the water services assessment, a council will build trusted relationships with their private drinking water supply communities thus creating an established relationship with communities to continue and sustain the requirement to undertake assessments every three years.

It is anticipated that the methodology and engagement steps will continue to evolve and improve as new information becomes available and communities, suppliers and individuals become more familiar with the requirements of the Act. A key change will be when all supplies have been registered. The Engagement Framework in section 6.2 provides a high-level visual aid to assist with council and community aspirations for ensuring that everyone has access to safe and sustainable drinking water supplies.

## 6.4 Establishing a water services assessment programme

Before water services assessments begin, it is suggested that the resourcing, programme and timeline is set up. This could include the following key actions:

**Establish a regional programme team** to lead and coordinate the collaborative effort required to undertake water services assessments. This team would hold the responsibility at a regional scale, supporting district council teams and be responsible for the wider context of the changes to water service delivery. This would be made up of the following roles, with high level estimate of the resourcing required as full time equivalent (FTE) staff over a two year period shown for each role:

- Water Services Assessment Programme Manager: responsible for the overall delivery of the programme, support to staff, stakeholder relationships and communication to the mayors, councillors and Taumata Arowai. Responsible for coordinating and supporting the programme team in tasks, information management, timeframes and resourcing (0.3 FTE)
- Water Technical Lead: responsible for leading the technical delivery of water services assessment inputs by district technical leads (0.2 FTE).
- Communications and Engagement Lead: responsible for developing and delivering the communications and engagement plan and supporting district communications and engagement staff (0.3 FTE).
- Māori Relationships Lead: responsible for providing guidance, contribution and support to stakeholders, communities and council relationships with mana whenua (0.15 FTE).
- GIS Lead: responsible for managing the data inputs and outputs in the regional and council GIS database and information systems (0.1 FTE).

**Establish a district programme team** supported by the regional team for each council to focus on delivering water services assessments to their own communities. This would consist of a Water

Engineer (0.15 FTE), a Communications and Engagement Specialist (0.1 FTE) and a Māori Relationships Officer (0.05 FTE). This team would work closely with the Regional Programme Manager and GIS Lead to manage the steps, timeline and information required to deliver the programme.

**Develop a work programme** working with inputs from the established district programme teams and guided by the four steps for water services assessments described in section 6.3. A high level programme is shown in Table 6-1. The first water services assessments must be complete by November 2024.

**Develop the regional story of the water services assessments programme** and district communications and engagement plans so that key stakeholders and communities are aware of councils' obligations under the Water Services Act 2021. The current Hawkes Bay 3 Waters website<sup>8</sup>, this report, the Hawke's Bay councils' submission to Taumata Arowai and the content developed for the pilot project provides foundational information and context to support this action.

As the Drinking Quality Assurance Rules and Acceptable Solutions, lack of clarity around the definition of community and the need to bring council staff into the water services assessment process, it is important that this action is developed in collaboration with councils' communications and engagement teams and tested with relevant stakeholders such as Taumata Arowai and Iwi so that it connects locally and contributes to the wider Kaupapa of the Act.

*Some anticipated project risks, opportunities and suggested solutions are summarised in Table 6-1 : High level programme*

Timeframe	2022	2023	2024
<b>Steps</b>	Step 1: Identify and prioritise communities to assess	Step 2: Engage with the community (first half of 2023)  Step 3: Identify and engage a sample of private drinking water suppliers	Step 4: Assess, develop and report on a plan for ongoing access to drinking water services
<b>Key Actions</b>	<ul style="list-style-type: none"> <li>• Programme and team set up and training (if required)</li> <li>• Needs assessment exercise to prioritise</li> <li>• Water services assessments</li> <li>• Develop regional and district specific communications and engagement plan</li> </ul>	<ul style="list-style-type: none"> <li>• Launch regional awareness campaign</li> <li>• Community Meetings Roadshow (for example)</li> <li>• Sample of site visit and assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of information</li> <li>• Collaborate with key stakeholders to develop a plan and what support looks like.</li> <li>• Report to councils and community, including preparation for Long Term Planning.</li> </ul>
<b>Outcome</b>	Water services assessments are integrated into council systems, supported through collaboration with relevant stakeholders and	Councils have completed water services assessments within the identified priority areas.	

<sup>8</sup> <https://www.hb3waters.nz/>

	resources to evolve and improve.		
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Table 6-2.

Table 6-1 : High level programme

Timeframe	2022	2023	2024
<b>Steps</b>	Step 1: Identify and prioritise communities to assess	Step 2: Engage with the community (first half of 2023)  Step 3: Identify and engage a sample of private drinking water suppliers	Step 4: Assess, develop and report on a plan for ongoing access to drinking water services
<b>Key Actions</b>	<ul style="list-style-type: none"> <li>• Programme and team set up and training (if required)</li> <li>• Needs assessment exercise to prioritise</li> <li>• Water services assessments</li> <li>• Develop regional and district specific communications and engagement plan</li> </ul>	<ul style="list-style-type: none"> <li>• Launch regional awareness campaign</li> <li>• Community Meetings Roadshow (for example)</li> <li>• Sample of site visit and assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of information</li> <li>• Collaborate with key stakeholders to develop a plan and what support looks like.</li> <li>• Report to councils and community, including preparation for Long Term Planning.</li> </ul>
<b>Outcome</b>	Water services assessments are integrated into council systems, supported through collaboration with relevant stakeholders and resources to evolve and improve.	Councils have completed water services assessments within the identified priority areas.	

Table 6-2 : Water Services Assessment Risks and Opportunities

Risks	Suggested Mitigations
Providing enough staff with the appropriate skill sets to deliver water services assessments will likely be challenging due to their existing responsibilities.	Additional staff or consultants may be required to deliver the Water Services Assessments Programme.
National direction continues to develop and evolve, which could create further uncertainty around how and how water services assessments are delivered.	Continue to work closely with Taumata Arowai and other key stakeholders to collaborate on learns and the approach to Water Services Assessments so that it aligns with the intent of the Act and Council meet their obligations.
Regulatory changes and consultation fatigue continue to make it difficult for communities, council staff and stakeholder to engage and	Effective programme planning and allowing appropriate time and resource for all parties to contribute when they need to, will be critical to ensure the quality of the water services

participate effectively in the obligations from the Act.	assessments are meaningful and support council and suppliers on their new obligations.
Opposition to Three Waters Reform may mean that communities and private water suppliers are less willing to participate.	Clearly explain the purpose of water services assessments and how they benefit the community.
<b>Opportunities</b>	<b>Suggested Approach</b>
Share the learnings from this project and the proposed approach to water services assessments with other councils around the country, to enable water services assessments to be delivered in a consistent way.	Present the project to other councils around the country (e.g. at conferences and other forums), particularly the other councils in the proposed Water Services Entity C.

## 6.5 Data management and maintenance

The management and accessibility of existing and new private water supply data will be a key requirement for each council to identify and retain the location and status of private water supplies within their district.

Three steps have been defined for capturing and maintaining private water supply data in the future:

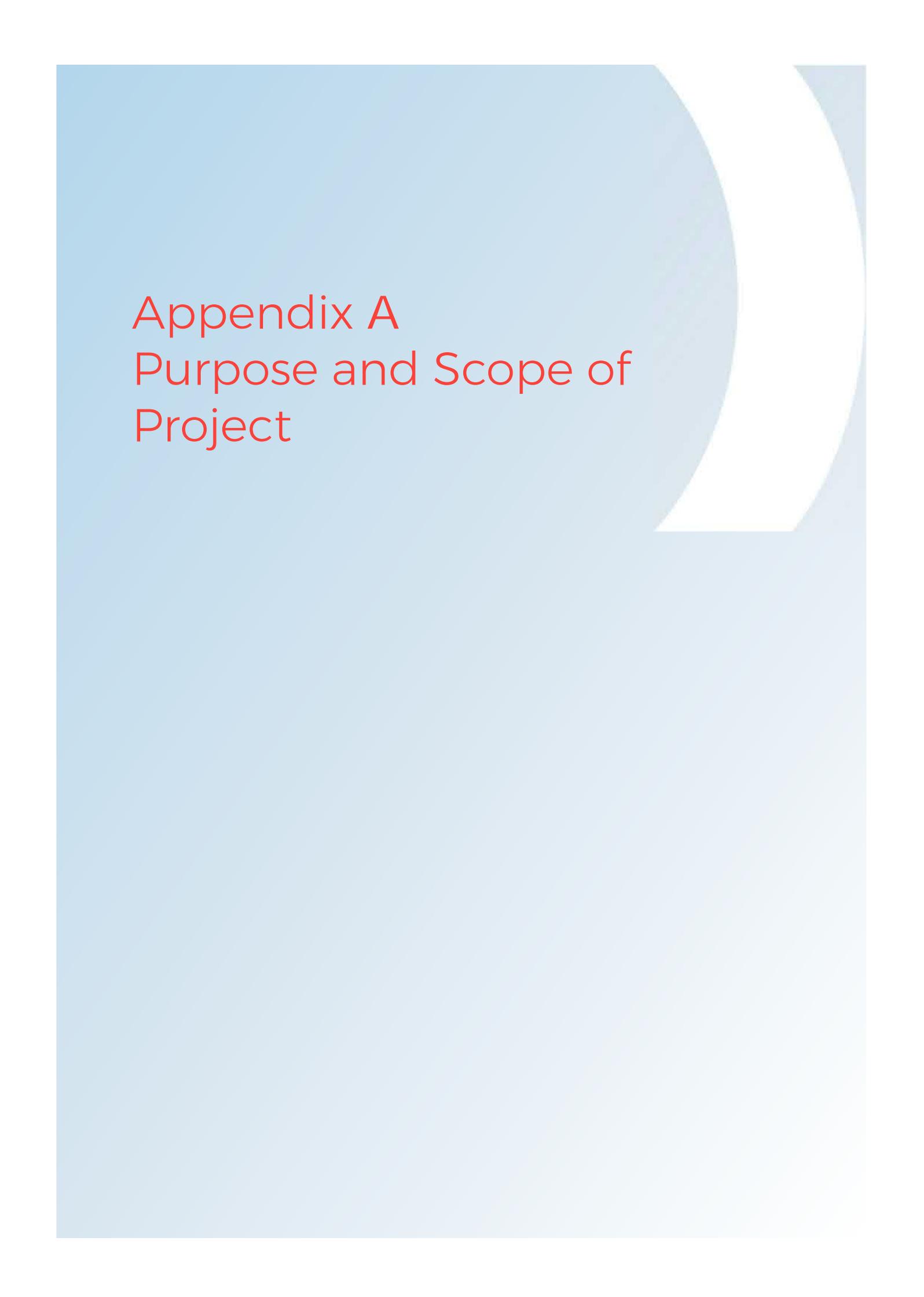
- Step 1: GIS layer maintenance
  - Validate known private water supplies across each district identified through interviews and surveys, to confirm the source of information and confidence. This will include information on the supply source and population served.
  - Confirm the extent of each private water supply through linked parcels in GIS.
  - Link to survey(s) data and reporting stored in a separate database or shared platform.
  - Retain reference datasets from desktop analysis (this project) as a separate GIS layer that can be updated or used in the future.

- Step 2: Private water supply database or shared platform
  - Detailed survey data associated with the private water supplies should be stored and maintained in a private database held by each council, or in a securely shared private platform allowing for sensitive customer information to be held.
  - Allowance for private water supply owners to notify councils of their private water supply status and interest in participating in engagement surveys through an online portal that is linked / stored in the council private water supply database or shared private water supply platform.
  - Discuss and confirm with Taumata Arowai the data requirements and system for storing private water supply data in the future, to confirm the extent and use of a centralised system as opposed for developing a locally based system.
- Step 3: Survey data capture
  - Capture of new private water supply information and maintenance of existing data should be performed through a survey application such as Survey 123. This application will need to work across all four councils, allowing updates to the council private water supply database or shared private water supply platform.
  - The survey application will need to provide consistency with the existing survey schema, capture lessons learnt from this investigation. It is recommended that guidance is sought from Taumata Arowai for maintaining and updating private water supply information for the future.

## 6.6 Other uses for the information

The information about private water supplies will also be useful to councils in a wider context, for example when processing building consents and resource consents. The regional council is required to protect drinking water sources from contamination and knowledge of the location of private water supplies will be very useful in this regard.

The information about the needs of communities not currently served by a council water supply will also inform the councils' Long Term Plans. In some cases, the most appropriate solution may be to extend the existing water supply reticulation to serve properties on the outskirts of town, or to provide new water supply schemes to whole communities.



# Appendix A

## Purpose and Scope of Project

# Appendix A – Purpose, Scope, Programme and Completion Date for Services

## 1. Purpose

1.1. The purpose of this project is to assess (to the extent defined in this Appendix A) private drinking water supplies before the Water Services Bill is enacted, so that the Hawke’s Bay councils can understand how best to assess private water supplies, support their communities to provide safe drinking water, to influence the way these assessments are carried out across the rest of New Zealand and to understand their potential liability with under-performing private water supplies.

## 2. Scope of Services

2.1. The Consultant will undertake for the Client an assessment of private water supplies in accordance with the stages and timeframes set in clause 2.5 of this Appendix A0 on behalf of the Napier City Council, Central Hawke’s Bay District Council, Hastings District Council and Wairoa District Council.

2.2. In order to enable the parties to fulfil their respective obligations under this Agreement, the Consultant shall implement and perform its obligations as set out in the project delivery plan specified as a key deliverable in Stage 1 – Project Set Up and Project Management. The Consultant shall provide a draft project delivery plan within two (2) weeks of the start of this Agreement and a final project delivery plan within one (1) week of the project start up hui.

2.3. The project delivery plan key milestone dates may be amended by agreement of the Parties in accordance with clause 7 of the Agreement and **Appendix H**.

2.4. Adherence to the delivery dates set out in the project delivery plan is contingent in part on each party’s reasonably expedient turnaround of information, document reviews and approvals where such review and approval is necessary.

2.5. The Consultant shall deliver the assessment and deliverables on a staged basis as set out below.

STAGE 1	PROJECT SET-UP AND PROJECT MANAGEMENT
<b>Objective</b>	
<p>The objective of Stage 1 is to establish the project direction, set the indicative research design and finalise the overall project plan.</p> <p>The project will commence with a start-up hui to understand and agree on:</p> <ul style="list-style-type: none"> <li>● What data and information will be sourced and their purpose, relative to the agreed project objectives</li> <li>● How best to honour the principles for community partnership established during the Hawke’s Bay’s independent Three Waters Review</li> <li>● Determine what success will look like, based on the agreed Project Objectives</li> <li>● The Project Delivery Plan, timeframes, roles and responsibilities confirmed.</li> </ul>	
<b>Task breakdown</b>	
<ul style="list-style-type: none"> <li>● The Consultant will prepare a presentation for the start-up hui (circulated prior to hui) proposing the draft research objectives, draft research design methodology and proposed success measures for discussion at hui.</li> <li>● The Consultant will prepare a project delivery plan with key information about the project: contract, budget, health and safety plan, key client and stakeholder contacts, resourcing,</li> </ul>	

risk register, deliverables, programme, hold points and milestones. This will be circulated prior to hui and confirmed at the hui.

### Assumptions

- One (1) start-up hui in Hawke’s Bay lasting 4 hours with key council project stakeholders and the Consultant’s Project Director, Project Manager, Technical Lead, Engagement Lead, Research Lead and Communications Lead to attend.
- One (1) weekly meeting (0.5 hours per week) with Regional Programme Director for up to 22 weeks (26 July to 17 December inclusive). Project Manager, Technical Lead and Engagement Lead to attend in person in Napier or via MS Teams. Technical Lead to attend via MS Teams.
- One (1) monthly meeting (1 hour per month) with Regional Programme Director and Council Infrastructure Leads for up to 6 months (July to December inclusive). Project Manager, Technical Lead, Engagement Lead and Communications Lead to attend in person in Napier or via MS Teams. Project Director and Technical Lead to attend via MS Teams.

### Risks

- Changing nature of the project based on ongoing updates at a Central Government Level. (Objectives need to remain static).

### Council Inputs / Opportunities

- Participate in start-up hui (Infrastructure Leads and Māori Advisors, Taumata Arowai)
- Provide requested data sets
- Confirm list of key documents to review (up to 12 documents)

### Key Deliverables

- Project Delivery Plan which will include budget, health and safety plan, key client and stakeholder contacts, resourcing, risk register, deliverables, programme, hold points and milestones.
- Project definition document - research objectives, research design methodology and success measures

### Timing

Draft project delivery plan: 2 weeks after contract start date  
 Updated project delivery plan and project definition document: 1 week after start-up hui date

## STAGE 2 INVESTIGATE SCOPE

### Objective

The objective of Stage 2 is to identify and investigate known and possible private water supplies.

### Task breakdown

- Obtain data available online to assist with identifying private water supplies and potential risks to private water supplies
- Request information about private water supplies from external parties (Ministry of Education, Kāinga Ora, Drinking Water Assessor)

- Obtain information from each Council's identified staff members via interviews
- Complete review of key documents (e.g. Water Services Bill, previous water supply assessments)
- Validate and integrate data into ArcGIS Online, categorise water supplies into:
  - Private networked supplies fed from Council owned water supplies (large)
  - Private networked supplies (>25 people) and specified self-supplies (medium)
  - Small private networked supplies (<25 people) (small)
- Draft matrix criteria for assigning sub-categorisation of medium and small private water supplies.
- Write a draft water supply assessment survey for qualitative (FOLKL) and quantitative (WSP) information.
- Review and feedback from Client team, partners and key stakeholders to critique draft matrix criteria and draft water supply assessment survey (pre-circulate draft documents and may require specific meeting to discuss).
- Load water supply assessment survey into data capture tool (Survey 123).

### Assumptions

- Thirty three (33) interviews and analysis, each to be conducted by one person from WSP and one person from FOLKL:
  - Six staff members from each of Wairoa, Central Hawke's Bay, Hastings and Napier Councils (suggest one each from 3 Waters, Environment and Public Health, Building Consents/Building Compliance, Resource Consents, Community Facilities, Communications and Engagement) (24 No. interviews).
  - Three staff members from Hawke's Bay Regional Council (suggest Resource Consents, Surface Water and Groundwater) (4 No. interviews)
  - Interviews for each Council to be conducted within one day.
  - Iwi representatives (4 No. interviews)
  - Drinking Water Assessor (1 No. interview)
- One (1) trip each to Napier, Wairoa, Central Hawke's Bay and Hastings for interviews
- Twelve (12) documents in total to review
- Design of 3 sub-criteria each for the Medium and for the Small Private Water Suppliers.
- Council staff and meeting rooms are available for staff interviews on a single day per Council.
- All interviews are conducted within one week.
- Councils co-ordinate interviews and meeting room bookings.
- Meeting to discuss matrix criteria and water supply survey assessment will be required and held in either Napier or Hastings.
- Extracting information from building consents, building warrants of fitness and land use consents to identify possible water sources is excluded.

### Risks

- More documents may need to be reviewed.
- Water supply assessment surveys may vary between districts and different categories of private water suppliers.
- Difficulty in identifying private water supplies from available information
- Much of the information provided will be confidential. Work will be undertaken in accordance with the Privacy Act 2020.

### Council Inputs / Opportunities

- Council staff participate in interviews and provide information about known and possible water supplies
- Each Council communicates the project and coordinates the time slots and meeting room bookings for internal meetings for the key staff interviews.
- Provide feedback on draft water supply assessment survey

<ul style="list-style-type: none"> <li>• Taumata Arowai meta-data standards have been defined and provided to the Client and Consultant.</li> </ul>	<ul style="list-style-type: none"> <li>• Council interviews and Leads may identify which area should be tested for small Private Water Suppliers.</li> </ul>	
<b>Key Deliverables</b>		<b>Timing</b>
<ul style="list-style-type: none"> <li>• Situational analysis report which covers: <ul style="list-style-type: none"> <li>○ Summary of each of the datasets, confirming the source, reliability (confidence) and how it is intended to be used for the project.</li> <li>○ Scope of previous related studies, key findings, issues identified, assumptions and information gaps</li> <li>○ Thematic analysis drawing key insights from the subject matter experts and desktop research analysis to inform the next steps towards defining the types of communities.</li> </ul> </li> <li>• Finalised water supply assessment survey form</li> <li>• All data and associated reports will be uploaded to the WSP project SharePoint site and to ArcGIS Online providing electronic visibility of the data and access to the latest files. The location and category of known and possible private water supplies will be shown, along with known data about those water supplies.</li> </ul>		3 weeks

### **STAGE 3    DEFINE COMMUNITIES**

#### **Objective**

The objective of Stage 3 is to:

- Define the extent and nature of communities (and potential sub-category types)
- Define case study areas
- Define and frame the communication messages/incentives
- Undertake water supply assessments for large private water supplies.

#### **Task breakdown**

- Communications approach and messaging developed for large private water supplies.
- Logistics for undertaking water supply assessments of large private water supplies
- Undertake water supply assessments for large private water supplies (to continue through to Stage 5 if required) (30 No. large water supplies)
- Assess the potential need for incentives
- Apply building use category to define sub-categories for medium private water supplies (e.g. schools, marae, community halls, farms, campsites, accommodation, vineyards)
- Input from analysis to further develop matrix criteria, adjust water supply assessment, refine method for engagement and draft messaging for medium private water suppliers.
- Engage with a sample of medium and small private water suppliers in each District to understand how they would like to be communicated with. This may be via workshops and/or interviews.
- Analysis from medium private water supplies test samples and insights drawn to help define test areas and criteria for small private water supplies.

## Assumptions

- Due to Privacy Act requirements Council will need to make first contact with supplies to seek permission to engage.
- Email correspondence to arrange a time to conduct an interview will be sufficient for large supplies and that contact details are already known or easily accessible via Council Staff.
- Water supply assessments for 30 large supplies to give a level of data that will provide quality insights.
- Incentives have not been included for large suppliers. However, this may come in the form of offering to share key insights from this Project – to be discussed with the Project Control Group (“PCG”).
- The most appropriate ‘test area’ for each four (4) councils will be assessed based on insights gained from the research to date.
- 1 day allocated per council to engage with a sample of medium private water supplies
- 1 day allocated per council to engage with a sample of small private water supplies

## Risks

- Difficulty contacting and co-ordinating visits to water suppliers, may take longer than expected
- Water suppliers may be reluctant to participate

## Council Inputs / Opportunities

- Council to contact water suppliers in the first instance to introduce the project and to request permission to share their contact details with the Consultant
- Council review and final sign off of communication messaging to large supplies.
- Suggest types of communities to engage with
- Contact details for private water suppliers (e.g. from ratings database)
- Discuss and confirm the approach for the next stage

## Key Deliverables

- Matrix Criteria Tool for sub-categorisation of medium and small private water supplies.
- Analysis and data collection of large private water supplies.
- Presentation on insights on the three types of communities to the PCG, discuss and confirm the approach to be taken in the next stage.

## Timing

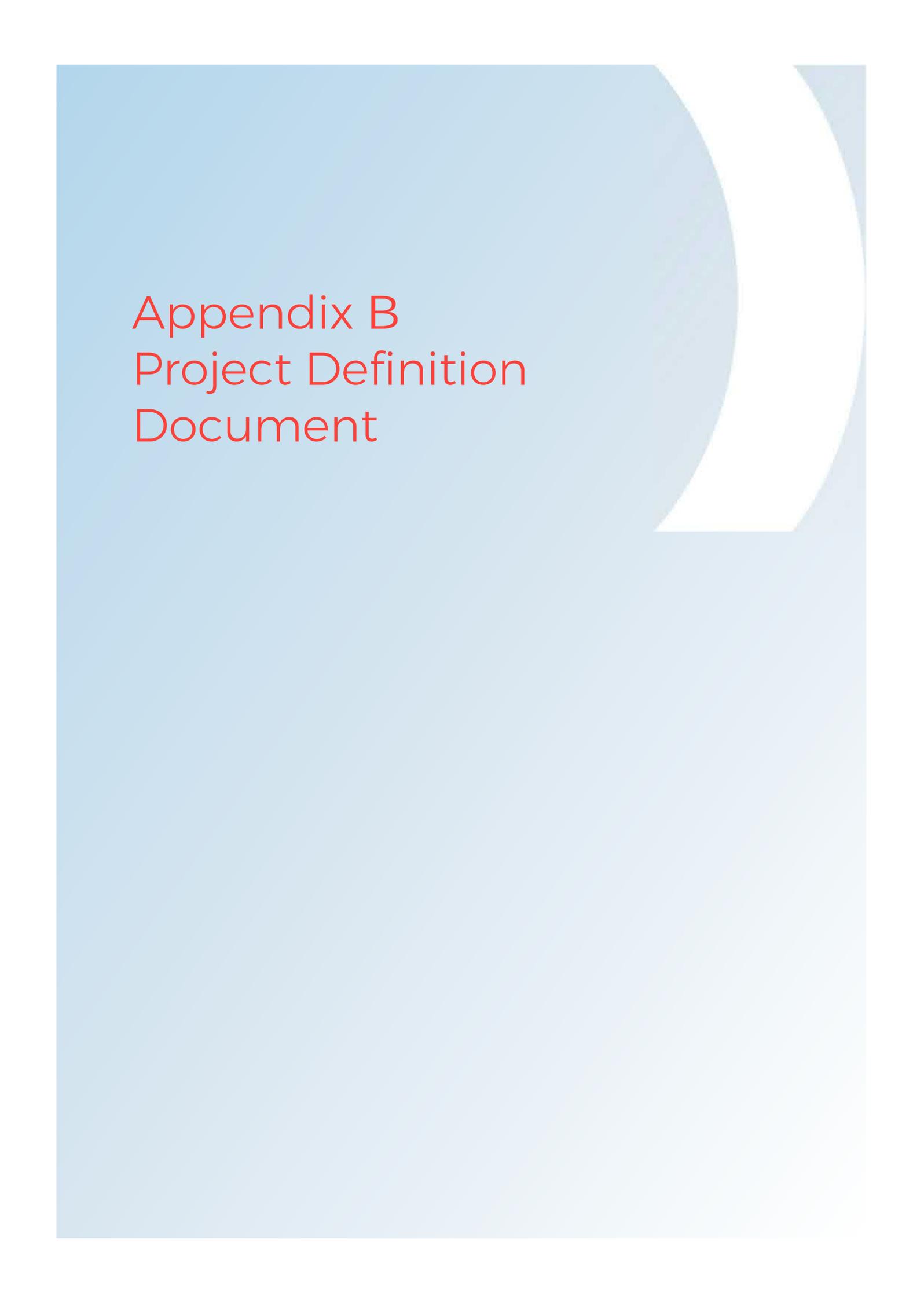
3 weeks

<b>STAGE 4 COMMUNICATIONS AND ENGAGEMENT PLAN</b>	
<b>Objective</b>	
The objective of Stage 4 is to develop the communications and engagement plan for medium and small private water supplies and finalise the research design to test 4 areas for the councils.	
<b>Task breakdown</b>	
<ul style="list-style-type: none"> <li>• Develop and finalise engagement strategy and communication approach for medium private water supplies.</li> <li>• Finalise research approach for engagement and communication with the agreed sample area of small private water supplies.</li> <li>• Create required collateral for communications of the project (copy, design, creative material).</li> <li>• Manage targeted media (e.g. targeted Facebook advertising, flyers).</li> </ul>	
<b>Assumptions</b>	
<ul style="list-style-type: none"> <li>• Management and execution of media collateral and estimated cost of media collateral e.g. print, creative, design for the total project has been included in Stage 4, however the assumption is that some management and execution of media communication may be required prior to this stage.</li> <li>• Communications collateral costs have been based on the assumption that an innovative event will be developed to engage each test community for small private water suppliers and that print material (leaflets) up to 1,000 suppliers may be communicated with, for example via leaflet (Direct cost, invoiced on actuals up to this cap).</li> <li>• Public Relations will be managed by Council staff. FOLKL will produce and manage the strategy and copy for communication as part of the project delivery.</li> </ul>	
<b>Risks</b>	<b>Council Inputs / Opportunities</b>
<ul style="list-style-type: none"> <li>• Timing for sign off for copy and to design and deliver print and communication material may hold up timelines.</li> </ul>	<ul style="list-style-type: none"> <li>• Review and approval of Communications and Engagement Plan</li> <li>• Public Relations will be managed by Council staff.</li> </ul>
<b>Key Deliverables</b>	<b>Timing</b>
<ul style="list-style-type: none"> <li>• Communications and Engagement Plan</li> </ul>	1 week

<b>STAGE 5 ASSESS AND TEST A SAMPLE OF EACH COMMUNITY</b>	
<b>Objective</b>	
<p>The objective for Stage 5 is to undertake assessments of a sample of medium and small private water supplies.</p>	
<b>Task breakdown</b>	
<ul style="list-style-type: none"> <li>• Implement the engagement method to find medium and small private water supplies that haven't already been identified in Stage 2.</li> <li>• Logistics for undertaking water supply assessments of a sample of medium and small private water supplies</li> <li>• Train staff who will undertake the water supply assessment surveys.</li> <li>• Undertake assessments of a sample of small and medium private water supplies in the four councils (interviews and workshops/events).</li> <li>• A thematic analysis to provide insight around who the small private networked suppliers are, including the values, concerns, constraints and any opportunities that will help to provide a greater understanding of how best to communicate and engage at scale. This insight, overlaid by the data location areas, outlined in Stage 3, will deliver an existing network base, key ways to provide communication, incentives and appropriate support to this category. The research and analysis would be completed during this phase and delivered as part of Stage 6.</li> </ul>	
<b>Assumptions</b>	
<ul style="list-style-type: none"> <li>• Twenty (20) water supply assessments (five (5) per council) for medium private water supplies, to be undertaken by two people (one (1) hour on site per interview).</li> <li>• Twenty (20) water supply assessments (five (5) per council) for small private water supplies, to be undertaken by two people (one (1) hour on site per interview).</li> <li>• Analysis of up to three (3) qualitative questions from the medium and small water supply assessments</li> <li>• One (1) workshop/event per District (one (1) day per District) for private water supplies.</li> </ul>	
<b>Risks</b>	<b>Council Inputs / Opportunities</b>
<ul style="list-style-type: none"> <li>• Health and safety risks with staff visiting private water supplies</li> </ul>	<ul style="list-style-type: none"> <li>• Council to contact water suppliers in the first instance to introduce the project and to request permission to share their contact details with the Consultant</li> <li>• Details regarding any CRIP (Customer Risk Indicator Profile) rated properties</li> <li>• Council input into selection of private waters supplies to be assessed</li> </ul>
<b>Key Deliverables</b>	<b>Timing</b>
<ul style="list-style-type: none"> <li>• Assessment of Private Water Supplies</li> </ul>	4 weeks

<b>STAGE 6 FINAL REPORT WRITING</b>	
<b>Objective</b>	
<p>The objective of Stage 6 is to collate all information and present this via a report and GIS database that the Councils can continue to use and update in the future.</p>	
<b>Task breakdown</b>	
<ul style="list-style-type: none"> <li>● Collate and present all information about private water supplies in a GIS platform (interactive GIS viewer using ArcGIS Online). Non-spatial data will be recorded in related data tables along with links to photographic records and other related documents.</li> <li>● Prepare a final project report which covers: <ul style="list-style-type: none"> <li>○ Project Definition – Outputs from project inception workshop</li> <li>○ Community Engagement Plan – Approach, development and capture</li> <li>○ Data Collection and Integration – Summary of datasets, assumptions and how they have been applied, recommendations for future improvements</li> <li>○ Investigate and Assess - Physical assessments to confirm and capture asset details on water source / private supplies</li> <li>○ Spatial Plan – Capture all relevant datasets spatially with used define interactive theming Reporting - Summarising findings, gaps and recommendations</li> <li>○ Prioritisation Plan – Risk based approach listing supplies / buildings to be prioritised for further investigation / immediate follow up</li> <li>○ Maintenance Plan – Guidance on how to maintain the data / information for future updates</li> <li>○ Qualitative Insights that have been investigated throughout this project to address the project objectives.</li> </ul> </li> <li>● The report will be designed to be read together as a whole region, but which can be sectioned out to address the specific detail of each council.</li> <li>● Present the key project findings to the client team.</li> </ul>	
<b>Assumptions</b>	
<ul style="list-style-type: none"> <li>● One (1) presentation of report.</li> <li>● Presentation is in either Napier or Hastings. Consultant Project Director, Project Manager, Technical Lead, Engagement Lead, Research Lead and Communications Lead to attend in person in Napier or Hastings.</li> <li>● Draft report is delivered in December.</li> <li>● Final presentation is completed in early February.</li> <li>● Taumata Arowai meta-data standards have been defined and provided to the project team</li> </ul>	
<b>Risks</b>	<b>Council Inputs / Opportunities</b>
<ul style="list-style-type: none"> <li>● <b>Delays in earlier stages delay final deliverables</b></li> <li>● <b>Taumata Arowai has not defined requirements and standards in the timeframe</b></li> </ul>	<ul style="list-style-type: none"> <li>● Take the findings of the project to roll out region-wide private water supply assessment</li> </ul>
<b>Key Deliverables</b>	<b>Timing</b>
<ul style="list-style-type: none"> <li>● Written report which contains the following sections: <ul style="list-style-type: none"> <li>○ Project Definition – Outputs from project inception workshop</li> <li>○ Community Engagement Plan – Approach, development and capture</li> </ul> </li> </ul>	4 weeks

<ul style="list-style-type: none"> <li>○ Data Collection and Integration – Summary of datasets, assumptions and how they have been applied, recommendations for future improvements</li> <li>○ Investigate and Assess - Physical assessments to confirm and capture asset details on water source / private supplies</li> <li>○ Spatial Plan – Capture all relevant datasets spatially with used define interactive theming</li> <li>○ Reporting - Summarising findings, gaps and recommendations</li> <li>○ Prioritisation Plan – Risk based approach listing supplies / buildings to be prioritised for further investigation / immediate follow up</li> <li>○ Maintenance Plan – Guidance on how to maintain the data / information for future updates</li> <li>● GIS Data in format that councils can use in their own systems and that meets Taumata Arowai categorisation requirements (if available)</li> <li>● Presentation of the key project findings</li> <li>● All data will be collected and provided in accordance with the Privacy Act 2020</li> </ul>	
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# Appendix B Project Definition Document



# Hawke's Bay Three Waters Private Water Supply Assessment - Project Definition Document

## 1 Purpose

The purpose of this project is to assess private drinking water supplies before the Water Services Bill is enacted, so that the Hawke's Bay councils can understand how best to assess private water supplies, support their communities to provide safe drinking water, to influence the way these assessments are carried out across the rest of New Zealand and to understand their potential liability with under-performing private water supplies.

## 2 Introduction

Water supply assessments are a new requirement proposed in the Water Services Bill. The four Hawke's Bay territorial authorities (Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council) are starting this assessment in advance of the Bill being enacted with funding from the Government's stimulus funding for Three Waters Reform. WSP and its subconsultant FOLKL have been commissioned to undertake this work.

The Water Services Bill also proposes that Taumata Arowai (the new drinking water regulator) and territorial authorities will need to work with under-performing water suppliers to help bring them up to standard, and for the territorial authority to take over those water supplies if those efforts fail. The Department of Internal Affairs has estimated that there may be 75,000 private water supplies across the country. Based on the population of Hawke's Bay, this indicates that there could be around 2,700 private water supplies in the region.

The project involves identifying as many private water supplies as possible in the Hawke's Bay region, undertaking research to understand how best to engage with private water suppliers, and undertaking water supply assessments for a representative sample of private water supplies.

This project is occurring in parallel to Three Waters Reform, and as such, there will be political risk and potential confusion which may arise from this project. This will be carefully managed, as part of the project delivery plan.

## 3 Research Objectives

The research objectives for this project are:

- To capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawkes Bay region.
- To develop a repeatable methodology for undertaking assessments of private water supplies
- To develop and validate a communications and engagement framework for future private water supply assessments
- To explore the community's values and perception of water and private water supplies within the Hawke's Bay region to inform the communications and community engagement approach
- To understand the expectations and needs of private water suppliers and their supplies within the Hawke's Bay region



- To investigate private water suppliers' understanding of safe and accessible drinking water within the Hawke's Bay region

## 4 Research Design Methodology

The philosophy and methodological approach to this project will be designed with a foundation of the following points:

- Community-up approach
- Qualitative methods
- Quantitative methods

### 4.1 Community-up approach

The investigation will adopt a community-up research approach using a sample of water suppliers. This will be founded in developing relationships within communities, to ensure researchers can gain a strong sense of knowing and understanding surrounding the research topic itself.

This approach includes building knowledge based on a respect for people and the intrinsic value of their contextual understanding to the investigation and respective objectives. A meaningful engagement is established through meeting people face-to-face, in their own time and place.

An aim of the community-up approach is to arrive at a shared understanding of the purpose and outcomes of the project, and to ensure a strong foundation for continued partnership can be achieved for future activity.

### 4.2 Qualitative methods

Qualitative methods use 'thick data' such as words and observations as a basis to construct knowledge and build understanding around a given direction of inquiry.

A qualitative mode of analysis helps to establish both broad contextual knowledge and a deeper understanding of a given topic, and in this case, the topic of water more generally in the region, and private water suppliers specifically within each district.

A reflective engagement approach will be conducted within the qualitative mode of analysis and involves understanding knowledge through the process of taking multiple steps and time to reflect on the topic, ensuring sufficient space is allowed to determine insights and information.

Qualitative methods for this inquiry are likely to include interviews, workshops, surveys, observations, participatory action research and other techniques to collaboratively obtain and gain a deeper level of understanding from the participants.

In alignment with the community-up approach, qualitative methods involve establishing relationships to ensure there is trust through transparency, consistent and timely communication with key stakeholders and communities. The outcome of this approach will be demonstrated in the successful delivery of the communications and community engagement strategy.

### 4.3 Quantitative methods

Quantitative methods use objective measurements and data to inform research. Multiple sources of information will be used to identify private water supplies in the region:

- Resource consents (e.g. water takes)
- Registered drinking water supplies



- Previous sanitary surveys undertaken by Councils
- Private water supplies identified by Council staff, the Drinking Water Assessor, Kāinga Ora etc.
- Overlaying multiple sources of GIS information (e.g. properties not connected to a Council network, clusters of buildings, aerial photographs) to identify possible private water supplies not identified through other means.

## 5 Project Success Measures

There is an overarching commitment to determining a trusted and sustainable partnership approach, between Hawke's Bay Councils and mana whenua representative entities. This will both guide and influence the investigation success measures and anticipated future activity surrounding the Three Waters Reform.

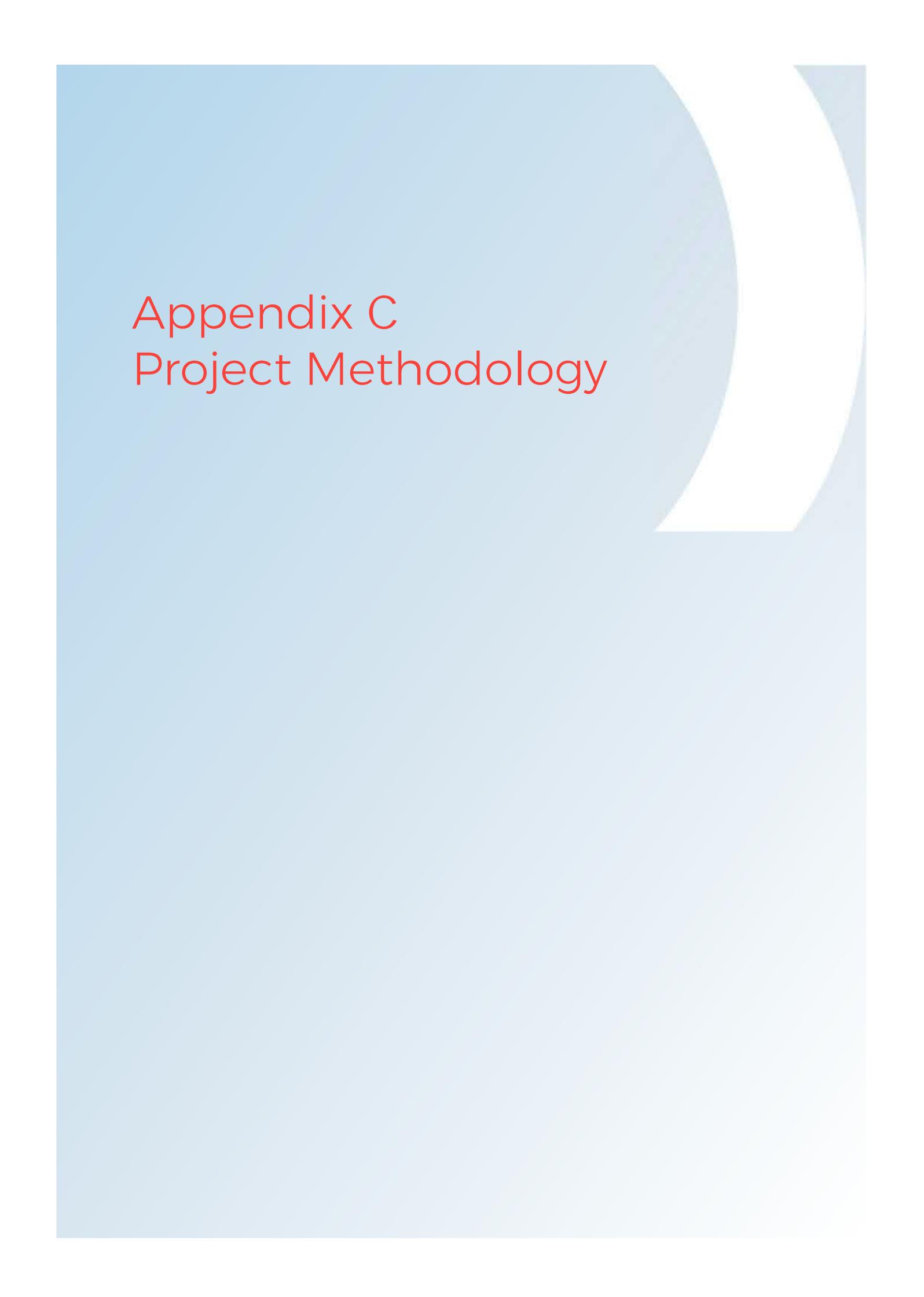
The project success measures from the project start-up hui held on 6 August 2021 are summarised as follows.

The success measures for this project are to:

- Gain an improved understanding of private water supplies, thus giving Councils and communities a better understanding of risks and opportunities
- Provide data and insights supplied to inform future programmes to deliver safe, accessible and reliable drinking water.
- Develop a sustainable approach for future private water supply assessments, communication and engagement
- Support private water suppliers participating in the project to understand their current and proposed responsibilities
- Deliver data and insights that can help prepare Councils for the enactment of the Water Services Bill.

The success measures in the longer term are:

- Cultural, environmental, social, economic and public health requirements will be identified to help the Hawke's Bay communities to provide safe and sustainable water supplies.
- Private water suppliers are able to identify Council's role and their own responsibility within the broader Three Water Reform programme at a Central Government level.
- Engaged communities will be clear in their understanding and awareness around the purpose and implications of the Three Waters Reform programme. The private water supply communities are aware of and engaged in their responsibilities as private water supply entities, with a good level of understanding around the management and operational requirements to comply with regulatory standards.



# Appendix C

## Project Methodology

# Appendix C – Project Methodology

## 1 Identifying Private Drinking Water Suppliers

Stage 2 of the project was to identify as many private drinking water suppliers as possible in Hawke's Bay, to understand who the suppliers are and where their water supplies are located.

"First and foremost, we need to 'understand' so that we can then 'make a plan' to put us in the best position for regulatory change within Hawke's Bay." - participant at start-up workshop.

The key methods to identify private drinking water suppliers were:

- 1 Drawing on the knowledge of the councils' project team at the project start-up workshop
- 2 Reviewing previous Drinking Water and Sanitary Services Assessments
- 3 Interviewing stakeholders, including a range of staff from the councils and the District Health Board
- 4 Using geospatial analysis to identifying locations of known and potential private drinking water supplies.

### 1.1 Project start-up workshop

A key reason for undertaking this project was that councils as organisations had very little information on who private drinking water suppliers were, and the extent and nature of their water supplies. Instead, most of the existing knowledge of suppliers was via personal relationships and connections to individuals in the community. By gaining an improved understanding of private drinking water suppliers and their water supplies, councils and communities will be in a better position to meet their obligations under the Water Services Act. They will also better understand the risks and be able to plan for providing access to safe drinking water for their communities. Recorded information within council organisations provides a foundation for undertaking water services assessments under the LGA. A participant at the project start-up hui said:

"We are undertaking this project to be prepared and understand the risk, context and scale - the gap between what currently is known and also what we don't know." - participant at start-up workshop.

#### 1.1.O Method

A project start-up workshop was held with the project team: Councils' Infrastructure Leads and other senior staff, the Regional Programme Director and the Drinking Water Assessor from the District Health Board. The purpose of this workshop was to agree the project objectives and success measures, and to draw out the current understanding of private drinking water suppliers and their supplies. Data was gathered through workshop exercises and notes which were analysed, and informed key findings.

#### 1.1.1 Key findings

The key findings of the project start-up workshop were:

- Councils had limited knowledge and historical context of private drinking water suppliers and their water supplies.

- It would be a challenge to define and identify communities and gain information on supply set up and ownership.
- There may be high levels of fear and frustration around what the regulatory changes will mean for private water suppliers in the future.
- These suppliers would want to know what is happening, why it is happening and what this means for them and their supplies. Some will be proud of their independence as a private water supplier.
- This project could offer a platform to engage with communities, provide support and education in an accessible and inclusive manner.
- The project needs to offer opportunities for two-way dialogue, to ensure questions that private water suppliers may have can be answered.
- A list of known private drinking water suppliers was collated which formed the foundation of potential people to engage with in this project.

**Insight:** The workshop helped to formulate the foundational knowledge around what was and was not understood about private drinking water suppliers in the Hawke's Bay region. This step helped to develop the interviews with key stakeholders and determine key documents and GIS data that could be used to identify potential private water supplies.

## 1.2 Previous drinking water assessments

The Water Services Act made an amendment to s125 of the LGA to require territorial authorities to undertake a more comprehensive assessment of drinking water services in their districts every three years, with the first assessment due by 1 July 2026. The assessment requirements include:

- Identifying every community that receives a drinking water service
- Describing the nature of the drinking water service
- Describing the characteristics of the community
- Assessing whether the quantity of water is sufficient to meet current and future needs, including identifying any reasonably foreseeable risks to access to drinking water
- Describing the safety and quality of the drinking water and identifying any public health risks
- Undertaking an assessment of wastewater and sanitary services
- Assessing the consequences if the community lost access to its drinking water service and outlining a plan to provide for ongoing access

Drinking water supplies that are owned or operated by the Crown (e.g. Ministry of Education, Department of Conservation) are specifically excluded from the requirements of s125 of the LGA.

Council owned or managed supplies were not assessed under this project, as the councils already have a good understanding of these. The project scope was limited to private drinking water supplies that meet the definition of a drinking water supply under the Water Services Act.

### 1.2.0 Method

Under the previous version of s125 of the LGA, territorial authorities had to undertake an assessment of drinking water and sanitary services from time to time. All councils in the Hawke's Bay prepared these in 2005. These were reviewed for this project and documented in the Situational Analysis Report (see Appendix D).

### 1.2.1 Key findings

A summary of each district's previous drinking water assessment is summarised below.

### 1.2.1.0 Central Hawke's Bay District

The communities in the Central Hawke's Bay District that did not have a council owned water supply were:

- (a) Onga Onga
- (b) Tikokino
- (c) Elsthorpe
- (d) Mangakuri Beach
- (e) Pourerere Beach
- (f) Blackhead Beach
- (g) Whangaehu Beach
- (h) Aramoana (Shoal Bay)

The water for most of these communities was rainwater collected in tanks used for individual properties. Two communities had a combination of rainwater and pumped bore water, sometimes feeding multiple households. The key issues for these communities were being able to secure water of sufficient quantity and quality.

When the sanitary survey was conducted in 2005, Onga Onga was considered the highest priority for an improved water supply, along with the beach communities, due to the population fluctuations, numbers of people visiting and likelihood of future development. This project found that the focus for Onga Onga now was securing access to drinking water during droughts, which is becoming more of an issue with climate change.

The recommendations for the higher priority communities were to establish whether a water source and supply network were feasible.

### 1.2.1.1 Napier City

The communities in Napier City that did not have a council owned water supply and private water supply systems served the public for drinking water were:

- (a) Jervoistown
- (b) Meeanee Township
- (c) The Loop
- (d) Awatoto
- (e) Kaimata
- (f) Eskdale
- (g) Bay View Rural
- (h) Landcorp Farm
- (i) Poraiti
- (j) Redclyffe

This survey found that 96% of the community was serviced by a public water supply.

Jervoistown, Meeanee Township, The Loop and Awatoto were served by private water supply systems; the majority either individual or shared bores. These areas obtained water from the same aquifer as the Napier City Council public supply, which has an abundant source of good quality water.

In Kaimata, Eskdale, Bay View Rural, Landcorp Farm, Poraiti and Redclyffe, 78% of the population (125 dwellings) used bores or rainwater for water supply; the remainder of the population received a reticulated water supply. The bore water comes from an aquifer in limestone and is hard. It sometimes has appreciable iron content also. These are generally aesthetic problems only and there was no evidence to suggest the water was not bacteriologically sound.

Around 20% of the non-reticulated population used rainwater and, on occasion, they experienced water shortages, and resorted to tankered water for supplementary drinking needs.

Extension of the water supplies to connect to a reticulated system was considered to be suitable only for multiple housing developments where the costs of extending the system to the required location could be shared among the beneficiaries.

#### 1.2.1.2 Hastings District

The communities in the Hastings District that did not have a council owned water supply, were partly reticulated or where the bulk of the community was reticulated were:

- |                        |                      |
|------------------------|----------------------|
| (a) Haumoana           | (mostly reticulated) |
| (b) Te Awanga/ Clifton | (mostly reticulated) |
| (c) Waimarama          | (mostly reticulated) |
| (d) Maraekakaho        | (no reticulation)    |
| (e) Waipatiki Beach    | (partly reticulated) |
| (f) Whirinaki          | (mostly reticulated) |
| (g) Puketapu           | (no reticulation)    |
| (h) Waikoau            | (mostly reticulated) |
| (i) Fernhill/ Omahu    | (partly reticulated) |
| (j) Bridge Pa          | (no reticulation)    |
| (k) Pakipaki           | (partly reticulated) |
| (l) Te Hauke           | (no reticulation)    |
| (m) Te Pohue           | (mostly reticulated) |
| (n) Ocean Beach        | (no reticulation)    |

#### 1.2.1.3 Wairoa District

The communities in the Wairoa District that did not have a council owned water supply in 2005 were:

- (a) Tuai village
- (b) Mahanga Beach Settlement
- (c) Approximately 50% of the Wairoa population

Private water supplies in the Wairoa District relied on water from a variety of sources including river, stream, spring and bore takes and collection of roof water (with supplementation from private suppliers of town supply water). The supply at Tuai is sourced from the Waimako spring and was untreated. It supplied a population of approximately 270 people. WDC commenced monitoring of the Tuai Spring during 2003. The supply at Mahanga comes from a shallow bore located in farmland and was untreated. It was only intended as a supplementary non-potable supply and much of the community was also supplied by rainwater.

**Insight:** The previous sanitary survey assessments provided a good overview of water services in each district and identified some private water supplies in Hawke's Bay. They helped to inform locations to focus on for this project. They described methods that could be used for assessing drinking water supplies at a higher community level than at the individual supply level.

## 1.3 Interviews with key stakeholders

### 1.3.1 Method

A series of interviews were held with relevant council staff, Te Kupenga (the Māori Advisory Group of the five Hawke's Bay councils) and Hawke's Bay District Health Board staff. Interviews were recorded, transcribed, and thematically analysed. These interviews identified additional private water suppliers. They also strengthened the foundational knowledge about private drinking water suppliers and helped to guide and build the approach for engaging with them.

### 1.3.2 Key findings

A summary of the key stakeholder conversations is described below. The Situational Analysis Report in Appendix D provides a more comprehensive account of the initial findings.

#### 1.3.2.1 Council staff

Between 13 August 2021 and 27 August 2021 FOLKL and WSP conducted a total of 24 interviews with staff members from Central Hawke's Bay District Council, Hastings District Council, Wairoa District Council, Napier City Council and Hawke's Bay Regional Council. The interviews were conducted with 24 council staff members through online and face-to-face interviews.

Staff reflected that conversations during community engagement will be influenced by how private water suppliers feel about water. Water is of great importance to communities in the Hawke's Bay. People are connected to water through their lived experiences and the relationships that they have with it. This impacts on how they think about and respond to conversations about water.

There were many commonalities across the region in how people understood drinking water, however, each district had clear differences, for example with Napier City and Wairoa District councils tending to navigate conversations around topics of water quality, while Hastings and Central Hawke's Bay districts focused more on water quantity issues.

**Insight:** Some communities will be more receptive to receiving support and input than others. Communities may be sceptical about talking about or engaging in any water reform topics, as many have been through their own water-related issues and they may be concerned about future responsibilities. Others will not want to participate in any government-led regulation requirements at all.

**Insight:** Council staff will have a varied understanding of their obligations under the Water Services Act 2021. Establishing a core project team to carry out community assessments with defined roles, responsibilities and sound knowledge of the political and historical back context will be important.

#### 1.3.2.2 Te Kupenga

Multiple hui were held with Te Kupenga (the Hawke's Bay councils' collective Māori advisory teams) throughout the process to provide updates and seek feedback to understand how the project approach and engagement could incorporate Te Ao Māori principles. Te Kupenga were trusted advisors for the

regional direction of the project and engaging with individual district private water supplier communities, relating particularly to marae and papakainga but wider guidance to engage with Māori communities more generally was also discussed. From the various hui, the following key points were used to guide the project approach, methodology development and communications and engagement framework:

- (a) Do not make it Māori centric but all inclusive; suppliers will exist across commercial, social and cultural sectors.
- (b) Any cultural principle must acknowledge its whakapapa and reserve the right (space and time) for Māori to determine the place and hold the integrity of the situation.
- (c) Ensure conversations are not pre-emptive and assumptions are not made prior to engagement.
- (d) Ensure project material is clear and easy to understand.
- (e) Important that the Māori Lens is across all four well-beings (Ohanga, Taiao, Tangata Hapori and Ritenga Māori).
- (f) Rather than talking in bi-cultural terms, think of the partnership approach as bi-lateral.
- (g) Consider Papatūānuku and the need to nurture her and acknowledge the wai that has run dry as a result of activities.
- (h) Acknowledge the multiple organisations across the region. Reach out to the Taiwhenua and Post-Settlement Governance Entity groups, as well as the Māori Standing Committee, to ensure they are across this project early and that there aren't preconceived ideas about how to implement this project.

#### 1.3.2.3 Hawke's Bay District Health Board

The key points from the interview with staff from the Hawke's Bay District Health Board Drinking Water Assessors were as follows:

- (a) The previous Ministry of Health subsidy had been successful in upgrading and installing new water treatment plants. However, this was discontinued a few years ago and the Ministry does not appear to have any plans to replace it. Funding the ongoing operations and maintenance of these systems is particularly challenging for some water suppliers.
- (b) The District Health Board has GIS data on the locations of public and private water supplies across the region. This is used to notify water suppliers of 1080 drops. This data was subsequently provided to the project.
- (c) The District Health Board has extensive information on private water supplies which may be useful for future water services assessments.

#### 1.3.2.4 Taumata Arowai

The key points from the interview with Taumata Arowai's Regulatory Team Leader, Te Papaioea / Palmerston North were as follows:

- (a) The previous work that was done which estimated 75,000 private water supplies across NZ was done by mapping the areas covered by registered drinking water supplies (using data from Drinking Water Online), then looking for clusters of buildings outside those areas that could have a shared water supply (e.g. one bore and several buildings).
- (b) Other water suppliers around the country that have done these assessments have tended to follow a similar approach to that done in the national study.
- (c) The Water Services Bill says that the scope of the water supply assessment must include "all types of water supply arrangements, including communities (and households within those communities) that do not receive drinking water services supplied by network reticulation." This would mean that self-supplying

domestic dwellings should be assessed (currently not in the scope of this project). These could be assessed as in groups (e.g. houses using rainwater or bore water) noting that these systems are covered by the requirements of the Building Act.

- (d) Rainwater is not very reliable in Hawke's Bay due to the drier summers so fewer houses are likely to be relying on this as their sole source of water compared with elsewhere in New Zealand.
- (e) The regional plan should be checked to see if water takes below a certain volume are permitted (this makes it harder to find them as they do not need a resource consent).
- (f) Taumata Arowai had not done much thinking about the sorts of questions that would be asked or information gathered to complete a water supply assessment to meet the requirements of the Water Services Bill. However, the draft list of questions for the water supply survey for this project seemed to be on the right track and sounded comprehensive.

### 1.3.3 Process used to identify private water suppliers using GIS data

Multiple data sources were used to identify private water supplies, in addition to information provided by council staff during interviews. The full list of data sources is in Appendix E. The key data sources used were:

- Registered water supplies - the address of the water supply was used to locate the water supply. Council and school water supplies were removed, as these are not private water supplies. The number of people served was divided by 2.6 people per house (occupancy rate) to estimate the number of properties served. The nearest properties were assumed to be served by that supply.
- Properties that are connected to a council supply - properties that are rated for water were excluded from the analysis, as they are not private water supplies.
- Resource consents for water takes - information on all water permits in the Hawke's Bay region was obtained. The permits were manually filtered to exclude those that were clearly not for drinking water (e.g. dewatering, monitoring). Where it was unclear whether the water might be used for drinking (e.g. used for irrigation of a nursery), it was left in the data set.
- LINZ building layer - this was used to identify whether there was a building on the property and if so the area of the building. It was assumed that buildings with a footprint of less than 40 m<sup>2</sup> would not have a drinking water supply. Properties with no buildings or only buildings with a footprint of less than 40 m<sup>2</sup> were excluded from the analysis.
- Water supplies known to the Hawke's Bay District Health Board - the HBDHB maintains a GIS database of known private water supplies. This includes the address of the source location and the number of people served. As for the registered water supplies, the number of people served was divided by 2.6 people per house to estimate the number of properties served. The nearest properties were assumed to be served by that supply.
- Marae - it was assumed that any marae that are not on a council water supply would be a private water supplier.
- Buildings near a known or potential private water supply - it is well known that neighbours often share a water source. If a building was within a set distance of a known or potential water supplier, it was assumed to be served by the neighbouring water supply. It was unknown over what distances neighbours would share a water supply, so a range of distances were used (150 m, 500 m and 1 km).
- Proximity to council water supply mains - the data for properties rated for water was difficult to use in the format that it was originally provided by some councils. The GIS analysis included scenarios which assumed that any property within 150 m of a

council water supply main would be connected to that supply and therefore was excluded from the analysis. Better data about properties rated for water was provided by councils later in the project, so these scenarios are now less relevant.

The process logic used to identify known, potential and assumed private water supplies is shown in Figure 1-1. Six scenarios were run in GIS to identify private water supplies, as described in Table 1-1. As we now have better GIS data for properties connected to council water supplies, Scenarios 2, 4 and 6 are most relevant.

Table 1-1 : GIS Scenarios for Identifying Private Water Supplies

Scenario	Method for excluding properties connected to council water supplies	Distance assumed for buildings on neighbouring properties
1	Properties within 150 m of a council water supply main	150 m
2	Properties rated for water supply	150 m
3	Properties within 150 m of a council water supply main	500 m
4	Properties rated for water supply	500 m
5	Properties within 150 m of a council water supply main	1,000 m
6	Properties rated for water supply	1,000 m

The definitions of each type of private water supply are:

- Registered private water supply: recorded on the water supply register and not a council or school water supply
- Identified private water supply: identified during interviews with council and District Health Board staff, marae, Kāinga Ora properties with a non-council water supply
- Assumed private water supply: properties with a bore or resource consent to take water
- Potential private water supply: properties with at least two buildings that have a footprint of more than 40 m<sup>2</sup>.

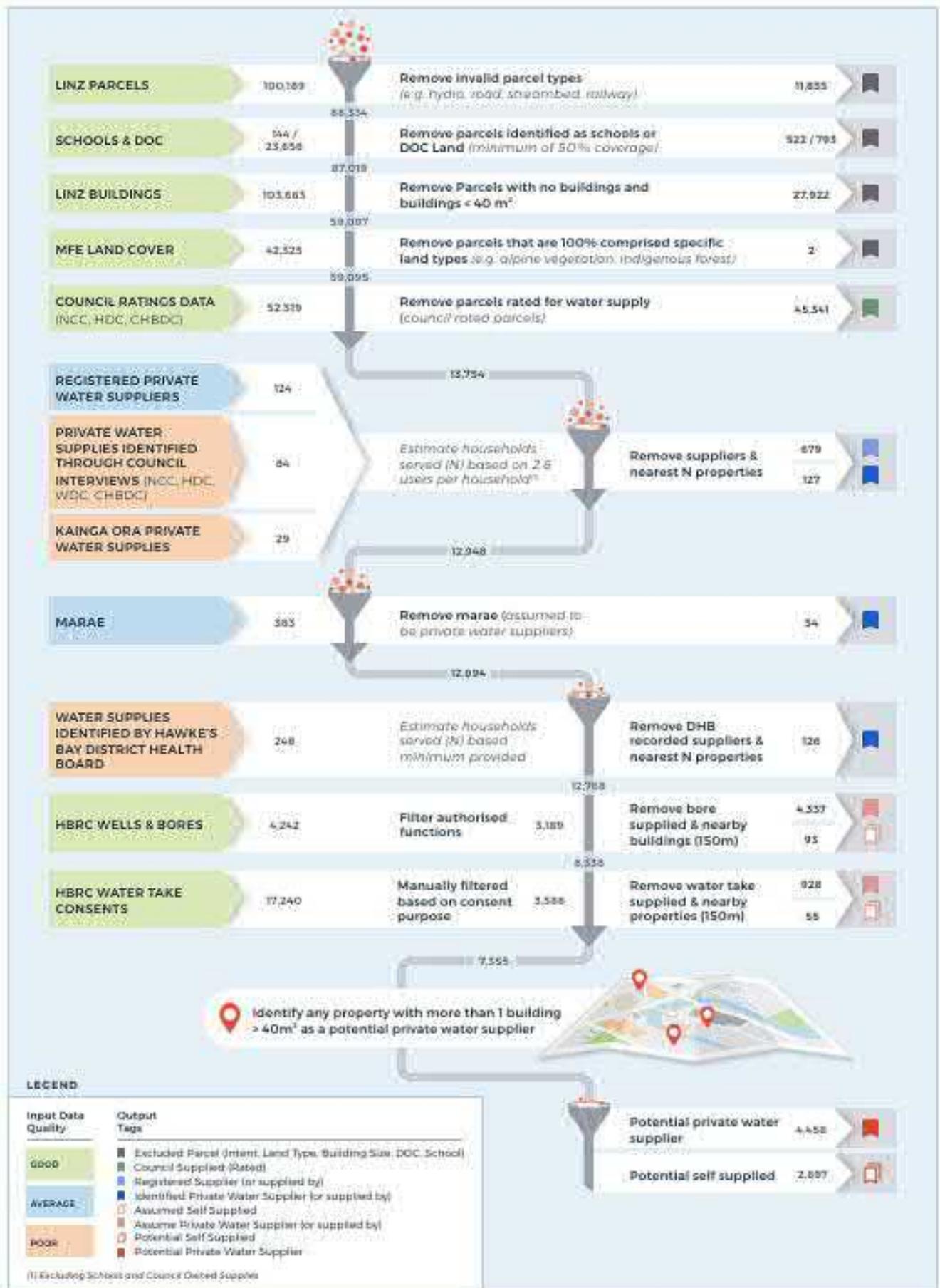


Figure 1-1 : Process for locating possible private water supplies in GIS

### 1.3.4 Private water suppliers identified

The number of private water supplies identified in each district for each scenario is shown in Table 1-2 and Figure 1-2.

The breakdown of the different types of water supply by district is shown in Figure 1-3. Maps of known and possible water supplies for each district for Scenario 2 (worst case as it results in the largest number of private water supplies) are shown in Figure 1-4 to Figure 1-7. Maps for the other five scenarios for each district are included in Attachment 1.

The following observations are made about the results:

- The estimated number of private water supplies in Hawke's Bay is between 3,900 and 6,900. This is much higher than the 2,700 supplies estimated by Taumata Arowai.
- Hastings District has the largest number of private water supplies (1,900 - 3,600), followed by Central Hawke's Bay (1,200 - 1,900), then Wairoa (700 - 1,000) and Napier (150 - 370).
- The number of registered and private water supplies is similar for all scenarios, which is to be expected as there is good confidence in this data.
- The number of assumed and potential private water suppliers is larger for those scenarios that use council water supply ratings data to exclude properties connected to a council water supply (Scenarios 2, 4 and 6), compared with those scenarios where it was assumed that any property within 150 m of a council water main would be connected to that supply (Scenarios 1, 3 and 5). This is to be expected, as using a 150 m buffer around council mains effectively increases the area of the council supply and captures properties on the outskirts of town.
- The number of private water supplies decreases as the distance over which neighbours are assumed to share a water supply increases. This could be because a small distance results in many very small supplies being identified (just one or two neighbours) whereas a larger distance results in a smaller number of water supplies, each covering a larger area.

**Insight:** It is estimated that there are between 3,900 and 6,900 private water suppliers in Hawke's Bay. The level of uncertainty in the data is significant and highlights the challenge and scale of the work required to identify and support private water suppliers.

Table 1-2: Number of private water suppliers for Scenario 2 (excluding properties rated for water and assuming private water supplies extend to neighbours within 150 m)

Type of Private Water Supply	Central Hawke's Bay District	Hastings District	Napier City	Wairoa District	Total
Registered	8	19	5	8	40
Identified	11	93	3	70	177
Assumed	325	1,604	210	81	2,220
Potential	1,594	1,860	151	832	4,437
<b>TOTAL</b>	<b>1,938</b>	<b>3,576</b>	<b>369</b>	<b>991</b>	<b>6,874</b>

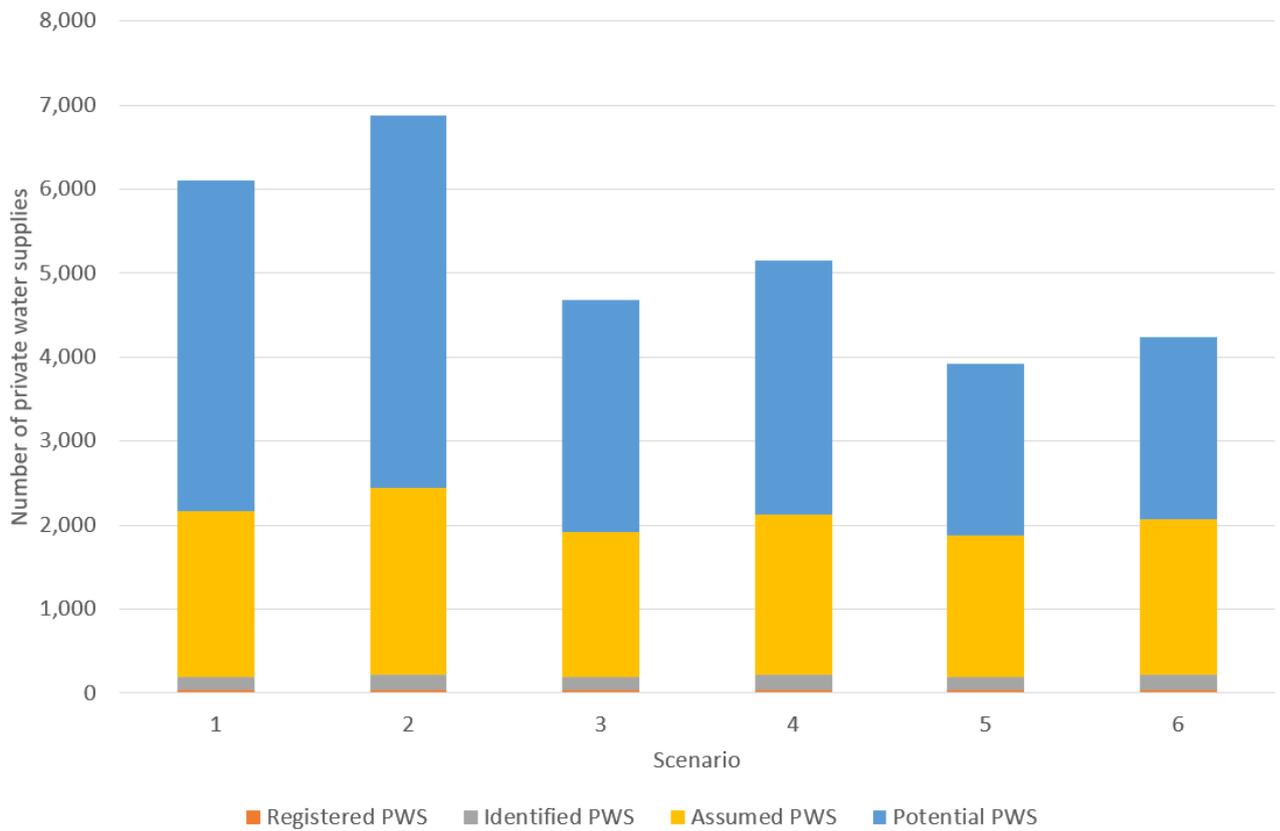


Figure 1-2 : Total number and type of private water supplies (PWS) identified in each scenario

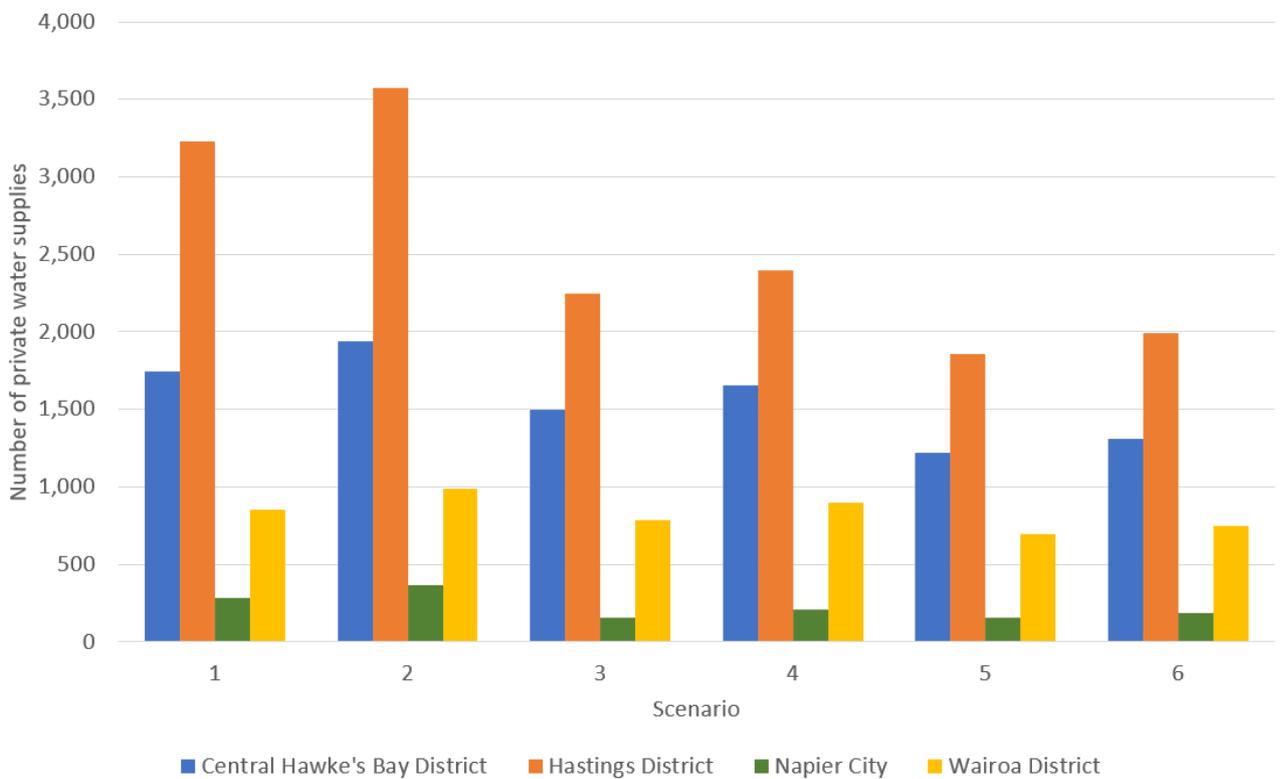


Figure 1-3 : Number of private water supplies identified in each scenario in each district

### 1.3.5 Issues with GIS analysis

There were difficulties using the GIS data to identify properties rated for water. Initially the properties were provided to us by councils as points or polygons [most were polygons] with differing attribute schemas and lacking a link to a national unique ID (LINZ). The analysis methodology uses the national LINZ dataset of parcel polygons for processing due to its consistency across the study area. In many cases the council supplied polygons did not match LINZ data and an attribute to link the datasets was not provided. WSP initially undertook to spatially match the datasets but due to inconsistencies and duplication within the council datasets the outputs were deemed unreliable.

These problems were resolved by asking the councils to provide the data as a point at the centre of each property, rather than as a polygon and/or providing a LINZ property ID in the data set. Duplicate rating polygons could then be spatially identified and removed resulting in a consistent, region-wide dataset that could be applied in the private water supplier identification process.

This means that the scenarios which use council water ratings data are now more reliable (Scenarios 2, 4 and 6) and it is recommended that this method is used going forward.

Of the 186 potential private water suppliers contacted, 56 (30%) advised that they were not private water suppliers. The main reasons for this were because they were a domestic self-supply, a secondary supply connected to a council network, or are covered by the Food Act or Wine Act rather than the Water Services Act.

This means that the number of assumed and potential private water supplies could be overestimated by 30%. This is counterbalanced by the additional private water supplies that were identified by private water suppliers that we engaged with through the project and not identified in the GIS data.

The other problem related to the GIS data was that it was not linked to contact details for property owners. This meant that a manual process was required to find contact details for a possible private water supplier. It is recommended that councils add fields for contact details to the property layer in their GIS systems. This would be useful for many of the functions that councils carry out.

**Insight:** GIS is a useful tool to identify possible water supplies. However, it relies on many assumptions and so the confidence in the results is not high. It is important to check the GIS analysis by engaging with communities and gathering information about their private water supplies.

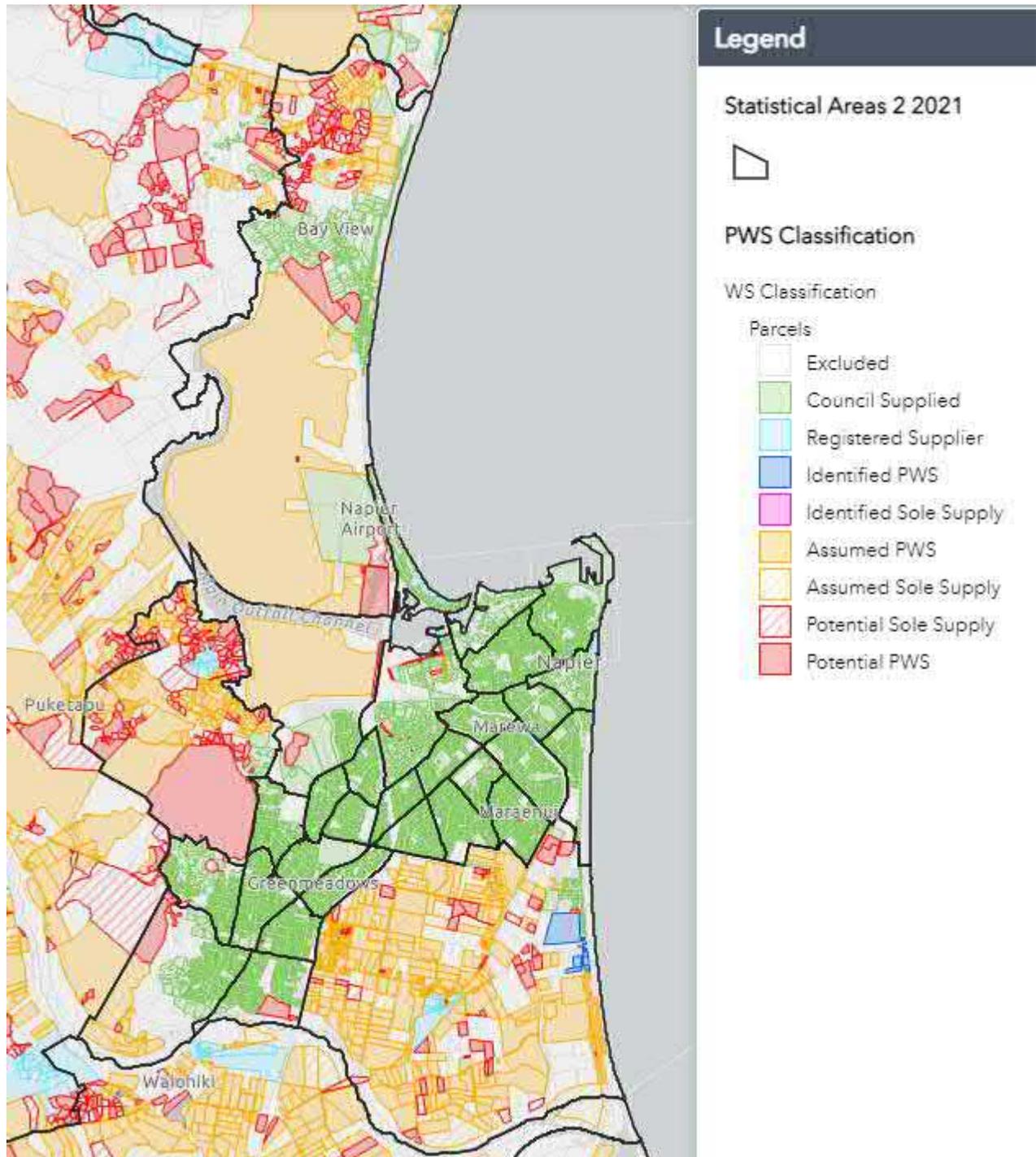


Figure 1-4 : Map of known and possible private water supplies (PWS) in Napier City (Scenario 2)









## 2 Engaging with private water suppliers

This section documents the engagement approach and methodology designed to identify and assess registered and unregistered private drinking water supplies.

This section delivers on the following project objectives:

- To develop and validate a communications and engagement framework for future private water supply assessments.
- To develop a repeatable methodology for undertaking assessments of private water supplies.

The section describes:

- The nature of the project and the approach used to develop the steps to engage with private drinking water suppliers and assess their water supplies.
- Challenges and key learnings that came with embarking on a project with multiple unknowns and the evolving political and legislative environment.
- The communications and engagement framework that was validated through undertaking the project.
- The rationale for the engagement approach, and reflection on the two engagement phases.

Section 4 and 5 provide the project results and insights from the engagements with private water suppliers.

### 2.1 Project engagement approach

The project was complex, as an in-depth project exploring the practical implementation of water services assessments under the revised s125 of the LGA had not yet been undertaken at a regional scale. A significant level of care was required to arrive at the preferred engagement approach. This is embedded in the project approach and methodology in the Project Definition Document (see Appendix B) which explains the need to build relationships and engage with people on their own terms to reach truly meaningful engagement and a deeper understanding of people's needs, concerns, constraints and the implications of the Act with given contexts and communities.

The engagement process was conducted in two phases, with an initial test sample undertaken, before confirming the approach for the full project sample, to help develop, test and verify the methodology and engagement approach.

#### 2.1.1 Project complexities

New Zealand councils that had conducted community drinking water supply assessments via a postal survey had received low response rates. It was therefore important to explore methods other than postal surveys to successfully engage with suppliers, and to begin building relationships and understanding of their supplies.

The nature of this project and aspects of the research process, particularly the qualitative research and engagement components, represent a 'snapshot' in time and must be recognised and situated against the wider socio-political context that the research has been completed within.



A range of potential engagement techniques were investigated. These included focus groups, town hall<sup>1</sup> settings, and using community champions<sup>2</sup> to connect and engage with supply communities in a meaningful, trusted and mutually beneficial way. However, there were a number of risks and challenges that were identified and continually reflected on during the project. These included:

**The legislative environment changed during the project.**

The enactment of the Water Services Act in November 2021 was of significance. It was a Bill when the project began and network supplies connected to council supplies (also known as secondary supplies including e.g. ports, airports, private subdivisions) were included in the definition of water supplier. Secondary supplies were not included in the definition of a water supplier in the Act and this interpretation was confirmed by Taumata Arowai. This had previously been a large focus area for the project that became redundant.

Another key change was that public consultation for the draft Drinking Water Quality Assurance Rules and Acceptable Solutions for drinking water supplies occurred late in the project (January – March 2022). The Hawke's Bay councils wished to provide a joint submission on this (see Appendix F), and the impact of these draft regulations became a focus of engagements later in the project.

**The contentious wider Three Waters Reform debate that was playing out had the potential to disrupt the intent of the project.**

Central Government plans to centralise the delivery of Three Waters services into four new publicly owned water supply entities. There was concern that suppliers would confuse the project with the proposed reform of how water services are delivered and/or spend a significant amount of interview time discussing the matter.

This confusion had the potential to increase distrust in the project's intent and make it difficult to find people willing to participate in the study. It could also create further public backlash around the Three Waters Reform conversation if the intent of the project was unclear or misconstrued.

**The definition of 'community' was unclear.**

Although the amendment to section 125 of the LGA requires councils to inform themselves about the access that each community in its district has to drinking water services by undertaking an assessment of drinking water services every three years, it was unclear what is meant by the term 'community'. There is no definition of community in the Water Services Act and the definition of community in the LGA seems to primarily relate to community boards. Neither Taumata Arowai nor the Department of Internal Affairs (DIA) clarified the definition of community.

**The number of private drinking water suppliers in Hawke's Bay was likely to be much higher than Taumata Arowai's estimate.**

When the Water Services Bill was initially drafted, Taumata Arowai estimated that there may be 75,000 private water supplies across the country. Based on the population of Hawke's Bay, this indicated that there could be around 2,700 private water supplies in the region. This

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<sup>1</sup> A 'town hall' is an organised public meeting typically held in a community venue to discuss a topic of interest or to discuss specific legislation or regulation. It can include presentations from the organising body and opportunity to openly discuss the topic with leaders such as councillors or council staff.

<sup>2</sup> A 'community champion' is a person that hold relationships, roles, or leadership positions in their local community and who takes on an issue or project to raise awareness, take action and support towards a shared cause.



project has now estimated that there are between 3,900 and 6,900 private water supplies. However, the actual number is still very uncertain.

Previous assessments of water and sanitary services undertaken by councils had analysed known water supplies in their districts. However, these assessments had limited engagement with private drinking water suppliers.

There was therefore very little information about who and where suppliers were, and the specific systems suppliers had.

**It was challenging to find and encourage people to participate in the project.**

As mentioned above, councils had limited information about who and where most private water suppliers were. Contact details were not readily available and council staff had very limited capacity to contact private water suppliers to ask if they would like to participate in the project.

There was little incentive for private drinking water suppliers who are not registered to self-identify and share information about their drinking water systems.

The project also required the project team to gain written consent from participants around how their information would be used, and this formal aspect of the engagement process led to a significant amount of hesitancy to participate.

**There was confusion by some suppliers about the role the Hawke's Bay councils have with respect to private water supplies.**

Taumata Arowai, the new water services regulator for Aotearoa, had been recently established, but had done little communication or engagement with private drinking water suppliers at the time.

Whilst it was not the councils' responsibility to audit private drinking water supplies on drinking water compliance, it was identified that this could be the perception by suppliers. This had the potential to create further scepticism and unwillingness to engage in the project and disclose information about the state of their drinking water systems.

The project team experienced people that were hesitant to provide information on their private water supplies or directly refused to participate in the engagement and assessment process. The process to obtain informed consent from participants was a barrier as many suppliers wondered what the benefit of disclosing their information to council would be. This was made more difficult as section 126 of the LG requires that after undertaking drinking water service assessments, councils are required to notify Taumata Arowai of any drinking water system that is not meeting its statutory obligations (or is at risk of not meeting them), any absence or deficiency in a drinking water service and any drinking water suppliers that are at risk of ceasing to provide a service.

This was important to disclose as part of gaining informed consent but, as discussed above it had the potential to further discourage people from participating in the project.

**The risk that suppliers would cut off their drinking water supplies if they were informed of their obligations without sufficient clarity, information and support.**

A significant change with the Water Services Act, compared to the previous drinking water requirements in the Health Act, meant that it applied to unregistered very small and small drinking water supplies. These had previously not been defined as drinking water supplies under the Health Act, nor had they been required to meet compliance requirements that specified penalties for offences.

The highest penalty under the Water Services Act is 5 years imprisonment and/or a \$600,000 fine for an individual and \$3 million for a body corporate or unincorporated body.



Perhaps the most serious risk was that suppliers would disconnect the water supply to others to avoid potential liability and costs of complying with the Act. Some suppliers said that they were considering this.

### 2.1.2 Two-staged engagement approach

A two-staged engagement approach was designed to address the complexities of the project noted above. The approach, its rationale and benefits are detailed below. The stages were:

- 1 Developing a methodology to identify, contact and engage with a small **test sample** of private drinking water suppliers. The intent was to engage with 12 private drinking water suppliers (3 different types of suppliers within each of the 4 districts).
- 2 Reflecting on the learnings from the test sample and improving the engagement delivery for the **larger sample**. The intent was to engage with 70 suppliers (16-17 suppliers per district) and to engage with a wide variety of different types of supply and supplier.

The benefits of undertaking a two-staged approach were:

- It allowed for the project team to become familiar with the processes for identifying, contacting and engaging with suppliers, including understanding the time and effort required to find suppliers willing to participate in the project.
- It provided key learnings from the initial engagement process that could be reflected on and improved for the wider sample.
- It provided initial insight into a particular community within a district that could be used for future engagement in that area.
- It gave a better understanding of the different types of suppliers and supplies that exist within a community. This can improve future engagements with the same type of suppliers and other suppliers within that community.

### 2.1.3 Key aims of the engagement

Key aims of the engagement were to:

- Build rapport and connect with the private drinking water supplier community to develop a repeatable methodology for drinking water assessments.
- Provide information to suppliers on the new obligations and understand and review how the new regulations (including the draft Rules and Acceptable Solutions) could be implemented (from a council and community perspective);
- Answer questions that suppliers may have
- Gain a better understanding of the private drinking water supplier, their expectations, needs and their supply.

In line with the project approach and methodology described in section 2.1, a 'community-up' approach provided the guiding foundation for the engagement. This built a strong sense of understanding based on relationships and created meaningful engagement through meeting people face-to-face and on their own terms (place and time).

With this in mind, individual 'interview' style engagements were undertaken at the location of the private drinking water supply and, wherever possible, at a time that suited them. This included providing options to meet in the evening and over the weekend.

The engagement approach also sought to use pre-existing relationships through those who were already connected with a particular community.

A cross section representing different types of supplies was identified to understand the views of a variety of drinking water suppliers.

#### 2.1.4 Defining the types of private drinking water supplies and their suppliers

A private drinking water supply matrix (Figure 31 below) was developed to help organise and understand the different type of drinking water supplies that may exist in the communities and subsequently who the various types of drinking water suppliers may be (for example a farmer, whānau from a marae or papakainga, or a resident of a privately-owned community based water supply) and how best to engage with them.

##### 2.1.4.1 Rationale for the private water supply matrix

A key rationale for the matrix was that by acknowledging the various type of drinking water supply scenarios, the suppliers would likely understand their supplies differently. Demonstrating individual care and understanding, as well as offering tailored solutions, would build rapport with suppliers who would need support and time to work through the requirements of the Water Services Act.

This matrix was used to understand what type of supply was being assessed, which helped to inform the field researchers who they would likely be engaging with. The final matrix has been built from the insights gained throughout each project stage and during the field research.

This supports the desire of the councils to work collaboratively with private drinking water suppliers. The aim was that these suppliers can be supported to provide safe access to drinking water for their communities and feel comfortable to engage with the councils in relation to future water services assessments.

##### 2.1.4.2 Development of the matrix

The structure and content of the matrix was established through a range of methods detailed in section 2 of this report. This included the start-up hui, key stakeholder interviews such as with council staff and Te Kupenga, and previous Drinking Water and Sanitary Assessments.

The matrix was developed further throughout the project, following analysis, reflection and refinement from the test sample and full sample size engagements with private drinking water suppliers.

The Water Services Act 2021 provides a broad definition of a drinking water supplier. Under section 8 of the Act “unless the context otherwise requires”, a drinking water supplier:

- (a) means a person who supplies drinking water through a drinking water supply; and
- (b) includes a person who ought reasonably to know that the water they are supplying is or will be used as drinking water; and
- (c) includes the owner and the operator of a drinking water supply; and
- (d) includes a person described in paragraph (a), (b), or (c) who supplies drinking water to another drinking water supplier; but
- (e) does not include a domestic self-supplier.

This means that if you supply or operate a system that supplies drinking water to more than one domestic household, then you are now a drinking water supplier under the Act.

Broadening the definition of a drinking water supplier significantly increased the number of suppliers and diversity of people and situations that are now required to meet the obligations of the Act.



It was clear that a wide variety of people would now be considered drinking water suppliers under the Act, many of whom will be defined as a supplier for the first time, particularly those small and very small categories of supplier.

#### 2.1.4.3 Using the matrix

Figure 2-1 illustrates how an assessor would undergo the selection process to begin to understand individual private drinking water suppliers, their nature and the characteristics of their water supply. This matrix can be used by field researchers and relevant stakeholders (such as council staff or a future water services entity) undertaking future water supply assessments, to understand what type of supplier they are engaging with.

The information selected for a given individual supplier can help to define a private water supplier, in terms of suppliers' obligations under the Water Services Act 2021. However, the matrix seeks to go a step deeper to provide more information and insights to better understand a given supply type and therefore supplier in more detail. For example, determining that the type of supply is for a commercial farm which is provided by a bore gives an indication of the likely nature and motivation for why the drinking water supply may exist and what is important or of potential concern for the supplier.

The definitions also intend to provide an indication to help guide the field researchers on how to engage with a particular type of private drinking water supplier. This will help to anticipate the level and amount of support a supplier may require.

It is acknowledged however, that this matrix is a guide to start to understand who a supplier is. Being well prepared on who and what the drinking water system is, will assist with a successful engagement. However, this will still require appropriate engagement techniques and professionalism to ensure that aspects about the nature of the supplier and supply is not assumed. Thus, this information should be adapted to suit the user, supplier and other historical and contextual indicators that can be gained during the engagement process (for example, comments can be documented following phone calls to arrange individual engagements that may be helpful for the field researcher to know).

The points below provide a brief explanation for each criterion and its relevance to the engagement and assessment process:

- 1 **Registration:** Identifying whether the supplier is registered or unregistered is important, as the Act has allocated different timeframes that suppliers must comply with regulatory standards. For registered suppliers, compliance must be met within one year of the Act's enactment. For unregistered suppliers, they have four years to register as a drinking water supplier and a further three years to comply with the Act.
- 2 **Category:** Suppliers will need to meet different standards for their drinking water system, depending on the population served by their supply. These categories have been defined in the draft Drinking Water Quality Assurance Rules.
- 3 **Motivator:** Understanding the primary reason and drivers for why the supplier has the drinking water supply can help understand the nature of the supplier and their needs. It also begins to build the profile to assist in developing the right communication angle and engagement approach to address the supplier type.



- 4 **Type:** Determining the supply type provides more detail about who this private drinking water supplier is.
- 5 **Source water:** Identifying the source for the drinking water supply allows the assessor to prepare the appropriate questions to assess the drinking water supply.

SELECT:			
Registration	Registered		Unregistered
SELECT:			
Category	Very small (<50 people)	Small (50 - 500 people)	Large (>500 people)
			Specifically declared supplier
SELECT:			
Motivator	Ohanga/ Commercial	Tangata Hapori/ Social	Ritenga Māori/ Cultural
			Te Taiao/ Environmental
SELECT:			
Type			
SELECT:			
Source water	Groundwater (bores)	Roof water	Spring/ surface water

Figure 2-1 : Private water supplier matrix development process



In relation to Figure 2-1, it should be noted that:

- The hard and broken lines that form the arrows acknowledge that most types of drinking water suppliers will likely be motivated by more than one of the four factors: economic, social, cultural or environmental.
- It is recognised that every drinking water supply is in some way affected by the financial viability of supplying drinking water.
- The purpose of the boxes is to reflect the likely primary motivation for having a private drinking water supply.

Table 2-1 to Table 2-4 provide guidance on how to select the appropriate criteria in the matrix for private drinking water suppliers, prior to any formal engagement.

Table 2-1 : Definition to help select registration status

REGISTRATION STATUS	DEFINITION
Registered drinking water supplier	Was on the drinking water register under the Health Act when the Water Services Act was gazetted on 15 November 2021. <sup>3</sup>
Unregistered drinking water supplier	Was not on the drinking water register under the Health Act when the Water Services Act was gazetted on 15 November 2021.

Table 2-2 : Definition to help select category criteria

CATEGORY	POPULATION SERVED
Very small	<50 people
Small	50 - 500 people
Large	>500 people

Table 2-3 : Definition to help select the motivator criteria

MOTIVATOR	DESCRIPTION
Ohanga/ Commercial	Commercial motivator is the group of private drinking water suppliers whose primary purpose for a drinking water supply relates to a commercial activity.
Tangata Hapori/ Social	Social motivator is the group of private drinking water suppliers whose primary purpose for a drinking water supply relates to an activity for civil good or cause.
Ritenga Māori/ Cultural	Cultural motivator is the group of private drinking water suppliers whose primary purpose for a drinking water supply relates to an identified cultural practice and spaces.
Te Taiao/ Environmental	Environmental motivator is the group of suppliers whose primary purpose for a drinking water supply is driven by the environmental value that the drinking water source provides for those people who use (or wish to use) it.

<sup>3</sup> Drinking water registers: <https://www.taumataarowai.govt.nz/for-communities/public-register/>



Table 2-4 : Definitions can be used to help select the supplier of a type of private drinking water supply

TYPE OF PRIVATE DRINKING WATER SUPPLIER	DESCRIPTION
Accommodation Facilities	Accommodation facilities are a type of supply whereby a supplier may charge a rent, membership or fee for their land or buildings in exchange for people to stay temporarily, and drinking water is supplied as part of the facilities. This includes campgrounds, Airbnb, Bookabach, and the New Zealand Motor Caravan Association (NZMCA).
Beach Communities	Beach communities are places where a supply is located in coastal environments and those connected to the supply may be a mix of full- and part-time residents. A private drinking water supplier may have a source of water such as a bore located on their property that they share with neighbours. This type includes baches and holiday homes.
Business Organisations	Business organisations are a supply which relates to a business activity (excluding farmers and horticulturalists which are covered below). The supplier may own or manage the drinking water supplied to the public or staff as part of their operation or own/lease property that supplies drinking water to others.
Community Facilities	Community facilities are supplies to community buildings that are owned and operated by community groups, such as trusts or incorporated societies. This private drinking water supplier provides drinking water when the community gathers at the facility for functions or ceremonies. This includes private sports clubs, golf clubs, churches, mosques or other religious places to gather. It could also include community halls or libraries that are not associated with a council.
Water Filling Stations	Water filling stations are supplies that provide a place for the public to fill their own water bottles or tanks from their water source. The supplier may own/ lease the land or manage the station which supplies water to people.
Farmers	Farmers in this context relate to suppliers who manage land that is used to rear animals (those who manage crops are identified as Horticulturalists separately). These private water suppliers may have supplies to woolsheds where water is provided, and/or workers' housing.



TYPE OF PRIVATE DRINKING WATER SUPPLIER	DESCRIPTION
Horticulturists and Viticulturists	Horticulturalists and viticulturists are suppliers who manage land that is used to grow and process crops. This private drinking water supply may be to Recognised Seasonal Employer (RSE) accommodation as part of the facility or at water stations within the workplace.
Kaumātua Flats	Kaumātua Flats are a type of supply to the homes where kaumātua (elders in Māori society) live. This private drinking water supplier may be a resident who lives there themselves and supplies to others, or an organisation that supplies a set of units or detached dwelling for them to live in. These flats may be located next to marae, papakainga or be held on Māori Reservation Land or Māori Land Blocks.
Marae	Marae provide the meeting place for people to undertake traditional Māori cultural practices and host visitors. These suppliers may be trustees of the marae, or other whānau who care for these spaces. The supply is often located within Māori Reservation Land.
Papakainga	Papakainga are a type of supply which provide drinking water to groups of houses where Māori communities live, often in a communal or traditional way. These private drinking water suppliers may be an organisation or trust who rent to whānau, or people may own their house on land that is collectively held (for example in a family trust).
Privately-owned Community Based	Privately-owned community-based water supplies are a small or large water network that supply to multiple houses. This private drinking water supplier could be a person responsible for an incorporated society or trust that runs the supply through a membership base where participants buy into the scheme through a formal agreement.
Rural Settlements	Rural Settlements are a supply type in a rural setting which is not connected to a reticulated municipal drinking water supply, including rural subdivisions. These private drinking water suppliers may own a property that has a bore or spring that supplies drinking water to neighbouring properties, for example.
Urban Infill	Urban Infill are supplies within urban environments, and are not connected to reticulated municipal systems (which may exist nearby). These private drinking water suppliers may have a water source such as a bore located

TYPE OF PRIVATE DRINKING WATER SUPPLIER	DESCRIPTION
	on their property which supplies to adjacent neighbours.
Retirement Homes	Retirement Homes are a supply to housing rented to, or bought by, people who are retired from working. This private drinking water supplier may be owned by an organisation or collective.
Unbuilt marae	Unbuilt marae is a type of supply that identify and recognise where marae once stood and which plan to one day be rebuilt at the location again. It acknowledges the important connection to Papatūānuku and the nurture she provides to places where marae settlements were established, typically near to water bodies. The private water supplier may be a trust or whānau member.

## 2.2 Engagement methodology

This section describes the engagement methodology used for engaging with private water suppliers. A 'closed' engagement approach was used, where potential participants were contacted directly, rather than via a wider public campaign. This was to mitigate the political risk associated with Three Waters Reform.

There were four steps in the engagement method:

- Selecting communities
- Identifying known and possible private water suppliers within those communities
- Contacting water suppliers to invite them to participate in the project
- Engaging with private water suppliers

These steps are described below.

### 2.2.1 Step 1 - Selecting communities

The first step was to select communities to focus on for each district. The intention to find and engage with as many as possible of known and possible private drinking water suppliers in these communities. The aim was to gain an understanding of the different types of supply and supplier in that community and to minimise travel time.

Three communities were selected for each district in consultation with the council's Infrastructure Lead (see Table 2-5)

Table 2-5: Community focus areas for each district

Community Focus Areas	Napier	Hastings	Central Hawke's Bay	Wairoa
1	Jervoistown	Maraekakaho	Tikokino	Mahia
2	Meeanee	Te Hauke	Onga Onga	Ngā Nuhaka



3	Awatoto	Waiohiki	Pourerere Beach	Raupunga
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### 2.2.2 Step 2 - Identifying known and possible water suppliers

The second step was to identify known and possible water supplies within the three communities. As many water suppliers as possible were identified in the first community before moving onto the second and then third communities.

Private water supplies identified through the earlier stages were the starting point for identifying water suppliers that might be interested in participating in the project. This was supplemented with a spread of supplies identified using the GIS system, for example 'identified', 'assumed', and 'potential' supplies.

The engagement sought to select a variety of different types of private drinking water suppliers based on the private drinking water supplier matrix (for example, farmers, accommodation facilities, papakainga and marae). Section 2.1.4 describes the matrix.

Once the supplier 'types' had been exhausted within the first area, the second location was used to continue to develop the list to identify and contact suppliers, followed by the third location.

### 2.2.3 Step 3 - Contacting water suppliers to invite them to participate in the project

Contact with known private drinking water suppliers often relied on existing council or project team relationships with people in the community.

Council staff were asked to follow a step-by-step process (see Appendix F) to make initial contact and seek consent from the supplier to participate in the project. The steps were:

- 1 Make an initial phone call to the private water supplier
- 2 Introduce the project (Council Contact script provided)
- 3 Seek private drinking water supplier's verbal interest in participating in the project
- 4 Email a consent form to the private water supplier to complete
- 5 Send the contact information to the project team to schedule a visit

The test sample revealed that not all people contacted were actually private water suppliers. In one case, it was a domestic self-supply and in another it was a non-potable supply.

Therefore, a verification stage was added for the larger sample to check that suppliers met the definition of a private drinking water supplier. This included checking the GIS system to check that they were not connected to a council supply and asking the potential participant a series of questions to confirm that they were a private water supplier. Even with these additional steps there were still some engagements with people who turned out not to have a drinking water supply.

The test sample also showed that it was important that the person making the initial contact had a good understanding of Three Waters Reform, the Water Services Act and why the councils were undertaking the project, as many people contacted had questions about these matters.

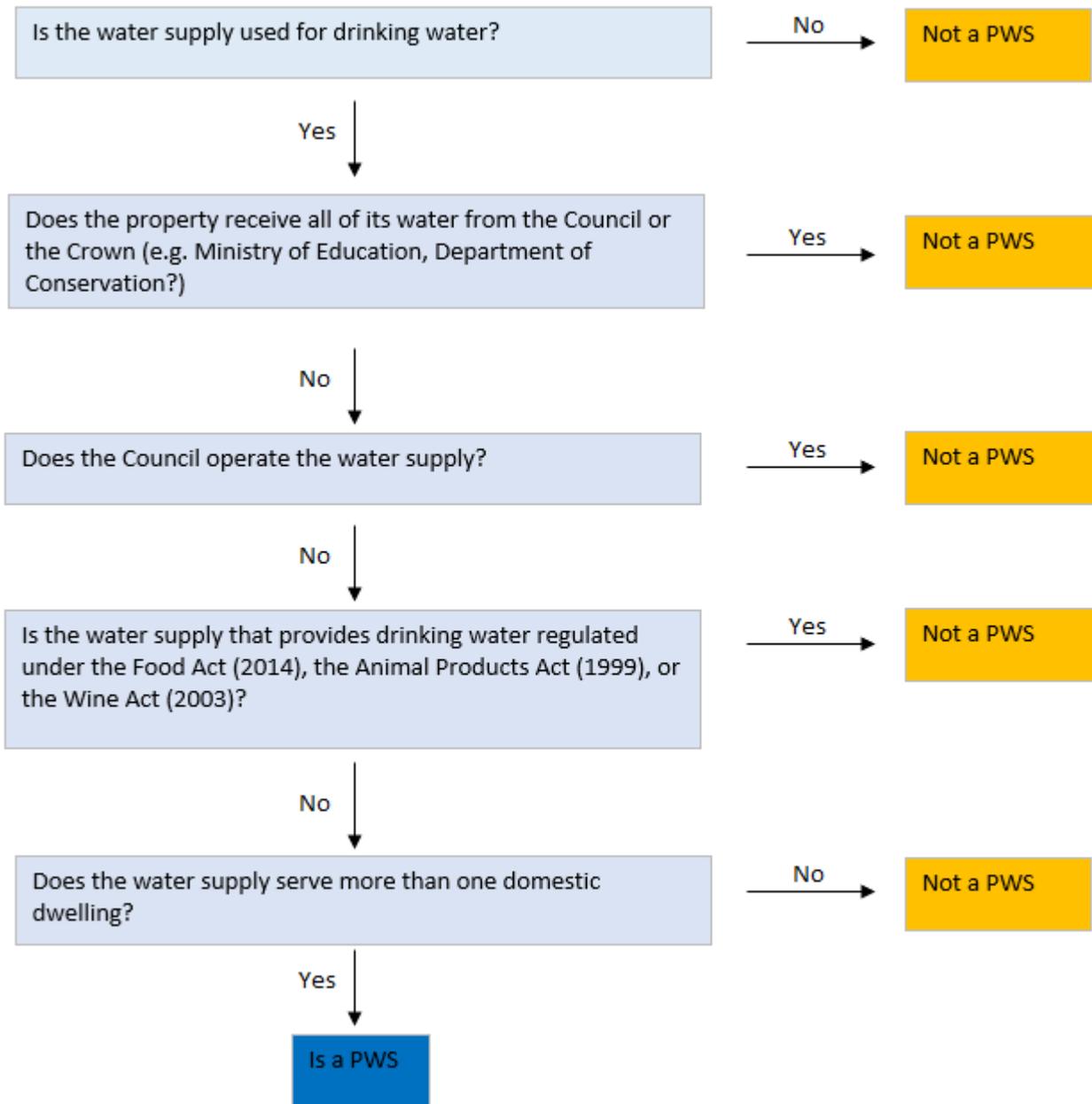


Figure 2-2 : Process for checking if someone is a private water supplier (PWS)

#### 2.2.4 Step 4 - Engaging with private water suppliers

The engagement method used was in-person semi-structured interviews to gather qualitative data and a standard set of questions about the drinking water supply to gather quantitative data.

The structure of the engagement was split into two parts. In the first part, the project was introduced and open-ended research questions were asked. In the second part, the supplier was asked to provide technical information about their drinking water supply. A site walkover and a visual assessment of the system itself was also undertaken to gather further information about the supply.

One water engineer, one engagement researcher and usually the councils' regional programme director attended the engagement with the supplier and/or group of relevant personnel. The councils' regional programme director was able to provide the wider context both nationally and locally.



These took place at the location of the drinking water supply and typically lasted between 1 - 1.5 hours.

Qualitative data was gathered in the form of field notes which underwent thematic analysis including inter-coder reliability testing between field researchers.

Quantitative data about the water supply was captured using a standardised questionnaire. The questions sought to understand key aspects of the water supply and to form the basis of a future water services assessment. Questions included the nature of the source, whether the water was treated and if so how, whether the water had ever been tested, and the confidence of the person operating and maintaining the supply. The questionnaire was used to populate a form in an app (Survey 123), which allows drop-down lists of responses, text field responses to capture narrative, locations and photos of assets. A copy of the questionnaire is included in Appendix G.

The use of a standard questionnaire enabled data to be analysed to draw insights from the project overall. It also meant the information could be provided to councils at the end of the project in a GIS format, for use in future water supply assessments. For privacy reasons, the information about individual supplies is not included in this report.

### 2.3 Experiences and reflections from engaging with the test sample

The following insights were gained from engaging with the test sample of private drinking water suppliers in Stage 3 of the project:

- The engagement setting varied depending on the situation and space available on-site. Interviews were held at dining room tables, in working sheds or offices, and in a car.
- Attitudes and opinions on the project ranged from very open and eager to participate, to very hesitant to participate.
- Following a period of time, often with some hesitancy at the beginning, rapport was built with all participants, who became more comfortable with the purpose for the project.
- Suppliers often had a reasonable to high level of technical knowledge about their water supplies and were able to answer the assessment questions or knew where they could obtain the right information. However, they generally had very limited knowledge about the legislative changes.
- The process of identifying private water suppliers and scheduling visits was labour intensive and inconsistent for the project team and council staff in terms of what was communicated to participants about the project and engagement purpose.
- Hesitant participants found the consent form to be intimidating; they were concerned about what the assessment information would be used for, and what their obligations would be if they decided to participate in the engagement.
- Participants were interested and, in some cases, concerned about what their obligations would be, but all wanted to ensure that their water was safe to drink.

The Insights and Analysis from the Test Sample provides the full detail, including the recommended changes for the full sample size (see Appendix G).

### 2.4 Communication and Engagement Strategy

Stage 4 of the project was to develop the the Communications and Engagement Strategy for engaging with the wider sample of private water suppliers. This was developed for the project and was tested, informed and varified by engaging with the test sample and amended for the wider sample of 50 participant engagements. A copy is provided in Appendix F.



## 2.5 Full project sample

Stage 5 delivered the approach and engagement process with the full project sample. Section 5 of this report below provides the key themes and insights from these engagements.

Engagement with the full test sample of private drinking water suppliers was undertaken between 18 January and 23 February 2022.

There was a target to undertake 70 engagements in total (around 17 engagements per district). The project contacted 186 known and possible private water suppliers over the phone, which led to 50 engagements. The shortfall in the assessment targets were due to constraints around time, resource, cost and a lack of momentum at start. Initial contacts were provided using council and the project teams existing relationships with suppliers and 'cold calls' to people who were identified as potential or assumed private drinking water suppliers. With less than a third of those contacted ending up participating in the project (either because they were not a private water supplier or because they did not wish to participate), this was a difficult and time-consuming process to engage participants. Barriers to participation included limited time, consultation fatigue, uncertainty and mistrust about why council now wished to understand private supplies and the hesitation around signing a consent form to participate in the project.

As the assessment phase gathered momentum, the project team started to receive unsolicited requests to meet with further suppliers. The engagement period was therefore extended from four to six weeks.

Insight: By the end of the project, unsolicited requests were being received from private water suppliers wanting to participate in the project. This demonstrates the appetite of private water suppliers to better understand their obligations and what it means for their supply.

## Attachment 1 – Maps of Additional Scenarios

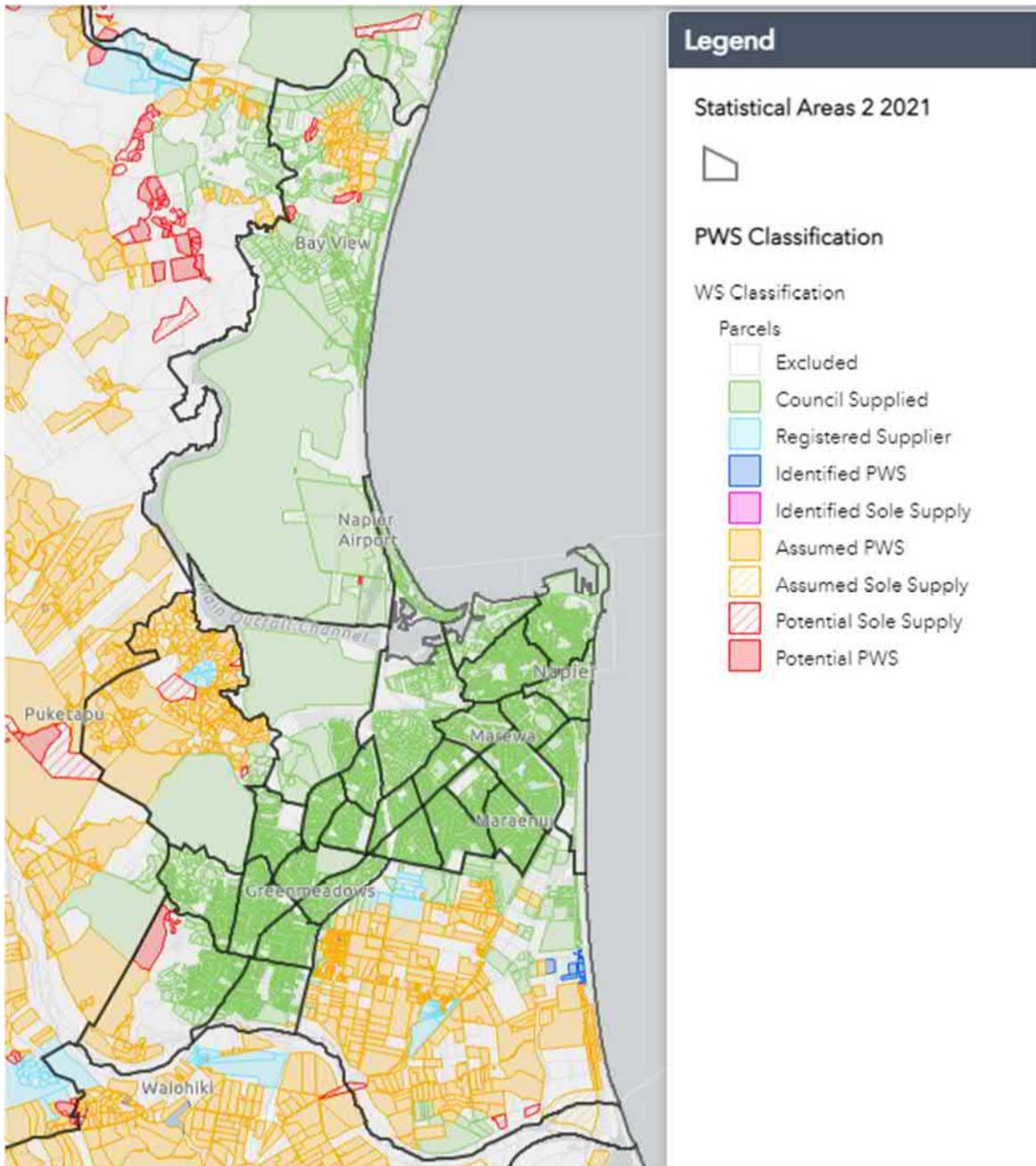


Figure 2-3: Map of known and possible private water supplies (PWS) in Napier City (Scenario 1)

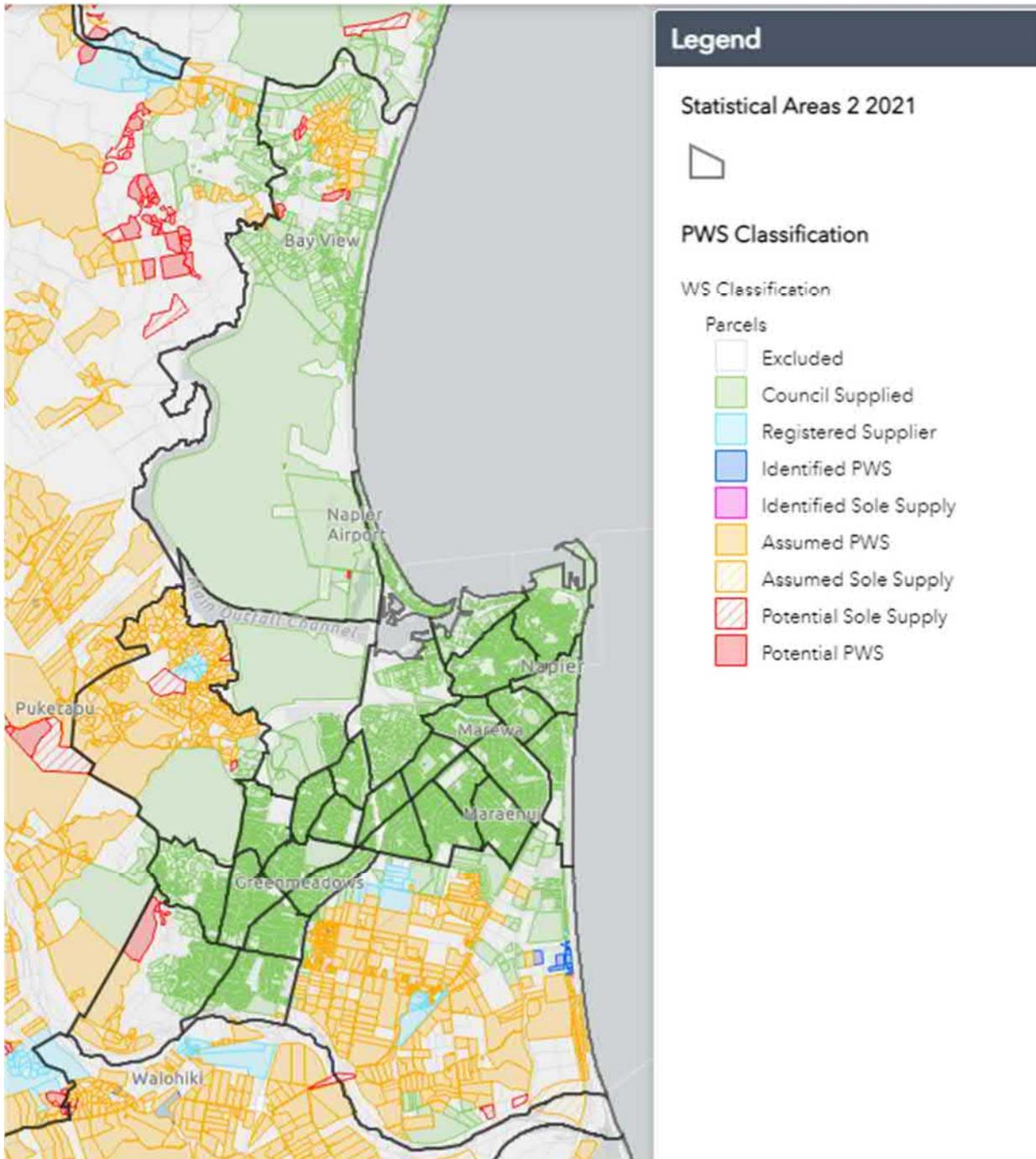


Figure 2-4: Map of known and possible private water supplies (PWS) in Napier City (Scenario 3)

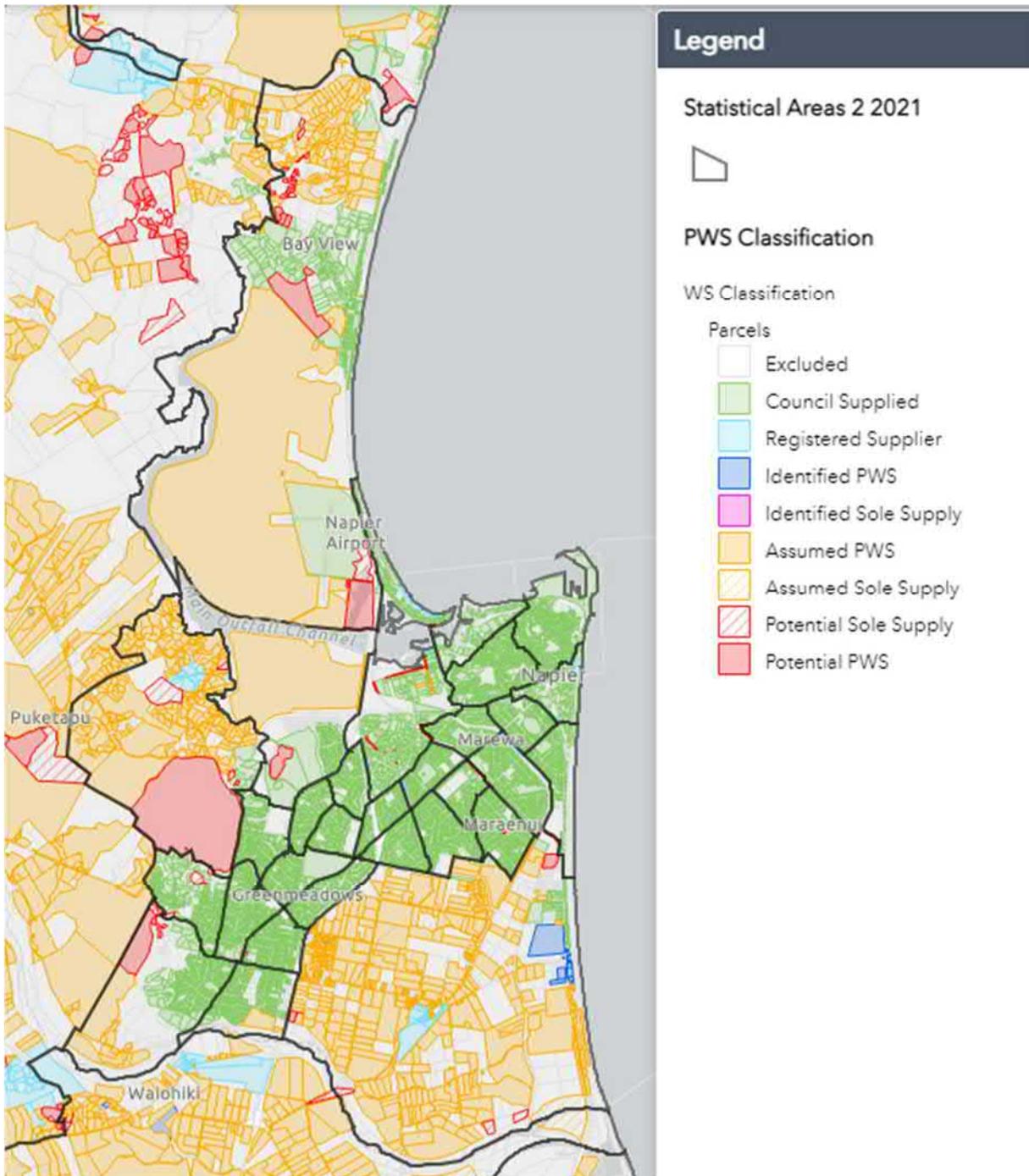


Figure 2-5: Map of known and possible private water supplies (PWS) in Napier City (Scenario 4)

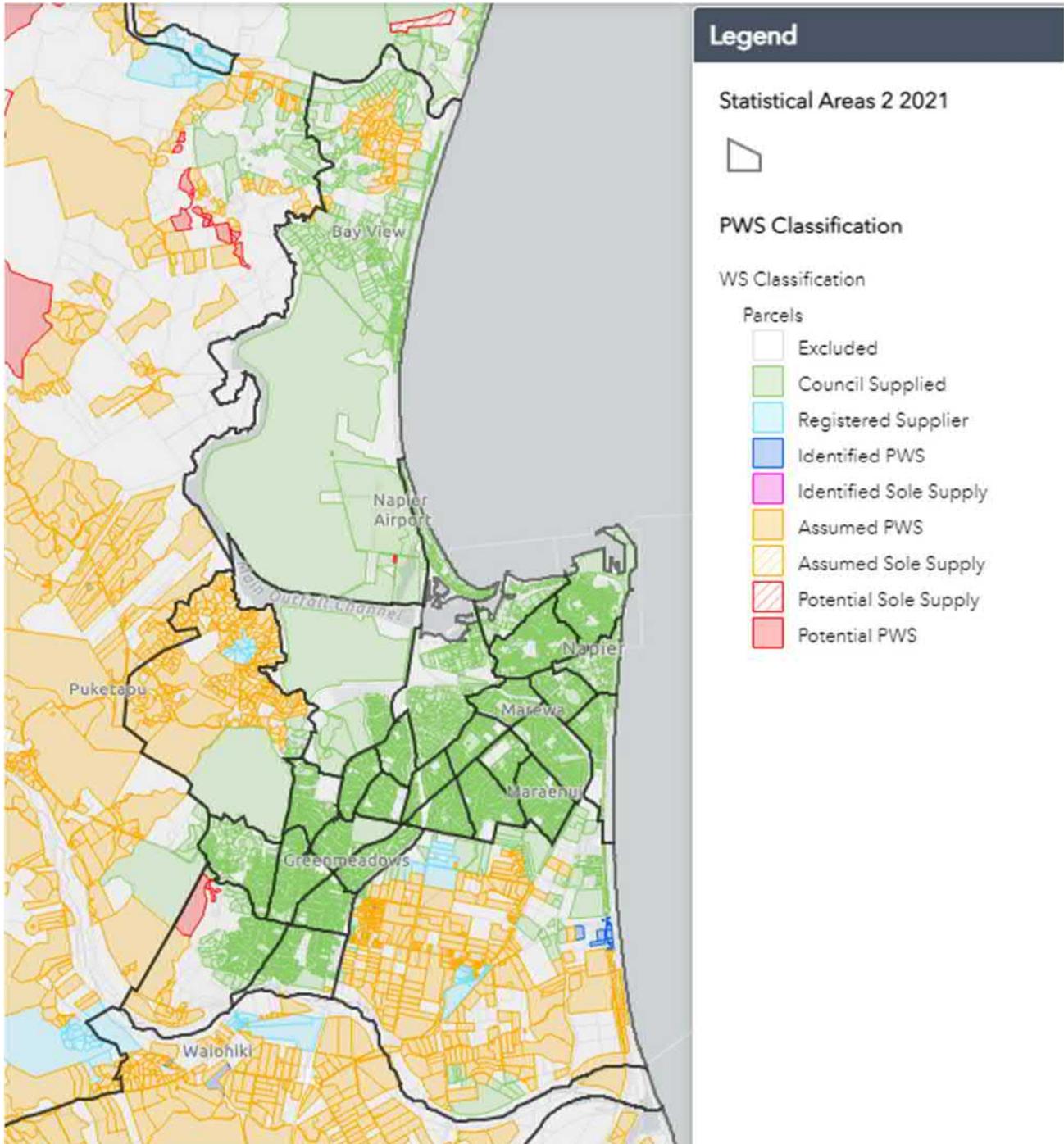


Figure 2-6: Map of known and possible private water supplies (PWS) in Napier City (Scenario 5)

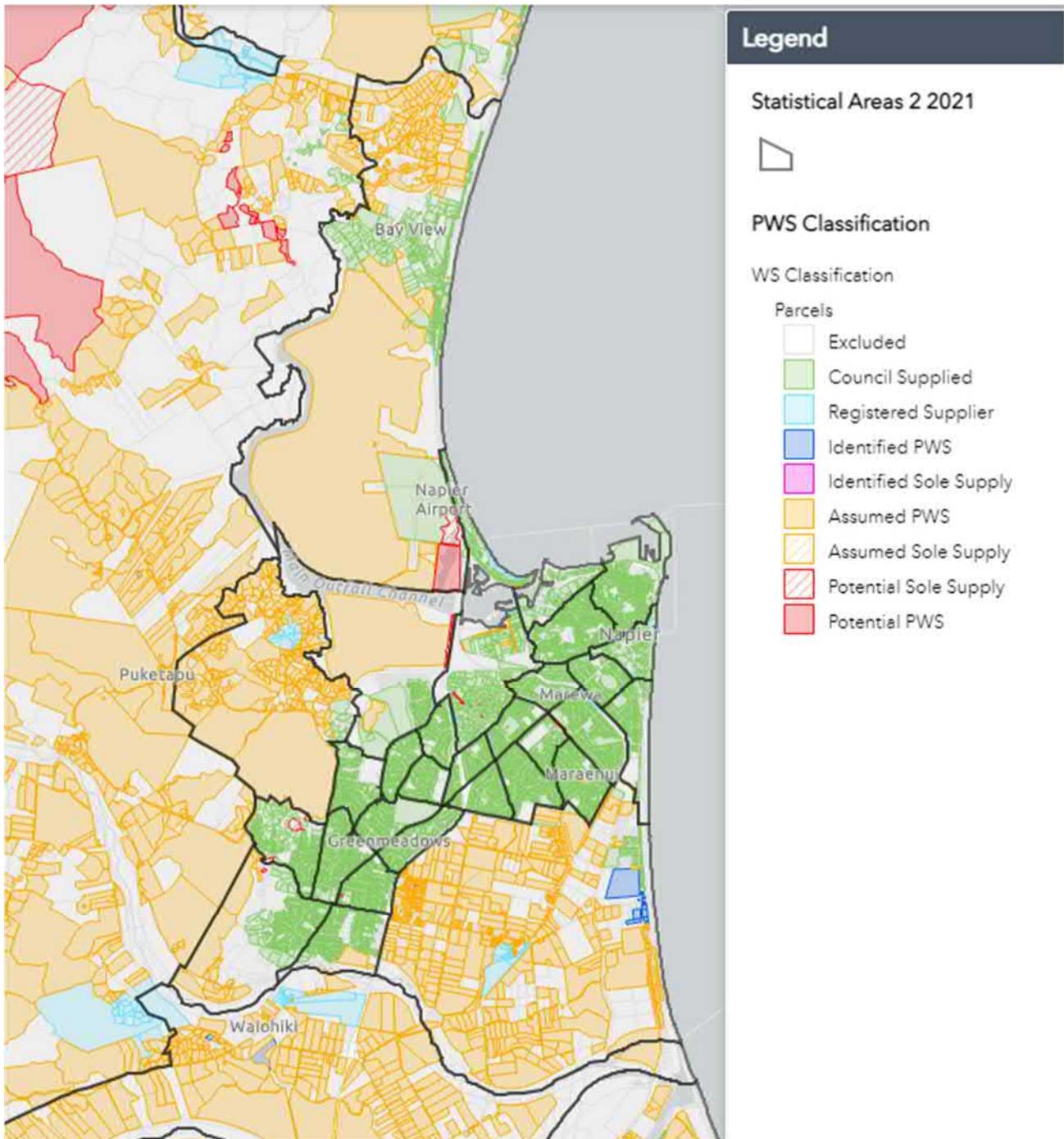


Figure 2-7: Map of known and possible private water supplies (PWS) in Napier City (Scenario 6)

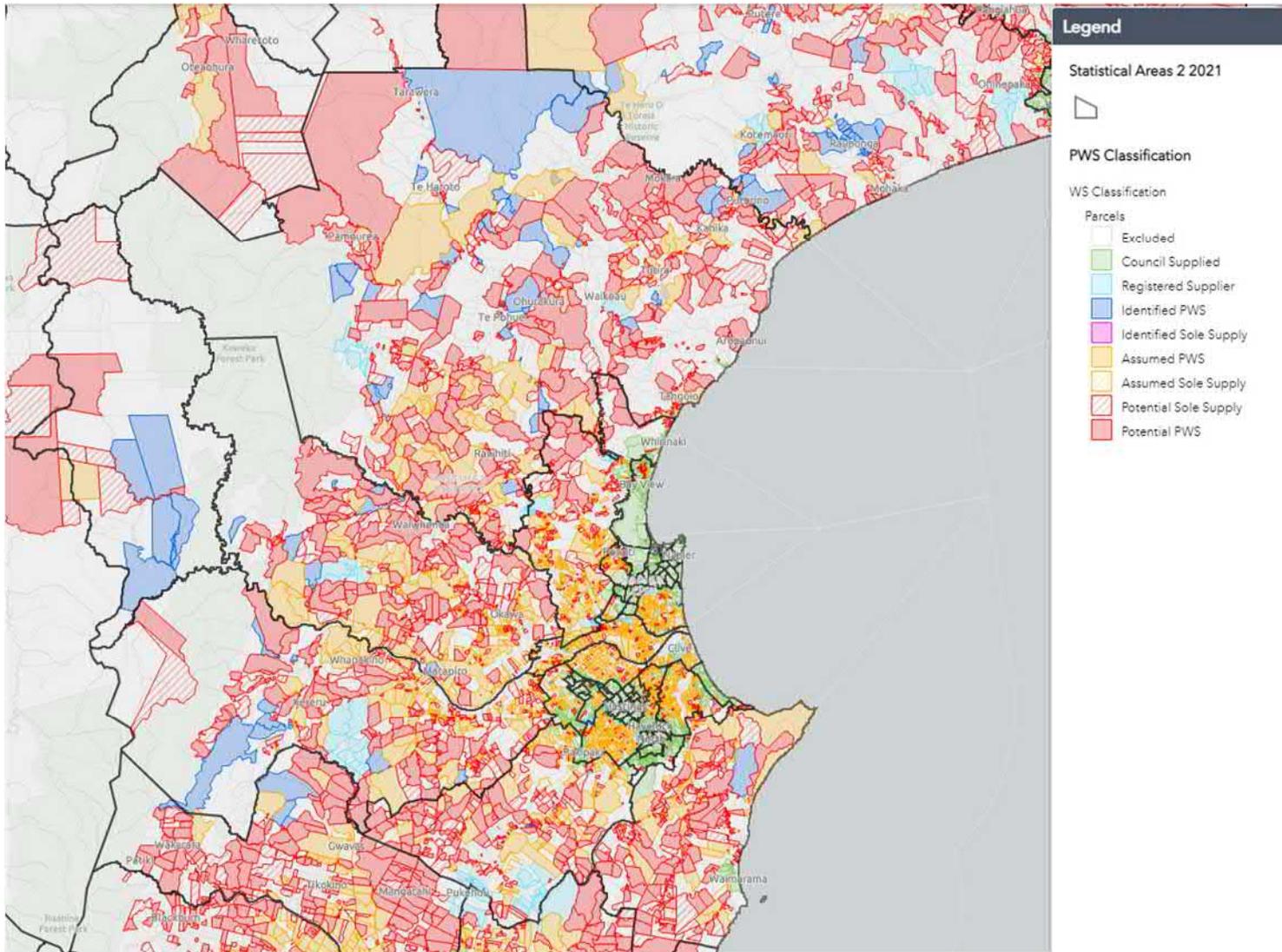


Figure 2-8: Map of known and possible private water supplies in Hastings District (Scenario 1)

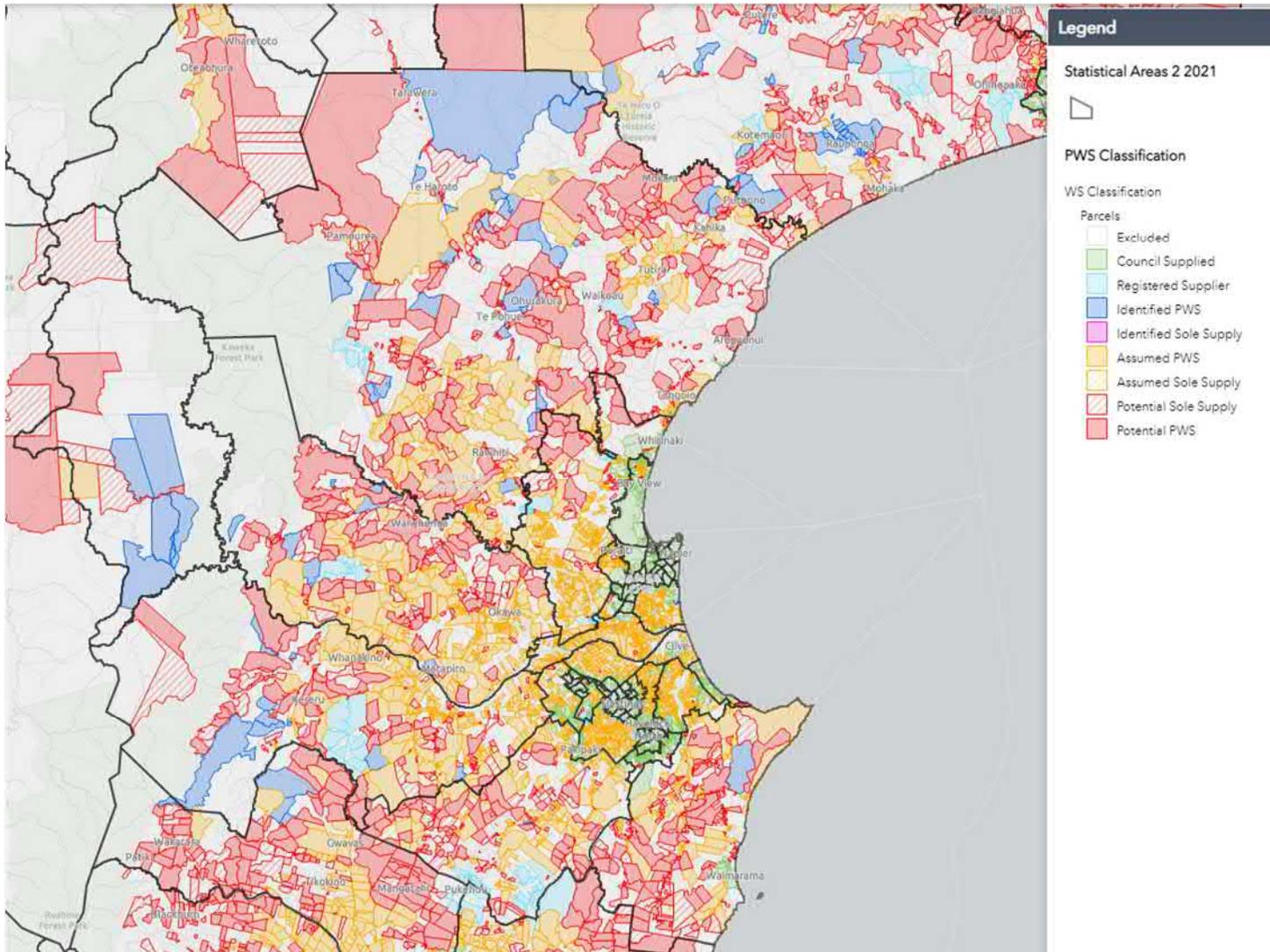


Figure 2-9: Map of known and possible private water supplies in Hastings District (Scenario 3)

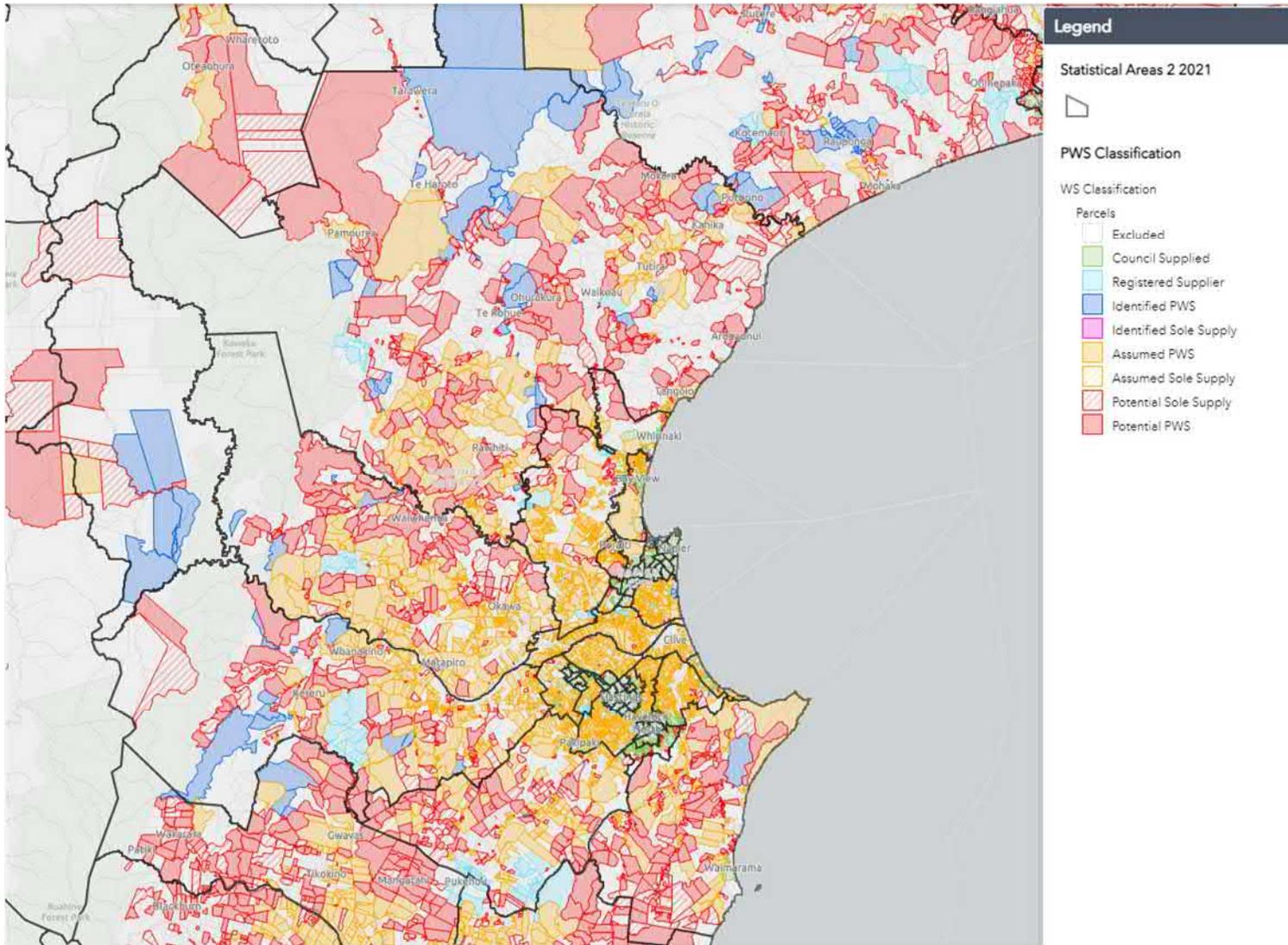


Figure 2-10: Map of known and possible private water supplies in Hastings District (Scenario 4)

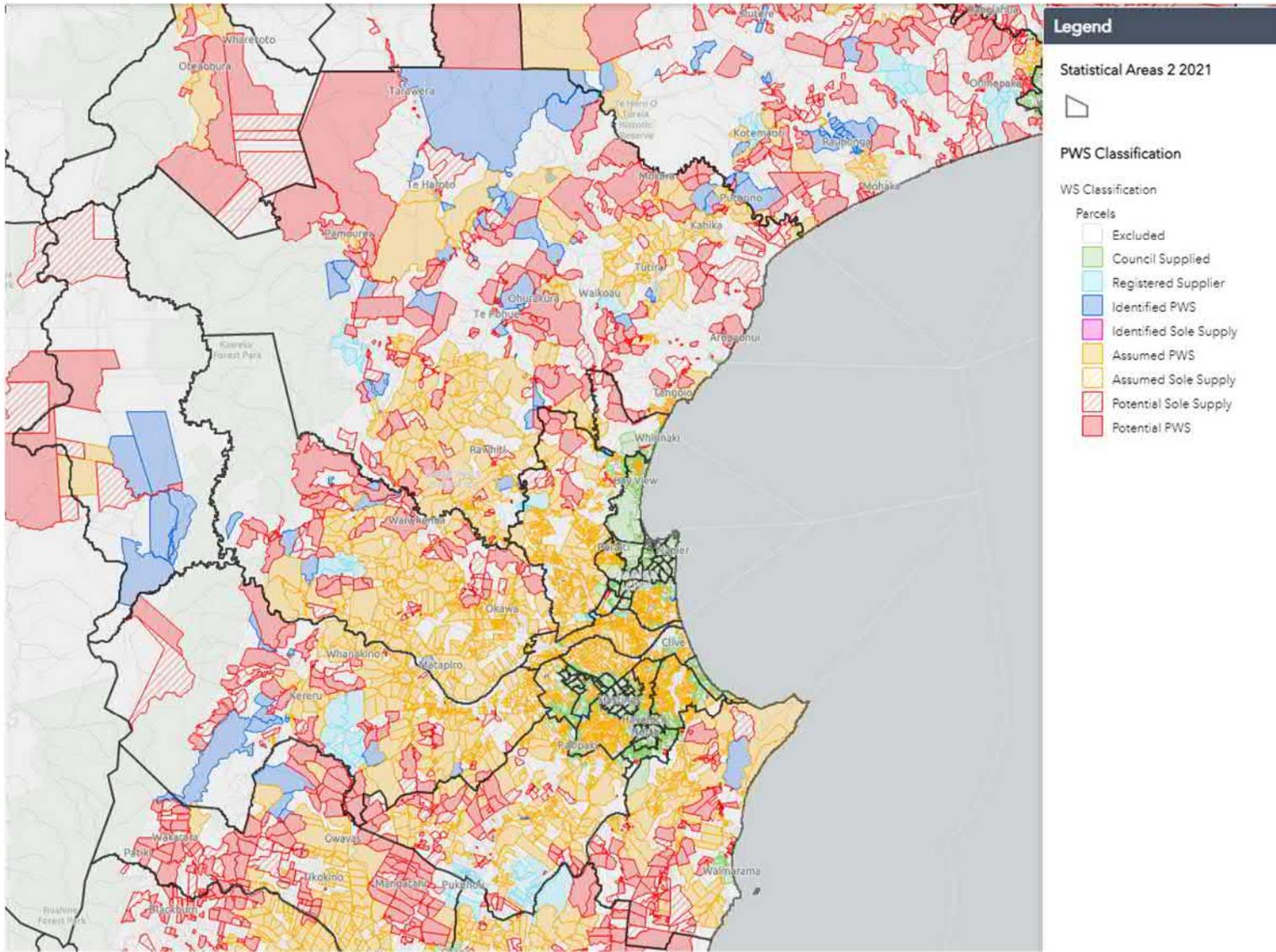


Figure 2-11: Map of known and possible private water supplies in Hastings District (Scenario 5)

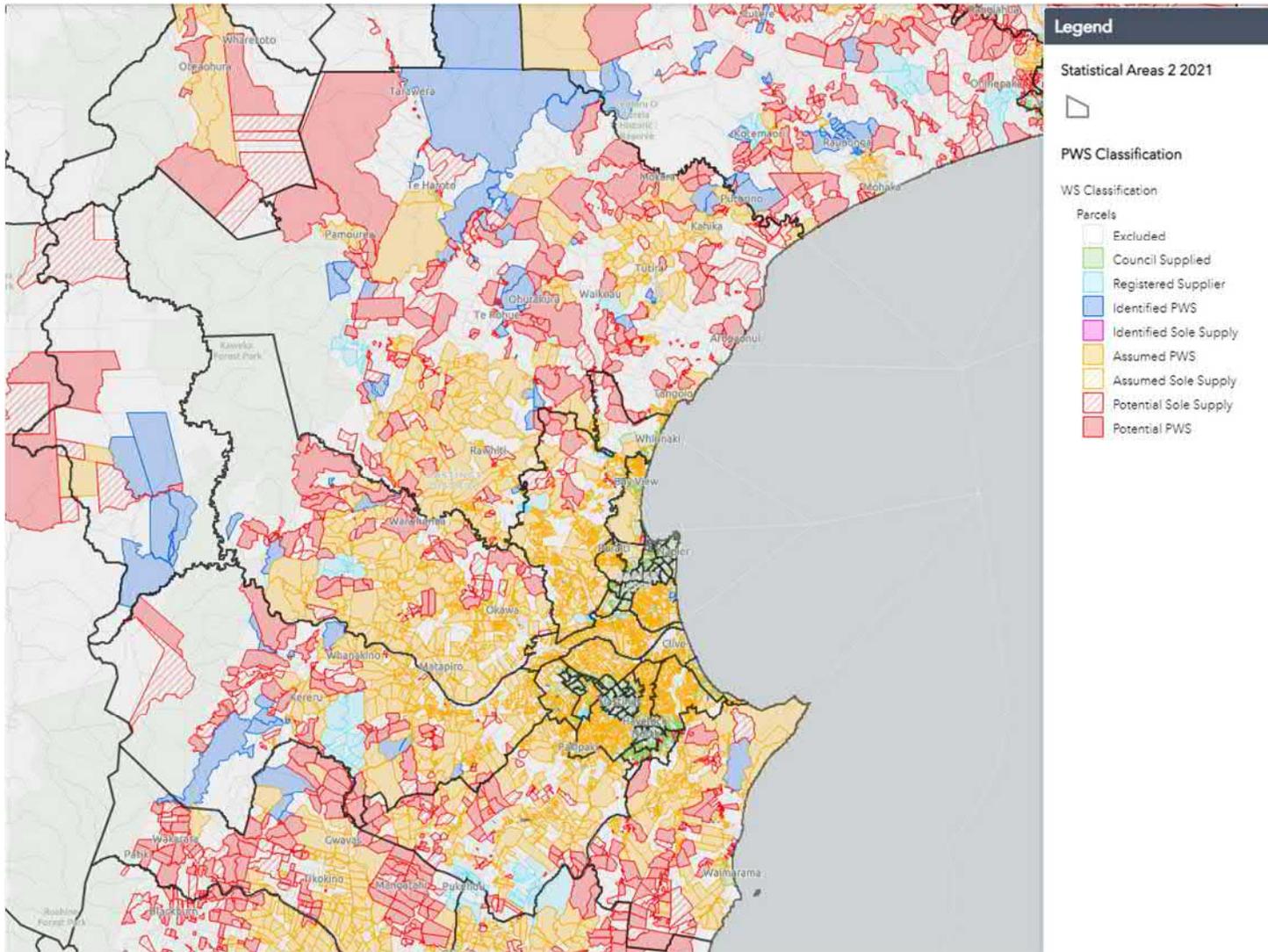


Figure 2-12: Map of known and possible private water supplies in Hastings District (Scenario 6)

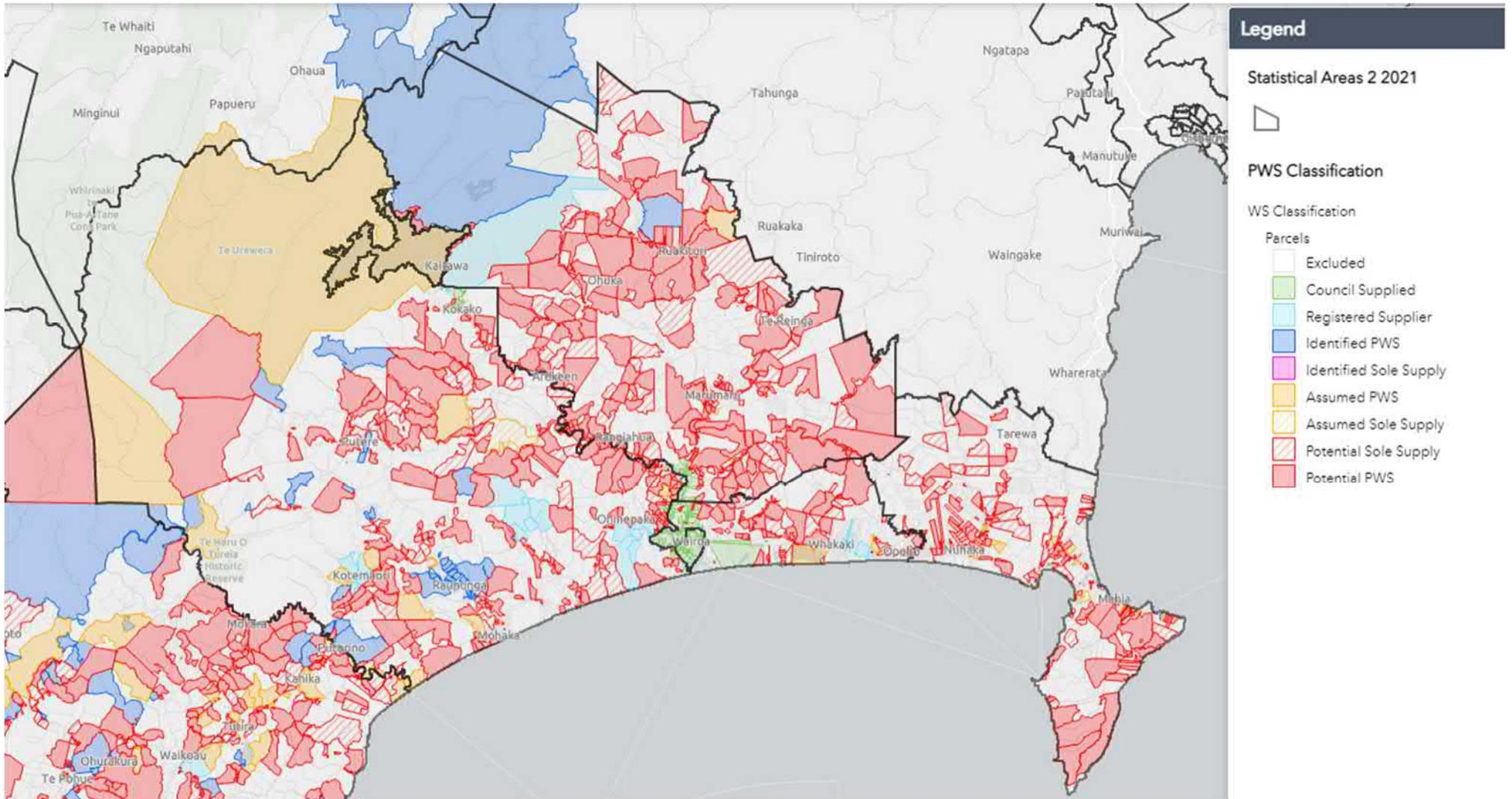


Figure 2-13: Map of known and possible private water supplies in Wairoa District (Scenario 1)

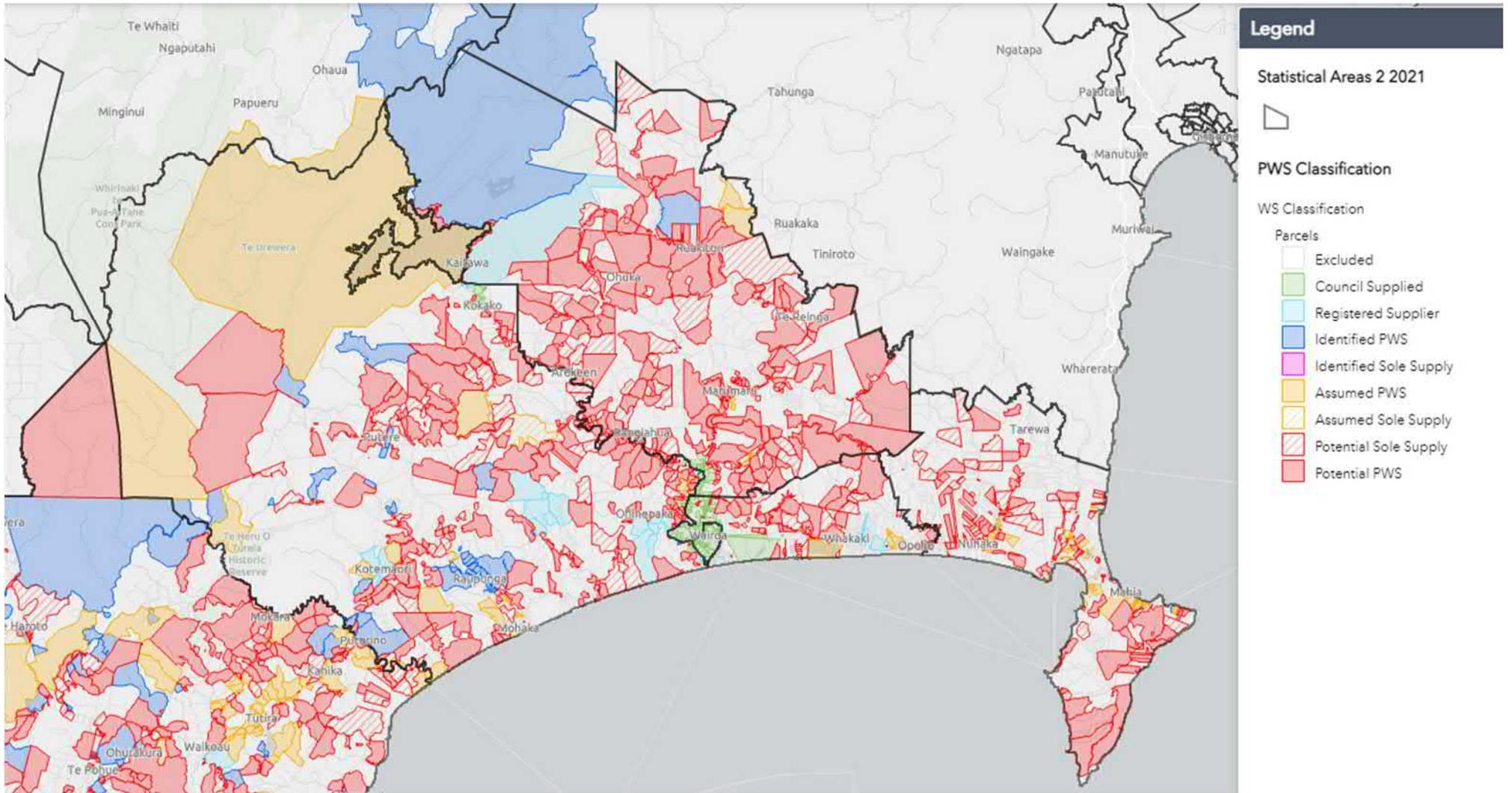


Figure 2-14: Map of known and possible private water supplies in Wairoa District (Scenario 3)



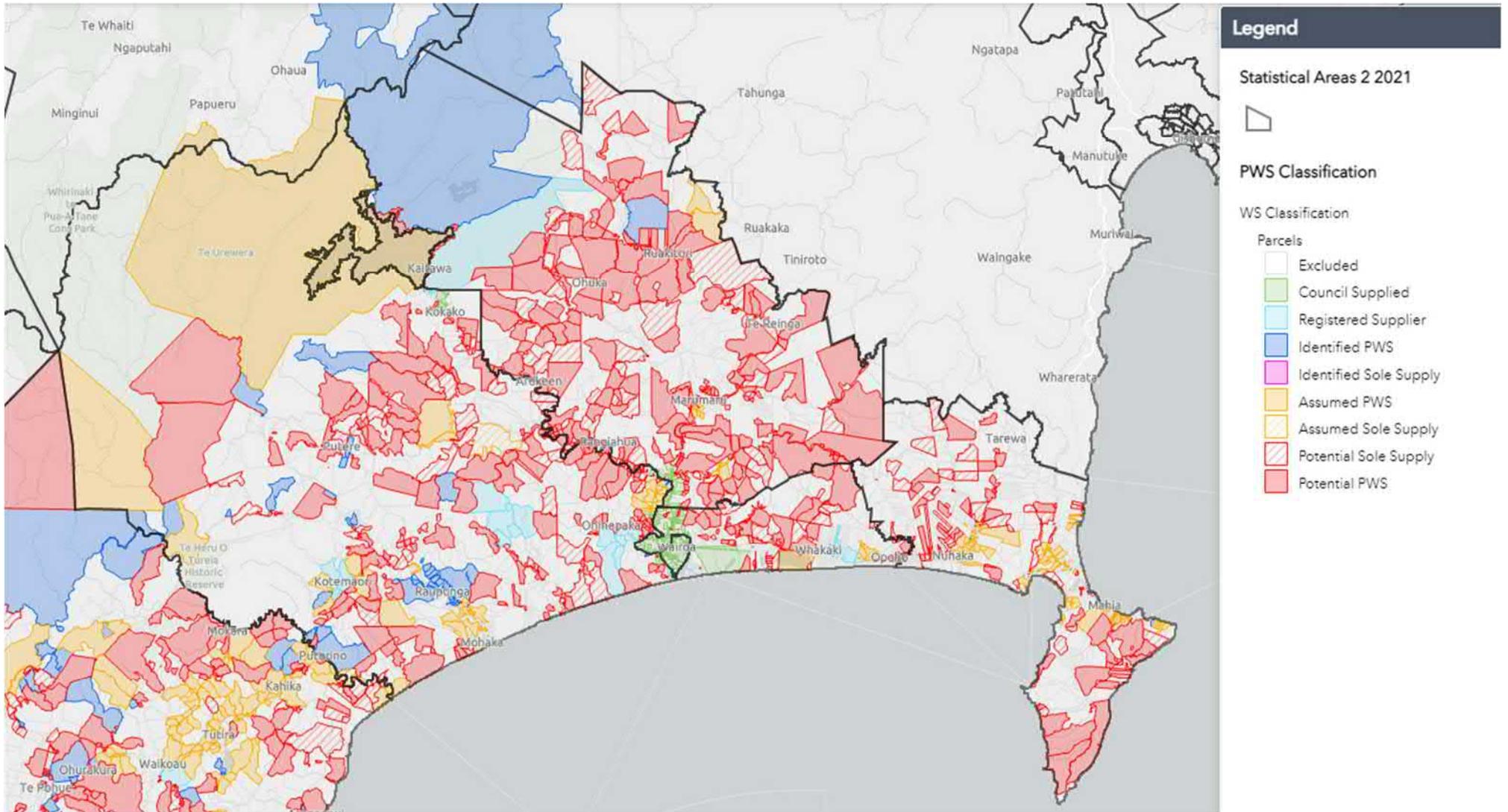


Figure 2-16: Map of known and possible private water supplies in Wairoa District (Scenario 5)



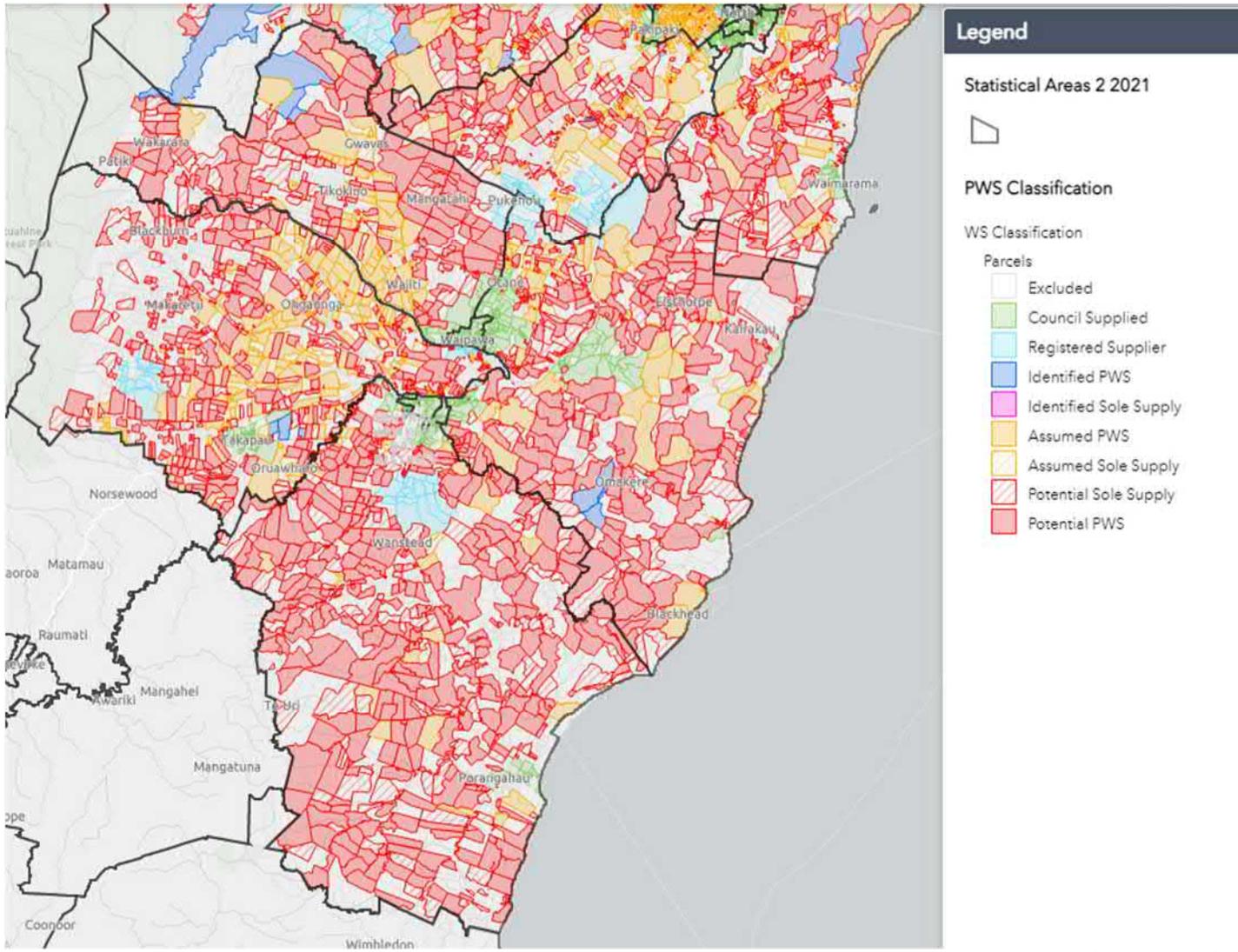


Figure 2-18: Map of known and possible private water supplies in Central Hawke's Bay District (Scenario 1)



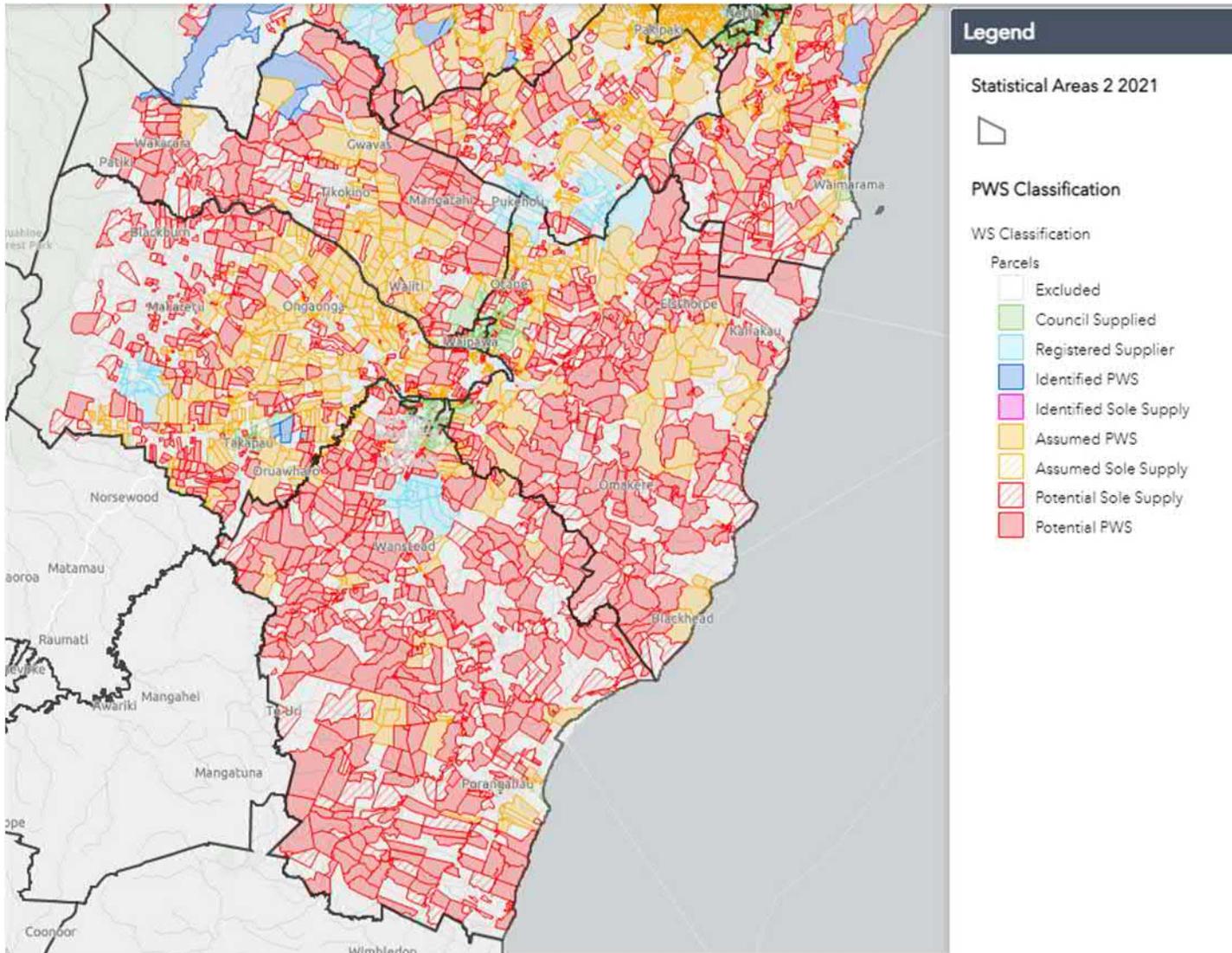


Figure 2-20: Map of known and possible private water supplies in Central Hawke's Bay District (Scenario 4)

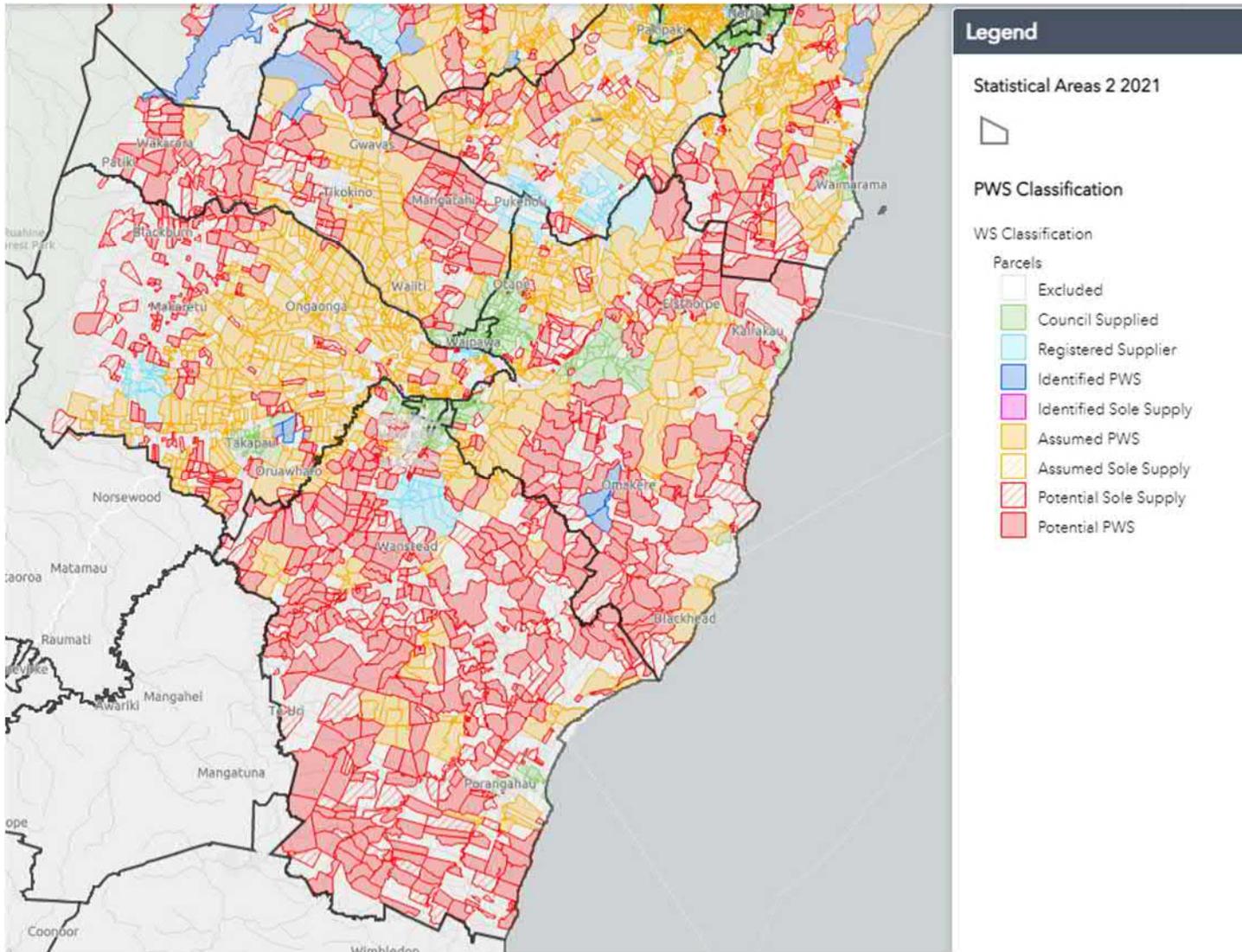


Figure 2-21: Map of known and possible private water supplies in Central Hawke's Bay District (Scenario 5)

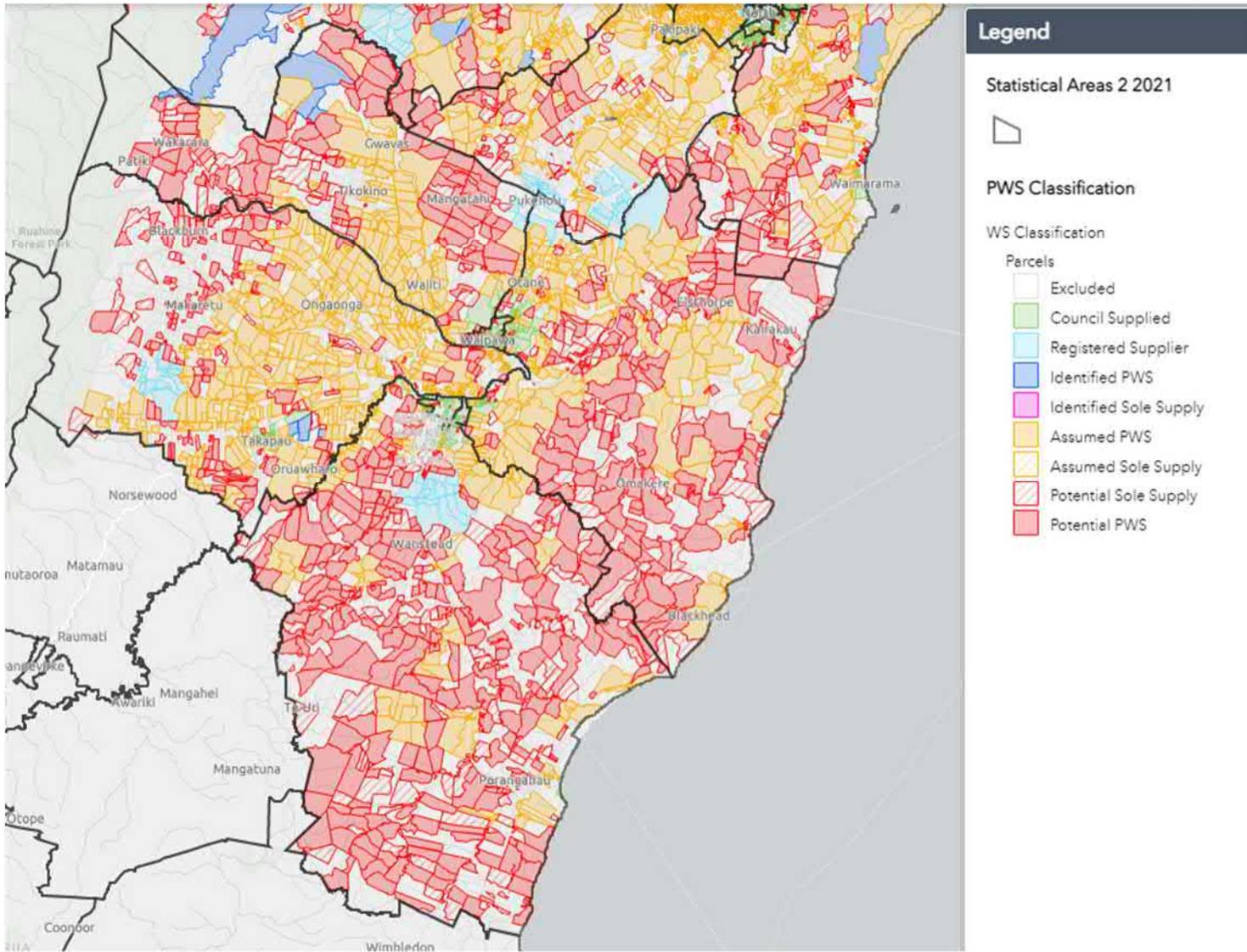
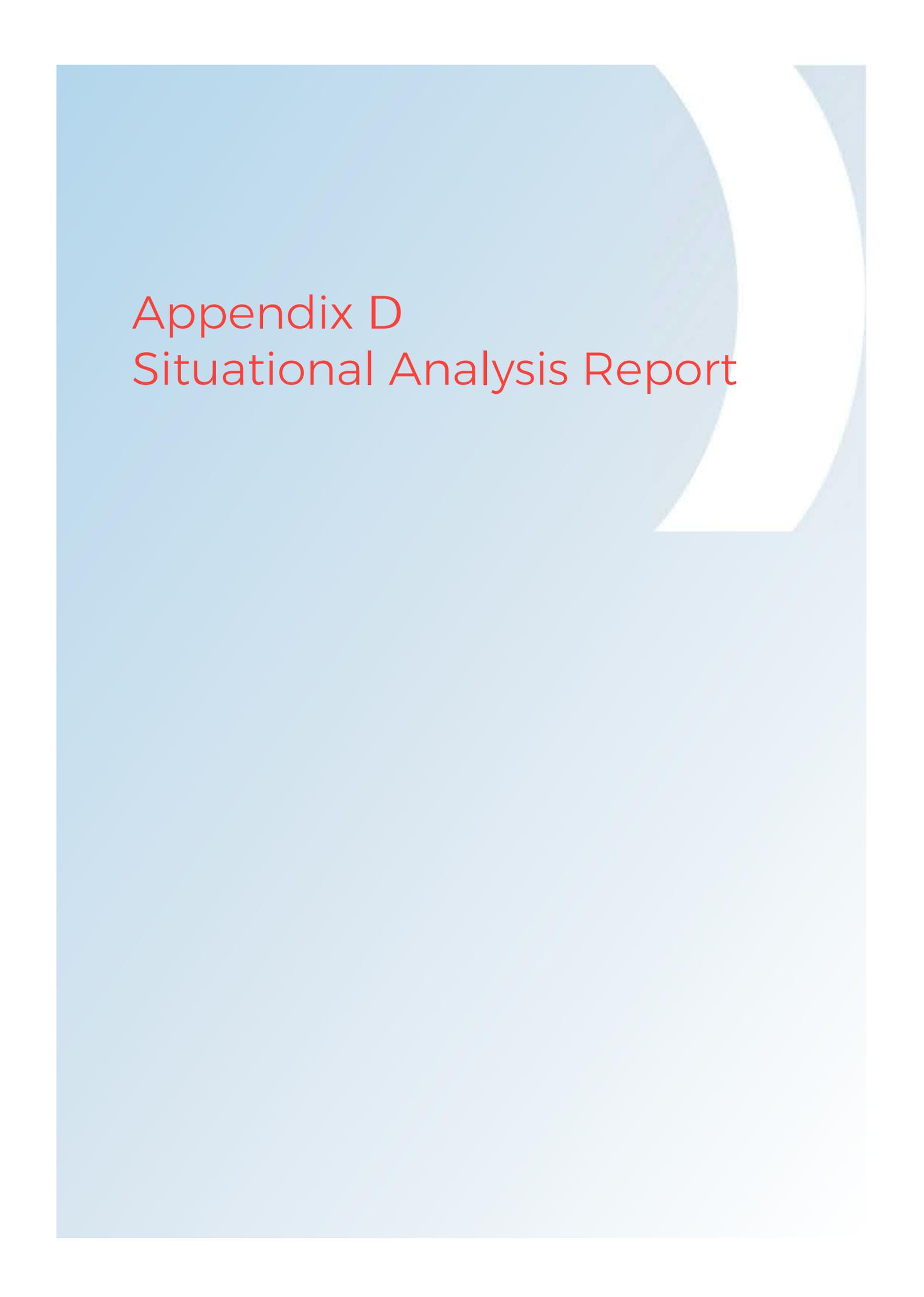


Figure 2-22: Map of known and possible private water supplies in Central Hawke's Bay District (Scenario 6)



# Appendix D

## Situational Analysis Report

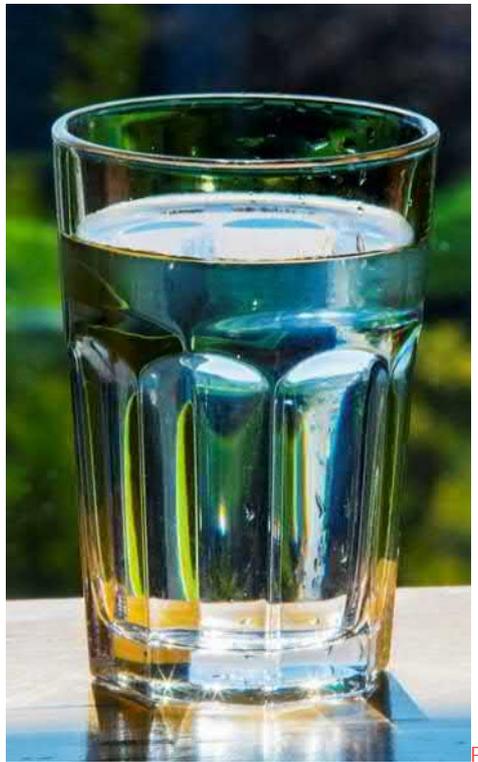
Napier City Council. Hastings District Council, Wairoa District Council and  
Central Hawke's Bay District Council

# HAWKE'S BAY PRIVATE WATER SUPPLIES PROJECT

## SITUATIONAL ANALYSIS REPORT

17 SEPTEMBER 2021

PUBLIC





## HAWKE'S BAY PRIVATE WATER SUPPLIES PROJECT SITUATIONAL ANALYSIS REPORT

Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council

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# EXECUTIVE SUMMARY

The purpose of this project is to assess private drinking water supplies before the Water Services Bill is enacted, so that the Hawke's Bay councils can understand how best to assess private water supplies. This information will help Councils support their communities to provide safe drinking water, to influence the way these assessments are carried out across the rest of New Zealand and to understand their potential liability with under-performing private water supplies.

This report summarises the information gathered to date from interviews with Council staff, reviewing previous sanitary surveys and other Council documents and multiple sources of GIS data and other information. The logic used to analyse this data and estimate the number and location of private water supplies is explained. It is estimated that there are 3,900 – 6,900 private water supplies in the Hawke's Bay region.

The key insights from the interviews relate to themes around the sentiment of water; private water supply communities; challenges and risks; and opportunities for this Investigation. Although the Council interviews and analysis have identified specific points for each district, the insights drawn from all findings will be used to understand the investigation as a whole, at a regional level.

People are connected to water through their lived experiences and relationships that they have with it, as is evident through their concerns around water quality and quantity issues.

Councils have played a limited role to date in how private water suppliers operate and there is little recorded on them, often with limited or disconnected processes within councils on how to manage information about private water supplies.

There is an opportunity in this Investigation to start the conversation with private water suppliers early, listen and consider supplier communities needs before regulatory changes occur. This will provide a greater level of understanding for both Council and private water supplier roles, ensuring an improved level of coordination, collaboration and engagement with suppliers.

Private water suppliers will communicate and engage in a range of ways on this Investigation, and it is expected that there will be varying levels of receptiveness. Many will be unaware that they are even private water suppliers themselves.

The next steps to define the communities and case study areas will be developed to inform the Communications and Engagement Strategy. A high-level matrix has been drafted to indicate how private water supply categories will be further understood within their specific community and types. A water supply assessment survey has been developed which aims to meet the proposed requirements of the Water Services Bill.

The previous water supply assessments which each Council undertook as part of their sanitary surveys in 2005 provide a foundation to defining communities and case study areas in each district.

This exercise has provided a sound foundation which can inform the next stages and build on the knowledge we have gained through this process.

# 1 PROJECT BACKGROUND

---

## 1.1 PURPOSE

The purpose of this project is to assess private drinking water supplies before the Water Services Bill is enacted, so that the Hawke's Bay councils can understand how best to assess private water supplies. This information will help Councils support their communities to provide safe drinking water, to influence the way these assessments are carried out across the rest of New Zealand and to understand their potential liability with under-performing private water supplies.

---

## 1.2 INTRODUCTION

Water supply assessments are a new requirement proposed in the Water Services Bill. The four Hawke's Bay territorial authorities (Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council) are starting this assessment in advance of the Bill being enacted with funding from the Government's stimulus funding for Three Waters Reform. WSP and its subconsultant FOLKL have been commissioned to undertake this work.

The Water Services Bill also proposes that Taumata Arowai (the new drinking water regulator) and territorial authorities will need to work with under-performing water suppliers to help bring them up to standard, and for the territorial authority to take over those water supplies if those efforts fail. The Department of Internal Affairs has estimated that there may be 75,000 private water supplies across the country. Based on the population of Hawke's Bay, this indicates that there could be around 2,700 private water supplies in the region.

The project involves identifying as many private water supplies as possible in the Hawke's Bay region, undertaking research to understand how best to engage with private water suppliers, and undertaking water supply assessments for a representative sample of private water supplies.

This project is occurring in parallel to Three Waters Reform, and as such, there will be political risk and potential confusion which may arise from this project. This will be carefully managed, as part of the project delivery plan.

---

## 1.3 RESEARCH OBJECTIVES

The research objectives for this project are:

- To capture data and information on private water supplies and suppliers to understand the current state (performance and risks) from a representative test sample within the Hawkes Bay region.
- To develop a repeatable methodology for undertaking assessments of private water supplies
- To develop and validate a communications and engagement framework for future private water supply assessments

- To explore the community's values and perception of water and private water supplies within the Hawke's Bay region to inform the communications and community engagement approach
- To understand the expectations and needs of private water suppliers and their supplies within the Hawke's Bay region
- To investigate private water suppliers' understanding of safe and accessible drinking water within the Hawke's Bay region

---

## 1.4 RESEARCH DESIGN METHODOLOGY

The philosophy and methodological approach to this project will be designed with a foundation of the following points:

- Community-up approach
- Qualitative methods
- Quantitative methods

### 1.4.1 COMMUNITY-UP APPROACH

The investigation will adopt a community-up research approach using a sample of water suppliers. This will be founded in developing relationships within communities, to ensure researchers can gain a strong sense of knowing and understanding surrounding the research topic itself.

This approach includes building knowledge based on a respect for people and the intrinsic value of their contextual understanding to the investigation and respective objectives. A meaningful engagement is established through meeting people face-to-face, in their own time and place.

An aim of the community-up approach is to arrive at a shared understanding of the purpose and outcomes of the project, and to ensure a strong foundation for continued partnership can be achieved for future activity.

### 1.4.2 QUALITATIVE METHODS

Qualitative methods use 'thick data' such as words and observations as a basis to construct knowledge and build understanding around a given direction of inquiry.

A qualitative mode of analysis helps to establish both broad contextual knowledge and a deeper understanding of a given topic, and in this case, the topic of water more generally in the region, and private water suppliers specifically within each district.

A reflective engagement approach will be conducted within the qualitative mode of analysis and involves understanding knowledge through the process of taking multiple steps and time to reflect on the topic, ensuring sufficient space is allowed to determine insights and information.

Qualitative methods for this inquiry are likely to include interviews, workshops, surveys, observations, participatory action research and other techniques to collaboratively obtain and gain a deeper level of understanding from the participants.

In alignment with the community-up approach, qualitative methods involve establishing relationships to ensure there is trust through transparency, consistent and timely communication with key stakeholders and communities. The outcome of this approach will be demonstrated in the successful delivery of the communications and community engagement strategy.

### 1.4.3 QUANTITATIVE METHODS

Quantitative methods use objective measurements and data to inform research. Multiple sources of information will be used to identify private water supplies in the region:

- Resource consents (e.g. water takes)
- Registered drinking water supplies
- Previous sanitary surveys undertaken by Councils
- Private water supplies identified by Council staff, the Drinking Water Assessor, Kāinga Ora etc.
- Overlaying multiple sources of GIS information (e.g. properties not connected to a Council network, clusters of buildings, aerial photographs) to identify possible private water supplies not identified through other means.

---

## 1.5 PROJECT SUCCESS MEASURES

There is an overarching commitment to determining a trusted and sustainable partnership approach, between Hawke's Bay Councils and mana whenua representative entities. This will both guide and influence the investigation success measures and anticipated future activity surrounding the Three Waters Reform.

The project success measures from the project start-up hui held on 6 August 2021 are summarised as follows. Please refer to Appendix A for the A3 sheets completed by each group at the hui, that were used to inform this summary.

The success measures for this project are to:

- Gain an improved understanding of private water supplies, thus giving Councils and communities a better understanding of risks and opportunities
- Provide data and insights supplied to inform future programmes to deliver safe, accessible and reliable drinking water.
- Develop a sustainable approach for future private water supply assessments, communication and engagement
- Support private water suppliers participating in the project to understand their current and proposed responsibilities
- Deliver data and insights that can help prepare Councils for the enactment of the Water Services Bill.

The success measures in the longer term are:

- Cultural, environmental, social, economic and public health requirements will be identified to help the Hawke's Bay communities to provide safe and sustainable water supplies.

- Private water suppliers are able to identify Council's role and their own responsibility within the broader Three Water Reform programme at a Central Government level.
- Engaged communities will be clear in their understanding and awareness around the purpose and implications of the Three Waters Reform programme. The private water supply communities are aware of and engaged in their responsibilities as private water supply entities, with a good level of understanding around the management and operational requirements to comply with regulatory standards.

## 2 THEMATIC ANALYSIS

The purpose of Stage 2 was to investigate what is currently known about private water suppliers in the Hawke's Bay region through a series of interviews with the five Councils and their department representatives. This inquiry heard from Council staff, who interact with the public and have valuable insight into their communities. The topics covered included: the nature of water and people's sentiment towards it; private water suppliers; and the opportunities, challenges and risks within their communities.

Between 13 August 2021 and 27 August 2021 FOLKL and WSP conducted a total of 24 interviews with staff members from Central Hawke's Bay District Council, Hastings District Council, Wairoa District Council, Napier City Council and Hawke's Bay Regional Council. The interviews were conducted with 34 Council staff members through online and face-to-face interviews.

This thematic analysis will inform the next Stage of the Investigation, helping to define communities across the Hawke's Bay Region, identify potential case study areas, and gain a deeper level of understanding and knowledge to support the development of the Private Water Supply Investigation - Communications and Engagement Strategy.

Through this interview process it was evident that establishing and building relationships with key regional staff will help to support the sustainability of this Investigation and subsequent work programmes.

---

### 2.1 THE NATURE OF WATER IN THE HAWKE'S BAY REGION

Conversations during community engagement will be influenced by how private water suppliers feel about water. As well as understanding people's perception as a region, it will be important to understand each district's feelings towards water too.

Water is of great importance across a number of communities in the Hawke's Bay. People are connected to water through their lived experiences and relationships that they have with it. This impacts on how they think about and respond to conversations about water in the region.

These insights highlight many commonalities in how people understand water across the districts, however each district has some clear differences in what matters most to them. For example, Wairoa is a district concerned primarily with discharges into the Wairoa River, while Napier residents show a negative sentiment toward chlorine. Thus, water quality appears to be of particular importance to these districts.

Although water quality has also been a key concern for Hastings District in the past, who experienced firsthand the events of the Havelock North drinking-water outbreak, their focus is on rural communities and how best to respond to allocation and water quantity issues. Similarly, Central Hawke's Bay district emphasised their greatest challenge was drought in their rural communities.

The sentiments in the themes above will resonate highly with every district, however, at a high level, Wairoa and Napier have a particular emphasis on water quality while the emphasis for Hastings and Central Hawke's Bay districts is on water quantity.

The section below will further unpack key findings in each district relating to water and private water suppliers set within the context of the proposed Water Services Bill changes.

## 2.1.1 WAIROA DISTRICT

### SENTIMENT AROUND WATER

Wairoa residents are strongly connected to water as communities located near coastal and river environments. Wairoa has a high Māori population and the close relationship that Māori have with water means that water is a significant priority to Wairoa residents.

Some of the Wairoa community perceive the wider Three Waters Reform and proposed amalgamation as a risk to their independent voice and the ability for decisions to be made that meet their District's water needs. Their dependency on access to reliable water is fundamental to the community's resilience given their relatively isolated location. These insights will be important to understand when consulting with private water supply communities in Wairoa.

### PRIVATE WATER SUPPLY COMMUNITIES

Some communities will be more receptive to receiving support and input than others. Communities may be sceptical about talking about or engaging in any water reform topics, as many have been through their own water-related issues and they may be concerned about future responsibilities. Others will not want to participate in any government-led regulation requirements at all. Some communities have appointed a representative spokesperson to lead discussions on water-related matters.

### CHALLENGES AND RISKS

Wairoa District Council and communities recognise the challenges ahead in implementing the Water Services Bill and proposed drinking water regulations. With limited resources, capabilities and capacity to appropriately monitor private water supplies, there is still a great level of uncertainty around how the new drinking water standards will be practically delivered.

Consultation with communities will be made more challenging whilst the legislation awaits enactment. As a result, Wairoa District Council will be unable to give definitive answers to questions that private water suppliers may have until the Water Services Bill is enacted.

Historically it has been difficult to deliver legislation that accounts for Te Ao Māori worldviews, often with poor iwi engagement around how this should be appropriately managed. There is a risk that iwi will see this as yet another regulation being imposed on them rather than developed with them.

### OPPORTUNITIES

The investigation is a worthwhile exercise, as it could provide Wairoa District Council staff with a greater understanding of private water suppliers in the district. Further, this process has provided an opportunity to initiate conversations around how Council staff could coordinate and manage information on private water suppliers within the district.

## 2.1.2 NAPIER DISTRICT

### SENTIMENT AROUND WATER

As a topic, water triggers people's emotions, as the issues surrounding the Havelock North drinking-water outbreak have influenced Napier's residents' sentiment around water. Water is therefore highly topical within local politics, and was a prominent issue surrounding the 2019 Council elections.

For a long time, there has been an impression by the Napier public that water is a clean and abundant resource that comes directly from the ground without the need for treatment. This current perception around the nature of water, coupled by the limited understanding of how and where water comes from, has made it difficult for Councils to communicate why some intervention to drinking water is required.

In addition, the environmental risks that communities face through events such as flooding, tsunami and coastal erosion continue to be reminders of the fragile equilibrium that communities must continue to manage.

The current prevailing Eurocentric rhetoric surrounding water sees it primarily understood through words such as ownership of asset infrastructure connected through pipes, and valves, sumps and drains that supply homes and businesses with instant, clean water to meet people's needs.

By comparison, iwi view water as a gift to be cared for. The relationship Māori have with wai (water) is one of nurturing through a mutual understanding that to sustain the health of people we must first reinstate the health of water itself.

### PRIVATE WATER SUPPLY COMMUNITIES

There are particular nuances, both colloquial and technical, within Napier which allude to how communities define and understand themselves. Some examples of this include: the Meeanee community who see themselves as separate from the Jervostown community, despite only being separated by a road. Bayview, Eskdale and Whirinaki see themselves as one community, even though technically from a Council jurisdiction perspective, half of their community is in Hastings and the other half is in Napier.

Napier private water suppliers are likely to be found in a more urban context, such as a private subdivision, apartment blocks or accommodation facility. There are also a large number of unknown bores (some with multiple connections) within the residential areas, rather than connected to town supply, which owners and the Council may not be aware of.

### CHALLENGES AND RISKS

There may be challenges engaging with some private water supplier communities due to pre-existing fear or uncertainty from past Council interventions relating to water issues. During these engagements, it will be important to manage expectations around Napier City Council's role.

Perceived gaps in Napier City Council and private water suppliers' information management and processes may result in issues around monitoring the provision of private water supplies for people. For example, after a resource or building consent is compliant, the Council does not engage with private water suppliers on an ongoing basis post-development to monitor water quality nor is it

known how regularly drinking water is tested by owners to ensure the water they supply is safe for people to drink.

#### OPPORTUNITIES

This inquiry provides an opportunity to listen to and understand communities needs and concerns before any regulatory changes occur. This will ensure there is a sufficient level of engagement and communication to respond and support people, in advance of changes to water supply regulation.

### 2.1.3 HASTINGS DISTRICT

#### SENTIMENT AROUND WATER

It is acknowledged that it is important to provide safe drinking water to communities and that we rely on it. However, wider public awareness of where their water source comes from and how it gets there appears to be limited in Hastings District, only that it comes from a tap. From a Te Ao Māori perspective, the intimate understanding of water goes as deep as whakapapa itself, in that we are all related to and come from our wai (water).

The Havelock North drinking-water outbreak has been pivotal in raising awareness with respect to water supply in the district. This coupled with additional environmental reminders, such as drought and flooding events have highlighted water's finite nature, water system vulnerabilities and the impact that this can have on communities. As a result, there has been a shift in thinking by both the public and Council staff around the need to take a more critical look at how water is managed and our relationship with it.

There is still public scepticism and mistrust towards Hastings District Council around their management and decision-making capabilities around the provision of safe drinking water.

#### PRIVATE WATER SUPPLY COMMUNITIES

There will be a range of responses to the proposed drinking water regulation changes, particularly around the roles and responsibilities of water suppliers. Some private water suppliers view Council interventions or monitoring as outside of Council's scope of work. There will be some who are active in their water testing and more willing to comply with these regulatory changes, while others will not have completed any testing at all.

Water is rural communities' greatest challenge. Contention around the resource stems from different user groups' ability to access water when water quality and quantity continues to deteriorate. For example, the farmers who use water to irrigate while rural communities drinking water supplies dry up during summer months.

Within marae communities, important tikanga (customary protocol) such as manaakitanga (hospitality) rely on access to water to carry out the process of welcoming guests to their marae. These tikanga practices demonstrate the mana (authority or influence) of its people. In light of the significant role that marae play in Māori identity, the regulation will need to consider how Māori are enabled to continue critical marae functions for hapū.

## CHALLENGES AND RISKS

Complex and changing social, economic, environmental and political demands around water pose greater challenges regarding how to manage it. With more change, comes greater financial capacity and capability demands on communities and councils themselves.

Centralising water services is seen to further disconnect people's relationship from water and their ability to care for, manage and represent it in a responsible (responsive and well-resourced) way.

Currently, the way that councils deliver or monitor water related services by different departments is disjointed. From a public perspective, this can cause confusion and frustration as they see Council as one front. The Water Services Bill has potential to further add to this disjointment and confusion if it is not implemented in the right way.

Other current legislative requirements, such as providing water storage for firefighting purposes, also pose risks to private water suppliers' ability to provide access to sufficient safe drinking water.

## OPPORTUNITIES

Hastings District Council staff recognise that a collaborative and unified approach will result in an informed and connected private water supply community. This approach will produce more sustainable and robust outcomes for water itself, and thus, for people who need access to safe drinking water.

This investigation provides an opportunity to better understand how suppliers manage their supplies and Council engagement (or lack of) with these supplies. This information will address gaps and provide recommended efficiencies and improvements to implement a more coordinated and clear approach to provide safe drinking water.

### 2.1.4 CENTRAL HAWKE'S BAY DISTRICT

#### SENTIMENT AROUND WATER

Water is of top priority for the Central Hawke's Bay's community. In particular, wai is of great importance to Mana Whenua, all of whom can share lived experiences and stories of their rivers. The evidence of water's abundance in the area indicate hapū's deep understanding and connection to wai (water). This is demonstrated through the many place names that begin with the prefix 'wai' in Central Hawke's Bay such as Waipawa and Waipukurau, as well as stories of critical drought levels.

Being predominantly rural, Central Hawke's Bay communities realise the value of water and the need to conserve it. People are accustomed to adjusting their water consumption to conserve water when water levels are low. However, there is still work required to demystify people's perception that water straight from the ground is safe to drink without treatment.

Central Hawke's Bay District Council recognises that a lack of water places significant pressure on farmers' ability to operate. The Council also recognises the critical role that farmers play in the district's economic well-being. There is sentiment in the rural communities that water is more challenging for them than in urban areas. There is contention over water allocation that permits a few large irrigators to take substantial water volumes.

Another challenge that Council faces is the possibility of external water servicing agencies proactively marketing treatment solutions to customers that purport to comply with proposed

drinking water standards before they have been confirmed. This will have a flow-on effect for suppliers that may need to revisit non-compliant supplies.

#### PRIVATE WATER SUPPLY COMMUNITIES

Many suppliers will not see themselves as private water suppliers and thus, will not recognise or understand their proposed responsibilities under the Water Services Bill. Some people who supply water either historically or are required legally through covenants, feel they have little control over what others do with the water they use. For example, a farmer whose water supply is used by neighbouring houses, can have serious consequences for that private water supplier if neighbours are not water conscious at critical low flow times and contribute to water supplies becoming dry, where farmers cannot provide water to their stock.

Access to water for marae is also a challenge, with varying views on how much intervention should be provided for water management. Thus, there will be varying levels of interest from private water suppliers to help manage their drinking water obligations.

#### CHALLENGES AND RISKS

The Central Hawke's Bay District has challenges that come with growth in the district, including increased infrastructure to provide more water access and balancing the different needs of communities that use water for their life, work and play.

In particular, keeping across the public's perception around what activities are seen as acceptable water usage will be important. Council recognise that this could shift as new populations move into the district. For example, farmers are currently seen as a critical part of the community, taking significant water for commercial purposes, while the population growth and thus water supply to these new developments are seen by some as a concern for the district. Changing communities may influence a change in the public's perception of acceptable water use activities in the future.

Private water supplies are not well recorded in the district and often discovered by accident. In addition, many will be feeling uneasy about the new regulations, they may have limited knowledge of their current water supplies, or wish to protect their own consented water takes (some of which are being held to future proof their activity or generations ahead) and do not want their water or infrastructure touched.

#### OPPORTUNITIES

Collaboration will be the greatest opportunity to implement the requirements of the Water Services Bill and drinking water regulations. There is an opportunity through this regulatory change to take a holistic look at private water suppliers and set clear processes that will help to manage drinking water for all people into the future. Through this, there is an opportunity to clarify and provide education for private water suppliers about their roles and responsibilities as well as the roles of both Regional and District Council.

Clarity around how decisions are being made to give effect to Te Tiriti o Waitangi, along with the respective roles of district and regional council, will improve private water suppliers' ability to engage in and support future regulatory requirements.

## 2.1.5 CONCLUDING STATEMENT

Although the council interviews and analysis above have identified specific points for each district, the insights drawn from all findings will be used to understand the investigation as a whole, at a regional level. This exercise has provided a sound foundation which can inform the next stages and build on the knowledge we have gained through this process.

## 2.1.6 PROGRESSING TO STAGE 3 - DEFINING COMMUNITIES

The next steps to define the communities and case study areas will be developed to inform the Communications and Engagement Strategy. Below, a high-level matrix has been drafted to indicate how private water supply categories will be further understood within their specific community and types.

## 2.1.7 HIGH LEVEL MATRIX

Please note this is an example and not an exhaustive this.

Category	Council-Supplied Supplier			Standalone Supplier Large			Standalone Supplier Small		
	"To define the criteria that puts a supplier in this category"			"To define the criteria that puts a supplier in this category"			"To define the criteria that puts a supplier in this category"		
Communities	Commercial	Community	Cultural	Commercial	Community	Cultural	Commercial	Community	Cultural
Type	Campground	Community Halls	Marae	Farms	Sports Clubs	Papakainga			
	Food industries								

## 2.1.8 PROGRESS UPDATE: COMMUNICATIONS AND ENGAGEMENT

In Stage 3 - Defining Communities, we plan to test the approach with identified key stakeholders, which is a fundamental step within our methodology, to determine how best to communicate and engage with wider communities of Hawke's Bay suppliers on the proposed new requirements.

The approach will be tested with key stakeholders, including the Programme Director, Infrastructure Leads, Council Communication and Engagement Leads, and other identified groups or individuals.

As the investigation progresses, we expect to increase our level of understanding around emergent themes within each of the communities, which will then influence and inform the proposed communications and engagement approach.

The high-level analysis matrix will evolve through Stage 3 into a comprehensive Stakeholder Analysis Matrix as we begin to identify and define the district's communities and understand needs, risks and concerns across the Hawke's Bay region. This will also help to identify trends, knowledge gaps, emerging challenges and opportunities within the district's communities.

The broader context of the Three Waters Reform programme introduces varied levels of risk and challenges to the Investigation. On-going and transparent dialogue with the Programme Director and key stakeholders will ensure there is a robust level of understanding around how to strategically manage and mitigate potential risks and challenges.

## 2.1.9 PROGRESS UPDATE: ENGAGEMENT TO-DATE WITH TE KUPENGA

An initial discussion with Te Kupenga has taken place and we will support the Programme Director with developing requested project information to inform external agencies and relevant representatives over the next month.

The intent is to seek further guidance from Te Kupenga and necessary cultural advisors around what shape and form the approach might take in order to uphold the Investigation.

# 3 WATER SERVICES BILL AND PREVIOUS RELATED STUDIES

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## 3.1 WATER SERVICES BILL

The Water Services Bill (the Bill) is currently going through the select committee process and is expected to be enacted later this year. This increases the expectations and accountability for water suppliers and will be enforced by Taumata Arowai once the Bill is enacted.

One of the key requirements of the Water Services Bill is that all water supplies (other than a domestic self-supply) must meet the requirements of the Bill and the drinking water standards. Currently only supplies that serve at least 25 people for 60 days per year need to comply with the Part 2A Drinking Water of the Health Act (which the Bill will replace). This means that there is a significant increase in the number of water supplies that will need to comply with the Bill and the revised drinking water standards. The Department of Internal Affairs has estimated that the number of registered water suppliers will increase from around 500 to over 75,000.

The Local Government Act 2002 (s125) currently requires local authorities to undertake a sanitary survey from time to time. This involves assessing the adequacy of water supply, wastewater, stormwater, solid waste and cemetery services in its district. In practice this was done soon after the Local Government Act was enacted, but rarely since then.

The Bill proposes to amend s125 of the LGA to require territorial authorities to undertake a more comprehensive assessment of drinking water services in their districts every three years, with the first assessment due by 1 July 2026. The assessment requirements include:

- Identifying every community that receives a drinking water service
- Describing the nature of the drinking water service
- Describing the characteristics of the community
- Assessing whether the quantity of water is sufficient to meet current and future needs, including identifying any reasonably foreseeable risks to access to drinking water
- Describing the safety and quality of the drinking water and identifying any public health risks
- Undertaking an assessment of wastewater and sanitary services
- Assessing the consequences if the community lost access to its drinking water service and outlining a plan to provide for ongoing access.

The scope of the investigation needs to consider all types of drinking water supplies but does not need to assess water services that are owned or operated by the Crown (e.g. schools).

If a water supplier has significant problems or potential problems with its water supply (fails to meet legal requirements, poses a serious public health risk or has ceased supply), the Bill requires the territorial authority to work with the water supplier and Taumata Arowai to identify a solution to

the problem and ensure that ensure that drinking water is provided to customers on a temporary or permanent basis. This may result in the territorial authority taking over the water supply.

The scope of this investigation is limited to a sample of private water supplies, not including self-supplies.

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## 3.2 PREVIOUS SANITARY SURVEYS

Previous sanitary surveys are summarised below. Please refer to Appendix A for a high-level analysis of other related documents provided to us by the Councils.

### 3.2.1 CENTRAL HAWKE'S BAY DISTRICT COUNCIL

Central Hawke's Bay District Council last undertook a sanitary survey in 2005. The results in terms of private drinking water supplies are as follows.

#### COMMUNITIES WITHOUT A COUNCIL-OWNED WATER SUPPLY

There were eight communities (summarised in Table 3-1) in the Central Hawke's Bay District that did not have a Council owned water supply:

- Onga Onga
- Tikikino
- Elsthorpe
- Mangakuri Beach
- Pourerere Beach
- Blackhead Beach
- Whangaehu Beach
- Aramoana (Shoal Bay)

The water for most of these communities was rainwater collected in tanks used for individual properties. Two communities had a combination of rainwater and pumped bore water, sometimes feeding multiple households. The key issues for these communities was being able to secure water of sufficient quantity and quality. Onga Onga was considered the highest priority for an improved water supply, along with the beach communities, due to the population fluctuations, numbers of people visiting and likelihood of future development.

Recommendations for the higher priority communities were to establish whether a water source and supply network was feasible.

Table 3-1: Un-serviced communities in Central Hawke's Bay District (from sanitary survey 2005)

Community	Water source	Reticulated	Water treatment	Approximate number of properties	Is there enough water?	Is the distribution system robust enough?	Is the water quality adequate?
Onga Onga (including General Store)	Mixture of groundwater and rainwater	No	No	70			Unknown
Tikokino	Mixture of groundwater and rainwater	No	No	60		N/A	Unknown
Elsthorpe	Mixture of groundwater and rainwater	No	No	15		N/A	Unknown
Mangakuri Beach	Rainwater	No	No	25		N/A	Unknown
Pourerere Beach	Rainwater	No	No	55		N/A	Unknown
Blackhead Beach	Rainwater	No	No	60		N/A	Unknown
Whangaehu Beach	Rainwater	No	No	20		N/A	Unknown
Aramoana (Shoal Bay)	Rainwater	No	No	1 (50 sections)		Unknown	Unknown

## PRIVATE WATER SUPPLIES

There were 63 known private supplies and Council owned supplies (summarised in Table 3-2) (not on reticulation), broken down into eight categories:

- Schools (11)
- Golf clubs and sporting facilities (7)
- Public houses (4)
- Halls (6)
- Camps (7)
- DoC huts (18)
- Marae (5)
- Other supplies (5)

These supplies were mainly in rural areas where public supply was not feasible. Again, many of these supplies used bore and rainwater collection with four of the supplies serving multiple households.

Key issues for these supplies that were identified were:

- Meeting the Drinking-water Standards for New Zealand (DWSNZ)
- Securing enough water to meet demand
- Education on importance of maintaining a secure water supply

Recommendations for private supplies were to identify systems where upgrades need to be made to meet DWSNZ. Another recommendation was for Council to put in place a requirement to be informed of sampling programmes and system upgrades by private supply owners and to conduct annual audits on these supplies.

Table 3-2: Private water supplies in Central Hawke's Bay District (from sanitary survey 2005)

Type of Comm unity	Name	Water source	Reticulated	Water Treatment	Approximate Number of Properties / Maximum People Served	Is the distribution system robust enough?	Is there enough water?	Is the water quality adequate?
Private water supply	Farm Road Scheme	Groundwater	Yes	Yes - Cl	45 properties			Unknown
	Hautope Scheme	Groundwater	Yes	Yes - Cl	15 properties			Unknown
	Pukeora Estate	Groundwater	-	No	10 properties			Unknown
	Richmond Takapau	Groundwater	-	Yes - Cl and Mn removal	N/A			
	Smedley Station	Creek	-	Yes - UV	5 properties			Unknown
Marae	Tapairu	Rainwater	-	No	No	-		
	Rakautatahi	-	-	No	No	-		

Type of Community	Name	Water source	Reticulated	Water Treatment	Approximate Number of Properties / Maximum People Served	Is the distribution system robust enough?	Is there enough water?	Is the water quality adequate?
	Whatu Apiti	-	-	No	No	-		
	Mataweka	-	-	No	No	-		
	Kairakau	-	-	No	No	-		
Public Halls	Argyll hall and play centre	Rainwater	-	No	45 people	-		
	Tikokino War Memorial Community Centre	Rainwater	-	No		-		
	Onga Onga hall and play centre	Groundwater	-	No	40 people	-		
	Otawhao	Rainwater	-	No		-		
	Wallingford (Small bore)	Rainwater	-	No		-		
	Elsthorpe	Rainwater	-	No		-		
Camps	Blackhead Beach	Rainwater*	-	No	200 people	-		

Type of Community	Name	Water source	Reticulated	Water Treatment	Approximate Number of Properties / Maximum People Served	Is the distribution system robust enough?	Is there enough water?	Is the water quality adequate?
	Wazz Macs	Groundwater and rainwater*	-	Yes	150 people	-		
	Pourerere Beach	Rainwater*	-	No	200 people	-		
	Gibraltar and Pourerere Rd corner	Rainwater	-	No		-		
	Whangaehu	Rainwater	-	No		-		
	Tikokino hotel and campground	Groundwater	-	No	30 people	-		
	Wakarara	Creek	-	No	50 people	-		

### 3.2.2 NAPIER CITY COUNCIL

Napier City Council undertook a sanitary survey in 2005. This survey found that 96% of the community was serviced by a public water supply. There was potential for extending the Council water supply reticulation for existing dwellings and infill in some areas that are currently not reticulated. However, as there were only 161 dwellings of infill scattered in the non-serviced areas, the only realistic option for reticulation extension was considered to be where these dwellings were concentrated in one location and property owners were prepared to meet the cost.

**Jervoistown, Meeanee Township, The Loop and Awatoto** (see Figure 3-1 for a map) were served by private water supply systems; the majority either individual or shared bores. These areas obtained water from the same good quality abundant aquifer as the Napier City Council public supply.

In **Kaimata, Eskdale, Bay View Rural, Landcorp Farm, Poraiti and Redclyffe**, 78% of the population (125 dwellings) used bores or rainwater for water supply; the remainder was reticulated. The bore water comes from a limestone aquifer and is hard. It sometimes has appreciable iron content also. These are generally aesthetic problems only and there was no evidence to suggest the water was not bacteriologically sound. Treatment should be considered for these communities on a case-by-case basis as they source their water from unconfined or semi-confined aquifers where the risk of contamination is higher. The bore water supply is adequate in quantity for domestic needs.

Around 20% of the non-reticulated population used rainwater and, on occasion, they experienced water shortages, and resorted to tankered water for supplementary drinking needs. A potential health risk of rainwater systems is the lack of treatment. Some of the individual property assessments in these communities indicated the presence of *E. coli* in the rainwater. It was recommended that a public education campaign to promote collection management, such as the diversion of first flush, should be considered.

Extension to the reticulated system was considered to be suitable only for multiple housing developments where the costs of extending the system to the required location could be shared among the beneficiaries. Technically feasible options to service areas such as Kaimata and Eskdale with reticulated systems were identified, but the cost was unacceptable to the community. In the interim, or for areas where reticulation is not possible, it was suggested that property owners could make improvements to current systems. Deeper bores or new and improved rainwater collection could improve the quantity of supply. Rainwater system manufacturers and consultants could advise on system improvements.

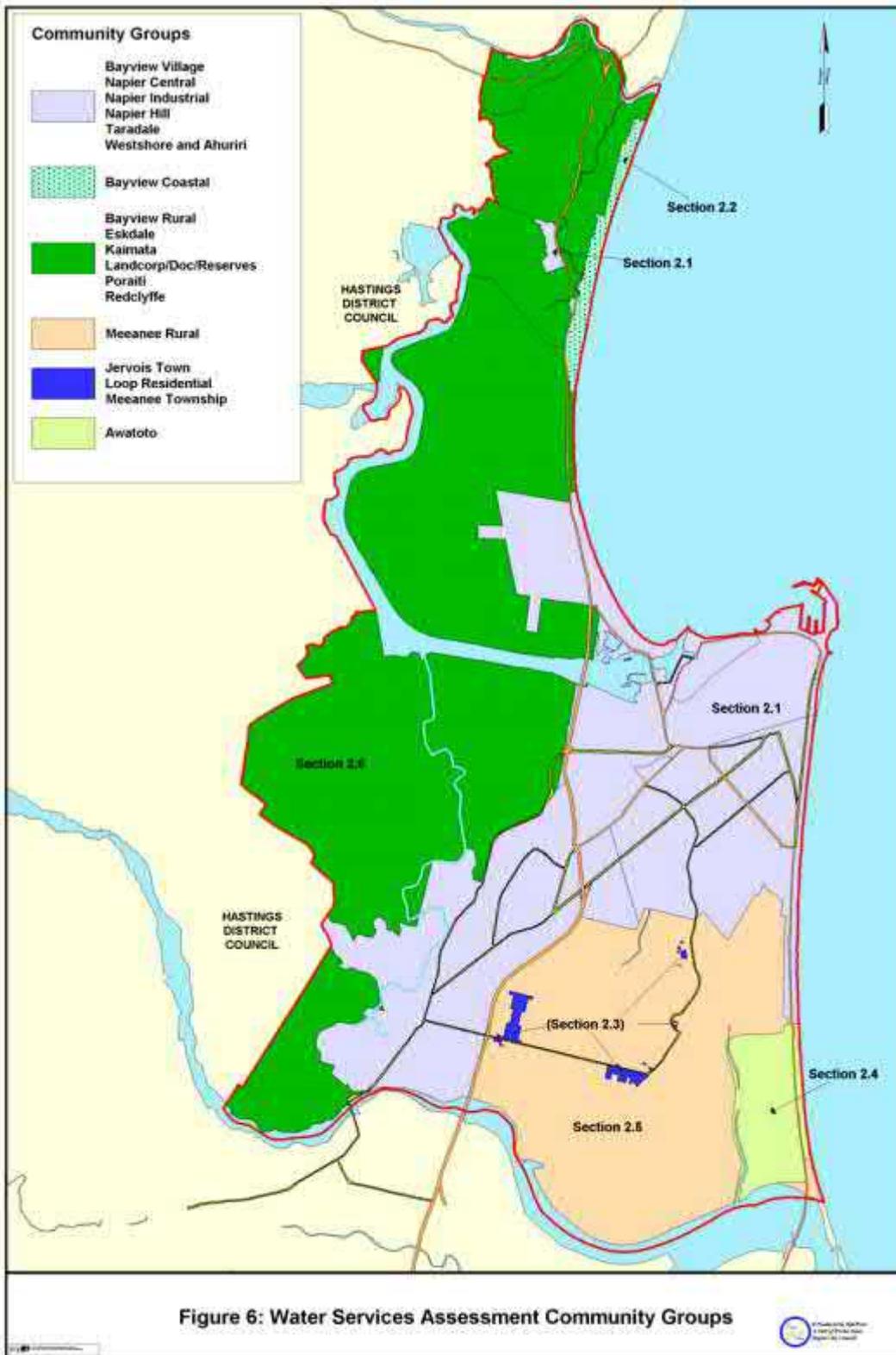


Figure 3-1: Napier Water Services Assessment Community Groups Map

### 3.2.3 HASTINGS DISTRICT COUNCIL

Hastings District Council undertook a sanitary survey in 2005 (Assessment of Water Services – A Study of Issues and Options, Opus 2005). The communities with and without Council-owned water supplies are shown in Table 3-3.

Table 3-3: Communities with and Without Reticulated Water Supplies

Community	Water	
Haumoana	√	Cc
Te Awanga/Clifton	√	Cc
Wairamarama	√	Cc
Maraekakaho	x	
Waipatiki Beach	~	Cc
Whirinaki	√	Cc
Puketapu	x	
Waikoau	√	Pp
Fernhill/Omahu	~	Cc
Bridge Pa	x	
Pakipaki	~	Cc
Te Hauke	x	
Te Pohue	√	Pp
Ocean Beach	x	

#### Table Key 1 - Reticulation

- √ indicates that there is a reticulated service available to the bulk of the community
- ~ means only a part of the community is reticulated
- x shows that there is no reticulation

#### Table Key 2 - Ownership and Operation

- Cc indicates reticulation is managed and operated by Council and is either Council or Community owned
- Pp indicates reticulation is privately owned and operated

The water supply assessments for communities without reticulation or private water supplies are summarised below.

## MARAEKAKAHO

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	No reticulated supply		
Non-Reticulated Supply	Low	Low	Low
Maraekakaho School	Low	Medium	Low

The medium level risk to public health for the Maraekakaho School related to the number of people potentially affected and the possible contamination of the artesian bore water supply. It was recommended that the Council encourage the school to undertake routine monitoring of the artesian bore to test for one or two key parameters so that the status of their water supply could be tracked and the contamination risk qualified.

## WAIPATIKI BEACH

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	High	Low	Low
Non-Reticulated Supply	Low	Medium	Low
Waipataki Beach	Low	Low	Low

The risk for meeting demand for reticulated supply was rated high as the supply was barely adequate for peak summer demand and would require augmentation and enhancement to meet projected growth requirements.

For the non-reticulated supplies, the 'medium' level risk to public health related to the potential risk of contamination of the non-secure groundwater source and the operation and management of systems by private property owners. Routine monitoring of the groundwater, or of household supplies, to test for one or two key parameters was recommended, so that the status of the groundwater could be tracked and the contamination risk quantified.

## PUKETAPU

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	No reticulated supply		
Non-Reticulated Supply	Low	Medium	Low
Puketapu School	Low	Medium	Low
Puketapu Hotel	Low	Medium	Low

For the non-reticulated supplies, the medium level risk to public health related to the potential contamination risk to 'non-secure' supplies. Routine monitoring of the groundwater was recommended so that the risk could be quantified.

For the Puketapu School and Hotel, the medium level risk to public health related to the security of the existing bore and tank supplies. It was recommended that regular testing of the water supply at the hotel should also be carried out and reported to Council.

#### WAIKOAU

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	Medium	Medium/High	Medium/High
Non-Reticulated Supply	Community Scheme		

For the reticulated supply the medium to high levels of risk to demand, health and environment related primarily to the poor operation and inadequate management of the community scheme.

#### FERNHILL/OMAHU

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	Low	Medium	Low
Non-Reticulated Supply	Low	Medium	Low
School	Low	Low	Low
Hotel	Low	Medium	Low
Te Awahira Marae	Low	Medium	Low
Omahu Marae	Low	Medium	Low

The medium risk health for the reticulated supply related to the unknown security of the reticulation against contamination. The medium health risk for non-reticulated and hotel and marae related to potential risk of contamination of the groundwater source.

For the reticulated supply, the medium risk for demand relates to the inadequate storage, particularly in summer. Even if additional supply is provided, it was recommended that additional storage should be considered. Ongoing monitoring for E. coli was recommended bi-annually.

#### BRIDGE PA

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	No reticulated supply		
Non-Reticulated Supply	Medium	Medium	Medium
Bridge Pa School	Medium	Medium	Medium
Korongata Marae	Low	Medium	Medium
Mangaroa Marae	Low	Medium	Medium

The medium risk for health and environment related to proximity of water bore to sewage disposal soak holes on site and the potential for draw from the water pumps to cause faecal contamination

of the groundwater source. Annual testing of the water supply by Ministry of Health had not detected any faecal contamination to date. It was recommended that Council discuss the matter with Ministry of Health to encourage six monthly or quarterly testing and to request that results be advised to Council to enable the situation to be monitored.

The medium risk for private properties for demand related to the reported occurrences of residents running out of water during peak summer periods.

The medium risk for public health for private properties and both marae related to the potential for contamination of the water source to go undetected.

It was noted that the resource consent for the Mangaroa marae water supply had expired. It was recommended that Council consult with HBRC and Ministry of Health and the marae to encourage some level of routine testing be undertaken and that a copy of the results be provided to Council. In addition, routine testing of bore water supplies at locations within the community was recommended to track the water quality and quantify the risk of contamination of the unconfined aquifer that provides source water for properties in the community.

#### PAKIPAKI

<b>Water Supply</b>	<b>Risk to Meeting Future Demand</b>	<b>Risk to Protecting Public Health</b>	<b>Risk to Environmental Protection</b>
Reticulated supply	Low	Medium	Low
Non-Reticulated Supply	Low	Medium	Medium

The medium level health risk for reticulated primarily related to issues surrounding the aesthetic water quality and the potential that some contamination could occur in the reticulation as the water was untreated. However, this was mitigated by investigations being undertaken by Council into possible connection of the supply to Hastings City water in conjunction with a proposed subdivision and pilot trials of treatment processes to moderate the impact of iron and magnesium levels in the source water.

The medium health risk for private properties related to the potential risk of contamination of unsecure groundwater sources. It was recommended that testing household water supplies for one or two key parameters be undertaken at locations within the community on a routine basis to monitor the source groundwater and quantify the risk of contamination of water supplies.

#### TE HAUKE

<b>Water Supply</b>	<b>Risk to Meeting Future Demand</b>	<b>Risk to Protecting Public Health</b>	<b>Risk to Environmental Protection</b>
Reticulated supply	No reticulated supply		
Non-Reticulated Supply	Low	Medium	Low
Kahuranaki Marae	Low	Medium	Low
Te Hauke School	Low	Low	Low

The medium health risk for non-reticulated private properties and the marae related to the fact that the security of the water sources was not known.

It was recommended that the marae be encouraged to routinely test their water supply and provide results to Council and that Council undertake sampling of household water supplies at locations within the community to test for key parameters to quantify and monitor the risk of contamination of private water supplies.

#### TE POHUE

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	Medium	Medium	Low
Non-Reticulated Supply	Community scheme		

The medium demand risk related to reports that a proposed new subdivision was declined due to limited water availability. This risk was mitigated by land use zoning and other geographical constraints on development of the area.

The medium health risk related to the potential for contamination of the source water, the absence of treatment and the unknown security of the reticulation. These risks were mitigated by the supply being well operated and that routine annual testing for faecal contamination occurred at the school and the hotel. It was recommended that Council request copies of results of annual testing and that technical support services in regard to training and advice be made available to the community supply operator and committee.

#### OCEAN BEACH

Water Supply	Risk to Meeting Future Demand	Risk to Protecting Public Health	Risk to Environmental Protection
Reticulated supply	No reticulated services provided		
Non-Reticulated Supply Tank supply	Low	Medium	Low
Non-Reticulated Supply Private Bores	Low	Medium	Low

*Note: Whilst the existing non-reticulated supply appears adequate for the present level of development, any future subdivision growth would require development of alternative water supply.*

The medium level public health risk related to possible contamination of the private bore supply. It was recommended that the owners be encouraged to monitor the water supply quality and undertake proper maintenance of existing services.

### 3.2.4 WAIROA DISTRICT COUNCIL

Wairoa District Council undertook a sanitary survey in 2005. Approximately 50% of the population relied on private individual water supply services to some extent. From the census 2001 occupied

dwelling statistics there were approximately 1,400 dwellings with private water supplies in the Wairoa District.

#### TUAI VILLAGE

The supply at Tuai is sourced from the Waimako spring and is untreated. It supplied a population of approximately 270 people.

WDC commenced monitoring of the Tuai Spring during 2003. The results showed general compliance with the drinking water standards. There was an issue with potential for contamination, however Council rectified this by placing secure fencing around the take site. The village was on a permanent boil water notice. This supply has since been upgraded to meet the Drinking Water Standards for New Zealand.

#### MAHANGA BEACH SETTLEMENT

The supply at Mahanga comes from a shallow bore located in farmland and is untreated. It was only intended as a supplementary non-potable supply and much of community was also on rainwater. It supplied a population in excess of 30 people. Due to the lack of treatment, the Mahanga supply was on a permanent boil water notice.

#### WAIROA DISTRICT PRIVATE SUPPLIES

Private water supplies in the Wairoa District relied on water from a variety of sources including river, stream, spring and bore takes and collection of roof water (with supplementation from private suppliers of town supply water). Limited data was available on the proportional usage of these sources however it was understood that bore water tended to be the primary source of water in the coastal settlements with rainwater as an alternative source.

# 4 WATER SUPPLY ASSESSEMENT SURVEY

The draft Water Supply Assessment survey aims to capture information about private water supplies to meet the proposed requirements of a water supply assessment in section 198 of the Water Services Bill. Qualitative questions are also included to help inform the recommended engagement approach for the regional roll out of the water supply assessment.

Answers to questions in blue text will be pre-populated based on information we already have or are obtained from the water supplier prior to the site visit. Answers to questions in black to be obtained during the site visit

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## 4.1 BASIC INFORMATION

Q1. Water supplier full name

Q2. Physical address of water supply

Q3. Contact number

Q4. Contact email

Q5. Preferred means of contact

Q6. Is the property tenanted? (Y/N)

a. If yes:

- i. Contact name for tenant
- ii. Contact number
- iii. Contact email
- iv. Preferred means of contact

Q7. Is this a registered water supply/supplies? (Y/N)

b. If yes:

- i. Registered water supply number

Q8. Is there a resource consent for the water supply/supplies? (Y/N)

b. If yes:

- ii. Resource consent number
- iii. Expiry date
- iv. Volume limit(s)
- v. Is the source overallocated? (Y/N) from regional plan (TANK Plan)

---

## 4.2 AWARENESS AS A PRIVATE WATER SUPPLIER

Q9. Firstly, we would like to hear your thoughts on your relationship with water, your experiences and any history relative to your water supply.

Q10. What does it mean to be a private water supplier? Are you aware of anything you need to do as

a private water supplier?

Q11. Before today, did you know that you are, or will become, a private water supplier? (Y/N)

---

### 4.3 COMMUNITY SERVED

Q12. Talk me through the nature of the supply. Briefly describe the nature of this supply community.

Q13. How many buildings does the water supply serve?

Q14. How many people does the water supply serve?

---

### 4.4 VOLUME REQUIREMENTS

Q15. Describe how much water is used:

- a. On average
- b. At peak time (normally summer)
- c. If a rural agricultural supply, approximately what percentage is used for domestic use?

Q16. What are your thoughts around how much water you will need in 10 years' time? Do you think it will increase? (Y/N) [Comment box for information]

- a. If yes:
  - i. Estimate increase in average volume
  - ii. Estimate increase in peak volume

Q17. Describe your understanding of allocation limits. [Comment box for information]

---

### 4.5 WATER SOURCE

Q18. Water source(s) (tick all that apply) (prepopulate and confirm on site)

- a. Roof
- b. Bore
- c. Spring
- d. Surface water
- e. Capture photos and location of source and intake/bore head

Q19. Describe the nature of your water source. [Comment box for information]

Q20. Are there any alternative water sources? (Y/N) [Comment box for information]

Q21. Describe the potential implications for you and your community if you did not have access to water. [Comment box for information]

Q22. If bore water is used:

- a. Well number
- b. Depth of bore (to top of screen)

- c. Is bore head above ground or below ground?
- d. What condition is bore head (score 1-5, with 1 being as new and 5 very poor)
- e. What is the distance between the bore and the on-site wastewater disposal field?

Q23. Has the source water ever been tested? (Y/N)

- a. If yes:
  - i. Did any parameters exceed the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N)
    - 1. If yes:
      - a. Comment box for further information
  - ii. Did any parameters exceed half the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N)
    - 1. If yes:
      - a. Comment box for further information

Q24. What are the risks to source water?

- a. Auto-populate suggested list based on source type and answers to water quality testing questions
- b. For roof water:
  - 1. Are lead head nails used on the roof? (Y/N)
  - 2. For painted galvanised iron roofs, please rate the condition of the paint (score 1-5)
  - 3. Are there any overhanging or nearby trees? (Y/N)
  - 4. Is there a chimney? (Y/N)
  - 5. Is there any spraying nearby (Y/N)
- c. For bore water:
  - 1. Is the wastewater disposal field within 50 m of the bore?
  - 2. Are any of the following within 50 m of the bore? Underground storage tank, waste pond, landfill, offal pit, areas where pesticides or animal effluent is applied to land.
  - 3. [Is it within 50 m of a Council wastewater network?](#)

## 4.6 WATER TREATMENT

Q25. Is the water treated?

- a. If yes:
  - i. Select from drop down list of treatment processes (e.g. cartridge filter, UV)
  - ii. Is the treatment adequate?
  - iii. Capture photos and location of water treatment plant

Q26. How old is the water treatment system?

Q27. What maintenance has been done on it?

Q28. Has the treated water ever been tested? (Y/N)

- a. If yes:
  - i. Did any parameters exceed the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N) [Comment box for further information]

- ii. Did any parameters exceed half the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N) [Comment box for further information]

---

## 4.7 DISTRIBUTION

Q29. Describe the pipe network and its condition. Prompts:

- a. What pipe material(s) are used to distribute water? (Select from drop down list)
- b. How old are the pipes?
- c. What is the condition of the pipes? (score 1-5)

Q30. How many storage tanks are there?

Q31. For each storage tank:

- a. What is the condition of the tank? (score 1-5)
- b. Is there an overflow? (Y/N)
- c. Is there an air vent? (Y/N)
- d. Is vermin protection adequate? (Y/N)
- e. What size is the tank?
- f. When was the last time the tank was cleaned out?
- g. Capture photos and location of reservoir

Q32. Are you aware of any hazardous activities present that may present a backflow risk and are you able to provide any details on them?

- a. If yes:
  - i. Rate backflow risk (high/medium/low)
  - ii. Are there any measures in place to mitigate these risks such as backflow prevention or air gaps? (Y/N)
  - iii. What type of backflow prevention device is it (select from drop down list)
  - iv. Is the device appropriate for the level of risk?
  - v. Other measures?

---

## 4.8 OPERATIONS AND MAINTENANCE

Q34. Who looks after your water supply?

Q35. How confident are they in operating and maintaining it?

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## 4.9 OTHER MATTERS

Q36. Describe your thoughts around being a private water supplier.

Q37. What would be helpful for you as a private water supplier?

# 5 IDENTIFYING PRIVATE WATER SUPPLIES

Multiple data sources were used to identify private water supplies, in addition to information provided by Council staff during interviews. These data sources are listed in Appendix B.

The data was then analysed to estimate the number and location of private water supplies in Hawke's Bay using the logic shown in Figure 5-1. It is estimated that there are 3,900 - 6,900 private water supplies in Hawke's Bay.

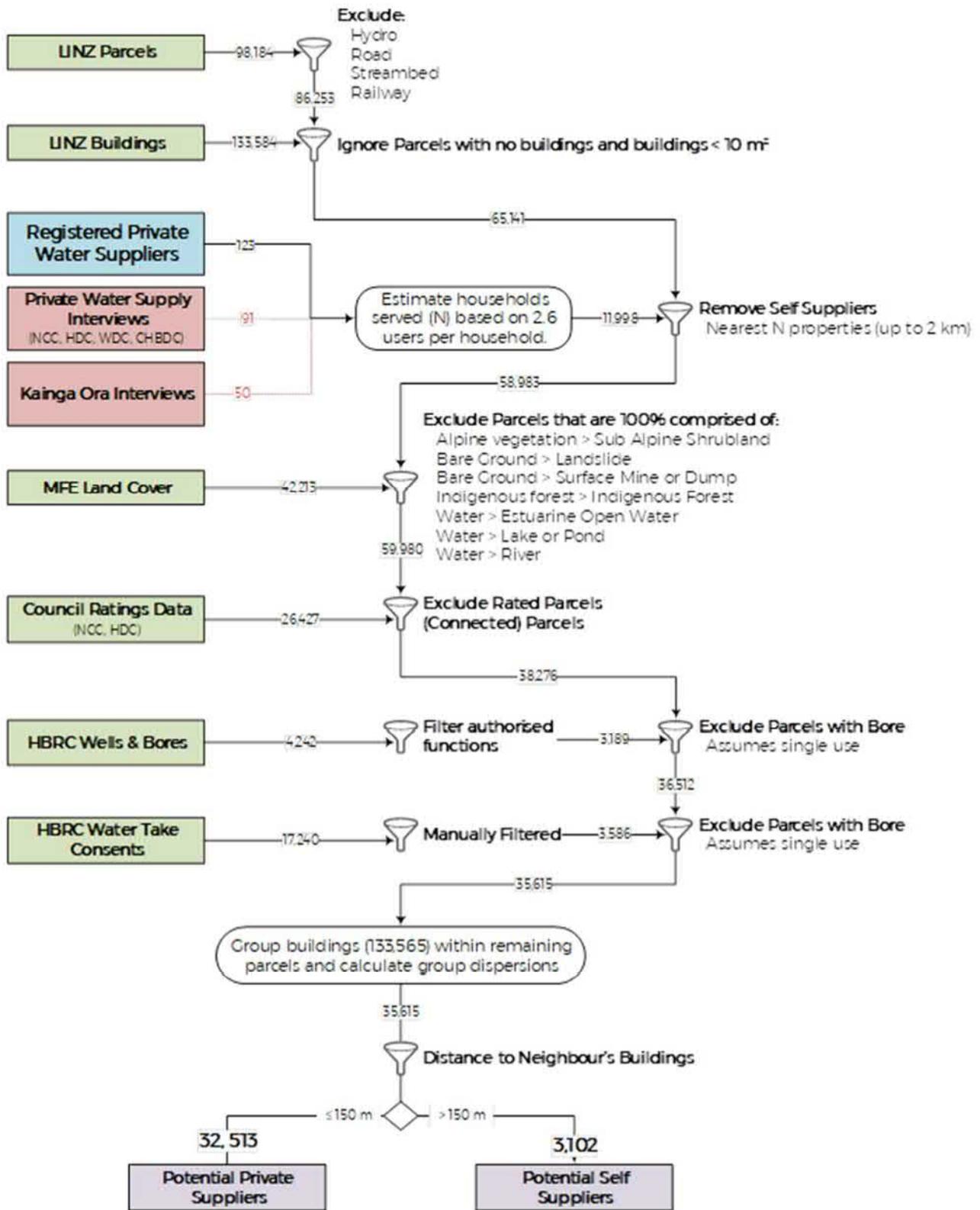


Figure 5-1: Process for identifying private water supplies

## 6 LIMITATIONS

This report ('Report') has been prepared by WSP New Zealand Limited ('WSP') exclusively for Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council ('Client') in relation to the situational analysis of private water supplies in the Hawke's Bay region ('Purpose') and in accordance with the contract dated 21 July 2021 ('Agreement'). The findings in this Report are based on and are subject to the assumptions specified in the Report and in our contract. WSP accepts no liability whatsoever for any use or reliance on this Report, in whole or in part, for any purpose other than the Purpose or for any use or reliance on this Report by any third party.

In preparing this Report, WSP has relied upon data, surveys, analyses, designs, plans and other information ('Client Data') provided by or on behalf of the Client. Except as otherwise stated in this Report, WSP has not verified the accuracy or completeness of the Client Data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this Report are based in whole or part on the Client Data, those conclusions are contingent upon the accuracy and completeness of the Client Data. WSP will not be liable for any incorrect conclusions or findings in the Report should any Client Data be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

# APPENDIX A: DOCUMENT REVIEW

Document name	Purpose	Key findings from document to build consultants contextual understand of each Districts water supply	Relevance to the project
<b>Wairoa District Council</b>			
Wairoa District Council Three Waters Activity Management Plan 2021 - 2031	This Three Waters Activity Management Plan (AMP) acts as a route map for the future, by providing the logic, reasoning and context behind how the Wairoa District Council proposes to maintain, operate, renew and improve Wairoa's drinking water, wastewater and stormwater (3 Waters) services.	<p>Wairoa District Council provides safe, reliable drinking water through the Wairoa and Tuai supplies to homes and businesses. The Frasertown Water Treatment Plant (WTP) supplies potable water to the Wairoa and Frasertown communities, as well as the AFFCO meat works.</p> <p>Problem 1: Compliance. Water reform, legislation, resource consents and legacy issues requiring higher compliance results in an increased cost for the community.</p> <p>Problem 3: Water Supply. Single source of water supply (Wairoa River) resulted in conflicts with cultural priorities and increased costs for alternative supply.</p> <p>Relevant responses include:</p> <ul style="list-style-type: none"> <li>Objective to comply with water reform legislation</li> <li>Objective to improve asset knowledge for key decision making</li> <li>Strategic response to collaborate regionally</li> <li>Identify an alternative water supply for Wairoa</li> </ul>	<p>The report provides guidance around how Wairoa District Council understand and manage their drinking water assets for Wairoa communities.</p> <p>The AMP takes a district-wide look at how to provide water to its communities (regardless of whether it is themselves or private water suppliers providing this service). As such, aligning private water suppliers to district outcomes and their vision will ensure equitable community outcomes can be achieved for everyone.</p> <p>The AMP provides helpful information on water in the Wairoa District and identifies key problems and responses that this Investigation intends to address.</p>
Whakarauroa - The regeneration of Long Water 2019 Giblin Group	The purpose is to provide a economic development priority framework to help guide sustainable growth throughout Wairoa District over the next 10 years and beyond.	<p>Wairoa's future success is dependent upon creating grassroots solutions, in their place of need. This requires a devolved, community-focused approach.</p> <p>Relationships are an important element of Māori psyche and earning trust is an essential foundation of</p>	The report included widespread community outreach and discussion with key individuals in the District. It provides a sound understanding of Wairoa's

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		<p>relationships. "Build(ing) a new relationship" with the people of Te Wairoa cannot start, let alone endure, in the absence of trust. Failing to honour even recently ratified Treaty Settlements commitments leads to continued distrust (p 101).</p> <p>The overarching theme and lead recommendation is that Wairoa is developed into New Zealand's first sustainable rohe, expressed as Whakarauora or Regeneration (of the sky, land and water, her people, their authentic traditions and culture). This focus uniquely positions Wairoa with her River (ecosystem) literally as its lifeblood "an area of environmental excellence, biodiversity and community guardianship". This is a desired future state or outcome, a consequence of investment addressing the river eco-system's current condition and attending to pressing sustainability requirements.</p> <p>Community Partnerships Group's aspiration is that all whanau across the Wairoa district are thriving. The group comprises members from Central Government Departments, agency leaders, and iwi representatives, and is chaired by Mayor Craig Little.</p> <p>The district comprises 10 distinct takiwa or communities, each with their own identity, needs and opportunities.</p> <p>Takiwa (district)-focused approach: "What works for All, doesn't work for Māori...what works for Māori does work for All".</p> <p>Whakarauora - the Regeneration of 'Long Water' - aims to:</p> <ul style="list-style-type: none"> <li>• Fulfil WCMG's wise mantra "Ki te ora te wai, ka ora ai te katoa - if the waterway is healthy, then everything will</li> </ul>	<p>communities, its priority focus and strategic approach for prosperity.</p> <p>At its core, the report is addressing the ecosystem of the Wairoa River and what is required to ensure optimal well-being for the waterways. The themes and wording from this report helps to understand the sentiment of Wairoa's approach to community collaboration and cooperation. It places the needs of Māori at the centre of everything that is done.</p> <p>Private water supply contributes to the district's water outcomes and the approach developed through this investigation will contribute to the community-focused, grassroots solutions approach, which is emphasised in the report.</p>

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		<p>survive". This is highly poignant for Wairoa district as a whole and her river system in particular;</p> <ul style="list-style-type: none"> <li>• Reinstate cultural respect for awa and the community's soul. Physically and spiritually, Whakarauora will re-unite all of Wairoa district; Māori and Pakeha; town and country alike. It will provide focus and hope, renewed spirit and health, new creativity.</li> <li>• Whakarauora - the Regeneration of 'Long Water' - aims to have an integrated ecosystem - holistic, lake to coast, earth to sky, a blend of Māori tradition and the best of contemporary society (using the latest science, research and technology).</li> </ul> <p>[Wording taken from Wairoa Article and the report itself <a href="https://www.wairoadc.govt.nz/home/article/273/whakarauora-the-regeneration-of-long-water?t=featured&amp;s=1">https://www.wairoadc.govt.nz/home/article/273/whakarauora-the-regeneration-of-long-water?t=featured&amp;s=1</a>]</p>	
Napier City Council			
Water and Sanitary Serves Assessment 2005	The report provides an overview of Napier City's water service provision to its communities.	<p>The main public health issue for water supply is contamination of drinking water. In particular, all supplies such as schools, cafes, golf courses, hotels, and other commercial establishments supplying over 25 people for more than 60 days of the year, should be a Registered Community Water Supply with the Ministry of Health.</p> <p>The health risks of not providing stormwater services are not as severe as for wastewater or water supply services. It is more of an environmental issue with health side effects such as land erosion or flooding issues, where contaminated flood water enters properties and renders them uninhabitable.</p>	<p>The report provides helpful background context on water supply in Napier City.</p> <p>The report includes relevant detail on each community that this Investigation can use as a baseline for understanding how to define communities and case study areas in a similar way.</p>

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		<p>Community areas are identified through loosely defined boundaries on page 9 solely for the purposes of the assessment to group service provisions and for addressing the health status generally as a whole community.</p>	
<p>Water Safety Plan (WSP) 2020</p>	<p>This WSP has been prepared for the Napier drinking-water supply to identify potential events that present public health risks to the consumers of the drinking water supply.</p>	<p>The Napier drinking water supply is a large urban supply providing water to two communities, Napier and Bayview. The total population that is supplied is approximately 50,800 people. The water is sourced from a local aquifer, and is provided without treatment to both communities.</p> <p>Napier City's water supply system consists of two distinct supply areas or communities, the Napier Community (NAPO01) and the Bayview Community (BAY001). The Napier community includes two distribution zones, Napier City (NAPO01NA) and Taradale (NAPO01TA). The Bayview community has only one zone, Bayview (BAY001BA). Both include water supply to urban and rural areas.</p> <p>95.5% of Napier's population is serviced by a reticulation system and 9.8 million m<sup>3</sup> of water is consumed annually.</p> <p>Groundwater is abstracted from the Heretaunga Plains aquifer and supplied to pressure zones within the two community systems via bore pumps, reservoirs and pump stations.</p>	<p>This plan provides information on Napier City's drinking water supply.</p> <p>A reticulated system supplies 95.5% of Napier's residents. This information gives an indication of where and how many unknown private water suppliers there are. It is possible that there are some private water suppliers currently identified as part of the reticulated systems, supplying a bulk of water to the gate.</p>

Document name	Purpose	Key findings from document to build consultants contextual understand of each Districts water supply	Relevance to the project
Hastings District Council			
<p>Hastings District Council Drinking Water Strategy 2018</p>	<p>The strategy presents a vision for the delivery of water services based on an agreed set of objectives that has water quality and safety as its prime objective.</p>	<p>Growing concerns about the combined effects of abstraction of water from the Heretaunga Plains meant that a greater focus was being placed on all users including municipal water supplies to demonstrate that their use was sustainable and that the management of these supplies was in line with appropriate practices and under regular review. With the Hastings urban water supply consent up for renewal in 2012 all of these issues would need to be addressed in a comprehensive strategy that set out initiatives and commitments over time.</p> <p>At the heart of the strategy was an assumption that the groundwater source supplying much of the entire urban area was of such a high quality that it was safe to deliver to consumers without treatment. This perception of groundwater being immune from contamination has been in existence since the 1880's when groundwater was first used to supply potable water to a developing community. Since then the communities of Napier and Hastings relied entirely on groundwater sources pumped directly from the source to the consumer without any treatment or chlorination until after the Havelock North drinking water outbreak.</p> <p>It must also be noted that the primary horticultural, agricultural and food processing industries have a huge reliance on the Heretaunga Plains groundwater source for irrigation and bulk water supply.</p> <p>The number one priority for Council is the provision of safe water.</p>	<p>The strategy underpins much of the public sentiment received from the Hastings District Council interviews and helps to build our understanding of the history of water for Hastings District.</p> <p>Principles of Drinking Water Safety were developed following the Havelock North Drinking Water Inquiry reports, which informed a national approach to understand water safety for the country. This national direction will be important to understand with regard to how communication and engagement is delivered to private water supplier communities.</p>

Document name	Purpose	Key findings from document to build consultants contextual understand of each Districts water supply	Relevance to the project
Assessment of Water Services - A Study of Issues and Options Opus, 2004	This Community Assessment Project assists Council to comply with the requirements of the Local Government Act 2002 in regard to assessment of water services for 14 existing small communities within the Hastings District.	<p>Community assessments must consider private water supplies or wastewater systems, schools, marae and camping grounds, where during large events a health risk may arise, and risk assessments for the absence of reticulated services.</p> <p>Te Pohue and Waikoau have privately owned and operated water reticulation systems.</p> <p>The summary for each community determined the overall risk relating to:</p> <ul style="list-style-type: none"> <li>• Ability of services to meet existing and future demand</li> <li>• Protection provided to public health</li> <li>• Protection provided to the environment</li> </ul> <p>Community Wide Mitigation Options:</p> <p>Education and monitoring (Rainwater Systems and Groundwater Bores)</p> <p>Communication</p> <p>Public Health Risk Management Plans</p>	<p>The report identifies community areas within the Hastings District and their key attributes that this investigation can use as guidance to identify and define case study areas. It also makes reference to reticulated communities from those areas that have private water supplies and identifies a range of private water supplier types and potential risks associated with each.</p> <p>The report outlines mitigation measures for non-reticulated water suppliers within the Hastings District. It will be important throughout this investigation to refer to the assessment's recommendations in our communications and engagement approach.</p>
Central Hawke's Bay District			
3 Waters Asset Management Plan 2021	The purpose of this Three Water Supply Asset Management Plan is to support the goal of the 3 Waters activities by ensuring that assets are operated and maintained to provide the required level of service and to meet community outcomes for present and future customers in a sustainable and cost-effective manner.	Project Thrive is the backbone of Council and provides the strategic direction behind the significant investment in people and infrastructure to support the growth and aspirations of the Central Hawkes Bay District. E ora ngātahi ana! Together we thrive!	The Central Hawke's Bay District Council's 3 Waters Asset Management Plan provides a strategic overview of 3 Waters within the wider context of the Council's strategic priorities for the District. It also identifies key risks and demands, which help to understand drivers and risks for the District. This Plan builds upon the

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		<p>Squillions' report found that more than 800 jobs were added in Central Hawke's Bay in the past three years to 2019. The largest creators of jobs were agriculture and service industries.</p> <p>An increased demand is placed on Council's water supply where industries decide to transition from private groundwater supplies to Council water supply. A major industrial growth area is east of the Waipukurau station. Council has included in the capital works programme, investigations into the upgrade of water and wastewater services in this area.</p>	<p>information received from Council staff interviews for this investigation.</p> <p>The AMP identifies the Council's customers and their needs and expectations, all of which can contribute to the communications and engagement strategy.</p>
<p>Assessment of Water and Sanitary Services 2005</p>	<p>This is an assessment relating to all water and sanitary services within the Central Hawke's Bay District.</p>	<p>Some areas of the Central Hawke's Bay District do not rely on Council services for water supply and wastewater disposal. These areas are serviced privately and Council has very little involvement with them. Little is known about many private supplies and this was reflected in the outcome of the assessment.</p> <p>If these systems/services fail, they will be addressed by Councils Regulatory Department under the Building Act and Health Act. Appropriate action will be taken to resolve the issues. However, in more serious cases, the Ministry of Health and the Hawke's Bay Regional Council will become involved and the District Council will work to mitigate problems. This would normally result in Council discussing the problem with the owner/service provider and coming up with a suitable solution using private suppliers.</p>	<p>The assessment provides an overview of the Central Hawke's Bay Council's understanding of private water suppliers and acknowledges the lack of information on them. It outlines the current engagement process with private water suppliers, particularly in relation to the current process for private water suppliers compliance with the Drinking Water Standards.</p> <p>The assessment identifies a range of private water suppliers that will help in defining supplier types, as well as potential case study areas.</p>

## APPENDIX B - DATA SOURCES

Ref ID.	Data / Information	Format	Extent	Hawkes Bay Regional Council	Napier City Council	Central Hawkes Bay District Council	Hastings District Council	Wairoa District Council	From	Source or filename/folder
HBPWS_001	Properties layer	GIS (shp file)	Region (All Councils)	-	-	-	-	-	LINZ NZ Primary Parcels	<a href="https://services7.arcgis.com/jl87xPT7G1AGV8Uo/ArcGIS/rest/services/LINZ_NZ_Primary_Parcels/FeatureServer">https://services7.arcgis.com/jl87xPT7G1AGV8Uo/ArcGIS/rest/services/LINZ_NZ_Primary_Parcels/FeatureServer</a>
HBPWS_002	GIS layers of the water supply networks	GIS (shp file)	Region (All Councils)	-	✓	In progress	✓	In progress		
HBPWS_003	LINZ Building layer	GIS (shp file)	Region (All Councils)	-	-	-	-	-	LINZ NZ Building Outlines	<a href="https://services7.arcgis.com/jl87xPT7G1AGV8Uo/ArcGIS/rest/services/LINZ_NZ_Building_Outlines/FeatureServer/0">https://services7.arcgis.com/jl87xPT7G1AGV8Uo/ArcGIS/rest/services/LINZ_NZ_Building_Outlines/FeatureServer/0</a>
HBPWS_004	Aerial photos		Region (All Councils)	-	-	-	-	-	ESRI	
HBPWS_005	Water Take Point Meters	GIS (shp file)	HB Regional Council	✓	-	-	-	-	HBRC Current Water Take Point Meters	<a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/8/query?outFields=* &amp;where=1%3D1">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/8/query?outFields=* &amp;where=1%3D1</a>
HBPWS_006	Water Permits (surface and ground water takes)	GIS (shp file)	HB Regional Council	✓	-	-	-	-	Well Permits	<a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/Reporting/MapServer/0/query?outFields=* &amp;where=1%3D1">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/Reporting/MapServer/0/query?outFields=* &amp;where=1%3D1</a>
HBPWS_007	Water Harvesting and Storage	GIS (shp file)	HB Regional Council	✓	-	-	-	-	HBRC Water Take Summary	<a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/6/query?outFields=* &amp;where=1%3D1">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/6/query?outFields=* &amp;where=1%3D1</a>
HBPWS_009	Previous Assessments of Water and Sanitary Services and up to 2, other documents for review	Word / PDF		-	✓	✓	✓	✓		

HBPWS_011	Water quality monitoring data	Excel / PDF	Region (All Councils)	✓					Hawke's Bay Groundwater Quality, LAWA Monitoring Site Reference Data, Fresh Water Quality	<a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/EnvironmentalLive">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/EnvironmentalLive</a> <a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/emar/MonitoringSiteReferenceData">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/emar/MonitoringSiteReferenceData</a>
HBPWS_012	Census data		Region (All Councils)	-	-	-	-	-	SA2 2018 population	From Stats NZ
HBPWS_013	Septic tank locations (if available)	GIS (shp file)	Region (All Councils)	wastewater discharge sites available	☐	not available	not available	not available		
HBPWS_014	HAIL sites	GIS (shp file)		☐	-	-	-	-		
HBPWS_015	Wastewater networks	GIS (shp file)	Region (All Councils)	-	☐	☐	☐	☐	Council GIS sites	
HBPWS_016	Wastewater and stormwater discharge consents	Word / PDF	Region (All Councils)	☐	-	-	-	-	HBRC All Resource Consents	<a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/1/query?outFields=*&amp;where=1%3D1">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/1/query?outFields=*&amp;where=1%3D1</a>
HBPWS_018	Land use consents	Word / PDF	Region (All Councils)	✓	-	-	-	-	HBRC All Resource Consents	<a href="https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/1/query?outFields=*&amp;where=1%3D1">https://hbmaps.hbrc.govt.nz/arcgis/rest/services/WebMaps/RegulatoryIRIS/MapServer/1/query?outFields=*&amp;where=1%3D1</a>
HBPWS_019	Complaint, incident or event reports related to drinking water supplies	Excel / GIS	Region (All Councils)	In progress	In progress	In progress	In progress	In progress		
HBPWS_020	Properties connected to Council supply	GIS (shp file) or Excel	Region (All Councils)	-	✓	✓	✓	✓		

		with address								
HBPWS_021	Known private water supplies	GIS (shp file) or Excel with address	Region (All Councils)	In progress						
HBPWS_022	Number of large vs small & medium water supplies to be assessed		All TAs					✓		



# Appendix E

## GIS Data Sources



## Appendix E - GIS Data Sources and GIS Process for identifying private water supplies

### GIS Data Sources

Layer	Source	Date
New Zealand Primary Parcels	LINZ	30/08/2021
New Zealand Facilities	LINZ	06/10/2021
Building Outlines	LINZ	30/08/2021
TA Boundaries	LINZ	30/08/2021
NZ Street Address	LINZ	20/10/2021
Public Conservation Land	Department of Conservation	06/10/2021
Ministry for the Environment Land Cover	Ministry for the Environment	24/08/2021
Council Rating Data	Napier City Council	27/11/2021
Council Rating Data	Wairoa District Council	21/09/2021
Council Rating Data	Hastings District Council	25/11/2021
Council Rating Data	Central Hawke's Bay District Council	14/09/2021
Council 3 Waters Data	Napier City Council	25/08/2021
Council 3 Waters Data	Wairoa District Council	25/08/2021
Council 3 Waters Data	Hastings District Council	25/08/2021
Council 3 Waters Data	Central Hawke's Bay District Council	25/08/2021
Registered Private Water Supplies	Institute of Environmental Science and Research (ESR)	31/08/2021
Hawke's Bay Marae	Hawke's Bay Regional Council	15/09/2021
Hawke's Bay Registered Water Supplies	Hawke's Bay District Health Board	17/09/2021
Hawke's Bay VTA Applications Water Supplies	Hawke's Bay District Health Board	23/09/2021
Wells & Bores	Hawke's Bay Regional Council	07/09/2021
Water Take Consents	Hawke's Bay Regional Council	20/08/2021
Private Water Supply Interviews	HCC, WDC, HDC, NCC & CHBDC	31/08/2021
Kāinga Ora Survey	Kāinga Ora	03/09/2021
District Health Board 1080 Drop Notices	Hawke's Bay District Health Board	23/09/2021
Statistical Areas	Stats NZ	07/12/2021
Geological Units	GNS Science	17/03/2021

### GIS Process for Identifying Private Water Supplies

The data sources provided (Appendix D) were collated in Safe Software's Feature Manipulation Engine (FME) Workbench version 2021.2.

Data was initially processed to ensure consistency and identify errors as follows:

- A universally unique identifier was applied to each feature in every feature class
- Geometry (if applicable) was validated, repaired, and reprojected into EPSG:2913 (New Zealand Transvers Mercator)
- Data was cropped to the project extent.

The following datasets required additional pre-processing before they could be effectively utilised in the filtering process:

- Council supplied rating data
- Council supplied water supply pipework data



- Hawke's Bay Registered Water Supplies
- Registered Private Water Supplies
- Hawke's Bay Marae
- Hawke's Bay Registered Water Supplies
- Hawke's Bay VTA Applications Water Supplies
- Private Water Supply Interviews
- Kāinga Ora Survey
- District Health Board 1080 Drop Notices

Variables were added to the workflow to allow options and sensitivity adjustment at various stages. In the output feature classes this attribute ("option") is defined as follows:

Option	Min Building Size (m <sup>2</sup> )	PWS Buffer <sup>1</sup> (m)	Average House Occupancy	Include WS Mains <sup>2</sup>
1	40	150	2.6	Yes
2	40	150	2.6	No
3	40	500	2.6	Yes
4	40	500	2.6	No
5	40	1000	2.6	Yes
6	40	1000	2.6	No

Option 2 was adopted as the primary output for reporting; however all 6 options are included.

A sequential filtering process was designed and applied to the LINZ parcel feature class to enable tagging with Private Water Supply Metadata. The process is outlined in Figure 1 and detailed below.

#### Filtering Process

- 1 Parcels with a "parcel\_intent" of Railway, Streambed, Road or Hydro were removed and tagged as "Excluded".
- 2 Schools were removed and tagged as "Excluded" using a spatial relation between parcels and the school data in the "NZ\_Facilities" feature class.
- 3 D.O.C. land ("Public Conservation Land" feature class) was removed and tagged as "Excluded" using a spatial relation with LINZ parcels where more than 50% of the parcel was covered by D.O.C. land.
- 4 Using the LINZ "Building Outlines" feature class, parcels were removed and tagged as "Excluded" where parcels contained no buildings, or buildings smaller than the minimum building size variable (40m<sup>2</sup>)
- 5 Using a spatial relation between LINZ Parcels and Ministry for the Environment Land Cover features, areas identified as River, Lake or Pond, Estuarine Open Water, Indigenous Forest, Surface Mine or Dump, Landslide, Sub Alpine Shrubland were removed and tagged as "Excluded".
- 6 Remove and tag rated properties as "Council Supplied" based on council rating data provided. Since the schema for each council dataset was unique, pre-processing was carried out to identify rated parcels, duplicates, and other possible issues. It was not possible to use LINZ parcel identifiers to join the rating data. The most robust solution was found to be a spatial relation between LINZ parcel data and a generated point within the rated parcel features provided by HDC, NCC and WDC. CHBDC features were supplied as points.
- 7 In options where the "Include WS Mains" variable was set, any parcel within 150m of a water supply pipe is assumed to be connected to council supply and tagged as "Council Supplied"
- 8 Data for registered private water suppliers was provided from three sources that required pre-processing before applying to the filtering process:
  - (a) Institute of Environmental Science and Research (ESR) for private water suppliers with less than 25 people supplied.

<sup>1</sup> Maximum distance between properties to consider as a private water supplier

<sup>2</sup> Use proximity of Council Water Supply mains to define a property as council supplied



This data was geocoded based on street addresses and filtered to remove council connections and schools. The number of houses supplied was assumed to be 25 / Average Household Occupancy.

- (b) Hawke's Bay Registered Water Suppliers data was geocoded based on street addresses and filtered to remove council connections and schools. The number of houses supplied was based on the population number, supply size, or inference and the Average Household Occupancy.
- (c) Hawke's Bay Registered Self Suppliers data was pre-processed as per (b)
- 9 The calculated / estimated number of houses supplied (n) from all three inputs was used to tag the nearest n parcels as "Registered Supplier". Additionally, supply clusters were generated grouping the Registered Suppliers and those properties being supplied.
- 10 Interviews
  - (a) Each council provided Private Water Supply Interview datasets. These were geocoded from address information if available and filtered based on various attributes. These suppliers are tagged as "Identified PWS". If a "number of houses" was provided (n) the nearest n properties were additionally tagged. Proximity tracing<sup>3</sup> was then performed using the PWS Buffer variable (150m) to tag possible supplied properties and create cluster polygons.
  - (b) Kāinga Ora Survey data was provided and geocoded using the supplied addresses. The number of supplied properties / people was not included. Parcels were identified and tagged as "Identified PWS" or "Identified Sole Supply" depending on the number of buildings present on the parcel.
- 11 The Hawke's Bay Marae data provided was spatially joined to LINZ parcels. All Marae were tagged and assumed to be Private Water Suppliers. Hawke's Bay VTA Applications data was supplied as point data. The features were spatially joined to the nearest n parcels where n is defined by the "at least n" attribute data provided (up to a maximum range of 2km). Once tagged as "Identified PWS", these parcels were processed through proximity tracing using the PWS Buffer distance to locate properties that could potentially be supplied. Additionally, clusters were generated for each identified private water supplier.
- 12 HBRC Wells & Bores data was filtered to remove Monitoring / Investigation bores before being spatially related to the remaining LINZ parcels. A proximity trace process was used to identify Sole Supply and Private water suppliers / supplied using the PWS buffer distance (150 m). Additionally, clusters were generated for each identified private water supplier.
- 13 HBRC Water Take Consent data was filtered to include only current / Under Appeal consents before being spatially related to the remaining LINZ parcels. A proximity trace process was used to identify Sole Supply and Private water suppliers / supplied using the PWS buffer distance (150 m). Additionally, clusters were generated for each identified private water supplier.
- 14 The remaining parcels are processed through a final function to identify
  - Potential Private Water Suppliers - parcels with more than 1 building
  - Potential Sole Supply - all remaining parcels

#### Interview Data

To protect privacy, ESRI Survey123 feature classes have been modified to exclude names, email address and phone numbers. This data has been retained in a secondary table that can be linked via a Global ID to recover the information.

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<sup>3</sup> Proximity tracing uses a custom processor to identify parcels that are potentially supplied by the selected parcel. The supplied buffer is used to find neighbouring parcels that contain buildings where the distance to the nearest building is less than the buffer (150m).

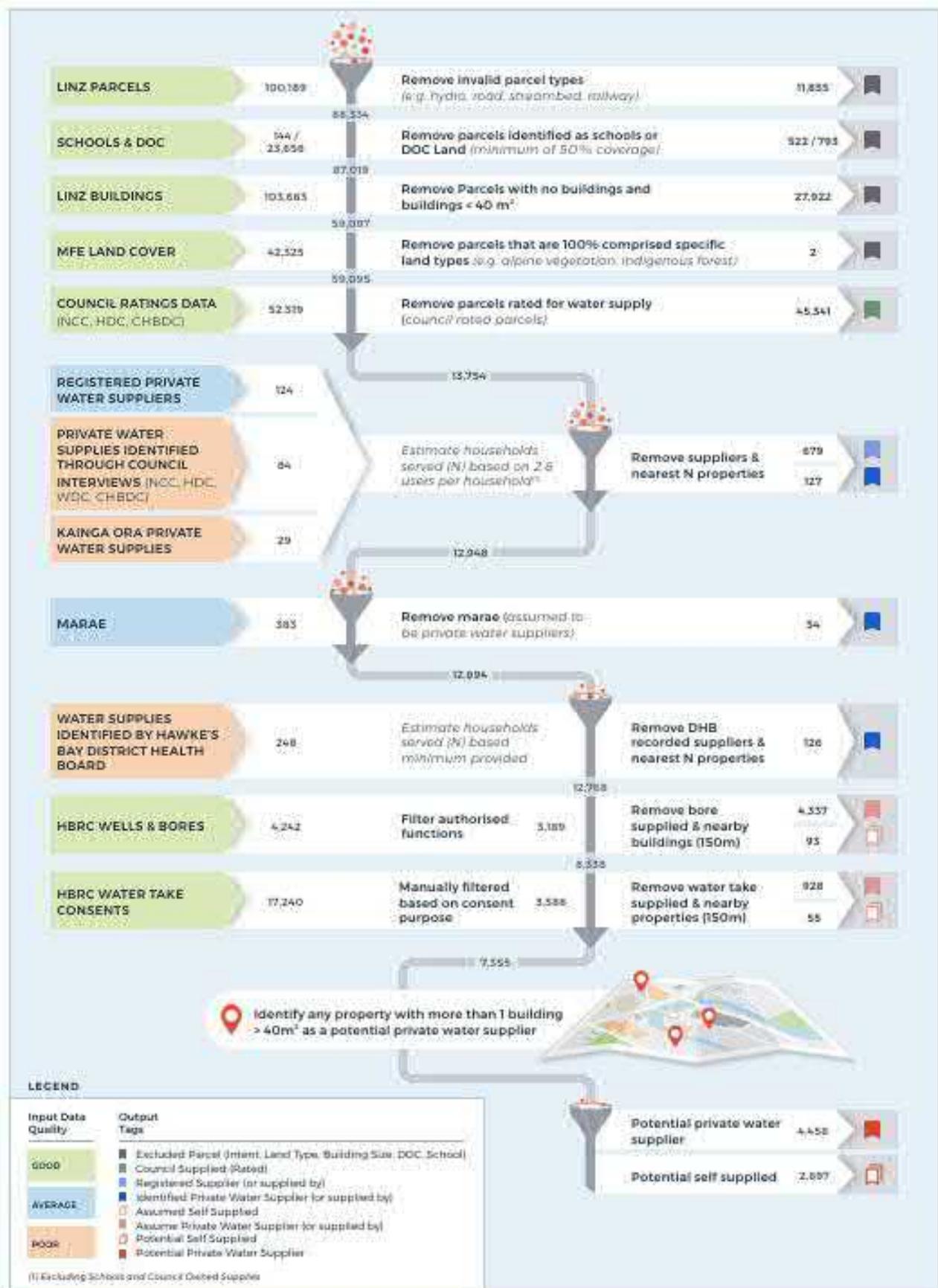
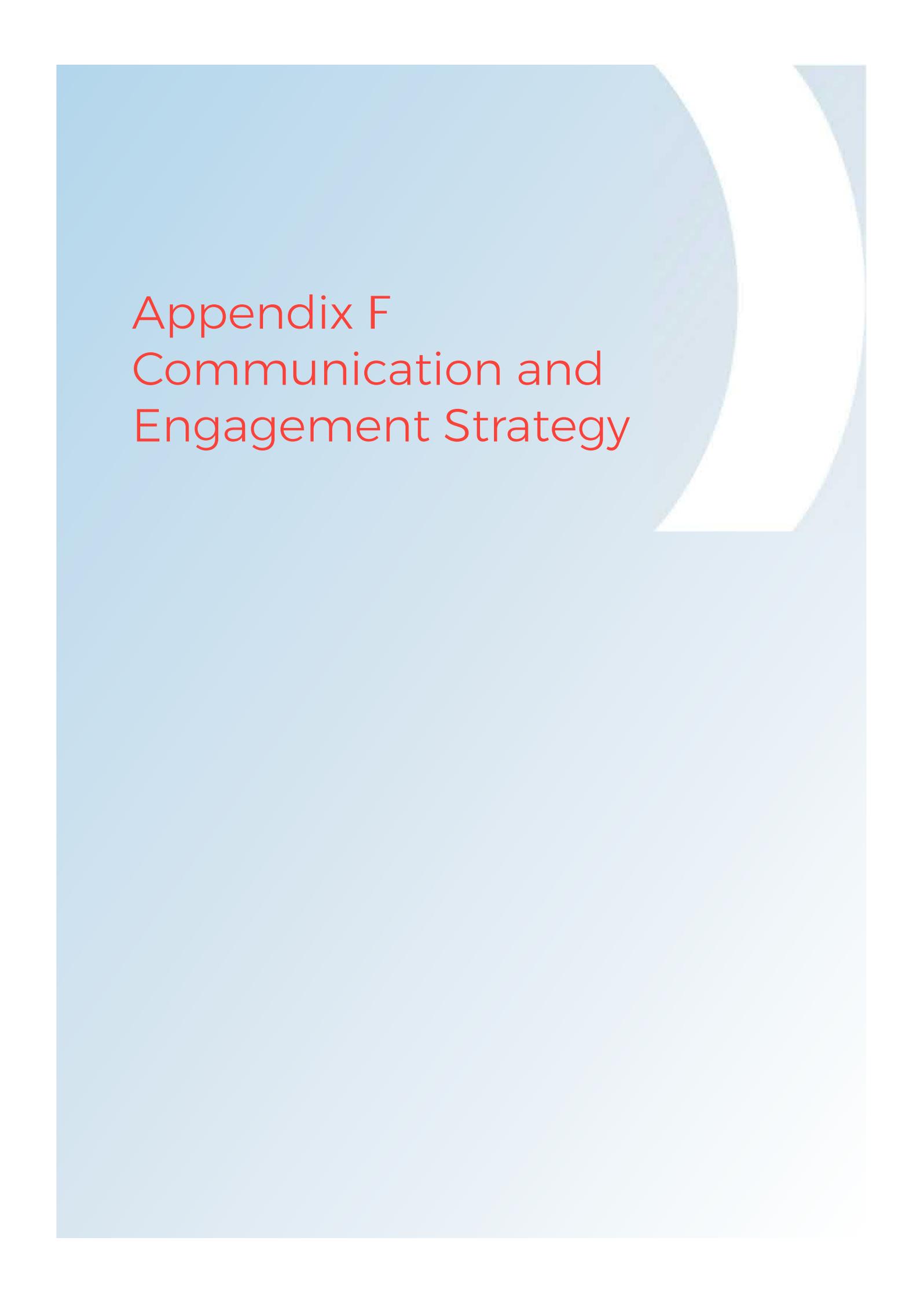


Figure 1: Process for locating possible private water supplies in GIS (estimated number of supplies are on right hand side)



# Appendix F Communication and Engagement Strategy

**Hawke's Bay Three Waters Private Drinking Water Supply Pilot Project**  
**Communications & Engagement Strategy**

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## **Document purpose**

The Private Drinking Water Supply Communications and Engagement Strategy (Strategy) outlines the Hawke's Bay councils' regional approach to deliver private drinking water supply assessments with customers and the community of private drinking water suppliers for the purpose of the Hawke's Bay Regional Council's Pilot Project (project).

This Strategy was designed for the project team who delivered the project to better understand future water supply assessments across the Hawke's Bay region. This team included the programme director and council three water infrastructure staff and managers, consultant water engineer technical experts, communication and engagement specialists, and field researchers.

This Strategy recognises its origin from the Hawke's Bay Regional Council project and the contribution from people who have provided valued guidance and comment throughout the project. The Strategic approach to communications and engagement was tested with the input and guidance from a range of people such as the Hawke's Bay Councils' Regional Programme Director, Council Infrastructure Leads, Te Kupenga, Taumata Arowai, and Private Water Suppliers themselves throughout the development of the pilot to arrive at the final engagement process for conducting individual private water supply assessments. At all times, the project has been people focused, reflective and exploratory in nature, we have sought to include and make the stages accessible to interested parties, and where possible, meet people face-to-face and on their own terms.

This Strategy was developed for the project however it does provide direction for future community assessments. The success of a future programme will require further contribution from council staff and an ongoing partnership approach with key stakeholders, which will support and sustain the long term delivery of Community Assessments.

## **Introduction**

Built on a foundation of respect and desire to understand private water suppliers and their water supplies, the aim of this Project is for all those involved to define and create trusted relationships with communities, and to have an awareness of the project's purpose and outcomes. The future of community assessments will establish a work programme to collaborate with the community of suppliers to enable all people to have access to safe drinking water and for everyone to meet their obligations under the new Act.

This Strategy provides the approach used to engage with a sample of private drinking water suppliers and documents the process and tools that were used to carry out these engagements with a range of individual private drinking water supplier types. The Agencies provide communication collateral, templates and tools developed to help councils and relevant members of the project team to communicate and engage with suppliers. This has been developed in accordance with the project objectives and highlights opportunities that were identified to continue to develop and support how council's and Suppliers' can continue to communicate and engage for community assessments to meet their obligations under the Act.

This project has proposed a methodology and high-level engagement framework for Hawke's Bay council's to undertake community assessments on an ongoing basis.

The engagement approach provides the opportunity for councils to better understand:

- the nature of communities' supplies and their relationship to water
- how the assessment of the supply is undertaken
- insights into the assessment process (opportunities and potential issues)
- how best to support suppliers in meeting their obligations under the Act.

These findings have been presented in the final report - Hawke's Bay Private Water Supplies Project, 2022.

## **Background context**

The Water Services Act 2021 (Act) seeks to ensure drinking water suppliers provide safe drinking water to consumers through a new drinking water regulatory and risk management framework.

The Act requires more of councils and suppliers.

- At least once every three years, councils are required to identify communities that receive a water supply in their district and carry out drinking assessments to determine water supply demand, safety, quality, and any potential risks.
- By 2028, all unregistered drinking water suppliers will need to meet new drinking water standards and rules, or be using an ‘acceptable solution’ (defined in the Act).

In the lead up to the changes Central Hawke’s Bay District Council, Hastings District Council, Napier City Council, Wairoa District Council, and Hawke’s Bay Regional Council worked together in 2019 to review the status of drinking, waste, and stormwater.

Consequently, the four Hawke’s Bay territorial authorities (Napier City Council, Hastings District Council, Wairoa District Council, and Central Hawke’s Bay District Council) have completed a project sample of more than 50 assessments between October and February 2022.

The aim of the pilot was for councils to: better understand their communities’ supplies, their expectations, and needs; understand how the new regulations might be best implemented; develop together and trial a methodology for undertaking water supply assessments; and support communities to comply with the new regulations.

This pilot project was funded by the Government’s stimulus funding for Three Waters Reform.

## **Principles**

The principles set the strategic direction for the engagement approach and process to deliver private drinking water supply assessments with customers and the community of private drinking water suppliers.

### People-focused

Understanding the existing context and putting people at the centre of the assessment process will ensure trusted relationships are developed and maintained throughout the duration of the project and beyond. Ultimately, a people-focused engagement approach will result in a sustainable and well-resourced delivery of these assessments and potential support.

### Reflective and explorative

A reflective and explorative approach to the assessment means that the process and outcomes will develop and evolve over time as new information emerges. The programme will allow for frequent opportunities for the project team and key stakeholders to test, assess and discuss the process and findings, before progressing to the next stage.

### Inclusive and accessible

A foundation of inclusivity and accessibility is at the core of the project. A respect for people and their understanding of their drinking water supply will build knowledge and understanding of the assessment.

This approach will ensure suppliers' individual drivers, needs and concerns are understood and accommodated to facilitate a positive engagement experience. It will also allow communities the space to define their own way to engage in these assessments.

### Face-to-face

Meaningful engagement is enabled when communities meet face-to-face, on their own terms so that there is sufficient time and space to define how they interact with these assessments.

## Project Objectives

Success Outcome: Develop a sustainable approach for future private drinking water supply assessments, communication and engagement.	
Objective 1	To develop a repeatable methodology for undertaking assessments of private water supplies
Objective 2	To develop and validate a communications and engagement framework for future private water supply assessments
Objective 3	To explore the community's values and perception of water and private water supplies within the Hawke's Bay region to inform the communications and community engagement approach.
Objective 4	To understand the expectations and needs of private water suppliers and their supplies within the Hawke's Bay region
Objective 5	To investigate private water suppliers' understanding of safe and accessible drinking water within the Hawke's Bay region.

## Measures of success

The success measures in the longer term are:

- Cultural, environmental, social, economic, and public health requirements will be identified to help the Hawke's Bay communities to provide safe and sustainable water supplies.
- Private water suppliers are able to identify council's role and their own responsibility within the broader Three Water Reform programme at a central Government level.
- Engaged communities will be clear in their understanding and awareness around the purpose and implications of the Three Waters Reform programme. The private water supply communities are aware of and engaged in their responsibilities as private water supply entities, with a good level of understanding around the management and operational requirements to comply with regulatory standards.

## Stakeholder Matrix

The Stakeholder Matrix identified what commitments would be made to various stakeholders in the project along the spectrum of the International Association for Public Participation (IAP2) framework. The spectrum helps the project team to decide what type of engagement is required for decision-making and ensure that expectations are clear and managed for all parties involved.

**Table 1. Strategic Stakeholder Engagement Matrix**

	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balance and objective information to assist them in understanding the problem, alternatives, and / or solutions	To obtain public feedback on analysis, alternatives and/or decisions	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution	To place final decision making in the hands of the public
Promise to the public	We will keep you informed	We will keep you informed, listen to you and acknowledge concerns and aspirations, and provide feedback	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and	We will look to you for advice and innovation in formulating solutions and incorporate your advice and	We will implement what you decide

		on how public input influenced the decision	provide feedback on how public input influenced the decision	recommendations into the decisions to the maximum extent possible	
Who (Outline Stakeholders)	Suppliers	Industry bodies	Taumata Arowai Suppliers	Council Staff	Infrastructure leads  Regional Programme Director  Te Kupenga
How (Outline Engagement Method/s)	Email Phone call	Online meetings Email	Face-to-face engagements Email	Online meetings Email Phone call Online content review	Face-to-face engagements Online meetings Email Phone call Online content review

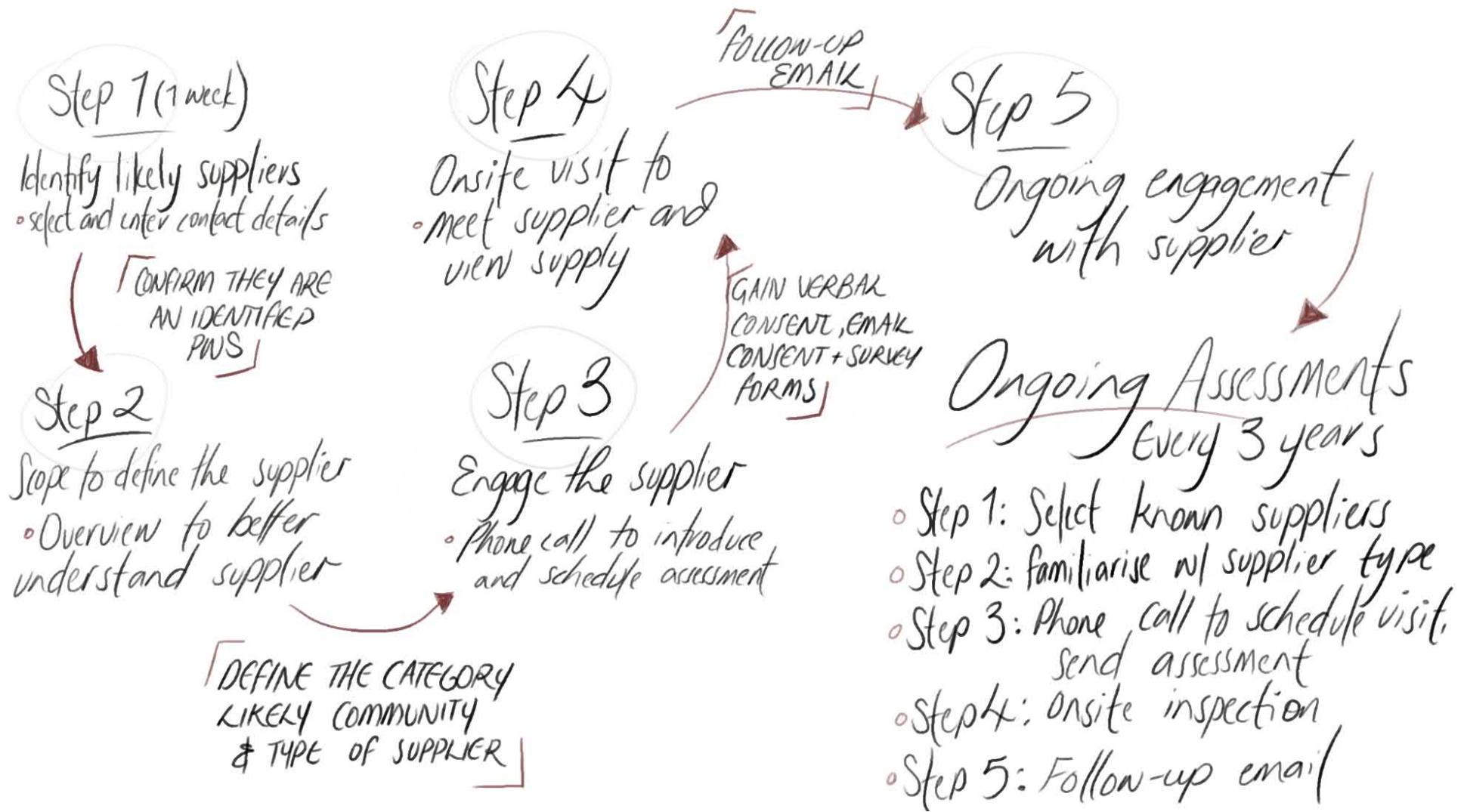
## **Engagement plan**

The engagement process and communication was tested through first completing a test sample of supplier assessments before finalising the final approach to engaging with private drinking water suppliers for the pilot project. This evolved five key steps for the project team to carry out to support the outcomes to identify and assess supplies. These steps were to:

1. Identify the 'identified', 'assumed', or 'potential' private drinking water supply
2. Define the supplier
3. Engage with suppliers, external stakeholders, and the wider community to seek consent
4. Engage with suppliers to carry out the assessment
5. Continued engagement with suppliers to provide support and guidance.

The five steps are further detailed below which identify the tools and templates developed throughout the communication and engagement process. The name of the tools and templates are underlined below and are provided in the Strategy Appendices.

# Engagement Plan



## **Step 1: Identifying a likely supplier**

### 1.1 Identify a likely drinking water supplier:

- Identify a supplier either by using the Template: Supplier Information Spreadsheet, Tool: Supplier GIS Map, through a referral, or by a supplier identifying their own supply.
- Identify whether the supplier is, or is likely, to be defined as a drinking water supplier under the Water Services Act 2021 using the Tool: Supplier Verification Process and by:
  - Obtaining the physical address for the supply.
  - Cross-checking the supplier address against the Tool: Supplier GIS Map and Template: Supplier Information Spreadsheet to confirm they are a likely supplier.
  - Determining whether the supply is registered as a supplier, or has been identified as an assumed or potential supplier in the Tool: Supplier GIS Map.
  - Once confirmed as a likely supplier - enter their contact details in the Template: Supplier Information Spreadsheet. **Progress to Step 2.**
- If they are not identified as a supplier, log them in the Template: Supplier Information Spreadsheet as not being a drinking water supplier, along with the reason why.

Note: Council staff will have access to supplier contact details through their internal databases, although this may only be the property owner name and postal address.

## **Step 2: Defining the supplier**

2.1 Confirm the exact location of the supply and relevant details to determine if they're likely to be defined as a drinking water supplier under the Act.

- Complete an initial scoping exercise against the Tool: Supplier GIS Map, Tool: Council Intramaps and/ or Tool: Google Earth can assist with this step.
- Record information into the Template: Supplier Information Spreadsheet on:
  - likely the number of people the source supplies to - more than or less than 25 people
  - the water source (if known)
  - the name of the business (if known)
  - Type/ number of buildings (i.e. church, marae, dwelling etc.)
  - rural or urban setting

## 2.2 Define a new supplier and the nature of their supply.

- Use the Tool: Private Water Supplier Matrix to help define the *registration, category, motivator, type and source water* the supplier is likely to be and have.
- List these in the Template: Supplier Information Spreadsheet

### Notes:

- The supplier 'type' listed in Appendix 10 is not exhaustive or definitive and should continue to be developed as additional suppliers and their nature are discovered through future engagements.
- Some suppliers may be relatively easy to define by their name or visual cues, such as a golf course, marae or campground.
- There may be limited information to identify the supplier if an address is the only detail available. Therefore, assumptions to define the supplier may need to be made until initial contact in Step 3 is completed.

### **Step 3: Engage the Supplier - first contact**

#### 3.1 Contact the identified supplier

- Refer to the phone script on the Tool: Council Contact Form or External Contact Form (if someone outside council holds the relationship)
- Confirm they are talking to a private drinking water supplier using the Tool: Suppliers Verification Process
- Confirm the supplier meets the definition of a drinking water supplier under the Act
- Introduce the project
- Confirm if the supplier is interested in engaging in the project
- Schedule a time to undertake the site visit

#### 3.1 From the phone call, note down any additional information into the Template: Supplier Information Spreadsheet. This includes:

- Confirmation of verbal consent to participate
- Scheduled meeting date and time, meeting location (if different from the water supply address)
- Additional and relevant information about the supplier
- Ask the supplier what their preferred communication method is (email or phone)
- Include your views on any potential hesitancy to engage, the level of the supplier's understanding of their obligations and subsequently provide any background material or information that may assist the supplier to engage with the assessment, and note whether there are any animals on the property, for example.

#### 3.2 Follow up with an email to confirm the next steps with the suppliers

- Refer to the Template: Pre-engagement email following first phone contact.
- Attach the Template: Privacy and Consent Form to sign prior to the site visit, a FAQ sheet (*to be developed for future community assessments*) and Tool: Water Supply Survey Questionnaire for the supplier to fill out details on their private water supply before the engagement.

#### Note:

- It's important at this stage to recognise that other stakeholders may hold valued relationships with suppliers. As a courtesy to these stakeholders, an additional requirement to contact relevant stakeholder organisations may be required.

#### **Step 4: Engage with Suppliers - Assessment**

##### 4.1 Complete the Template: Pre-engagement check-list

- Review the pre-populated Tool: Water Supply Survey Questionnaire answers and note down additional information or details to clarify at the site visit.
- Bring a copy of the pre-populated Tool: Water Supply Survey Questionnaire answers to the supply site.
- Familiarise yourself with the Private Water Supplier Matrix detail.
- Make contact via text, call or email a day before the engagement (if one week has passed between scheduling the engagement and the time to meet onsite) to confirm meeting time and location. Refer to Template: Pre-site visit email.
- Print relevant supporting information.

##### 4.2 Complete the Template: On-site Engagement check-list

- Spend time before carrying out the technical water supply assessment to connect with the supplier to ease them into the conversation.
- Before commencing the assessment, have a brief discussion about the supply, the supplier's community, and the nature of their and council's obligations.
- Ask if they have any further questions.
- Carry out the visual inspection of the supply and capture photos and information as per the Tool: Survey 123 App.
- Communicate the next steps to the supplier, including that a follow-up email will be sent with further information and any findings from the assessment. Include a timeframe by when this communication will be provided.

##### 4.3 Send a post-assessment email to the supplier

- Refer to the Template: Post- engagement email to the supplier including any communication details from the visit and assessment results to complete the engagement process.

Notes:

- The field engagement is a critical step in the process and requires preparation to ensure the supplier feels supported and at ease.
- The aim is to inform and support the supplier at all times.
- Allow time for responses and questions to be asked. They may need space and time for clarification.

**Step 5: On-going engagement with supplier (sustainability and relationship building)**

5.1 Develop a reminder to Template: Email reminder to check in on them and their supply and inform them that the assessment will be required in two and then one year's time. This is an opportunity for the supplier to update any contact information during that time or discuss any questions they may have with their supply.

Notes:

- Thank the supplier for their time and information.
- It's important to fulfil any promises made during the engagement and manage expectations on the role of Council in the process.
- Inform the supplier of any information following the assessment that you discussed or discovered following your visit.
- Assessments are only carried out every three years; it's important to show that ongoing support is available to Suppliers.

## Overview of Engagement Plan and Supporting Communication Collateral and Tools

The table below outlines the key steps for the engagement plan and the relevant tools, collateral and templates to help support the implementation of the work programme. This table should be read in conjunction with the Engagement Plan. Refer to the Appendix for the tools, collateral and templates.

Steps	Tools	Collateral & Templates
Identify likely suppliers	1. Supplier GIS Map	1. Supplier Information Spreadsheet
Defining the supplier	1. Supplier GIS Map 2. Google Earth and Council Intramaps Systems	1. Supplier Information Spreadsheet
Engaging with suppliers – initial and ongoing contact	1. Private Water Supplier Matrix 2. Water Supply Survey Questionnaire 3. Suppliers Verification Process	1. Council Contact Form 2. Suppliers Verification Process 3. Supplier Information Spreadsheet 4. Privacy and Consent Form 5. FAQ sheet ( <i>to de developed</i> ) 6. Pre-engagement email
Engaging with suppliers - assessment	1. Water Supply Survey	1. Pre-engagement check-list 2. Pre-site visit email

	Questionnaire 2. Survey123	3. Post-engagement email
On-going engagement with supplier (TBC)		1. Reminder email to suppliers - annual or three yearly distribution

## Communications and Engagement Toolbox/ Kete

The following tables provide detail on the communications and engagement tools and templates developed as part of the pilot project including their intention, users, and appendix number.

### Communication collateral & templates

Item Name	Intention	Users	Appendix
Project Overview	This sheet is a general information sheet which holds the details on the pilot project.	The project team can supply this as additional information to suppliers and stakeholders who are engaged in the project.	Appendix 2
Council Contact Form	This is content and script which provides direction to council staff to make contact with potential private water suppliers to participate in the project.	Project team and other resources such as consultants use this to guide their call with potential participants to engage in the pilot project.	Appendix 3
Privacy and Consent Form	This form sought participant consent for the project and provided detail on how their information would be used. and protected.	Project team uses this to obtain participant consent for the project.	Appendix 4
Communications and Engagement Log	This excel spreadsheet provides the details for engaging participants including	Project team uses this to record the information on an engagement with a participant.	Appendix 6 (Tab 4)

	date for engagement and consent information.		
Email to Suppliers - pre-assessment; post-assessment	This email text provides the participants with information on the engagement process and assessment content and a follow up email on the assessment findings.	Project team emails this communication before and after the engagement to participants.	Appendix 7

<b>Item Name</b>	<b>Intention</b>	<b>Users</b>	<b>Appendix</b>
Supplier Information Spreadsheet (excel spreadsheet)	To assist with information management of private drinking water supplier communications and engagement	Project team to use the excel spreadsheet as an internal tool to manage participant engagement and water supply information.	Appendix 6
Supplier GIS Map	GIS Tool to be integrated into Council internal system to help identify possible private drinking water suppliers. It relies on assumptions and requires manual engagement, managed via the Supplier Information Spreadsheet above to ground truth supplies.	Project team and council staff to identify possible private drinking water supplies.	External map to be incorporated into Council's internal GIS systems.
Private Water Supply Matrix	To help define a given private	To assist the project team, in	Appendix 10

	water supplies <i>registration, category, motivator, type and source water</i> that supplier is likely to have.	particular those who will undertake the engagement in understanding who the supplier is, what their water supply may engage.	
Supplier Verification Process	To determine whether a person is defined as a water supplier under the Water Services Act 2021.	For the project team to ask a participant during the initial phone conversation to ensure that they are a supplier under the Act	Appendix 8
Private Water Supply Questionnaire	To obtain information on a private water supply.	Technical engineer in the field to undertake assessment onsite during engagement with a private water supplier.	External document in Appendix F of the Final Report.
Survey 123 App	The Survey123 app is used to capture technical information about the water supply. This includes drop-down lists and comment boxes for answers to questions, and for locations and photos of the water supply to be captured.	Technical engineer in the field to undertake assessment onsite during engagement with a private water supplier.	Application to be installed onto ipads for field visits.
RASCI template	To assign roles and responsibilities to the project team.	Project team leaders can use this tool to provide clear accountabilities and communication to stakeholders, participants and the project team.	Appendix 9



## Engagement activity and opportunities

Throughout the pilot project, a range of suggestions and opportunities arose that could help to improve the methodology for completing assessments and the engagement process. The following table highlights engagement activities and potential improvement opportunities to assist in further developing the Engagement Strategy and Plan.

This information is not exhaustive and should continue to develop as new experiences arise from future engagements.

Activity	Potential improvements
Engagement Process	<p>Continue to learn more about who is and isn't a drinking water supplier under the Act. This will strengthen the process to identify and engage with Suppliers. As engagements occur, continue to:</p> <ol style="list-style-type: none"> <li>1. Adapt the <u>Tool: Flowchart to identify Suppliers</u> by adding relevant questions to continue to develop the verification process.</li> <li>2. Update the list of likely excluded supplier examples as they come to light to ensure that people are aware of scenarios of who is and isn't likely to be included as a supplier under the Act.</li> <li>3. Update and refine the <u>Tool: Private drinking water supply matrix</u></li> </ol>
Communication	<p>Update communication material to ensure terminology and key phrases are clear and easily understood for customers and the wider Supplier community.</p> <p>Suppliers have varying levels of technical understanding of their water supplies. As legislation is implemented and the Project Team becomes more familiar with phases and terminology, the material will continue to be updated accordingly.</p> <p>Therefore, continue to:</p>

	<ol style="list-style-type: none"> <li>1. Test any new communication content for technical use of language before it's shared with the public domain and external stakeholders.</li> <li>2. Develop a glossary guide</li> </ol>
Foster relationships	<p>Continue to foster relationships with the Te Kupenga group to understand the structure of organisations that best assist and enable Māori and engagement.</p> <p>As part of relationship building, there's an opportunity to build on this foundation to ensure there's a coordinated approach to communications and engagement.</p> <p>Steps to progress these relationships might include:</p> <ol style="list-style-type: none"> <li>1. Arrange opportunities (for example through hui) to introduce the project.</li> <li>2. Seek further clarity and guidance on who might hold responsibilities on this project's future programme.</li> <li>3. Review the supplied key contacts and surrounding context on pre-existing relationships and opportunities for further engagement.</li> </ol> <p>The Taiwhenua or Post Treaty Settlement Group (PTSG) may need to be informed of councils' plans to make contact with a supplier - such as a marae - before the phone call is conducted.</p>
Undertaking the Assessment	<p>Explore opportunities to advance engagement methods to improve efficiencies and the customer experience.</p> <p>Consider the following:</p> <ol style="list-style-type: none"> <li>1. The role that technology could play to streamline and simplify the delivery and monitoring of assessments. For example, an online user profile or mobile app to capture results could be used in future.</li> </ol>
Relationship	Throughout the research, a number of external stakeholders have been identified who are in positions that

building	<p>could help. They have relationships with suppliers and are trusted within the suppliers' communities. Consider the opportunity to:</p> <ol style="list-style-type: none"> <li>1. Establish a Memorandum of Understanding between external stakeholders who are committed to partner and assist in the kaupapa of these assessments and other obligations under the Act.</li> <li>2. Develop a trusted advisor/supplier list to support delivery outputs of the project.</li> <li>3. Explore the idea of a regional steering committee group, or working group, to help communicate and engage with specific supplier communities. For example, rural communities.</li> </ol>
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### **Problem-shooting risks and issues**

This section outlines 'Identified risks and potential issues' that may be experienced during the engagement process; and 'Problem-shooting for future engagement' that provides potential solutions or mitigation measures to assist with the engagement approach.

This information is not exhaustive and should continue to develop as new experiences arise from future engagements.

The risks and associated implications could be categorised as follows:

Political: This could undermine the purpose of the project, stronghold alternative agendas or mismanagement of information.

Economic: The economic risk has potential cost implications to either the supplier or council.

Social: The social risk has the potential to impact people's wellbeing or reputation in the community.

Environment: The environment risk has the potential to impact or disrupt the engagement environment that the Strategy seeks to achieve.

Risk	Potential issues	Problem shooting for future engagement	Supporting collateral, tools, templates
Political	<p>The Three Waters Reform programme introduces various potential risks and issues for future water supply assessments as suppliers are concerned about the future of their water supply and what the implications are for them.</p>	<p>Develop proactive and reactive media strategies and media monitoring to keep across the conversation.</p> <p>Use the project messaging to focus on the kaupapa of this assessment and why it's important for suppliers. This will help to differentiate between this project's purpose and the wider reform.</p>	<p>Refer to the Toolkit for the Information Sheet and FAQs.</p>
Social	<p>The definition of a supplier continues to develop. This will have implications for the project team, external stakeholders and suppliers, who may or may not be aware of their status. This lack</p>	<p>Confirm the status of drinking water suppliers under the Act. It's important that only those who fall into the current definition are communicated and engaged with.</p> <p>Communicate to suppliers that they may have obligations under other legislative requirements (such as the Building Act) to comply with the drinking water standards.</p>	<p>Refer to the Supplier Verification Process.</p>

	of clarity has the potential to create additional demand on resources, misinformation and stress.		
Social	Hesitation from suppliers to sign the consent form.	Clear and proactive communication collateral.	Refer to the Information Sheet and FAQs.
Economic	Delays in making contact with the supplier have the potential to impact on engagement momentum, suppliers buy-in, resource and programme timeframes.	Develop a clear programme structure and RASCI model for the project team.  Streamline the process to contact suppliers and reduce the amount of input from multiple people by training one council staff member to contact and schedule all visits to suppliers.	Refer to the RASCI and Contact Log templates in the Toolkit.
Economic	Some suppliers may require collective or higher approval within their organisations before they can participate in the assessment.	Identify the programme interdependencies and potential time delays early on project process.	Refer to the Toolkit for additional questions.

<p>Environment</p>	<p>Some suppliers may experience a degree of uncertainty or confusion during the engagement. This may result in either parties feeling ill-prepared or more effort is required by the assessor to connect and make the supplier feel comfortable.</p> <p>Upon engagement, some Suppliers may still be hesitant to participate or unsure exactly what this project is for.</p>	<p>Two weeks prior to the site visit send an email detailing the structure of the engagement and key details to support the process. It is recommended that the Questionnaire is pre-populated in advance to support the customer journey and experience.</p> <p>Reiterate the purpose of this engagement is to meet with them to provide information on the new obligations; and answer questions that suppliers may have and to better understand the supply.</p> <p>Consider making a phone call to the supplier a day in advance to reconnect; ask if they have any questions about the purpose of the meeting; and confirm where and when you have arranged to meet them. This will mitigate confusion and ensure the engagement is achieved in a timely manner.</p>	<p>Refer to the Information Sheet, FAQs (, Questionnaire, and Contact Form to support engagement.</p>
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**COVID-19 response plan**

During the project duration, COVID-19 was prevalent and the engagements with private drinking water suppliers were prepared to be completed online if required. Should further situations arise relating to COVID-19, it will be addressed through a response plan that meets the needs of the community assessment delivery programme.

**Evaluation**

It is anticipated that both the recommended methodology and engagement for community assessments continue to be evaluated and improved as new information and efficiencies become available.

## **Communication and Engagement Strategy Appendices**

A1: IAP2 principles

A2: Project Overview Sheet

A3: Council Contact Form

A4: Privacy and Consent Form

A5: Communications and Engagement presentation

A6: Supplier Information Spreadsheet (inclusive of Communications and Engagement Log)

A7: Email template to Suppliers - pre-assessment; post-assessment; annual distribution

A8: Supplier Verification Process

A9: RASCI template

A10: Private Water Supply Matrix

A1: IAP2 principles

		INCREASING IMPACT ON THE DECISION 				
		INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL		To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC		We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision. We will seek your feedback on drafts and proposals.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

## A2: Project Overview Sheet

# Hawke's Bay Private Drinking Water Supply Pilot

## Project Overview

30 November 2021



Government has introduced new regulations for those who provide drinking water to people. The Water Services Act (2021) now asks more of councils and private drinking water suppliers. If you supply drinking water from a private water source such as a bore, spring, stream, river or roof to a house other than your own, this will include you.

The **Water Services Act 2021** seeks to ensure that drinking water suppliers provide safe drinking water to consumers through a new drinking water regulatory and risk management framework.

The Act requires more of councils and private drinking water suppliers.

- At least once every three years, councils are required to undertake drinking water supply assessments for their communities to determine water supply demand, safety, quality, and any potential risks. Assessments must include communities who receive drinking water services from councils and also other drinking water suppliers/arrangements (including households within those communities).
- By 2028, all unregistered drinking water suppliers will need to meet the new Water Services Act, drinking water standards, and rules, or be using an acceptable solution (defined in the Act).
- There are also new obligations registered drinking water suppliers need to meet.

### *Hawke's Bay's Private Water Supply Pilot Project Objectives*

The Hawke's Bay Councils (Napier City Council, Hastings District Council, Wairoa District Council, and Central Hawke's Bay District Council) want to partner with private drinking water suppliers to establish the best approach to help us all meet our new obligations under the Water Services Act.

This project provides a test platform for both council and drinking water suppliers to develop a methodology and framework so we can meet our respective obligations going forward.

We want identify the extent of private drinking water suppliers across Hawke's Bay and work with a sample to:

- Better understand our communities' suppliers, their expectations and needs
- Understand how the new regulations might be best implemented
- Develop together and trial a framework for water supply

### *An important project for Private Drinking Water Suppliers*

This project will help suppliers by:

- Increase understanding of what the Water Services Act changes mean for them and the community they provide drinking water to.
- A technical assessment on their drinking water supply and recommendations to help them plan for meeting their obligations.
- Provide an opportunity to give feedback on the implications of the proposed regulations and acceptable solutions to Taumata Arowai (the regulator).



### New obligations for all drinking water suppliers

- The new Water Services Act (2021) intends to ensure that drinking water suppliers provide safe drinking water, through a regulatory framework designed to improve the quality of water services in New Zealand.
- In March 2021, the government set up Taumata Arowai as a dedicated water services regulator.
- Taumata Arowai has drafted new rules and standards including 'Acceptable Solutions', intended to provide a straightforward approach which automatically complies.
- Taumata Arowai will be consulting on their draft Acceptable Solutions, drinking water standards and operational compliance rules in early 2022 and expect to have these in place by 1 July 2022.
- By 2025, all currently unregistered drinking water suppliers must register their supply with Taumata Arowai.
- By 2028, all currently unregistered drinking water suppliers will need to meet the Water Services Act, new drinking water standards and operational compliance rules, or be using an Acceptable Solution.
- By November 2022, currently registered suppliers must have submitted a water safety plan, including a source water risk management plan, with Taumata Arowai.



## Defining a Drinking Water Supplier:

If you own or operate a water supply that is being used as drinking water by people outside of your own home, you are a drinking water supplier and will have responsibilities under the Water Services Act 2021.



## New obligations for Councils

The Water Services Act (2021) amends Section 125 of the Local Government Act and introduces a new requirement for Councils (territorial authorities) to undertake water supply assessments of drinking water services.

The assessments require Councils to:

- Identify communities that receive a drinking water service
- Describe the nature of the drinking water service
- Assess whether the water is sufficient to meet current and future demands
- Describe the safety and quality of the drinking-water and identify any potential public health risks
- Assess consequences if the community loses access to the service and outline a plan to provide for ongoing access

Following the assessment, a Council must:

- Make the assessment public and provide a copy to Taumata Arowai (the national drinking-water regulator)
- Notify Taumata Arowai if any suppliers are, or appear to be, failing to meet statutory obligations, any absence or deficiency in a drinking-water service, and if there is a risk of a water supplier ceasing to operate
- Consider any findings in relation to the Council's current and future Infrastructure Strategy, Long Term Plan and District Plan.

Where suppliers and communities face significant problems or potential problems with their drinking-water services, Taumata Arowai may require the Council to work with them, the supplier and consumers to provide a solution to the problem. This may include taking over the management and operations for the drinking water service or providing drinking-water through an alternative arrangement.

The Department of Internal Affairs has estimated that there may be over 75,000 private water supplies across the country. There could be around 2,700 private water supplies in the region, based on the current population of Hawke's Bay.

A3: Council Contact Form

# Hawke's Bay Private Drinking Water Supply Pilot Project - Internal Contact Form

## Council Contact Lead Form



To:	[Insert full name, job, title, etc] Private water supply contact
Date:	[Insert date]
Actions Requested	Make contact with identified private drinking water supplier by [insert date]

### Purpose

You've been identified as the Council contact lead to initiate the discussion with identified private water supplier's to participate in the Hawke's Bay regional private water supplier pilot project.

This document includes:

- The process for communicating with the supplier
- A proposed script for you to follow
- An introduction to the project & new legislation requirements
- A follow up email to the Private Water Supplier if they verbally consent to the process

### Process for communicating with your private water supplier

You may have an existing relationship with this private drinking water supplier or this phone call may be your first contact you've made. Alternatively, this supplier's details may have been referred to you as the Contact Lead.

1. Make an initial phone call to the private water supplier (details listed in Table 1).
2. Introduce the project (refer script below).
3. Seek private water suppliers verbal interest in participating project
4. Send consent form to private water supplier to complete
5. Send the contact information to the Regional Programme Director & Engagement Lead via [redacted] and [redacted]

### Suggested Script

Tēnā koe/Hello. My name is ..... and my role is .....

- I'm calling because the councils (Napier City Council, Hastings District Council, Wairoa District Council, and Central Hawke's Bay District Council) have started a pilot project that may be of interest to you.
- The Hawke's Bay councils (Napier City Council, Hastings District Council, Wairoa District Council, and Central Hawke's Bay District Council) have started a regional project to collaborate and partner with a sample of private drinking water suppliers to establish the best approach to help us all meet the new obligations under the Water Services Act.

- Are you aware of the new Water Services Act and the obligations it puts on private water suppliers and councils?

The new Water Services Act requires more of councils and private drinking water suppliers.

- At least once every three years, councils will be required to undertake drinking water supply assessments for their communities to determine water supply demand, safety, quality, and any potential risks. Assessments must include communities who receive drinking water services from councils and also other drinking water suppliers /arrangements (including households within those communities).
- By 2028, all unregistered drinking water suppliers, including rural, marae, and papakainga will need to meet the new Water Services Act, drinking water standards, and rules, or be using an acceptable solution (defined in the Act).
- There are also new obligations registered drinking water suppliers need to meet.
- By 2028, all unregistered drinking water suppliers, including rural, marae, and papakainga will need to meet the new Water Services Act, drinking water standards, and rules, or be using an acceptable solution (defined in the Act).
- There are also new obligations registered drinking water suppliers need to meet.

- This project provides a test platform for both council and drinking water suppliers to develop a methodology and framework so we can meet our respective obligations going forward.

- We want to identify the extent of private drinking water suppliers across Hawke's Bay and work with a representative sample to:

- Better understand our communities' suppliers, their expectations and needs
- Understand how the new regulations might be best implemented
- Develop together and trial a framework for water supply assessments

- This project will help suppliers by:

- Increase understanding of what the Water Services Act changes mean for them and the community they provide drinking water to.
- A technical assessment on their drinking water supply and recommendations to help them plan for meeting their obligations.
- Provide an opportunity to give feedback on the implications of the proposed regulations & acceptable solutions directly to Taumata Arowai (the regulator).

**Note: We will not be testing the quality of your drinking water system, just reviewing the types of drinking water systems.**

- Would you consider participating in this project?

- Can I just also check if you know where you get your water from? I understand that your water is sourced from **[a bore/surface water/roof water/a spring]**. Is that correct?
- In order to participate in the project we will require your consent to proceed.
- First I will read our consent statement to ensure you are well informed prior to sending via email a consent form for your authority to participate in this project. **[Read Consent Form Attached]**.
- To confirm, do you consent to participating in this project?
- Thank you - I will now pass your details on to our project team to arrange a time to meet with you to kōrero/ talk about your private water supply.
  - Our team would come to your property to discuss your water supply for 1-2 hours.
  - Are there any particular times or days over the next few weeks that might suit? Or don't suit?
  - The team will be in touch to schedule a suitable time in the next couple of days.
- I will also send a follow up email to you with the consent form and further project information (see script below to copy and paste). Thank you your time.

## Email Template (please cc: [REDACTED])

Hello {Name of Supplier}

Thank you for your time and discussion on the phone earlier regarding our project. Please find attached the consent form discussed and an overview of the project. We look forward to hearing from you once you have had an opportunity to review. We are looking to undertake assessments in late January and a member of the project team will be in touch to arrange a suitable date and time.

### Project Summary

The Hawke's Bay Councils (Napier City Council, Hastings District Council, Wairoa District Council, and Central Hawke's Bay District Council) want to partner with private drinking water suppliers to establish the best approach to help us all meet our new obligations under the Water Services Act. This project provides a test platform for both council and drinking water suppliers to develop a methodology and framework so we can meet our respective obligations going forward.

We want identify the extent of private drinking water suppliers across Hawke's Bay and work with a representative sample to:

- Better understand our communities' suppliers, their expectations and needs
- Understand how the new regulations might be best implemented and provide feedback to the new regulator (Taumata Arowai) to influence changes and/or improvements where required
- Develop together and trial a framework for water supply assessments

The link below sets out the new rules for drinking water suppliers, as further background information

<https://www.taumataarowai.govt.nz/for-water-suppliers/>

Best Regards,

.....

## Table 1. List of identified private drinking water suppliers

Private Water Supplier Name	Contact Person	Phone Number	Email	Physical Address	Water Source	Time preference or unavailability

## Table 2. Project team contact details

Role	Contact name	Phone number	Email
Regional Programme Director			
Central Hawke's Bay District Council			
Wairoa District Council			
Hastings District Council			
Napier City Council			
Project Engagement Lead			

## Appendix 1: New Legislation and Regulatory Requirements

- The new Water Services Act (2021) has been enacted to ensure that drinking water suppliers provide safe drinking water, through the provision of a regulatory framework to improve the quality of water services in New Zealand.
- The Water Services Act (2021) requires territorial authorities to complete water supply assessments for their respective districts.
- In March 2011, the government set up Taumata Arowai as a dedicated water services regulator.
- Taumata Arowai has drafted new rules for all drinking water suppliers under the Water Services Act (2021).
- To support the delivery of these new regulations, Taumata Arowai has drafted 'Acceptable Solutions'. These are intended to provide a more straightforward approach by setting out a standard treatment system, which if installed, automatically complies with the requirements.
- Water suppliers will also need to carry out water quality monitoring and prepare an operations and maintenance plan and emergency response plan as part of the Acceptable Solution.
- By 2028, all currently unregistered drinking water suppliers, including rural, marae and papakainga will need to meet the Water Services Act, new drinking water standards and operational compliance rules, or be using an Acceptable Solution.
- Taumata Arowai will be consulting on their draft Acceptable Solutions, drinking water standards and operational compliance rules in early 2022 and expect to have these in place by 1 July 2022.

### CENTRAL HAWKES BAY ONLY

#### Contestable grant funding to support Private Drinking Water Suppliers

- Private drinking water suppliers from **Central Hawke's Bay**, can apply to Council for a 'Private Drinking Water Supplier Fund' grant.
- Provided as part of the governments COVID -19 stimulus funding for three waters, the funding available is apportioned as follows:
- **Central Hawke's Bay District Council \$150,000 (capped at \$10,000) per applicant**
- This grant fund is contestable, so success will dependent on the application meeting the grant criteria, the priority of the grant purpose compared with others, and the grant money available.
- Priority will be given to those applicants who represent community groups, community service providers, and marae that fall within the Water Services Act.
- Applicants must show intent to engage with Councils and be transparent about the performance of their drinking water & associated systems.
- Applications will be open for a two and a half month period from **1 December 2021 until 14 February 2022**

#### Potential fund uses

- Water quality testing
- Water safety plan creation/updates
- Small water system equipment or upgrades
- Drinking water supply training courses
- Installing systems to prevent water backflow
- New water tanks
- New water source investigation
- Preparing operations and maintenance manuals and standard operating procedures

## A4: Privacy and Consent Form

# Hawke's Bay Private Drinking Water Supplies Project

## Privacy and Consent Form



Government has introduced new regulations for those who provide drinking water to people. The Water Services Act (2021) now asks more of councils and private drinking water suppliers. If you supply drinking water from a private water source such as a bore, spring, stream, river or roof to a house other than your own, this will include you.

Wairoa District Council, Napier City Council, Hastings District Council and Central Hawke's Bay District Council are working together to prepare for these changes and want to engage with you to help understand what this means for everyone.

The Act requires more of councils and private drinking water suppliers.

- At least once every three years, councils will be required to undertake drinking water supply assessments for their communities to determine water supply demand, safety, quality, and any potential risks. Assessments include communities who receive drinking water services from councils and also other drinking water suppliers /arrangements (including households within those communities).
- By 2028, all unregistered drinking water suppliers, including rural, marae, and papakainga will need to meet the new Water Services Act, drinking water standards, and rules, or be using an acceptable solution (defined in the Act).
- There are also new obligations registered drinking water suppliers need to meet.

Through this regional project, we will develop by working with you an assessment method that works for both private drinking water suppliers and councils.

By participating in this project, you will be provided with information and any recommendations to help you meet your new obligations. You will also have an opportunity to provide feedback via the councils to the new drinking water regulator - Taumata Arowai.

### What information will we collect?

We will collect information about you and your water supply. This information will help the project team identify and locate your water supply, schedule the site visit, and provide details of your drinking water supply system in accordance with the Act.

Type of information	Why we collect this information
Name of water supply	Used to identify your drinking water supply
Physical address	Used to locate your drinking water supply
Contact name (Legal Name)	Used to book your site visit and contact you in future about your drinking water supply
Contact email and/or contact phone number	Used to send your site visit confirmation and reminders, and to contact you in future about your drinking water supply
Information relating to your drinking water supply system collected as part of on-site visit.	To inform councils assessment of your drinking water supply system in accordance with the requirements of the Water Services Act (2021).

### What happens if we find an issue with your drinking water supply?

- If during the course of the assessment we become aware of a situation with your drinking water supply system that poses a serious risk to the safety and health of those connected to the supply, we will first advise you and also inform the regulator Taumata Arowai in accordance with our obligations under the Act. However, we will not be testing the quality of your drinking water, just reviewing the system to provide it.

### How will we keep your information safe?

- Your personal information will be held and managed in accordance with the Privacy Act 2020. It means secure measures are in place to protect your information from unauthorised access and access to that information is limited to authorised users only and for the purposes of complying with New Zealand laws and regulations.

## How long will we keep your information?

- It's our intention to hold your information to support the ongoing requirement for councils to undertake these assessments to determine water supply demand, safety, quality, and any risks associated with supplies under the Act.
- Additionally, all views expressed during our discussion (outside of the technical assessment) will be anonymous so you can feel safe to express any needs or concerns you may have.

## CONSENT

I understand and agree that the Council and/or their nominated agent will collect information to comply with the Water Services Act 2021.

I \_\_\_\_\_ consent to participating in the Hawke's Bay Private Drinking Water Supplier project led by the Hawke's Bay territorial authorities (Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council).

\_\_\_\_\_  
Company Name (if applicable) and Private Water Supply Address

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Regulations

The Water Services Act amends Section 125 of the Local Government Act requiring councils (territorial authorities) to carry out assessments of drinking water services. In these assessments, councils must:

- Identify communities that receive a drinking water service;
- Describe the nature of the drinking water service;
- Assess whether the water adequately meets current and future demands;
- Describe the quality of the drinking-water and identify any potential health risks; and
- Assess consequences if the community loses access to the services and to make a plan to resolve access issues.

Following the assessment, councils must:

- Make the assessment open to the public and provide a copy to Taumata Arowai (the new drinking-water regulator);
- Notify Taumata Arowai if any suppliers are, or appear to be, failing to meet statutory obligations; if there's an absence or deficiency in a drinking-water service; and if there's a risk of a water supplier ceasing to operate; and
- Consider any findings if they relate to the council's current and future Infrastructure Strategy, Long Term Plan, and District Plan.

## A5: Project Communications and Engagement Overview [for the Hawke's Bay Private Drinking Water Supplier Project]

FRIDAY, 10 SEPTEMBER 2021

F O L K L

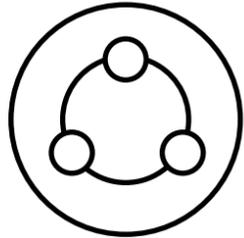
# **THREE WATERS REFORM** **PRIVATE WATER SUPPLY INVESTIGATION.** **HAWKE'S BAY REGION.**

**Communications & Engagement Overview.**

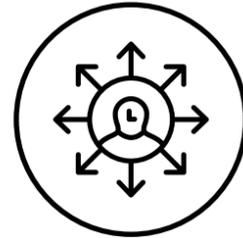
Prepared For: Hawke's Bay Five Councils – Programme Director, Toni Goodlass

Prepared By: FOLKL – Communications & Engagement Leads, Liv Young and Pip Mackay

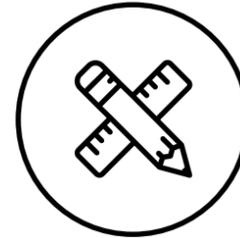
# AGENDA.



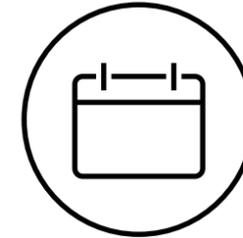
**COMMUNICATIONS  
& ENGAGEMENT  
STRATEGIC APPROACH.**



**ROLES &  
RESPONSIBILITIES.**



**INDICATIVE  
COMMUNICATIONS  
KIT.**



**INDICATIVE  
TIMELINE.**



**POTENTIAL  
CONTENT  
REQUIREMENTS.**



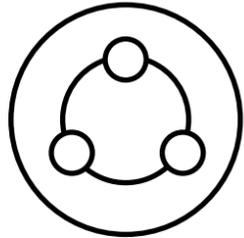
**POTENTIAL  
ENGAGEMENT  
METHODS.**



**RISKS.**



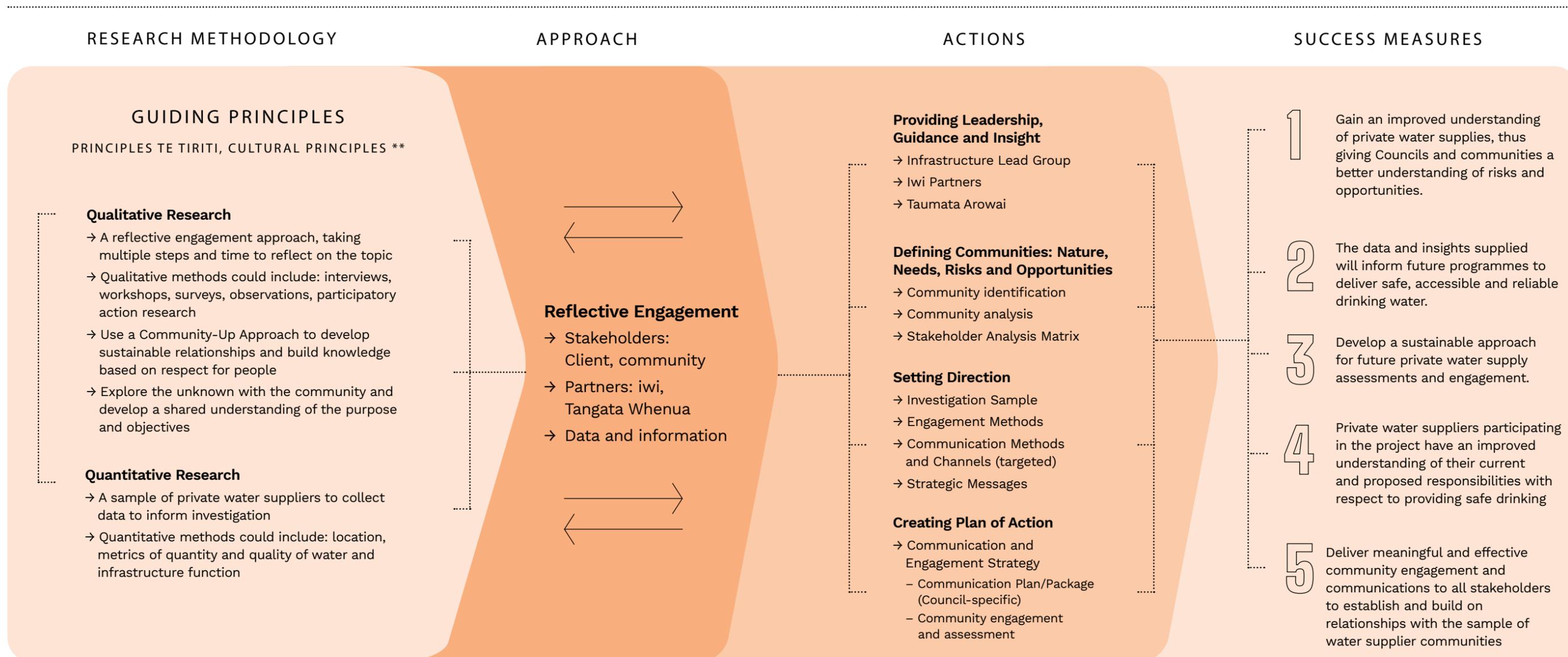
**FURTHER  
QUESTIONS.**



# COMMUNICATIONS & ENGAGEMENT STRATEGIC APPROACH.

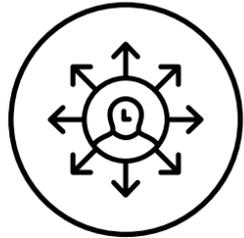
**STRATEGIC DIRECTION:**  
Stakeholder Engagement; Communications Strategy; and Monitoring & Evaluation.

**AIM:**  
The investigation aims to test and validate a Communications and Engagement framework through this sample assessment, in order to deliver a more extensive Plan across a wider group of private water suppliers in the future.



FOLKL: PROPRIETARY AND CONFIDENTIAL

\*\* Further discussion is required with iwi partners to demonstrate the Cultural Principles. The intention is for a partnership approach to be embedded within the Communications & Engagement of this investigation.



# ROLES AND RESPONSIBILITIES.

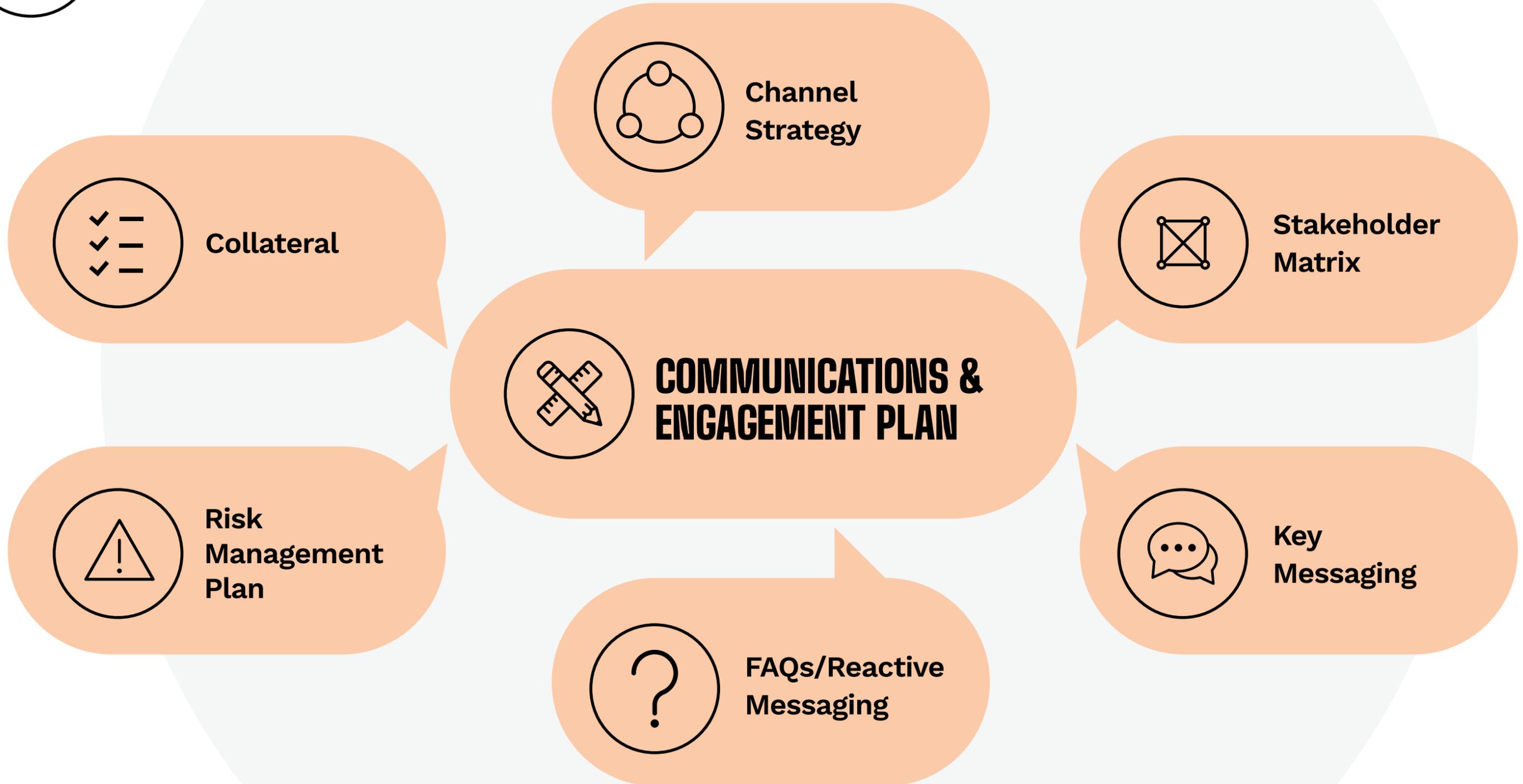
ROLE	RESPONSIBILITY	ACTIVITY
<b>Consultant</b> → <b>Communications &amp; Engagement (C&amp;E)</b>	→ Strategic Communications & Engagement overview → Communications and Engagement Toolkits	→ Strategy → Stakeholder mapping → Coordination and planning → Engagement and events → Milestones and timelines → Monitoring, evaluation and feedback
<b>Five Hawke's Bay Councils</b> → <b>Programme Director</b>	→ Three Waters Reform Programme → Political relations → Te Kupenga relations → Media spokesperson	→ Risk Management → Content approvals
<b>Five Hawke's Bay Councils</b> → <b>Communications &amp; Engagement Leads</b>	→ Advice and district data and information → Local media relations → Stakeholder liaison	→ Tactics and Delivery Plan → C&E Channels → Timelines → Council staff coordination and planning
<b>Consultant</b> → <b>Media &amp; Public Relations</b>	→ Media representative and liaison	→ Strategy → Crisis Management → Media Management

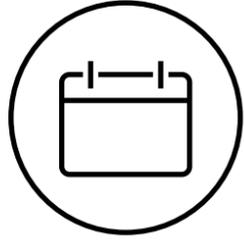
FOLKL: PROPRIETARY AND CONFIDENTIAL

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# INDICATIVE COMMUNICATIONS KIT.





# INDICATIVE TIMELINE.

DATE	TASK	CHANNEL/S	CONTENT/COLLATERAL	LEAD
<b>10 September 2021</b>	Test C&E approach - Programme Director, Infrastructure Leads, Comms Leads	Workshop Email	C&E strategic approach High level Stakeholder Matrix High level overview of a sample comms kit Timeline (indicative)	FOLKL
<b>w/c 13 September 2021</b>	Brief C&E Approach with Council Comms Lead	Email Online meeting	Above content (following approval from Programme Director)	FOLKL Programme Director Councils
<b>w/c 20 September 2021</b>	Test Supplier Communities Identify Community Champions Develop Communications Kits	Email/Phone/ Online meeting N/A N/A	Various Communications (refer below) List of Community Champions Various Communications (refer below)	Councils FOLKL Council FOLKL
<b>w/c 20 September 2021</b>	Brief Community Champions  Communications live (TBC)	Email/Phone/Face-to-Face  Website/eDM/Social (TBA)	Champion Brief  Key Messaging	Councils  Councils
<b>w/c 01 October 2021</b>	Community Engagement	Workshop/focus group/ town hall (TBD)	Collateral	FOLKL
<b>10 October 2021</b>	Confirm Assessment Schedule	Email/Post	Letter to Suppliers	Councils
<b>w/c 05 November 2021 – 29 November 2021</b>	Assessment	Field Work	Communications Kit Content	FOLKL Councils (in agreed upon circumstances)



# POTENTIAL CONTENT REQUIREMENTS.

CONTENT	AUDIENCE	FORMAT
<b>Investigation information -</b> → overview of the project, why we are doing it, assessment process, what it means for suppliers	Suppliers Councils Community champions Te Kupenga / external agencies Federated Farmers / additional partners	Letter Infographic Bullet points
<b>Incentive programme</b> → process, criteria, next steps, timeline	Suppliers Councils Community champions	Letter Briefing (bullet points)
<b>Community invitation</b> → date, time, place etc	Suppliers	Letter Designed invite
<b>Assessment information</b> → date, time, place etc	Suppliers	Letter
<b>Post-assessment information</b> → next steps, data storage (WSP), privacy	Suppliers	Letter Infographic
<b>Post-assessment information</b> → next steps, support package	Non-compliant suppliers	Letter Infographic

FOLKL: PROPRIETARY AND CONFIDENTIAL

\*\* Further discussion is required with iwi partners to demonstrate the Cultural Principles. The intention is for a partnership approach to be embedded within the Communications & Engagement of this investigation.



# POTENTIAL ENGAGEMENT METHODS.

The below methods are examples of various direct and indirect engagement techniques. As we continue to research, build our knowledge and develop our partnerships with Te Kupenga and Tangata Whenua, we will arrive at a selection of engagement methods which are tailored and of maximum relevance to the communities in question.

ENGAGEMENT METHOD	DESCRIPTION	BENEFITS AND OPPORTUNITIES	DISADVANTAGES AND RISK
<b>Town Hall / Marae / Water Road Show</b>	Presentation to targeted community group(s)	<ul style="list-style-type: none"> <li>→ Establish and build relationships and rapport</li> <li>→ Minimise risk of misinformation</li> <li>→ Opportunity for community participation</li> <li>→ Direct and active presence within community</li> </ul>	<ul style="list-style-type: none"> <li>→ Audiences disrupt investigation focus with out-of-scope agenda/s</li> <li>→ Media attendance</li> <li>→ Political attendance</li> <li>→ Mobilise and/or escalate group resistance and collective grievances</li> <li>→ Low participation</li> </ul>
<b>Focus Groups Workshops</b>	Group activity with select participants	<ul style="list-style-type: none"> <li>→ Establish and build relationships and rapport</li> <li>→ Face-to-face contact with communities in a managed environment</li> <li>→ Focused approach</li> <li>→ Safe environment for sharing information and testing options</li> </ul>	<ul style="list-style-type: none"> <li>→ Perception of exclusion from audiences who are not invited to participate</li> <li>→ Confidential information may be shared and leaked by participants and/or used for ulterior motives in the future</li> <li>→ Low participation</li> </ul>
<b>Individual Targeted Letters</b>	Letters are sent to targeted private water suppliers to ask them to participate in investigation	<ul style="list-style-type: none"> <li>→ Accessible and passive option that people can opt in or out of</li> <li>→ Familiar option for suppliers, based on past experiences</li> </ul>	<ul style="list-style-type: none"> <li>→ Misunderstanding, misconception and/or increase in resistance towards Investigation</li> <li>→ Low participation levels</li> </ul>
<b>Community Champions</b>	Existing relationships between Council and community members are used to brief and provided information to targeted groups	<ul style="list-style-type: none"> <li>→ Trust is established through existing relationships</li> <li>→ Increase in Supplier understanding, knowledge and participation in the Investigation</li> <li>→ Potential for decrease in risk of pushback and misinformation within communities</li> </ul>	<ul style="list-style-type: none"> <li>→ Varied and different views and perceptions between Champions</li> <li>→ Spreading of misinformation between Champions and their communities</li> <li>→ Limited information on historical context</li> <li>→ Time constraints</li> <li>→ Limited resources</li> <li>→ Additional pressure onto people in a volunteer capacity is not sustainable or always fair to rely on</li> </ul>
<b>COVID-19 Response options to engagement</b>	Online options for all outlined engagement methods can be arranged.	<ul style="list-style-type: none"> <li>→ Key conversations and information are still shared and received</li> <li>→ Programme milestones are met</li> </ul>	<ul style="list-style-type: none"> <li>→ Less effective relationships are established through online engagement</li> <li>→ Low participation levels</li> <li>→ Limited accessibility (e.g. no access to internet)</li> </ul>

\*\* Further discussion is required with iwi partners to demonstrate the Cultural Principles. The intention is for a partnership approach to be embedded within the Communications & Engagement of this investigation.



# RISKS.

F O L K L



A6: Supplier Information Spreadsheet (inclusive of Communications and Engagement Log)

The eight tabs in the spreadsheet and how they are used are described below:

**Tab 1:** Private drinking water supplier matrix’ – the private drinking water supply matrix from which a sample is based to confirm the spread across the community assessment. This will assist the team during Step

	A	B	C	D	E	F	G	H	I	J
<b>Private drinking water supplier matrix</b>										
<b>Select:</b>	<b>Registered drinking water supplier</b>				<b>Unregistered drinking water supplier</b>					
<b>Registration</b>	Definition: Was on the drinking water register under the Health Act when the Water Services Act was gazetted on 15 November 2021.				Definition: Was not on the drinking water register under the Health Act when the Water Services Act was gazetted on 15 November 2021.					
<b>Select:</b>	<b>Very small population served</b>	<b>Small population served</b>	<b>Large population served</b>							
<b>Category</b>	<50 people	50 - 500 people	>500 people							
<b>Select:</b>	<b>Ohanga / Commercial (The Māori economy)</b>	<b>Tangata Hāpori/ Social (People and Māori communities, whānau)</b>	<b>Ritenga Māori/ Cultural (Customary practice and cultural spaces, hapū and marae)</b>	<b>Te Taiāo/ Environmental (The Māori environmental worldview/ papatūānuku)</b>						
<b>Motivator</b>	Commercial motivator is the group of private drinking water suppliers whose primary purpose for a drinking water supply relates to a commercial activity.	Social motivator is the group of private drinking water suppliers whose primary purpose for a drinking water supply relates to an activity for own good or cause.	Cultural motivator is the group of private drinking water suppliers whose primary purpose for a drinking water supply relates to an identified cultural practice and spaces.	Environmental motivator is the group of suppliers whose primary purpose for a drinking water supply is driven by the environmental value that the drinking water source provides for those people who use (or wish to use) it.						
<b>Select:</b>	<b>Type of supplier</b>	<b>Description</b>								
<b>Type of supplier</b>	<b>Accommodation facilities</b>	Accommodation facilities are a type of supplier that charge a rent, membership or fee for their land or buildings in exchange for people to stay temporarily, and drinking water is supplied as part of the facilities. This includes campgrounds, Airbnb, Backpacker, and the New Zealand Motor Caravan Association (NZMCA).								
	<b>Beach communities</b>	Beach communities are those that reside in coastal environments and may be a mix of full- and part-time residents. A private drinking water supplier may have a source of water such as a bore located on their property that they share with neighbours. This type includes beaches and holiday homes.								
		Business organisations are those who own or manage a business (excluding								
<span>&gt;</span> <span>☰</span> <b>Template PDWS Matrix &amp; definiti</b> <b>Template Spread Across PWS Type</b> <b>Working List</b> <b>Supplier Engagement Log</b> <b>Unconfirmed PWS</b>										

**Tab 2:** 'Spread Across PWS Type' – the initially identified private water suppliers in the district based on engagement with the community. Use the definitions table to determine the type of water suppliers and note where they fit on this matrix table.

A	B	C	D	E	F	G
<b>Type</b>	<b>COUNCIL</b>	<b>Pending Schedule</b>	<b>Assessment Scheduled</b>	<b>Assessment Completed</b>	<b>Not a supplier</b>	<b>Unwilling supplier</b>
Accommodation facilities						
Beach community						
Business organisation						
Community facilities						
Community water filling station						
Farmers						
Horticulturalists and viticulturalists						
Kāumatua flats						
Marae						
Papakāinga						
Privately owned - community based PWS						
Retirement homes						
Rural settlements						
Unbuilt marae						
Urban infill						
<b>To continue to be developed</b>						

**Tab 3: 'Working List'** – the proposed list of private water suppliers to contact and organise logistics with for the CHB representative sample

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Assumed Identified / Potential PWS	Property ID	Geographic Location	Geographic Sublocation	Physical Address	Supply Name	Contact Name	Contact Phone	Contact Email	Postal Address	Registered / Unregistered	Water Supply Source	Supplier motivator	Private Drinking Water Supplier Type	Notes
1	Select likely private drinking water supplier based on project GIS selected property  e.g. Assumed/Potential or Identified PDWS	Input property ID from Council identification system  e.g. 53762	Selected from the meshblock identified on project GIS/ Stats NZ Statistical Area  e.g. Puketapu-Eskdale	If community or council have identified a name within the meshblock  e.g. Rissington	Input physical supply location address  e.g. 2496 State Highway 2	If there is an identifying factors for the supplier  e.g. Mr Apple	Input contact name of drinking water supply.  e.g. A.B Gibson	Input contact number  e.g. 021 223 223	Input contact email  e.g. A_B@gmail.co.nz	Input suppliers postal address which could be different from the supply address.  e.g. PO Box 2135 Waterway Lane Hastings New Zealand 4428	Select if the supply is registered or unregistered (this will become redundant after 2024).  e.g. Unregistered	Select which water supply source the supplier operates.  e.g. Groundwater, spring or roof water	Select which motivator the supplier is primarily driven by.  e.g. Social, economic, cultural or environmental	Select what type of drinking water supplier the supply services.  e.g. Accommodation facility	Add any notes based on known information such as conversations with the supplier.  e.g. Contacted supplier on 20 March, 2022 discuss a time to complete an assessment Discussed that they own and operate 5 accommodation houses which are tested annually. Does not have formal training and undertakes maintenance themselves as needed.
	<b>Colour code as contact is made.</b>	Could not reach													
		Follow up required													

**Tab 4:** ‘Supplier Engagement Log’ – log of private water suppliers who have been contacted, assessed and provided assessment feedback

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Geographic Location	Geographic sublocation	Physical address	Supply Name	Physical Address	Contact Name	Contact Phone	Contact Email	Samp	Verbal Consent	Signed Consent	Assessment Date	Assessment Time	Pre-engagement email complete	Post-engagement email complete	Additional	
			Clifton Accommodation						Y	Y	15-Nov-21	14:00	Y	Y	was scheduled	
			Teatree Farms						Y	Y	2-Dec-21	8:00	Y	Y	could not	
			Serious Fruit Company						Y	Y	2-Dec-21	11:00	Y	Y		
			Kopire Farm						Y	Y	2-Dec-21	13:00	Y	Y		
									Y	N	8-Dec-21	9:30	Y	N	draft fee	
									Y	Y	18-Jan-22	13:00	Y	Y		
									Y	Y	19-Jan-22	10:30	Y	Y		
									Y	Y	19-Jan-22	13:00	Y	Y		
									Y	Y	25-Jan-22	10:30	Y	Y		

**Tab 5:** 'Unconfirmed PWS' – list of assumed private water suppliers who had been reached out to but not progressed due to a lack of response or, further information is unavailable to confirm them as private water suppliers

A	B	C	D	E	F	G	H	I	J	K
No	Progress notes	Assumed / Identified / Potential PWS	Property ID	Geographical location	Geographic sublocation	Physical Address	Supply Name	Contact Name	Contact Phone	Contact Email
	<i>Note why the supplier is unconfirmed as a PDWS and next step if any to progress</i>	Assumed	55797	Maraekakaho						
		Assumed								
		Assumed Potential								

> ≡ Template Spread Across PWS Type **Template Working List** TemplateSupplier Engagement Log Template Unconfirmed PWS Template Unwilling P +

**Tab 6: 'Unwilling PWS' – list of private water suppliers that were contacted and refused to participate in the pilot**

A	B	C	D	E	F	G	H	I	J
No	Status for decline	Assumed / Identified	Property ID	Geographical location	Geographical sublocation	Physical Address	Supply Name	Contact Name	Contact Phone
	Approached and denied participation	Cannot confirm from GIS, require more accurate address		Maraekakaho					
	declined - has been a hard couple of years in the hospitality game and don't feel they have a energy to engage with us. Declined. Noted heistation that their input can actually make a difference.	Assumed	99776	Maraekakaho					
		Assumed	53764	Maraekakaho					





A7: Email template to Suppliers - pre-assessment; post-assessment

### **Pre-assessment email template**

Good morning/ afternoon **[Name]**,

Thanks for confirming **[Date - e.g. Wednesday 19<sup>th</sup> January at 1PM]** for a site visit.

The assessment will be attended by two field staff on behalf of Hawke's Bay Five Councils (water engineer [ **Name**] and engagement lead **[Name]**).

The meeting will involve a discussion about your

Attached is a copy of the questions that will be covered for discussion. We encourage you to have a read and preferably pre-fill this prior to our arrival and come with any questions you may have.

Please feel free to contact me should you have any questions.

Regards,  
**[Name]**

### **Post-assessment email template**

Kia ora **[Insert name of participant(s)]**,

Thank you for your time to meet with us to discuss your drinking water supply on the [ **date**]. We found it a very useful and informative experience and hope that you did too.

We encourage you to have a look at [Taumata Arowai's website](#), (the new drinking water regulator) particularly the [draft drinking water standards and quality assurance rules](#) and the [draft acceptable solutions](#).

Based on our understanding of your drinking water supply, the sections that are most relevant for you are:

- **[Insert appropriate link to Rules]**. You would also need to prepare a drinking water safety plan.

As discussed onsite, **Example of description to be assessed on individual water supplies** - you would not be able to use the acceptable solution for springs and bores, as your wastewater disposal field is within 50 metres of the bore. If you wish to change the museum to a roof water supply, we suggest you look at the [Acceptable solution for roof water supplies](#)].

In addition, we suggest the following steps for your water supply [**Example of suggested steps**]:

- Consider remediating the bore headworks, to minimise the risk of contaminants entering the bore.
- Consider installing a fence to exclude farm animals from within 5 metres of the bore.
- Consider installing a water treatment plant to treat the water that complies with the drinking water quality assurance rules (cartridge filtration and UV disinfection)
- You will need to register your supply with Taumata Arowai within four years (by November 2025). Within seven years you will need to comply with the drinking water quality assurance rules or be using an acceptable solution (by November 2028).

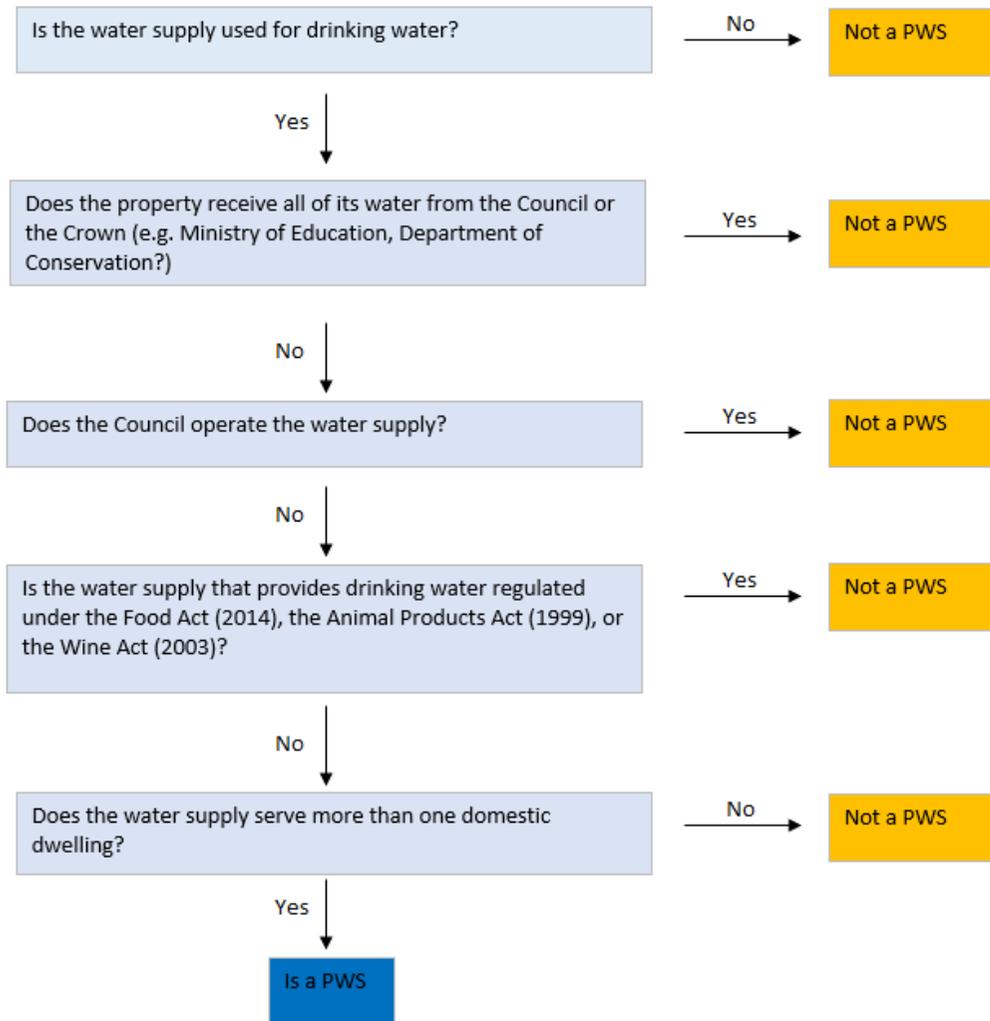
**Example of next step for community assessments** - Our next steps for this project are to compile the key findings using the information we have heard from you and other members of the community, to develop our approach for future community assessments. Importantly what we have learnt from you will also inform our feedback on issues facing drinking water suppliers and councils formal submissions to Taumata Arowai on the draft standards and solutions].

Thank you again for your time and participation. If you have any questions or feedback that you'd like to provide, please feel free to contact [**Insert name**] (**Insert title - e.g. Group Manager – Community Infrastructure and Development at Central Hawke's Bay District Council, Email, Phone**) or [**Insert name**] (**Insert title e.g. Regional Programme Director, Email, Phone**).

Ngā mihi,

**Insert name**

## A8: Supplier Verification Process



## A9: RASCI template

To build a RACI model:

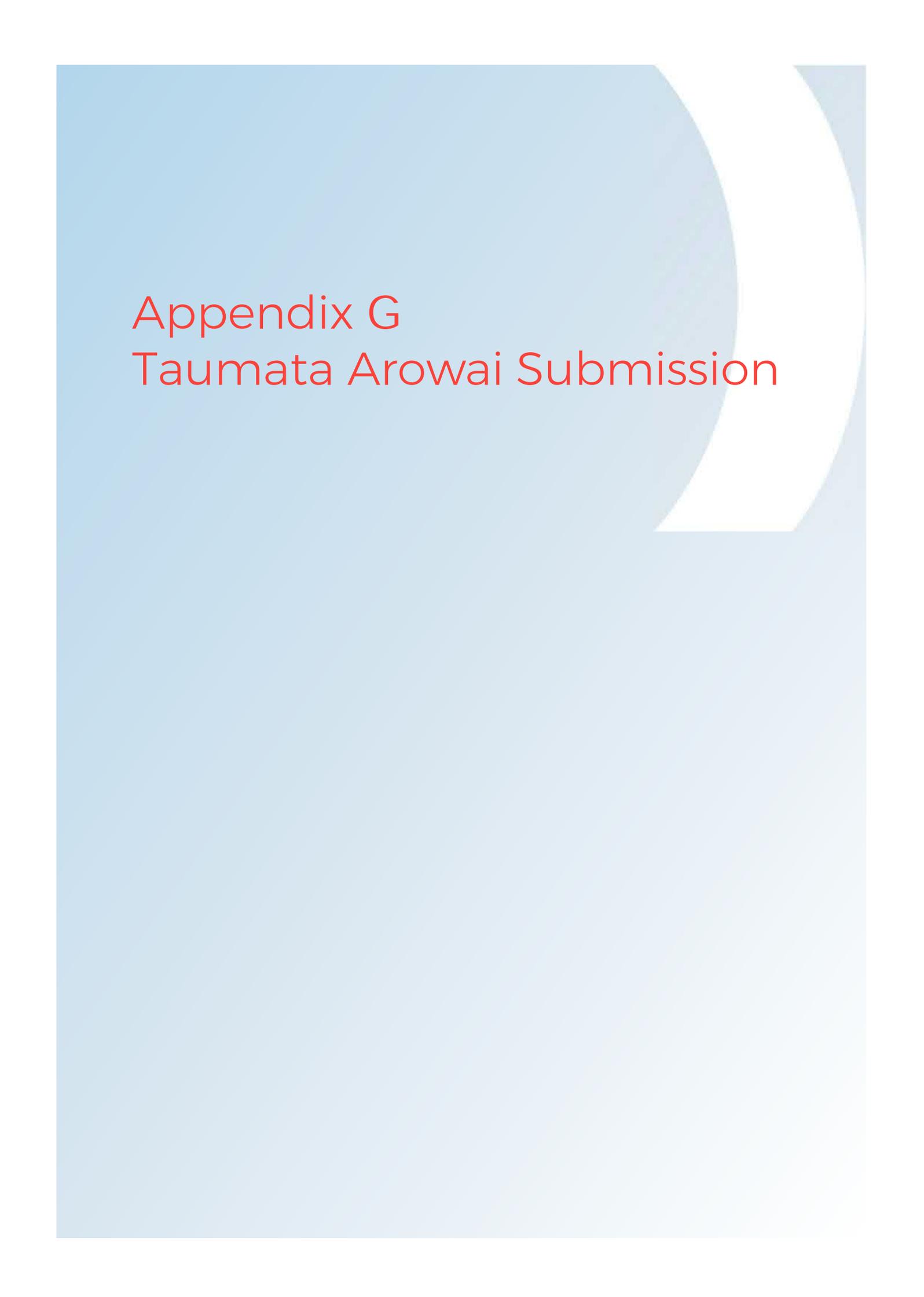
- Outline the tasks and key deliverables down the Y axis
- List all relevant stakeholders across the X axis
- Assign the respective RACI (key in the right top corner of the table) in the box which intersects between the stakeholder and action/task to clarify roles and responsibilities for the community assessment
- This will developed by the Project Lead and consulted on with the Project Team and relevant stakeholders where appropriate

The table below provides an example of an Excel Spreadsheet that can be set up when community assessments begin. The tasks have not been provided as the steps for community assessments but could be used to build out the more detailed aspects of each step.

A	B	C	D	E	F	G	H	I	J	K
ROLE	Sponsor/Leadership Team	Sponsor / Leadership	Sponsor/Leadership Team	Project Team	Project Team	Other Resources	Other Resources	Other Resources	KEY	
TITLE	Programme Director	Infrastructure Lead Group	Te Kupenga	FOLKL	WSP	Council Communications Leads	External Agencies (e.g Fed Farmers)		Responsible	Assigned to complete task or deliverable
Deliverable or Task									Accountable	Has final decision-making authority and accountability for completion. Only 1 per task.
Phase 1									Consulted	An advisor, stakeholder, or subject matter expert
Phase 2									Informed	Must be informed after a decision or action
Phase 3										
<i>Test Understanding of Definitions of Communities and Case Study Areas (internal)</i>										
Community Dictionary (Matrix)			Consulted							
Te Kupenga Overview for hui			Consulted							
Overview of Comms & Engagement Presentation										
RACI Matrix										
Case Study Rationale										
Test Sample Engagements						Informed	Informed			
Community Definitions Presentation										
<i>'Externally' Test Understanding of Definitions of Communities Test Engagement Options</i>						Informed	Consulted			

A10: Private water supply matrix

SELECT:				
Registration	Registered		Unregistered	
SELECT:				
Category	Very small (<50 people)	Small (50 - 500 people)	Large (>500 people)	Specifically declared supplier
SELECT:				
Motivator	Ohanga/ Commercial	Tangata Hapori/ Social	Ritenga Māori/ Cultural	Te Taiao/ Environmental
SELECT:				
Type				
SELECT:				
Source water	Groundwater (bores)	Roof water	Spring/ surface water	



# Appendix G

## Taumata Arowai Submission



# Submission to Taumata Arowai on Draft Drinking Water Rules, Acceptable Solutions and Environmental Performance Measures

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## Part 2 – Private Water Supplies – Pragmatic Approach

### 1. Context

The Councils have undertaken a project to identify private water supplies in the Hawke's Bay region and to engage with a range of private water suppliers. Our analysis estimates that there are over 6,000 private water supplies in Hawke's Bay, so it is vital that the implications for these supplies and the tens of thousands of other private water supplies around the country are considered.

### 2. Key Insights and Recommendations

The following points comprises our feedback on the draft Rules and Acceptable Solutions in relation to private water supplies, following a series of engagements with a cross section of private drinking water suppliers as part of the Hawke's Bay Private Drinking Water Supplies project. These points should be read in conjunction with **Appendix 1** that provides more detail on the insights and recommendations.

- The draft Rules and Acceptable Solutions set out to improve public health outcomes by addressing risks posed by drinking water supplies. However, it appears that the Acceptable Solutions seek to eliminate risk altogether, rather than reducing risk to an acceptable level.
- Drawing on the insights from the range of engagements held, it has become clear that the draft Rules and Acceptable Solutions appear to be both impractical and too onerous in their prescription for the scale at which they intend to serve.
- 98% of private water suppliers that we surveyed were unaware of the consultation on the draft Rules and Acceptable Solutions.
- Given that tens of thousands of private water suppliers across New Zealand are affected – many of whom are not even aware that they are private water suppliers – there needs to be a comprehensive communications and

engagement campaign to make sure that they are adequately informed and their views and perspectives are heard.

A **Pragmatic Approach** needs to be taken to plan for and support the process to transition the private drinking water supply community who will not be familiar with or do not have the means financially or technically to meet the proposed requirements.

The **Pragmatic Approach** will need a communication, engagement and education plan to create awareness and understanding of the changes before improvements can be made.

- Taumata Arowai's needs to establish relationships with communities impacted and build trust. It should meet rural, marae and community volunteer water supply communities to listen and understand.
- This should followed by an engagement and awareness campaign, raising awareness and understanding of the Water Services Act and developing pragmatic Rules and Acceptable Solutions in conjunction with private water suppliers.
- Direction should be established through a clearly staged and well supported approach, developed within a Treaty partnership framework. It is vital that Te Ao Māori principles are embedded in the guidance for improvement solutions.
- A programme should be developed to assist private water suppliers with the funding options to meet the cost of the new obligations, and to increase their capacity and capability.
- It is important to take private water suppliers on the journey, and in the long run this will result in safer water supplies and higher levels of compliance.

### 3. Key Technical Issues for Private Water Suppliers

The key submission points that the Hawke's Bay Councils wish to make to implement the **Pragmatic Approach** for private water supplies are:

- Who is responsible for the water supply? Taumata Arowai needs to provide greater clarity about who is the water supplier, and therefore responsible for the water supply, where there are multiple parties involved.
- Guidance on governance structures: It would also be helpful to provide guidance about governance structures for unregistered private water suppliers where multiple parties are involved.



- **Chlorination should not be required:** Very Small and Small Water Supplies should not be required to chlorinate their supplies as the risks could well outweigh the benefits.
- **Simplify the Acceptable Solutions and Rules:** A pragmatic approach to risk will provide a more effective pathway to improving public health outcomes in a cost effective and practical manner. We further recommend that that private supplies serving <25 people are excluded from the Rules and Acceptable Solutions and instead focus on an engagement and education programme supported with guidelines for the monitoring and end-point treatment solutions to mitigate risks associated with supplies. We also recommend that the population ranges could be reconsidered to which rules for very small and small supplies are applied as part of a review to enable more pragmatism
- **Guidance and templates for drinking water safety plans:** Taumata Arowai should provide very simple templates and guidance for drinking water safety plans and source water risk management plans that can be used by people who are not experts in drinking water.
- **Reticulated distribution systems need to be defined:** A clear, pragmatic, risk-based definition of a reticulated distribution system is needed e.g. a distribution system is a network of pipes, pumps and storage tanks that supplies water to more than one property and to at least 20 buildings.
- **Does other legislation apply?** Clear guidance about the extent to which the Food Act, Animal Products Act and Wine Act mean that suppliers don't need to comply with the Water Services Act is needed.
- **Monitoring cyanobacteria and cyanotoxins** can be a complicated field and we recommend further consideration is required of this. Part of this review needs to consider the role and expertise that Regional Councils have that could be part of the monitoring and oversight back to water suppliers.

These are described in more detail below.

### 3.1. *Who is the water supplier?*

Private water supplies are often informal arrangements between neighbours and the issue of ownership, responsibility and accountability for these supplies is often complex and unclear. The following examples in the Hawke's Bay where it is unclear who is the water supplier include:

- Four neighbours sharing untreated water from a nearby spring which is owned by neither of them.
- A farmer supplying untreated spring water as part of a historical agreement to a group of nearby houses and for the neighbour's stock water. The neighbours have subsequently subdivided for new houses.



- A neighbour letting another neighbour (who has an easement) take water from a bore on the property which they does not use.
- A lifestyle block owner who holds the consent for the water, but the bore is on the neighbour's property that supplies the neighbour' household and the irrigation, stock water and drinking water to two houses on the lifestyle property owner's land.
- An industrial site providing drinking water to nearby commercial properties.

**Recommendation:** that Taumata Arowai provides greater clarity and definition for water supplies and their responsibilities where there are multiple parties involved and there is no clear water supplier.

It would also be helpful to provide guidance about governance structures for private water suppliers who are not yet registered.

### 3.2. Chlorination

Requiring Very Small supplies using the Acceptable Solution for Spring and Bore Water Supplies and Small supplies using the Rules to chlorinate will introduce Health & Safety and environmental risks (plus potential public health risks from overdosing or disinfection by-products) which potentially outweigh the public health risk being managed by requiring residual disinfection.

The Rules and Acceptable Solutions are inconsistent in their requirements for chlorination. A Very Small supplier with a groundwater source does not need to chlorinate under the Rules but would need to chlorinate if using the Acceptable Solution for Spring's and Bore Water Supplies. Chlorination is required for self-

**Recommendation:** that Very Small and Small Water Supplies should not be required to chlorinate their supplies. The Rules and Acceptable Solutions should be consistent for chlorination with respect to population served.

supplying buildings under the Rules, despite having no network.

### 3.3. Acceptable Solutions

The intent of the acceptable solutions is supposed to enable a simple straightforward path to compliance with the Water Services Act and drinking water regulations<sup>1</sup>. However, the Acceptable Solutions as drafted are complex and onerous.

The requirements before an Acceptable Solution can be adopted are currently too narrowly defined to give private water supplies a viable alternative to using the Rules and needing to prepare a drinking water safety plan.

If a water supplier fails to meet any of the criteria in an Acceptable Solution (e.g. has a bore in limestone country or has elevated manganese in their source water) then they

<sup>1</sup> Letter from the Office of Hon Nania Mahuta's to Federated Farmers dated 3 September 2021



cannot use the Acceptable Solution. The requirements should be broadened to be more inclusive and provisions included to address concerns (e.g. treatment for iron and manganese if source water concentrations are high).

Acceptable Solutions also need to consider scenarios where the supply is a blended solution. Eg: roof top rainwater supply that is topped up by an irrigation scheme or spring in a drought.

If a water supplier fails to meet any one of the more than **70** requirements of the Acceptable Solution, they have failed to meet their obligations under the Water Services Act. It appears that the acceptable solutions seek to eliminate risk altogether, rather than reducing risk to an acceptable level. We suggest that this requires reconsideration of how the initial intent of the Acceptable Solutions can be met and

**Recommendation:** that a Pragmatic Approach is taken with private water suppliers including excluding private supplies of <25 from the Rules and Acceptable Solutions. The Acceptable Solutions approach for private water

risks for different supplies be considered.

### *3.4. Drinking Water Safety Plans*

Drinking water safety plans cannot currently be developed effectively without water-specialists, and even councils are struggling to find the resources in the industry to complete drinking water safety plans for large supplies. There will be very few knowledgeable people available to support private suppliers and potentially an industry of opportunists may develop, providing a copy-and-paste approach to drinking water safety plans, which is the opposite of what is needed. The nature of private water suppliers and supply types are wide.

We also note that the lack of any drinking water safety plan templates or guidance means that it is hard to weigh up the difference in expectations for water suppliers between the two compliance pathways (Rules or Acceptable Solutions). If water safety plans are simple easy-to-use templates with questions and prompts for those who are not experts, then complying with the Rules may be a far easier path than complying

**Recommendation:** that Taumata Arowai provides very simple templates and guidance for drinking water safety plans and source water risk management plans, which can be used by people who are not experts in drinking water.

with the Acceptable Solutions as drafted.

### *3.5. Definition of Reticulation*

There is no more clarity in the Rules and Acceptable Solutions than in the Act about what is meant by a reticulated distribution system.

- Are pipes that serve multiple buildings on a single property a reticulated distribution system? (e.g. marae, papakainga, school, industrial site, farm)



- Pipes on a single property are covered by the Building Act and Building Code requirements, so would this not be considered a distribution system?
- What if a similar property was in multiple titles but was operated as a single property?
- Would a pipe between two neighbours sharing a spring or bore be considered

**Recommendation:** that Taumata Arowai provides a clear, pragmatic, risk-based definition of a reticulated distribution system e.g. A distribution system is a network of pipes, pumps and storage tanks that supplies water to more than one

a reticulated distribution system?

### 3.6. Food Act and Wine Act

Some private water suppliers are covered by the Food Act 2014, the Animal Products Act 1999 or the Wine Act 2003 and as we understand do not need to comply with the Water Services Act. However, it is not always clear where these apply. For example, does a winery with a restaurant need to comply with the Water Services Act for the restaurant?

The Rules and Acceptable Solutions for suppliers that had both restaurants and houses on their supply network were more onerous for the houses than requirements for the restaurant under the Food Act. This was nonsensical to owners we engaged with.

**Recommendation:** that Taumata Arowai provides a clear guidance about the extent to which the Food Act, Animal Products Act and Wine Act mean that suppliers don't need to comply with the Water Services Act.

### 3.7. Cyanobacteria and Cyanotoxins

The rules for cyanotoxins will be difficult for private water suppliers to comply with. How would a small or very small water supplier know whether an algal mat in their surface water source is a benthic cyanobacteria mat or a planktonic cyanobacterial growth? Even very experienced water suppliers are unable to determine this. This can only be determined by an expert rather than every individual water supplier that uses a surface water source. We suggest this area requires further work and discussion to develop an effective and workable approach, and will require the input of Taumata Arowai, Regional Councils, and water suppliers. Implementation of Rules will require effective collaboration and understanding between Regional Councils, water suppliers, and

**Recommendation:** monitoring cyanbacteria and cyanotoxins requires further consideration as to where the expertise resides, and the how the various roles and responsibilities are allocated

consideration of the Source Water Risk Management Plans.



## 4. Conclusion

Drawing on the insights from the range of engagements held, it has become clear that the draft Rules and Acceptable Solutions appear to be both impractical and too onerous in their prescription for the scale at which they intend to serve.

The draft Rules and Acceptable Solutions set out to improve public health outcomes by addressing **all** risks posed by drinking water supplies. It appears that the Acceptable Solutions seek to eliminate risk altogether, rather than reducing risk to an acceptable level.

The Rules and Acceptable Solutions should be designed to reflect what is realistic and attainable.

We strongly encourage Taumata Arowai to stop, engage, review and reset the Rules and Acceptable Solutions to gradually increase the requirements to allow private water supplies to “grow” into the raised requirements. A step wise and **Pragmatic Approach** growing awareness, knowledge, and an improvement path to deliver on safer drinking water outcomes for our communities.





# Appendix 1

## Hawke's Bay Private Drinking Water Supply Project



# Hawke's Bays Private Drinking Water Supplies Project

Access to private drinking water supplies, particularly in rural and remote areas, has significantly improved the quality of life for many communities. As one interviewee stated:

*"Before the water [4 years ago], this is no exaggeration, you would save your bath water, everyone would use the same bathwater, you would use your bathwater for your washing... Sometimes you didn't have a bath. Sometimes you had to choose what clothes you would wash. And everyone had long drops. What the water does now, a wash day is only 9am – 12pm not 9am – 7pm at night. That's no exaggeration. It used to take that long. It's life-changing, and it has improved their lifestyle and living standard."*

This appendix documents the key insights and recommendations from the Hawke's Bay Private Drinking Water Supply Project:

- **Part A** describes the methodology and approach undertaken for the project.
- **Part B** sets out the key themes and insights to draw recommendations to Taumata Arowai based on the implications the Rules and Acceptable Solutions are likely to have on private drinking water suppliers.
- **Part C** provides the insights into the impact of the proposed Rules and Acceptable Solutions on community, social, cultural, economic and environmental wellbeing.

## Introduction

The Water Services Act 2021 (the Act) requires more from both councils and private drinking water suppliers.

- The Act requires councils to complete drinking water supply assessments for their districts every three years, to understand and assess the nature, demand, safety and quality of their communities' drinking water services.
- The Act also extends the definition of a drinking water supplier to anyone who supplies drinking water to more than one domestic self-supplied household and provides new standards and Rules in the provision of drinking water.
- With this shift for councils and drinking water supplier responsibilities, the Hawke's Bay's four territorial authorities (Central Hawke's Bay District Council, Hastings District Council, Napier City Council and Wairoa District Council) established the Hawke's Bay Private Drinking Water Supply project.

The project was established in mid-2021 to engage with a representative sample (50) of private drinking water suppliers in our communities to establish the best approach to help understand and our new obligations under the Act. The project team met with a cross section of private drinking water suppliers across the Hawke's Bay to:

- Better understand our communities' private drinking water suppliers, their expectations and needs.



- Understand how the new regulations could be best implemented (from a council and community perspective).
- Engage with our communities to develop a repeatable methodology for drinking water assessments.
- Review the Government's draft Rules and Acceptable Solutions with private drinking water supplier's so that the implications of the proposals can be better understood.

The project will conclude at the end of April 2022 and a final report will be submitted to councils, providing a detailed analysis of the findings. Once this report has been formally received by councils, a copy will be provided to Taumata Arowai and published

**Insight:** It will be difficult for Councils to undertake community assessments under the Local Government Act section 125 amendment in the first three year period for the following reasons:

- Lack of quality information and systems to determine where private water suppliers are located.
- Inconsistencies with the Waters Services Act timeframe for Councils and the drinking water supplier's timeframe to register. The first assessment will be particularly challenging as unregistered suppliers do not have to register for four years. It is anticipated that this process will become much easier once all water supplies are registered.
- Ambiguity as to what the scope of Council's requirement eg: all private supplies being assessed vs areas where there are clusters of properties (the latter seems likely given the requirements on councils to consider in planning). Unfortunately, the definition of community in the Local

on the [www.hb3waters.nz](http://www.hb3waters.nz) website.



## PART A –Project Methodology & Approach

This section discusses the methodology and approach for the project including:

- Identifying private drinking water suppliers
- Nature of private drinking water suppliers
- Engagement with private drinking water suppliers

### Identifying drinking water suppliers

The project team sought to identify private water suppliers using a variety of datasets and sources including interviews with staff from the Councils and District Health Board, registered water suppliers data sets, and Council GIS data sets (water take consents, bores, buildings, properties connected to Council water supply networks, marae, and proximity to another private water supplier).

From this analysis, it is estimated that there are over **6,000** private water supplies in the Hawke's Bay region. However, the actual number is still very uncertain.

The second phase of the project was to make the introductory calls with potential private water suppliers to:

- establish whether they were drinking water suppliers in accordance with the Act definition and not connected to a Council owned or operated supply; and
- seek their consent to participate in our project.

The primary research methods for engagement were in-person interviews, where a council representative, engagement researcher and a water engineer met with participants. These engagements included standardised survey questions about the nature and history of their water supply, a site visit and high-level assessment of their system, and a discussion of how they were likely to be impacted by the Water Services Act and the proposed Rules and Acceptable Solutions.

Some of the key challenges with the process of identifying private water suppliers were:

- Most of the data sources were points, and made it difficult to determine which properties were served by a private water supply. It was assumed that there were 2.6 people per house, and that the properties nearest to the water supply would be served by that supply.
- It is well known that neighbours often share water supplies, but it was unknown over what distance this would typically occur. A range of distances were used, from 150 m to 1000 m.
- Not all buildings are habitable and therefore need a drinking water supply. It was assumed that only buildings with a footprint of more than 40 m<sup>2</sup> would be habitable.
- Councils had varying levels of knowledge about private water suppliers across their district and property files did not store water supply source as dedicated field systems.



- Systems were not integrated so when a potential water supplier had been identified, contact details for the property owner were often difficult to find. Also the property owner and the resident are often not the same.
- It was sometime difficult to determine whether a water supply was covered by the Water Services Act or by other legislation (e.g. Food Act 2014, Wine Act 2003 or Animal Products Act 1999).
- A flow diagram was developed to assist with identifying potential private drinking water suppliers. However, due to the limited information, participant knowledge and complexities associated with the nature of the supply, there were a number of engagements undertaken where it was determined that they were not a private drinking water supplier.

## Nature of Different Types of Suppliers

The Act provides a broad definition of a drinking water supplier. Under section 8 of the Water Services Act 2021 “unless the context otherwise requires”, a drinking water supplier:

*(a) means a person who supplies drinking water through a drinking water supply; and*

*(b) includes a person who ought reasonably to know that the water they are supplying is or will be used as drinking water; and*

*(c) includes the owner and the operator of a drinking water supply; and*

*(d) includes a person described in paragraph (a), (b), or (c) who supplies drinking water to another drinking water supplier; but*

*(e) does not include a domestic self-supplier.*

The project sought to engage with private drinking water suppliers that met the criteria as defined above and

- Are not owned and/or operated by a Council or Government agency
- Who supply drinking water to anyone other than their own domestic household
- Do not have an exemption under section 6 of the Act (where they would be regulated instead by the Food Act 2014, the Animal Products Act 1999 or the Wine Act 2003)
- Provided a range of private water supplier types.

The table below shows the main types of private drinking water suppliers that were identified and engaged with as part of the project.



Type of Private Drinking Water Supplier	Description
Accommodation Facilities	Accommodation facilities are a type of supplier that charge a rent, membership or fee for their land or buildings in exchange for people to stay temporarily, and drinking water is supplied as part of the facilities. This includes campgrounds, Airbnb, Bookabach, and the New Zealand Motor Caravan Association (NZMCA).
Beach Communities	Beach communities are those who reside in coastal environments and may be a mix of full- and part-time residents. A private drinking water supplier may have a source of water such as a bore located on their property which they share with neighbours. This type includes baches and holiday homes.
Business Organisations	Business organisations are those who own or manage a business (excluding farmers and horticulturalists which are covered below). They may supply drinking water to the public as part of their operation or own/lease additional property that supplies drinking water to others. This type could include businesses that employ workers or the public that use their facilities.
Community Facilities	Community facilities are community buildings owned and operated by community groups, such as trusts or incorporated societies. This private drinking water supplier provides drinking water when the community gathers at the facility for functions or ceremonies. This includes private sports clubs, golf clubs, churches, mosques or other religious places to gather. It could also include community halls or libraries that are not associated with a Council.
Community Water Filling Stations <sup>2</sup>	Community Water Filling Stations provide a place for the public to fill their own water bottles or tanks from their water source.
Farmers	Farmers manage land that is used to rear animals. These private drinking water suppliers may have woolsheds /dairy sheds/implement sheds where drinking water is provided, and/or workers' housing.
Horticulturalists and Viticulturists	Horticulturalists and Viticulturists manage land that is used to grow and process crops. This private drinking water supplier may have Recognised Seasonal Employer (RSE) accommodation, and drinking water is supplied as part of the facility or at stations within the workplace.

<sup>2</sup> This type of supplier was anticipated as a potential private drinking water supplier, but they were not engaged with as part of this project



Type of Private Drinking Water Supplier	Description
Kaumātua Flats <sup>2</sup>	Kaumātua Flats are a type of supplier who own or manage the homes where kaumātua live. This private drinking water supplier may be a resident who lives there themselves and supplies to others, or an organisation that supplies a set of units or detached dwelling for them to live in. These flats may be located next to marae, papakainga or be held on Māori Reservation Land or Māori Land Blocks.
Marae	Marae are a type of supplier who look after the meeting place for people to undertake traditional Māori cultural practices and host visitors. These may be trustees of the marae, or others who care for these spaces, which are often located within Māori Reservation Land.
Papakainga	Papakainga are those responsible for groups of houses where Māori communities live in a communal or traditional way. These private drinking water suppliers may be an organisation or trust who rent to whānau, or people may own their house on land that is collectively held (for example in a family trust).
Privately-owned Community Based	Privately-owned community-based water suppliers manage a small network, supplying to multiple houses. This private drinking water supplier could be an incorporated society or trust who runs the supply through a membership base where participants buy into the scheme through a formal agreement.
Rural Settlements	Rural Settlements are those who live in a rural setting and are not connected to a reticulated municipal drinking water supply, including rural subdivisions. These private drinking water suppliers may own a property that has a bore or spring that supplies drinking water to neighbouring properties, for example.
Urban Infill <sup>2</sup>	Urban Infill are within urban environments, and are not connected to reticulated municipal systems (which may exist nearby). These private drinking water suppliers may have a water source such as a bore located on their property which supplies to adjacent neighbours.
Retirement Homes <sup>2</sup>	Retirement Homes are networks of housing rented to, or bought by, people who are retired from working. This private drinking water supplier may be owned by an organisation or collectively.



## Initial Engagement with Private Water Suppliers

Having established a representative sample list of private water suppliers the next step was to make the introductory calls with potential private water suppliers to:

- establish whether they were drinking water suppliers in accordance with the Act definition and not connected to a Council owned or operated supply; and
- seek their consent to participate in our project.

The initial engagement phase was particularly difficult for the following reasons:

- Access to resources with the right level of understanding and broader Three Waters Reform context and skills to support the 'cold call' aspect of this engagement.
- The consent process that was required and the Council requirement to disclose their obligation under the Act to report any significant concerns identified in a water supply assessment to Taumata Arowai. The consent form was seen as intimidating and alarming to some potential participants, and some subsequently chose not to participate.
- There was a perception among some that the Councils were the long arm of Government, seeking to enforce compliance with draft Rules before the Rules were in effect.
- People were generally hesitant to engage and there were many who declined. Predominant reasons were political party positions, views of the Three Waters Reform, or because people felt nervous to disclose information on drinking water supplies with Councils.
- The project contacted over 185 individuals over the phone, which led to just over 50 in-person engagements

The primary research methods for engagement were in-person interviews, where a council representative, engagement researcher and a water engineer met with participants.

These engagements included standardised survey questions about the nature and history of their water supply, a site visit and high-level assessment of their system, and a discussion of how they were likely to be impacted by the Water Services Act and the proposed Rules and Acceptable Solutions.

As the assessment phase gathered momentum and resulted in insightful and positive engagement experiences, the project team started to receive unsolicited requests to meet with further suppliers. This was in main part because participants and our communities had no visibility or knowledge of the legislative changes and proposed rules and wanted to understand how they would be impacted.



## PART B – Key Themes and Recommendations

The following key themes emerged as part of our engagements with drinking water suppliers and recommendations have been suggested for each key theme.

### Lack of Awareness and Disconnect from the Consultation Process

**Insight:** Most of the private water suppliers surveyed had no knowledge of the Water Services Act 2021, the new definition of a drinking water supplier, Taumata Arowai or the draft Rules and Acceptable Solutions. 98% were not aware that the draft Rules and Acceptable Solutions were being consulted on.

The majority of the suppliers contacted during this project did not realise that they were now defined as a drinking water supplier under the Act, and that they have (or will have) new duties and liabilities as a drinking water supplier.

Only three suppliers had read the draft Rules and Acceptable Solutions. Very few people had heard of the regulator Taumata Arowai, with some stating the name was tricky to remember or identify with water to find online.

The project initially identified over 6,000 potential private water supplies in the region based on data sources, however through the engagement phase we discovered that there will be many more. The scale and impact of the proposed changes needs to be more strongly considered by Taumata Arowai.

Communities have not received a targeted communication and engagement process regarding changes under the Water Services Act and the Taumata Arowai consultation on the new Rules and Acceptable Solutions. This means that our communities have not had the information, time or even awareness to meaningfully engage with a consultation process.

There was a strong sentiment of frustration that the Government was imposing more regulation and costs on their sector, business, communities and households without proper consideration and consultation. This led to feelings of scepticism and distrust in the Government, Taumata Arowai and its consultation process.

People did not feel they had a proper opportunity to contribute to the consultation, even though they would be directly affected. Impacted communities need to have their say.

This was further compounded with previous experiences where people had spent significant effort and time to provide feedback on previous consultations but did not think their submissions had been acknowledged or even considered.

Suppliers often asked whether their concerns would be genuinely listened to. People also mentioned that they were very busy and that there is a lot of information and documents being consulted on, much of which was technical in nature and difficult to keep up with.

*“Will the submission make a difference? We submitted a 50-page document on the climate change bill and received no reply ... It feels like you get ignored.”*



*“The people who write this are in Wellington and have no idea what the practicalities of this are on the ground.”*

*“We can't see the draft standards changing much.”*

**Recommendation:** We strongly recommend that Taumata Arowai delays the implementation of Rules and Acceptable Solutions and undertakes further engagement on revised versions of the documents that address the concerns we raise in our submission. Given that tens of thousands of private water suppliers are affected, there needs to be a comprehensive communications and engagement campaign to make sure that they are adequately informed

## Who is Responsible?

**Insight:** A common question asked was who was responsible for the supply.

A key discussion point in the engagement with suppliers was about determining who was responsible for the supply and therefore liable to comply under the Act, Rules and Acceptable Solutions.

The nature of drinking water supply arrangements varied widely and the majority were complex to understand. Supply arrangements ranged from those that served multiple properties and had easements in place, informal handshake agreements, and formal structures through to inherited agreements that property owners wanted to get out of. Often where there were multiple parties involved it was difficult to determine responsibilities.

Community schemes, trustees and volunteer committees expressed concern and the risk in having to assume legal responsibilities and liabilities for the supplies. Communities will be at risk of losing their skilled volunteers under the changes.

Supplies formed from historical 'handshake agreements' felt they were now being penalised for providing a 'community good' to their neighbours and communities.

*“If something happened and if we supply free water, surely neighbours wouldn't get angry but they might, then they could try and take me. It might not even be the neighbours who would want to, but it could be... other people who will be obligated to prosecute”.*

*“I have an easement with the one neighbour but... the other neighbour beside me, wanted access to my bore water - and he made an agreement with the neighbour who just takes a hose to fill his tank as well. Am I legally responsible for it?”*

The participant expressed *“That they were being prosecuted for doing a neighbourly good. If they were to know something like this was going to be required, then it would have been a different consideration.”*



**Recommendation:** The Water Services Act should be amended to provide better definitions about who is the water supplier for water supplies where there are multiple parties involved. This should not be left to case law to be interpreted.

It would be helpful to provide guidance template examples about governance structures for private water suppliers who are not yet registered, to mitigate thousands of private water suppliers having to engage legal services at

## Lack of Flexibility

**Insight:** The draft Rules and Acceptable Solutions do not adequately allow for the wide variety of different contexts and supply arrangements that people are in and in many cases impractical for suppliers to implement.

Suppliers raised consistently that the draft rules and Acceptable Solutions did not make logical or practical sense for their nature of their supply and in many cases, had 'gone too far'.

There was strong sentiment from agricultural, horticulture suppliers and marae, who have an intimate understanding of their supply, how it works and deep intergenerational knowledge regarding the surrounding source environment.

Views were that Rules and Acceptable Solutions should be appropriate to the scale, risk and nature of the situation and there should be provision for solutions that allow for untreated water if there is sufficient proof that the water is safe to drink. One common suggestion (which the majority of suppliers acknowledged they would be willing to do) was to undertake increased testing to demonstrate the safety of their water, before needing to take subsequent measures to install expensive treatment equipment.

Some suppliers saw the Rules increasing risks to safe water. One supplier skilled in the management of treatment systems expressed his concern and lack of confidence in managing chemicals. Those who are not appropriately trained in the use of chemicals, could pose a more serious health risk to people than the risk associated with current untreated water supplies.

The draft Rules and Acceptable Solutions do not always align with existing regulations such as the Building Code or Regional or District Plan Rules. Examples of this were:

- A papakainga development under construction was installing end point treatment devices so that the houses had potable water under the Building Code. However, as it is a bore water supply, end point treatment is not permitted in the Acceptable Solution or Rules and so an additional centralised treatment plant would need to be installed.
- The backflow prevention requirements are inconsistent with Clause G12 Water Supplies of the Building Code. The hazardous activities listed in the Acceptable Solution are not consistent with Clause G12, with several activities that are medium hazard under the Clause G12 being classed as high hazard in the Acceptable Solution. Air gaps are a common method of backflow prevention in rural communities but are not allowed for in the Acceptable Solution for high hazard activities, but they are allowed in Clause G12.



- The allowable separation distance between bores and effluent disposal fields is 30 m in the Hawke’s Bay Regional Plan but is 50 m in the Acceptable Solution.

Many suppliers have installed infrastructure which meets current regulatory requirements, but which will not meet the requirements of the draft Rules and Acceptable Solutions. If flexibility is not considered in relation to existing compliant infrastructure, then there will be significant additional costs to comply with new standards.

Participants wanted pragmatism and the flexibility to demonstrate that existing treatment systems are of an acceptable quality and provide safe drinking water until such time that a treatment system needs to be replaced. The Water Safety planning (WSP) pathway should, if scalable and pragmatic, ideally be the appropriate pathway for water suppliers to take and consider their current system and supply risks, unfortunately at this time we are not aware of how complex the WSP process maybe for private suppliers.

*“We have gone through all the legal requirements with Council to cover off everything with the Papakainga. Council has approved this system - does this work for Taumata Arowai?”*

*“There needs to be flexibility around requirements - e.g. you don’t need double-backflow prevention if water is coming down a hill”.*

*“They seem over the top.”*

*‘We had a treatment tank set up... and use to put chemicals in but “it was a pain in the butt”.*

*“The Regional Council says 30m from an effluent field but these rules say 50m - whose do we listen to?”*

**Recommendation:**

**Adopt the Pragmatic Approach for private water supplies** to engage, educate, build relationships, trust, and gradually increase the understanding and level of competency in the sector while minimising unintended consequences. The Rules and Acceptable Solutions need to be significantly simplified and made less onerous to encourage and enable compliance. For private water suppliers serving <25 people we propose that the Rules and Acceptable Solutions are removed and instead focus on an engagement and education programme supported with guidelines for the monitoring and end-point treatment solutions to mitigate risks associated with supplies.

**Disempowering Communities**

**Insight 6:** The Rules and Acceptable Solutions appear to disproportionately overload those drinking water suppliers working in a volunteer capacity or who supply water as a community good.



All suppliers the project engaged with want to ensure they are providing safe water to their whanau and communities, but there was concern that the Rules and Acceptable Solutions did not account for the nuanced approaches and knowledge people have around determining their own well-being.

Where schemes were run by knowledgeable volunteers or retirees, people were seriously concerned and expressed hesitancy or unwillingness to be subjected to the increased responsibilities and personal liabilities. Others felt that the draft Rules and Acceptable Solutions set requirements, obligations and costs beyond what was reasonably expected of community supplies. This all lead to questions about whether these schemes could feasibly continue.

*“This is coming and it's going to be a lot more responsibility, my daughter just told me to get rid of [the water supply]. But no one else is going to want to take this responsibility on”.*

*“We read [the draft Rules and Acceptable Solutions] several times and were worried. The document created anxiety. Need to use simple language.”*

**Recommendation:** To assist the wide variety of different scenarios, it is recommended that a more flexible and **Pragmatic Approach** is developed.

For volunteer communities this should focus on how best to create a supportive space for community to begin conversations around safe access to their drinking water supply. For others it could acknowledge existing skill sets and encourage shared responsibilities, particularly for those community orientated or more informal arrangements

### Kaitiaki of Papatūānuku and Ranginui

**Insight:** The Rules and Acceptable Solutions fail to sufficiently incorporate Te Ao Māori approaches to caring for the water and people.

The draft Rules and Acceptable Solutions were often viewed to be in contrast with Te Ao Māori principles to caring for the water and their people. Marae and Papakainga whānau were concerned that the Rules and Acceptable Solutions conflicted with their rights under Te Tiriti o Waitangi to protect their own taonga. Some stated that water is a part of their whakapapa and that tikanga on the marae is used to protect water supplies, as well as applied to ensure that everyone is safe on the marae. That is, how can a marae demonstrate something as basic and normal as 'manaakitanga' if people are going to get sick? Tikanga is not only applicable in traditional and or cultural contexts, but can also be applicable in pragmatic contexts for well-being of marae whānau and mana whenua.

Many marae are located on Māori Reservation land, which people felt they collectively held the responsibility to make decisions around the protection of their water supplies in ways that make sense for them and the benefit of their whānau. For example, continuing the practices that their tīpuna had taught them and ensuring that tamariki will continue these important practises as kaitiaki into the future.



*"It's our way of life here - we have our own tikanga that protects our water sources".*

*"Water is a part of our whakapapa - it is Rangi and Papa."*

*"Māori don't have the problem, we stand firm with how we look after our water - it's all those around us, this big business that take the mauri."*

*"Our t ī puna owned their water it was for everyone. And if we are in turn, a Supplier, as a trustee, then we are only just the caretakers for all. How can we be privately owned...? To who? Everyone in our hapū has this ownership."*

**Recommendation:** It is recommended that an approach that more closely aligns to Te Ao Māori principles is drafted in close collaboration with mana whenua to consider appropriate solutions for those who hold kaitiakitanga over their whenua and water, and in ways that can uphold specific tikanga and kawa, unique to that place.

## Increased Cost and Limited Access to Contractors and Equipment

**Insight:** The Rules and Acceptable Solutions will create high demands on private water suppliers, increasing the cost, capacity and capability requirements and putting pressure on water supply equipment and services.

Many private drinking water suppliers looked after their systems themselves, and in more remote locations, people did not see how they would be able to obtain the expertise contractors, parts or services needed to meet the significant expectations that are proposed.

The requirement for validated UV treatment systems will impose further costs on suppliers that already have existing non-validated UV treatment systems and some private water suppliers could not see any benefit in this where they feel that they are already providing safe treated water.

There were also concerns that maintaining reliable power to rural locations was difficult, and some had moved or were considering moving to solar power. This is not provided for in the Acceptable Solutions, which require treatment plants to be connected to mains power. The primary objective should be to ensure that power is available to the plant, from whatever adequate source maybe.

The tight timeframes for registered drinking water suppliers to comply with the Rules and Acceptable Solutions further escalates the issue of capacity, demand and supply chains, making it difficult for them to comply within the timeframes.

Previously water suppliers could access Government funding through their Drinking Water Assessor to upgrade their water supplies, but this fund was discontinued some years ago.

*"What about the dates for the November deadline of compliance for registered drinking water suppliers? If [we] all go out and get UV and backflow etc. the ability for a supplier to provide that for people is going to be difficult. Going to be a bit of a challenge".*



*“When I was part of the Water Safety Officers - we had a carrot and that carrot*

**Recommendation:** It is recommended that a funding support plan is developed and implemented in collaboration with private water suppliers, to help fund the improvements required.

It is also recommended that procurement (All of Government (AoG) type approach) at a national level is considered for a range of approved components and materials required by suppliers, and that this purchasing option is made available to all private suppliers in order to reduce costs to households and

*was funding.”*

## Potential for People to be Cut Off

Some private drinking water suppliers discussed the stress and community mental health capacity to take on the additional compliance requirements that the draft Rules and Acceptable Solutions will impose. They were also concerned about their capacity to meet the requirements from a cost perspective and the ongoing compliance requirements to maintain their drinking water supplies.

People often mentioned that it was likely that water supplies will be cut off, or result in serious disagreements between neighbours and within communities. This was

**Insight:** The Rules and Acceptable Solutions add stress, cost, liability and ongoing demand for private water suppliers that in some cases, make it easier to cut off water supplies than comply with the proposed requirements.

particularly distressing for people interviewed where the supplier had a personal relationship e.g.: friend, a longstanding neighbour or fellow community member.

Larger scale private water suppliers were also concerned about the increased cost and liabilities associated with continuing to provide drinking water. Examples included an owner responsible for providing water to multiple properties, orchardists, and trustees involved in privately owned community-based drinking water supplies schemes, one of which had up to 90 houses on the same network.

Some of these schemes were originally established with Government co-funding and the feedback was that the Government needs to provide funding and support for them to continue and review the burden of liability where they are providing a community good.

In rural communities with tenanted farmhouses on properties, people raised concerns that the regulations could lead to property owners refusing to rent out properties to those who need them because of the liabilities and additional costs, which is a particularly relevant concern given the current housing crisis.

*“People will be working out ways to get around this regulation. Which could mean that they’ll go underground... rather than being upfront. Councils or the Regulator will know even less about what is happening with the private drinking water supplies than they do now... if they don’t have the obligation to supply, then they will just cut off the supply. They will take alternative measures not to be a private water supplier”.*



*“After the legislation came out, the Lawyer said to go home and cut [the water supply] off.”*

*“[But] we are the ones who have to live in this community.”*

**Recommendation:** Taumata Arowai considers the unintended consequences associated with the draft Rules and Acceptable Solutions.

**Adopt the Pragmatic Approach for private water supplies** to engage, educate, build relationships, trust, and gradually increase the understanding and level of competency in the sector while minimising unintended consequences. The Rules and Acceptable Solutions need to be significantly simplified and made less onerous to encourage and enable compliance. Private water suppliers serving <25 people we propose that the Rules and Acceptable Solutions are removed and instead focus on an engagement and education programme supported with guidelines for the monitoring and end-point treatment solutions to mitigate risks

## A Treaty Partnership Framework

Private drinking water suppliers challenged the public consultation process adopted by Te Taumata Arowai, particularly the draft Rules and Acceptable Solutions and also the way in which they have been developed and written. They stated that the Treaty Partnership Framework is about equity and to look at the means through which people are able to respond on equitable terms from their position and in their own way. Equity is about acknowledging place and difference and so a Treaty partnership framework should not be generic rather, specific and local for instance to a particular marae and its hapū.

The supplier communities need to work alongside the regulator to coach each other in how to respond to the challenges of drinking water supplies together, and this needs to be understood within the context of the bigger narrative around water.

*“Take a look at this from a Treaty Partnership Lens. Partnership Framework is about equity - which everyone has the right amount of resources to respond to and create the outcomes that are needed for them.”*

**Recommendation:** It is recommended that the Rules and Acceptable Solutions, along with the consultation process are developed and work within a treaty partnership framework that acknowledges place as well as diversity, that is, tino rangatiratanga and mana motuhake

## A case for alignment and connection with existing standards, audit and regulatory systems

**Insight:** Existing accreditation programmes exist for many suppliers and there is an opportunity for the Rules and Acceptable Solutions to align with these.

Many private drinking water suppliers were part of existing accreditation or regulatory systems that required them to meet multiple levels of compliance. For example, dairy farmers and horticulturalists who export products have their water monitored through Fonterra and Global GAP (Good Agricultural Practices) respectively. This ensures they



uphold high standard of practice (including for drinking water) which is often accompanied by extensive audit processes and documentation to prove it. People were reluctant to add another layer of compliance, monitoring and audit on top of these obligations. Suppliers felt it would be more efficient and practical to find a way that the draft Rules and Acceptable Solutions could align with compliance, regulations and accreditation systems that they already have to comply with.

*“I have 13 accreditations that the business needs to meet. This drives the actions we take regarding drinking water. Global GAP as an exporter”.*

*“We have gone through all the legal requirements with Council to cover off everything with the Papakainga. Council has approved this system - does this work for Taumata Arowai?”*

*“Just had a test through Fonterra.”*

*“As part of their accreditation through Global Gap (it is compulsory as an exporter to go through Global Gap), and the assurance programme, supplier has ramped up their testing to 4 times a year. This accreditation includes all the sustainable practise, labour and environmental monitoring for the supplier.”*

*“Water is monitored and all the water information is sent to the Council as part of the water take consent. Council will call us up if we have gone over our daily limit for a day so you guys have all the information you will need anyway.”*

**Recommendation:** It is recommended that Taumata Arowai reviews existing compliance arrangements to see where these can be integrated with existing sector systems, to reduce the compliance burden on private water suppliers.



## PART C – Impacts on Community, Social, Cultural, Economic and Environmental Well-beings

This section focuses on the impacts the draft Rules and Acceptable Solutions from a community well-being lens and provides further insights in terms of social, cultural, economic and environmental well-being.

### Impacts of the Draft Rules and Acceptable Solutions on Community Well-being

Many private drinking water suppliers are managing supplies for friends, whānau and neighbours who live in their own communities, more often than not for a public good, rather than for any financial or personal gain. Private drinking water suppliers acknowledged that no one wanted to see people get sick nor were they acting intentionally negligent. However, the proposed approach will unreasonably penalise private drinking water suppliers for providing a source of water to others.

The way that the draft Rules and Acceptable Solutions have currently been proposed to communities has the potential to create wider negative impacts on the well-being of water suppliers and their communities, including:

- Causing additional stress and burden to people's livelihoods and workloads.
- Financial costs, which appear to weigh heavily on private drinking water suppliers, making their commitment to continue to supply water unviable in many cases.
- Cultural practices and intergenerational skills and knowledge that have been built into people's way of life, leaving them feeling undermined and overlooked.
- In the case of pristine natural, untreated water, the draft Rules and Acceptable Solutions were seen to unnecessarily interfere with the aspect of their existing drinking supplies that people value the most, resulting in a feeling that there is no compromise or control over the environment they have chosen to live in.

### Impacts of the Draft Rules and Acceptable Solutions on Social Well-being

The key impact of the Rules and Acceptable Solutions have on social well-being broadly relate to:

- Supplies as a community good are at risk
- Schemes as community connectors may be lost
- Neighbourhood tensions
- Increased mental health issues.

### Supplies as a Community Good at Risk

**Insight:** Community supplies have provided life changing improvements which could become unsustainable.



Often private drinking water suppliers provide water to assist others such as neighbours, family, friends or the wider community as a community good. However, the draft Rules and Acceptable Solutions have caused them to rethink this approach due to the implications that this would have on their personal liability and also the financial implications.

In the case of community-run schemes, volunteers have invested significant time and effort into building and maintaining systems, some to a very high standard, but the draft Rules and Acceptable Solutions raises doubts over whether some of these would have the resources, time or money, or are prepared to accept the liability to continue.

This has serious, and in some cases, life changing, implications particularly for rural communities who have had experiences of living without reliable access to a supply of water for their daily needs.

*“Under the World Health Organisation guidelines, they hold the importance of access to water higher than water safety.”*

*“I understand why it has been done (Regulation) but “no one wants that” (to have to cut people from water).”*

### Schemes as Community Connectors may be Lost

**Insight:** If suppliers stop supplying water a consequence will be the erosion of people’s social connection in their communities.

It was apparent that neighbourly arrangements or community schemes can act as a community connector, especially in rural communities, where everyone works together around a common problem. However, this may change if it becomes too hard.

People likened this to the closure of rural schools which were at the heart of communities or community swimming pools that closed down because the liability was too great.

They see the consequences of the draft Rules and Acceptable Solutions, if suppliers stop supplying water, as further eroding people’s social connection in their communities.

*“The whole group around here - take a look at their way of doing it. The community group has mobilised around a shared problem.”*

*“It’s the same with school pools. A lot of country pools have shut because people are not willing to take on the liability.”*

### Neighbourhood Tension

**Insight:** There was concern that the draft Rules and Acceptable Solutions could create tensions among suppliers and receivers of drinking water supplies as they tried to make sense of their responsibilities.

Some suppliers already have issues with existing supply agreements, or have inherited them unhelpfully. Formal agreements such as covenants and easements over land were also difficult to navigate, as was subsequent subdivision on neighbouring land



that connected into existing water supplies, increasing levels of responsibility without the supplier necessarily having control over who it was they were supplying to.

Those that receive water were also concerned as they have little control over the supply of water to them. In rural communities, water is their lifeline for both life and businesses.

There was concern that these new requirements could feed into tensions, resentment or disagreements among neighbours and communities as they tried to make sense of how they were going to be impacted, what the cost would be, and who is responsible for certain aspects of each supply.

*“It’s terrifying for people who are told during 30-degree weather that they are going to get their water turned off.”*

*“There is a social responsibility that will have an impact on us. It’s our family who have come back to their roots.”*

*“The main thing for us is water for stock. We have got to guarantee this otherwise we have no business.”*

## Increased Mental Health Risks

**Insight:** Many felt the draft Rules and Acceptable Solutions were yet another layer of bureaucracy to add to the already high levels of stress that people are

Many of the participants in the project were busy and some found it difficult to make time for an interview, as they dealt with a variety of competing demands.

It was very clear that the requirements of the Act, draft Rules and Acceptable Solutions could quickly become a source of further stress, compounding the level of mental health issues that already exist in isolated and rural communities. As one person commented:

*“Mental health is real and it is unbelievable the stress that people are under. The wider impact of a decisions like this will reach all corners of well-being.”*

*“Because of the current environment/COVID, people’s emotional shock absorbers are not overly resilient so their ability to understand changes or take on more information can be difficult.”*

This sense of being overwhelmed by further regulatory requirements was palpable during many interviews, with people needing time to understand what the Act, Rules and Acceptable Solutions meant for them and raising concern on how they would cope and manage.



## Impacts of the Draft Rules and Acceptable Solutions on Cultural Well-being

The key impact that the Rules and Acceptable Solutions have on cultural well-being broadly relates to the notion that:

- Cultural knowledge specific to place (mātauranga-a-iwi) should apply
- Water is central to tikanga practices and to the application of rangatiratanga
- There is ingrained inter-generational knowledge and mātauranga-a-iwi to consider
- Considerations to the socio-cultural and historical contexts of mana whenua should be foremost.

### Cultural Knowledge Should Apply

**Insight:** The draft Rules and Acceptable Solutions appear to have been drafted without considering the historical experience and cultural customs.

Suppliers each exist in the nuanced context of their communities with specific knowledge and experience of their own systems. When speaking with people, many stated that the draft Rules and Acceptable Solutions have been drafted without considering the historical knowledge, skills and experience and cultural customs which had been passed down through generations and that they will be ‘imposing’ on those existing bodies of knowledge.

For example, some spoke of their rights as kaitiaki of their land and water and that their responsibilities to uphold tino rangatiratanga to care for their people under the principles of Te Tiriti were being undermined. On Māori Reservation land, it was believed that it should be up to the marae trustees (of that reservation) and their hapū to look after their drinking water supply systems. The Rules and Acceptable Solutions are set out in a prescribed manner without taking into account the tikanga of each marae that have often been implemented long ago to safeguard many things including their cultural identity and the provision of water supplies for manuhiri, whānau and hapū.

*“We are kaitiaki, we are scientists too and should be listened to with regard to the knowledge we hold about our place.”*

*“When science meets culture, that is where the tension occurs and there has got to be a compromise”.*

*“There is law and then there is lore.”<sup>3</sup>*

### Water is Central to Tikanga Practices

**Insight:** If Rules and Acceptable Solutions were unable to be met due to financial burdens or capacity issues, this will have huge implications for the ability of marae to function and practise its tikanga-a-iwi.

Water is fundamental for marae to host and apply tikanga, but there are often other important priorities competing for resources. Some interviewees indicated that their marae rely on grants and do not have regular forms of income. Therefore, if Rules and



Acceptable Solutions were unable to be met due to financial burdens or capacity issues, there would be huge implications to host tangihanga, pōhiri and undertake hākari.

There needs to be further discussion from Te Taumata Arowai in how it will financially invest and support Māori if the draft Rules and Acceptable Solutions are placed upon marae to adhere too. This investment should include training for Kaitiaki in ensuring that safe practices are being carried out in accordance with these draft Rules and Acceptable Solutions, but equally ensuring that Māori are empowered to incorporate their mātauranga-ā-iwi.

Marae trustees felt that the marae was owned by all whānau who whakapapa to that place, with responsibilities being shared:

*“Part of the welcoming function of a marae is to host, the tikanga of manaakitanga is a key part of being on a marae. If we can't look after the physical well-being of our visitors, then we are not able to open.”*

*“That’s our manaki - we are keeping people safe.”*

### Ingrained Generational Knowledge

**Insight:** Many felt the draft Rules and Acceptable Solutions were yet another layer of bureaucracy to add to the already high levels of stress that people are

The draft Rules and Acceptable Solutions require training and reporting elements that do not account for the technical expertise that people hold, exemplified in the case of rural farmers. Farmers described how they had learned to find solutions to complex problems, with many spending decades building up knowledge of their water sources and systems. In these cases, and many others, being directed on what to do, meeting training requirements, or having to outsource work to a contractor was seen as disempowering, and contradicted their skills, expertise, values and approach to work.

*“My father would be upset if he was being told what to do with their water.”*

*“It feels like an invasion of how we have always done things.”*

*“It is just bad business if we don't supply safe drinking water to our workers. We don't want to have unsafe drinking water, from a health perspective, a farm and business perspective it doesn't make sense either.”*

*“We look after the supply for our own health, our families and the workers “*

### Consider the Cultural Context

**Insight:** The draft Rules and Acceptable Solutions need to consider the cultural context in which they are asking for change.

The draft Rules and Acceptable Solutions need to consider the cultural context in which they are asking for changes. That is, there needs to be an acknowledgement of past experiences managing water systems and associated rights under the Te Tiriti o Waitangi for there to be a true partnership approach towards creating practical solutions communities see the benefit in taking up. Many felt there was little room



to provide feedback, or no other option but to go along with the new Rules and Acceptable Solutions, with one person stating:

*“I know there is raru and to move forwards we have to put things aside and leave it in the past, and I don't see any other way around this so we need to talk to you”.*

This formed part of a wider sentiment that people were somewhat forced with no alternative such has been the historical legacy for many who expressed such views. They did not feel confident that there was an opportunity to also see potential solutions from a Te Ao Māori viewpoint, or influence the process in a meaningful and constructive way and so, such pathways need to be opened up and or made clear for whānau rather than being seen to be subjugated beneath the confusing rhetoric.

**Impacts of the Draft Rules and Acceptable Solutions on Economic Well-being**

The key impact of the draft Rules and Acceptable Solutions have on economic well-being broadly relate to:

- Unaffordable levels of investment
- Compliance costs
- Marginal health benefits for significant economic cost
- Reasonable costs for continued access.

**Unaffordable Levels of Investment**

**Insight:** Most private drinking water suppliers had significant concerns and questions about what exactly each aspect of the system would cost.

There was significant concern that meeting the draft Rules and Acceptable Solutions would have an impact on private drinking water suppliers’ economic well-being, as they would require a level of investment that many would be unable to afford.

Participants were concerned that the draft Rules and Acceptable Solutions had not been well publicised or communicated. Some suppliers have already invested significant resources into their system and none of those interviewed had planned for these future costs.

Almost all suppliers had questions about what the changes would cost (including on-going costs) and if they would have support to access equipment and services for which there is likely to be unprecedented demand. The need for support to access funding and capability to work through the requirements were also raised.

A common sentiment was that business owners such as farmers saw selling their business to be a more viable option due to the overwhelming compliance requirements Government were imposing across their sector.

*“The cost for people is frightening.”*

*“If he has to implement these standards to every property, it is not practical and would be hugely expensive.”*



*"I'm glad to be getting out of farming - we have enough to worry about."*



## Compliance Costs

**Insight:** People found it hard to justify the cost of compliance, especially when many had never had issues with their water source.

Businesses, farmers and horticulturalists that were interviewed want to ensure they are providing safe drinking water to their workers and families, but the vast majority were concerned about the financial and compliance burdens to meet the new requirements.

Larger scale commercial businesses were more easily able to plan for the draft Rules and Acceptable Solutions than small businesses, as they had the staffing resource and financial means to plan for and adapt.

People asked if registering their supply would cost them money, and subsequently, would costs be passed onto water suppliers for auditing and compliance purposes. They advised that this has the potential to lead to increased rent on properties as part of the supply.

Another point raised was that people who had historical handshake or informal arrangements to supply water may not want to enter into formal agreements with those they supply, as it will lock any future owners into this responsibility which could be a deterrent for resale purposes. These regulations have the potential to devalue property prices.

Many suppliers already have UV and cartridge filtration treatment systems that would not meet the new requirements (or validation standards) of the draft Rules and Acceptable Solutions, adding more costs for an upgrade when they are already managing the safety and quality of their water.

*"I'd have to get someone external to do this, which will cost".*

*"Legislation is written to the landlords, but it will affect the tenants. This is similar in that it will be a hugely significant consequence as it could result in people being without water or having to pay for it in one way or another."*

## Marginal Health Benefits for Significant Economic Costs

**Insight:** The cost takes away from people's ability to spend on other important aspects of life.

Many private drinking water suppliers theorised scenarios where people were unable or unwilling to meet the draft Rules and Acceptable Solutions, or conducted a cost benefit analysis and decided against continuing as a private drinking water supplier.

Potential consequences were people either cutting off supplies, discontinuing rental agreements associated with the supply, or passing on costs to tenants. Comments were made that this increased cost would only be making marginal public health gains for many small suppliers, who could not spend that money on other family/whānau goals such as paying off debt or affording activities for their children.



*“They are making marginal gains with water safety and that is not going to necessarily have better outcomes for our people. This is money we could have used to pay off our mortgage, or for whānau activities or our children's piano lessons.”*

*“It costs \$7,000 a year just to insure at the moment. To get other stuff done on top of this is disheartening.”*

## Reasonable costs for continued access

**Insight:** Costs need to be reasonable to ensure that it is not a driving force for removing people’s access to drinking water supplies.

Financial/funding assistance and access to reasonably priced goods and services were consistent points raised by private drinking water suppliers, alongside clarity around what exactly they needed to do based on their set-up.

Private drinking water suppliers suggested that there be flexibility and a more pragmatic approach around the requirements based on their system, situation, capability, location and context. For example, many were happy to provide additional levels of testing, but did not believe they needed to go so far as completely reconfiguring their system to provide treatment or upgrade an existing treatment system.

Suppliers wanted justification to make these investments when their source water is regularly tested to demonstrate that it is safe without treatment.

Some community drinking water supply schemes have taken 10 years of fundraising to develop, with ongoing grants/funding required to keep up with existing maintenance demands.

One community scheme supplier discussed needing to raise an additional \$100,000 for the four years it had been operating to make improvements. If further changes are required, suppliers will need both incentives and ongoing assistance to ensure community schemes that provide lifelines to their people continue to provide access.

## Impacts of the Draft Rules and Acceptable Solutions on Environmental Well-being

The key impact of the draft Rules and Acceptable Solutions on environmental well-being broadly relate to:

- Challenging nature’s fresh, untreated water
- Environmental constraints unaccounted for
- Flexibility for activities in existing environments.

## Challenging Nature's Fresh, Untreated Water

**Insight:** People were concerned about the effects the draft Rules and Solutions would have on their water quality.



People were often extremely proud of their 'fresh, clean and safe' water that came straight from the ground and were concerned about the effects that the draft Rules and Acceptable Solutions would have on interfering with the quality of their water, such as needing to add chlorine to their supply. Discussions were held on the increased risk to public health if chlorine is used without appropriate competencies and could even make the supply dangerous.

To some, it seemed like a counter-intuitive step that devalued what the environment offered. Interviewees explained:

*"A resident here is a descendant of this land and he has lived here all his life. He credits his health and longevity to the [local] water for its fresh, pure, untreated qualities."*

*"We have some of the best water in the world. Straight from the ground. If it is already fresh water coming from the ground and has been tested, then why would we need to add treatment?"*

### Environmental Constraints Not Considered

**Insight:** Some Rules and Acceptable Solutions would not practically work for the environment they would applied to.

Environmental constraints meant that the draft Rules and Acceptable Solutions may not be feasible in certain situations.

For example, the size, shape or physical boundaries of properties would make it difficult for some suppliers to comply with the requirements to have an effluent disposal field at the suggested 50 m distance from the source water. If a property does not have 50 m of space within the boundary to move it. On rugged land, it may not be feasible to add fencing around every spring, and many would be physically difficult for a water supplier to access.

Other issues related to the environmental composition of the particular area or source water that the standards have not accounted for such as naturally hard water and limestone terrain which would have impacts on UV disinfection systems and costly maintenance requirements. In these cases, the draft Acceptable Solutions could not be used.

There are an estimated 900 water supplies in limestone country in Hawke's Bay, 700 of which are in Hastings District. If the Acceptable Solution is not amended, many may need to prepare Drinking Water Safety Plans and comply with the Rules. It may be far simpler to amend the Acceptable Solution to allow hard water to be treated.

### Flexibility for activities in existing environments

**Insight:** The Rules and Acceptable Solutions need to be able to be practically applied and consider existing environments.

Environments are useful for a variety of activities, many of which are already set up in a particular way. For example, water supply networks that integrate troughs or irrigation on farms with farmhouse supplies. The Rules and Acceptable Solutions should not



adversely compromise the existing activities that are undertaken in those environments.

In some cases, private drinking water suppliers were positive about making improvements to their water quality and safety, but they advised it should be in ways that reflected their situation and means, and incorporate the knowledge and technical expertise they have about their system and environment.

*“Really good to have us come and do this exercise as I will go away now and put some measures around the potential identified risks in the system.”*

Other practical examples from the research included:

*“Asking farmers to put backflow prevention on rural properties, they are going to have big issues, as these devices reduce the pressure. What was a 20 mm feedline will become the equivalent of a 5 mm supply. So our stock are going to get no water”.*

*“On farms, watch out for green weeds in the troughs as it acts as a capillary attraction and can suck water up over the trough and vice versa i.e. contaminants into the water supply.”*

## Concluding Comment

In order for communities to feel meaningfully invested and work towards the shared goal of safe drinking water, it is important their concerns are listened to and addressed through the right scale of expectations on private drinking water suppliers and the appropriate level of support to achieve secure access to a good quality and safe drinking water supply.

If not addressed with a **Pragmatic Approach** as described in **Part 2** of our main submission, there is a real risk that the draft Rules and Acceptable Solutions will result in unintended consequences where private drinking water suppliers will be unwilling to disclose information by not registering their drinking water supplies, supplies are cut off, which will have significant impacts on the receiving communities, families and businesses that they service.





# Appendix H Water Supply Survey Questionnaire

# WATER SUPPLY ASSESSMENT SURVEY FORM

## 1. BASIC INFORMATION

Q1. Water supplier full name

Q2. Physical address of water supply

Q3. Name of organisation/company (if applicable)

Q4. Position in organisation/company (if applicable)

Q5. Contact number

Q6. Contact email

Q7. Preferred means of contact

Q8. Is the property tenanted? (Y/N)

a. If yes:

- i. Contact name for tenant
- ii. Contact number
- iii. Contact email
- iv. Preferred means of contact

Q9. Is this a registered water supply/supplies? (Y/N)

b. If yes:

- i. Registered water supply number

Q10. Is there a resource consent to take water for the water supply/supplies? (Y/N)

b. If yes:

- ii. Resource consent number
- iii. Expiry date
- iv. Volume limit(s)
- v. Is the source overallocated? (Y/N) from regional plan (TANK Plan)

Q11. The private water supplier is:

- a) Category
- b) Community
- c) Type

## 2. AWARENESS AS A PRIVATE WATER SUPPLIER

Q12. Firstly, we would like to hear your thoughts on your relationship with water, your experiences and any history relative to your water supply. [Insert comment box]

Q13. Before the initial contact about this enquiry, did you understand that you are a private water supplier? (Y/N)

Q14. What does it mean to be a private water supplier? Do you know what you need to do as a private water supplier? [Insert comment box]

### 3. COMMUNITY SERVED

Q15. Talk me through the nature of the water source and the water supply. Who uses the water and what is the water used for? [Comment box for information]

Q16. Who uses your water supply? [Comment box for information]

[Assessor to use the map to select properties connected to the water supply]

Q17. How many buildings does the water supply provide for? [drop down number]

Q16. How many people does the water supply serve? [drop down number]

[Comment box for further information]

Q18. Do you have any agreements with neighbours to supply them with water? Y/N [Comment box for further information]

### 4. VOLUME REQUIREMENTS

Q19. Do you know how much water is used? If so, describe how much water is used:

- a. On average [Insert comment box]
- b. At peak time (normally summer) [Insert comment box]
- c. If a rural agricultural supply, approximately what percentage is used for domestic use? [Enter percentage or don't know]

Q20. How much water do you think you will need in 10 years' time? Do you think it will increase? (Y/N) [Comment box for information]

- a. If yes:
  - i. Estimate increase in average volume [Insert number]
  - ii. Estimate increase in peak volume [Insert number]

Q21. What is your understanding of the water allocation limits for your water supply? [Comment box for information]

### 5. WATER SOURCE

Q22. Water source(s) (tick all that apply) [Auto populate and confirm on site]

- a. Roof
- b. Bore
- c. Spring

d. Surface water

e. Capture photos and location of source and intake/bore head

Q23. Are there any alternative water sources or water supplies you could connect to? (Y/N)  
[Comment box for information]

Q24. What are the potential implications if you lost, or no longer had access to, the water supply, for you and those people you supply drinking water to? [Comment box for information]

Q25. If bore water is used:

a. Well number

b. Depth of bore (to top of screen)

c. Is the bore head above ground or below ground?

d. Could we please look at the bore head? What condition is bore head (score 1-5, with 1 being as new and 5 very poor).

[Assessor to determine the score of the bore head]

e. What is the distance between the bore and the on-site wastewater disposal field?

[Assessor to capture location of wastewater disposal field]

Q26. Do you know if the source water has been tested? (Y/N)

a. If yes:

When did you have it tested (year?)

Do you remember any details on the results of the test?

i. Did any parameters exceed the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N)

1. If yes:

a. [Comment box for further information]

ii. Did any parameters exceed half the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N)

1. If yes:

a. [Comment box for further information]

Q27. We'd like to understand the environmental conditions of your water source. We have a couple of questions to talk through with you.

[To assess any risk, the assessor will ask the specific prompts below to determine if it may result in a risk to the source water]

a. For roof water:

1. For painted galvanised iron roofs, please rate the condition of the paint (score 1-5)

2. Are there any overhanging or nearby trees? (Y/N)

3. Is there a chimney? (Y/N)

4. Is there any spraying nearby (Y/N)

b. For bore water:

1. Is the wastewater disposal field within 50 m of the bore?

2. Are any of the following within 50 m of the bore? Underground storage tank, waste pond, landfill, offal pit, areas where pesticides or animal effluent is applied to land. (Y/N)

3. Is it within 50 m of a Council wastewater network?

[Comment box for assessor to analyse risk to source water]

## 6. WATER TREATMENT

Q28. Is the water treated?

- a. If yes:
  - i. What form of treatment do you have? (e.g. cartridge filter, UV)  
[Select from the drop down list of treatment processes]
  - ii. Capture photos and location of water treatment plant

Q29. Do you know when the water treatment system was installed?

Q30. What maintenance has been done on it?

Q31. Do you know if the treated water has been tested? This would be separate from a test of the source water, which is the water supplied before the water treatment system. (Y/N)

- a. If yes:
  - a. When did you have it tested (year?)
  - b. Do you remember any details on the results of the test?
    - i. Did any parameters exceed the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N) [Comment box for further information]
    - ii. Did any parameters exceed half the applicable maximum acceptable value or guideline value in the Drinking-water Standards for NZ? (Y/N) [Comment box for further information]

## 7 DISTRIBUTION

Q32. We are interested to understand your pipes and their condition.

- a. What pipe material(s) are used to distribute water? [Select from drop down list: PE, PVC, asbestos cement, other]
- b. Approximately how old are the pipes? [Years]
- c. Have you had any problems with the pipes? (Y/N) [Comment box for further information]
- d. What is the condition of the pipes? (score 1-5) [Auto populate based on age and condition]

Q33. How many water storage tanks are there?

Q34. Can you please show us your water storage tanks? [For each storage tank, the assessor is to capture the following information]:

- a. What is the condition of the tank?(score 1-5)
- b. Is there an overflow? (Y/N)
- c. Is there an air vent? (Y/N)
- d. Is vermin protection adequate (mesh covering all vents and overflows, secure lid)? (Y/N)
- e. What size is the tank? [Volume] [Volume if known, otherwise assessor can determine via height and diameter if round, or height, length and width if rectangular]

- f. When was the last time the tank was cleaned out? [No. Years]
- i. Were there any issues when you cleared it out?
- g. Capture photos and location of reservoir

Q35. Backflow is when drinking water becomes contaminated and flows the wrong way into the drinking water supply. Water contamination can occur from backflow, with the unexpected presence of things such as chemicals and stock troughs. Are you aware of any hazardous activities that may present a backflow risk?

[The Assessor is to select from a drop down list of activities from Clause G12 Water Supplies of the Building Code].

- a. If yes:
  - i. Rate backflow risk (high/medium/low) [Auto populate based on answer to Q32]
  - ii. Are there any measures in place to mitigate these risks such as backflow prevention devices or air gaps? (Y/N)
  - iii. What type of backflow prevention device is it (select from drop down list: RPZ, testable double check valve, non-testable dual check valve, air gap)
  - iv. Is the device appropriate for the level of risk? [Auto populate based on the answer to Q32 a iii]

## 8. OPERATIONS AND MAINTENANCE

Q36. Who looks after your water supply? [Comment box for further information]

Q37. How confident is this person to operate and maintain your water supply? [Score 1-5, with 1 being not confident and 5 being very confident]

Q38. What do you know about water supply operations and maintenance? [Comment box for further information]

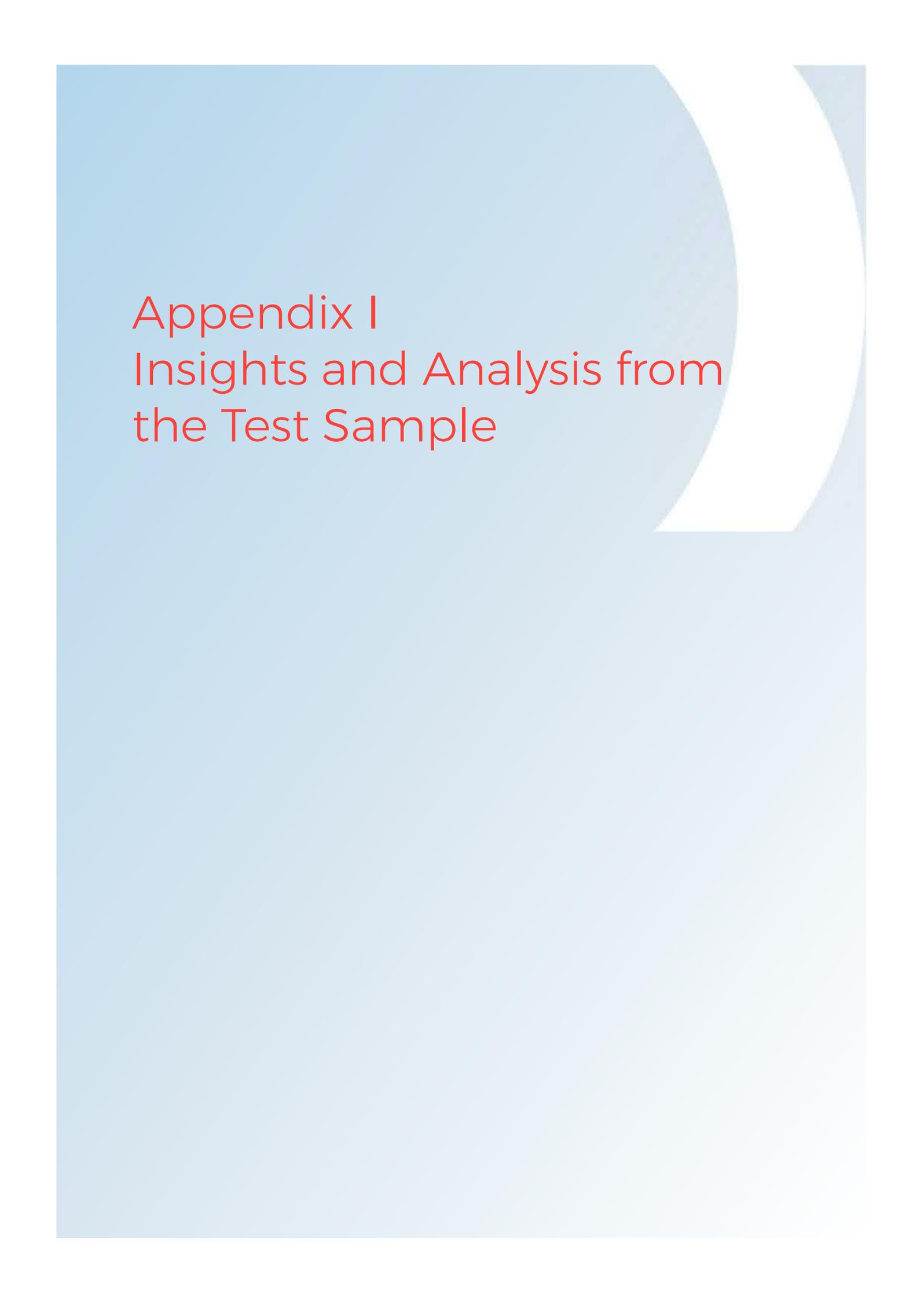
Q39. Has anyone involved in your water supply received formal training relating to it? [Comment box for further information]

## 9. OTHER MATTERS

Q40. Do you have any concerns that you would like to share? [Comment box for further information]

Q.41 What are your thoughts around being a private water supplier? [Comment box for further information]

Q42. What would help you as a private water supplier? [Comment box for further information]



# Appendix I

## Insights and Analysis from the Test Sample



# Insights and Analysis from the Test Sample

**Purpose:** The purpose of this reflection is to outline the test sample approach and process, draw out and learn from the experience we have had to date on the process to find and engage with private drinking water suppliers.

## Test Sample Overview

A list of 12 (three per district) private drinking water suppliers were chosen through selecting a range of types (identified on the matrix) to ensure that the sample comprised of a range of different suppliers.

Using known contacts and staff knowledge, Councils were asked to validate their test sample. This is now considered to be a convenience sample and was used given the time and sensitivity constraints of this project.

A Council Contact Form was emailed to identified Council staff, with email instructions to call their suppliers by a specified date and follow up with an email to provide the Consent Form for the supplier to sign and email back.

In most cases (CHBDC, WDC, HDC), suppliers and their contact details were able to be provided by Council staff, and staff were aware and willing to make initial contact with suppliers.

A verification process was introduced which double checked the supplier against the GIS portal, and during the second phone call, included questions to better determine that a supplier was defined as a private drinking water suppliers under the Act. These questions were:

- Is your source connected to a Council owned supply?
- Do you supply more than one dwelling?

## Challenges

The key challenges with the test sample were:

- There were delays in making initial contact with suppliers within the Napier City Council district. The reason for this was that they did not have the contact details or existing relationships.
- Some Council staff were on annual leave which resulted in delays for making initial contact.
- Some Council staff called suppliers before the Contact Form had been provided.
- Some private drinking water supplies that were selected were later found through the secondary phone call from WSP, to not be a private drinking water supplier. This meant a new supplier needed to be found. For example:
  - A facility owned and operated by Council such as a Community Hall
  - A resident who had a bore on their property, was found not to supply another dwelling
  - A water supply scheme was found to be for stock only and not used for drinking water



- A papakainga housing development had individual tanks for each property, rather than a connection to the bore that exists on the property (potential future development, which would make them a private drinking water suppliers).
- Some larger organisations identified as private drinking water suppliers, who were not the owners of the supply, had to seek higher approval before they could confirm that they would participate in the project. This led to a significant delay in confirming the assessment.
- The project team found the suppliers had been given varying degrees of information in their initial phone call to introduce the project and obtain verbal consent. This meant it was difficult to know if every private drinking water suppliers had been appropriately briefed before the second phone call. The second phone call to schedule the meeting, ensured that the participant had been given appropriate information before making the decision to participate in the project.
- Upon engagement, some private drinking water suppliers were still hesitant to participate, be recorded or were still unsure exactly what this project was for.
- Feedback included that the Consent Form was intimidating. Questions and feedback included:
  - Needs to be much more about the kaupapa of the project i.e. Providing people with safe access to drinking water.
  - What do we do if the supplier does not want to sign the consent form?
  - What is the follow up email (engagement) to provide suppliers - including thank you for their time.
  - WSP to determine how technical they want to make their feedback following the assessment they took.

## General Reflections

The purpose of the engagement is to determine their level of technical knowledge and current understanding of the Act, experience the range of private water supplier attitudes and opinions and provide information on what's next, including encouraging others they know to engage in the future when the Councils are in a position to reach out to suppliers

There were varying degrees of hesitancy to participate (some of which had no hesitancy, to others who were not comfortable signing the Consent Form until we had answered a number of questions first).

Once we had spent time with suppliers, all were comfortable with the project and understood why we were there.

A wide range of engagement styles were experienced from sitting down at dining room tables, to standing up in a working shed, and car rides across a number of sites

The duration of the interview varied from 1 hour (farm supplies) to 2.5 hours (community supplies).

Depending on their level of current understanding about the changes, influenced the degree that they are able to suggest future support or understand their future requirements. Especially if they see themselves as running an operation that is currently working fine, and no problems have been identified in the past.



## Next Steps and Recommendations

- Identify a long list of private drinking water suppliers from the GIS system - including addresses
- Council to just provide contact names and contact details for private water suppliers on the long list
- Project Team to make the initial call to request participation, ensure a follow-up email is sent immediately afterwards
- Streamline engagement -> initial contact person identified -> provide consistent information -> scheduled meeting
- Pre-populate questionnaire as much as possible in advance of the site visit
- Review project documentation (project overview, consent form) to reflect a more appropriate and accessible language and tone for the stakeholders.

# Appendix J

## Cost Estimates

## Appendix J - Cost Estimates

### Estimated Cost of Installing Treatment for Untreated Water Supplies In Hawke's Bay

Supply Type	Very Small				Small				Large			
	Treated		Untreated		Treated		Untreated		Treated		Untreated	
	Count	% of total	Count	% of total	Count	% of total	Count	% of total	Count	% of total	Count	% of total
Bore + Spring	5	10%	15	31%	10	21%	7	15%	1	2%	0	0%
Roof	0	0%	7	15%	2	4%	0	0%	0	0%	0	0%
Surface	0	0%	0	0%	1	2%	0	0%	0	0%	0	0%

	Bore					Roof				Spring			
	Very Small	Small	Large	Undefined	Total	Very Small	Small	Large	Total	Very Small	Small	Large	Total
Count	15	16	0	1	32	7	2	0	9	5	1	0	6
Percentage	47%	50%	0%	3%		78%	22%	0%		83%	17%	0%	

	Bore					Roof				Spring			
	Very Small	Small	Large	Undefined	Total	Very Small	Small	Large	Total	Very Small	Small	Large	Total
Treated	5	9					2				1		
Untreated	10	7				7				5			

### Estimated number of private water supplies In Hawke's Bay region

Lower estimated total number	3,900
Upper estimated total number	6,900

### Estimated number of supplies in each category

Supply Type	Very Small				Small				Large			
	Treated		Untreated		Treated		Untreated		Treated		Untreated	
	Lower Estimate	Upper Estimate										
Bore + Spring	406	719	1219	2156	813	1438	569	1006	81	144	0	0
Roof	0	0	569	1006	163	288	0	0	0	0	0	0
Surface	0	0	0	0	81	144	0	0	0	0	0	0

### Estimated cost of complying with the draft Rules and Acceptable Solutions

Supply Type	Capital cost estimate		Annual operations and maintenance cost estimate		One-off operations cost estimate	
	Draft Rules	Draft Acceptable Solutions	Draft Rules	Draft Acceptable Solutions	Draft Rules	Draft Acceptable Solutions
Very small bore water supply	\$ 36,000	\$ 236,000	\$ 3,000	\$ 12,000	\$ 21,000	\$ 9,000
Very small roof water supply	\$ 36,000	\$ 117,000	\$ 3,000	\$ 9,000	\$ 21,000	\$ 8,000
Small bore water supply	\$ 156,000	\$ 259,000	\$ 15,000	\$ 13,000	\$ 21,000	\$ 9,000
Small roof water supply	\$ 156,000	\$ 123,000	\$ 15,000	\$ 10,000	\$ 21,000	\$ 8,000

**Capital cost estimate for untreated water supplies in Hawke's Bay**

Supply Type	Very Small				Small			
	Lower cost estimate		Upper cost estimate		Lower cost estimate		Upper cost estimate	
	Rules	Acceptable Solutions						
Bore + Spring	\$ 43,900,000	\$ 287,600,000	\$ 77,600,000	\$ 508,900,000	\$ 88,700,000	\$ 147,300,000	\$ 157,000,000	\$ 260,600,000
Roof	\$ 20,500,000	\$ 66,500,000	\$ 36,200,000	\$ 117,700,000	\$ -	\$ -	\$ -	\$ -

**Annual operations and maintenance cost estimate for untreated water supplies in Hawke's Bay**

Supply Type	Very Small				Small			
	Lower cost estimate		Upper cost estimate		Lower cost estimate		Upper cost estimate	
	Rules	Acceptable Solutions						
Bore + Spring	\$ 4,000,000	\$ 15,000,000	\$ 6,000,000	\$ 26,000,000	\$ 12,000,000	\$ 7,000,000	\$ 15,000,000	\$ 13,000,000
Roof	\$ 2,000,000	\$ 5,000,000	\$ 3,000,000	\$ 9,000,000	\$ -	\$ -	\$ -	\$ -

**One-off operations cost estimate for untreated water supplies in Hawke's Bay**

Supply Type	Very Small				Small			
	Lower cost estimate		Upper cost estimate		Lower cost estimate		Upper cost estimate	
	Rules	Acceptable Solutions						
Bore + Spring	\$ 26,000,000	\$ 11,000,000	\$ 45,000,000	\$ 19,000,000	\$ 12,000,000	\$ 5,000,000	\$ 21,000,000	\$ 9,000,000
Roof	\$ 12,000,000	\$ 5,000,000	\$ 21,000,000	\$ 8,000,000	\$ -	\$ -	\$ -	\$ -

**Total cost estimate**

	Capital cost estimate		Annual operations and maintenance cost estimate		One-off operations cost estimate	
	Rules	Acceptable Solutions	Rules	Acceptable Solutions	Rules	Acceptable Solutions
Lower estimate	\$ 150,000,000	\$ 500,000,000	\$ 18,000,000	\$ 27,000,000	\$ 50,000,000	\$ 21,000,000
Upper estimate	\$ 270,000,000	\$ 890,000,000	\$ 24,000,000	\$ 48,000,000	\$ 87,000,000	\$ 36,000,000

Cost Estimate - Very Small Supply Using Draft Drinking Water Quality Assurance Rules

Category	Items Required	Estimated Capital Costs	Estimated Operations and Maintenance Costs (per year)	Estimated One-Off Operations Costs	Notes and Assumptions
Equipment	Very Small Package Treatment Plant (Board Mounted)	\$ 20,000	\$ 730		Treatment plant: cartridge filtration and UV disinfection. Annual O&M costs include replacing UV lamp and filters once a year. Assuming a plumber/technician call out rate of \$120/hr.
	Site Pipework and Valves	\$ 2,000			
	SubTotal Equipment	\$ 22,000	\$ 730	\$ -	Provisional sum to connect treatment plant to water supply.
P&G and Design	Professional Fees (10%)	\$ 2,200			
	Preliminary and General (15%)	\$ 3,300			
	Total Equipment	\$ 27,500	\$ 730	\$ -	
Documentation / Training	Prepare Water Safety Plan		\$ 500	\$ 10,000	
	Source Water Risk Management Plan		\$ 100	\$ 3,000	
	Staff training			\$ 3,000	
	Total	\$ -	\$ 600	\$ 16,000	
Quality Assurance	Water quality monitoring		\$ 620		6-monthly monitoring of E. coli and total coliforms at source and post treatment (\$100 each), plus chemical suite in source water 3-yearly and in distribution annually (\$165 each)
	Total	\$ -	\$ 620	\$ -	
Contingency (30%)		\$ 8,250	\$ 585	\$ 4,800	
Total (rounded)		\$ 36,000	\$ 3,000	\$ 21,000	

Cost Estimate - Small Supply Using Draft Drinking Water Quality Assurance Rules

Category	Items Required	Estimated Capital Costs	Estimated Operations and Maintenance Costs (per year)	Estimated One-Off Operations Costs	Notes and Assumptions
Equipment	Small Package Treatment Plant (Board Mounted)	\$ 30,000	\$ 860		Treatment plant: cartridge filtration, UV disinfection and chlorination. Annual O&M costs include replacing UV lamp and filters once a year. Assuming a plumber/technician call out rate of \$120/hr. Hypochlorite dosing system, 20 Litre 13% strength hypochlorite.
	Site Pipework and Valves	\$ 5,000			
	Online water quality monitoring (FAC, pH, turbidity & UVT)	\$ 61,000	\$ 6,000		Daily monitoring required in treated water and in distribution system so assumed online monitoring as easier than grab samples. Combined FAC, pH and turbidity analyser \$24k (2 No.). UVT analyser \$13k (1 No.). Monthly calibration by instrument technician (\$250/hr, 2 hrs monthly)
	SubTotal Equipment	\$ 96,000	\$ 6,860	\$ -	
P&G and Design	Professional Fees (10%)	\$ 9,600			
	Preliminary and General (15%)	\$ 14,400			
	Total Equipment	\$ 120,000	\$ 6,860	\$ -	
Documentation / Training	Prepare Water Safety Plan		\$ 500	\$ 10,000	
	Source Water Risk Management Plan		\$ 100	\$ 3,000	
	Staff training			\$ 3,000	
	Total	\$ -	\$ 600	\$ 16,000	
Quality Assurance	Water quality monitoring		\$ 3,930		Monthly monitoring of E. coli and total coliforms at source, post treatment and in distribution system (\$100 each), plus chemical suite annually in source water and in distribution system (\$165 each)
	Total	\$ -	\$ 3,930	\$ -	
Contingency (30%)		\$ 36,000	\$ 3,417	\$ 4,800	
Total (rounded)		\$ 156,000	\$ 15,000	\$ 21,000	

Cost Estimate - Very Small Bore/Spring Supply Using Draft Acceptable Solution for Spring and Bore Water Supplies

Category	Items Required	Estimated Capital Costs	Estimated Operations and Maintenance Costs (per year)	Estimated One-Off Operations Costs	Notes and Assumptions
Equipment	Acceptable Solution package treatment plant	\$ 78,000	\$ 200		Cartridge filtration and UV disinfection treatment plant including hypochlorite dosing. Annual O&M costs include material costs for hypochlorite and replacing UV lamp and filters once a year.
	Online treated water quality monitoring (FAC, pH, turbidity)	\$ 60,000	\$ 4,000		Daily monitoring required at source water (turbidity), treated water (FAC, pH and turbidity) and in distribution system (FAC, pH and turbidity) so assumed online monitoring as easier than grab samples. Turbidity analyser \$12k. Combined FAC, pH and turbidity analyser \$24k (2 No.). 3-monthly calibration by instrument technician (\$250/hr, 4 hrs monthly).
	Bore headworks remediation	\$ 4,000			Provisional sum to reduce risk of contamination of bore water
	Handheld UV transmittance meter	\$ 3,500			Weekly testing by water supplier
	SubTotal Equipment	\$ 145,500	\$ 4,200	\$ -	
P&G and Design	Professional Fees (10%)	\$ 14,600			
	Preliminary and General (15%)	\$ 21,800			
	Total Equipment	\$ 181,900	\$ 4,200	\$ -	
Documentation / Training	Operations and Maintenance Manual		\$ 500	\$ 2,000	
	Incident and Emergency Response Plan		\$ 200	\$ 1,000	
	Staff training			\$ 3,000	
	Handheld UV transmittance meter training			\$ 600	
	Total	\$ -	\$ 700	\$ 6,600	
Quality Assurance	Water quality monitoring		\$ 2,510		Monthly E. coli test post-treatment and distribution \$100 each. 3-yearly chemical suite in source water and in distribution system (\$165 each).
	Maintenance Visits		\$ 2,160		3x 4 hr visits for basic O&M tasks and 1x 6 hr visit to cover basic O&M and replace UV lamp and filters @ \$120/hr for a plumber (assuming supplier has online monitoring of water quality parameters and alarms). 4th visit is covered above under Acceptable Solution package treatment plant.
	Total	\$ -	\$ 4,670	\$ -	
Contingency (30%)		\$ 54,570	\$ 2,871	\$ 1,980	
Total (rounded)		\$ 236,000	\$ 12,000	\$ 9,000	

Cost Estimate - Small Bore/Spring Supply Using Draft Acceptable Solution for Spring and Bore Water Supplies

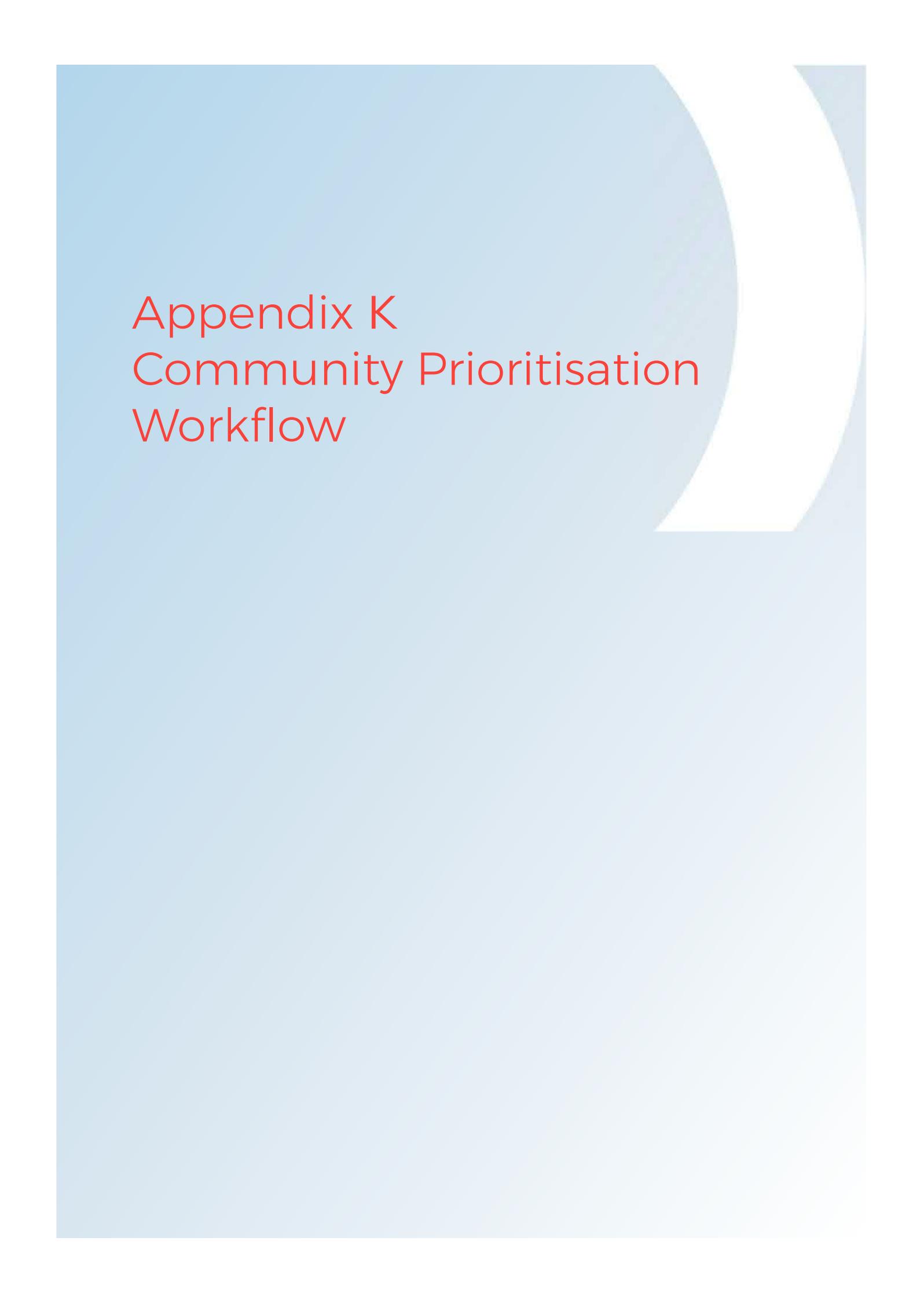
Category	Items Required	Estimated Capital and One-Off Costs	Estimated Operations and Maintenance Costs (per year)	Estimated One-Off Costs	Notes and Assumptions
Equipment	Acceptable Solution package treatment plant	\$ 90,000	\$ 860		Cartridge filtration and UV disinfection treatment plant including hypochlorite dosing. Annual O&M costs include material costs for replacing UV lamp and filters once a year.
	Online treated water quality monitoring (FAC, pH, turbidity)	\$ 60,000	\$ 4,000		Daily monitoring required at source water (turbidity), treated water (FAC, pH and turbidity) and in distribution system (FAC, pH and turbidity) so assumed online monitoring as easier than grab samples. Turbidity analyser \$12k. Combined FAC, pH and turbidity analyser \$24k (2 No.). 3-monthly calibration by instrument technician (\$250/hr, 4 hrs monthly).
	Bore headworks remediation	\$ 6,000			Provisional sum to reduce risk of contamination of bore water.
	Handheld UV transmittance meter	\$ 3,500			Weekly testing of UVT by water supplier.
	SubTotal Equipment	\$ 159,500	\$ 4,860	\$ -	
P&G and Design	Professional Fees (10%)	\$ 16,000			
	Preliminary and General (15%)	\$ 23,900			
	Total Equipment	\$ 199,400	\$ 4,860	\$ -	
Documentation / Training	Operations and Maintenance Manual		\$ 500	\$ 2,000	
	Incident and Emergency Response Plan		\$ 200	\$ 1,000	
	Staff training			\$ 3,000	
	Handheld UV transmittance meter training			\$ 600	
	Total	\$ -	\$ 700	\$ 6,600	
Quality Assurance	Water quality monitoring		\$ 2,510		Monthly E. coli test post-treatment and distribution \$100 each. 3-yearly chemical suite in source water and in distribution system (\$165 each).
	Quarterly Maintenance Visits		\$ 2,160		3x 4 hr visits for basic O&M tasks and 1x 6 hr visit to cover basic O&M and replace UV lamp and filters @ \$120/hr for a plumber (assuming supplier has online monitoring of water quality parameters and alarms). 4th visit is covered above under Acceptable Solution package treatment plant.
	Total	\$ -	\$ 4,670	\$ -	
Contingency (30%)		\$ 59,820	\$ 3,069	\$ 1,980	
Total (rounded)		\$ 259,000	\$ 13,000	\$ 9,000	

Cost Estimate - Very Small Roof Supply Using Draft Acceptable Solution for Roof Water Supplies

Category	Items Required	Estimated Capital Costs	Estimated Operations and Maintenance Costs (per year)	Estimated One-Off Operations Costs	Notes and Assumptions
Equipment	Acceptable Solution package treatment plant	\$ 68,000	\$ 140		Cartridge filtration and UV disinfection treatment plant. Annual O&M costs include replacing UV lamp once a year and filters twice a year. Assuming a plumber/technician call out rate of \$120/hr
	Calmed inlet and floating outtake in untreated water storage tank	\$ 1,230			Calmed inlet \$350. Floating outlet 25mm diameter \$280. Plus 4 hr install at \$150/hr.
	Leaf screens	\$ 1,320			4 @\$180 each. Plus 4 hr install at \$150/hr.
	First flush diverters	\$ 1,160			4 @ \$140 each. Plus 4 hr install at \$150/hr.
	SubTotal Equipment	\$ 71,710	\$ 140	\$ -	
P&G and Design	Professional Fees (10%)	\$ 7,200			
	Preliminary and General (15%)	\$ 10,800			
	Total Equipment	\$ 89,710	\$ 140	\$ -	
Documentation / Training	Operations and Maintenance Manual		\$ 500	\$ 2,000	
	Incident and Emergency Response Plan		\$ 200	\$ 1,000	
	Staff training			\$ 3,000	
	Total	\$ -	\$ 700	\$ 6,000	
Quality Assurance	Water quality monitoring		\$ 315		Monthly E. coli test post-treatment and distribution \$65 each. 3-yearly chemical suite in source water (\$165 each). (assuming alarms from the treatment system are only displayed at the site)
	Monthly Maintenance Visits		\$ 6,120		10x 4 hr visits to cover basic O&M, 1x 5 hr visit for basic O&M and replace filters and 1x 6 hr visit for basic O&M, replace UV lamp and replace filters @ \$120/hr for a plumber (assuming alarms from the treatment system are only displayed at the site)
	Total	\$ -	\$ 6,435	\$ -	
Contingency (30%)		\$ 26,913	\$ 2,183	\$ 1,800	
Total (rounded)		\$ 117,000	\$ 9,000	\$ 8,000	

Cost Estimate - Small Roof Supply Using Draft Acceptable Solution for Roof Water Supplies

Category	Items Required	Estimated Capital Costs	Estimated Operations and Maintenance Costs (per year)	Estimated One-Off Operations Costs	Notes and Assumptions
Equipment	Acceptable Solution package treatment plant	\$ 68,000	\$ 190		Cartridge filtration and UV disinfection treatment plant. Annual O&M costs include replacing UV lamp once a year and filters twice a year. Assuming a plumber/technician call out rate of \$120/hr
	Calmed inlet and floating outtake in untreated water storage tank	\$ 2,700			Assume 2 untreated water storage tanks. Calmed inlet 2x \$350. 2 x 50mm diameter floating outlets @ \$400 ea. Plus 8 hr install at \$150/hr.
	Leaf screens	\$ 2,640			8 @\$180 each. Plus 8 hr install at \$150/hr.
	First Flush Diverters	\$ 2,320			8 @ \$140 each. Plus 8 hr install at \$150/hr.
	SubTotal Equipment	\$ 75,660	\$ 190	\$ -	
P&G and Design	Professional Fees (10%)	\$ 7,600			
	Preliminary and General (15%)	\$ 11,300			
	Total Equipment	\$ 94,560	\$ 190	\$ -	
Documentation / Training	Operations and Maintenance Manual		\$ 500	\$ 2,000	
	Incident and Emergency Response Plan		\$ 200	\$ 1,000	
	Staff training			\$ 3,000	
	Total	\$ -	\$ 700	\$ 6,000	
Quality Assurance	Water quality monitoring		\$ 315		Monthly E. coli test post-treatment and distribution \$65 each. 3-yearly chemical suite in source water (\$165 each).
	Monthly Maintenance Visits		\$ 6,120		10x 4 hr visits to cover basic O&M, 1x 5 hr visit for basic O&M and replace filters and 1x 6 hr visit for basic O&M, replace UV lamp and replace filters @ \$120/hr for a plumber (assuming alarms from the treatment system are only displayed at the site)
	Total	\$ -	\$ 6,435	\$ -	
Contingency (30%)		\$ 28,368	\$ 2,198	\$ 1,800	
Total (rounded)		\$ 123,000	\$ 10,000	\$ 8,000	



# Appendix K Community Prioritisation Workflow

## Appendix K – Community Prioritisation Workflow

This workflow is for preparing bubble graphs and maps to prioritise communities without a Council water supply

1. Download data from LINZ
  - a. Meshblocks with census population **(A)**
    - i. <https://datafinder.stats.govt.nz/layer/104578-2018-census-electoral-population-meshblock-2020/>
  - b. Deprivation Index **(B)**
    - i. <https://www.arcgis.com/home/item.html?id=a357b7fb650d40fc9ffaaf48ef58275a>
  - c. Private Water Suppliers **(C)**
    - i. [https://nz-maps.wsp.com/server/rest/services/PWS\\_Classification8\\_4\\_MIL1/MapServer](https://nz-maps.wsp.com/server/rest/services/PWS_Classification8_4_MIL1/MapServer)
2. Apply definition query to **(C)** to remove “Excluded” and “Council Supplied” categories
3. Calculate population density of **(A)** by dividing “General\_EI” by “Land\_Area” to get pop/km<sup>2</sup>
4. Set population density cut offs to focus on areas of high enough population density
  - a. Napier/Hastings: pop density >30
  - b. CHB/Wairoa: pop density >10
5. Visually look for areas of high density on the map to help define communities. Using a Lasso Selection, select all PWS area **(C)** that are within communities to get a broad area that defines a community based on PWS areas
6. From the selection in Step 5, select all PWS areas **(C)** that intersect areas of high density **(A)** using Select by Location (selection from a subset of current selection)
7. QC the selection in Step 6 by removing any PWS areas that only slightly overlap High Density areas
  - a. This is because there may be drawing errors/discrepancies between Meshblocks in **(A)** and land parcels in **(C)**
8. Export as communities (x35) **(D)**
9. Add a field to **(D)** called “CommunityName”
10. Populate “CommunityName” with the name of the community
11. Select all meshblocks **(A)** that intersect each of the 35 communities **(D)**
12. Check MBs in each community for overlap or random ones on outskirts
13. Export these meshblocks **(E)**
14. Clip these meshblocks **(E)** to the PWS layer **(C)** to get areas MBs within PWS areas **(F)**

15. Explode Clipped MBs **(F)** to separate out individual PWS areas (rather than 1 big multipart feature)
16. Tidy up these clipped areas, in case of any artifacts in Step 14
17. Add a new field called "New pop density"
18. Use "Calculate Geometry" for **(F)** to recalculate the "Area\_SQ\_KM" as area in km<sup>2</sup>
19. Calculate "New pop density" as "population density" (Step 3) x "Area\_SQ\_KM" (Step 18) to get an extrapolated population based on the new clipped areas
20. Clip Deprivation Index **(B)** to MB areas within PWS **(F)** to create **(G)**
21. Spatial Join **(G)** to **(F)**
22. Do another cleanup for areas <100m<sup>2</sup> which are slivers or artifacts from the clip in Step 20
23. Export this output to Excel
24. In Excel, look for MB areas where there's multiple Deprivation Indices based on Target\_FID from Step 21
25. Average out the Deprivation Indices (Score and Index) for these areas
26. Remove repeated areas to ensure New pop density is not doubled up

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