



Opōtiki District Council
STRONG COMMUNITY STRONG FUTURE

2024-54 Infrastructure Strategy

August 2024

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Executive summary

Scope and purpose of the strategy

This strategy describes the key infrastructure-related challenges to three waters, solid waste, transport and harbour activities that the Ōpōtiki District Council will face over the next 30 years. It explains what the options and implications are for responding to these challenges, and Council's preferred approach.

The key challenges facing our infrastructure are:

- Replacing old assets (ageing infrastructure)
- Improving levels of service due to community expectation and or mandated requirements
- Meeting the demands of future growth and
- Natural hazards
- Water Services Reform

Self Disclosure – LGA 2002 Section 101(b)

The Infrastructure Strategy has a primary focus on investment required through years 1-10 to renew existing assets, accommodate regulatory compliance (or other Level Of Service requirements), improve resilience and meet underlying growth assumptions. This does include some investment, for critical infrastructure, that would address requirements over a 30 year period.

However, for years 11-30 the strategy generally sets out requirements to operate, maintain and renew existing assets with less focus on estimating additional investment required to further accommodate growth and level of service improvements beyond what would be catered for through years 1 to 10.

For this reason, we disclose that the Infrastructure Strategy does not fully comply with the requirements of Section 101(b).

Key challenges facing our infrastructure

The table below summaries the infrastructure challenges we face, and the associated range of decisions considered to address these issues. The **underlined** decision highlighted for each challenge is the preferred approach for Council.

Infrastructure Challenge	Significant Issue	Significant Decisions
Replacing Old Assets	Are we prudent managers of our assets?	- Invest based on asset end of life and get ahead of curve. <u>Adopt long run average renewal approach and invest operationally to mature renewal approach based on asset condition, service condition and criticality.</u> - Limit renewal programme.
Improving levels of service due to community expectation and or mandated requirements	The ability to pay needs to be balanced against the desire to improve levels of service and in some cases the requirement to improve levels of service in response to the regulatory environment.	- Invest heavily in improving both desired and mandated levels of service. <u>Limit improvements in level of service primarily to mandated areas.</u> - No investment in improving levels of service.
Meeting the demands of future growth	How proactively should Council invest in infrastructure for growth?	- Invest fully in infrastructure to enable growth. <u>Limited investment in identified areas to assist growth.</u> - No pro-active investment for growth.
Natural Hazards	How actively should council be investing in ensuring our infrastructure is resilient to natural hazards?	- Invest significantly to address resilience. <u>Limited investment to critical assets to mitigate some risk.</u> - No investment to manage resilience.
Water Services Reform	Can we afford to fund and resource management of three waters assets ourselves.	- Continue with current delivery model for three waters infrastructure. <u>Investigate alternative delivery model for three waters infrastructure.</u>

Replacing old assets:

As a council we are responsible for carefully managing our existing assets, including renewing them at the right times to maintain levels of service. We aim to get better at deciding when to invest in our assets based on their actual condition, not just their age. This means putting more resources into collecting asset condition data and better understanding how critical each asset is to inform when to renew our assets and what assets can be pushed to their limit. This avoids premature investment, and premature burden to the community. This is especially important for our three waters and solid waste assets which need more detailed asset information to better inform renewals programmes. Our transport assets generally have more consistent data across the board, and it is clear we need to invest more in maintaining them to keep them in good condition. To assist in funding of the depreciation of assets, we have adopted a 'Long Run Average Renewal' approach to funding renewals. This means Council will set its funding level to the long run average costs of renewals over 30 years.

Improving levels of service due to community expectation and or mandated requirements:

Improving levels of service due to community expectations and / or mandated requirements is an ongoing challenge. The ability to pay needs to be balanced against the desire to improve levels of service and in some cases the requirement to improve levels of service in response to the regulatory environment. The community has expressed a strong interest in better managing stormwater in the Ōpōtiki Township. They want a new stopbank at the southern end of town to prevent floodwater from entering the urban area and to upgrade the pump station capacity to remove water more effectively. The community will need to support other upgrades, like obtaining a new permit for the Ōpōtiki Township wastewater treatment plant and disposal field with new conditions, and moving the Te Kaha water treatment plant to meet water quality requirements consistently, which is currently a challenge during wet weather. Our approach in this area is to limit improvements to level of service to primarily mandated areas.

Meeting the demands of future growth:

The district is growing and is estimated to continue to grow with up to 14,600 people predicted to be living in Ōpōtiki District by 2055. The ability for Council to meet this demand on services needs to be balanced with the affordability of investing in the required infrastructure. With the cost of living high, the community's ability to handle increases in costs and the Council's increased costs to deliver services needs to be balanced with the required renewals and upgrades to infrastructure, particularly with the growth that Ōpōtiki is experiencing.

We are adopting an approach of limited investment in identified areas to assist growth as opposed to fully funding growth projects. This means costs to the community can be spread over time to help balance the needs of the assets against the ability of the community to pay. In this manner growth is still provided for in some capacity.

Natural Hazards:

The Council faces challenges in keeping its infrastructure safe from natural hazards. The Auckland and Hawke's Bay floods in 2023 have shown we share similar risks. Investment in resilience against natural hazards can be expensive for our community but we can't ignore the need for it. Our strategy involves ongoing investment to better understand the risks to critical assets and develop ways to manage these risks. This means finding a balance between

preventing service disruptions with the ability to restore services if they are disrupted. A key part of our approach is to make sure the community understands both the benefits and risks of these management strategies so everyone can support them as a collective effort. Our focus will be on key critical infrastructure to mitigate some of these risks.

Water Services Reform

The New Zealand government is working to change the way water services are delivered. They previously indicated they are seeking to aggregate services to various entities across New Zealand. This is now uncertain with the new government, and therefore we are currently in a holding period. Proposed legislation changes earmarked to be fully in place by mid-2025 under the “Local Water Done Well” policy is likely to result in Council retaining much of the three waters services in-house but keeps the door open for different models of service delivery.

Assessments of the state of three waters infrastructure in New Zealand estimate that the cost of upgrading water and wastewater infrastructure to address public health and environmental impacts is in the order of \$10 billion.

Ōpōtiki District Council is not without its own challenges with regard to its ability to fund the required level of investment required to renew existing assets, improve levels of service and accommodate growth. The challenges to three water services are significant, and Council continues to plan for and react to the dynamic legislative landscape to ultimately provide a fit for purpose service to our community. The direction therefore is to explore alternative delivery models for three waters infrastructure.

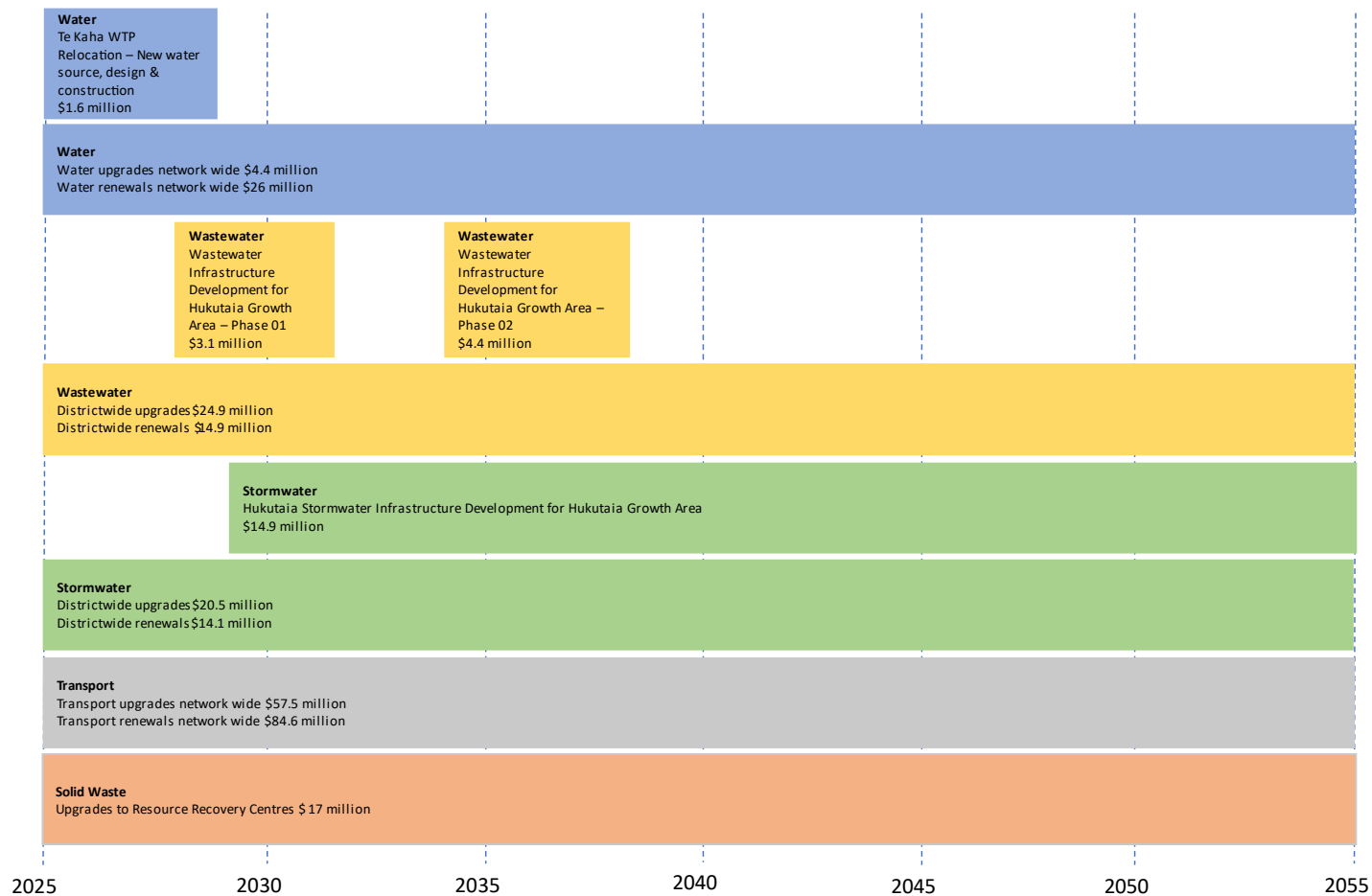
Capital works investment direction

Activity	Years 1-3	Years 4-10	Commentary
All	Limit to historic delivery levels	Increase, based on long run average renewal approach and limits on LOS, Growth and risk mitigation.	• Adopt long run average renewal approach and invest operationally to mature renewal approach based on asset condition, service condition and criticality • Limit improvements in level of service primarily to mandated areas • Limited investment in identified areas to assist growth • Limited investment to critical assets to mitigate some risk
Three Waters	Limit	Increase	• Progress with critical works Ōpōtiki township WWTP consent and upgrade

Activity	Years 1-3	Years 4-10	Commentary
	[whilst investing operationally to improve work programme]		- Progress WWPS01 and Rising Main renewal/upgrade for resilience, I&I and future growth - Progress Te Kaha WTP - Growth projects in later years, can be brought forward if funding sourced. - Unmandated LOS projects (i.e. SW improvements) in later years, can be brought forward if funding sourced.
Transport	Increase [within combined limit to historic delivery levels]	Increase	Work programme is mature, increase investment to catchup with renewal programme and make use of NZTA 75% funding rate.
Solid Waste	Increase [within combined limit to historic delivery levels]	Increase	Work programme is immature, increase investment to address immediate needs whilst investing operationally to improve work programme
Harbour	On Hold	On Hold	Awaiting outcome of negotiations with MBIE

Proposed major infrastructure projects

The following figure highlights the major infrastructure projects that are proposed over the next 30 years.



1 Introduction

1.1 Purpose and scope

This Infrastructure Strategy describes the key infrastructure-related challenges facing the Ōpōtiki District over the next 30 years, what the options and implications are for responding to these, and the Ōpōtiki District Council's preferred approach.

The strategy covers the Council's transport, three waters, solid waste, and harbour activities. This strategy focuses on the big picture issues for Council's infrastructure and is supplemented by the relevant 202 asset management plans (AMPs). These additional plans give a more comprehensive insight into how Council manages the assets for each activity.

Self Disclosure – LGA 2002 Section 101(b)

The Infrastructure Strategy has a primary focus on investment required through years 1-10 to renew existing assets, accommodate regulatory compliance (or other Level Of Service requirements), improve resilience and meet underlying growth assumptions. This does include some investment, for critical infrastructure, that would address requirements over a 30 year period.

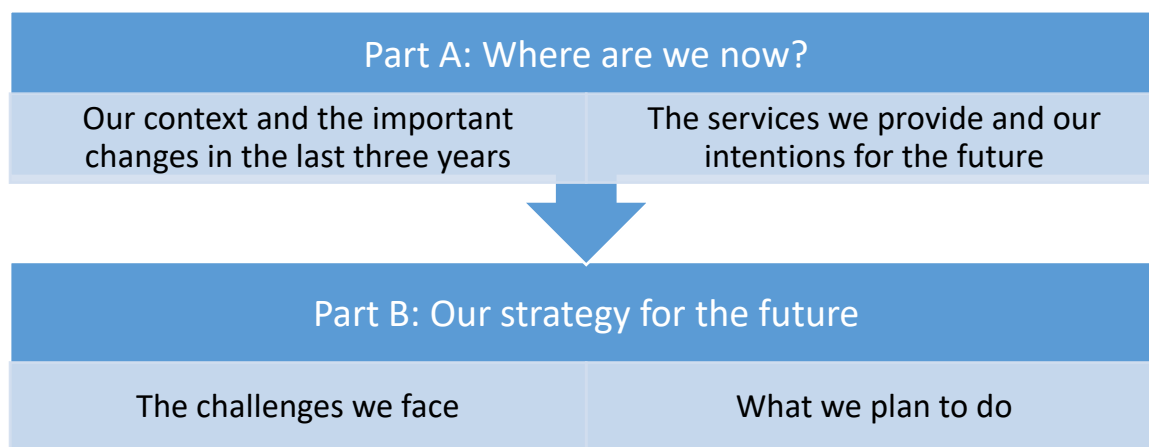
However, for years 11-30 the strategy generally sets out requirements to operate, maintain and renew existing assets with less focus on estimating additional investment required to further accommodate growth and level of service improvements beyond what would be catered for through years 1 to 10.

For this reason, we disclose that the Infrastructure Strategy does not fully comply with the requirements of Section 101(b).

Note: The financial forecasts in this document are inflated unless stated otherwise.

1.2 Document structure

This strategy has a two-part structure, shown below.



1.3 Guiding principles for the infrastructure strategy

ŌDC's vision is "Strong communities, Strong future". To support this vision, ŌDC has five strategic priorities, shown in the table below, along with the guiding principles used in the infrastructure strategy to support these priorities.

Council's strategic priorities	How this strategy supports the strategic priorities
--------------------------------	---

Strong relationships and partners	We strive to establish, develop and maintain genuine relationships with Iwi and hapu, community groups and stakeholders.
Investment in our district	We advocate for and attract high-quality investment across our district.
Wellbeing is valued	We prioritise the wellbeing, hauora and engagement of all our communities, now and into the future.
Our communities are resilient	We enable our communities to make informed, safe decisions about resilience and adaptation.
Growth is sustained over time	We plan for a district which is future focused and ready for growth.

PART A: WHERE ARE WE NOW?

2 Our strategic context

The key big-picture elements that are shaping our approach to infrastructure are:

- Makeup of our district
- Resilience
- Inflation
- Iwi partnerships and settlements
- Growth
- The harbour development project and
- New Zealand is feeling the impacts of climate change.

These are covered in the sections below.

2.1 Makeup of our district

The Ōpōtiki district is in the Eastern Bay of Plenty and extends from the Ōhiwa Harbour to Cape Runaway along the coast. It incorporates the township of Ōpōtiki, along with rural settlements including Kutarere, Ōhiwa, Waiotahe, Opape, Torere, Omaio, Te Kaha, Waihou Bay and Cape Runaway, with the majority located along the coastline. The district covers 308,978 hectares of rural, urban, coastal and forested areas.

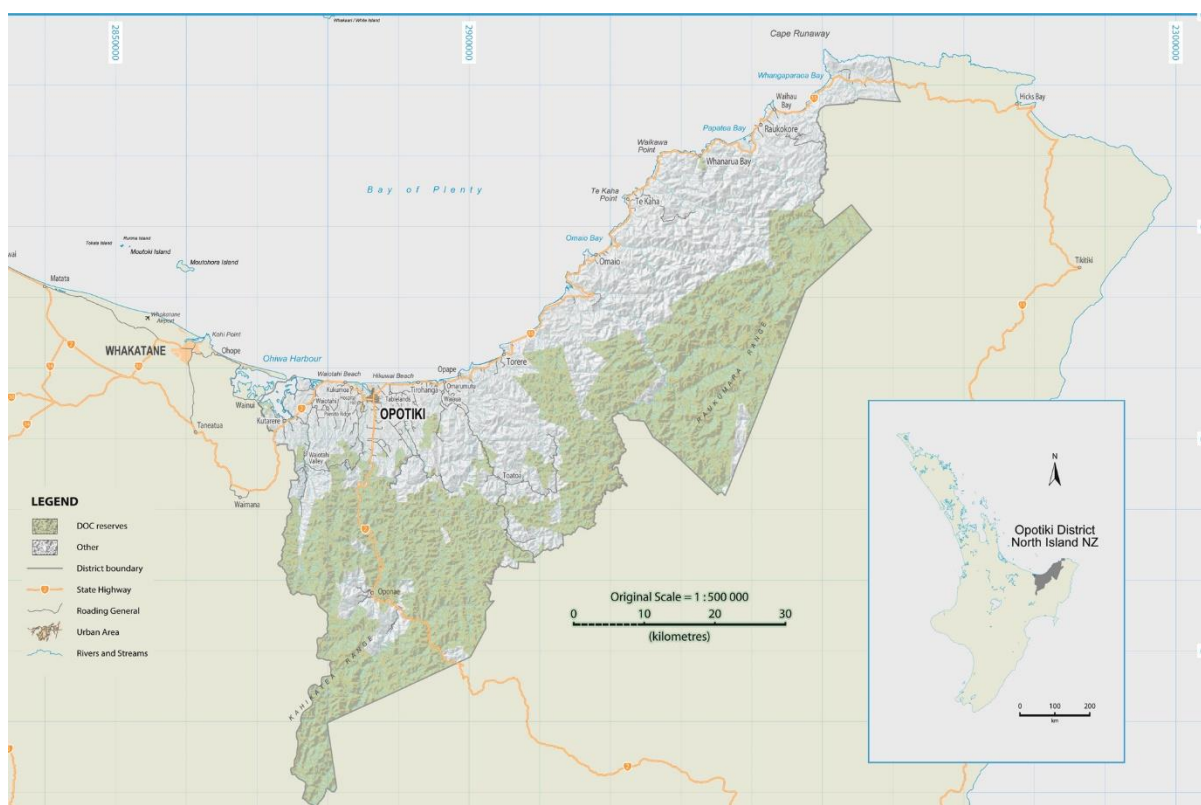


Figure 2-1: Map of Ōpōtiki District Council

The district encompasses 25% of the Bay of Plenty region. Approximately 50% of the Bay of Plenty coastline falls within the district, comprising 160 kilometres of coastline with an economic zone extending 12 kilometres out to sea.

Key industries in the area are agriculture and kiwifruit. Aquaculture (open-ocean mussel farms and associated processing) is growing into a significant employer, too.

The district relies on the state highway (SH) network for connectivity to the wider region and beyond.

Although Ōpōtiki is an area with a rich natural environment and inspiring people, the district as a community faces many social and economic challenges. Approximately 70% of the district's land area is non-rateable. Close to 52% of the landmass is in the Department of Conservation (DoC) estate, with a further 12% managed through Nga Whenua Rāhui, in association with DoC. Ōpōtiki has a high proportion of Māori land blocks, particularly east of Ōpōtiki township and there are 193 hectares in reserve land.

2.2 Resilience

Infrastructure resilience is a key issue facing councils throughout New Zealand. Resilience in infrastructure can be defined as a network that provides a reliable level of service. This means that natural and man-made risks can be minimised or managed, planning is adaptive to emerging risks, and the network can recover from unplanned hazards and events.

The Ōpōtiki District has recently seen heavy rain events resulting in widespread surface and river flooding, together with major slips and river scour adjacent to roads. These events disrupt the district and result in additional costs to Council in the form of emergency works. The 2022/23 year has seen an increase in emergency works expenditure of over 50% compared to the 2021/22 year.

The wet weather events of 2022/23 resulted in \$1.6M in storm damage works on the network. There are several sites in the network that are likely to deteriorate and trigger further reinstatement expenditure requirements.

Notable projects that have been initiated since the last Infrastructure Strategy are the Tarawa Creek Pump Station upgrade which has been designed, as well as conceptual designs for Duke St West Stopbank and Wellington St Stormwater Basin. These projects, when completed, will directly contribute to the flooding / stormwater resilience of Ōpōtiki Township.

The dialogue around climate change is ongoing with the following documents contributing to the national understanding.

- An LGNZ report in 2019 estimated that \$14 billion of local government infrastructure is exposed to sea level rise.
- The adoption of the Climate Change Response (Zero Carbon) Amendment Act 2019, which established a Climate Commission, set emissions targets, and enables mandatory reporting on emissions targets by utility operators.
- The Ministry for the Environment published New Zealand's first Climate Change Risk Assessment in 2020.
- The Ministry of Environment published New Zealand's first national adaptation plan in 2022.
- The IPCC published their 6th assessment report in 2023, which concluded that deep, rapid reductions in greenhouse gas emissions across all sectors are required within this decade to avoid overshooting 1.5 C° of warming.

The current government has indicated that adaption planning will be the key focus nationally.

The investments by local government into infrastructure are key to making their communities adaptive and resilient. As we go into the next ten years, this will be an area of slow but increasing focus for Council. To support this, Council is currently developing a climate change strategy which will outline ŌDC's intentions and focus areas. Council has plans in place to address wider resilience issues and are ready to implement projects to achieve these goals. The constraint to date is adequately funding these projects to deliver the works.

2.3 Inflation and affordability

Interest rates in NZ have been at historical lows since 2009, with the official cash rate almost at 0% for two years from mid-2020. However, rates have jumped back up towards long term averages over the last two years. Alongside this, inflation has followed a similar path.

This has resulted in increased costs of living and business in the community. For Council, it has increased the cost of projects, the cost of debt, and the amount of depreciation that Council must rate (because asset valuations have increased).

In the last 2021 LTP, Council made decisions aimed at making things more affordable for the community. One decision was to assume that Government grants would pay for major growth projects, based on discussions with the Government of the day. Unfortunately, this funding did not eventuate, so now developers will likely have to cover those costs. Another decision was to not fully fund depreciation costs, which kept rate increases lower. However, we now need to make up for the shortfall in funding.

Ōpōtiki district still has a long way to go to reduce deprivation levels relative to the rest of the country.

2.4 Iwi partnerships and settlements

The aspirations of our local iwi and opportunities enabled by settlement will play a significant role in the development and growth of the Ōpōtiki district over the next ten years.

ŌDC strives to establish, develop and maintain genuine relationships with iwi and hapū, community groups and stakeholders.

2.5 Growth

The growth we are forecasting is primarily driven by economic activity. We currently experience a large influx of seasonal workers for the kiwifruit season. The aquaculture and kiwifruit industries have largely complimentary working seasons, creating the opportunity for staff requirements to grow together, creating a year-round workforce, and further service industries to support them.

Council supports this growth. It increases the quality of services that Council can provide and supports the wellbeing of the community through additional employment.

Infrastructure plays an important role in supporting this growth. Industry requires infrastructure that can meet its business needs. Likewise, large scale residential growth is more attractive to developers when serviced by infrastructure because the subdivisions can have a higher yield from smaller lot sizes.

2.6 The harbour project

The Ōpōtiki Harbour Development Project is underway, and work on the harbour entrance is almost finished. This upgrade will allow bigger boats to enter the harbour in almost all suitable working weather conditions. As a result, Ōpōtiki will be a service and processing base for aquaculture and other marine related industries.

Physical works on the Ōpōtiki Harbour Development Project started in June 2020 and are expected to be completed in 2024.

The project will provide a platform for sustainable economic growth by:

- Capitalising on opportunities from the existing 3,800-hectare marine farm offshore from Ōpōtiki.
- Enabling other aquaculture ventures and marine related development in the Eastern Bay of Plenty.
- Increasing overall social, economic and cultural wellbeing in Ōpōtiki and the wider Eastern Bay of Plenty.
- Enhancing recreation opportunities and public access to the coast.

An additional project for the private development of a new marina is currently progressing with consenting. The timing is still to be confirmed but construction may occur within the next few years.

Provincial Growth Fund (PGF) funding has also been obtained for development of the Harbour industrial zone on the western approach to town which is currently working through Resource Consent. Further funding has enabled the construction of the mussel processing factory on the southern side of town, now in operation. The Crown has provided funding for improvements to the town centre and the town wharf refurbishment. The decision on the extent of the wharf upgrades is pending.

Te Whanau Apanui are currently developing a mussel hatchery and research hub in the Te kaha area. They have also applied for a 10,000-hectare seawater consent off the coast of Te Kaha for aquaculture activities. These developments are all part of the development of an aquaculture industry associated with the Ōpōtiki Harbour development.

This development is expected to deliver:

- Employment of 936 people
- Provision of \$27.3 million in household income
- Contribution of \$34.6 to Ōpōtiki's GDP
- An increase in \$44.9 million in output.

3 Overview of our services and intentions

This section outlines key information about how the core infrastructure Council operates, and our long-term intentions for the services we provide through them.

3.1 Transport

The transport network plays a vital role in the District by supporting the social and economic well-being of the community. The transport system enables people to move within and through the District, and for primary producers to access State Highways 35 and 2 for links to Whakatāne, Kawerau, Tauranga and Gisborne. Keeping the roading network in good condition is essential for the continued growth and economic success of the Ōpōtiki District, ensuring they are safe and efficient for everyone to use.

3.1.1 Overview of our assets

Transport infrastructure includes roads, footpaths, cycleways, parking facilities, bridges, and traffic control measures (such as signage, lighting, and road markings). Council's responsibilities include operation and maintenance of the current network and planning for future development. The Council manages transport planning, policy and networks through the transportation activity. ŌDC's current network is made up of over 300km of rural and urban streets, roads and connectors. 176km's are sealed roads and 134kms are unsealed rural and unclassified roads.

Table 3.1 provides an overview of the transport assets owned and maintained by the Council:

Table 3.1: ŌDC Transport Assets Valuation (Beca, 2022)

Asset Type	Component	Unit	Base life (average)	Age	RUL	% Base consumed	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Formation	Formation	m2					69,285,166	69,285,166	
Sealed Pavement	Sealed Subbase	m2					28,615,026	28,615,026	
	Sealed Basecourse	m3	108	51	57	47%	49,296,874	25,725,400	454,655
	Sealed Surfaces	m2	16	10	6	63%	8,049,680	3,103,499	505,407
Unsealed Pavement	Unsealed Subbase	m2	0	0	0		6,715,198	6,715,198	
	Wearing Course	m3	5	3	2	60%	1,170,703	583,242	233,310
Footpaths and Crossings	Footpath	m2	67	16	51	24%	15,671,449	11,826,681	233,149
	Vehicle Crossings	m2	80	12	68	15%	43,114	36,647	539
	Pedestrian Give Way	each	80	11	69	14%	22,437	19,468	280
Drainage	Drainage	each/m	74	41	33	55%	14,344,395	6,309,656	193,238
Surface Water Channels	Surface Water Channels	m	80	24	56	30%	8,862,509	6,253,866	110,781
Streetlights	Light	each	26	5	21	19%	559,680	453,424	21,464
	Brackets	each	50	16	34	32%	350,350	240,194	7,007
	Poles	each	50	23	27	46%	1,047,375	570,536	20,948
Structures	Bridges	m2	99	46	53	46%	49,927,263	26,827,762	506,001
	Retaining Walls	m2	60	5	55	8%	716,386	646,326	11,846
Traffic Facilities	Traffic Signs	each	26	20	6	77%	882,775	190,511	33,943
	Edge Marker Posts	each	15	5	10	33%	31,805	20,143	2,120
	Railings	m	35	18	17	51%	1,366,956	666,154	39,554
	Bollards	each	50	1	49	2%	5,064	4,968	101
	Gates	each	25	2	23	8%	41,038	37,717	1,642
Total							257,005,243	188,131,584	2,375,986

3.1.2 What is important to our community

The community priorities specific to transport are as follows:

- Wellbeing – The condition of the existing transport system is efficiently maintained at a level that meets the current and future needs of users.
- Wellbeing – Transport is made substantially safer for all.
- Resilient – The transport system is better able to cope with natural and anthropogenic hazards and failure.

3.1.3 Our current situation and intentions for what is important

ŌDC has aging assets from a maturing network, resulting in higher maintenance requirements and programmed renewals.

To meet the community's needs, planning and development of new transportation assets to fill the current infrastructure gaps will be needed. This includes investment to bring existing infrastructure up to standard to ensure safe access. Improvements will cover better drainage, adding footpaths to make sure pedestrians and mobility vehicles can move safely around the Ōpōtiki township.

Anticipated growth from town developments will likely lead to new internal subdivisions provided by private fund sources and Kāinga Ora. This will include the new transportation assets that will have to be created within these developments including facilities for public transport.

Economic development has led to an increase in traffic, including more heavy vehicles, that are resulting in increased deterioration and maintenance requirements on the network. With the Ōpōtiki Harbour Development project underway there will continue to be additional pressure on the transport network from the growth this project will result in. The growth in the district is seeing the town expand and there is more demand for connectivity and facilities that support safe options for pedestrian and cyclist travel.

Road safety continues to be an issue throughout the district. Road crash deaths and serious injuries in the Ōpōtiki District are a significant issue making up 13% of crashes in the district, minor injury crashes account for 31% of crashes. By improving road infrastructure and setting and enforcing safe speed limits a safer road system can be created.

The increased annual rainfall and the higher intensity storms that the district is experiencing are having an impact on the network resilience. The wet weather events of 2022/23 resulted in \$1.6M in storm damage to the network, and there remains a number of sites in the network that are likely to deteriorate and trigger further reinstatement expenditure requirements.

A resilient transport network is an important economic, social, and safety component, particularly as there are areas within the district where roading network routes are few or there is no alternative access. Ongoing assessments of infrastructure resilience will be necessary to plan interventions while working with Waka Kotahi to prioritise maintenance and emergency response operations for SH35 as a lifeline route.

Overall, Council is planning so that 30 years from now, the levels of service that are important to the community have been maintained, through long term renewals and maintenance programmes.

3.2 Solid Waste

3.2.1 Overview of our assets

ŌDC's Solid waste infrastructure includes three resource recovery centres, which sort and process solid waste. The RRC's are located in Ōpōtiki township (main RRC), Te Kaha and Waihou Bay.

Materials collected at the coastal RRCs are transported to Ōpōtiki RRC by Council's contractor. Ōpōtiki RRC has adequate capacity to handle the quantity of waste generated in the district at present.

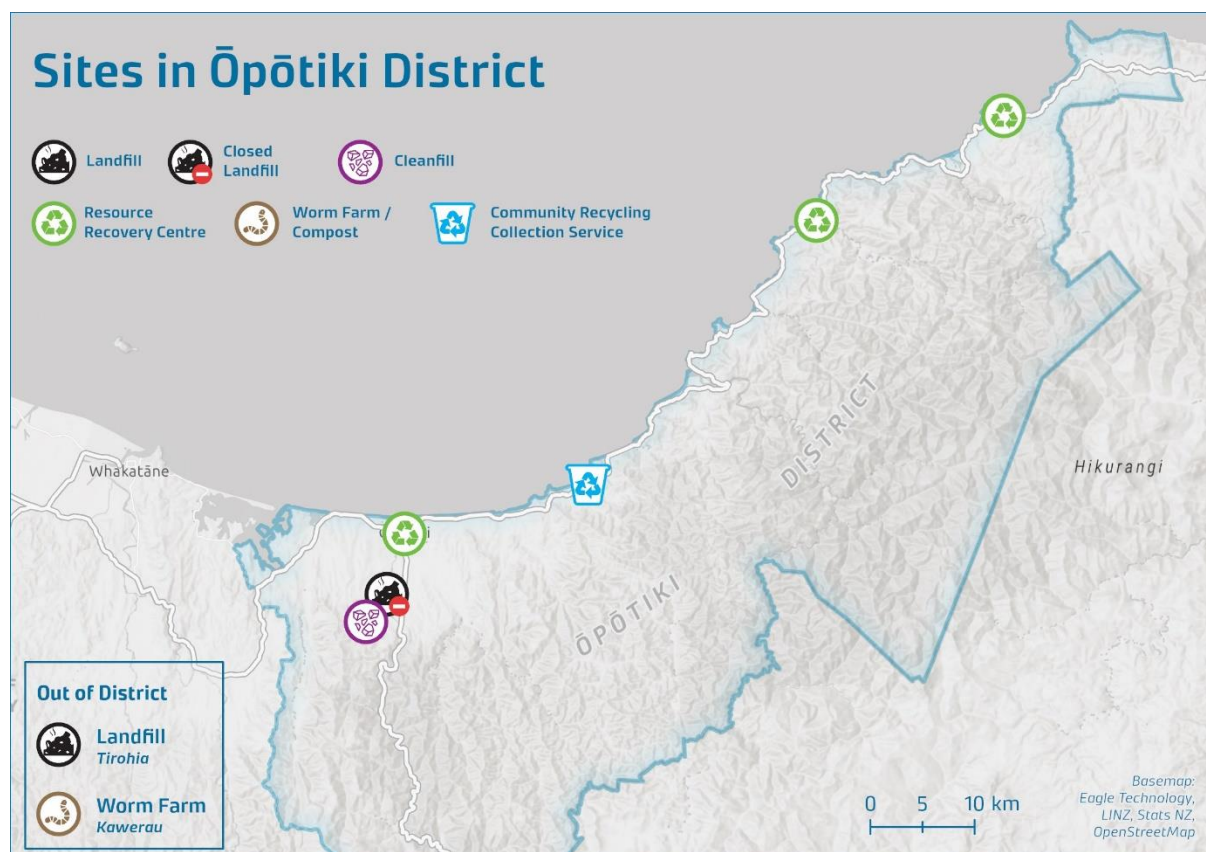


Figure 3-1: Key Waste Facilities in Ōpōtiki District.

ŌDC also has a kerbside refuse and recycling collection service for urban Ōpōtiki. This service is provided to 65% of households and 1-2% of businesses across the district through a targeted rate (at

no cost to Council). Many residents choose to drop their waste at the resource recovery centres (RRCs). Businesses can pay to have their waste and recycling collected or dispose of their recycling at the RRC for a fee. There is no separate food waste collection for households or businesses.

3.2.2 What is important to our community

The community priorities specific to solid waste are as follows:

- Wellbeing - Kerbside collections are reliable and tidy.
- Wellbeing - Transfer stations are accessible.
- Wellbeing - Active improvements in reducing waste.
- Strong relationships - Strong relationships and partners to facilitate waste minimisation.

3.2.3 Our current situation and intentions for what is important

Managing solid waste is a significant activity in Ōpōtiki District. Since the Woodland landfill closed in 2004, Ōpōtiki has had to dispose of all non-clean fill solid waste out of the district. Municipal solid waste from kerbside collections and the three RRCs is currently sent to Tirohia Landfill in Hauraki District, located approximately 200 km from Ōpōtiki. There is uncertainty about how long this facility will be available, therefore other options are to be explored. All recyclable materials are consolidated at the Ōpōtiki RRC before being transported to end users or for further processing.

With legislation changes and solid waste reforms include implementing a food waste service and kerbside collection. From February 2024, all district and city councils are excluding plastic types 3,4,6 & 7 from their recycling collection. By 2030, all district and city councils are to provide food scraps (or food and garden waste) collections to households in urban areas of 1000 people or more. The Government has decided to raise the waste levy and include more types of disposal facilities covered by the levy. According to current proposals, half of funding collected from this levy will be given to councils based on population in their areas. For the Ōpōtiki District, this means there is a potential future funding stream to support services and/or investment in appropriate infrastructure.

The following goals have been established to focus on what is important for waste management and minimisation in Ōpōtiki District:

- Collective responsibility for our resources and where they end up
- Enabling systems to support the reuse, reduction and recycling of materials
- Collaborate and innovate for a circular economy

3.3 The Harbour

3.3.1 Overview of our assets

The Ōpōtiki Harbour Transformation Project has been a key project for the organisation, the community and district for decades. The harbour is on schedule for completion in mid 2024. Currently the handover for the maintenance and operation to Ōpōtiki District Council is going to be delayed by two years given the Marina Development and associated funding streams are not up and running, which was a key assumption in the business case with central government. The dredge is currently owned by the Crown, the decision around who will own the dredge for maintenance and operations going forward, is still to be decided.

Currently the Town Wharf is owned by ŌDC. An upgrade of the Town Wharf to accommodate mussel boats will be completed in the 2024/2025 financial year (already funded). The Town Wharf upgrade is a measure implemented in lieu of the Marina Development not being ready yet. It is expected the Marina will come on-line within 10 years and the mussel boats will move to that location reducing the significance of the Town Wharf infrastructure.

Walkways and rubbish bins which are part of the harbour project are currently considered part of the existing assets. These have been included in the transport and solid waste categories of the infrastructure strategy for simplicity. Eventually, these will form the assets of the harbour development.

3.3.2 What is important to our community

The community priorities specific to the harbour and wharf are as follows:

- Investment - The entrance is open in all suitable open ocean working conditions i.e. open ocean conditions are safe to work in and the bar is safe to cross.
- Investment - The channel is deep enough for working boats.
- Investment - The wharf is set up for commercial operation.

3.3.3 Our current situation and intentions for what is important

The harbour is on schedule for completion in July 2024. Due to the impending decisions that need to be made around the wharf and the harbour, it was decided to ring-fence the wharf and the operating model to be included in the next cycle of the infrastructure strategy.

3.4 Water Supply

Council supplies drinking water to approximately 60% of the Ōpōtiki District population. Schemes service Ōpōtiki Township (including Hukutaia and the Waiotahe Drifts) and Te Kaha and Ōhiwa.

The water supply schemes are designed to provide for the environmentally safe collection, treatment and reticulation of potable water.

3.4.1 Where we are providing this service

The water supply activity services approximately 5,750 of the Ōpōtiki District population in Te Kaha, Ōpōtiki Township (including Hukutaia and the Waiotahe Drifts) and Ōhiwa.

The areas we currently provide water supply services are shown in the maps below.



Figure 3-3 Te Kaha water supply network

Opotiki District Council
No guarantee is given as to the accuracy, location and the completeness of services. Proceed with caution and always verify on site.



Figure 3-2 Ohiwa water supply network

Opotiki District Council
No guarantee is given as to the accuracy, location and the completeness of services. Proceed with caution and always verify on site.



Figure 3-4 Ōpōtiki Township water supply network

Ōpōtiki District Council
No guarantee is given as to the accuracy, location and the completeness of services. Proceed with caution and always verify on site.

3.4.2 Overview of our assets

The Ōpōtiki Township scheme is relatively new (the average age of most assets is less than 20 years) and already provides for growth. On the other hand, the Hukutaia area has older infrastructure (average age greater than 45 years). Despite its age, Hukutaia is an ideal candidate for upgrades or renewals to support growth.

The Te Kaha scheme is halfway through its life (average age 30 years) with sections requiring remedial action and upgrade to maintain service pressures and provide for growth. Te Kaha requires a new water source to supply the town due to turbidity issues during and following heavy rainfall events. One bore has been formed. However, the secondary bore has collapsed and will require further investigation to re-establish a duty/standby operation in Te Kaha.

The Ōhiwa scheme reticulation is also relatively new (average pipe age 12 years) but requires an upgrade of treatment facilities to ensure the protection of public health. This upgrade was completed in 2019.

Table 3.2 provides an overview of the water supply assets for each scheme that are owned and maintained by the Council:

Table 3.2: Water supply scheme overview

Water scheme	Scheme overview	Replacement value (2022)
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Ōpōtiki Township (including Hukutaia and Waiotahe Drifts)	- Population served: 4,530 - Number of connections: 2,175 - Demand average and peak: 2100 m³/d, 3000 m³/d 2 water sources (bore capacity is 8,600 m³/d, consented for 4,925 m³/d, treatment capacity 3,600 m³/d) 1 water treatment plant 3 booster pump stations 3 water storage sites (1 reservoir (4500 m³ and 2 x 250 m³ tanks) for a total of 5,000 m³) 86.6 km of pipe	\$41,100,000
Te Kaha	- Population served: 410 - Number of connections: 321 - Demand average and peak: 315 m³/d, 480 m³/d 1 water source (infiltration well capacity is 2,000 m³/d, consented for 972 m³/d, treatment capacity 480 m³/d) 1 water treatment plant 1 booster pump station 3 water storage sites (reservoirs and tanks) for a total of 410 m³ 14.9 km of pipe	\$7,700,000
Ōhiwa	- Population served: 50 to 410 (seasonal) - Number of connections: 21 - Demand average and peak: 23 m³/d (average), 32 m³/d (peak) 1 water source (bore capacity is 300 m³/d, unconsented for <35 m³/d, treatment capacity 100 m³/d) 1 water treatment plant 2 x 60 m³ water storage tanks 0.8 km of pipe	\$400,000
TOTAL	- Population served: 4,990 – 5,350 - Number of connections: 2,412	\$49,200,000

3.4.3 What is important to our community

To our community, the most important aspects of our water supply service are that:

- The water is safe to drink
- The supply is reliable
- The supply is available for new homes and businesses
- The supply supports firefighting.

Overall, we are performing well in these important areas. Our long term intentions for these are discussed in the following section.

3.4.4 Our current situation and intentions for what is important

Safe to drink:

Council operates modern treatment plants and robust systems, ensuring a good track record in providing safe water. Plans are in place to move Te Kaha Water Treatment Plant to a new location to

address issues with the quality of raw water by switching its source. The goal is for all Council-managed water systems to remain safe to drink and meet drinking water standards 30 years from now.

The provision of safe drinking water is a legal responsibility of Council as a water supply provider. The outbreak of *Campylobacter* in the Havelock North water supply resulted in a national enquiry. Careful consideration has been given to the findings in the report produced from the enquiry and though Ōpōtiki Council's water supplies are, for the most part, of a very good standard some shortcomings were noted in relation to the changes and direction expected from central government.

All supplies have been assessed for public health risk. Treatment processes have improved in Te Kaha and Ōhiwa to ensure that not only bacteria but also protozoa are removed. These improvements were completed in 2019, 2020 and 2024, Ōpōtiki and Ōhiwa supplies are now fully compliant, with Te Kaha still regularly failing protozoa compliance due to high turbidity issues in source water.

Despite improvements, the Te Kaha intake struggles with contamination during heavy rain. Plans to switch to a cleaner groundwater source are underway with one bore already operational. However, a secondary bore collapsed, necessitating further investigation to achieve a reliable backup system for Te Kaha's new water source, especially during heavy rainfall.

With regulatory changes, Council may need to manage several small, privately-owned water supplies. The Council has yet to assess the implications on capacity, resource and affordability if this were to occur.

Reliable:

Council's water supplies are reliable but some of our assets are getting old, making them more prone to breaking. Overall, we are planning so that, 30 years from now, Council water supplies will be more reliable than they are presently.

The Hukutaia area has limited water storage capacity, with just one reservoir on Crooked Rd. Council plans to improve the resilience of supply to the Hukutaia area by either making the reservoir bigger to hold more water or adding a new river crossing and Booster Station. This station would allow Hukutaia to get water directly from the main Ōpōtiki reservoir or, in emergencies, from water bores. Both options will enable increased resilience by ensuring that a 24-hour storage capacity is available to both Ōpōtiki township and Hukutaia.

The replacement of 5.8 km of DN300 uPVC watermain from the WTP to Ford Street is planned to go ahead due to multiple previous pipe failures in this section of the network. This will reduce the effect on the community during a pipe failure and ensure a reliable service is provided.

Council has a continuous plan for updating aging assets. By actively replacing older assets, the network becomes more reliable, leading to fewer breakdowns and less water being lost.

Available:

Council currently provides drinking water to all new properties in areas serviced by our schemes. However, we are expecting more growth than before. We are planning so over the next 30 years, the Council's water supply will continue to be available at the boundary of all new properties in planned growth areas. We are also planning to support water supply requirements of new industry in growth areas so long as they have minimised their needs as much as practical.

The key areas for growth are infill housing in the Ōpōtiki township and in Hukutaia. Council already provides water supply in these areas and does not anticipate any challenges in providing future connections.

The abstraction consent for Ōpōtiki is due for renewal in 2045 so is within the 30 years timeframe of this plan. Current population predictions assuming continued economic development in the town, suggest demand will be close to the abstraction consent at that time. If the town grows more than expected or industrial water use increases, the Council might apply to renew this consent to allow for more water to be drawn. The consent limit set for abstraction is still well below the capacity of the bore and so an increase should not harm the environment.

The water supply for the Ōpōtiki Township can meet current demand. However, within the next 10 years, to keep up with anticipated growth, the treatment capacity will need to expand by 2027. After 10 years, more storage will be necessary to handle long periods of high demand, expected by 2039.

The current consent limits for the Ōpōtiki supply will need to be increased when the consent is renewed in 2045. The Ōpōtiki Township water supply has been designed so that the treatment capacity can be increased to cope with increased demand. There is currently one treatment “cell” at the plant with capacity for up to two additional “cells” to be added when required.

Te Kaha water supply has been upgraded but further works are proposed in 2027 to meet demand including relocation of the Treatment Plant to a new water source.

The water supply for Ōhiwa is meeting current demands but may need to be increased for seasonal variations in demand or if the resident population increases. Further investigation is needed and resource consent obtained if demand is likely to exceed consent limits.

Firefighting:

Enough water is stored for firefighting in Ōpōtiki, Hukutaia Waiotahi Drifts and Ōhiwa. But in Te Kaha, there is a need for more water storage specifically for firefighting. This will require further investigation once a new water source is determined.

Industrial properties must arrange for their own firefighting water needs if these go over and above the requirements for residential areas.

3.5 Wastewater

The wastewater activity provides for the environmentally safe collection, treatment and disposal of the District’s sewage wastes. Council is involved in the collection, treatment and safe disposal of human and commercial/trade wastes which is essential for the protection of public health and environmental outcomes in urban areas.

Council is possibly unique in New Zealand as all its treated effluent is discharged onto land.

3.5.1 Where we are providing this service

Council operates two schemes: one serves the Ōpōtiki Township (inclusive of the Waiotahi Drifts); the other serves a small subdivision at Waihou Bay, as shown in the maps below. All other properties in the District are serviced by privately owned septic tank systems.

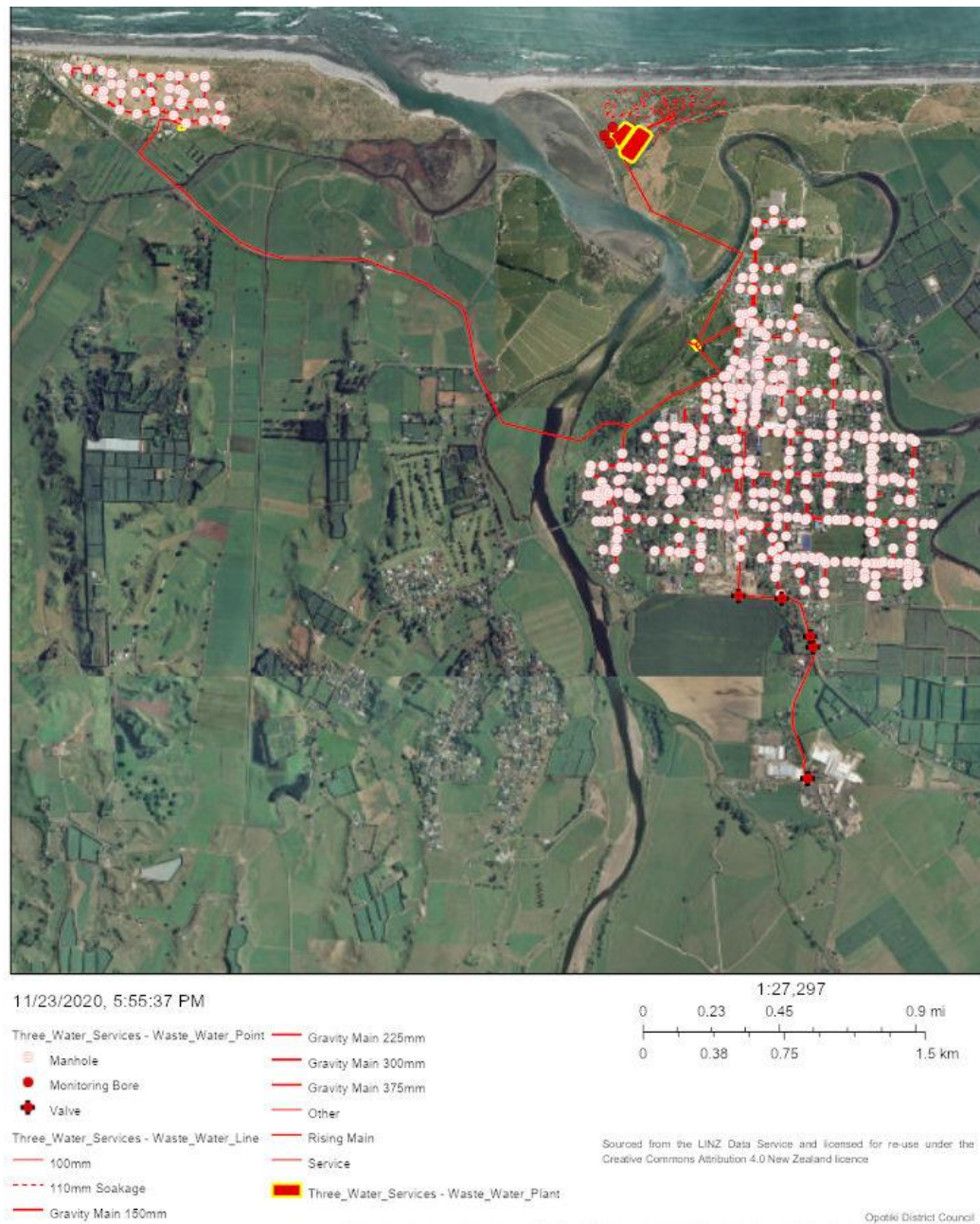


Figure 3-5 Wastewater Network extent for Ōpōtiki and the Waitotahi Drifts.



Figure 3-6 Wastewater network in Waihau Bay.

3.5.2 Overview of our assets

Council's wastewater network is made up of traditional gravity network and pumpstations.

In the past, ŌDC completed a sewer relining project that targeted the areas with the worst stormwater infiltration and groundwater inflow (I/I). This work was undertaken to reduce extremely high wet weather flows, to address two major issues:

- The overloading of the reticulation meant that some residents had trouble getting their toilets to flush properly, to the extent that Council would hire porta-loos and set them up in affected areas; and
- The overloading of the treatment plant impacted Council's ability to operate the plant successfully.

ŌDC is planning to input monitoring systems to track the ongoing performance of the network and identify further leaks or residents reinstating illegal stormwater connections.

Table 3.3 provides an overview of the wastewater assets for each scheme that are owned and maintained by the Council:

Table 3.3: Wastewater scheme overview

Wastewater scheme	Scheme overview	Replacement value (2022)
Ōpōtiki / Hukutaia	- Population served: ~3,780 - Number of connections: 1,416 - Demand flows: 1,039 m³/d dry weather, 1,590 m³/d average, 10,166 m³/d peak wet weather - Peak capacity: Pump Stations 22,000 m³/d, Pond +5,000 m³/d, consented for 2,500 m³/d, Soakage 3,000 m³/d 1 treatment plant (comprising Milli Screen, Imhoff Tank, 30,000 m³ Oxidation Pond, 10,000 m³ Overflow Pond, and 3 km Soakage Field) 8 pump stations 46.3 km of pipe	\$29,970,000
Waihou Bay	- Population served: 10-30 - Number of connections: 26 - Demand flows: 1-5 m³/d - Peak capacity: Pump Station 100 m³/d, consented for 23 m³/d, treatment 5 m³/d 25 m soakage lines and 25 m³ septic tank 1 pump station 0.4 km of pipe	\$430,000
TOTAL	- Population served: ~3,800 - Number of connections: 1,442	\$30,400,000

3.5.3 What is important to our community

To our community, the most important aspects of our water supply service are that:

- The wastewater system is **sanitary** (doesn't create public health issues)
- The wastewater system minimises **environmental impacts**
- The system is **reliable** even in large storms
- The system is **available** for new homes and businesses
- The wastewater system meets **cultural needs**

Overall, we are performing well against these important areas, however there are a number of challenges for the system during large storm events. Our long-term intentions for these are discussed in the following section.

3.5.4 Our current situation and intentions for what is important

Public health risk and reliability

Council's wastewater network performs well during dry weather but struggles during heavy rain. The system can't handle the extra water from leaks and stormwater entering it. We have already completed work to reduce the amount of water getting into the network. Plans include upgrading

wastewater pump station 1 (WWPS01) and the corresponding rising main from WWPS01 to the wastewater treatment plant. This upgrade will allow for additional capacity in the network. Overall, we are planning so that, 30 years from now, the Council wastewater system will be safer and more reliable than it is now.

Our immediate focus is on reducing stormwater getting into the system. The biggest public health risk comes from the system overflowing during storms, which can also stop properties from being able to flush toilets during very heavy rain.

Upgrades are also planned for the wastewater treatment plant and disposal field to handle increased flows from population and industrial growth without risking public health.

Renewals are programmed on an ongoing basis to replace aging assets. A proactive approach to renewals mean less system breakages and reduces the amount of water entering the system during wet weather, making it more resilient.

Available:

The plan is to ensure that, for the next 30 years, Council's wastewater system continues to be available at the boundary of all new properties in planned growth areas.

Currently, all infill housing in areas with existing wastewater services can connect to the network. We are planning to extend wastewater into Hukutaia, to support the area as a growth node.

We are also planning to support wastewater requirements of new industry in serviced areas so long as they have minimised their needs as much as practical.

Previously we were planning to accommodate the new mussel factory and the anticipated wastewater that would be produced and discharged into public reticulation. However, the mussel factory is now treating and discharging their own waste, alleviating any associated foreseeable issues with capacity for the Ōpōtiki WWTP.

The largest planned growth areas are infill housing in the Ōpōtiki township and in Hukutaia.

We plan to support higher intensity development in Hukutaia by building a new wastewater network to connect the area to the existing treatment plant. This will be done in a staged approach, subject to actual demand. It is intended that stages will include provision to new and existing households.

Council plans to upgrade the wastewater treatment plant. With a need to renew its consent in 2025, Council will take the opportunity to expand the plant's capacity. This expansion is aimed at supporting both new residential properties and industrial customers.

For Waihou Bay, the existing wastewater system is adequately meeting current demands. Seasonal and permanent population trends will be monitored to better understand any capacity constraints as whilst currently adequate the system is nearing capacity during peak demand.

Environment impact:

We are planning so that, 30 years from now, we are addressing the impacts of growth to achieve and to improve the level of environmental impact.

Council has a good record of compliance with the resource consents for its wastewater services. This is helped by our ability to discharge all of our treated effluent to land instead of water. However, we are facing increased demands from growth and the renewal of our resource consent.

Culture:

With the new consent, Council aims to improve how the wastewater system addresses cultural needs with continuous improvements planned for the next 30 years.

Our current systems all dispose treated wastewater to land. As part of the renewal process for our existing consent renewal (expires 2025) and growth needs, we plan to work with iwi to understand cultural needs for the treatment plant.

3.6 Stormwater

The stormwater activities within the district are the key approach for managing nuisance surfaces and also damaging flooding from stormwater that hasn't yet entered the local flood scheme. The stormwater networks have two primary components:

- Reticulation network, attenuation and pumping arrangements within the township to collect and dispose stormwater into the rivers.
- Overland flowpaths from the wider sub-catchments within and surrounding the township

A combination of the activities above ensures that habitable areas within Ōpōtiki are not inundated during storm events, and public infrastructure is still accessible during minor storm events.

3.6.1 Where we are providing this service

Council's stormwater schemes service the Ōpōtiki township (inclusive of Waitahe Drifts and Hukutaia). Key infrastructure provisions include stormwater attenuation basins, pumps and reticulation networks (both piped and open drain). The extent of stormwater provision within Ōpōtiki township is shown in the figures below.

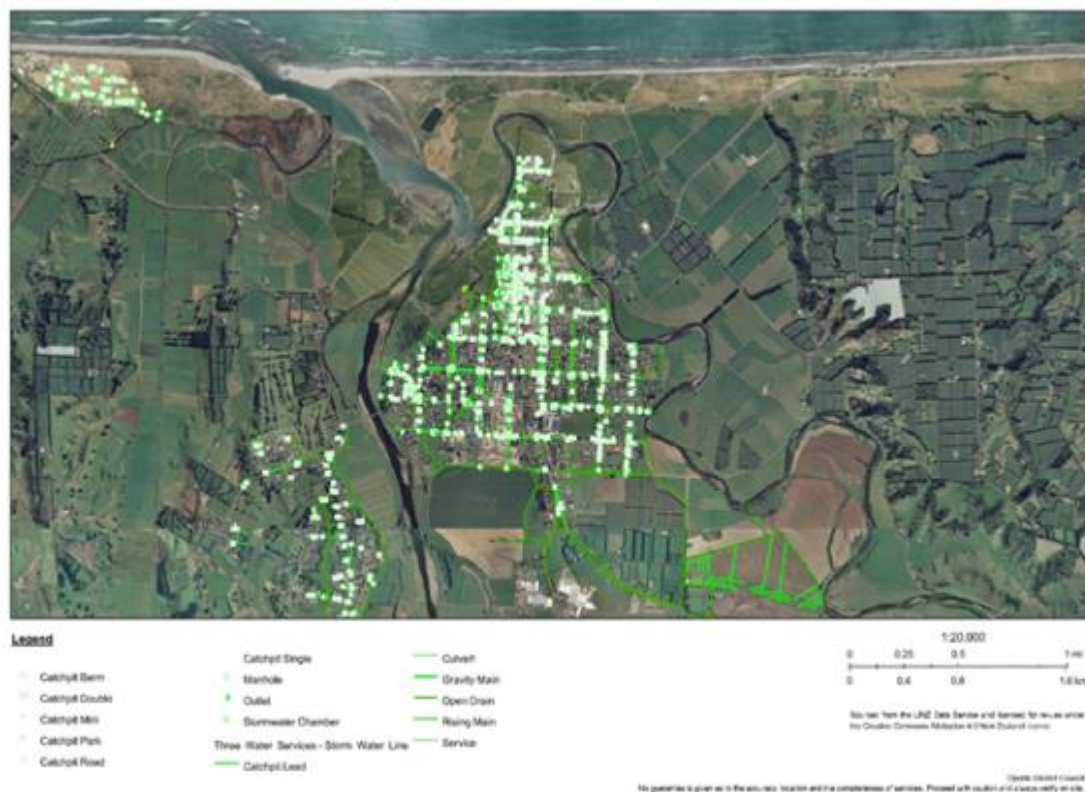


Figure 3-7 Ōpōtiki Township – Stormwater Provisions



Figure 3-9 Waioatahe Drifts – Stormwater Provisions



Figure 3-8 Hukutaia– Stormwater Provisions

3.6.2 Overview of our assets

The reticulated network across the township, including pump stations and attenuation basins, is Ōpōtiki District Council's responsibility. Council also has a duty to protect habitable buildings and key infrastructure from the effects of low level or nuisance flooding.

Stormwater modelling of the urban network has been undertaken, with allowance for the effects of climate change and sea level rise. The model results have show locations that require upgrades to the network, attenuation provisions and pump capacity across the township.

The stopbanks along both rivers around the township are part of the flood scheme operated by the Bay of Plenty Regional Council and aren't considered part of the stormwater scheme. The one exception to this is the Duke Street flood scheme pump station, and BOPRC asset, which pumps water from ŌDC's stormwater network during storms.

In addition to the below-ground and open drain reticulation network within the township, the road corridors act as conveyance routes for overland flow. This primarily occurs when the reticulation network is overwhelmed during large storm events. Stormwater attenuation basins and pump stations are located at several low points around the township, lifting stormwater into the Otara or Waioeka rivers. Some of the overland flow entering Ōpōtiki is from rural land upstream of the township. The District Council works with the Bay of Plenty Regional Council to manage this flow.

Table 3.4: Ōpōtiki Stormwater Assets - Overview

Asset description	Quantity	Replacement value (draft 2020)
Piped drains	28.8km	\$32,100,000
Manholes and catchpits	688 no.	
Pump stations	12 no.	
Flood gates	21 no.	
Culverts, inlets and outlets	265 m	
Open drains	20 km	

3.6.3 What is important to our community

To our community, the most important aspects of stormwater activities are:

- That all properties can **dispose of their stormwater** adequately
- That **nuisance flooding** from stormwater is minimised
- That **damaging floods** from stormwater are minimised

Our long-term intentions for these are discussed in the following section.

3.6.4 Our current situation and intentions for what is important

During the last Infrastructure Strategy period, we expected significant spikes in stormwater activity between 2021 and 2033. This was because we needed to build more reticulation capacity, new ponding basins, pump stations and other network upgrades. These upgrades were planned to help

mitigate against an increase in intensity and magnitude of storms and other extreme weather events.

Due to limited budgets for new projects, plans to fund LOS improvements will be delayed, focusing instead on asset renewals. This shift in focus may lead to a decrease in LOS over time. The intentions to address the predicted surge in stormwater activity in context of key community outcomes are as follows:

Disposing of stormwater

Overall, Council is planning to ensure that, over the next 30 years, issues with stormwater disposal will have improved. This will be achieved by prioritizing how these issues are addressed.

Within the Ōpōtiki township many properties struggle to get rid of their stormwater adequately due to the high ground water table and poor soakage. This problem occurs whether they try to direct the water to kerb and channel or overland flow to a gully or drain. However, we know that some properties cannot do this well, as shown by the persistent practice Council has found of some residents connecting downpipes to wastewater gully traps.

The Hukutaia and Waioatahe Drifts area do not face the same challenges where properties are generally situated at higher elevations or well-draining ground.

Address nuisance and damaging flooding

While nuisance and damaging flooding have different impacts, the overall approach to handle both is similar. Actions taken to address one type of flooding often help with the other, so they are discussed together below.

Currently, neighbourhoods around the township experience localised areas of nuisance and damaging flooding for storm events between a 1 in 10-year and 1 in 50-year AEP. The Council's goal over the next 30-years, is to ensure that no homes in the township will flood from a storm that's expected once every 50 years (1 in 50-year ARI event).

Urban stormwater modelling has helped identify locations where the reticulation network requires upgrading or extending to address existing issues. Plans are in place to increase the pumping capacity and ensure that resilience (provision of back-ups and retrofitting) improvements have also been planned in the trunk parts of the network to address large storm events.

Council has also planned for future demographic growth to be located away from vulnerable areas, into locations that are more sustainable, for instance with Hukutaia. Sustainably planned growth areas allow for more robust scoping and provision of stormwater assets without the requirement for frequent upgrades and renewals. This in turn provides reliable protection against issues such as nuisance flooding or floor level flooding for small magnitude storm events.

Renewals works are also programmed on an on-going basis to replace ageing assets and address any shortcomings. A proactive renewals programme increases resilience in the network by reducing the number of breakages that occur, thereby maintaining levels of service during and in the aftermath of large storm events.

Overland flow entering the township from the south is also of major concern, particularly during large storm events. To address this issue, ŌDC plans to work with Regional Council to mitigate against this overland flow, therefore minimising the volume of stormwater runoff entering the township from upstream catchments. The planned options here include the upgrade of the SH2 culvert and the provision of increased attenuation through the provision of stop banks with a suitable standard of protection for the township.

Furthermore, like with Hukutaia, future plans for population growth will avoid areas prone to flooding, ensuring that new infrastructure is also placed in safer locations. This approach enhances

the resilience and reliability of the stormwater infrastructure while mitigating against predicted climate change and sea level rises.

PART B: STRATEGY FOR THE FUTURE

4 The challenges facing our infrastructure

This section sets out the major challenges facing our infrastructure and the services they deliver. It covers:

- Natural hazards;
- Community needs and expectations (LOS);
- Growth; and
- Ageing assets
- 3 Waters Reform Changes

4.1 Natural hazards

Our district faces many natural hazard risks. Being a predominantly low-lying coastal area means we have existing and potential future challenges to manage due to natural hazards exposure. The district has relatively high exposure to flooding and coastal inundation, with approximately 2,000 homes across the district estimated to be exposed to rainfall related flooding, 2,700 homes exposed to coastal inundation at a sea level rise of 0.9m and 450 homes located within a potential coastal erosion zone¹.

4.1.1 Sea Level Rise

Our district has approximately 160 km of coastline. In many coastal areas the land is at, or only just above, current mean sea levels. Sea levels are projected to rise by 0.21 m in 2040 and 0.67 m in 2090². This will significantly impact our district, particularly in the form of increased coastal erosion, coastal inundation, and higher groundwater elevations.

Most of the East Cape can be accessed along the coast on State Highway 35, but this route is at risk of getting damaged by increasing coastal erosion, flooding, and sea level rise. State Highway 35 and State Highway 2 may experience more disruptions due to landslides. For transport there are currently no direct issues associated with sea level rise for Councils' network. However, it is noted that this could become an issue over time with roads into some of the smaller coastal towns likely to be susceptible to inundation during king tide events. Additional work is required to forecast when rising groundwater levels might have an adverse impact on pavements.

4.1.2 Ōpōtiki Flooding

As noted above our district and in particular our townships are located along the coastline. In addition to this many of our urban areas are adjacent to rivers and streams.

Over the past decade the Ōpōtiki District has been subjected to numerous heavy rain events resulting in widespread surface and river flooding, together with major slips, that disrupt transportation connectivity to other districts and regions. These events have resulted in the additional costs to the Council in the form of emergency works.

Flooding also impacts on the urban areas and other services such as water supply (in Te Kaha) and the wastewater network (in the Ōpōtiki township).

¹ Bay of Plenty Regional Climate Change Risk Assessment – Volume 2: District Summaries

² National Climate Change Risk Assessment for New Zealand – Snapshot. MfE 2020.

A resilient transport network is an important economic, social, and safety component, particularly as there are areas within the district where roading network routes are few or there are no alternatives.

4.1.3 Climate Change

Our climate is warming which will result in rising sea levels, more frequent and severe extreme weather events and greater risk of increased flooding and drought/wildfire events. Temperatures are set to increase by a further 1°C by 2040 and 3°C by 2090³. This warming will likely be greatest in the northeast of New Zealand where Ōpōtiki is situated.

These changes will exacerbate already present natural hazard risks of coastal inundation and flooding because of sea level rise as highlighted in Section 4.1.1 and 4.1.2.

An increasing frequency and magnitude of severe weather events means that Ōpōtiki will experience higher rainfall, flooding and future risk of increased landslips. This is a potential issue for transport infrastructure with the network comprising a large number of rural largely unsealed roads that would be more prone to damage.

Ōpōtiki is home to a thriving aquaculture industry, with oyster and mussel farms in Ōhiwa Harbour and surrounding coastal waters. However, these farms are facing challenges. They are vulnerable to increasing sediment deposition and temperature increases as shellfish are highly sensitive to contamination from agricultural runoff. Rising sea levels and storm surges may cause damage to aquaculture facilities, particularly in more exposed coastal locations.

Farms are mostly located on the fertile river flats of the Otara, Waioeka and Waioatahe Rivers. These farms may be subject to increased flooding and loss of land as sea level rises. Coastal erosion, rising groundwater and severe rainfall events will increasingly impact farmland. Increased temperature may result in animal welfare issues and increase the persistence of pests and diseases.

Pockets of forestry are located along the East Cape in the foothills of the Raukumara Ranges. These relatively steep plantations may be at risk of damage from increasing erosion, extreme weather, drought, landslides and fire risk, as well as disruption to logging connections due to flooding of transport routes.

4.1.4 Earthquake and Liquefaction

Like many parts of New Zealand, the Ōpōtiki district is susceptible to earthquakes. The Bay of Plenty region is located within the Taupo Volcanic Zone in which there are many known fault lines. Much of the region is coastal and low-lying and therefore also potentially susceptible to liquefaction. Liquefaction is a natural process where earthquake shaking increases the water pressure in the ground in some types of soil, resulting in temporary loss of soil strength. Soils that are susceptible to liquefaction require a certain level of earthquake shaking (duration and intensity of ground shaking) to cause them to liquefy.

While the risk of liquefaction has yet to be quantified in our district, from historical regional earthquake events it is likely that damage caused by liquefaction is a risk to our infrastructure. Bay of Plenty Regional Council (BOPRC) undertook a liquefaction vulnerability assessment in 2021, which informed the natural hazard maps for the District. The maps show the extent of the land expected to be covered by each natural hazard event and provide information about the likelihood of future events.

³ National Climate Change Risk Assessment for New Zealand – Snapshot. MfE 2020.

4.1.5 NZ wide changes to 3 Waters Industry

The New Zealand government is currently reviewing the way water services are delivered in New Zealand. Proposed legislation changes earmarked to be fully in place by mid-2025 under the “Local Water Done Well” policy is likely to result in Council retaining much of the three waters services in-house but keeps the door open for different models of service delivery. Currently, it isn’t certain how this model will look. The state of the country’s three waters infrastructure and the cost of upgrading infrastructure to address public health and environmental impacts is in the order of \$10 billion. The challenges to three water services are significant, and Council continues to plan for and react to the dynamic legislative landscape in conjunction with other local Councils to ultimately provide a fit for purpose service to our community.

4.2 Responding to community needs and expectations

We provide services for the benefit of our community. As a Council we talk with people and groups involved to make sure we can realistically provide what our community needs and wants. It's important to have these discussions to make sure we consider everything that may affect the development of our infrastructure.

Council consults with external stakeholders and customers such as our domestic, commercial and industrial users through 'Pop up shops', customer surveys and direct discussions with community members. A strategy day was also held with community leaders, Iwi, Bay of Plenty Regional Council and Central Government. The strategy day was a chance for all involved to share their concerns, talk about solutions, and come up with a holistic plan for the future.

Internal stakeholders including elected officials, asset managers, planners and finance have also contributed to the development of this strategy. Elected officials have been involved at every step to guide the decision-making process, planners have contributed through the operative district plan and asset managers have provided the key consideration of the assets themselves.

We are expecting minimal change to the levels of service provided by Council in response to community needs and expectations. We acknowledge that some in the community have aspirations for stormwater to be improved, wastewater to function better during wet weather, and ongoing investment to keep our roads and footpaths in good condition.

When it comes to the levels of service we provide to the community, Council's strategic approach for infrastructure is to:

- Ensure that legislative and regulatory requirements are met; and
- Provide a service in alignment with community needs and expectations taking into account what is realistically affordable.

4.2.1 Transport

The key transport infrastructure options for achieving and maintaining our desired levels of service over the next 30 years are outlined in the table below:

ISSUE: Ongoing road safety and local road upgrades Capital improvements up to the value of \$2,000,000 for any individual project will be procured through the Low Cost Low risk programme. This includes projects related to the following activity classes: Local road improvements Safety Improvements (Road to Zero) Walking and cycling improvements		
Key Investment decisions: The investment is seen as necessary to improve transport Level of Service, access and reduce system vulnerabilities throughout the network.		
SCENARIO 1 Investment upfront, without deferring any projects.	SCENARIO 2 - PREFERRED Harbour Access Road \$ 400,000 2024 (but subject to grant providing 75% funding) Seal Extensions \$ 8,579,069 2024-2054 Minor Improvements – Low-Cost Low Risk \$ 41,750,148 2024-2054	SCENARIO 3 Deferring of investment would lead to deteriorating assets and loss of LOS.
IMPLICATIONS - Scenario 1 The option of upfront investment in the LOS projects would be expensive and unrealistic in terms of do-ability.	IMPLICATIONS - Scenario 2 Harbour project is underway so the access road not going ahead would risk breaching arrangements with other parties and not being able to access the harbour. Potentially for loss of LOS if seal extensions and minor improvements and deferred. Deferring partial investment is mitigated by increased investment in OPEX budget to better understand the assets.	IMPLICATIONS - Scenario 3 Deferring all upgrades across the network would increase risk to public and infrastructure, while worsening or deteriorating the network over time.

UNCERTAINTY: There is a low level of uncertainty relating to the LCLR programme as generally most of ŌDC's transport projects fall within the \$2,000,000 threshold and the specified activity classes (and therefore have funding available). Overall, Transport activity is relatively mature and the network needs understood adequately.

4.2.2 Solid Waste

ISSUE: Obtaining and then complying with resource consents and key assets required to accommodate new legislation		
Key Investment decisions: The investment is seen as necessary to maintain levels of service and reduce system vulnerabilities.		
SCENARIO 1 Investment upfront, without deferring any projects.	SCENARIO 2 – PREFERRED Investment upfront to upgrade key assets required to maintain LOS and comply with resource consent. New bins for organic collection, required for new legislation: \$269,613 2027-29 Upgrades to RRCs: Ōpōtiki Town \$441,035 2024-29 Te Kaha \$338,181 2025-32 Waihau Bay \$443,227 2024-32	SCENARIO 3 Deferred investment of RRC upgrades would lead to deteriorating assets and loss of LOS.

IMPLICATIONS - Scenario 1	IMPLICATIONS - Scenario 2	IMPLICATIONS - Scenario 3
The option of upfront investment in the LOS projects would be expensive and unrealistic in terms of do-ability (based on historic deliverability of capital expenditure Council wide and within the Solid Waste activity).	This option balances the need to upgrade assets to comply with resource consent requirements and to meet new legislation, while spreading upgrades overtime to keep expenses down.	This option would mean non-compliance with resource consent requirements and would result in further costs due to fines. It would also result in further deterioration of assets, meaning further expenses down the track.
UNCERTAINTY: There is a moderate level of uncertainty with these scenarios due to the relatively immature state of asset management for the Solid Waste activity. As Council continues to invest in data collection, understanding the activity performance, asset management processes and overall systems to better understand the assets, then the reliability of level of service upgrades and timing of projects will improve.		

4.2.3 Water Supply

ISSUE: Te Kaha water treatment plant relocation. The existing Te Kaha treatment plant does not meet water quality standards for protozoal removal during heavy rain events. The treatment plant and reservoir therefore need to be relocated to a new water source. Investigations have been undertaken to determine if there is a suitable bore located on Copenhagen Road; two bores were drilled, and one is viable. The secondary bore collapsed and therefore investigations are underway to determine a new site for the secondary bore so the new Te Kaha WTP can operate the bores on duty/standby to meet current and foreseeable demand. The need for a larger reservoir will be put on hold until the water source issues can be resolved. In addition, this project also aims to resolve ongoing access issues to the trunk main, as it currently runs through private property.	
Key Investment decisions: Long term viability of a water source and provision of treated water for Te Kaha settlement. This significant investment will enable the treatment plant to be compliant with NZ drinking water standards.	
OPTION 1 (Preferred) Relocate Te Kaha water treatment plant and connect Te Kaha reticulation to new supply. Te Kaha Water Treatment Plant Relocation – New Water Source \$160,000 2024 Te Kaha Water Treatment Plant Relocation – Design \$129,553 2025	OPTION 2 Continue existing operation.

Te Kaha Water Treatment Plant Relocation – Construction \$1,333,458 2026	
IMPLICATIONS - Option 1 Relocating the Te Kaha water treatment plant to a more viable water supply will mean the water treatment will be consistently more compliant with the regulations. Council treatment plant and assets would be wholly located on Council-owned land compared to the current arrangement.	IMPLICATIONS - Option 2 Not relocating the Te Kaha water treatment plant will likely mean that Te Kaha will continue to have noncompliance episodes during storm events. This exposes the public to health risks that are considered unacceptable.
UNCERTAINTY: The uncertainty of requiring an upgrade or relocation of the treatment plant is considered low given the high likelihood that signalled changes to drinking water standards will occur in the industry. There is low uncertainty with this project as all early investigations have indicated a suitable raw water supply and water treatment plant location.	

ISSUE: Water reticulation renewals - Replace 5.8km of DN300 uPVC watermain from the water treatment plant to Ford Street. The section of 5.8km of DN300 uPVC water from WTP to Ford Street has been proven to be a brittle batch of uPVC pipe and requires replacement following multiple breaks on this section of watermain leaving Ōpōtiki residents with untreated raw water whilst repairs are undertaken. The replacement of this watermain is critical for the supply of safe drinking water to the Ōpōtiki community and to maintain compliance with the drinking water regulations.	
Key Investment decisions: The project is considered critical as a water supply provider to meet regulatory and public health requirements.	
OPTION 1 (Preferred) WTP to Ford Street DN300 uPVC Replacement 5.8 km - Design \$25,000 2024 WTP to Ford Street DN300 uPVC Replacement 5.8 km - Construction \$8,823,358 2027-50	OPTION 2 Defer replacement.
IMPLICATIONS - Option 1 Replacing the reticulation as described will provide stability to the supply of treated water to the Ōpōtiki community and allow for consistent compliance accordingly to the drinking water safety standards and regulations.	IMPLICATIONS - Option 2 Electing to defer or not replace the water main will potentially lead to ongoing pipe failures resulting in emergency raw water supply to the community and ongoing expenses related to the response team as well as contractors repairing pipe failure, this would result in increased cost to the existing rate payers.

UNCERTAINTY: There is a medium level of uncertainty surrounding the process and timing of these works as sections will need to be replaced in stages resulting in the potential loss of water supply to Ōpōtiki community during renewal.

4.2.4 Wastewater

All our major LOS programmes are mainly driven by either the need for growth or need for renewals. The main LOS improvement is to extend wastewater services to the existing properties at Hukutaia. This project has been pushed back, however, to the later years of the LTP and will rely on developer funding. The main reason for this project is to encourage growth in an area that is more capable of withstanding challenges, so we discuss this project in the growth section. Another project to accommodate the anticipated industrial growth is the Factory Road wastewater extension. The main options for wastewater infrastructure that we're considering to support LOS for the next 30 years are outlined in the tables below:

ISSUE: The Ōpōtiki Township population connected to the wastewater system is set to increase in the long-term. This includes development in Hukutaia, Waiotahe Drifts, catchment infill, marina development and potential additional flow and load associated with industry.

The existing consent to discharge effluent to the existing disposal field expires in July 2025 and a new resource consent will be required. As part of the new consent it is expected the conditions will require the level of service in terms of treatment quality to improve whilst also catering for the growing demand.

Key Investment decisions: The project is driven by the Ōpōtiki town's wastewater treatment plant requiring a new consent in 2025. It is expected the upgrades proposed will need to improve LOS in Ōpōtiki which is heavily impacted by I&I issues within the network. The upgrades also allow for growth based on the growth predictions.

OPTION 1 – upgrade treatment plant (Preferred) obtain a new consent for the wastewater treatment plant and upgrade the capacity. This option allows for major upgrades and capacity increases to account for ongoing I&I issues and anticipated growth. Cost and timeframes: WWTP Upgrade – New Resource Consent (Stage 1) \$ 202,820 2024-2025 WWTP Upgrade – Early Works Design (Stage 2a) \$ 75,000 2024 WWTP Upgrade – Preliminary Design (Stage 2b) \$ 560,000 2024 WWTP Upgrade – Detailed Design (Stage 3) \$ 740,304 2025-2026 WWTP Upgrade – Construction – Early Works (Stage 4a) \$ 1,050,775 2025-2027 WWTP Upgrade – Construction (Stage 4b) \$ 17,423,095 2027-2036	OPTION 2 – no upgrades Delay the capacity increase and rely on the I&I works to reduce the issues. This option does not allow for any upgrades and capacity increases. It also does not address the requirement for a new consent.
IMPLICATIONS - Option 1 It is likely the new consent will need an increased level of treatment. This option also allows for a greater increase in capacity required for anticipated growth.	IMPLICATIONS - Option 2 Council will not have a consent to operate the wastewater treatment plan. In the short term, I/I reduction may not create the required capacity. In the long-term dry weather flows may have capacity issues with the increased capacity anticipated growth will require.
UNCERTAINTY: Timing and nature of industry standards and regulatory changes. The current trends in wastewater treatment standards are for more stringent requirements. While it is likely that this consent for the wastewater treatment plant will require upgrades the level of these upgrades could be higher than expected. There is also future uncertainty over the suitability of the current site due to natural hazards and viability due to other site constraints. Work is required to better understand these uncertainties.	

ISSUE: In 2025 a new resource consent will be required. As part of the new consent, it is expected the conditions will require the level of service in terms of treatment quality to improve whilst also catering for the growing demand. As a part of increasing the capacity at the WWTP in Ōpōtiki wastewater pump station 1 (WWPS01) and rising from WWPS01 to the WWTP requires an upgrade. Currently there are also LOS issues during wet weather events where WWPS01 is overrun and sections of Ōpōtiki township wastewater reticulation is surcharged.	
Key Investment decisions: The project is driven by LOS issues in Ōpōtiki and the Ōpōtiki town's wastewater treatment plant requiring a new consent in 2025. The upgrades proposed will need to improve the LOS for the Ōpōtiki township which is heavily impacted by Inflow and Infiltration (I&I) issues within the network. The upgrades also allow for growth based on the growth predictions.	
OPTION 1 – upgrade WWPS01 and rising main (Preferred) Obtain a new consent for the wastewater treatment plant and upgrade the capacity. This option allows for major upgrades and capacity increases to account for ongoing I&I issues and anticipated growth. Cost and timeframes: Ōpōtiki Town - Wastewater Pump Station 01 Potts Avenue - Upgrade \$ 1,677,626 2024-2026 Ōpōtiki Town - WWPS01 Rising main to WWTP - Diversion and Upgrade \$ 2,650,319 2024-2028	OPTION 2 – no upgrades Delay the capacity increase and rely on the I&I works to reduce the issues. This option does not allow for any upgrades in relation to the condition of assets and capacity increases.
IMPLICATIONS - Option 1 This option will increase the condition and performance of WWPS01 and the rising main, allowing for increased capacity correlating with the WWTP upgrades. This will improve performance during wet weather events as well as provide capacity for anticipated residential and industrial growth.	IMPLICATIONS - Option 2 This option may continue to cause overflows and surcharging during wet weather events if the I&I remediation does not create enough capacity. In the long-term dry weather flows may have capacity issues with the increased capacity anticipated growth will require. Given the condition of the pump station and rising main operational failures may occur leading to loss of service while repairs are undertaken.
UNCERTAINTY: There is future uncertainty over the capacity as a result of climate change and I&I issues in the WW reticulation. We are currently considering that over the next 30 years the site will continue to be suitable, however, sustainable future intensification of the site will be considered with each major upgrade.	

4.2.5 Stormwater

The key stormwater infrastructure options for achieving and maintaining our desired levels of service over the next 30 years are outlined in the table below:

ISSUE: Tarawa Creek – Pump station upgrade and flood water storage area

The township is surrounded by the Waioeka and Otara rivers, which have stopbanks to prevent fluvial flooding into Ōpōtiki. However, during large storm events, the elevated water levels in the two rivers, combined with overland flow from rural land to the south of Ōpōtiki results in the township being inundated.

The inundation has flood water impacts on property and access routes but also has impacts on the Ōpōtiki Township wastewater network.

There is a requirement to maintain or improve levels of service within the township to better deal with this flooding and improve level of service for the water network.

Upgrades are required for all pump stations within the Ōpōtiki township to ensure the level of service to the township is maintained, as a minimum requirement.. The pump station infrastructure currently in place serves to discharge urban stormwater out of the township and into the downstream river or tidal environment.

Key Investment decisions: These upgrades are seen as a key investment decision, with several projects proposed in a staged manner to address the key strategic objective of improving/maintaining levels of service with increased risk from natural hazards.

OPTION 1 (Preferred)

Upgrade stormwater reticulation alongside pump station and storage basin upgrades to address the issue holistically.

Cost and timeframes:

Ōpōtiki Town - Flood Water Storage Area - Tarawa Creek

\$ 3,141,220 | 2034-2036

Ōpōtiki Town - Stormwater Pump Station - Tarawa Creek Upgrade

\$ 3,648,900 | 2031-2033

OPTION 2

Complete stormwater upgrades within the initial 3 year period, as these upgrades have the most developed design to inform them.

OPTION 3

Maintain status quo on provision of levels of service.

IMPLICATIONS - Option 1

Reduced risk of flood hazard for the Ōpōtiki township. Regulatory compliance for stormwater discharges on the Ōpōtiki scheme.

IMPLICATIONS - Option 2

Option 2 would require a lower initial outlay of capital, but lesser priority upgrades may worsen in time and

IMPLICATIONS - Option 3

Deferring all upgrades across the township would increase risk to public and infrastructure, while worsening or deteriorating over time.

		could cost more than the planned capital sum. This may also limit growth across the township.	
UNCERTAINTY: The level of uncertainty for the requirement of stormwater upgrades is considered to be low – given the confidence in projections of climate change and sea level rise. The list of upgrades identified have also been through a combination of anecdotal evidence and district-wide modelling. It should be noted that the stormwater modelling does not capture minor or localised issues, and rather focuses on major issues like overland flowpaths and flooding due to tidal and fluvial water levels.			
ISSUE: Rural to urban flood protection – SH2 culvert upgrade The township is surrounded by the Waioeka and Otara rivers, which have stopbanks to prevent fluvial flooding into Ōpōtiki. However, during extreme storm events, the elevated water levels in the two rivers, combined with overland flow from rural land to the south of Ōpōtiki results in the township being inundated from rural properties in the south of Ōpōtiki. There is a requirement to maintain or improve levels of service within the township to mitigate flooding. There is a Bay of Plenty Regional Council stormwater pump station located south of Duke Street, during storm events flood waters overrun this pump station flowing into Ōpōtiki from the South. This flooding is pushed from rural areas into southern parts of the Ōpōtiki township.. The SH2 culvert aims to address the flooding on the eastern side of SH2 to minimise the effect of rural flooding on the eastern urban area of Ōpōtiki. This project in combination with Duke Street Stopbank will aim to prevent the rural flood water entering into the urban area and will rely on the Bay of Plenty Regional Council’s pump station to pump the water into the Waioeka river.			
Key Investment decisions: These project is driven by maintaining levels of service with increased risk from natural hazards.			
OPTION 1 (Preferred) Upgrade SH2 culvert. Cost and time frames: Ōpōtiki Town - Rural to Urban Flood Protection - SH 2 Culvert Upgrade - 1 - Investigation and Design \$ 92,538 2025 Ōpōtiki Town - Rural to Urban Flood Protection - SH 2 Culvert Upgrade - 2 - Consent and Approvals \$ 53,666 2026-2027		OPTION 2 Maintain status quo on level of service provisions.	

Ōpōtiki Town - Rural to Urban Flood Protection - SH 2 Culvert Upgrade - 3 - Construction \$ 1,292,390 2029-2030	
IMPLICATIONS - Option 1 Renewing and upgrading the SH2 culvert was not resolve all flood risk issues, solution to be paired with other network improvements.	IMPLICATIONS - Option 2 Deferring the upgrade across would increase risk to public and infrastructure, while worsening or deteriorating over time.
UNCERTAINTY: The level of uncertainty for the requirement of pump station upgrades is considered to be low – given the confidence in projections of climate change and sea level rise. The list of upgrades identified have also been through a combination of anecdotal evidence and district-wide modelling. It should be noted that the stormwater modelling does not capture minor or localised issues, and rather focuses on major issues like overland flowpaths and flooding due to tidal and fluvial water levels.	

ISSUE: Stormwater reticulation extensions/upgrades Stormwater reticulation extensions and capacity upgrades are required across the township to keep up with projected climate change and sea level rise scenarios. The township is surrounded by the Waioeka and Otara rivers, which have stopbanks to prevent fluvial flooding into Ōpōtiki. However, during extreme storm events, the elevated water levels in the two rivers, combined with overland flow from rural land to the south of Ōpōtiki results in the township being inundated. There is a requirement to maintain or improve levels of service within the township to mitigate this flooding.	
Key Investment decisions: These upgrades are seen as a key investment decision, with a number of projects proposed in a staged manner to address the key strategic objective of improving/maintaining levels of service with increased risk from natural hazards.	
OPTION 1 (Preferred) Upgrade the existing open channel network. (to service greenfield and infill development) Cost and timeframes: Ōpōtiki Town - Stormwater Reticulation extensions/upgrades \$ 9,208,251 2030-2054	OPTION 2 Staged upgrades to existing open channel network driven by planned growth. (to service greenfield development, with staged upgrades for infill development)
IMPLICATIONS - Option 1 Renewing and upgrading the entirety of the planned works within Hukutaia is dependent on the proposed growth in the region to actually happen. Should growth	IMPLICATIONS - Option 2 While staging the reticulation upgrades would provide a saving on cost in the near future, the downstream stormwater storage basin would require construction to its full capacity. Benefits of economics of scale would be lost if the work is staged.

not occur as projected, this would result in increased cost to the existing rate payers.	
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UNCERTAINTY: There is a medium level of uncertainty surrounding the timing and staging of these works as projected growth trends may vary with actual growth. However, the uncertainty around this region being a necessity to facilitate growth within Ōpōtiki is low.	
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4.3 Responding to growth

The population in Ōpōtiki is projected to increase in the future. The District population is expected to increase to 12,000 residents in 2033, up from 10,400 in 2022. ŌDC are currently undertaking district wide spatial planning with the view that Council will lead plan changes for the district to then give developers a level of certainty for future developments. To accommodate the full growth potential, a development contributions model will be set up to help deliver the associated infrastructure required over and above the limited growth investment Council have adopted.

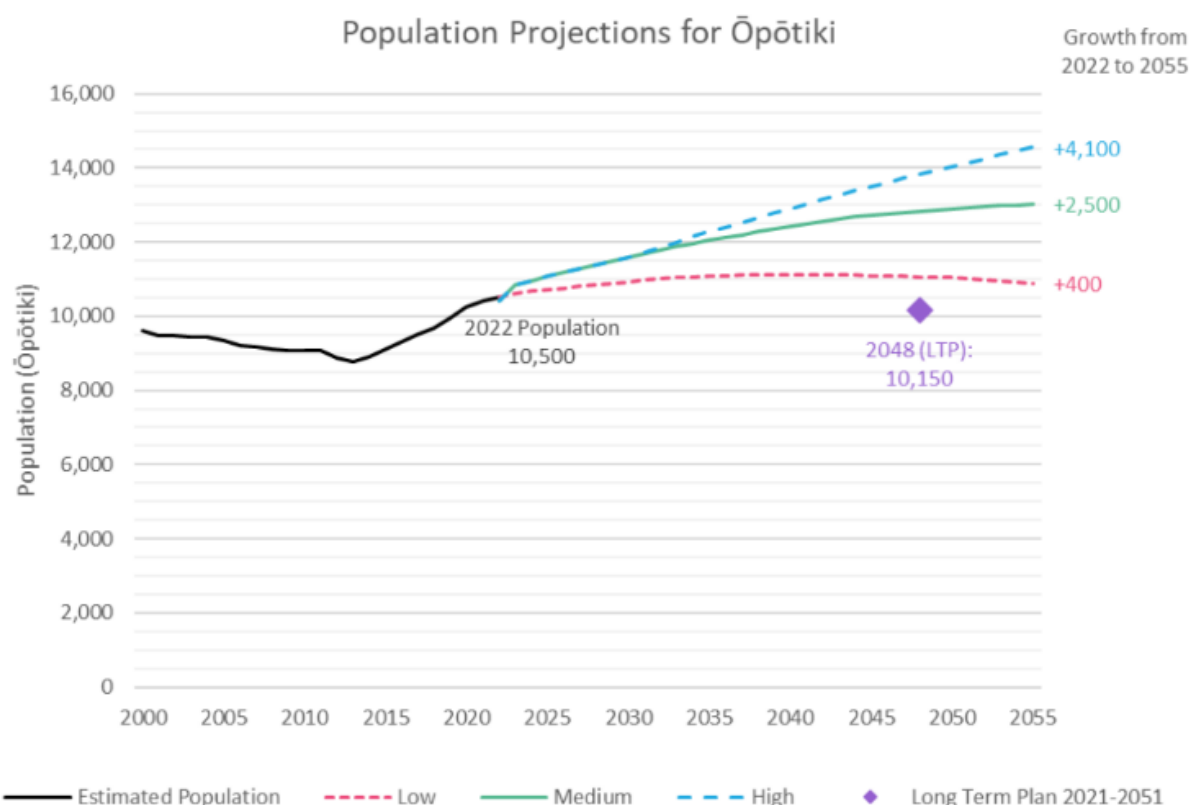


Figure 4-1: Population projections for Ōpōtiki (Source: MRC Population Projections NZ3321 Eastern BoP HBA Research Report)

There are significant uncertainties with this growth that Council must consider:

- **The rate of growth.** The main factor driving growth is economic activity, which is more difficult to forecast than growth from population changes like births and deaths. This means the actual rate at which our community grows could be faster or slower than what we're expecting.
- **The location of the growth.** Where this growth happens is also important because it affects where we'll need to extend or upgrade networks. We have assumed that the primary areas for residential growth will be new subdivisions in Hukutaia and Woodlands area and infill housing in Ōpōtiki (plus smaller development at The Waiotahi Drifts and also some unserviced locations). However, we know that where this growth occurs is subject to landowner initiative and capacity, and it could occur in alternate locations, for example papa kāinga housing on iwi land.

Our approach to this uncertainty in rate and location is to monitor indicators such as subdivision and building consents, industry enquiries, school rolls, and the census. If these indicate that actual growth is significantly different from our forecast, we will adjust the timing and/or location of the infrastructure projects needed to support growth.

Decisions about growth-driven infrastructure carry certain risks for the community. If we build infrastructure in anticipation of growth that doesn't occur as expected, there's a risk the community could end up paying for facilities that aren't needed. Alternatively, failing to provide infrastructure that is needed for growth could prevent the community from growing to its full potential.

When it comes to growth, Council's strategic approach for infrastructure is to:

- Ensure there is spare capacity available to support growth that could occur in the near term.
- Encourage efficient use of infrastructure (for example concentrating growth infrastructure into specific areas) to achieve best value.
- Requiring industry to take reasonable steps to minimise impacts on infrastructure.

4.3.1 Transport

The transport programmes that will contribute to growth are primarily driven by either improving levels of service or renewals issues. This means there aren't any specific transportation projects designed solely for dealing with growth driven challenges or opportunities. There are several key projects underway that encourage further development in the district, particularly in the aquaculture and horticulture sectors.

There are several areas of development in the Hukataia and Woodlands area, and at Waiotahi Drifts, which will use State Highway 2 to access town and main areas of employment south of town. The spatial plan for the district also has growth in the Tablelands area east of the town, which uses State Highway 35 for access to the town centre for services and employment. These developments are driven by the levels of service they require.

Transport projects relating to growth have been centred around the Hukutaia area, with projects involving intersection upgrades, road safety improvements, internal subdivision roading and improvements for pedestrian, cyclists and mobility users.

The above growth funded projects have been applied for in an IAF funding application. If this application is granted, then these growth driven projects can be included in the LTP in years 3-1.

ISSUE: Encouraging growth in the district Transport projects relating to growth have been centred around the Hukutaia area, with projects involving intersection upgrades, road safety improvements, internal subdivision roading and improvements for pedestrians, cyclists and mobility users.	
Key Investment decisions: There are a number of areas of development in the Hukutaia and Woodlands area, and at Waiotahi Drifts, which use SH2 to access the town and main areas of employment south of the town. These developments are driven by the levels of service these developments require.	
SCENARIO 1 No growth allowed for.	SCENARIO 2 – PREFERRED Transport Hukutaia Growth Intersection upgrade / Hukutaia Road and SH2 \$8,260,158 2034-36 Minor road safety improvements \$1,723,731 2026-35 Provision of pedestrian, cyclist and mobility improvements \$2,014,725 2029-32
IMPLICATIONS - Scenario 1 Allowing for no growth may result in not being able to unlock the growth area and undertake development, resulting in a reduction in community outcomes.	IMPLICATIONS - Scenario 2 This option allows for growth in the Hukutaia area, which unlocks the area for development and provides for future growth from the harbour project. Safety improvements, new infrastructure like kerb and channels, cycleways and footpaths will all be funded through the LCLR programme. New bridges and seal extensions are also covered under this category up to the \$2,000,000 threshold.
UNCERTAINTY: There is uncertainty as to what level of funding will be granted from the IAF funding (have estimated 'high-range'). The provision of pedestrian, cyclist and mobility improvements is also uncertain, as it is 100% Developer contribution.	

4.3.2 Solid Waste

Future demand of solid waste is greatly influenced by population growth, economic activity, changes in lifestyle and consumption, and changes in waste management approaches.

The key waste issues identified which respond to growth are as follows:

- Kerbside services – population growth means increased demand on Council services.
- Waste from businesses - developments in aquaculture and the harbour will result in a significant waste stream associated with the processing of shellfish. Construction and demolition waste is also a result of new developments.

Some of the projects that ŌDC propose to responding to growth include upgrades to the RRC's at Te Kaha and Waihou Bay. This includes additional bays and hardstand areas to cater for the growth in solid waste volumes collected at these locations.

However, these are primarily driven by levels of service due to existing infrastructure at these locations requiring upgrades regardless to maintain levels of service provided.

Another response to growth will be the expansion of the Ōpōtiki Town RRC Future Green Waste area. The current area available for Green Waste is undersized and unsuitable for the waste generated. This currently sits in Years 16 and 30, with a total value of \$750,000.

ŌDC has also included additional rubbish bins at district toilets in the OPEX budget.

ISSUE: Increased population generating more waste	
Key Investment decisions: The RRC Future Green Waste project for Ōpōtiki Town Respond to growth in green waste disposal and improve on the undersized existing green waste processing area.	
SCENARIO 1 No growth	SCENARIO 2 – Deferred growth scenario Ōpōtiki Town RRC Future Green Waste \$1,123,660 2037-39
IMPLICATIONS - Scenario 1 The implication of growth not being catered for is likely to result in a loss of LOS and reduction in community outcomes over time.	IMPLICATIONS - Scenario 2 Growth in disposal of green waste is catered for albeit on a deferred basis. The existing green waste staging area can be sweated further with potential interim upgrades allowed for to maintain the minimum level of service until 2038.
UNCERTAINTY: Due to the lower level of asset management maturity for the Solid Waste activity (including lack of data) there is a moderate uncertainty in the timing of the Future Green Waste project. A focus on operational projects including better understanding of the requirements and capacity of the Ōpōtiki Town RRC green waste service will result in greater clarity on the scope and timing of the proposed project.	

4.3.3 Harbour

The harbour development is set to boost and support tourism activities in the district once completed. It is expected to employ 936 people.

Growth enabling projects to unlock the Harbour development have largely been completed in previous years. There is a single project for the Harbour Access Road that is primarily driven by maintaining or improving the levels of service related to accessing the new Harbour development.

Currently, the Harbour development is not owned by Ōpōtiki District Council, which is why it hasn't been included in the Infrastructure Strategy. The exception to this is the already committed access road project.

4.3.4 Water Supply

The key water supply infrastructure options for supporting growth over the next 30 years are outlined in the table below:

ISSUE: Hukutaia – Water supply LOS and Resilience The Crooked Rd reservoir provides little capacity and the rising/falling main to the reservoir lies in low lying wetland terrain and AC material, increasing the risk of failure. The project would see additional resilience to the western side of the water supply network by either upgrading the reservoir or providing an alternative network configuration with a new river crossing directly feeding Hukutaia from the water treatment plant. The upper Hukutaia area of the network would be served by a new booster pump station.	
Key Investment decisions: The project is seen as significant improvement to LOS and Resilience while also being key to facilitate growth within Ōpōtiki while aligning with key strategic values.	
OPTION 1 (Preferred) Upgrade the reservoir or a new water main river crossing to Hukutaia with new booster pump station. Hukutaia – Water Supply LOS and Resilience – 1 – Planning Phase \$ 25,705 2025-26 Hukutaia – Water Supply LOS and Resilience – 2 – Design Phase \$ 158,745 2026-27 Hukutaia – Water Supply LOS and Resilience – 3 – Implementation Phase \$ 2,525,250 2031-33	OPTION 2 Continue existing operations.
IMPLICATIONS - Option 1 Upgrading the reservoir or providing another river crossing will increase network resilience and facilitate growth in Hukutaia by increasing capacity. The existing treatment plant bores and reservoir have capacity to provide the storage requirements. There is a significant cost implication to ratepayers that needs to be considered.	IMPLICATIONS - Option 2 Increased risk of disruption for Hukutaia water supply leading to LOS reduction to the community. There will also be limited capacity for growth in the Hukutaia area given the capacity of the current reticulation.
UNCERTAINTY: There is medium uncertainty in the appropriateness and feasibility of the options. Further investigation and analysis will be required to determine the final network configuration. However, the requirement for an upgrade is considered low uncertainty due to the Hukutaia being the main area for future growth to occur.	

4.3.5 Wastewater

The key wastewater infrastructure options for supporting growth over the next 30 years are outlined in the tables below.

ISSUE: Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area

The Hukutaia and Woodlands areas present an ideal area for future growth due to their proximity to existing treatment facilities, the capacity of the area for infill and greenfield development, its elevation above the effects of climate change and the presence of an existing water supply scheme which is due for renewal in line with growth timeframes.

The Hukutaia area currently does not have any wastewater infrastructure. Intensification of residential development is hampered by the number and space required for onsite septic systems. Provision of a centralised wastewater reticulation system will allow for reduced lot size and reduce the impact of onsite wastewater disposal on health and the environment.

There is currently only one river crossing for wastewater coming from the west of the Waioeka River. This rising main discharges into the Ōpōtiki township system. It is expected that if growth from Hukutaia is realised the existing rising main and network will suffer capacity issues. Providing a second crossing and pump station near the proposed marina will increase the resilience of the network west of the Waioeka River, reduce demand on the Ōpōtiki township system and allow for growth from the Hukutaia/woodlands, Marina and Waitahe Drifts areas.

Key Investment decisions: The key decision is the extent of work and the staging of the new system. A balance must be sought between creating a network to promote new development and the affordability implications of connecting existing properties to a centralised system. Development potential includes both infill from existing properties subdividing as well as new greenfield development. The type of system and technology whether low pressure sewer system, gravity, hybrid and other also needs to be considered.

OPTION 1

Provide for all forecasted growth and provision of centralised wastewater services in a single phase of works. Expansion of network will require existing properties to connect within a given time frame.

This includes the area south of the Ōpōtiki golf course down to the southernmost intersection of Grant Rd and Woodland Rd.

Future development of the wastewater network south of this is not expected until the long term (20+years).

OPTION 2 (Preferred)

The minimum core enabling works (trunk mains, pump station and rising mains) are installed to enable greenfield growth. Extension to existing residents is deferred to year 8 of the LTP.

Early provision of wastewater to existing properties may be considered on a sub-catchment basis if requested.

OPTION 3

Continue with individual onsite wastewater systems in the Hukutaia area.

Any Infill or new development is restricted by current planning and consent restrictions.

Common Elements to OPTION 1 and 2

A new pump station and river crossing are proposed for when Hukutaia has a significant proportion of future flows connected to the existing system. This pump station is expected to also allow flows from Waitahe Drifts to the proposed Marina development. Two river crossings will allow for increased resilience and maintenance options.

Both these options allow for a third stage of growth to the south of the existing properties in the long term.

Option summary

Provide for greenfield and infill growth and provision of wastewater services to existing properties in one stage.

Preferred Option summary

Provide core enabling infrastructure for the area and enabling infrastructure for greenfield development. Defer provision

Option summary

No Council activity or spending on

Cost and timeframes: Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area - Phase 01 \$3,102,200 2027-2030 Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area - Phase 02 \$ 4,352,882 2033-2037	of wastewater services to existing properties in a second stage. Cost and timeframes: Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area - Phase 01 \$3,102,200 2027-2030 Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area - Phase 02 \$ 4,352,882 2033-2037	wastewater in the area
IMPLICATIONS - Option 1 Residents will be required to join the scheme within a given time and additional wastewater charges will be added to the existing residents. Existing properties will become more suitable for subdivision and intensification creating economies of scale in all service provision to the area. The scheme mechanics should not present significant difficulties in design. Providing the whole scheme should provide economies of scale and a sufficient rating base to prevent overburdening the general wastewater rating base for Ōpōtiki township. This option is the most capital intensive option requiring more upfront capital expenditure. The new river crossing will give capacity relief and increased resilience to the existing network immediately, however, if the actual benefit is significant still needs to be investigated.	IMPLICATIONS - Option 2 (Preferred) The main implication over option 1 is that the existing residents will not be required to connect to the network until much later, deferring any issues of affordability until external funding can be secured. Existing residents will be able to plan and adjust for the upcoming change to centralised service. Infill development is unlikely to be allowed until service is provided. There is the potential that later phases are not developed within the medium term requiring the district rating base to support the scheme. Staging allows use of the existing river crossing in the short term. Uncertainty in the timing of the Marina development may require the new western pump station to be brought forward.	IMPLICATIONS - Option 3 There are few no alternative areas that provide the same affordability and resolution of strategic issues as the Hukutaia area. Residential growth in the district will continue to be ad-hoc and constrained. Additional septic systems will degrade the environment and consent for individual systems may become more difficult. There will be more pressure for infill in Ōpōtiki town which is not as climate resilient as the Hukutaia area.
UNCERTAINTY: There is low uncertainty surrounding the necessity and location of extension due to the certainty of climate change and the viability of the area. There is a medium level of uncertainty surrounding the timing and staging of these works as growth trends may vary and the timing of renewal of water supply reticulation may change as condition information improves. There is uncertainty around the existing resident's willingness to uptake the scheme.		

4.3.6 Stormwater

The key stormwater infrastructure options for supporting growth over the next 30 years are outlined in the table below:

ISSUE: Hukutaia - Stormwater infrastructure development for Hukutaia Growth Area Stormwater reticulation and increased capacity is required within Hukutaia to support the planned growth in the region. The Hukutaia region is an optimum location for growth, and providing reticulation in this region is in line with key strategic issues that have been identified within this Infrastructure Strategy, with regards to encouraging development in areas that are minimally impacted by climate change and rising sea levels.		
Key Investment decisions: The project is seen as significant to facilitate growth within Ōpōtiki while aligning with key strategic values. The key decision across the options provided below is regarding the level of infrastructure support provisions for planned growth in Hukutaia.		
OPTION 1 (Preferred) Upgrade the existing open channel network. (to service greenfield and infill development) Cost and timeframes: Hukutaia - Stormwater infrastructure development for Hukutaia Growth Area - Phase 01 \$ 2,977,200 2028-2033 Hukutaia - Stormwater infrastructure development for Hukutaia Growth Area - Phase 02 \$ 11,956,084 2044-2053	OPTION 2 Staged upgrades to existing open channel network driven by planned growth. (to service greenfield development, with staged upgrades for infill development)	OPTION 3 Rely on private developer-led provisions for stormwater reticulation and treatment, with robust regulatory guidance on mitigating for intensified stormwater runoff.
IMPLICATIONS - Option 1 Renewing and upgrading the entirety of the planned works within Hukutaia is dependent on the proposed growth in the region actually occurring. Should growth not occur as projected, this would result in increased costs to the existing rate payers.	IMPLICATIONS - Option 2 While staging the reticulation upgrades would provide a saving on cost in the near future, the downstream stormwater storage basin would require construction to its full capacity. Benefits of economies of scale would be lost if the work is staged.	IMPLICATIONS - Option 3 The lack of a robust code of practice could lead to inconsistent provisions and levels of service, therefore resulting in pocket issues arising across the region.
UNCERTAINTY: There is a medium level of uncertainty surrounding the timing and staging of these works as projected growth trends may vary with actual growth. However, the uncertainty around this region being a necessity to facilitate growth within Ōpōtiki is low.		

4.4 Replacing old assets

Replacing (or renewing) existing assets as they come to the end of their useful lives is part of lifecycle management of infrastructure assets. Replacing an asset could be required as the condition of the asset has deteriorated; is performing poorly; or has become redundant for other reasons.

Council's strategic approach to infrastructure renewals is to:

- Initially, derive a renewals programmes driven primarily by life expectancy of the assets contained in Univerus or RAMM. From this data renewals profiles are generated which informs the renewals programming
- Adopt a long run average renewal approach as set out in the Financial Strategy
- Use the criticality of the assets to inform the renewals programmes
- Run to failure of non-critical assets
- Plan the renewal of assets in conjunction with upgrades and new assets projects where possible
- In early years invest in operational projects to collect more data on assets so that renewals profiles can shift from age-based profiles to condition-based profiles.

The Council's renewal programme is based on asset information contained in the Univerus and RAMM databases for the district. The reliability of these renewal plans is considered to be between low and medium (for Three Waters and Transport). The uncertainty is due to the completeness of the database. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.

Having good data, particularly condition data, is key to adequately planning renewals. Having incomplete and/or unreliable condition data creates a risk of unplanned work occurring (emergency or otherwise) and therefore is a risk to financial planning. To mitigate this risk, generic renewals budgets are available for most asset types across all activities which can be used for unplanned physical works when they arise (reactive). Separately, there are emergency budgets under Transport to specifically address emergency related unplanned physical works. There is still a residual risk that a large unplanned physical repair is required and funding would need to be sort from Council.

Solid Waste has no renewals profile to underpin planning for asset replacement due to not having a functioning asset register. Renewals of assets have historically been undertaken solely on a reactive basis with little visibility of future capital expenditure. Therefore, the renewals identified are compiled on the basis of renewing a large 'bow-wave' of assets on the understanding that over time the activity will mature in the management of assets and move toward a condition-based asset renewal approach.

The table below outlines the condition of Council's three waters assets. Staff experience and judgement is used to infer risk and prioritisation of renewals from what is understood of asset condition and criticality.

The condition and performance of our most critical assets is also summarised in the table below. Council has developed criticality criteria for pipes but the criticality of sites (for example, pumpstations and treatment) is considered based on staff experience, due to the relatively simple nature of the schemes.

Asset group with high criticality	Condition	Performance
Water treatment plants	Very good. Our plants are relatively new, although shorter lived assets will need replacing in the next 30 years. The key assets are not complex so they are monitored using visual inspection.	Spare production capacity.
Ōpōtiki water trunk mains	Poor. Pipe is brittle and subject to periodic failure.	The trunk pipes have spare capacity for peak demand.

Ōpōtiki wastewater treatment plant	Poor to good. Pond liner in average condition, disposal field assets deteriorate due to UV exposure. Monitored by visual inspection.	Abatement notice was issued due to inability to cope with wet weather events, exceeded consent conditions. Limited capacity for growth.
Wastewater pumpstation 1 (PS1)	Very poor to good. The wet well concrete is monitored using density testing. Other components are inspected visually. The chamber roof is planned for replacement based on the condition assessment findings.	Good capacity for all but wet weather events, when wet weather flows exceed capacity.
Wastewater trunk main from PS1 to treatment plant	Condition uncertain but pipe is well through expected life. Condition assessment by laboratory analysis is planned to inform replacement decision as part of upgrade project.	Pipe is rated for low pressure flows. This limits options for increasing flowrate from the pump station. Needs to be upgraded.
Bridges	Average. Condition monitored using a rolling inspection by external experts.	Bridges meet current safety standards and levels of service requirements

Much of the replacement cost of the three waters assets over the next 30 years are either very high or high criticality. This reinforces the importance of undertaking proactive planning towards, and timely renewal, of assets.

A significant portion of the transport carriageway network has a remaining useful life (RUL) of less than four years – which will require immediate intervention without incurring more expensive rehabilitation works in the future. However, we note the RUL figure in RAMM⁴ data is a conservative estimate, recorded at the time of sealing. A condition survey will be required to confirm the accuracy of the RUL estimate.

For transport there are 9 bridges that have a RUL of less than 30 years according to the information currently in RAMM. Tirohanga Road Culvert is the only bridge asset planned to be replaced within the first 5 years of the programme. In addition to this there will still be a need to maintain structural component renewals to manage risk and maintain levels of service.

4.4.1 Water Supply

The key water supply infrastructure options for renewals over the next 30 years are outlined in the table below:

ISSUE: Hukutaia, Te Kaha and Ōhiwa Treatment and Reticulation Renewals The Hukutaia area is reaching the end of its design life and specific larger renewals are addressed in another table below by a specific set of projects for this issue. Renewals identified through predictive modelling for the most part include point and plant assets such hydrants and pumps. The majority of the Te Kaha scheme was installed in the 50's and 60's and as such some portions of the reticulation are reaching the end of their design lives. These renewals are not predicted to be significant and for the most part will be renewed alongside upgrades to provide for growth and maintaining service pressures. A new treatment plant is required in Te Kaha and therefore any renewals required at the current Te Kaha treatment will be limited to priority works. The Ōhiwa reticulation is relatively new. Renewals mainly consist of aging treatment components. Key Investment decisions: This project is seen as significant to maintaining levels of service in the water supply areas while aligning with key strategic values.

⁴ Asset management software from ŌDC to maintain transport records

OPTION 1 (Preferred) Renew ageing assets as identified by asset management. Cost and timeframes: Ōhiwa Water - Reticulation Renewals \$10,524 2024 – 2054 Ōhiwa Water - Treatment Renewals \$95,463 2024 – 2054 Hukutaia Reticulation Renewals \$1,704,774 2024 – 2054 Te Kaha Water - Reticulation Renewals \$1,331,122 2024 – 2054 Te Kaha Water - Treatment Renewals \$985,053 2024 – 2054 Key investment decisions will be undertaken through the Annual Planning process for these budgets.	OPTION 2 Run assets to failure.
IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Letting assets run till failure has the potential to delay expenditure however in the long term costs will remain the same. Choosing not to renew assets based on predictive modelling will elevate the risk to public health and decline in service pressures
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.	

ISSUE: Hukutaia Reticulation Renewals

The Hukutaia area is reaching the end of its design life. The reticulation around this area was not renewed at the same time as the Ōpōtiki township and is 1950's & 60's asbestos cement (AC). AC pipe has a reduced estimated life of 60 years based on national findings. The majority of the reticulation will be replaced alongside upgrades to provide for growth and levels of service. The projects outlined below are for the renewal of the remaining sections of AC pipe on Grant Rd, Hukutaia Rd and Woodlands Rd.

The need for renewals and the timing is based on the following key strategic issues.

Growth – The Hukutaia area is ideal for infill and the existing AC lacks capacity for the increased pressures required.

Climate Change – Hukutaia is located on high ground.

Life Cycle Management – The Hukutaia reticulation is due for renewal in the next 10 years and could line up with the extension of the wastewater scheme.

Key Investment decisions: This project is seen as significant to maintaining levels of service in Hukutaia while aligning with key strategic values.

OPTION 1 (Preferred) Renew ageing assets as identified by asset management. Cost and timeframes: Hukutaia - Water Main Renewal - Grant Road - AC Watermain \$342,051 2032 Hukutaia - Water Main Renewal - Hukutaia Rd - AC Watermain \$438,022 2032 Hukutaia - Water Main Renewal - Woodlands Road - AC Watermain \$615,200 2032 Key investment decisions will be undertaken through the Annual Planning process for this budget.	OPTION 2 Run assets to failure.
IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Letting assets run till failure has the potential to delay expenditure however in the long term costs will remain the same. Choosing not to renew assets based on predictive modelling will elevate the risk to public health and decline in service pressures
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.	

ISSUE: Ōpōtiki WTP Renewals

The Ōpōtiki water supply scheme is relatively new with the major portion servicing the township installed in the 90's and the Waiotahi Drifts area installed in the 2000's. There are several key components at the Ōpōtiki WTP that require replacing over the 30 year planning horizon. These are critical components to the water treatment process.

Key Investment decisions: These assets are part of a critical process in treatment of the water supply. Therefore, the project is seen as necessary to maintain status quo and replace ageing assets, and to provide the minimum level of service required.

OPTION 1 (Preferred) Renew ageing assets as identified by asset management. Cost and timeframes: Ōpōtiki Town - Water Treatment Renewals \$3,861,256 2024 – 2054 Ōpōtiki Town - Water Reservoir Lining Renewal \$373,804 2028 – 2029 Ōpōtiki Town - Water Treatment UV Renewals \$428,718 2024 – 2054 Key investment decisions will be undertaken through the Annual Planning process for these budgets.	OPTION 2 Run assets to failure.
IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Letting assets run till failure has the potential to delay expenditure however in the long term costs will remain the same. Choosing not to renew assets based on predictive modelling is a significant risk to public health as these assets are part of a critical public health process (water treatment).
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.	

ISSUE: Booster Station Renewals Key component renewals for Otara and Hukutaia Booster Stations. Both of these pump stations service the majority of the wider Ōpōtiki water supply area.	
Key Investment decisions: The project is seen as necessary to maintain status quo and replace ageing assets, so as to provide the minimum level of service required.	
OPTION 1 (Preferred) Renew ageing assets as identified by asset management. Cost and timeframes: Hukutaia - Booster Station Electrical Control Renewal \$115,001 2024 – 2054 Ōpōtiki Town - Otara Booster Station Renewals and Pumps \$375,922 2026 – 2054	OPTION 2 Run assets to failure.

Key investment decisions will be undertaken through the Annual Planning process for this budget.	
IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Letting assets run till failure has the potential to delay expenditure however in the long term costs will remain the same. Choosing not to renew assets based on predictive modelling is a significant risk to public health as these assets are part of a critical public health process (water treatment).
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.	

ISSUE: Ōpōtiki, Te Kaha and Hukutaia Valves, Hydrants and Meters Valves, hydrants and meters make up the majority of water supply point assets. These assets have shorter lifespans than pipeline assets and therefore have a separate renewals programme.	
Key Investment decisions: The project is seen as necessary to maintain the status quo and replace ageing assets, so as to provide the minimum level of service required.	
OPTION 1 (Preferred) Renew ageing assets as identified by asset management. Cost and timeframes: Hukutaia - Valves and Hydrants Renewals \$97,290 2025 – 2054 Ōpōtiki Town - Valves, Hydrants and Meters Renewals \$2,526,253 2025 – 2054 Te Kaha - Valves, Hydrants, Meters, Pumps Renewals \$412,024 2025 – 2054 Key investment decisions will be undertaken through the Annual Planning process for this budget.	OPTION 2 Run assets to failure.

IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Letting assets run till failure has the potential to delay expenditure but incurs increasing maintenance costs and service disruptions.
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.	

4.4.2 Wastewater

The key wastewater infrastructure options for renewals over the next 30 years are outlined in the table below:

ISSUE: Ōpōtiki Town - Reticulation Rehabilitation The Ōpōtiki Wastewater reticulation currently suffers from inflow and infiltration (I&I) due to complications arising from: • poor installation practice in the 1950's • use of oval seconds pipe • installation difficulties caused by ground water and soil strata Levels of service are difficult to maintain in wet weather events when reticulation becomes overloaded. From symptomatic assessment of I&I, pipe displacement, degradation, slumping etc appear to be widespread offering poor resilience and little to no room for growth. A 3-year investigation into the extent, severity and localisation of I&I has been completed and a preferred remediation option had been resolved by Council and informed rehabilitation works over the last 10 years. Rehabilitation was found to be the preferred option due to the balance of cost versus benefit and the extension of the life of the reticulation. However, additional investment is required to review and confirm Council's commitment to this approach.		
Key Investment decisions: The project is seen as necessary to maintain status quo and replace ageing assets, to provide the minimum level of service required.		
OPTION 1 rehabilitation (Preferred) Wastewater Reticulation Rehabilitation includes reviewing and confirming Council's commitment to the continued refurbishment of the network conditional on the review of the current performance of the existing rehabilitated network. This option also allows for investigation and remediation of any issues identified within the network including raising gully traps, decommissioning redundant lines and smoke testing. Cost and timeframes:	OPTION 2 full replacement Full replacement of assets that have potential for high I&I is anticipated to result in modern materials placed through trenching rather than refurbishment which is being undertaken without the need for digging up the surfaces above the existing pipes.	OPTION 3 do nothing Allow assets to run to the end of nominal asset life, without addressing the current condition that is allowing wet weather flows into the system and reducing network capacity.

Ōpōtiki Town - Reticulation Rehabilitation - 1 - Investigations and Planning \$ 250,000 2024 Ōpōtiki Town - Reticulation Rehabilitation - 2 - Design and Approvals \$ 257,050 2025-2026 Ōpōtiki Town - Reticulation Rehabilitation - 3 - Construction \$ 6,222,358 2026-2031		
IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 This option is more expensive than option 1 and due to the implications of climate change the full useful life of the assets may not be realised creating a potential inefficiency in Council spending	IMPLICATIONS - Option 3 Allowing assets to run to failure can delay imminent expenditures but would elevate risk to public services and is likely to require increased spend in the future to address large scale replacements.
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.		

ISSUE: Ōpōtiki and Waihau Bay Reticulation & WWTP Renewals Reticulation upgrades across Ōpōtiki township include pipelines, pump stations, manholes to capture and convey wastewater across Ōpōtiki township and to the WWTP.	
Key Investment decisions: The project is seen as necessary to maintain the status quo and replace ageing assets, to provide the minimum level of service required.	
OPTION 1 (Preferred) Renew ageing assets as identified by asset management. Cost and timeframes: Ōpōtiki Town - Wastewater Reticulation Renewals \$ 3,273,408 2024-2054 Waihau Bay - Wastewater Reticulation Renewals \$ 286,388 2021-2054 Ōpōtiki Town - Wastewater Treatment Renewals \$ 3,367,924 2024-2054 Waihau Bay - Wastewater Treatment Renewals \$ 47,731 2024-2054 Key investment decisions will be undertaken through the Annual Planning process for these budgets.	OPTION 2 Allow assets to run to end of life.

IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Allowing assets to run to failure can delay imminent expenditures but would elevate risk to public services and is likely to require increased spend in the future to address large scale replacements.
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.	

4.4.3 Stormwater

The key stormwater infrastructure options for renewals over the next 30 years are outlined in the table below:

ISSUE: Stormwater Reticulation Renewals Reticulation renewals across Ōpōtiki township include pipelines, pump stations, culverts to capture and convey stormwater runoff from sub-catchments across Ōpōtiki township. Multiple areas within the township are approximately half-way through their design life, whilst other parts of the network servicing the township have short design lives. The assets that are past the half-way point of its design life are also of varying criticalities, as modelled using Univerus.	
Key Investment decisions: The project is seen as necessary to maintain the status quo and replace ageing assets, to provide the minimum level of service required.	
OPTION 1 (Preferred) Renew ageing assets as identified by asset management modelling. Cost and timeframes: Ōpōtiki Town - Stormwater Reticulation Renewals \$ 12,277,830 2024-2054 Ōpōtiki Town - Stormwater Pump Stations - Renewals \$ 1,195,063 2024-2054 Ōpōtiki Town - Stormwater Drainage Renewals \$ 570,830 2024-2054 Key investment decisions will be undertaken through the Annual Planning process for this budget.	OPTION 2 Allow assets to run to end of life.
IMPLICATIONS - Option 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Option 2 Allowing assets to run to failure can delay imminent expenditures but would elevate risk to public services and is likely to require increased spend in the future to address large scale replacements.
UNCERTAINTY: There is a low to medium level of uncertainty around the renewals profile, due to the completeness of the database. While the asset data for high criticality assets is reliable, there is minimal data	

available on low criticality assets within Univerus. A 'smoothed' renewals profile accounts for this uncertainty but it does not negate the potential for cost spikes through variations in asset lifespan.

4.4.4 Transport

The average age profile for high value network assets doesn't indicate an asset renewal deficit. The requirements for maintenance are increasing due to the increased demand on the network and climatic impacts.

The key transport infrastructure options for renewals over the next 30 years are outlined in the table below:

ISSUE: Operations and maintenance of the district network to required level of service The maintenance spend over the past five years has been increasing in line with the development and traffic growth on the network, in addition to costs relating to an ageing network. A significant portion of the roading and drainage network is showing a remaining design life of less than four years, requiring immediate intervention.	
Key Investment decisions: The project is seen as necessary to maintain status quo and replace ageing assets and to provide the minimum level of service required.	
SCENARIO 1 - PREFERRED Renewing ageing assets as identified by asset management and following the wider Council long run average renewals approach. CBD Kerb & Channel \$1,372,651 2024-54 Renewals \$19,630,259 2024-54 Unsealed Road Resurfacing \$9,452,396 2024-54 Sealed roads \$53,511,086 2024-54 Council site Access Roads \$643,433 2024-54 Emergency Events (major & minor events reserve) \$4,289,534 2024-54	SCENARIO 2 Allow assets to run to end of life.
IMPLICATIONS - Scenario 1 Renewing ageing assets combined with improved data collection provides a more robust renewals profile to ŌDC, which ensures future renewal works are carried out in the most efficient and affordable manner.	IMPLICATIONS - Scenario 2 Allowing assets to run to failure can delay imminent expenditures but would elevate risk to public services and is likely to require increased spend in the future to address large scale replacements.

UNCERTAINTY: There is a low to medium level of uncertainty around the maintenance and renewals profile due to the completeness of the database. Accurate records of maintenance spending for many transport assets have only been kept since the last few years. Therefore it is difficult to identify long-term trends in this data.

4.4.5 Solid Waste

Historically, there hasn't been enough investment in maintaining and renewing the infrastructure for managing Solid Waste, partly because of lack of detailed knowledge about these assets. To address this, Council is now focusing on improving how it manages its solid waste assets. This involves starting a journey towards better asset management practices. These projects will help gather essential information about what assets exists, their current condition, and when they might need to be replaced. This effort is all about making sure the Council can manage infrastructure more efficiently in the future.

ISSUE: Ongoing RRC renewals	
Key Investment decisions: The project is seen as necessary to maintain levels of service and reduce system vulnerabilities throughout the network.	
SCENARIO 1 – PREFERRED Renewing ageing assets as identified by staff experience and judgement (long term aspirational goal of renewing ageing assets as identified by asset management information, prioritising key assets). Renewals to RRCs: Ōpōtiki Town \$8,855,240 2024-54 Te Kaha \$3,442,476 2024-54 Waihau Bay \$2,082,065 2024-42	SCENARIO 2 Allow assets to run to end of life.
IMPLICATIONS - Scenario 1 This option is a balance of investing in gathering asset management information to inform planned renewals and renewing assets that are priority. There is a risk of unplanned works due to the trade-off of not renewing everything.	IMPLICATIONS - Scenario 2 Allowing assets to run to failure can delay imminent expenditures but would elevate risk to public services and is likely to require increased spend in the future to address large scale replacements.
UNCERTAINTY: There is a moderate to high level of uncertainty given the lack of asset data records and condition assessments across the activity. The condition of Solid Waste assets is based on staff knowledge and experience in lieu of accurate asset data. The uncertainty of this assumption may lead to under or over	

investment in asset replacement. As investments are made into asset management process and data collection, the condition assumptions and therefore replacement programme should become more accurate over time.

4.5 Financial affordability

Financial affordability is about the hard choices that have to be made regarding spending on infrastructure. These decisions are crucial for Council to meet its obligations on debt interest payments, remain solvent, balance the cost to ratepayers and the levels of service to be provided to the community. Making these decisions require compromise between the planned or desired capital expenditure and what is realistically affordable for Council.

Council's approach to maintaining financial affordability for infrastructure is to:

- Manage overall debt levels to a targeted range of operating income
- 'Distribute' renewals capital expenditure over time by prioritising critical assets and adopting a long run average renewals approach

Affordability was a key theme in feedback received during consultation on the Hukutaia growth projects. In response to this feedback, Council deferred projects in the 2024 LTP to connect existing households to a new wastewater service until years 4-6 for Phase 1 and years 10-11 for Phase 2. This allows time to any external funding and to develop financial measures to manage affordability, without completely removing the work from the 10-year programme.

4.6 Backlog of works and the 'Do-ability' of the works programme

Council has not used a large portion of its budget for capital projects in the past few years. This has led to a backlog of projects that need to be done, and these have been included in the current strategy plan.

The planned works outlined in the early years of this strategy reflects what the Council has historically been able to accomplish (Year 1 includes \$2.5 million for Snell Road upgrades and renewals which is currently underway due to be completed in 2024/2025. This project is already resourced and funded and therefore is not expected to have any effect on deliverability of remaining programmed works in year 1). Starting from year 3 onwards, there is a plan to gradually increase the amount and scale of works. To handle this increase, the Council will improve how it manages internal staff resourcing to facilitate project management and procurement of contractor and consultant inputs. This is combined with an overarching organisation refresh which is being implemented to review the structure of the organisation and how it can be organised to better support delivery outcomes.

Three key risks have been identified (as of March 2024) as:

- (i) Availability of contractors/consultants/materials,
- (ii) Resource consent delays, and
- (iii) internal staff resourcing.

Clear mitigation actions are in place to address these risks, and new risks will be identified and prioritised as we progress through delivery.

5 What we plan to do

5.1 Summary of projects

The following tables summarise the preferred project options that Council will undertake over the next 30 years.

5.1.1 Transport

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
LOS				
Harbour Access Road	\$400,000	\$400,000	\$-	\$-
Seal extensions	\$8,579,069	\$612,340	\$1,589,140	\$6,377,589
Emergency Events - Major Events Reserve	\$2,144,767	\$153,085	\$397,285	\$1,594,397
Minor Improvements - Low Cost Low Risk	\$41,750,148	\$2,183,424	\$6,000,951	\$33,565,773
Emergency Events - Minor	\$2,144,767	\$153,085	\$397,285	\$1,594,397
Snell Road	\$2,500,000	\$2,500,000	\$-	\$-
Renewals				
CBD Kerb & Channel	\$1,372,651	\$97,974	\$254,263	\$1,020,414
Council site access roads	\$643,433	\$45,926	\$119,188	\$478,319
Footpath renewals	\$4,087,533	\$249,535	\$685,826	\$3,152,172
Unsealed Road Metalling	\$9,452,396	\$577,048	\$1,585,969	\$7,289,379
Sealed Road Resurfacing	\$29,667,394	\$2,566,100	\$5,621,916	\$21,479,378
Drainage Renewals	\$6,529,629	\$399,382	\$1,126,181	\$5,004,066
Sealed Road Pavement Rehabilitation	\$23,843,692	\$1,978,354	\$4,302,023	\$17,563,315
Structures Components Replacement	\$3,990,189	\$168,438	\$462,939	\$3,358,812
Traffic Services Renewal	\$2,483,193	\$151,594	\$416,647	\$1,914,952
Structures Renewals	\$2,247,450	\$300,000	\$800,856	\$1,146,594
Environmental Renewals	\$292,265	\$-	\$78,694	\$213,571
Growth				

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
Transport Hukutaia Growth - Intersection Upgrade / Hukutaia Rd and SH2	\$8,260,158	\$-	\$-	\$8,260,158
Transport Hukutaia Growth - Minor Road Safety Improvements	\$1,723,731	\$156,315	\$1,191,855	\$375,561
Transport Hukutaia Growth - Provision of pedestrian, cyclist and mobility improvements	\$2,014,725	\$-	\$2,014,725	\$-

5.1.2 Solid Waste

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
LOS				
New bins for organics collection	\$269,613	\$-	\$269,613	\$-
Ōpōtiki Town - RRC improved workstation flow	\$81,814	\$81,814	\$-	\$-
Ōpōtiki Town - RRC security system	\$38,091	\$-	\$38,091	\$-
Ōpōtiki Town - RRC upgrades for resource consent compliance	\$156,355	\$103,180	\$53,175	\$-
Ōpōtiki Town - RRC layout upgrade (existing greenwaste bays)	\$123,504	\$-	\$123,504	\$-
Ōpōtiki Town - RRC layout upgrade (existing greenwaste gravel pavement)	\$41,271	\$30,636	\$10,635	\$-
Te Kaha - RRC additional glass bins	\$15,314	\$15,314	\$-	\$-
Te Kaha - RRC improved workstation flow	\$10,319	\$10,319	\$-	\$-
Te Kaha - RRC Loader	\$85,080	\$-	\$85,080	\$-
Te Kaha - RRC upgrades for resource consent compliance	\$46,908	\$30,955	\$15,953	\$-
Te Kaha - RRC additional hardstand for bays	\$93,192	\$-	\$93,192	\$-
Te Kaha - RRC bays (additional)	\$87,368	\$-	\$87,368	\$-
Waihau Bay - RRC improved workstation flow	\$10,635	\$-	\$10,635	\$-
Waihau Bay - RRC upgrades for resource consent compliance	\$46,908	\$30,955	\$15,953	\$-
Waihau Bay - Hardstand and building expansion	\$315,790	\$153,180	\$162,610	\$-
Waihau Bay - RRC bays (additional)	\$69,894	\$-	\$69,894	\$-
Renewals				
Ōpōtiki Town - RRC bailer - tin and can	\$130,128	\$-	\$130,128	\$-

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
Ōpōtiki Town - RRC bailer / compactor	\$297,780	\$-	\$297,780	\$-
Ōpōtiki Town - RRC bays (existing)	\$401,587	\$91,908	\$236,133	\$73,546
Ōpōtiki Town - RRC fencing replacement	\$251,679	\$30,636	\$61,039	\$160,004
Ōpōtiki Town - RRC hardstand (pavement for existing bays)	\$652,670	\$30,636	\$622,034	\$-
Ōpōtiki Town - RRC hoist (glass)	\$116,229	\$30,621	\$-	\$85,608
Ōpōtiki Town - RRC renewals	\$1,447,263	\$107,237	\$278,126	\$1,061,900
Ōpōtiki Town - RRC bailer / compactor building	\$60,737	\$-	\$60,737	\$-
Ōpōtiki Town - RRC building facilities	\$110,430	\$-	\$110,430	\$-
Ōpōtiki Town - RRC building replacement	\$3,769,149	\$-	\$-	\$3,769,149
Ōpōtiki Town - RRC conveyor/sorter	\$53,316	\$-	\$53,316	\$-
Ōpōtiki Town - RRC drainage renewals	\$114,473	\$-	\$114,473	\$-
Ōpōtiki Town - RRC hardstand (gravel)	\$85,080	\$-	\$85,080	\$-
Ōpōtiki Town - RRC hardstand (pavement for entrance and turning areas)	\$647,086	\$-	\$251,565	\$395,521
Ōpōtiki Town - RRC hoist (plastics)	\$121,496	\$-	\$31,905	\$89,591
Ōpōtiki Town - RRC replace roller doors x 4	\$158,844	\$-	\$158,844	\$-
Ōpōtiki Town - RRC weighbridge renewal	\$271,982	\$-	\$-	\$271,982
Te Kaha - RRC hardstand (pavement for existing bays)	\$133,862	\$30,636	\$78,711	\$24,515
Te Kaha - RRC renewals	\$1,077,823	\$122,544	\$196,779	\$758,500
Te Kaha - RRC bays (existing)	\$97,850	\$60,627	\$37,223	\$-
Te Kaha - RRC building facilities	\$78,694	\$-	\$78,694	\$-
Te Kaha - RRC building replacement	\$1,480,347	\$-	\$-	\$1,480,347
Te Kaha - RRC fencing replacement	\$57,250	\$-	\$57,250	\$-
Te Kaha - RRC hardstand (pavement for entrance and turning areas)	\$366,293	\$-	\$366,293	\$-
Te Kaha - RRC replace roller doors x 2	\$80,150	\$-	\$80,150	\$-
Waihou Bay - RRC fencing replacement	\$46,298	\$46,298	\$-	\$-
Waihou Bay - RRC renewals	\$619,123	\$45,955	\$118,068	\$455,100
Waihou Bay - RRC bays (existing)	\$94,739	\$45,955	\$48,784	\$-

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
Waihau Bay - RRC building facilities	\$56,210	\$-	\$56,210	\$-
Waihau Bay - RRC building replacement	\$707,265	\$-	\$-	\$707,265
Waihau Bay - RRC hardstand (pavement for entrance and turning areas)	\$255,944	\$-	\$255,944	\$-
Waihau Bay - RRC hardstand (pavement for existing bays)	\$153,585	\$76,607	\$76,978	\$-
Waihau Bay - RRC replace roller doors x 2	\$78,694	\$-	\$78,694	\$-
Ōpōtiki Town - Resource Consent	\$165,311	\$165,311	\$-	\$-
Te Kaha - Resource Consent	\$70,207	\$70,207	\$-	\$-
Waihau Bay - Resource Consent	\$70,207	\$70,207	\$-	\$-
Growth				
Ōpōtiki Town - RRC Future Green Waste	\$1,123,660	\$-	\$-	\$1,123,660

5.1.3 Water Supply

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
LOS				
Hukutaia - Water Supply LOS and Resilience - 1 - Planning Phase	\$25,705	\$25,705	\$-	\$-
Hukutaia - Water Supply LOS and Resilience - 2 - Design Phase	\$158,745	\$158,745	\$-	\$-
Hukutaia - Water Supply LOS and Resilience - 3 - Implementation Phase	\$2,525,250	\$-	\$2,525,250	\$-
Ōhiwa - Water Telemetry Upgrade	\$50,000	\$50,000	\$-	\$-
Te Kaha - Water Treatment Plant Relocation - 1 - New Water Source	\$160,000	\$160,000	\$-	\$-
Te Kaha - Water Treatment Plant Relocation - 2 - Design	\$129,553	\$129,553	\$-	\$-
Te Kaha - Water Treatment Plant Relocation - 3 - Construction	\$1,333,458	\$1,333,458	\$-	\$-
Te Kaha Water - Booster to OBrien's 1.4km	\$1,096,520	\$-	\$1,096,520	\$-
Te Kaha Water - Reticulation upgrades - Copenhagen Loop	\$586,854	\$-	\$586,854	\$-
Growth				
Ōpōtiki Town - Water Reticulation Upgrades for Harbour	\$169,775	\$-	\$169,775	\$-

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
Ōpōtiki Town - Water Ring Main - Duke St - 1 - Planning and Design Phase	\$79,439	\$-	\$-	\$79,439
Ōpōtiki Town - Water Ring Main - Duke St - 2 - Easement Arrangement	\$246,421	\$-	\$-	\$246,421
Ōpōtiki Town - Water Ring Main - Duke St - 3 - Construction Phase	\$509,598	\$-	\$-	\$509,598
Renewals				
Hukutaia - Valves and Hydrants Renewals	\$97,290	\$17,479	\$79,811	\$-
Hukutaia - Booster Station Electrical Control Renewal	\$115,001	\$15,000	\$42,135	\$57,866
Hukutaia - Reticulation Renewals	\$1,704,774	\$231,488	\$271,182	\$1,202,104
Hukutaia - Water Main Renewal - Grant Road - AC Watermain	\$342,051	\$-	\$342,051	\$-
Hukutaia - Water Main Renewal - Hukutaia Rd - AC Watermain	\$438,022	\$-	\$438,022	\$-
Hukutaia - Water Main Renewal - Woodlands Road - AC Watermain	\$615,200	\$-	\$615,200	\$-
Ōhiwa - Water Reticulation Renewals	\$10,524	\$6,350	\$-	\$4,174
Ōhiwa - Water Treatment Renewals	\$95,463	\$6,173	\$16,435	\$72,855
Ōpōtiki Town - Otara Booster Station Renewals and Pumps	\$375,922	\$11,641	\$127,908	\$236,373
Ōpōtiki Town - Valves, Hydrants and Meters Renewals	\$2,526,253	\$22,620	\$223,454	\$2,280,179
Ōpōtiki Town - Water Reservoir Lining Renewal	\$373,804	\$-	\$373,804	\$-
Ōpōtiki Town - Water Reticulation Renewals	\$3,296,984	\$273,726	\$550,579	\$2,472,679
Ōpōtiki Town - Water Reticulation Renewals - 5.8km DN300 uPVC WTP to Ford Street - 1 - Planning and Design	\$25,000	\$25,000	\$-	\$-
Ōpōtiki Town - Water Reticulation Renewals - 5.8km DN300 uPVC WTP to Ford Street - 2 - Construction	\$8,823,358	\$-	\$2,054,400	\$6,768,958
Ōpōtiki Town - Water Reticulation Renewals - Ōpōtiki WTP Treated Water Main	\$158,612	\$-	\$158,612	\$-
Ōpōtiki Town - Water Treatment Renewals	\$3,861,256	\$193,660	\$747,258	\$2,920,338
Ōpōtiki Town - Water Treatment UV Renewals	\$428,718	\$22,620	\$103,285	\$302,813
Te Kaha - Valves, Hydrants, Meters, Pumps Renewals	\$412,024	\$17,479	\$87,837	\$306,708
Te Kaha - Water Reticulation Renewals	\$1,331,122	\$94,270	\$435,449	\$801,403
Te Kaha - Water Treatment Renewals	\$985,053	\$92,153	\$164,352	\$728,548

5.1.4 Wastewater

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
LOS				
Ōpōtiki Town - Factory Rd Wastewater Extension - 1 - Design Phase	\$100,985	\$-	\$100,985	\$-
Ōpōtiki Town - Factory Rd Wastewater Extension - 2 - Implementation Phase	\$290,013	\$-	\$290,013	\$-
Ōpōtiki Town - Wastewater Pump Station 01 Potts Avenue - Upgrade	\$1,677,626	\$1,677,626	\$-	\$-
Ōpōtiki Town - WWPS01 Rising main to WWTP - Diversion and Upgrade	\$2,650,319	\$226,144	\$2,424,175	\$-
Ōpōtiki Town - WWTP - Stage 2a - Early Works Design	\$75,000	\$75,000	\$-	\$-
Ōpōtiki Town - WWTP - Stage 2b - Preliminary Design	\$560,000	\$560,000	\$-	\$-
Ōpōtiki Town - WWTP - Stage 3 - Detailed Design	\$740,304	\$740,304	\$-	\$-
Ōpōtiki Town - WWTP - Stage 4a - Construction - Early Works	\$1,050,775	\$1,050,775	\$-	\$-
Ōpōtiki Town - WWTP - Stage 4b - Construction	\$17,423,095	\$-	\$13,326,806	\$4,096,289
Ōpōtiki Town Wastewater - Caravan Wastewater Dumpstation	\$306,583	\$-	\$306,583	\$-
Growth				
Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area - Phase 01	\$3,102,200	\$-	\$3,102,200	\$-
Hukutaia - Wastewater infrastructure development for Hukutaia Growth Area - Phase 02	\$4,352,882	\$-	\$314,425	\$4,038,457
Hukutaia - WWPS 04 Rising Main Separation / WWPS05 Upgrade	\$289,996	\$-	\$289,996	\$-
Ōpōtiki Town - Wastewater Extension Stage 2 - Otara Rd	\$843,944	\$-	\$843,944	\$-
Renewals				
Ōpōtiki Town - Reticulation Rehabilitation - 1 - Investigations and Planning	\$250,000	\$250,000	\$-	\$-
Ōpōtiki Town - Reticulation Rehabilitation - 2 - Design and Approvals	\$257,050	\$257,050	\$-	\$-
Ōpōtiki Town - Reticulation Rehabilitation - 3 - Construction	\$6,222,358	\$1,178,946	\$5,043,412	\$-
Ōpōtiki Town - Wastewater Reticulation Renewals	\$3,273,408	\$282,193	\$550,579	\$2,440,636
Ōpōtiki Town - Wastewater reticulation renewals - Waiotahe Drifts - replace PN6 rising main with PN12	\$772,693	\$-	\$772,693	\$-
Ōpōtiki Town - Wastewater Treatment Renewals	\$3,367,924	\$199,739	\$369,794	\$2,798,391
Ōpōtiki Town - WWTP - Stage 1 - New Resource Consent	\$202,820	\$202,820	\$-	\$-
Waihou Bay - Wastewater Disposal Field Renewals	\$191,482	\$-	\$191,482	\$-

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
Waihau Bay - Wastewater Reticulation Renewals	\$286,388	\$18,519	\$49,305	\$218,564
Waihau Bay - Wastewater Treatment Renewals	\$47,731	\$3,086	\$8,218	\$36,427

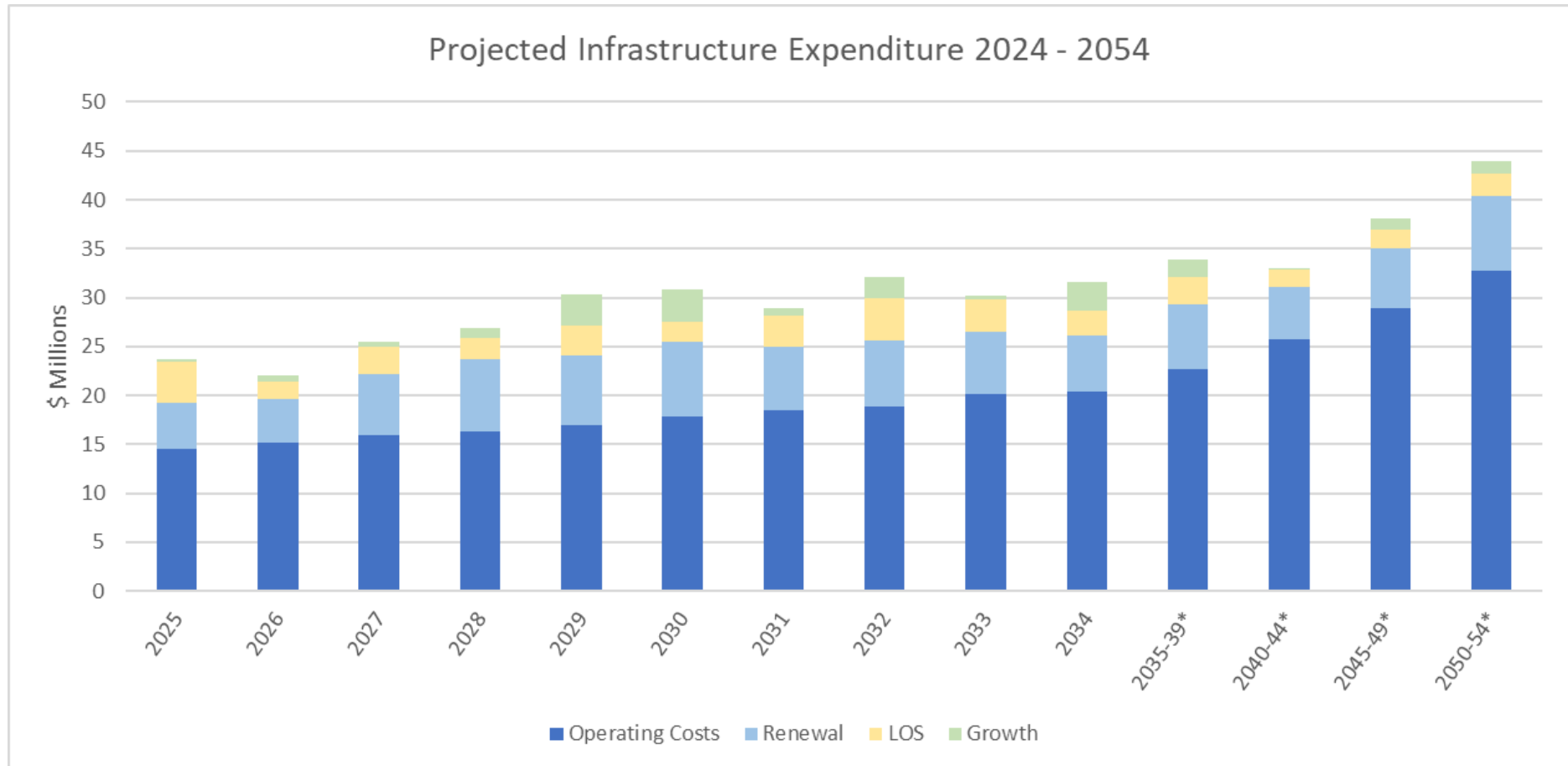
5.1.5 Stormwater

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
LOS				
Ōpōtiki Town - Flood Water Storage Area - Tarawa Creek	\$3,141,220	\$-	\$-	\$3,141,220
Ōpōtiki Town - Rural to Urban Flood Protection - SH 2 Culvert Upgrade - 1 - Investigation and Design	\$92,538	\$92,538	\$-	\$-
Ōpōtiki Town - Rural to Urban Flood Protection - SH 2 Culvert Upgrade - 2 - Consent and Approvals	\$53,666	\$26,458	\$27,208	\$-
Ōpōtiki Town - Rural to Urban Flood Protection - SH 2 Culvert Upgrade - 3 - Construction	\$1,292,390	\$-	\$1,292,390	\$-
Ōpōtiki Town - Rural to Urban Flood Protection - Duke St West Stopbank - 1 - Investigations and Design	\$77,115	\$77,115	\$-	\$-
Ōpōtiki Town - Rural to Urban Flood Protection - Duke St West Stopbank - 2 - Consent	\$26,458	\$26,458	\$-	\$-
Ōpōtiki Town - Rural to Urban Flood Protection - Duke St West Stopbank - 3 - Construction	\$838,125	\$-	\$838,125	\$-
Ōpōtiki Town - Stormwater Main Upgrade - St John Street	\$895,796	\$-	\$-	\$895,796
Ōpōtiki Town - Stormwater Portable Pumps and Permanent Sumps - 1 - Planning and Design	\$50,000	\$50,000	\$-	\$-
Ōpōtiki Town - Stormwater Portable Pumps and Permanent Sumps - 2 - Sump Construction	\$260,813	\$260,813	\$-	\$-
Ōpōtiki Town - Stormwater Portable Pumps and Permanent Sumps - 3 - Existing Pump Upgrade	\$102,820	\$102,820	\$-	\$-
Ōpōtiki Town - Stormwater Portable Pumps and Permanent Sumps - 4 - New Pump/s Purchase	\$529,150	\$529,150	\$-	\$-
Ōpōtiki Town - Stormwater Pump Station - Tarawa Creek Upgrade	\$3,648,900	\$-	\$3,648,900	\$-
Ōpōtiki Town - Stormwater Basin - Wellington/Union Street	\$250,000	\$250,000	\$-	\$-
Ōpōtiki Town - Stormwater Reticulation extensions/upgrades	\$9,208,251	\$-	\$1,084,940	\$8,123,311
Growth				
Hukutaia - Stormwater infrastructure development for Hukutaia Growth Area - Phase 01	\$2,977,200	\$-	\$2,977,200	\$-
Hukutaia - Stormwater infrastructure development for Hukutaia Growth Area - Phase 02	\$11,956,084	\$-	\$-	\$11,956,084
Renewals				

Key projects and programmes	Total estimated cost	Year 1-3	Year 4-10	Year 11-30
Ōpōtiki Town - Stormwater culvert cost share	\$50,000	\$50,000	\$-	\$-
Ōpōtiki Town - Stormwater Drainage Renewals	\$570,830	\$45,283	\$77,502	\$448,045
Ōpōtiki Town - Stormwater Pump Stations - Renewals	\$1,195,063	\$61,166	\$259,470	\$874,427
Ōpōtiki Town - Stormwater Reticulation Renewals	\$12,277,830	\$231,488	\$599,396	\$11,446,946

5.2 Forecast expenditure

The combined capital and operating expenditure forecast for the three waters, solid waste and transport activities are shown in the figure below.



*Multi-year bars are the 5-year average expenditure

6 Our assumptions

The assumptions that have been made in preparing this Infrastructure Strategy are outlined below.

- The condition of the assets is based on the information contained within the ŌDC RAMM and Univerus database. It is assumed that deterioration and replacement of assets follows the predicted renewals profiles. Errors in this assumption would mean that Council under or over invested in asset replacement. This assumption should become more accurate over time.
- The condition of Solid Waste assets is based on staff knowledge and experience in lieu of accurate asset data. The uncertainty of this assumption may lead to under or over investment in asset replacement. As investments are made into asset management process and data collection, the condition assumptions and therefore replacement programme should become more accurate over time.
- Note the following assumptions have been made as part of the build-up of estimated capital costs for projects. Errors in these assumptions will impact the total cost to deliver one off projects and will alter the amount of work that Council can deliver in rolling annual programmes. To mitigate this risk, contingency multipliers have been allowed for on some of the projects:
 - Rates are based on national rates and not Bay of Plenty regional rates except where supplied by Council
 - Costs do not take into account site specific conditions for general network assets. Specific asset upgrades do have estimates that account for the location itself.
 - We have assumed straight forward design and consenting allowances for general network assets, and site specific design and consenting for larger significant assets such as treatment plants.
 - The costs outlined in the Infrastructure Strategy do not include staff costs (these are accounted for in the Long Term Plan 2024 – 2054 financial model as a separate line item).
 - The costs have been prepared on a programme portfolio basis and are not based on detailed project schedules.
- It has been assumed that actual growth will roughly follow growth projections. Potential errors in the growth assumptions might mean that Council spends money unnecessarily, either making upgrades the wrong size or building them too soon, or that projects have to be brought forward sooner to meet demand.
- This strategy is produced under the assumption that the current Government fully repeals reform of local government's role in the water industry.
- Any further legislative changes (e.g. RMA reforms) would not have a significant impact on infrastructure development and delivery.
- That Council will find cost effective ways to adapt the forecast projects and operations to meet future emissions requirements without significant financial implications. Errors in this assumption could lead to cost escalations beyond the short to mid-term.
- There is sufficient contractor and consultant capacity to deliver the capital programmes in the planned timeframes, with mitigation measures in place to provide early heads up to the sector of planned projects. Errors in this assumption could lead to works being delayed or cost escalations.

- Any new resource consents for the activities are renewed on the basis of requiring new and/or additional conditions to those currently held. Errors in this assumption could lead to significant additional costs, either in getting the consent or upgrades to infrastructure so Council can comply with the consent.
- NPS for Freshwater management 2020 requires regional councils to put in place water quality / quantity limits across the region by 2024. ŌDC will engage in this limit setting process for the Ōpōtiki District to understand if there needs to be any changes to our infrastructure approach to support these limits.