Appendix G Current State - 2019

Hawke's Bay Three Waters Service Delivery

Current State Assessment

April 2019

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1 Introduction

1.1 National context

The New Zealand Government is currently reviewing how three waters services are delivered across New Zealand. In a Cabinet paper released on 20 November 2018, the Government indicated that alongside regulatory changes there may be major structural reform of the water sector. The Cabinet paper described a system facing significant issues where *"the scale of the challenge indicates that the status quo is not sustainable in the long term"*. Among the key issues identified were weak regulation, capability challenges (particularly for smaller councils), funding and financing issues for upgrading infrastructure, where the Government stated *"for many smaller councils, there is no clear way forward given the scale of the challenges".*

The Government has identified the following as the major outcomes it seeks for the reform of the three waters system:

- *Existing three waters assets and services must remain in public ownership, and the system will incorporate safeguards to protect public ownership of this essential infrastructure, both now and in the future*
- *A sustainable three waters system that operates in the long-term interests of consumers, communities, tangata whenua, and New Zealand generally*
- *Drinking water that is safe, acceptable and reliable*
- *Environmental performance of wastewater and stormwater realise the aspirations of communities in which they are situated, including tangata whenua and New Zealand generally*
- *Three waters services are delivered in a way that is efficient, effective, resilient and accountable, with transparent information about performance, and prices consumers can afford*
- *Regulatory stewardship of the three waters system is fit for purpose, and provides assurance that these outcomes are being achieved and safeguarded.*

The Cabinet paper identified three high level options for reform.

1. Regulatory reforms only, with voluntary, sector led reforms to service delivery arrangements.
2. A three waters fund to support voluntary service delivery improvements.
3. An aggregated system of dedicated, publicly owned, drinking water and wastewater providers
   - On a regional basis – 12 providers
   - On a multi-regional basis, with approximately three to five providers.

Through the Government's consultation process around the Cabinet paper and three waters review generally, it has encouraged stakeholders to put forward their best suggestions as to what that reform may look like. The three options for reform are now expected to be considered progressively with the first announcements relating to the regulatory reform package expected in June 2019.

This review does not assume any outcomes of the Government's reform program. However, as announcements are made providing certainty over outcomes, they will be taken into consideration and adjustments to the project made as required. We also recognise the political environment and growing expectation within the sector that significant regulatory reform will be made.

1.2 Regional context

The five councils within the Hawke's Bay Region, including Napier City Council, Hastings District Council, Central Hawke's Bay District Council, Wairoa District Council and Hawke's Bay Regional Council ("the Councils") have collectively commenced this review of the three waters service delivery.

The Hawke's Bay has been a focal point for the three waters discussion due to the 2016 Havelock North water contamination event. Following this, the Councils have collectively worked together to respond to recommendations arising from the inquiry into the Havelock North water contamination event. The region is now one of the few who have joined together to engage with the government on the issues identified by the November 2018 Cabinet paper.

The primary objective of this review is to complete an assessment and recommendations of the current and potential delivery models for three waters in the Hawke's Bay region. It is focussed on the three waters service provided by the Councils, but in doing so needs to acknowledge the broader issues and emerging community concerns relating to water and the management of water within the Hawke's Bay and more generally across the country. The review is concerned with the three waters services – drinking water, wastewater and stormwater. Issues relating to the wider management of rivers, lakes and harbours for example is not part of this study except to the extent that the three waters services impact on rivers, lakes and harbours.

While parts of the Rangitīkei and Taupō District Councils are within the Hawke's Bay Regional Council area, those areas are not within the scope of this study.

This study is intended to provide the Councils with information to engage effectively with central government on the three waters reforms. Ultimately a recommendation will be provided to the Councils about the best way forward. It will then be for the Councils and their communities to decide the next steps.

1.2.1 Current state assessment

The purpose of this initial phase of the project, the current state assessment, is to complete a stocktake of the current three waters service delivery in the Hawke's Bay in order to inform all later parts of the study. This includes gathering data and information relating to:

- the infrastructure and physical assets that provide the services
- the funding and financing of the service
- the people involved in providing the service (both employed by the Councils and through contracts)
- the performance of the three waters system and compliance with current regulatory standards.

This report does not analyse the data to compare relative performance across the region nor draw conclusions on future options from the information contained within it. The report is presented solely to provide an assessment of the current situation such that it can be used to inform later analysis of the options. It does however quite clearly identify some common themes, the similarity of challenges, but quite stark differences between the respective councils' situations. Taken together, these create opportunities at a regional level.

2 Methodology

2.1 Project

An overview of the methodology for the entire project is set out below to give context to this current state assessment. The project follows a structured, staged process moving from current state assessment, definition of key principles into analysis of a long and short list of options over time. The approach and then analysis will be consistent with the Better Business Case approach and the requirements of Section 17A of the Local Government Act.

Throughout the process there was engagement with the Councils' project team as well as the Councils themselves and identified stakeholders. It is important to note that the review is intended to provide analysis of the costs and benefits of different service delivery models for three waters in Hawke's Bay. The report should therefore be seen as only the first step in a process and not an outcome in and of itself.

The report will need to be considered individually and collectively by the Councils, including, we anticipate, identification of the future work required to identify a preferred option and the approach to those phases of work, then engagement with the respective communities and the region as a whole before any determination by a council or the Councils is made.

Figure 1 Summary of project methodology

2.2 Current state assessment

The purpose of this phase is to achieve clarity around the services, assets and resources of three waters in the region. It is not possible to undertake meaningful analysis of the options or consideration of the benefits of changing approach without first having a consistent, common understanding of the status quo across the region.

The process has included a number of data requests, a questionnaire sent to the Councils for completion, data validation meetings, web-conferences and telephone discussions. We would like to acknowledge and thank the Councils for their openness and the willingness of the project team and wider council staff to respond to our numerous requests.

The results of the current state assessment are presented in separate sections for each service (i.e. water supply, wastewater and stormwater) with numeric and qualitative information collated at council level that shows the contribution each council makes to the total. A regional view has also been provided where that is relevant.

The current state assessment has been presented using a range of suitable benchmarks and measures covering the resources (financial, asset and human resources) and the services themselves. Our approach has been to present a summary of the information in charts, tables and figures with explanatory notes throughout.

2.2.1 Data limitations and clarifications

Financial data

Financial information is based on three years of information provided by each council, and LTP projections for the years beyond that. Figures used in this report may therefore differ from the published LTP.

DIA performance measures

DIA requires all councils in New Zealand to report against mandatory non-financial performance measures. These measures have been used in this report. However, we note that while the measures themselves are mandatory, each council may set its own targets.

This means that although, for example, all councils may meet a particular measure, their performance can be quite different. This also means that the most useful comparison requires analysis of both the target and the actual performance.

Asset condition

While each council reports condition data based on the same scale of 1 – 5, we acknowledge that each council has its own approach to determining the actual condition of its assets. A comparison between the respective conditions of the Councils' three waters assets should only therefore be treated as indicative.

3 Hawke's Bay

3.1 General information

The Hawke's Bay region lies on the east coast of the North island of New Zealand and is home to an estimated 165,900[1] people. The main cities are located close to each other - Napier on the coast, and Hastings 17 km inland. Smaller towns are Wairoa, Waipawa and Waipukurau, with other small settlements found throughout the region.

Figure 2 Map of the Hawke's Bay Region

Figure 2 above shows the area covered by the Hawke's Bay Regional Council and within that area there are six territorial authorities (one city council and five district councils). For the purposes of this study the region does not include the area within the boundaries of Rangitīkei or Taupō District Councils.

[1] Sub-national population estimates, June 2018, Stats NZ

3.2 The councils of the region

Based on population and size of council operations, there are two large and two small territorial authorities within the Hawke's Bay region. The *www.localcouncils.govt.nz* website publishes comparative information about the councils. It states that Napier City Council and Hastings District Council are roughly equivalent, each with approximately $100 million operating revenue and over 400 employees. Central Hawke's Bay District Council and Wairoa District Council each have revenue of $25 million and $19 million respectively, and less than 60 employees. This is significant in the context of delivering three waters service and, as noted later in the human resources section, results in employees having to cover a broad range of duties and act as generalists, not specialists. The population and rating base in the smaller councils also limits the funds available for capital works. The capital works budget (across all council activities) in Hastings District Council is over ten times larger than the capital works budget for Wairoa District Council. Napier is unique in the context of the Hawke's Bay as a City Council, with a significantly smaller land area and one population centre.

Table 1 Territorial Authority key statistics

	Central Hawke's Bay	Hastings	Napier	Wairoa
Land area	3,332 km^2	5,226km^2	105km^2	4,077km^2
Population[2]	14,150	80,600	62,800	8,230
Council operating[3] revenue ($000)	24,989	104,635	99,160	18,974
Council operating expenditure ($000)	29,649	113,855	80,915	21,209
Council capital expenditure ($000)	12,742	54,069	38,342	5,086
Council rates revenue ($000)	18,520	70,469	51,029	11,736
Median personal income	$26,800	$26,500	$26,000	$22,000
Council employees	51	403	428	56

3.3 Three waters service

The 'three waters' refers to the provision of drinking water, wastewater and stormwater services. These services are largely provided by the Central Hawke's Bay District, Hastings District, Napier City and Wairoa District Councils. Hawke's Bay Regional Council has no direct role in the delivery of three waters services except in a number of overlaps between land drainage and urban stormwater.

The three waters services are critical to the communities they serve. They link to almost all the economic, social, cultural and environmental outcomes of the individual councils.

While the Councils' 30-year infrastructure strategies are structured differently there are some common themes that emerge in relation to the three waters. Those are shown in Figure 3 below, with a summary set out in *Appendix A.*

2 Ibid

3 *www.localcouncils.govt.nz* – key financial statistics (2017)

Figure 3 Key themes for three waters (from 30-year infrastructure strategies)

Demand and Growth

- requiring extension to existing networks and/or supply challenges

Asset Condition and Performance

- renewal of infrastructure (age, condition)

Resilience

- impact of floods, slips, coastal inundation, inflitration)

Risk and compliance

- safety and security of water supply, ability of stormwater and wastewater systems to meet standards

Table 2 Region wide summary of three water assets

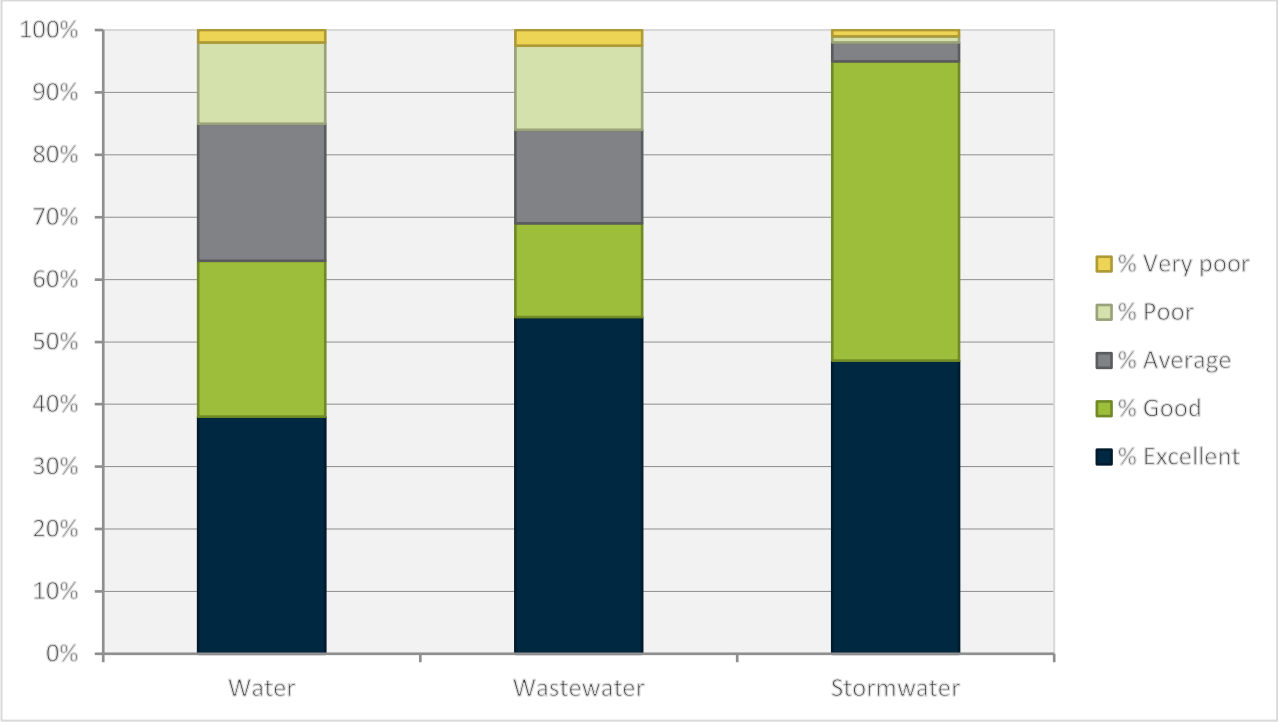
	Water	Wastewater	Stormwater
Length of pipe (km)	1,441	1,082	760
No of reservoirs	101	n/a	n/a
No of pump stations	35	n/a	24
No of wastewater pump stations	n/a	115	n/a
Average age of pipes	36	47	46
No of treatment plants[4]	33	13	n/a

Table 3 Region wide summary of three water customers

	Water	Wastewater	Stormwater
No. of serviced properties	55,664	52,479	52,068
Population served	129,408	127,917	126,835
Communities served	26	24	n/a
Serviced Area (ha)	1,322,900	948,260	1,271,000

[4] The size of treatment plants varies from small, low complexity to large, complex plants. Differences would be recognised in the valuations of the treatment plants.

Figure 4 Region wide summary of three water asset condition (by length)



3.4 Funding and financing

Financial information for the delivery of three waters was provided by all Councils and supplemented with data from long term plans and annual reports where necessary. The total annual operating expenditure and rates revenue are outlined in the table below, along with the percentage of three waters to total council operating expenditure and rates revenue. This data is sourced from 2018 annual reports.

Table 4 Three waters key financial information

	Central Hawke's Bay	Hastings	Napier	Wairoa
Rates revenue	$6,209,000	$15,864,000	$14,461,000	$2,790,000
% of Council total	32%	22%	27%	23%
Operating costs including depreciation	$7,102,000	$31,942,000	$20,467,000	$4,914,000
% of Council total	22%	28%	20%	18%
Average three waters residential rate[5]	$1,798.02	$773.30	$752.50	$1,265.75

[5] Based on sum of average weighted residential rate from funding impact statements (2018 LTPs).

There is a clear difference, not just in absolute terms but in per ratepayer costs, between the large councils (Napier and Hastings) and the smaller rural councils (Wairoa and Central Hawke's Bay).

The way in which these costs are recovered also differs across the Councils, as outlined in the table below.

Table 5 Council approaches to three waters charges

	Water	Wastewater	Stormwater
Central Hawke's Bay	District wide targeted rate Metered water for extraordinary users	District wide targeted rate	Targeted, undifferentiated rate on catchment area
Hastings	District wide targeted rate. Metered for high users	Targeted rate differentiated for properties in Waipatiki Wastewater treatment 20% funded by UAGC	General rates
Napier	District wide targeted water rate Targeted fire protection rate differentiated based on property use Metered for high users	Targeted rate differentiated for properties in Bay View	General rates
Wairoa	Targeted rate differentiated by supply area Some metered properties	Targeted rate differentiated by supply area	Targeted rate differentiated by urban area

These differences also flow into the Councils' approaches to funding asset renewal and depreciation. The table below outlines the approach to renewals funding for each council.

Table 6 Council approaches to funding renewal and depreciation

	Water	Wastewater	Stormwater
Central Hawke's Bay	Rate fund renewals Borrow for large capital expenditure	Rate fund renewals Borrow for large capital expenditure	Rate fund renewals Borrow for large capital expenditure
Hastings	Fully fund depreciation	Don't fully fund depreciation, renewals funded from a mix of debt and rates	Don't fully fund depreciation, rates fund $750,000 for renewals, if not required used to repay debt
Napier	Fully fund planned renewals rather than depreciation	Fully fund planned renewals rather than depreciation	Fully fund planned renewals rather than depreciation
Wairoa	Fund depreciation unless asset was debt funded (then fund debt servicing cost)	Fund depreciation unless asset was debt funded (then fund debt servicing cost)	Fund depreciation unless asset was debt funded (then fund debt servicing cost)

The differences in approach to funding renewals and other capital expenditure impact the levels of debt carried by each council. The charts and figures below show the Councils' total debt, debt to asset, and debt to revenue ratios respectively. The chart data is based on projected debt levels in 2019/20, and in addition to being reflective of differences in funding and financing policies, also demonstrates differences in level of investment.

Figure 5 Total three waters projected debt across the Hawke's Bay (2019/20 budgets) - $000s

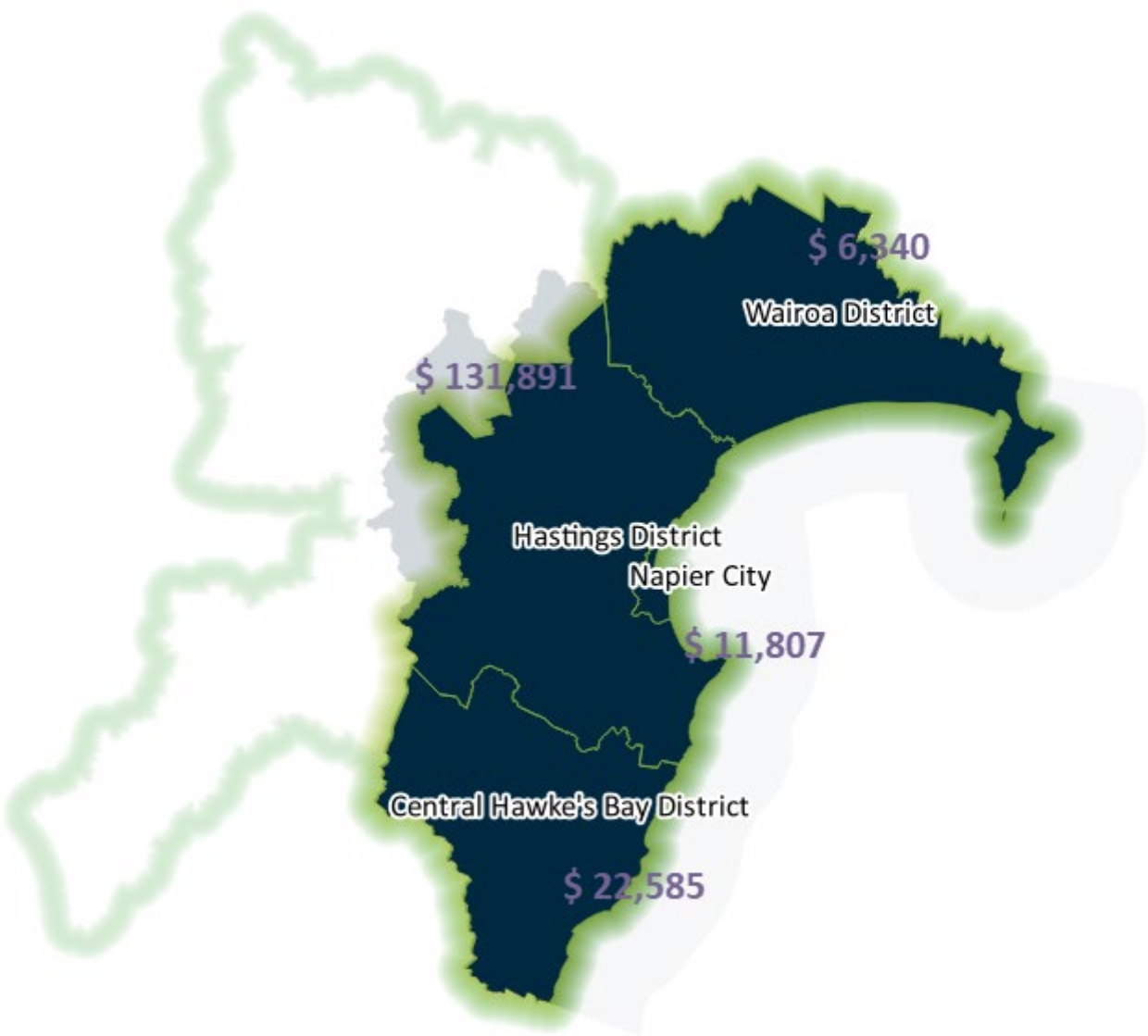


Figure 6 Three waters debt to asset ratio

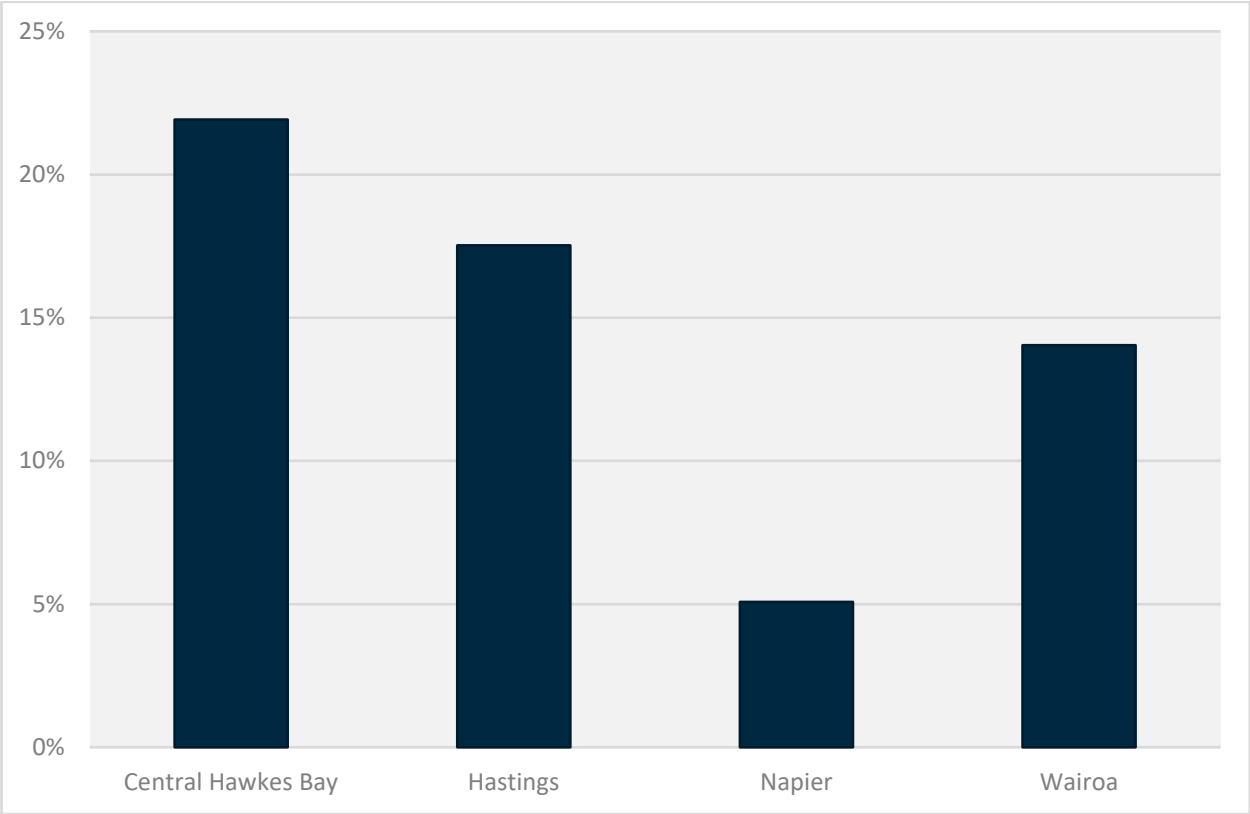
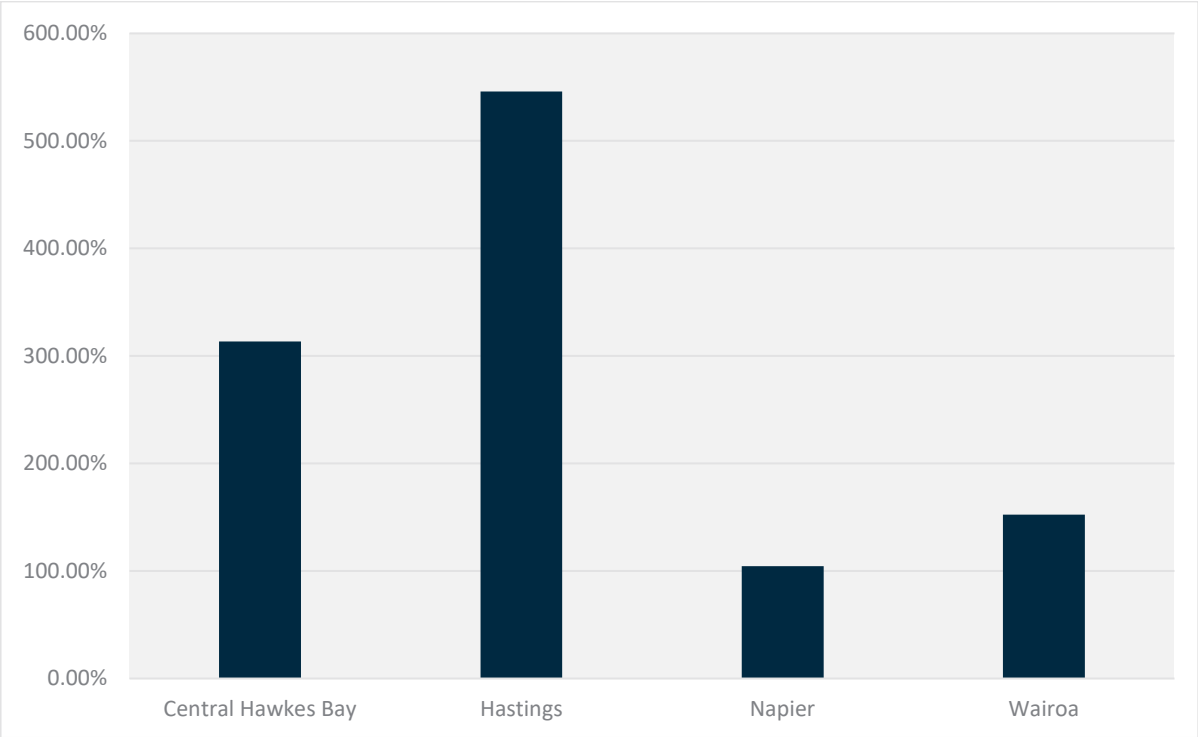


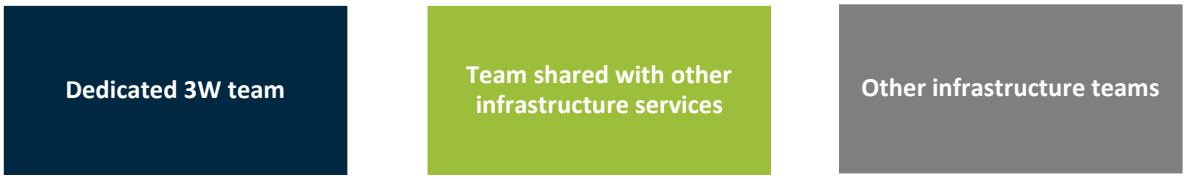
Figure 7 Three waters debt to revenue ratio



The charts demonstrate a wide variation in the Councils' approach to managing debt.

3.5 Human resources involved in three waters services

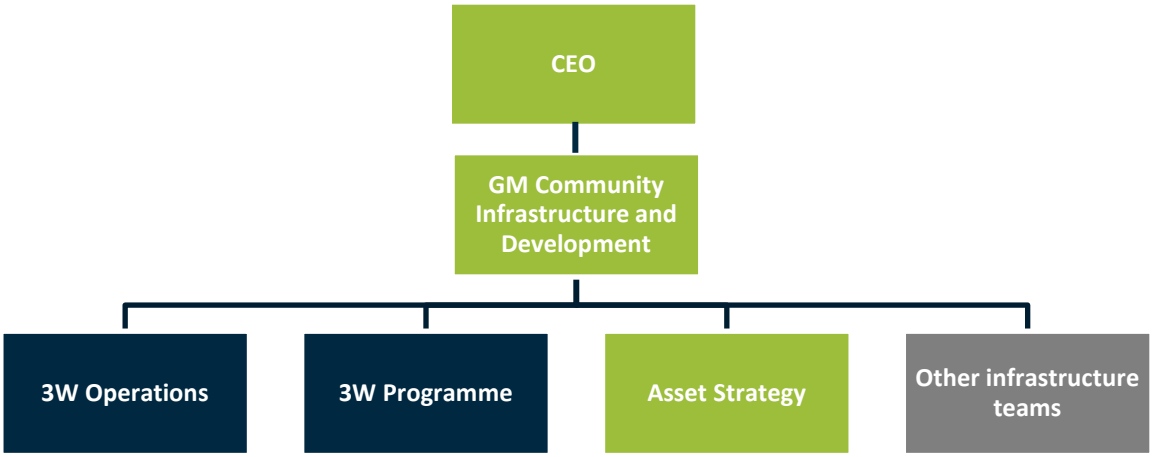
Human resources information for the delivery of three waters services has been provided by Central Hawke's Bay, Hastings, Napier and Wairoa. A summary of the Council staff involved for each territorial authority is shown below. The organisational structures are shown at a high level to show the relationship between the three waters' team(s) and the other infrastructure services. Support functions such as finance, human resources, planning, information technology and customer services are not shown. A key to the charts is shown below.



3.5.1 Central Hawke's Bay District Council

In Central Hawke's Bay, all three waters services are delivered through the Community Infrastructure and Development department, with dedicated three waters operations and programme teams, as well as a shared asset strategy team with other council assets. The total team comprises six dedicated water specialists. There is only one employee who is shared across water and other assets, as well as the General Manager of Community Infrastructure and Development.

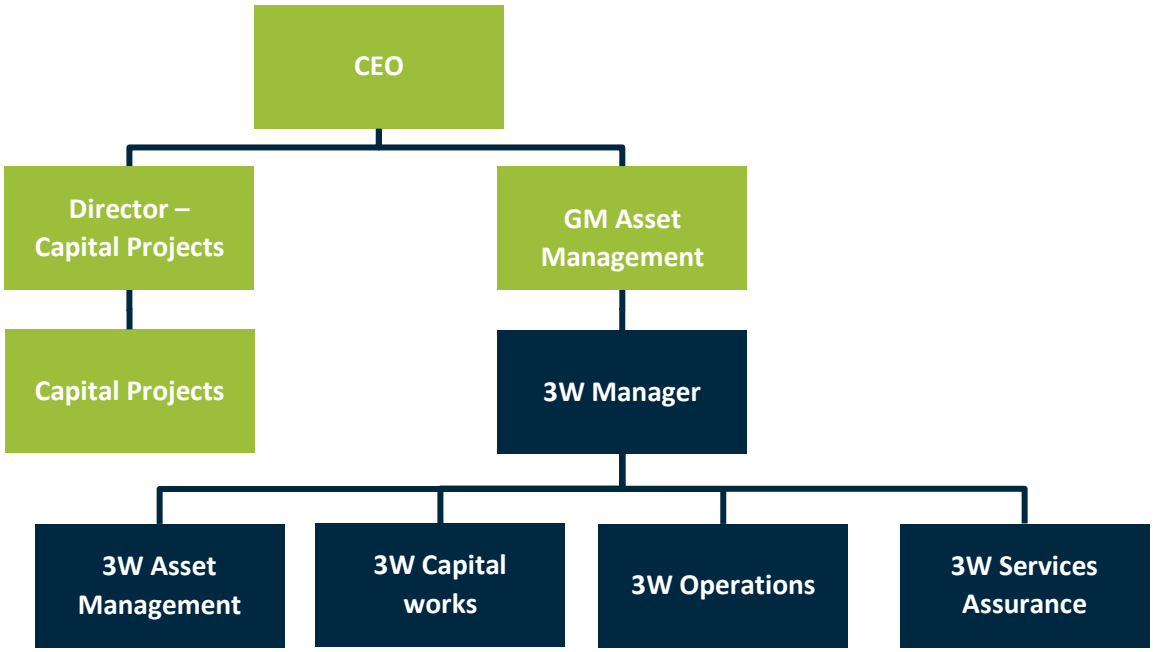
Figure 8 Central Hawke's Bay District Council three waters team structure



3.5.2 Hastings District Council

Hastings's structure is the most clearly delineated by asset class, with one three waters team covering asset management, capital works, operations and assurance. There is not the same degree of overlap with other infrastructure as in the other councils.

Figure 9 Hastings District Council three waters team structure



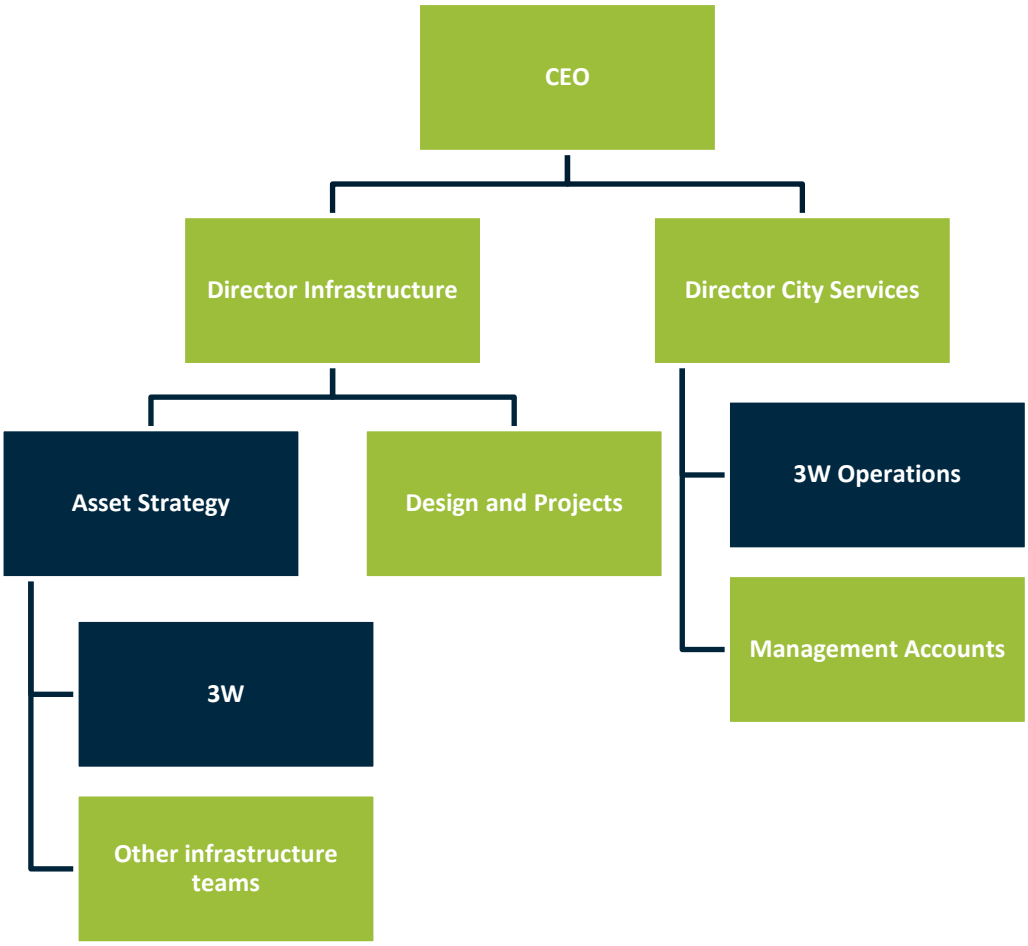
3.5.3 Napier City Council

Napier has five teams delivering three waters services, reporting through to the Director of City Services and the Director of Infrastructure. These are

- Asset Strategy – includes a dedicated three waters team and an asset management team and development and standards team shared with transportation and parks, reserves and sportsgrounds
- Design and Projects – providing internal design and project management services across all of Council's assets
- Environmental Solutions – providing environmental compliance services
- City Services Management Accounts – providing accounting, procurement and administration support to the City Services team (which is wider than three waters)
- City Operations – providing operations of the water, wastewater and drainage networks and treatment plants, as well as transfer station operations.

The Napier service delivery model has a high degree of in-house services with a higher proportion of employees being functional specialists (e.g. asset management, capital projects) rather than asset specialists. The size of Napier's network allows for more specialised roles within the Council.

Figure 10 Napier City Council three waters team structure



3.5.4 Wairoa District Council

Wairoa's water services are provided through the Community Assets and Services team. Due to the small size of Council, there are often only one or two positions for each function, with these individuals responsible for all asset classes. Wairoa has two dedicated three waters positions, with another five individuals providing support on a part-time basis.

Figure 11 Wairoa District Council three waters team structure

3.5.5 Hawke's Bay Regional Council

Hawke's Bay Regional Council has no direct role in the delivery of three waters services except in a number of overlaps between land drainage and urban stormwater. A small overlap of services occurs in the provision of stormwater services to urban customers through the use of drainage networks owned, operated and maintained by Hawke's Bay Regional Council. There are also very small areas of reverse overlap where a district council operates natural streams or manmade drains as part of a greater stormwater service to their customers.

The Regional Council's in-house Works Group undertakes the significant share of scheme maintenance and minor capital works for the land drainage schemes. The Works Group also undertakes work on a commercial basis for Napier, Hastings and Wairoa.

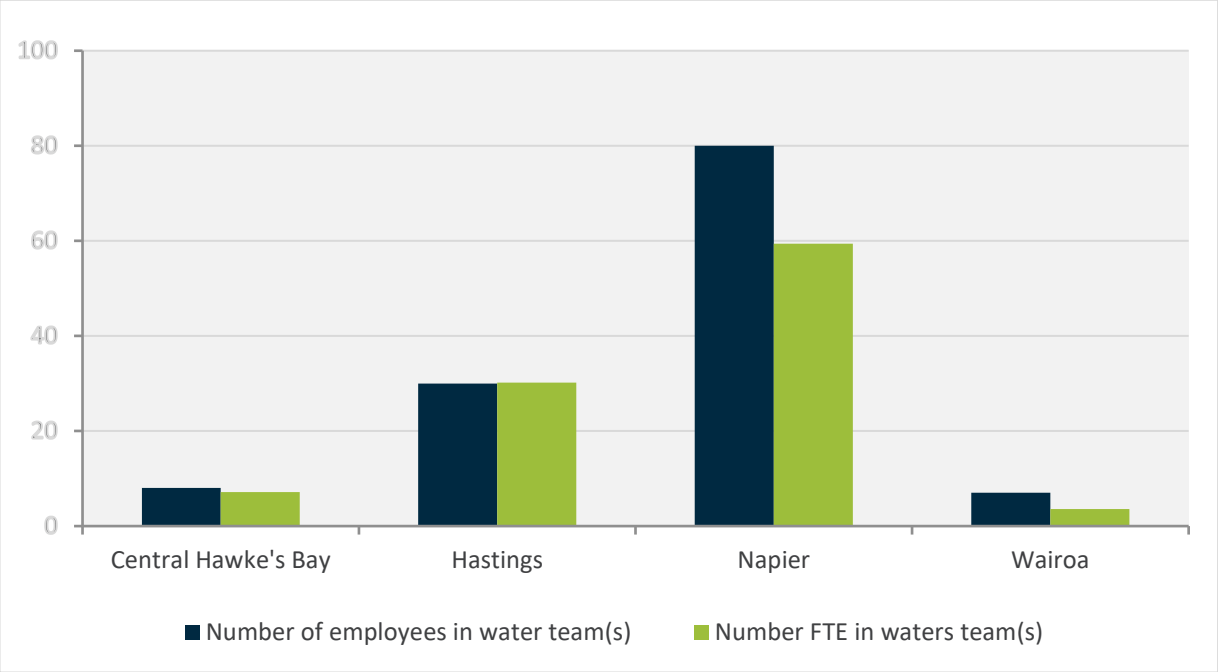
3.5.6 Relative scale of the three waters service

The number of employees directly involved in delivering water services varies, from less than ten in Central Hawke's Bay and Wairoa, through to 80 at Napier. This represents both the size of each council's three waters network, and the service delivery model utilised at each council. The number of full-time equivalent staff (FTEs) involved in the three waters delivery is generally lower than the number of employees as some employees work across a number of different council assets, not only three waters.

These figures exclude management and corporate support roles that are shared with other council areas. All three waters teams make use of centralised finance, human resources, information technology and customer services teams. The only exception to this is the dedicated management accounting team supporting the City Services division at Napier. Customer services is an important support function for three waters provision, with 24-hour contact centres necessary to allow rapid response to high priority incidents.

Note, the Napier figures are much higher due to the in-house operations team.

Figure 12 Number of employees and full-time-equivalent employees in each council's water team(s)



3.5.7 Service delivery models

The different service delivery models are illustrated in the tables below.

Table 7 Internal delivery of three waters services

	Central Hawke's Bay	Hastings	Napier	Wairoa
Asset management	Across all assets	Dedicated Three Waters	Across all assets	Across all assets
Capital projects	Dedicated Three Waters	Dedicated Three Waters	Across all assets	Across all assets
Operations	Dedicated Three Waters	Dedicated Three Waters	Dedicated Three Waters	Dedicated Three Waters

Table 8 Extent of in-house delivery and outsourcing for three waters

	Central Hawke's Bay	Hastings	Napier	Wairoa
Reticulation O&M	Outsourced	Outsourced	In-house with specialist contract support	Outsourced
Treatment O&M	Outsourced	In-house with contract support	In-house with specialist contract support	Outsourced
Professional Services	Outsourced on an as required basis	Design/project management largely outsourced	In-house with specialists contracted as required	Outsourced on an as required basis

We note the following expiry dates for the term contracts:

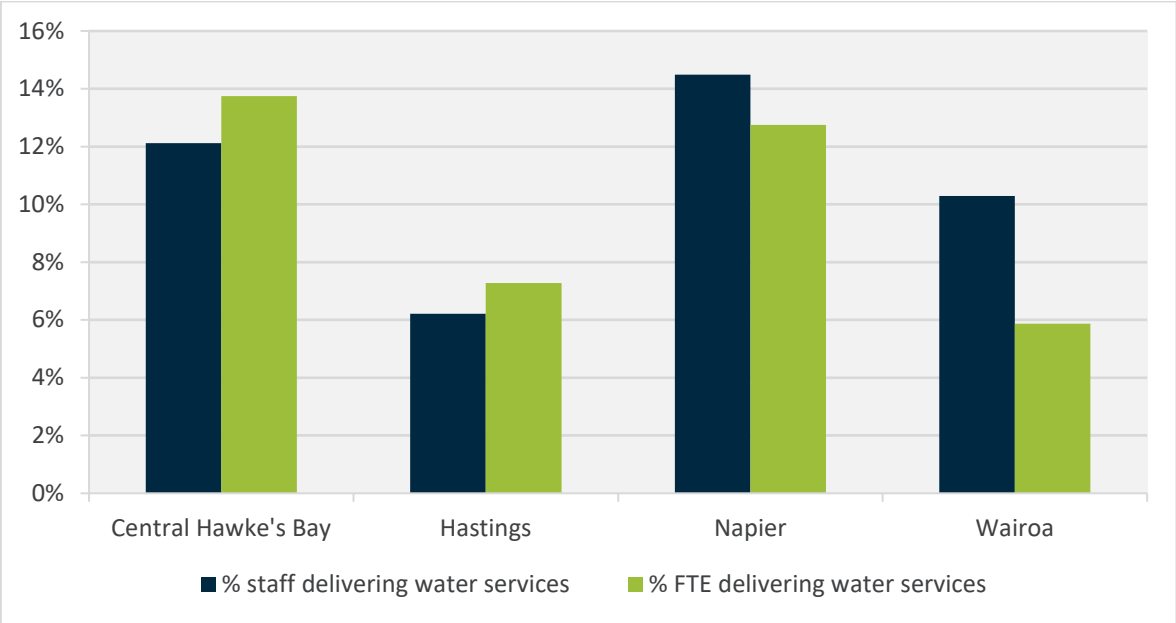
- Hastings Operations and Maintenance and Professionals Services contracts: June 2020
- Central Hawkes Bay Operations and Treatment contract: Dec 2023
- Wairoa three Waters Operations and Maintenance contract: (2 + 2 +2)

3.5.8 Scale relative to council size

The proportion of council staff directly involved in the delivery of three waters varies[6], from 5% in HDC to 14% in NCC. This is driven by the different delivery models including

- the proportion of in-house delivery versus outsourcing, and
- the use of either dedicated functional teams (e.g. asset management, capital works) versus teams dedicated to the various asset types (e.g. water, transport).

Figure 13 Proportion of employees and proportion of FTEs involved in delivering three waters services

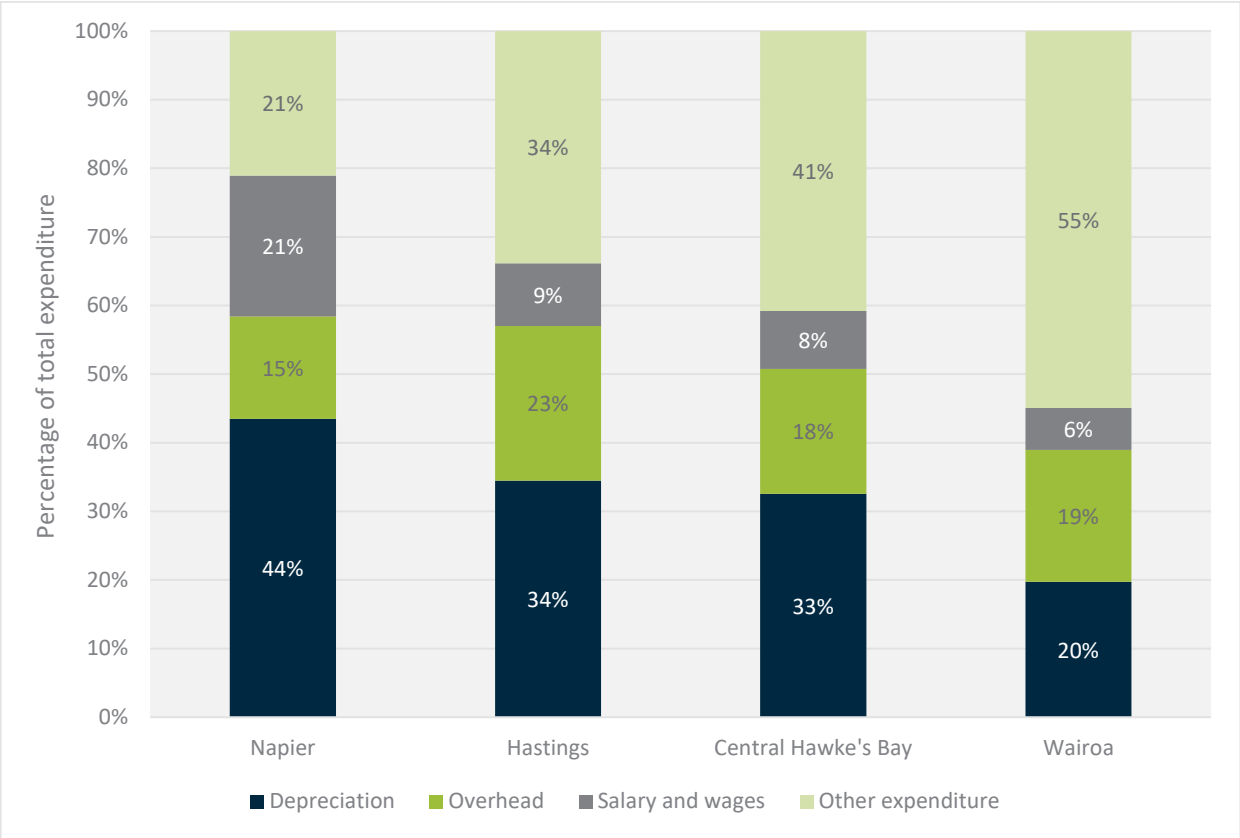


The proportion of the Councils' full-time equivalent staff delivering three waters services varies slightly from the proportion of employees. In Napier and Wairoa, the proportion is lower reflecting the higher number of employees who are engaged in three waters delivery as well as other activities (e.g. transport). In Central Hawke's Bay and Hastings, the proportion is higher due to the presence of a dedicated three waters team. To a lesser extent, these figures also reflect the different proportion of part-time employees at each council.

This can be further seen in the proportion of three waters expenditure on salaries and wages when compared to other operational expenditure. This varies from 6% in Wairoa to 21% in Napier. Equally it shows through the significant difference between other expenditure which varies from 55% in Wairoa to 21% at Napier. Other expenditure includes contractors, consultants, insurance, finance costs, potentially some maintenance or small repair costs, electricity, monitoring, etc. All the Councils will have a different mix of costs in that category depending on how they allocate and code expenses, and the extent to which they contract out services. Figure 14 provides a demonstration of the different approaches that the Councils use to deliver the services.

[6] Note all figures exclude corporate services and customer services staff supporting three waters delivery.

Figure 14 Breakdown of three waters expenditure



3.5.9 Culture

Different cultures exist within the four territorial authorities. This is partly driven by the different size of the organisation, with 552 employees at Napier versus 66 at Central Hawke's Bay. This impacts the depth of corporate support such as the provision of dedicated water or infrastructure support roles e.g. infrastructure management accountants. In the smaller councils, officers are required to cover a number of different roles and are more likely to be generalists, while there are more specialists within the larger councils. Examples of specialists include a dedicated Contract Manager in Hastings and a Drinking Water Quality Lead and Network Control Systems Engineer in Napier. The different delivery models are important to allow the Councils to effectively and efficiently deliver services to their communities.

There are many other elements to culture including the level of customer focus, the degree to which the council is risk adverse, the willingness to work collaboratively across departments, willingness to embrace new technology and solutions to become more efficient and effective. There will naturally be differences between the Councils and differences in culture may become relevant if changes are made to the current service delivery model.

The culture also reflects the different urban or rural nature of the region as well as the key community priorities. The extent of in-house delivery versus outsourcing will also impact the culture of the team. A number of the Councils have had restructures in recent years and the HDC team has recently been through a significant period of change with the Government Inquiry into Havelock North Drinking Water.

Most of the councils have some very long-serving water services employees with tenures exceeding fifteen or twenty years.

This means that there is significant knowledge and expertise that exists within the water services teams. In some cases, however, the expertise and knowledge which has been built over years resides with single individuals in specialist roles.

Workforce risks identified by the Council's include aging workforce demographic, the need to mitigate potential loss of expertise through resignation/retirement, and the current tight labour market for systems, operations and water quality engineers and drinking water specialists. We note that structural engineers, construction project managers (roading and infrastructure) are on the NZ Immigration Skills Shortage List.

3.5.10 Employment terms and conditions

A mixture of individual employment agreements and collective agreements are used by the Councils, with varying terms and conditions. Specifics have not been provided for confidentiality reasons, however differences in terms and conditions include

- annual, sick and long service leave allowances
- provision of vehicles, terms of use and corresponding salary sacrifice
- standard hours of work
- overtime and on-call provisions
- superannuation provisions
- redundancy provisions
  - notice period
  - redundancy compensation
  - provisions regarding transfer of business to new entity including distance to location of new position.

Provisions vary by employee as well as between the different councils, with numerous versions of employment agreements depending on the tenure of employees.

3.6 Governance of three waters

3.6.1 Regional

Following the Havelock North water contamination event, a joint working group comprising members of Hastings District Council staff, Hawke's Bay Regional Council staff and Hawkes Bay District Health Board staff was established to implement the initial recommendations. Napier City Council staff subsequently joined the working group.

Subsequently a joint committee, the Hawke's Bay Drinking Water Governance Joint Committee was formerly established under the Local Government Act to provide governance oversight and direction in a range of drinking water related matters across the region. The joint committee has members from

- Hastings District Council
- Hawke's Bay Regional Council
- Hawkes Bay District Health Board
- Central Hawke's Bay District Council
- Napier City Council
- Wairoa District Council.

The Committee is Chaired by an independent member.

3.6.2 Councils

The current arrangement within each council is that each of the four Territorial Authorities have standing committees of council that have differing responsibilities and oversight of three waters.

- Wairoa District Council – Infrastructure Committee where the committee's role is one of oversight, reviewing plans, policies and projects and making recommendations to Council on matters that include the three waters.
- Hastings District Council – Has both a portfolio leader "Our Water" to provide leadership, and a Works and Services Standing Committee with a broad range of delegated authority "to exercise functions, duties and powers" within approved budgets of LTP/AP on matters which include the three waters.
- Napier City Council – Strategy and Infrastructure Committee whose role is to provide leadership, develop policy, govern and make recommendations to Council on matters which include the three waters.
- Central Hawkes Bay District Council – Finance and Planning Committee role is to support Council in preparing key planning documents such as the LTP and AP, assess current and future projects and review policies on matters which include the three waters.

Ultimately however, in each case Council provides the governance of the three waters.

3.6.3 Involvement of Māori in governance of three waters

Each of the Councils has one or more Māori standing or advisory committees.

- Hawkes Bay Regional Council – Hawke's Bay Regional Council Regional Planning Committee[7] and Māori Committee
- Wairoa District Council – Wairoa Māori Standing Committee
- Hastings District Council – Hastings Māori Joint Committee
- Napier City Council – Napier Māori Consultative Committee
- Central Hawkes Bay District Council

While none of the committees have specific three waters responsibilities, their terms of reference or charters typically have broad ranging roles including advising the Council, considering and providing leadership on matters of importance to Māori and tangata whenua. Generally, the role of the committees is to make recommendations to Council but there are some cases where they are delegated decision-making powers e.g. Hastings for the allocation of Marae Development grants (within approved budgets).

[7] The Regional Planning Committee was established under the Hawke's Bay Regional Planning Committee Act 2005 with specific responsibilities relating to the Resource Management Act

4 Water

The table below summaries the major issues and challenges for the Councils relating to the water service.

Table 9 Major water issues (as identified by the Councils)

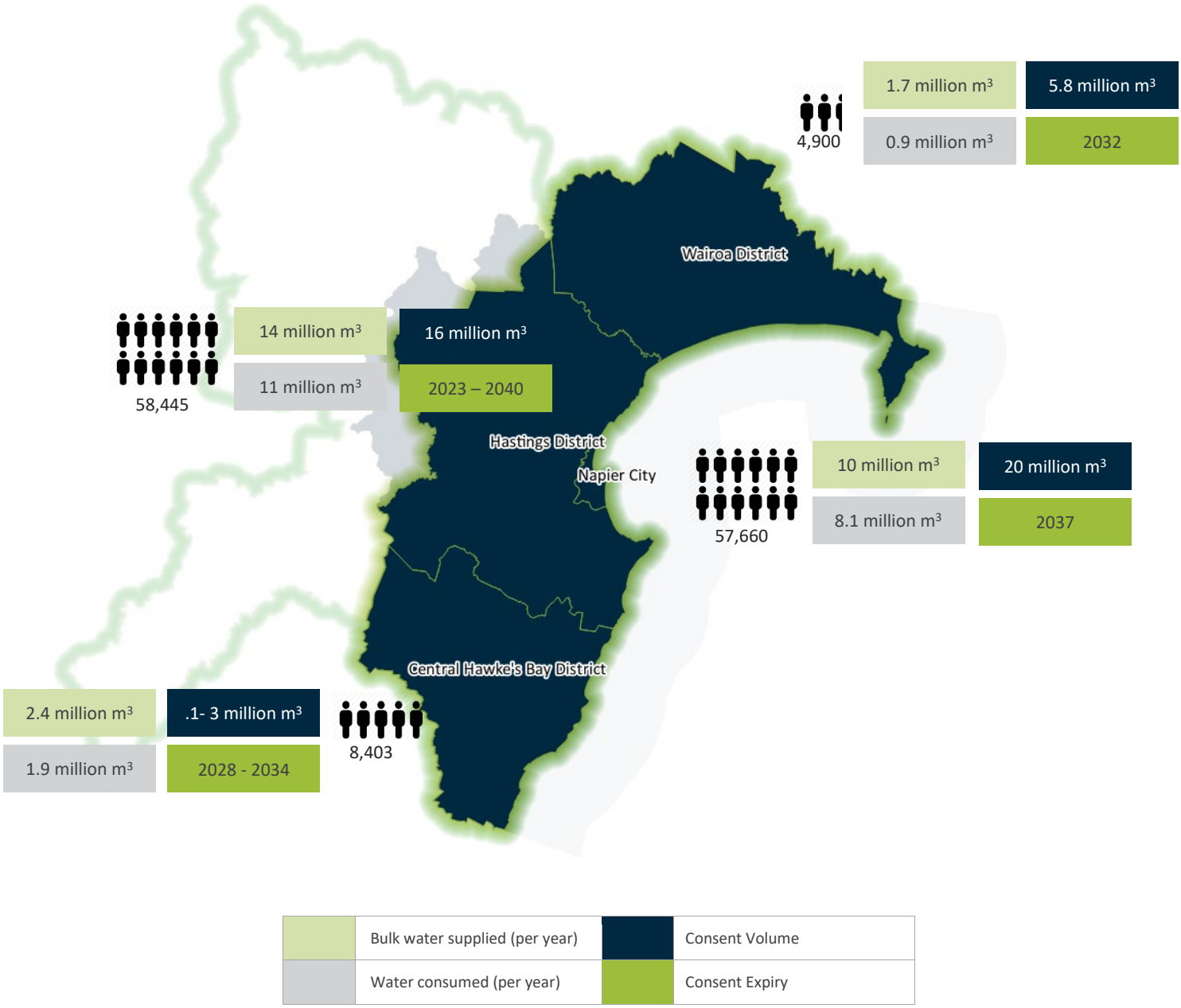
Central Hawke's Bay		Hastings		Napier		Wairoa	
Priorities	**Challenges**	**Priorities**	**Challenges**	**Priorities**	**Challenges**	**Priorities**	**Challenges**
Meeting Drinking Water Standards compliance. Particularly creating and implementing effective and approved Water Safety Plans	Changing environment with meeting the Drinking Water Standards	Development and implementation of the Source Protection Strategy	Resourcing the Water Strategy adequately	Water quality due to clarity, microbiological, chemical contamination.	Accessing sufficient and appropriate information for strategic planning. (models, masterplans, strategies etc.)	Water leak management (Wairoa and Tūai) due to ageing infrastructure	Water leak management (Wairoa and Tūai) due to ageing infrastructure
Creating a second supply for Waipukurau to improve capacity and resilience	Predicting growth and where growth will impact on our networks	Upgrading water treatment facilities and reticulation network	Long term Aquifer health monitoring	Asset knowledge. Lack of asset data accuracy and completeness for all 3-W laterals networks. Above ground inventory is only at high level.	Organisational capacity to deliver capital plan (projects team, engineering scoping. Constrained local capacity to do work (e.g. NCC Depot and external contractors).	Secure, safe water river intake (major bank erosion)	Maintaining secure, safe water river intake (major bank erosion)
Ensuring network capacity to meet growth	Design and construction of new treatment plants for Pōrangahau and Takapau to remove iron and magnesium	Management and development of backflow prevention programme	Changing compliance and regulatory framework	Water demand. Unmetered supply and therefore no disincentive to high consumption		New water supplies (Blue Bay, Mahanga)	Ageing infrastructure difficult to fund due to economy of scale

4.1 Assets

4.1.1 Water supplied and consumed

The figure below demonstrates the populations served, water supplied and consumed by each of the Councils respectively. Also depicted are the relevant consents; all consents are for total water take. The difference between the amount produced and the amount consumed is the unaccounted-for water. In this case, it is largely assumed to be network losses and of a much smaller scale, the unauthorised users of water.

Figure 15 Water supply service key information[8]



[8] Wairoa consumption estimated using results reporting against DIA Performance Measure 2: Percentage of real water loss.

4.1.2 Asset information

The figures below set out information about the number and type of assets involved in the water supply service. The type of pipe material and age of the assets is also set out. This information begins to highlight the differences between the respective councils' networks.

What follows in the next sections is a comparison of the condition of the network and comparison of the failure rates in the network.

Figure 16 Water pipe length

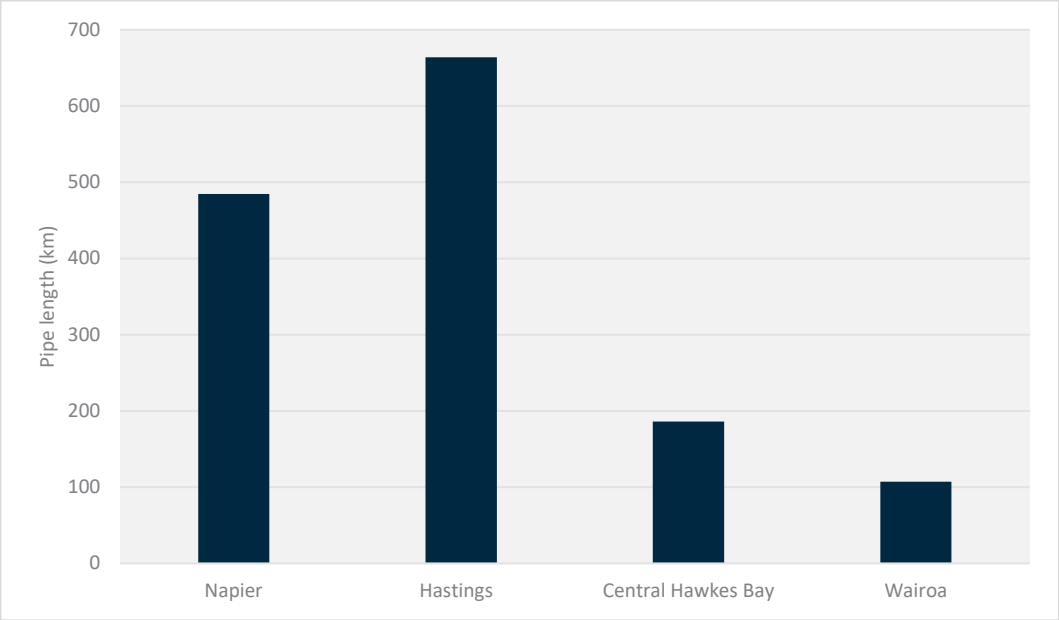
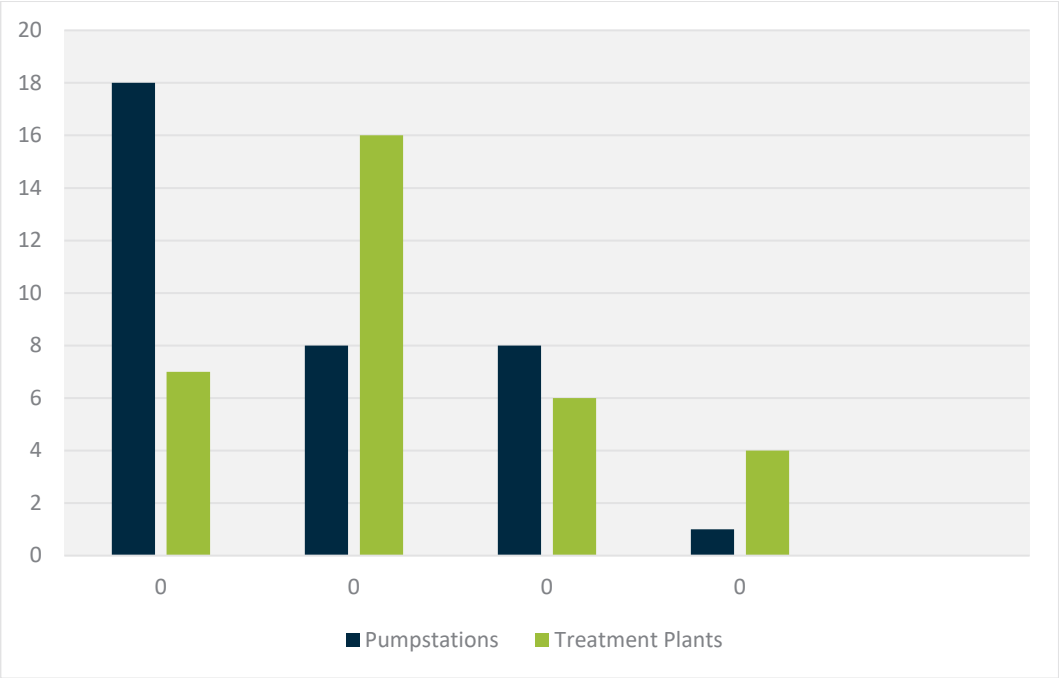


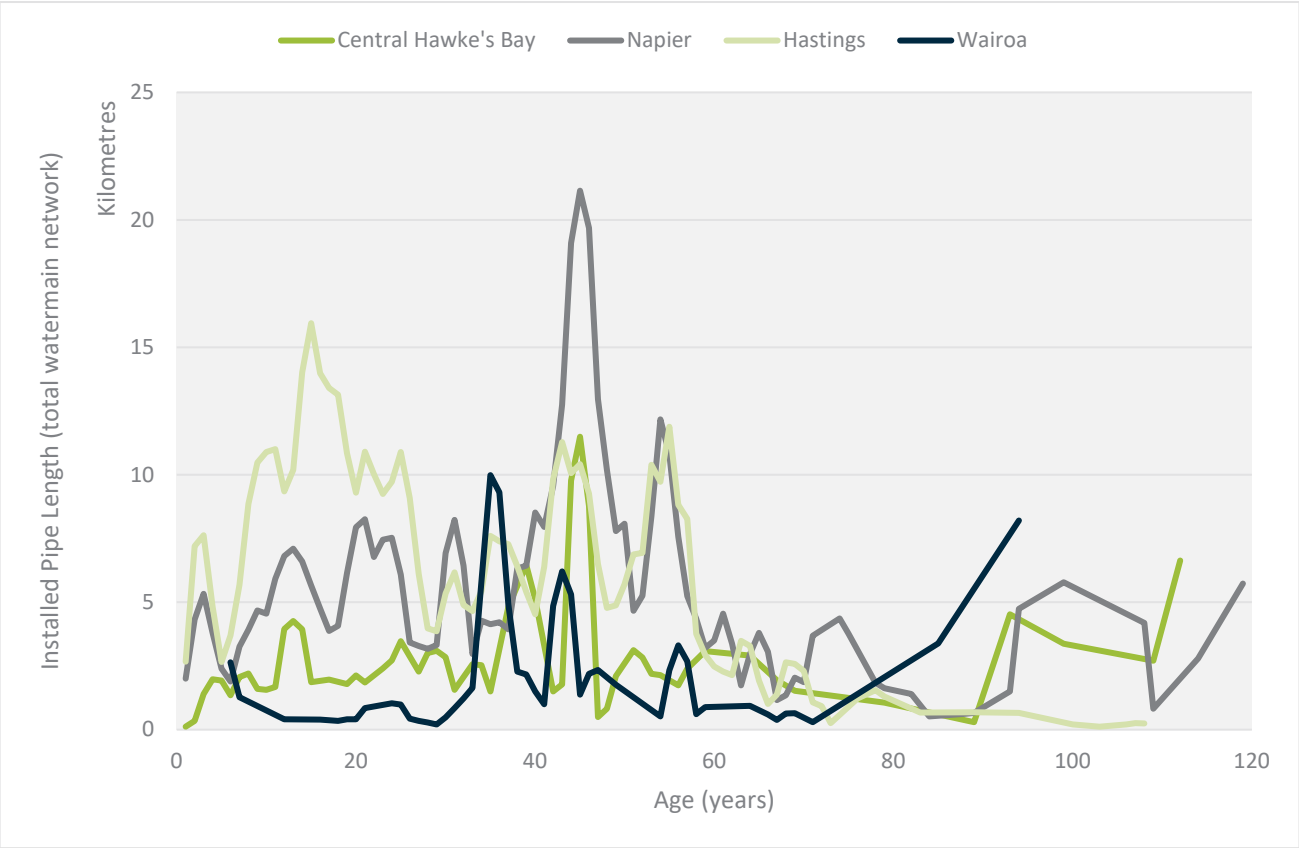
Figure 17 Pump stations and treatment plants



We note that treatment plants can vary in scale from small scale Chlorine dosing units at bore to full scale, complex water treatment plants.

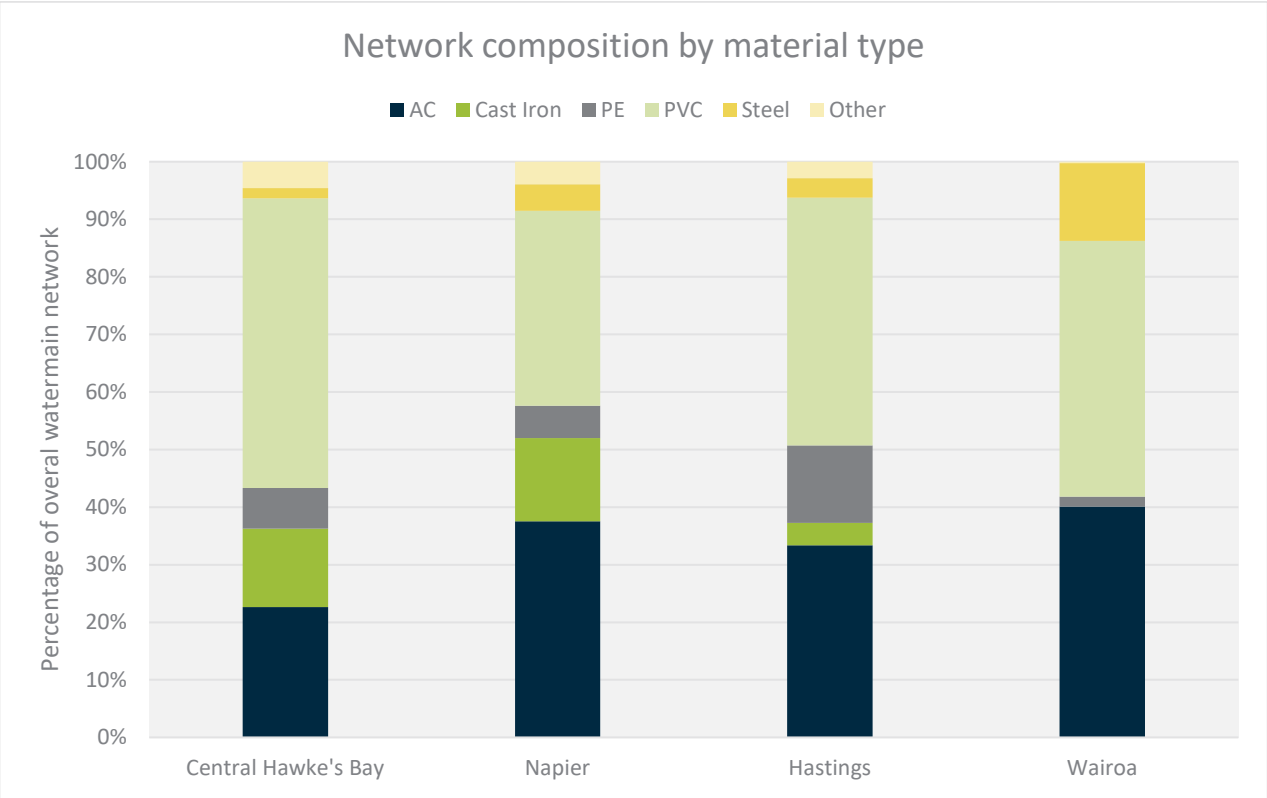
The age of each council's watermains is shown below, with ages of some pipes exceeding 100 years. There is a significant length in the 40 – 45 year age bracket for all four councils due to urban expansion in the 1970s. Wairoa in particular noted the impact of aging infrastructure as one of its key challenges for its water network.

Figure 18 Age profiles of water networks (watermains)



As expected, due to the age profile of the network, there is a variety of materials currently in place. Figure 19 shows the composition of the water network by pipe material with the different pipe types explained in Appendix B. The type of pipes that make-up of each council's water network is relevant due to the different requirements for repair and replacement of each pipe type. We note that each council's forward program should take into account the different types of pipes within its network.

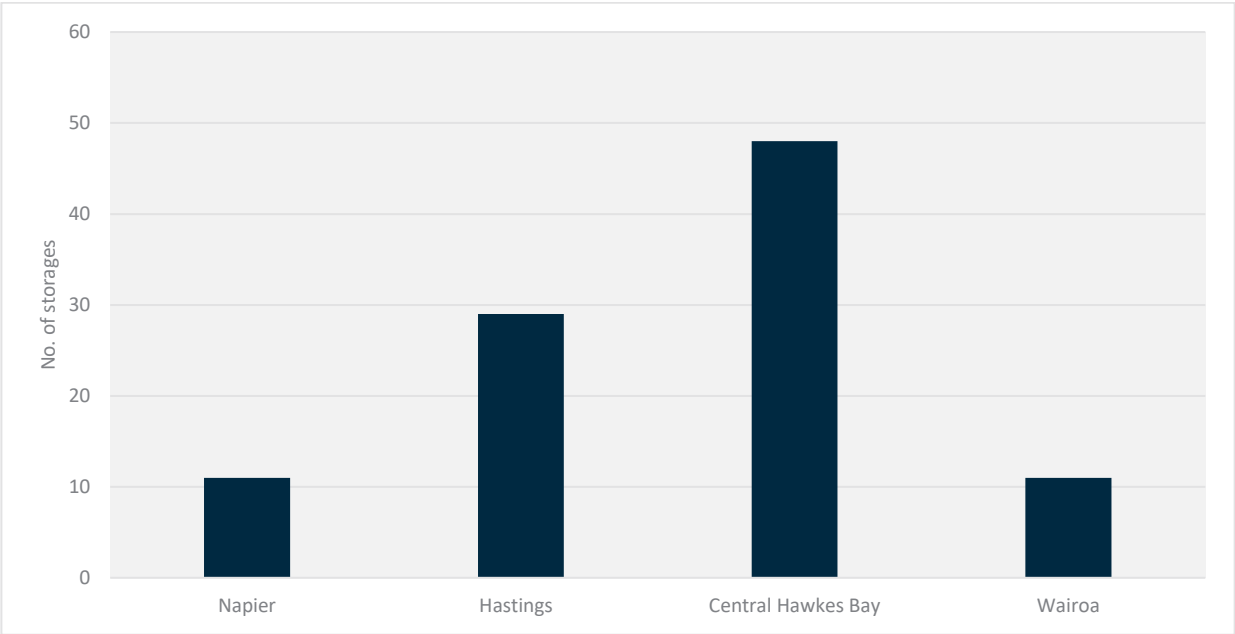
Figure 19 Network composition by material type



4.1.3 Water Reservoirs

There is also differences in the Council's water storage capacity. This is show by reference to the number of reservoirs then also the capacity in cubic metres and hours of supply. Central Hawke's Bay has a system characterised by a lot of smaller schemes and a large number of reservoirs. Napier and Hastings have a smaller number of reservoirs supporting larger networks servicing bigger populations.

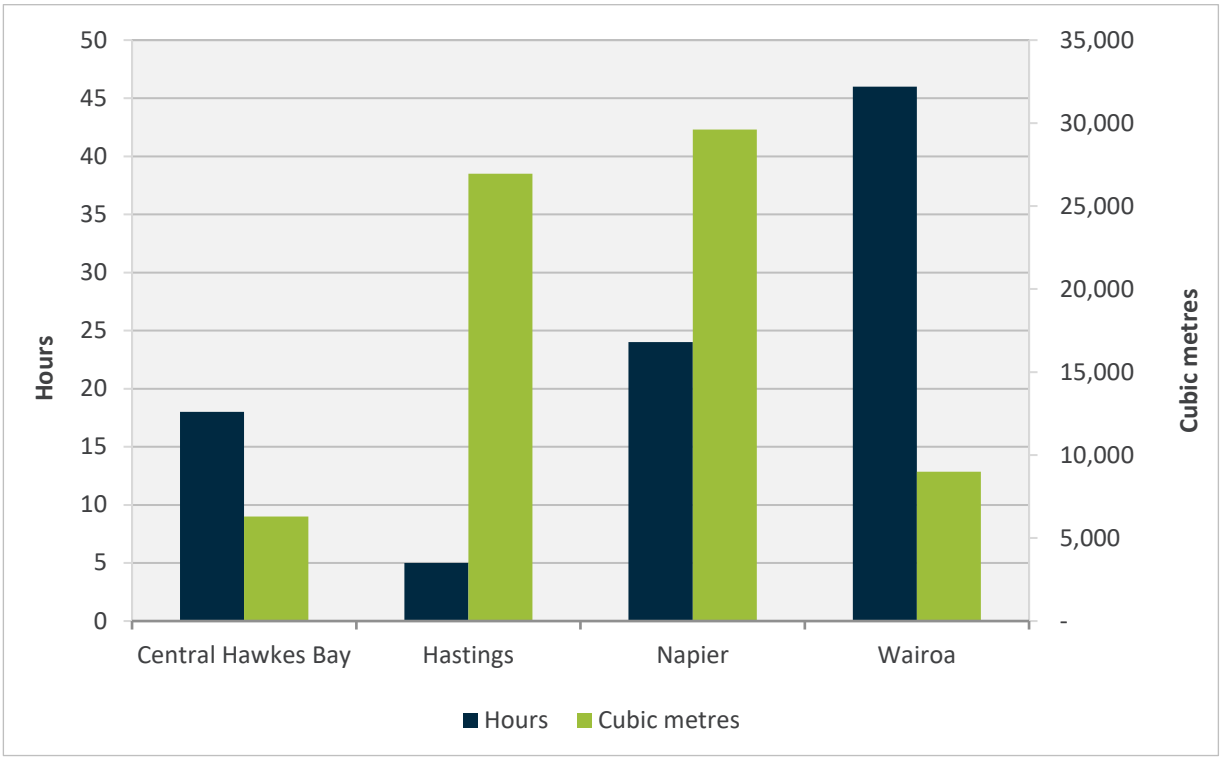
Figure 20 Number of reservoirs



The Councils' water storage in the reservoirs also varies. Hastings has five hours (with Napier over 40 hours). Hastings storage is at a low level (five hours) and low in comparison to the other councils but an explanation from the AMP states

> *"The primary Hastings and Havelock North reservoirs only have approximately 5 hrs of storage during peak summer flows, however this is on the basis that Council relies on groundwater stored in the underground aquifers rather than investing in above ground storage. A greater reliance is therefore placed on the ability to extract water to meet peak demands."*

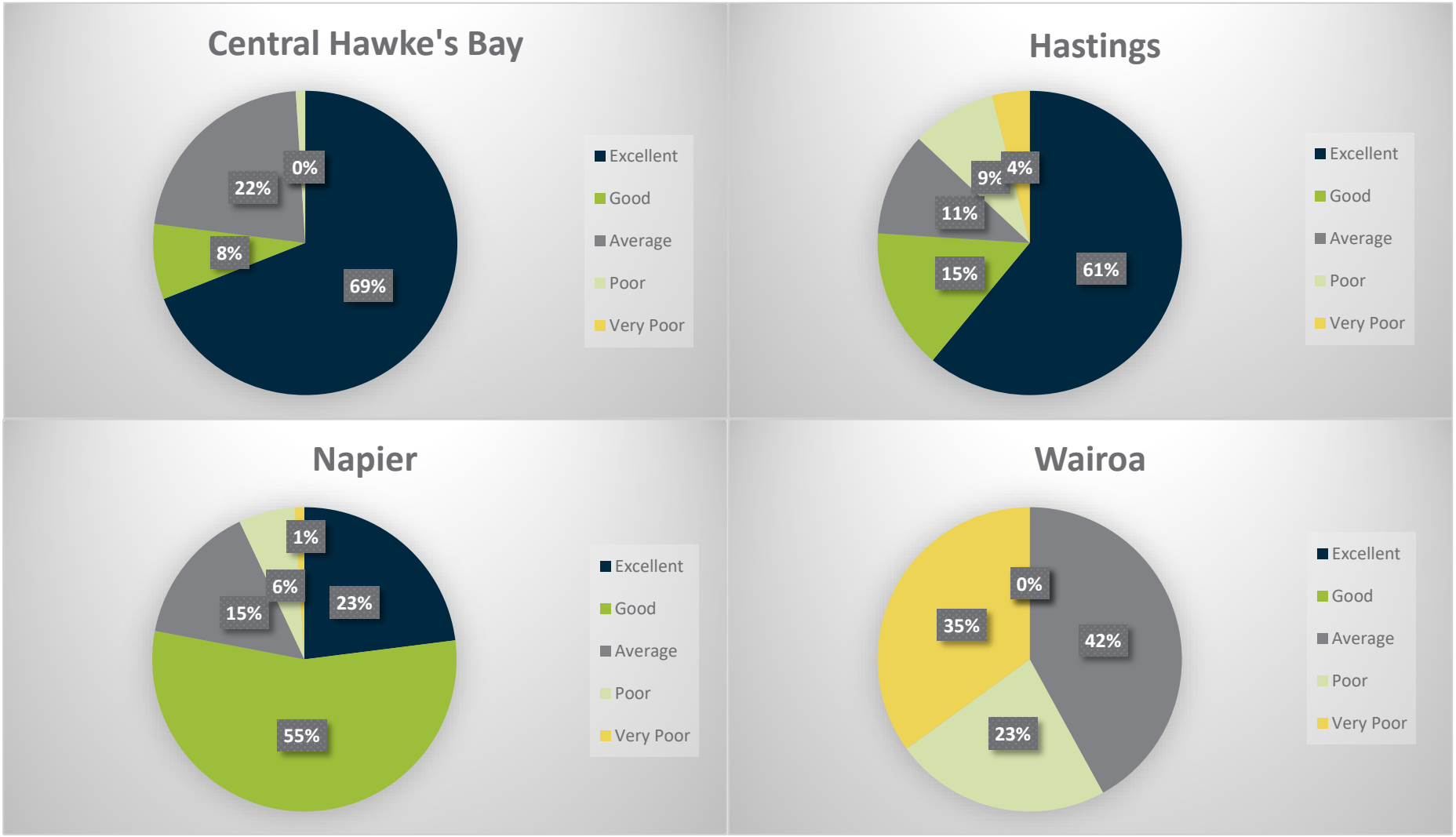
Figure 21 Reservoir storage



4.1.4 Asset Condition

A comparison of the respective condition of each council's water services assets is set out below. While each council has different approaches to rating their assets and different confidence levels in the data on which the assessment is based there are significant differences in the condition of the assets across the group of councils.

Figure 22 Water asset condition (by length)



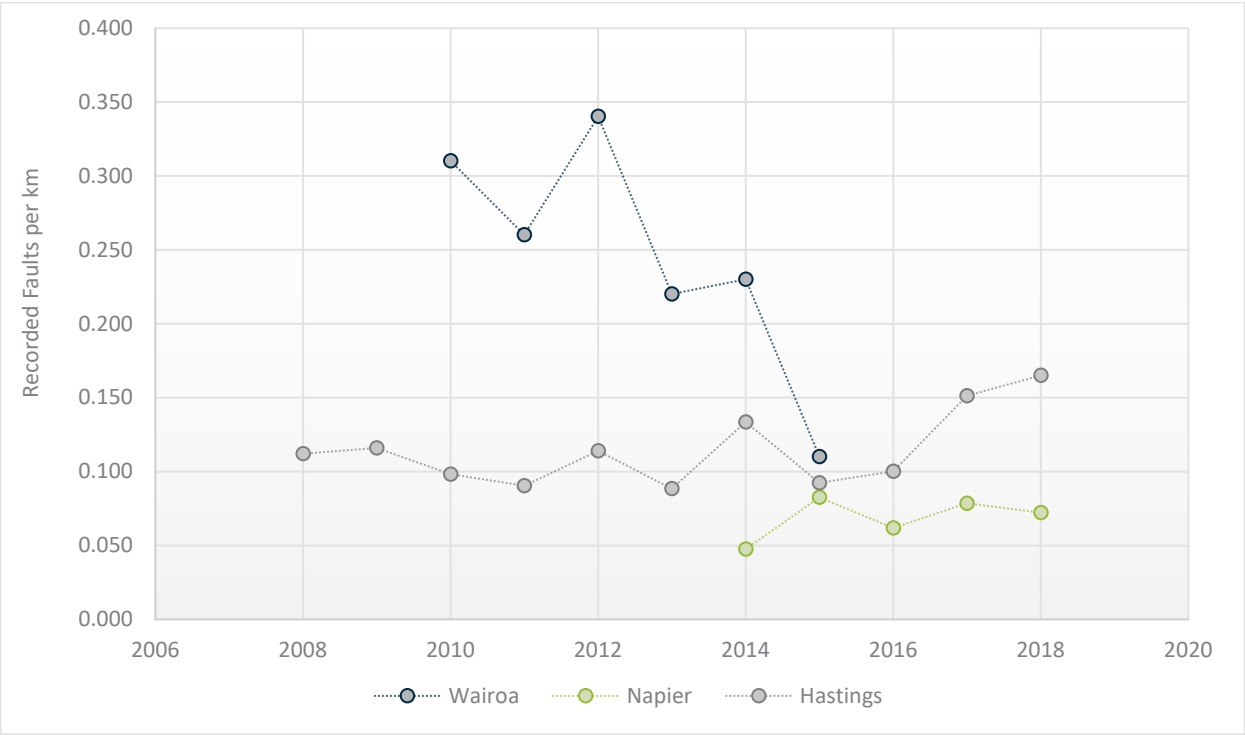
4.1.5 Analysis of pipe failures in the water network

An initial high-level statistical analysis of the water network was undertaken by reference to the number of failures on each Council's networks over a four-year period. The purpose of the analysis is to understand the actual performance of the network as compared to the condition of the network, which has been considered above.

The analysis found that there was no direct correlation between network composition, age and annual faults per kilometre. We note that Central Hawke's Bay was not able to provide failure data. A summary of the analysis is set out below with further detail (including analysis of failure by pipe type) is set out in Appendix B.

Overall, Napier has the lowest failure rates we note that this is based on a limited data sets so no strong conclusions should be drawn and Napier has one of the oldest networks and the second most AC pipes in their network. The results from the Councils who provided failure data linked to material type show no consistent pattern between material type and failure rates, though they do show decreasing failure trends in the worst material type, suggesting problems are being addressed as they arise.

Figure 23 Annual faults normalised by network length (all material types)



Further observations

Central Hawke's Bay has a similar age profile to Napier, but with more PVC and less AC installed. Hastings has the youngest average network age and the highest pipe length under 25 years old, implying there has been an active replacement programme (or new growth) in the area. The other three councils all have watermain ages peaking around the 40-year mark, which is typical of most New Zealand councils.

Hasting's younger network overall does not translate into less faults per kilometre, with Napier having less recorded faults over the 2014-2018 period. In fact, Napier has the lowest recorded faults per kilometre yet has the second oldest average network age and the second highest percentage of AC installed.

Wairoa has seen a sharp decline in the number of recorded faults per kilometre, particularly in AC watermains which make up 40% of their network, bringing down their total faults per kilometre. The overall age profile of the Wairoa network does not suggest an aggressive replacement programme has been underway, so this reduction is likely to be due to the targeted replacement of mains causing multiple failures.

The number of annual faults per kilometre has been relatively consistent in Napier and Hastings over the time period supplied. Hastings may be trending upwards, with an increase in failures in PVC and AC, but the trend is not yet well established.

Fault data by material is limited to two councils, Wairoa and Hastings. Comparing these two:

- Wairoa AC and Hastings steel watermains both have above 'average' annual faults per kilometre and both with a decreasing trend over time, suggesting these issues are being or have been addressed by the respective councils.
- PVC generally has the lowest annual fault rate per kilometre, though in Wairoa it is comparable to steel. This may because of the relative urban/rural composition. Elsewhere we have seen rural PVC with poor installation techniques, pull down overall PVC performance.

4.1.6 Performance and levels of service

The Councils have varying levels of service and performance against those targets. Each council's targets for the Department of Internal Affairs (DIA) performance measures and their actual performance against these is set out in the table below this brief summary.

All the Councils currently meet the DIA mandatory performance measures for compliance with drinking water. Targets for water loss (network maintenance) range from 20% to 30%. Wairoa has a target of 30% and an estimated current level of 50%, Hastings is close to achieving its target of 20% and Napier meets its target of 22%. Central Hawke's Bay however records zero water loss against a target of 30%.

Demand management (water use per person) targets and performance against those targets varies considerably. Targets range from 400 to 666 litres per person per day with actual performance ranging from current usage of 350l/p/d[9] to a high of 1420l/p/d.

Response times are fairly similar and all Councils report meeting these.

Customer satisfaction criteria targets vary significantly but show Councils are meeting these.

[9] WSP Estimate based on information provided by the Councils

Table 10 DIA performance measures: water (17/18)

	Central Hawke's Bay		Hastings		Napier		Wairoa	
DIA performance measurement	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**
DIA Non-financial performance Measure 1: ***(safety of drinking water)*** **The extent to which the local authority's drinking water supply complies with:** **a) part 4 of the drinking-water standards (bacteria compliance criteria), and** **b) part 5 of the drinking-water standards (protozoal compliance criteria).**	100%	- Otāne100% - Waipawa100% - Waipukurau100% - Takapau in progress - Kairakau in progress - Pōrangahau in progress	100%	a) Target achieved b) Target not achieved	100%	a) Not achieved b) Not achieved	100%	100%
DIA Non-Financial performance Measure 2: ***(maintenance of the reticulation network)*** **The percentage of real water loss from the local authority's networked reticulation system (Including a description of the methodology used to calculate this).**	30%	0 %	20%	21%	22%	18.8%	25%	Estimate 50% - based on nightflows, Water Loss Management Plan in progress to better understand water loss
DIA Non-Financial performance Measure 3: ***(fault response times)*** **Where the local authority attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following median response times measured:** **a) attendance for urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site, and** **b) resolution of urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption.**	a) <2 Hours b) <12 Hour	a) 10 Minutes b) 38 Minutes	a)1 Hour b) 2 Hours	a) 43 minutes Hour b) 2.98 Hours	a) <90 minutes b) <6 Hours	a) 23 minutes b) 1 hour 23 minutes	a) 1 hour for Wairoa/Frasertown and 2 hours for other areas b) 4 hours from Wairoa/ Frasertown and 5 hours for other areas Priority Work in Contract:	a) 1 hour for Wairoa/ Frasertown and 2 hours for other areas b) 4 hours from Wairoa /Frasertown and 5 hours for other areas. Priority Work in Contract:

	Central Hawke's Bay		Hastings		Napier		Wairoa	
DIA performance measurement	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**
c) attendance for non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site, and **d) resolution of non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption**	c) <6 Hours d) <72 Hours	c) 5hrs 54 minutes d) 16 Hours 51 minutes	c) 3 Days d) 7 Days	c) 2 Days d) 3 Days	c) <8 Hours d) <72 Hours	c) 1 hour 15 mins d) 1 hour 48 minutes	c) 2 days and d) 3 working days.	c) 2 days and d) 3 working days.
DIA Non-Financial performance Measure 4: ***(customer satisfaction)*** **The total number of complaints received by the local authority about any of the following:** **a) drinking water clarity** **b) drinking water taste** **c) drinking water odour** **d) drinking water pressure or flow** **e) continuity of supply, and** **f) the local authority's response to any of these issues.** **expressed per 1000 connections to the local authority's networked reticulation system**	<5	0	1	9.16	a) <2 b) <2 c) <2 d) <2 e) <2 f) <2	a) 30.42 b) .15 c) 1.04 d) 1.5 e) 1.73 f) .27	a) 20 b) 20 c) 20 d) 40 e) 40 f) 20	a) 0 b) 0 c) 0 d) 2.87 e) 3.83
DIA Non-performance Measure 5: ***(demand management)*** **The average consumption of drinking water per day per resident within the territorial authority district. (litres per person per day)**	666	1420 litres per connected property	400	427.77	<430	560	550	Not every property is metered, WLMP underway to better understand consumption

4.2 Financial

The average water rates for the 2018/19 financial year are detailed below. The amount paid for water services in Wairoa and Central Hawke's Bay is higher than that of Napier and Hastings.

Table 11 Water charges

	Central Hawke's Bay	Hastings	Napier	Wairoa
Average residential rate for water[10]	$668	$357[11]	$234	$698

Detailed budgets for the 2019/20 year show significant variation across the region in the amount that ratepayers are paying for water services.

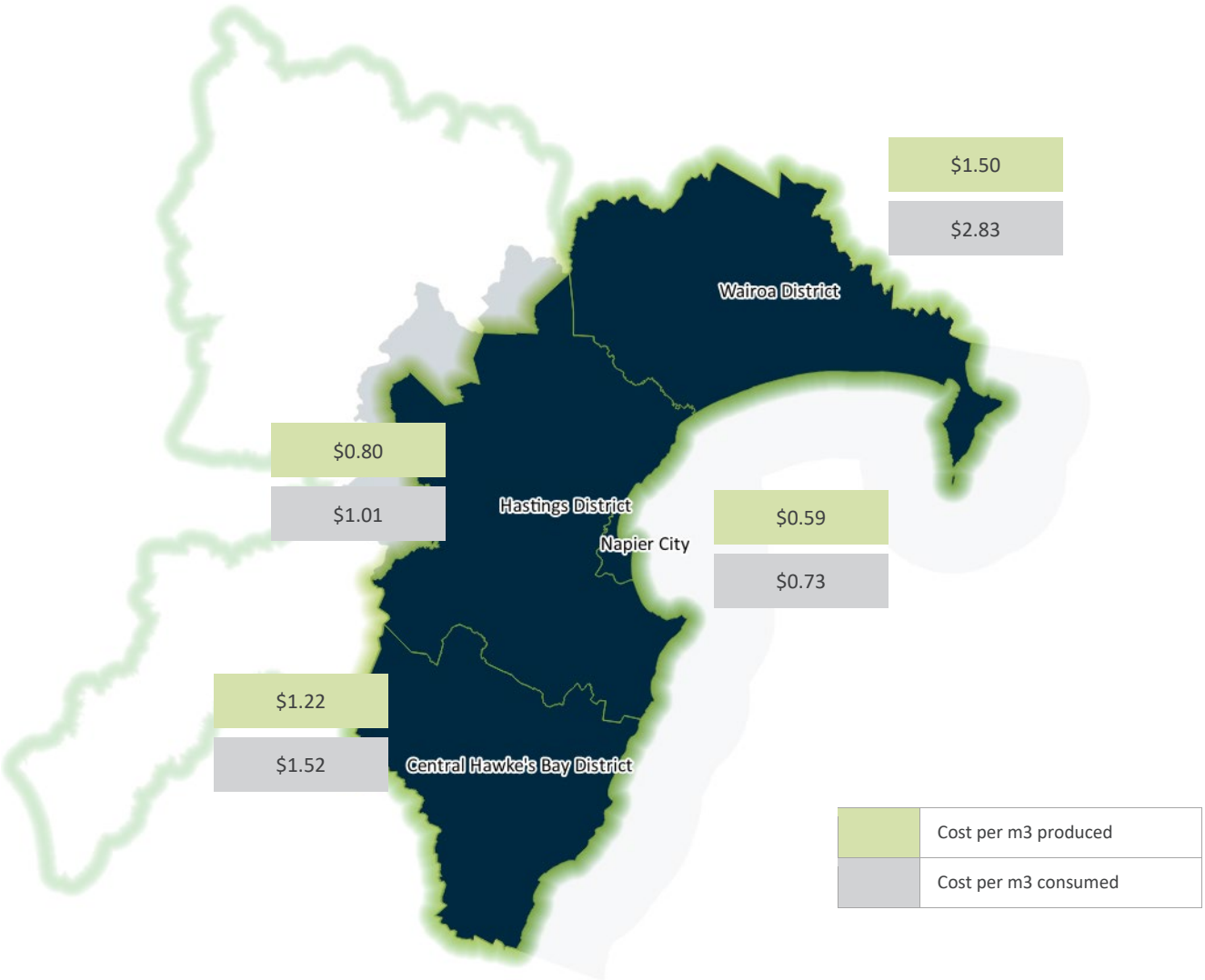
Table 12 Water revenue

	Central Hawke's Bay	Hastings	Napier	Wairoa
Total revenue from targeted rates	$3,027,880	$10,938,000	$5,228,797	$2,442,037
Total revenue from general rates	0	$83,000	0	0
Percentage of targeted rates revenue from metered water	14%	4.5%	11%	34%

These differences are also reflected in the cost for each council of water consumed and produced within the district as shown in Figure 24 below. The differences between the cost produced and the cost consumed again represents the unaccounted-for water which is predominantly network losses.

[10] Weighted average across schemes
[11] Plus contribution from general rates

Figure 24 Cost[12] per cubic metre of water produced and consumed in Hawke's Bay Region



[12] Total operating cost including depreciation divided by water produced/consumed

The levels of debt associated with water services across each of the Councils, as per 2019/20 detailed budgets, is outlined in Table 13 below. This comprises a mix of internal borrowings and allocations of external debt, with a range of different loan terms.

Differences in the debt to asset ratio across the Councils highlights key differences in each council's approach toward funding and financing the purchase of new infrastructure assets.

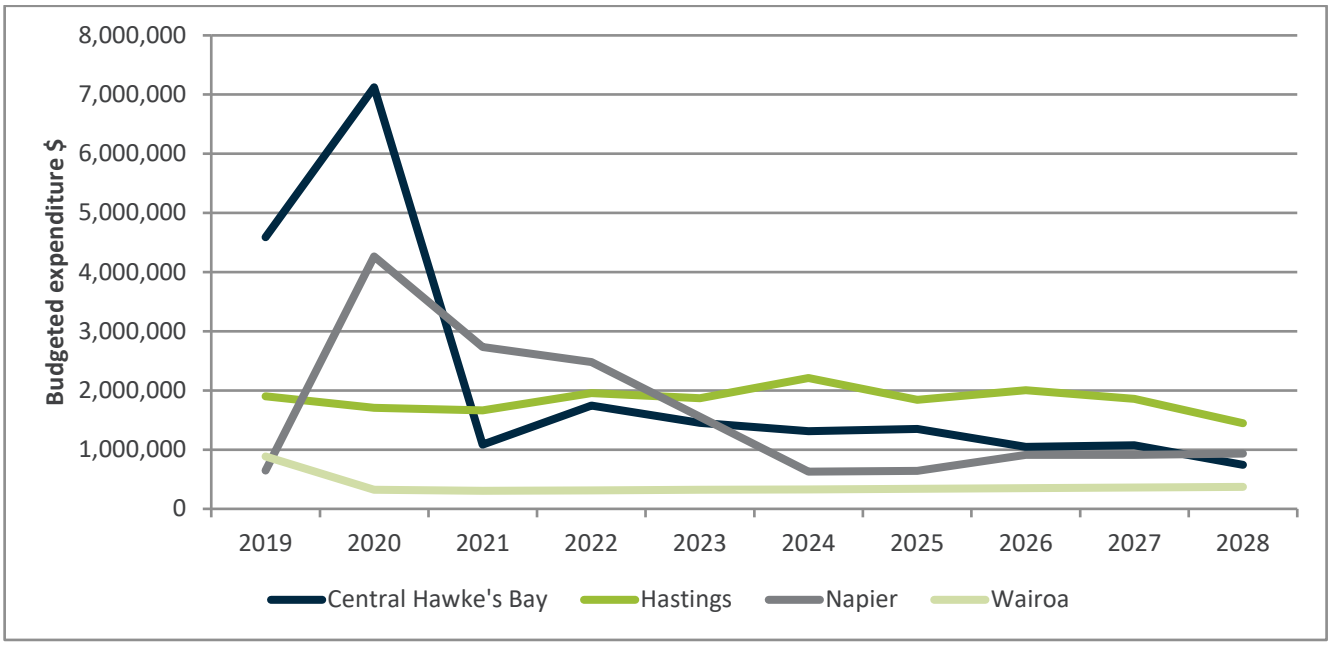
Table 13 Water debt

	Central Hawke's Bay	Hastings	Napier	Wairoa
Total debt	$10.4 million	$65.3 million	$8.0 million	$0.4 million
Debt to revenue ratio[13]	342 %	576 %	132 %	15 %
Average loan term	18 years	25 years	25 years	44 years
Debt to asset ratio[14]	26 %	40 %	7 %	2 %
Interest cost per annum	$316,000	$1,964,000	$222,000	$2,000
Interest to revenue[15]	10 %	17 %	6 %	0.1 %

Expenditure on asset renewal has been compared across the four councils based on the published 2018-2028 LTPs updated with current three-year budgets provided by each council. We note that a number of the Councils, through the current annual planning process, looked to bring forward some of the capital works that are currently in the outer years of the LTP. These have been taking into account.

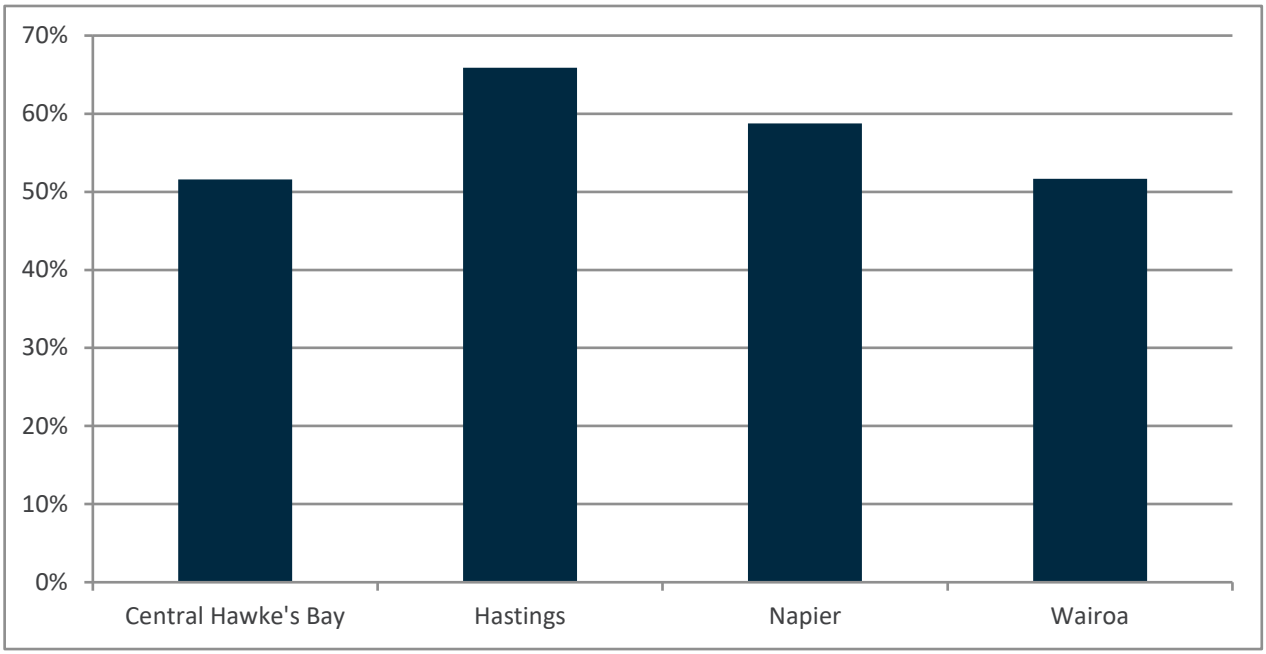
[13] The LGFA limit on borrowing for this ratio is 250% across a council's entire business
[14] 2019/20 total projected debt divided by 2019/20 project net book value of infrastructure assets
[15] The LGFA limit on borrowing for this ratio is 20% across a council's entire business

Figure 25 Water assets planned renewals investment



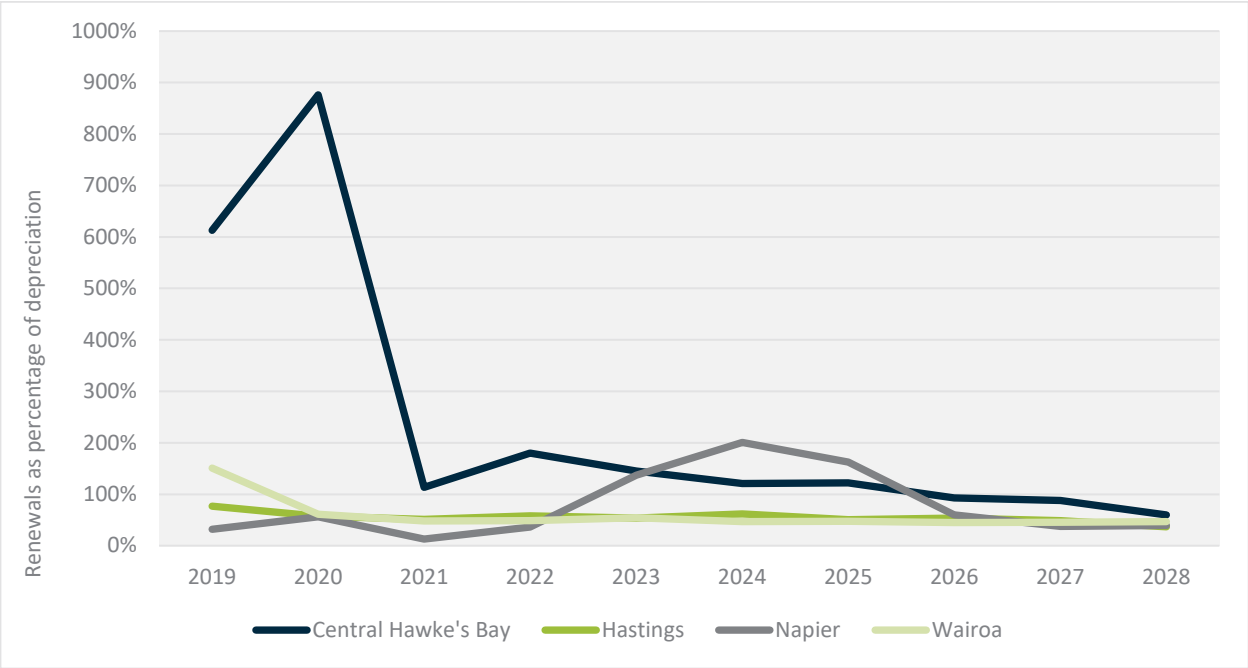
The asset consumption ratio, shown below, is a financial measure of the maturity of an asset base. The ratio compares the written down value of assets with their replacement cost to show an average amount of useful life left in the assets. The ratios below relate to the 2018 financial year (i.e. the last complete year), and highlights differences between the urban and rural councils.

Figure 26 Asset consumption ratio for water assets



Planned asset renewals, when compared to depreciation of water assets are high for Central Hawke's Bay over the next five years, with Napier also planning a marked increase in renewals spending during the long-term plan period.

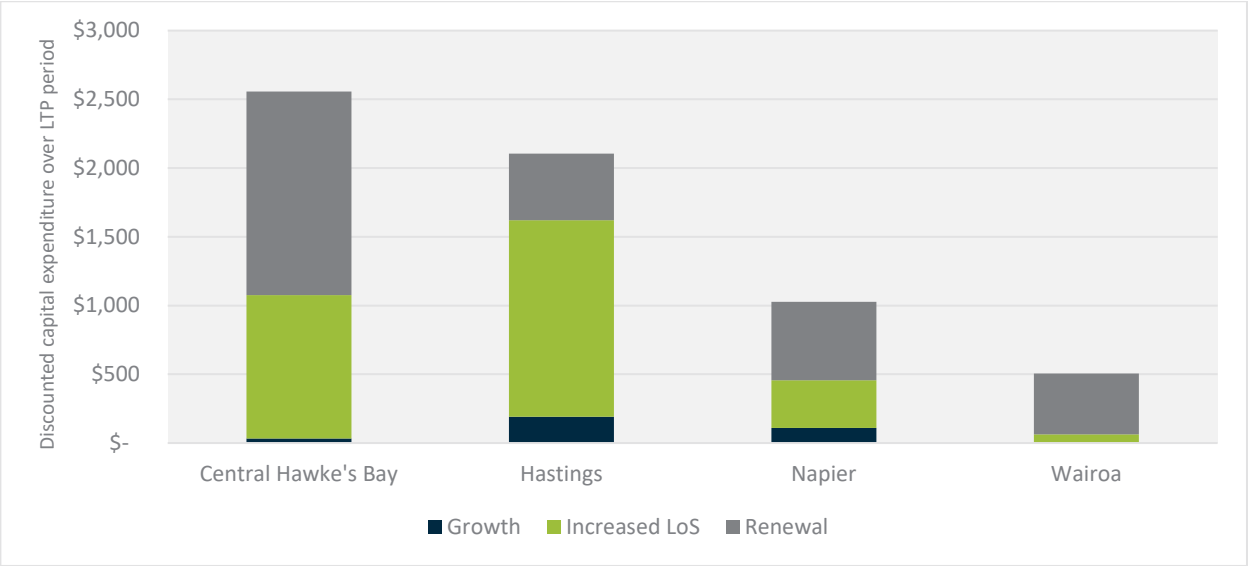
Figure 27 Water asset renewal ratio (long term plan)



Despite low renewals expenditure compared to most of the other Hawke's Bay councils, Hastings has significant investment planned in assets to increase level of service over the long-term plan period. Similarly, almost half of Central Hawke's Bay's planned investment in the water assets is directed toward improving levels of service.

We also note that the 2018 LTPs do not include any potential costs for as yet unspecified upgrades required to meet any increased environmental standards coming out of the three waters reform. That means the capital expenditure over this period may well be much higher than was planned at the time.

Figure 28 Planned water capital expenditure per ratepayer (Long term plan[16], NPV 5% discount rate)



[16] Ten-year period, years 2019/20, 2020/21 and 2021/22 from detailed budgets

Below is a description of what the growth and increased level of service expenditure includes for each council.

Central Hawke's Bay

- Second supply and building resilience in Waipukurau
- Building resilience in Waipawa
- Alternative supply in Otāne
- Treatment upgrades in Takapau, Pōrangahau, Kairakau and Pouerere

Hastings

- To meet additional demand and improve levels of service such as treatment and storage improvements and capacity upgrades to water supplies and reservoirs at Clive, Eastbourne, Frimley Havelock North, Wilson road plus others. New reservoir at Havelock Hills. Upgrades and renewals and small suppliers
- To provide infrastructure in line with the Heretaunga Plains Urban Development Strategy and Development updates

Napier

- Commissioning a new reservoir in 2018
- Replacing the Enfield reservoir - one of Napier's critical reservoirs - in 2022-2025
- Installing an additional supply main from the Taradale bore field to the Taradale reservoir as part of the network reconfiguration to improve water quality

Wairoa

- Meet additional demand and improve levels of service such as new main supply pipe from Blue Bay bore, Blue bay bore rehabilitation and Blue bay water treatment plant upgrade
- Install earthquake valves
- Install Chlorine analysers

5 Wastewater

The table below summaries the major issues and challenges for the Councils relating to the wastewater service.

Table 14 Major wastewater issues (as identified by the Councils)

Central Hawke's Bay		Hastings		Napier		Wairoa	
Priorities	**Challenges**	**Priorities**	**Challenges**	**Priorities**	**Challenges**	**Priorities**	**Challenges**
Wastewater treatment for the Wapiawa, Waipukurau and Otāne wastewater system	Community and compliance expectations along with funding impact	Continuing to maintain Resource consent compliance, including management of trade waste	Ensuring processing in place to manage and mitigate odour and corrosion in the reticulation	Inflow and Infiltration (I&I) compromises system capacity during prolonged wet weather	Being able to correlate LOS, rates funding and expenditure of 3W O&M in a meaningful way for strategic planning and community understanding of value returned for rates paid	Consent compliance - underway	Re-consenting of Wairoa wastewater discharge ongoing key milestones to achieve
I&I reduction	Wastewater treatment for the Wapiawa, Waipukurau and Otāne wastewater system	Continuing to implement the renewals strategy, including improvements where required for capacity increase (informed from modelling and performance)	Network resilience	Consent renewal for discharge of treated effluent requires renewal in 2026 and may require additional level of treatment		Compliant systems	Ageing infrastructure difficult to fund due to economies of scale
Capacity to service growth	Predicting growth and where growth will impact on our networks	Reticulation and treatment resilience planning and climate change responses	Climate change impacts on critical assets i.e. WWTP	Integrity and capacity of ocean outfall during prolonged wet weather (I&I)		Infiltration and inflow	Significant negative impact of inflow and infiltration on the entire wastewater system

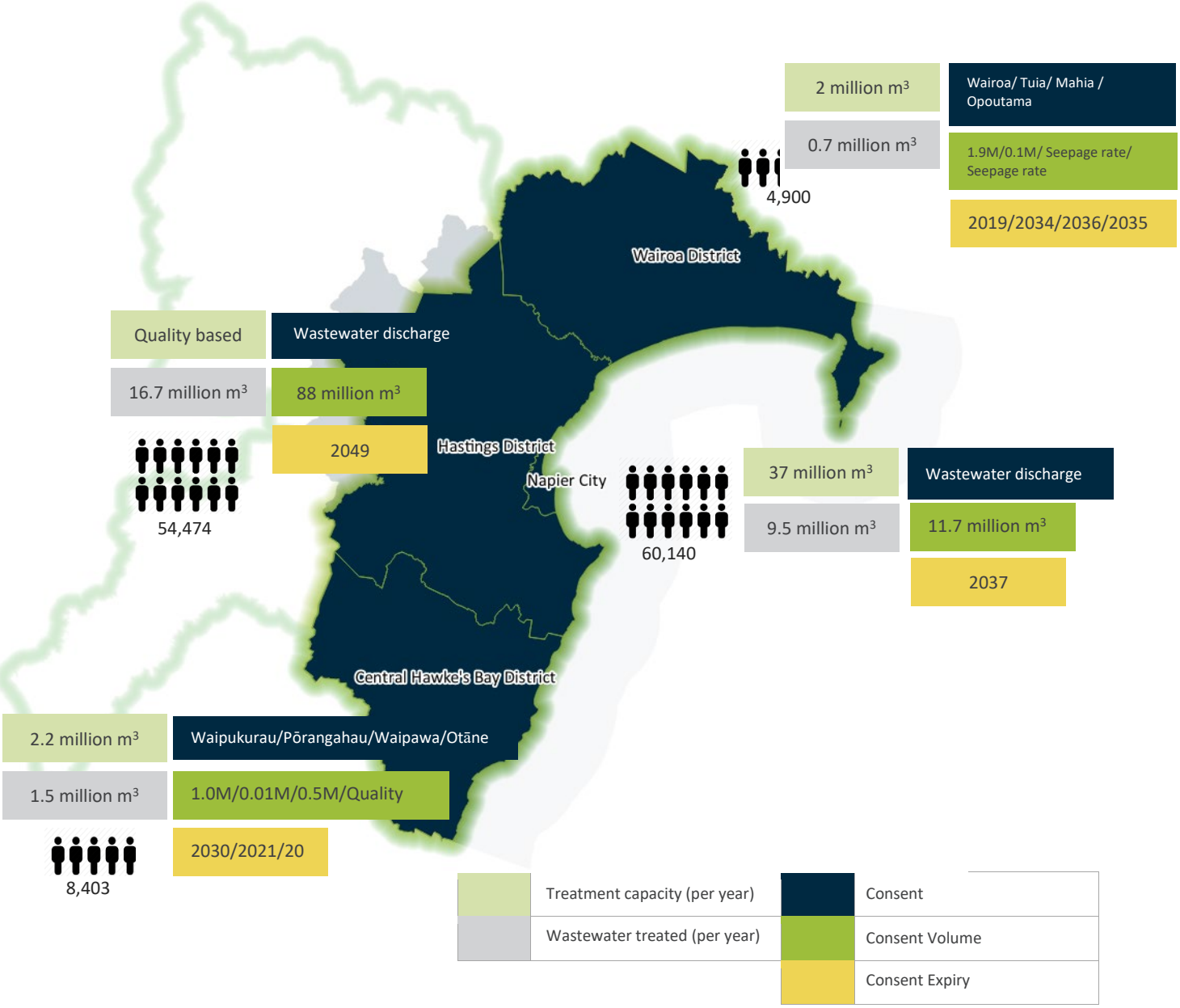
5.1 Assets

5.1.1 Wastewater treatment capacity and treated

The figure below demonstrates the populations served, water supplied and consumed by each of the Councils respectively.

Also depicted are the relevant consents showing the Central Hawke's Bay and Wairoa have consents that will need to be renewed imminently. We note that Napier, Hastings and Wairoa consents are for coastal discharges whereas Central Hawke's Bay is to surface water. All councils with consents expiring soon were found to be aware of the expiry and were in or had begun the process to seek renewals of consents. However, we note there are some ongoing issues with Wairoa's new consent.

Figure 29 Wastewater service key information



5.1.2 Wastewater asset information

The figures below set out information about the number and type of assets involved in the wastewater service. The age of the assets is also set out. This information begins to highlight the differences between the respective council's networks. Napier and Hastings have longer networks with fewer treatment plants, whereas Central Hawke's Bay and Wairoa have smaller networks with a larger number of treatment plants.

What follows in the next sections is a comparison of the condition of the network to provide a fuller picture of the assets.

Figure 30 Wastewater pipe length

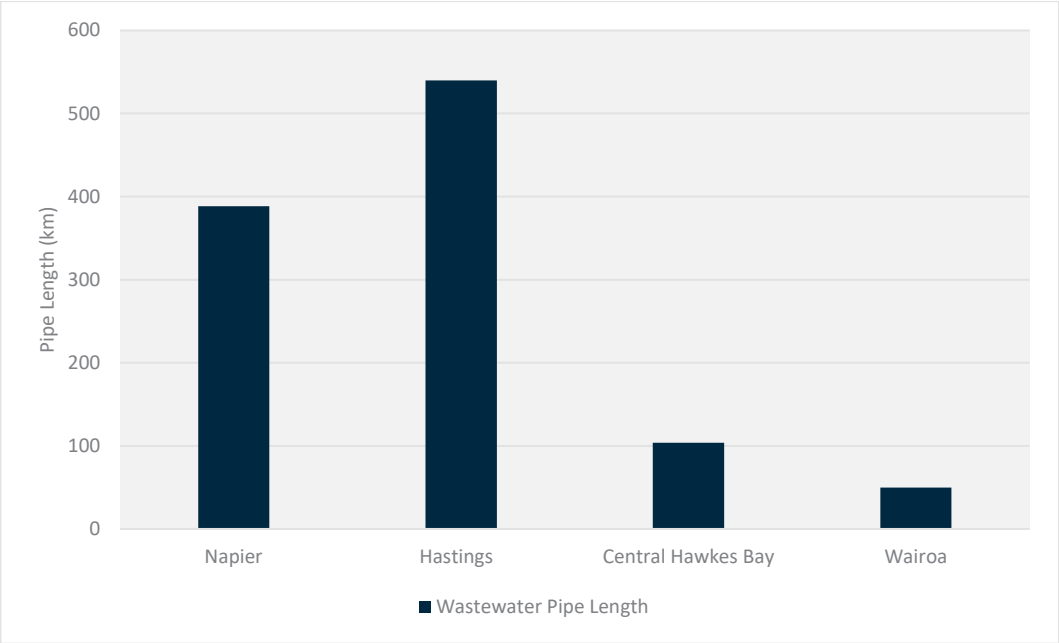
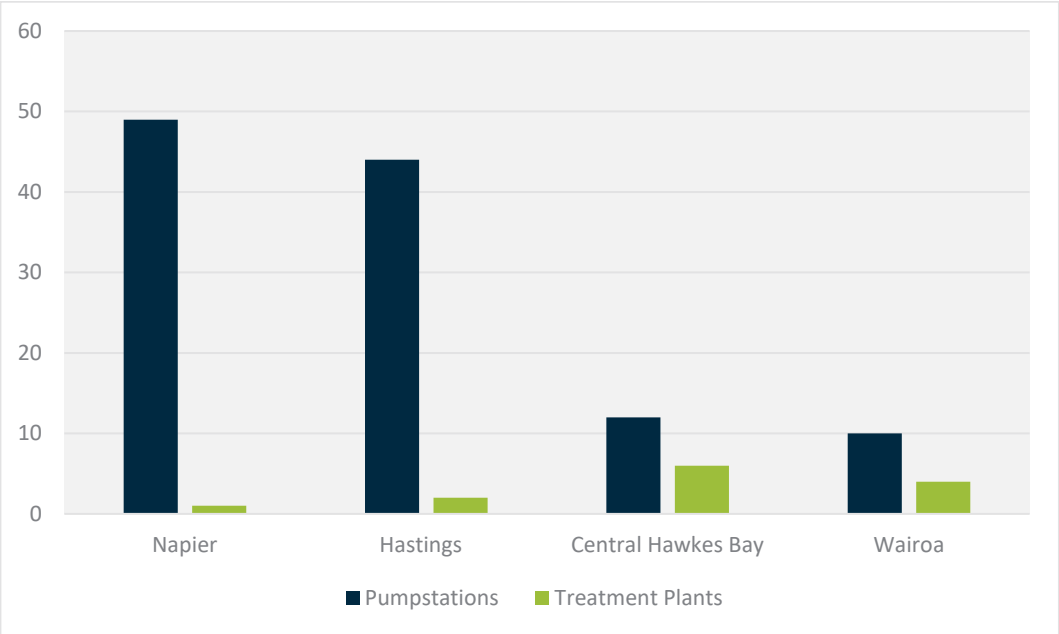
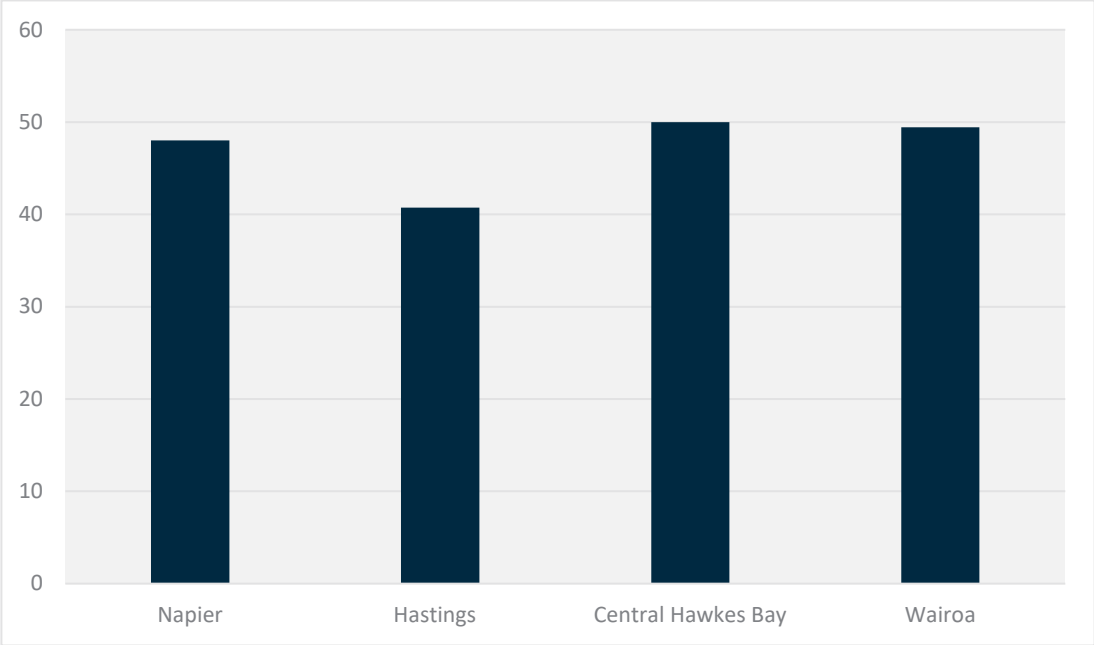


Figure 31 Number of pump stations and treatment plants



The average age of the pipes is between 40 and 50 years for all the Councils.

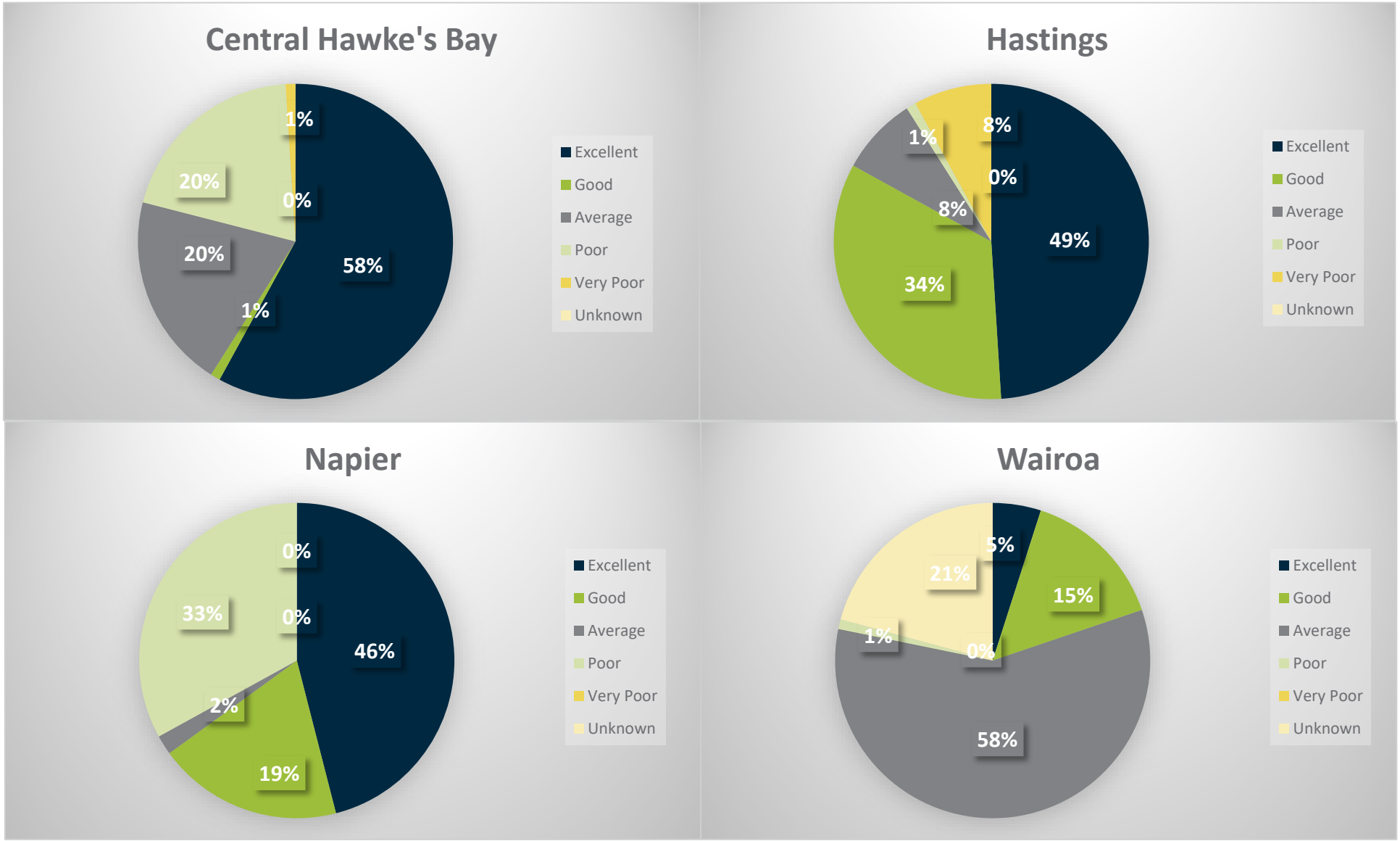
Figure 32 Wastewater pipe average age



5.1.3 Asset Condition

A comparison of the respective condition of each council's wastewater services assets is set out below. While each council has different approaches to rating their assets, and different confidence levels in the data on which the assessment is based there are significant differences in the condition of the assets across the group of councils with a significant proportion of the Wairoa network in an unknown condition.

Figure 33 Wastewater asset condition (by length)



5.1.4 Performance and levels of service

The Councils have varying levels of service and performance against those. Each council's targets for the DIA performance measures and their actual performance against these is set out in the table below this brief summary.

All currently meet the DIA mandatory performance measures for compliance with wastewater discharge resource consents except to note that Wairoa has reported one abatement notice.

Response times vary and all the Councils report meeting these. In many cases the response times achieved (as reported) are significantly less than required by the measure.

Customer satisfaction criteria targets vary significantly with all Councils meeting these.

Table 15 DIA performance measures: wastewater (17/18)

	Central Hawke's Bay		Hastings		Napier		Wairoa	
DIA performance measurement	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**
DIA Non-Financial Performance Measure 1: *(system and adequacy)* Number of dry weather sewerage overflows from the Council's wastewater System, expressed per 1000 sewerage connections to that sewerage system.	<10	1.15	5	0.85	<0.1	0.24	16 in total across the network	0
DIA Non-Financial Performance Measure 2: *(Discharge compliance)* Compliance with Council's resource consents for discharge from its sewerage system measured by the number of: a) Abatement notices b) Infringement notices c) Enforcement orders d) Convictions	a) 0 b) 0 c) 0 d) 0	0	0	a) 0 b) 0 c) 0 d) 0	a) 0 b) 0 c) 0 d) 0	a) 0 b) 2 c) 0 d) 0	a) 0 b) 0 c) 0 d) 0	a) 1 b) 0 c) 0 d) 0
DIA Non-Financial Performance Measure 3: *(Fault response times)* Where the Council attends to sewerage overflows resulting from a blockage or fault in the Council's sewerage system, the following median response times are measured:	a) <1 Hours b) <4 Hours	a) 28 minutes b) 1hr 31 minutes	a) 1 Hour b) 1 day	a) 0.5 Hour b) 2.25 hours	a) <2 Hours b) <8 Hours	a) 1.09 hours b) 2.32 hours	The target for this performance measure is: a) 1 hour for Wairoa and 2 hours for Tuai areas; b) 4 hours for Wairoa and 5 hours for Tuai areas.	The target for this performance measure is: a) 1 hour for Wairoa and 2 hours for Tuai areas; b) 4 hours for Wairoa and 5 hours for Tuai areas.

	Central Hawke's Bay		Hastings		Napier		Wairoa	
DIA performance measurement	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**	**Target**	**Current Actual**
a) Attendance time: From the time that the Council receives notification to the time that service personnel reach the site, and b) Resolution time: From the time that the Council receives notification to the time that service personnel confirm resolution of the blockage or other fault reach the site							Priority Work in Contract: a) 2 days and b) 5 working days.	Priority Work in Contract: a) 2 days and b) 5 working days.
DIA Non-Financial Performance Measure 4: *(customer satisfaction)* Total Number of complaints received by the Council about any of the flowing: a) Sewage odour b) Sewerage system faults c) Sewerage system blockages d) The Council's response to issues with its sewerage system expressed per 1000 connections to the Council's sewerage system	<10	0	61	23.6	a) <5 b) <20 c) <10 d) <1	a) 0.55 b) 1.38 c) 9.37 d) .59	a) 20 b) 20 c) 20 d) 20	a) 0 b) 0 c) 9.3 d) unknown

5.2 Financial

The average wastewater rates for the 2018/19 financial year are detailed below. Ratepayers in Central Hawke's Bay are currently facing rates that are more than double those faced in the next most expensive district.

Table 16 Wastewater charges

	Central Hawke's Bay	Hastings	Napier	Wairoa
Average residential rate for wastewater[17]	$895	$320[18]	$366	$366

The detailed 2019/20 budgets show some consistency in the amount that ratepayers are currently paying for wastewater services across the region.

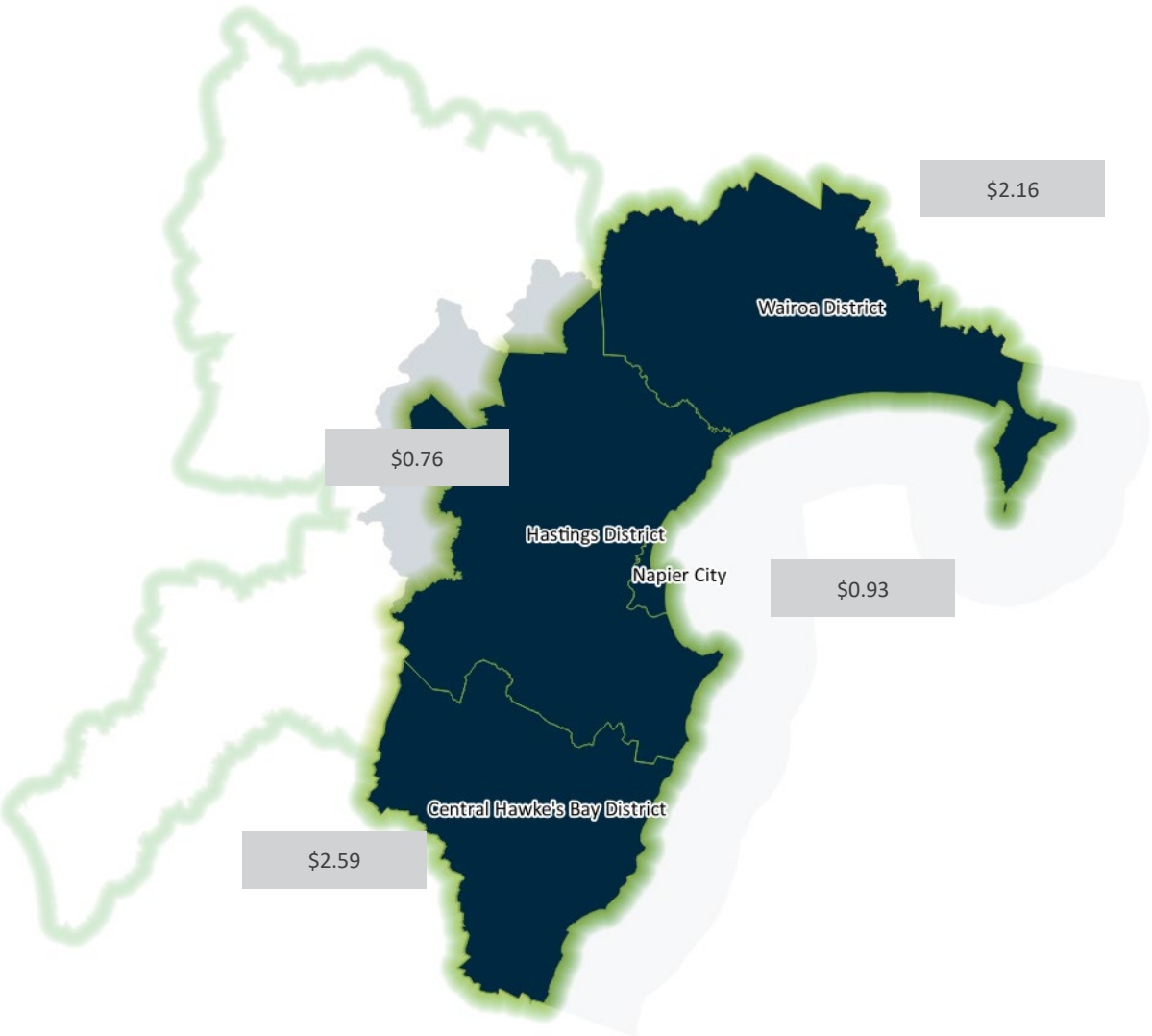
Table 17 Wastewater revenue

	Central Hawke's Bay	Hastings	Napier	Wairoa
Total revenue from targeted rates and trade waste	$3,472,166	$9,271,247	$8,775,163	$1,018,585
Total revenue from general rates	0	$472,000	0	0

There are also large differences in the cost of treatment of water with Napier and Hastings having a similar cost of treatment but Wairoa and Central Hawkes Bay having a similar but significantly higher cost of treating a cubic metre of wastewater, as shown in Figure 34 below.

[17] Weighted average across schemes
[18] Plus, contribution from general rates

Figure 34 Cost[19] per cubic metre of wastewater treated in Hawke's Bay Region



The levels of debt associated with wastewater services, as per 2019/20 detailed budgets, across each of the Councils is outlined below. This comprises a mix of internal borrowings and allocations of external debt, with a range of different loan terms.

Differences in the debt to asset ratio across the Councils highlights key differences in each council's approach toward funding and financing the purchase of new infrastructure assets, and the extent to which the council has made significant investment in its wastewater assets in recent years.

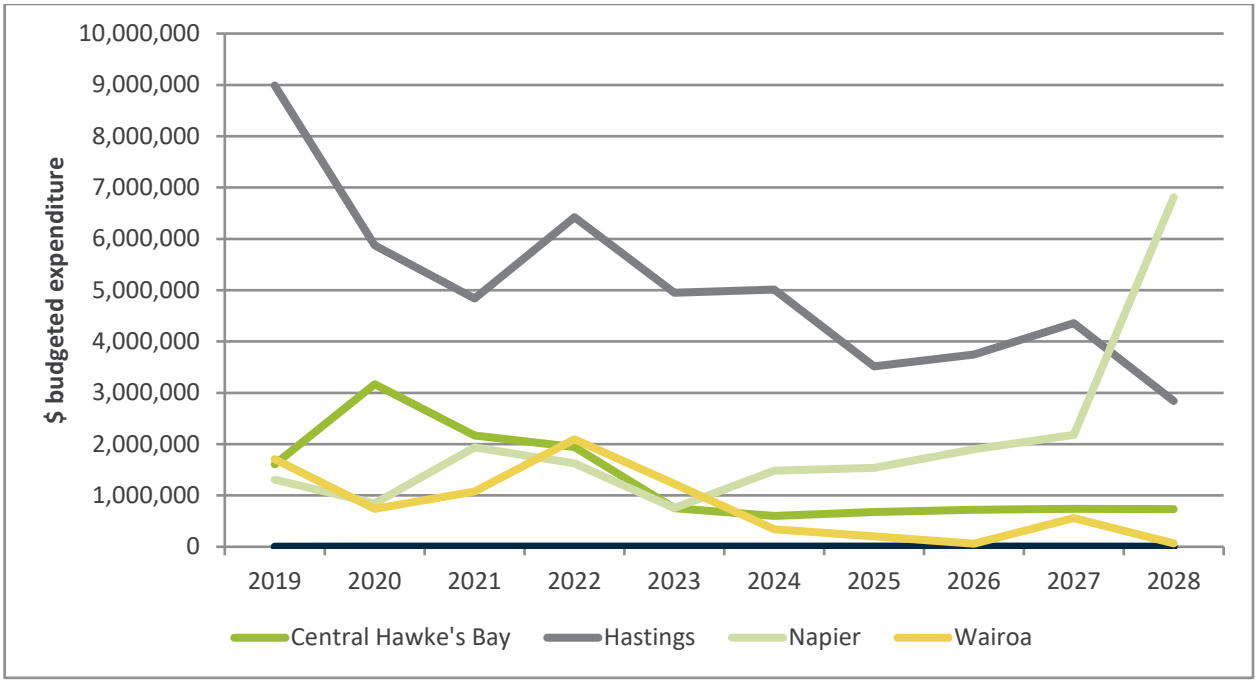
[19] Total operating cost including depreciation divided by wastewater treated

Table 18 Wastewater debt

	Central Hawke's Bay	Hastings	Napier	Wairoa
Total debt	$11.6 million	$43.5 million	$4 million	$5.5 million
Debt to revenue ratio[20]	336%	442%	45%	461%
Average loan term	18 years	25 years	25 years	24 years
Debt to asset ratio[21]	26%	12%	3%	32%
Interest cost per annum	$481,000	$1,314,000	$179,000	$72,000
Interest to revenue[22]	13.9%	13.4%	2%	6.1%

Expenditure on asset renewal has been compared across the four councils based on the published 2018-2028 LTPs updated with current three-year budgets provided by each council. We note that a number of the Councils, through the current annual planning process, looked to bring forward some of the capital works that are currently in the outer years of the LTP. These have been taken into account.

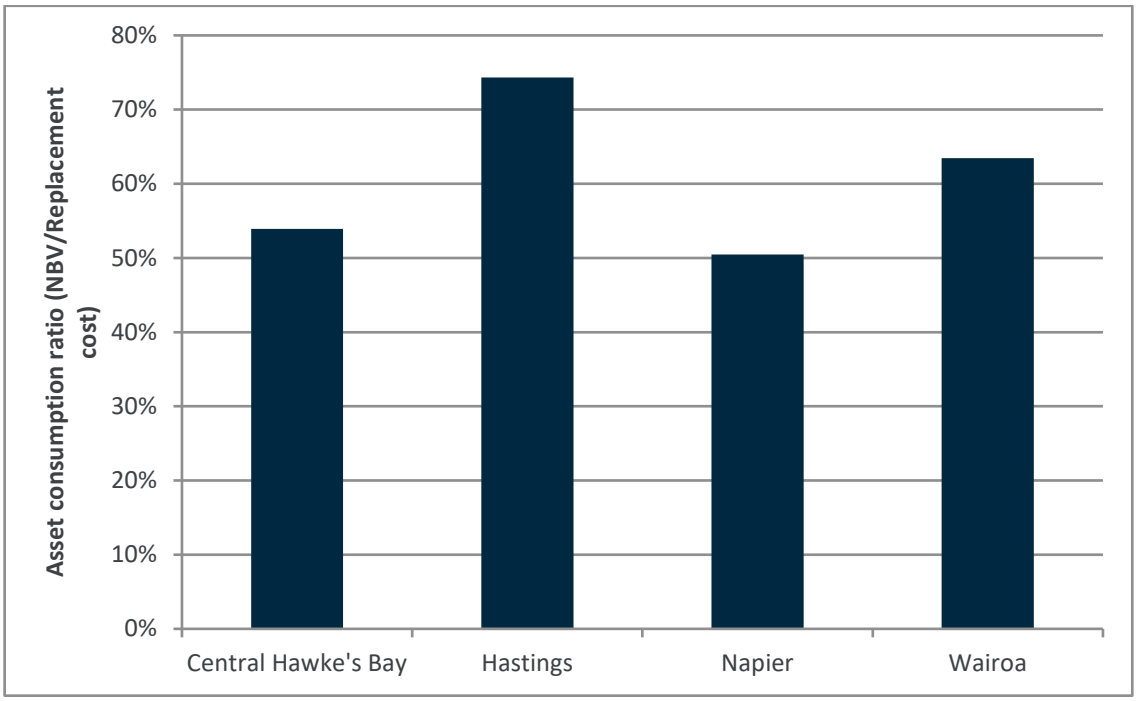
Figure 35 Wastewater assets budgeted renewals expenditure



The asset consumption ratio for wastewater assets shows a typically younger asset base than water assets, with more variability across the region. The figures are again sourced from 2018 actual results.

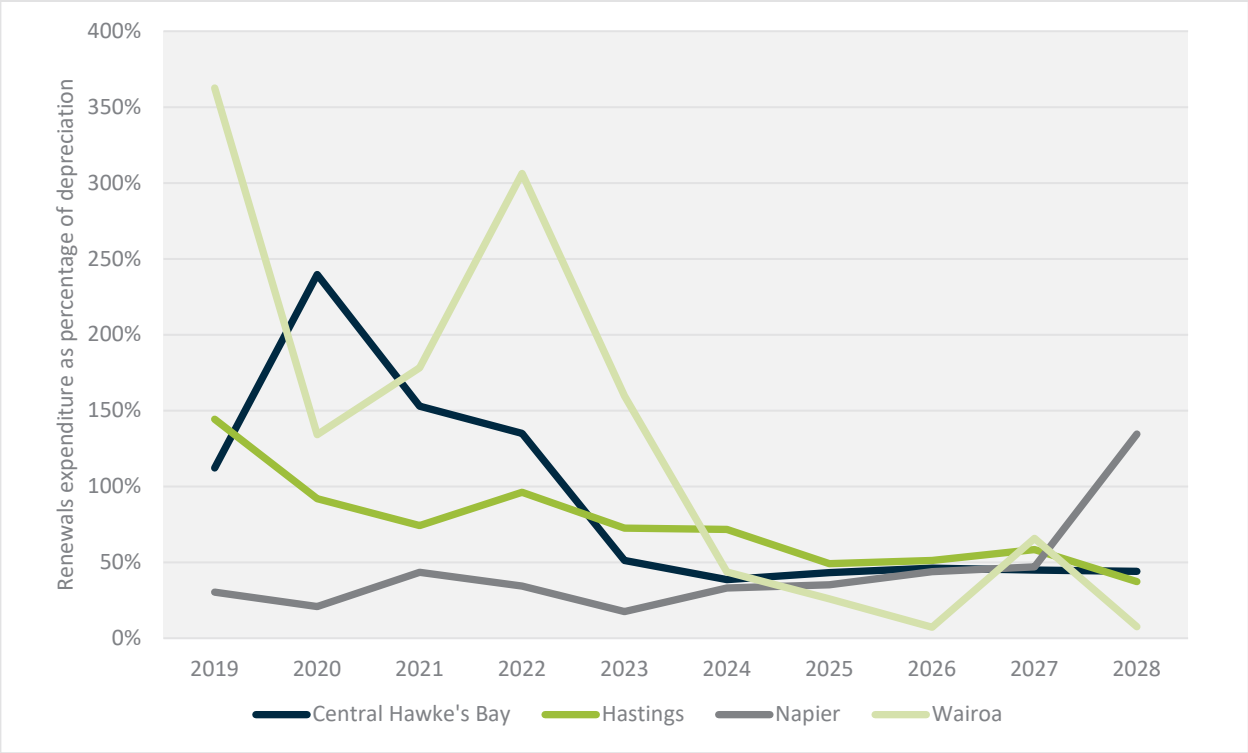
[20] The LGFA limit on borrowing for this ratio is 250% across a council's entire business
[21] [21]2019/20 total projected debt divided by 2019/20 project net book value of infrastructure assets
[22] The LGFA limit on borrowing for this ratio is 20% across a council's entire business

Figure 36 Asset consumption ratio (2018) for wastewater assets



Analysis of long-term plan projections for renewals spend and depreciation expense shows significant investment planned in the renewal of wastewater assets in Wairoa and Central Hawke's Bay over the three to four years, however reinvestment in wastewater assets in Napier is less than 50% of depreciation cost over the same period.

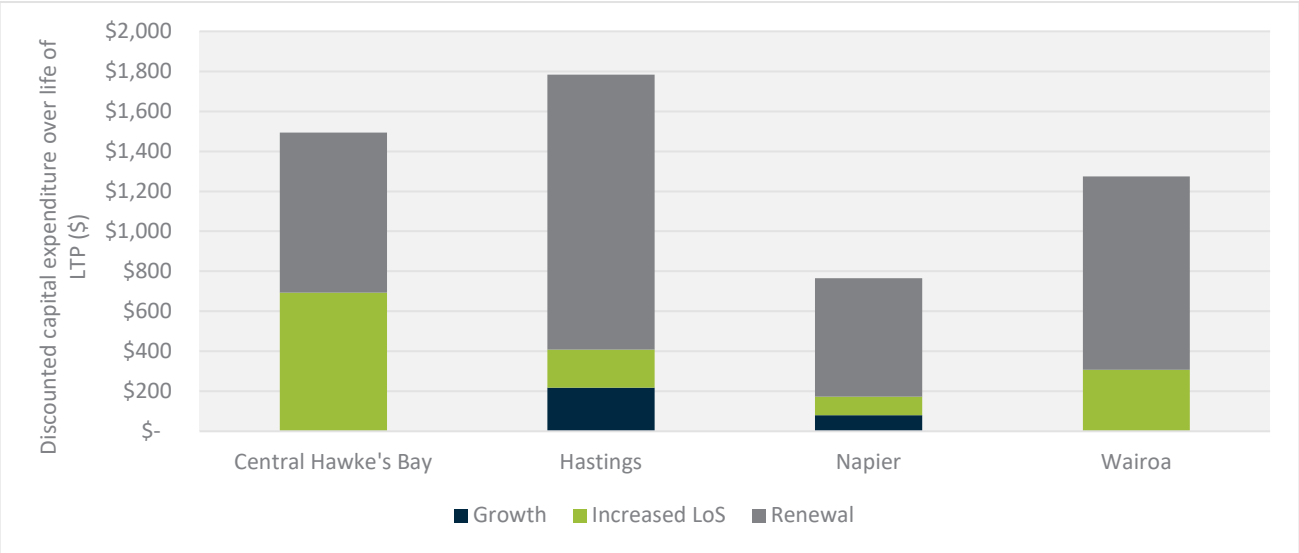
Figure 37 Wastewater renewal ratio



Across all councils, renewal of assets is the main driver of capital expenditure within the wastewater activity. However, given differences in scale between Central Hawke's Bay and Hastings, it is interesting to note the comparatively high investment in assets to increase levels of service in Central Hawke's Bay.

We also note that the 2018 LTPs do not include any potential costs for as yet unspecified upgrades required to meet any increased environmental standards coming out of the three waters reform. That means the capital expenditure over this period may well be much higher than was planned at the time.

Figure 38 Planned wastewater capital expenditure per ratepayer[23] (Long term plan, NPV 5% discount rate)



Below is a description of what the growth and increased level of service expenditure includes for each council.

Central Hawke's Bay

- Treatment improvements and building resilience in Waipukurau
- Main trunk renewal, treatment improvements and building resilience in Waipawa
- Treatment upgrade in Takapau, Otāne and Pōrangahau/Te Paerahi

Hastings

- To meet additional demand and improve levels of service such as increase capacity and extensions to trunk sewers, pump stations and rising mains at various locations across the district. Outfall manifold.

Napier

- The upgrading and rationalising of several sewer mains will be investigated
- Work is underway to identify options for wastewater treatment
- Replacing or upgrading of marine outfall is planned in the years 2026 to 2029

Wairoa

Improve levels of service such as de-sludge oxidisation ponds, remedial works to network following infiltration study and upgrade of a treatment plant

[23] Ten-year period, years 2019/20, 2020/21 and 2021/22 from detailed budgets

6 Stormwater

The table below summaries the major issues and challenges for the Councils relating to the stormwater service[24].

Table 19 Major stormwater issues (as identified by the Councils)

Central Hawke's Bay		Hastings		Napier		Wairoa	
Priorities	**Challenges**	**Priorities**	**Challenges**	**Priorities**	**Challenges**	**Priorities**	**Challenges**
New consent requirements and compliance	Changing environmental compliance requirements	Managing stormwater discharge quality	Climate change implications	Capacity - Most of reticulated stormwater is design to one in two-year event and needs upgrading to meet standard	Available funding and resources to address levels of service, climate change and growth areas	Application under way not yet submitted for global consent	No current consent
Condition-related failures of Helicoil pipes and the availability of good asset information to effectively plan	Working through the new consent process for stormwater management and the implications on budget and resources	Continuing development of a Renewals Strategy	Havelock streams management strategy	Quality of stormwater discharged to receiving environments is of great concern to Council and the public	Ability to improve water quality in water bodies with other contributing factors/parties that are beyond our control	Asset data cleansing, understanding which assets are roading responsibility and 3 waters	Ageing infrastructure difficult to fund due to economy of scale
Capacity to service growth	Historical issues with pipe materials failing and poor historical records	Ongoing stormwater model development	Managing urban flooding and overland flow control	There is no reticulated stormwater network in some areas of the city			Lack of historical data, maintenance and management of the entire stormwater network (shared management between three waters and roading)

[24] We note that Hastings stormwater as set out in this report will include an element of flood control (primarily Havelock streams and Dams that HDC provides some management on behalf of HBRC

6.1 Assets

6.1.1 Stormwater serviced population

The figure below demonstrates the population served by each council's stormwater service.

Figure 39 Stormwater service key information

6.1.2 Stormwater asset information

The figures below set out information about the number and type of assets involved in the stormwater service. The age of the assets is also set out as is the serviced area for stormwater. This information begins to highlight the differences between the respective council's networks.

What follows in the next sections is a comparison of the condition of the network to provide a fuller picture of the assets.

Figure 40 Stormwater pipe length

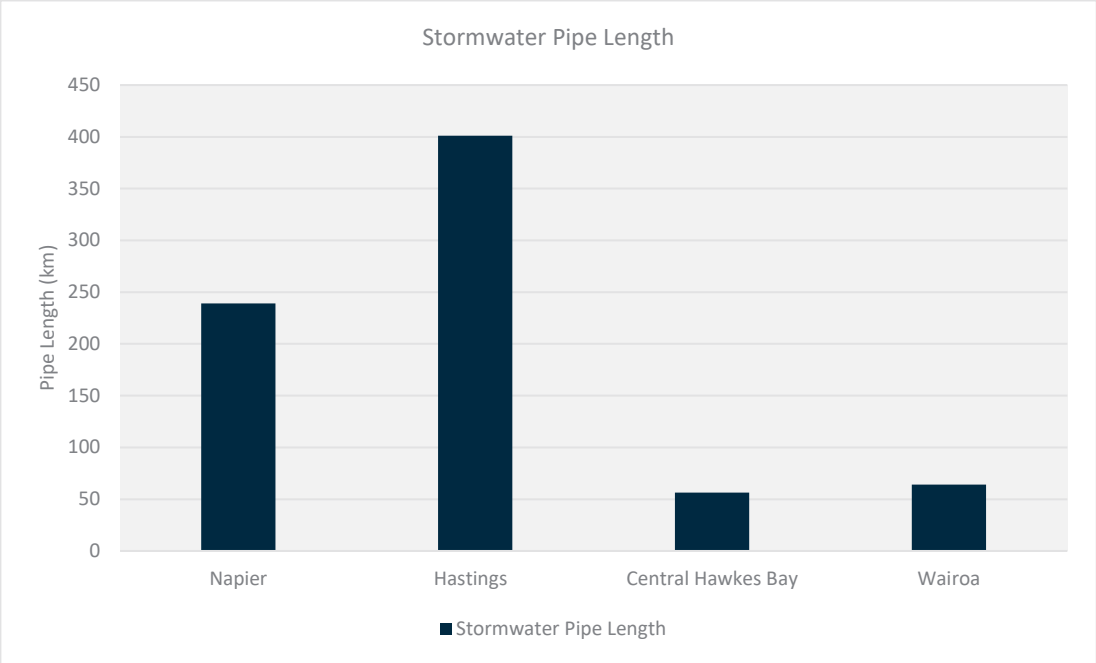


Figure 41 Stormwater pump stations

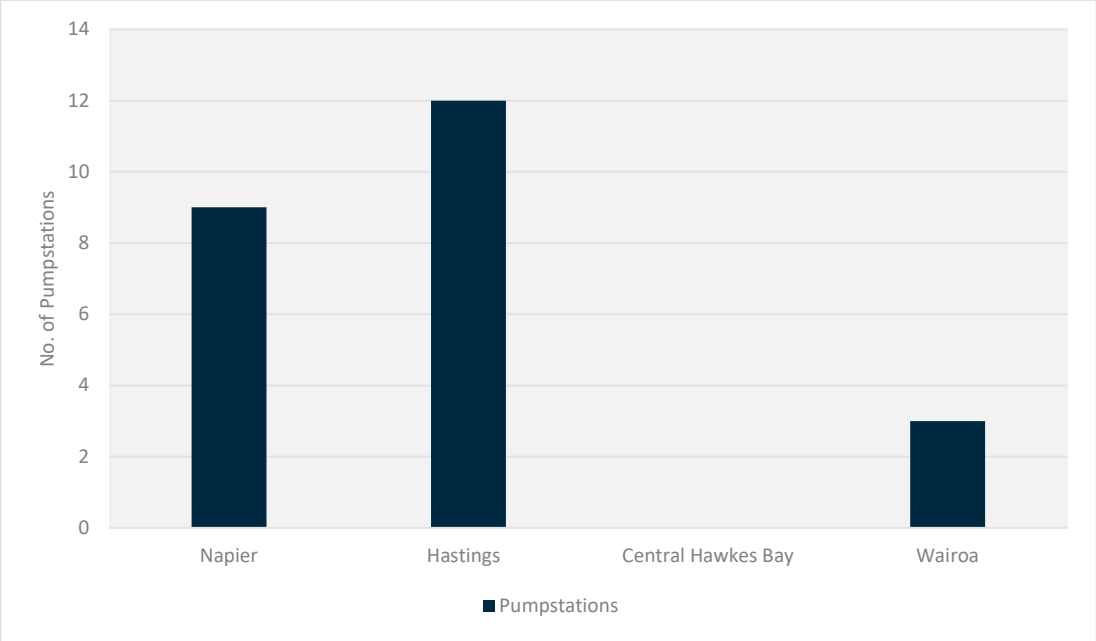
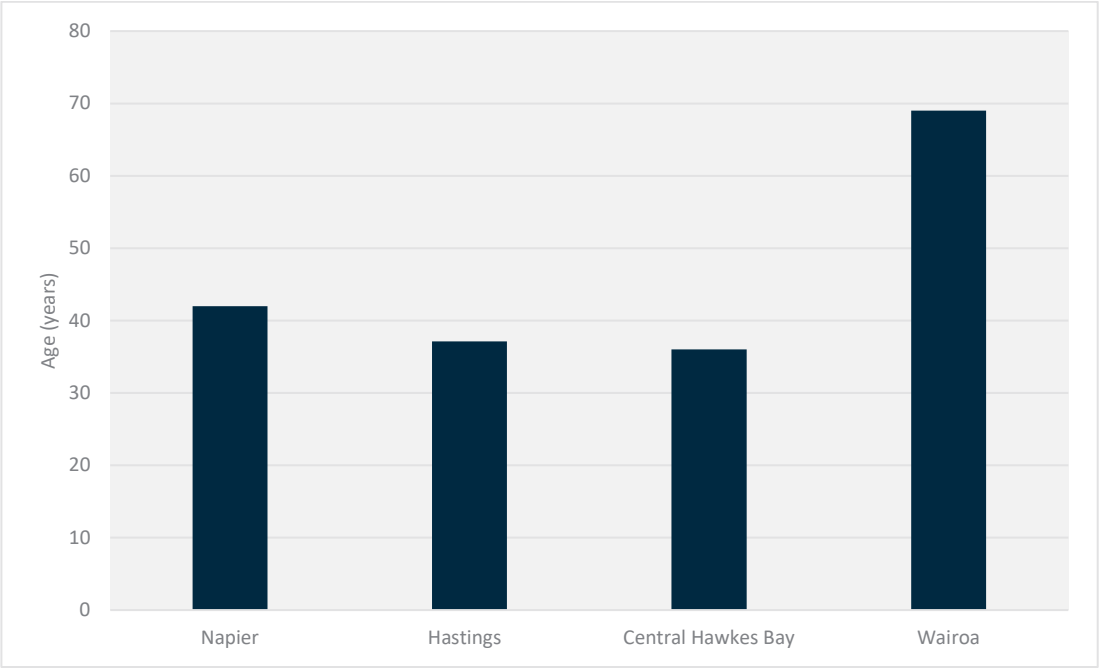


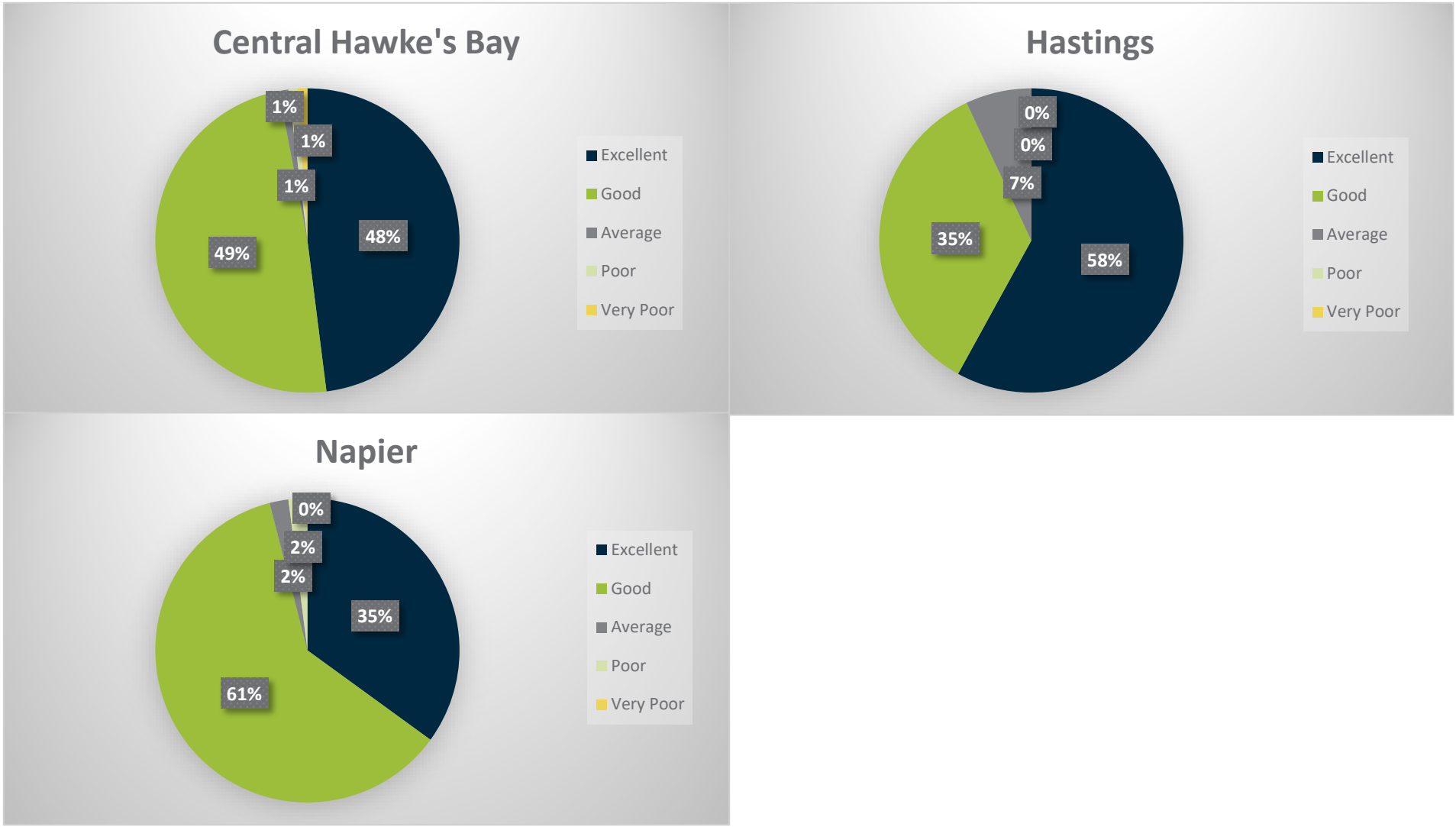
Figure 42 Stormwater pipe average age



6.1.3 Asset Condition

A comparison of the respective condition of each council's wastewater services assets is set out below. While each council has different approaches to rating their assets and different confidence levels in the data on which the assessment is based there are significant differences in the condition of the assets across the group of councils with a significant proportion of the Wairoa network in an unknown condition.

Figure 43 Stormwater asset condition[25]



[25] No asset condition was provided for Wairoa. Addressing the lack of stormwater condition data has been identified as an action in Council's asset management improvement programme.

6.1.4 Performance and levels of service

The Councils have varying levels of service and performance against those. Each council's targets for the DIA performance measures and their actual performance against these is set out in the table below this brief summary.

All currently meet the DIA mandatory performance measures for compliance with stormwater discharge resource consents. Note that Wairoa has no stormwater consent and is in the process of applying for a comprehensive stormwater discharge consent.

Response times are fairly similar and all the Councils report meeting these.

Customer satisfaction criteria targets vary significantly with all Councils reporting performance significantly better than the target.

Table 20 DIA performance measures: stormwater (17/18)

	Central Hawke's Bay		Hastings		Napier		Wairoa	
	Target	Current Actual	Target	Current Actual	Target	Current Actual	Target	Current Actual
DIA Non-Financial Performance Measure 1: *(System and Adequacy)* The number of flooding events that occur in the Councils district. For each flooding event, the number of habitable floors affected (expressed per 1000 properties connected to the Council network).	0	0	0 (zero)	0 (NPR)	<1	None	50	0
DIA Non-Financial Performance Measure 2: *(Discharge compliance)* Compliance with Council's resource consents for discharge from its stormwater system measured by the number of: a) abatement notices b) infringement notices c) enforcement orders d) convictions	0 (zero)	0	0 (zero)	a) 0 (Zero) Abatement notices b) 1 Infringement notices c) 0 (Zero) Enforcement orders d) 0 (Zero) convictions	0 (zero)	None	0 (zero)	No current consent
DIA Non-Financial Performance Measure 3: *(Response Times)* The median response time to attend a flooding event, measured from the time that the Council receives notification to the time that service personnel reach the site.	<2 hours	0	1 Hour	1.12 Hours	<2 hours	No event	Unknown	<2 hours
DIA Non-Financial Performance Measure 4: *(Customer Satisfaction)* The number of complaints received by Council about the performance of its stormwater system, expressed per 1000 properties connected to the Councils stormwater system.	<5	0	15	11.15	<5	4.87	50	25 in total No records of connected properties available

6.2 Financial

The average stormwater rates for the 2018/19 financial year are detailed below.

Table 21 Stormwater charges

	Central Hawke's Bay	Hastings	Napier	Wairoa
Average residential rate[26]	$153	$96	$235	$202

The detailed 2019/20 budgets show some variation in the rates charged across the region for stormwater. In addition, there is a clear differentiation between the charging mechanisms in Napier and Hastings, which use a general rate, and Central Hawke's Bay and Wairoa, which use targeted rates, to fund the stormwater activity. Differences in revenue collected to fund the stormwater activity across the Councils is broadly reflective of differences in the size of the Councils.

Table 22 Stormwater revenue

	Central Hawke's Bay	Hastings	Napier	Wairoa
Total revenue from targeted rates and trade waste	$699,342	0	0	$428,065
Total revenue from general rates	0	$2,937,392	$3,927,000	0

Total debt allocated to stormwater assets is comparatively low when compared to water and wastewater, as would be expected given typically low levels of investment in the network nationwide. However, low revenues mean that Hastings District Council's debt to revenue ratio for this activity is particularly high. It is important to note that lending covenants are unlikely to specifically consider stormwater debt and revenue in isolation however.

Table 23 Stormwater debt

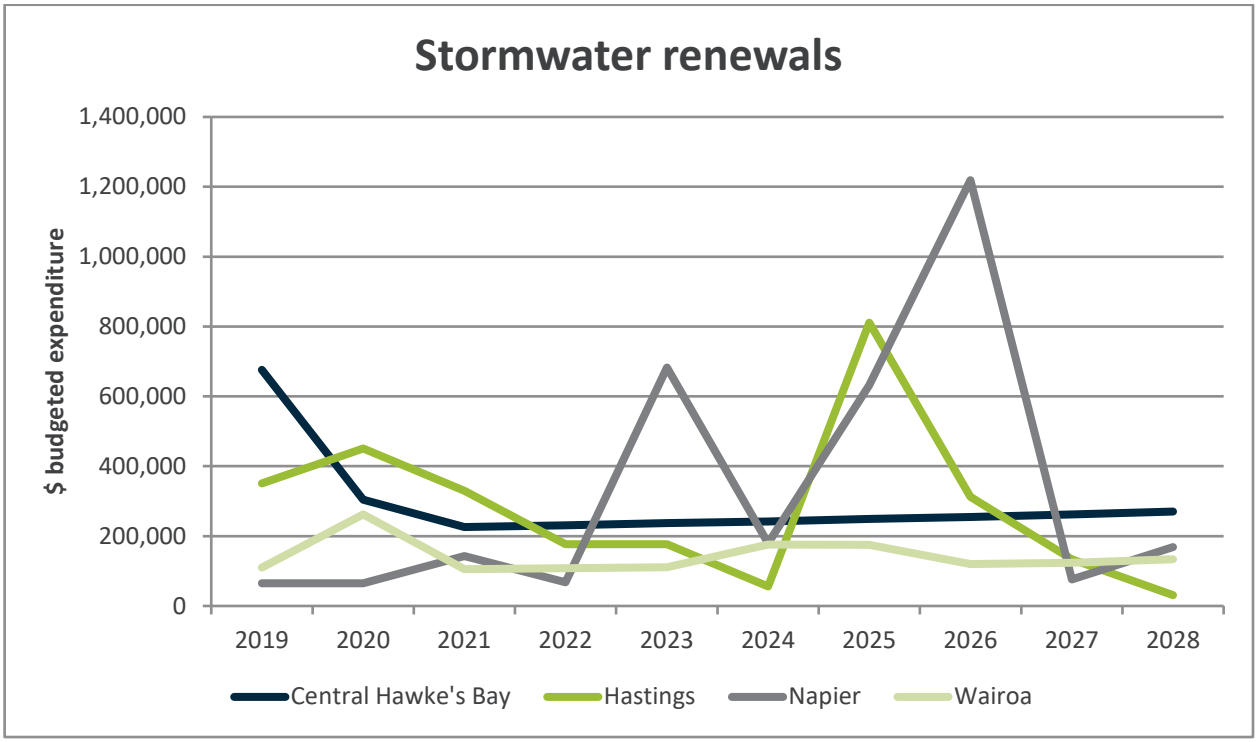
	Central Hawke's Bay	Hastings	Napier	Wairoa
Total debt	$0.6 million	$23.1 million	$7.7million	$0.5 million
Debt to revenue ratio[27]	80%	776%	194%	105%
Average loan term	18 years	25 years	25 years	45 years
Debt to asset ratio[28]	3%	10%	6%%	8%

[26] Total rate take for stormwater activity divided by number of assessments for stormwater
[27] The LGFA limit on borrowing for this ratio is 250% across a council's entire business
[28] [28]2019/20 total projected debt divided by 2019/20 project net book value of infrastructure assets

	Central Hawke's Bay	Hastings	Napier	Wairoa
Interest cost per annum	$24,000	$667,000	$101,000	$70,000
Interest to revenue[29]	3.4%	22.4%	2.5%	14.9%

Expenditure on asset renewal has been compared across the four Councils based on the published 2018-2028 LTPs updated with current three-year budgets provided by each Council. We note that a number of the Councils, through the current annual planning process, looked to bring forward some of the capital works that are currently in the outer years of the LTP. These have been taken into account.

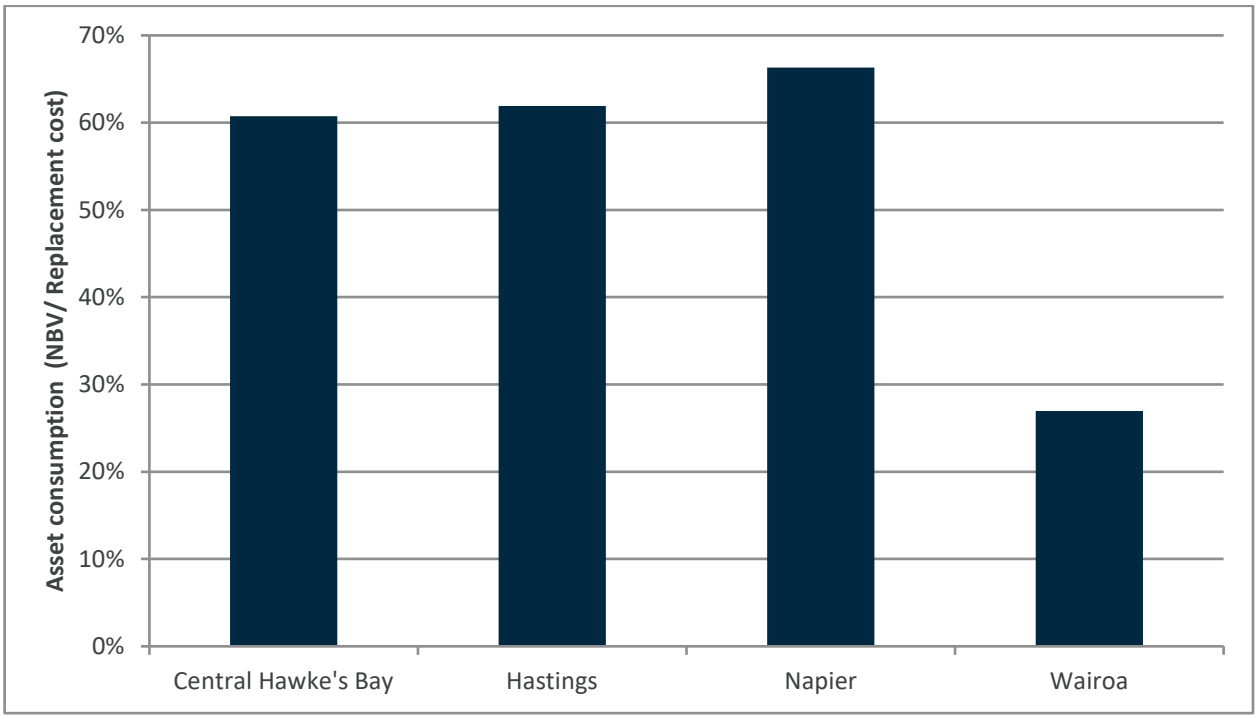
Figure 44 Stormwater assets budgeted renewals expenditure



The asset consumption ratio for wastewater assets shows a typically younger asset base than water assets, with the exception being Wairoa which has a particularly low consumption ratio for its stormwater assets. The figures are again sourced from 2018 actual results.

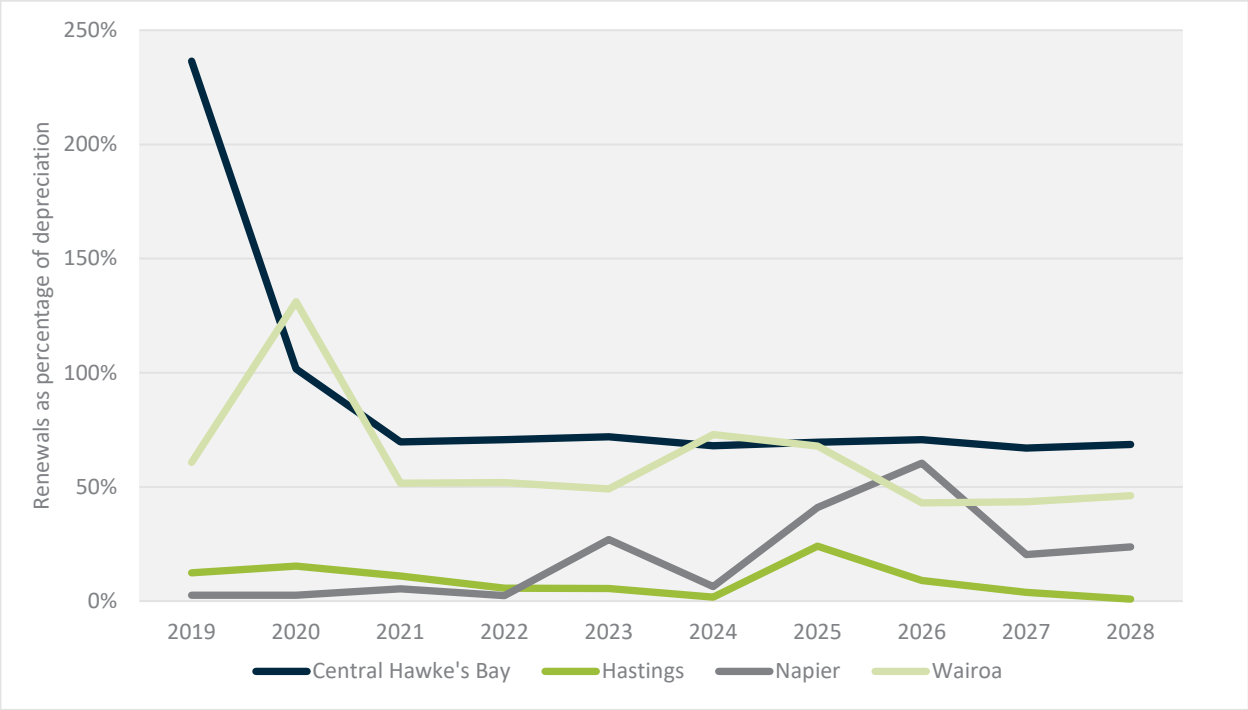
[29] The LGFA limit on borrowing for this ratio is 20% across a council's entire business

Figure 45 Asset consumption ratio (2018) for stormwater assets



Planned reinvestment in the stormwater network is low across the entire region, with reinvestment typically remaining well below the rate of depreciation. This is consistent with trends across all New Zealand councils.

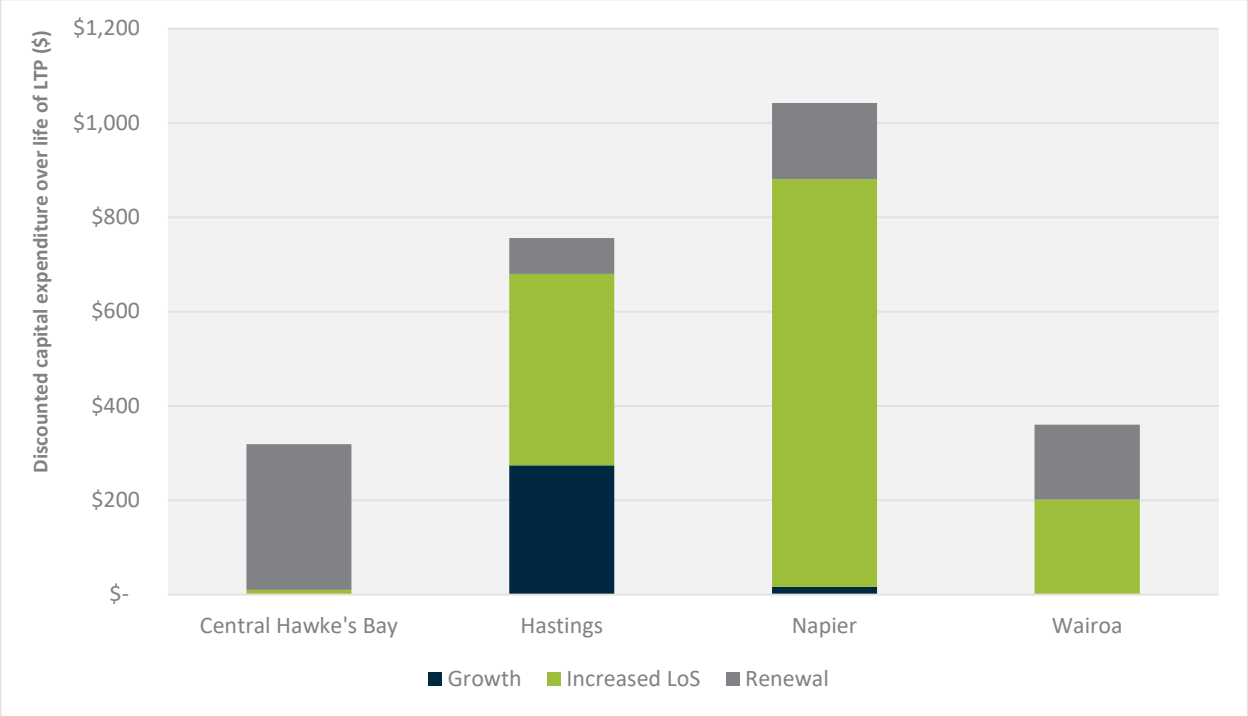
Figure 46 Stormwater renewal ratio



Despite relatively low levels of renewals investment for stormwater assets in Napier and Hastings, total capital expenditure over the life of the Long-Term Plans exceeds $23 million and $26million respectively (discounted at 5%). This is supported by significant investment in new stormwater assets to facilitate growth (which will be part funded by Development Contributions) and investment in improving the level of service.

We also note that the 2018 LTPs do not include any potential costs for as yet unspecified upgrades required to meet any increased environmental standards coming out of the three waters reform. That means the capital expenditure over this period may well be much higher than was planned at the time.

Figure 47 Planned stormwater capital expenditure per ratepayer[30] (Long term plan, NPV 5% discount rate)



Below is a description of what the growth and increased level of service expenditure includes for each council.

Central Hawke's Bay

- CBD Improvements in Waipukurau
- Network wide building resilience

Hastings

- To meet additional demand and improve levels of service such as increase capacity and extensions to pipes, open drains and detention ponds at various locations across the district.

[30] Ten-year period, years 2019/20, 2020/21 and 2021/22 from detailed budgets

Napier

- The Council is developing a modern network wide hydraulic model to use as a tool for assessing and analysing the stormwater system. Existing networks are not designed to our required standards, hydraulic models will assist with the prioritisation of levels of service improvement works

Wairoa

- Improve levels of service such as piping open drains

7 Further observations

7.1 Good practice

The assessment of the current state has not been an in-depth review of the processes and practices that underpin the three waters services. It has focussed on collection and comparison of information from each council about the services themselves in order to develop a regional understanding. We have not at this stage therefore highlighted particular strengths of any individual council. However, through this process a number of areas of good practice were highlighted.

- The initiation of this joint regional review and the collaborative manner in which it has been undertaken. The Hawke's Bay is one of only two areas that we are aware of undertaken a similar exercise to inform their response to the Minister's reform agenda. It is not easy to create the political and operational goodwill required for a regional project to be successful. Even with the HBLASS in place undertaking the project in the open, collaborative manner that it is with leadership from elected members, CEOs, right through the project team and beyond is a credit to the Councils.
- The joint working group set up following the following the Havelock North water contamination event has the territorial authorities and the regional council alongside government agencies at both a Governance (elected members) and operational (council staff) levels. The Councils highlighted the benefits of having the joint working group and joint governance committee.
- Regional work on Emergency Management and Lifelines

7.2 Regional opportunities

Several key common challenges stood out for the three water activities. They are faced by all five councils and the commonality of the issues means that understanding and addressing the challenges at the same time, especially give the capacity challenges faced by two of the four territorial authorities presents significant opportunity for regional co-operation.

- Community expectations i.e. correlation of being able to meet LOS, rates, funding.
- Changing regulatory environment i.e. Drinking water standards and wastewater & stormwater discharge limits.
- As yet unquantified future costs arising from increased regulatory standards and community expectations.
- Growth pressure – resilience and organisational capacity to deliver capital plan.
- Connection between the water supplies across the Hawke's Bay.
- Resourcing – staff, suppliers and training

Appendix A Summary of Infrastructure Strategy Key Themes

Wairoa District Council

Demand and Growth

- Council predicts a static population with little change to the demand for services over the next 30 years.
- With over 50% of Wairoa's population being Māori, the relationship with the tangata whenua of Wairoa needs to be actively managed if changes affect their ancestral lands, water, sites, waahi tapu and other taonga.
- Residential development on previously rural land, such as that which has occurred in Mahia over the last ten years, can increase demand on the water services and typically increases impermeable service, which can impact on wastewater and stormwater networks.
- Tourism is an area of focus, in particular the potential tourism related to Rocketlab, with an aim to launch once per week. Infrastructure must be in place to support tourism.

Asset Condition and Performance

- 44% of water supply pipes have been assessed as being in poor or very poor condition
- The wastewater system in Wairoa has been assessed as having less than 50% of pipes being in good condition.
- Wastewater pump stations are at times unable to accommodate extreme wet weather flows – this has resulted in some incidents where untreated overflows of wastewater into the Wairoa River. The proposed upgrade to the wastewater treatment plant and associated works over the next two to three years will reduce these events in the future.
- Condition information of the stormwater assets is limited, information captured is based primarily on visual assessments and age with some information gathered through reactive works etc.

Resilience

- The nature of some small three waters networks can be vulnerable due to flooding and slips in severe storm events which may lead to communities being cut off.
- Potential impacts for Wairoa include coastal inundation and erosion, inland flooding from the Wairoa River and wider changes associated with extended period of drought. Many lowland areas, including the Wairoa township and the Nuhaka settlement, are at risk from flooding. This may have multiple adverse effects on roads and to three waters networks; flooding; loss of key infrastructure; increased demand for water; and/or disruption to gravity sewerage system from droughts.

MorrisonLow

Napier City Council

Demand and Growth

- Napier projects an increase in population growth of 18.9% over the next 30 years (from 61,100 in 2017 to 71,000 by 2048).
- Considering anticipated growth and current rates of water consumption across the city, the drinking water supply network will reach its maximum permitted peak allocation in 30 years' time.
- There is currently a wider regional discussion about capping the total amounts of water drawn from the aquifers and rivers. As the region's population grows, and the regional economic activity with it, it is likely that the City will need to be much more proactive in demand management of its water supply.

Asset Condition and Performance

- Council's three waters SCADA system has reached its end of life and requires a completed replacement or upgrade.

Resilience

- The traditional concept of city-wide networks collecting and treating wastewater is now being challenged. Smaller local or on-site treatment facilities embedded throughout the urban area are proposed as opposed to a single large treatment facility. This will increase the overall network redundancy and thus reliability and resilience.

Risk and Compliance

- The implications from the Havelock North Inquiry Report no.2 for Napier were the recommendations for compulsory chlorination of water and loss of groundwater security. Napier's water supply network was never configured for large scaled permanent chlorination.
- The aquifer Napier draws its water from is fed from the Hastings District. As such Napier needs to investigate means to assure itself of the protection of the upstream aquifer and the safety of the water source. Council will also need to allow for changes in groundwater quality and aquifer levels that may result from other environmental factors outside Napier's ability to control.
- Several of Council's current water bores have well heads located below ground level and located within the urban area and close to wastewater infrastructure. This situation has been identified as a high risk for the safety of the water supply.
- The consent for the wastewater disposal via the treatment facility and ocean outfall is due to expire in 2037.
- Napier wastewater system is a conventional system comprising a network of pump stations, gravity and pumping mains. One of the main disadvantages of the system is high inflow and infiltration during wet weather.
- Council's goal with respect to flood protection is to provide protection to houses, business and commercial buildings from a rain event with a 50-year return period. Due to lower standards in the past, this target cannot be met in localised areas already developed within the city.

Central Hawke's Bay District Council

Demand and Growth

- Council predicts growth of households around 9.5% in total across the district for the next ten years from 2018, with a growth of around 9.0% over the following 20 years to 2048.
- Lifestyle residential development on the city fringe will result in pressure on Council to extend existing networks to accommodate growth. Intense development within the existing towns will also place pressure on the capacity of the existing three waters networks.

Asset Condition and Performance

- Waipawa and Waipukurau have aging water supply and wastewater network. They will reach the end of their asset life over the next 30 years.

Resilience

- Some of the wastewater networks are more prone to infiltration because of the age or condition of assets or the design of some of the networks means that stormwater infiltration is more common irrespective of asset age and condition.
- Some water supply schemes only have a single supply with no redundancy.

Risk and Compliance

- Recent findings in modelling highlighted the lack of firefighting/supply capacity to meet legislative needs in the Waipukurau, Waipawa and Otāne water supply networks.
- The National Policy Statement for Freshwater Management (NPS-FM) requires Council to meet high levels of treatment for the disposal of waste from treated waste pond discharges. Similarly, the Regional Council consents have increased cost both in capital and operation works to manage stormwater discharges.
- The Hawke's Bay Regional Council Plan Change 6 may have the effect of reducing the quantities of water that can be extracted for town supplies, particularly reducing the peak flow rates. This may result in water restrictions for longer periods in the summer periods and constrains the ability to service additional wet industries in Waipukurau.
- Water supply schemes currently comply with Drinking Water Standards (DWS) 2002 but do not comply with the DWS 2005 (revised 2008).
- In the towns of Waipukurau and to a lesser extent Waipawa, there are a number of points where the three waters infrastructure crosses known fault lines.
- Smaller wastewater schemes are currently meeting consent conditions however in the future, consent conditions may set higher standards or the conditions for new resource consents may not be met given the age, conditions or design of existing infrastructure.

Funding

- Havelock North water crisis has resulted new capital projects such as new UV water treatment and also added cost on the operational side of Council water supply systems.
- The South West area of Waipukurau drains to Lake Hātuma and can silt up at times creating a constraint for the single outlet. This may cause flooding upstream including onto the Racecourse and a constraint for future development in the catchment.

MorrisonLow

Hawke's Bay Regional Council

Level of Service

- For Heretaunga Plains Flood Control and Drainage Scheme, Council has committed to increase the level of service to convey flood water with a 0.2% chance of occurrence in any one year.
- The community values and climate impacts with respect to the natural environment have changed and continue to change at a significant rate.
- Public is increasingly seeking multiple values in addition to the original single purpose of flood protection or drainage at the time many of the schemes were established.
- There is an increasing expectation that stock will be excluded from the vicinity of waterways. The presence of fences (especially electric) on the river berms is resented by a portion of the community.
- Future river management will most likely require extending the flood protection scheme upstream boundary together with additional funding to allow for the ongoing removal of unwanted tree species from the braided riverbed.
- Intend to review future level of service on infrastructure including:
    - National and international advice on climate change predictions
    - Community expectations for appropriate levels of flood protection
    - Affordability and willingness to pay
- The review will also include risk assessments of schemes, including climate change, and where appropriate may recommend changes or improvements that reduce the risk of premature failure, or enable the level of service to be reinstated more rapidly following a natural hazard event that impacts on the scheme.

Resilience

- Iwi will be more empowered and better positioned to provide shared input into scheme management as Treaty of Waitangi settlements and redress occur in Hawkes Bay.
- Hawkes Bay experiences a number of natural hazards which have the potential to impact critical assets (i.e. flooding, earthquakes, tsunami, landslides, coastal erosion and inundation).
- Many of the Hawke's Bay public and businesses have little or no knowledge of the potential impact of a major flood and are not well prepared for the consequences.
- The requirement for informing and educating scheme ratepayers to possible impacts and threats to schemes and scheme assets is a challenging area.
- Hawke's Bay Region is predicted to be drier but with the potential for increased storminess. Severe storms are predicted to bring more intense rainfall which will result in increased flood flows.
- Land use change and climate change are predicted to result in increased runoff from the land into the waterways.

Significant Infrastructure Issues

- Significant quantities of sediment are carried by the major rivers. The flood carrying capacity of waterways will be compromised by aggradation of sediment unless appropriate measures are put in place to manage that risk.
- Some of the scheme developments occurred at the expenses of the natural environment with significant impacts on wetlands and rivers and the surrounding habitat.

Hastings District Council

Level of Service

- Community expectations in respect of wastewater disposal have changed over time and may do again in the future. Council's consent does not expire until 2048, the disposal methods will be reassessed as part of the nine yearly consent review process.

Asset Condition and Performance

- On average the water supply network is about half way through its expected life.
- 35% of water supply pipes are made of AC. AC pipe has a reduced life, is brittle and can fail without warning.
- Councils three key wastewater trunk mains require renewal over the next 30 years.
- Analysis on the remaining life of the submerged and beach sections of the East Clive wastewater discharge pipeline is underway to determine timing for replacement

Risk and Compliance

- The Council faces changes in:
    - Drinking water security, treatment, availability and legislation
    - Increasing environmental standards, particularly in relation to stormwater quality and road runoff
- There are growing concerns regarding the quality of stormwater discharges (urban and rural) and the potential degradation of the District's waterways.
- The Havelock North contamination events had a marked impact on the community as well as the necessary investment response. Focus is on drinking water security, treatment, availability and legislation.
- Due to the changes of understanding and status of the groundwater, a new water supply strategy was adopted. The water strategy is to move away from Brookvale borefield, develop new borefield, increase pipe capacity and install water treatment on all urban water supplies.
- Council's approach to the provision of safe drinking water has changed significantly since the Havelock North contamination event and subsequent government enquiries.

Appendix B Failure Analysis

Information supplied

Asset data was available from all councils of a reasonably consistent standard. The attributes required were mainly an install date, material and length. More sophisticated management attributes such as criticality and condition were not investigated.

Information about asset failures is not recorded consistently as it typically is not included in the asset management systems of the Councils. Even where failures are recorded, the level of detail and reliability of failure histories does vary between Councils.

Information supplied for this study includes:

Table 24 Data supplied for failure analysis

Council	Age of Assets	Total Annual Failures	Annual Failures by material	Annual failures by asset	Failure period
Central Hawke's Bay	X				
Napier	X	X			2014-2018
Hastings	X	X	X		2008-2018
Wairoa	X	X	X	X	2010-2015

Assumptions and limitations

- Faults caused by third party damage to watermains have been included for consistency as they were not identified in all data sets.
- Installed pipe lengths are as per the data supplied and are representative of the installed pipe lengths over the period of faults analysed, but may not be exact.
- Faults are as provided and may include faults on watermains that have since been replaced or renewed. As most fault data is not recorded against a specific pipe, extraction of faults on pipes no longer in service was not possible at this stage.
- Results are presented for watermain failures only, and do not include service lines or laterals, tobies, hydrants or other ancillary assets.
- The definition of a 'fault' is not necessarily consistent between Council's. While minor leaks have been discarded if they were identified, there may be some inaccuracy in the level of fault recorded and/or classified by each Council.
- Similar pipe materials have been grouped together for ease of comparison (e.g. 'PE' covers HDPE, MDPE and PE).
- All watermain information supplied has been used, this includes urban and rural networks.

Figure 48 Annual AC faults normalised by network length

Figure 49 Annual PVC faults normalised by network length

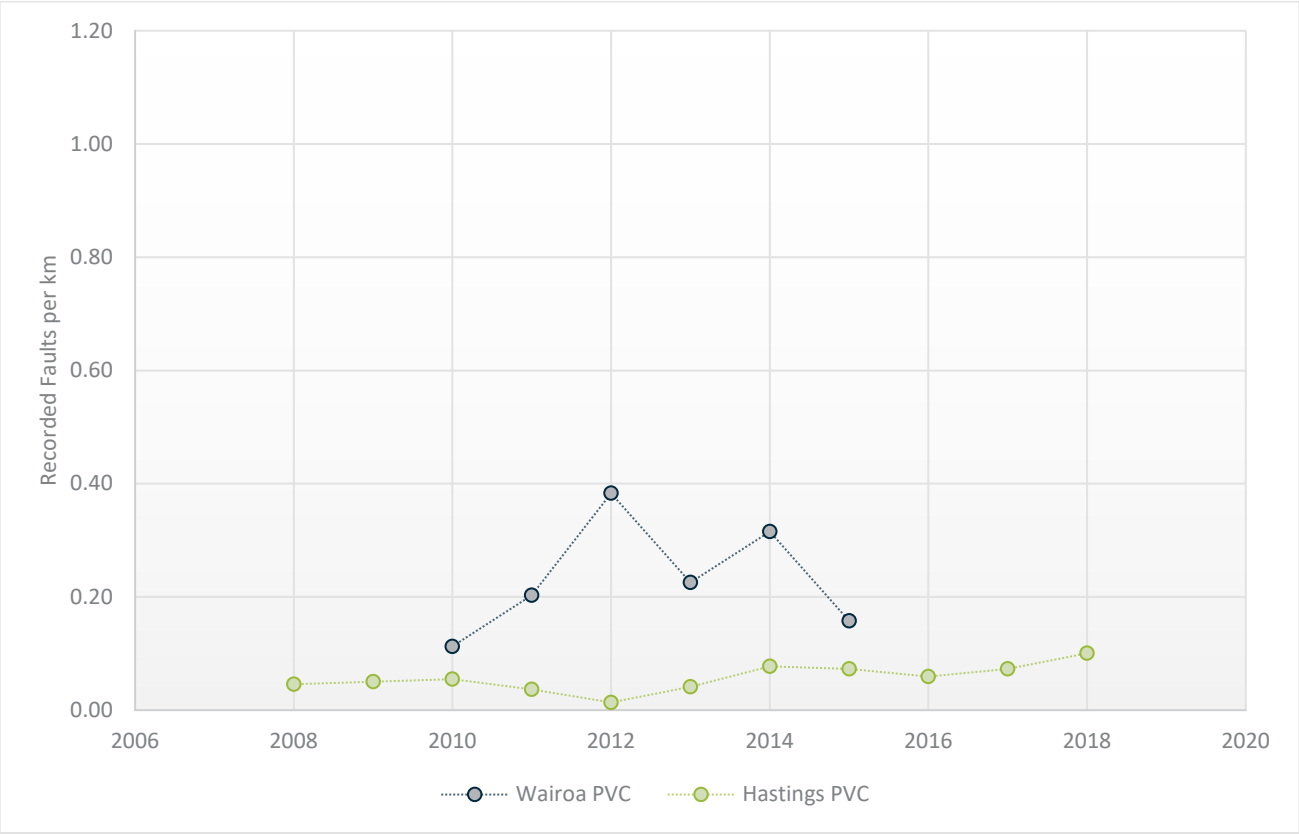


Figure 50 Annual steel faults normalised by network length

Figure 51 Age distribution by pipe material