

Infrastructure Strategy 2021 - 2051

Te Rautaki Hanganga Metarahi

[Incorporating amendments proposed in the Long Term Plan Amendment 2021-2041](#)

Definitions

Asset Management Plan (AMPs)

An Activity Management Plan (AMP) is a considered, infrastructure plan that is asset related, which details how individual Activities are managed and the Levels of Service for the Activity to the end user or customer. The plans are used as the basis of the work programmes and budgets that are included in the Infrastructure Strategy and Long Term Plan. The plans have succinct descriptions of problems, benefits and consequences, for each of the separate activities, and establish the justification for option identification and provide detailed analysis to substantiate the selection of the preferred programme.

Level of Service (LoS)

The quality of service a Council Activity is committed to provide to the community.

Renewal

The replacement of an existing asset, at the end of its defined useful life.

Core infrastructure

Infrastructure that relates to Water Supply, Wastewater, Stormwater, and Land Transportation networks.

Three Waters

Infrastructure relating either to Water Supply, Wastewater, or Stormwater.

Financial Strategy

A fundamental Strategy in Council's Long Term Plan that sets out 20 years of prudent financial management.

Statement of Service Provisions (SSPs)

A requirement of the Long Term Plan, each Group of Activities sets out the Level of Services and rationale for why Council supplies the Activity services to the community.

Infor Public Sector (IPS)

An asset management system used by Council to improve asset efficiency by scheduling maintenance, managing costs, and recording details of Council assets for Water Supply, Wastewater, and Stormwater.

Road Asset and Maintenance Management (RAMM)

An asset management system used by Council to improve asset efficiency by scheduling maintenance, managing costs, and recording details of Council assets for Land Transportation.

CCTV

Closed-circuit television (CCTV) is a monitoring system strategically placed in our infrastructure network, but can traditionally be used for surveillance and security purposes.

CMPs

Catchment Management Plans.

Introduction

The Horowhenua District is going through a period of transformation. Following a long period of static population growth, the Horowhenua District has grown at a rate of 2% per annum since 2014, and is projected to reach over 80,000 by 2051.

This high level of growth provides a number of challenges and opportunities for Council to balance in delivering its infrastructure activities, including the need to renew or replace ageing assets as well as providing new assets to accommodate growth. This document provides the key strategic direction for balancing these needs. It aligns with the Financial Strategy to ensure the delivery of these activities is not only affordable for the community but also sustainable.

Council is taking a proactive approach to planning for growth and at a regional level has been a key partner in the development of the Wellington Regional Growth Framework and the Manawatū-Whanganui Regional Spatial Plan. The Wellington Regional Growth Framework includes the following key initiatives that will impact on future infrastructure requirements:

- Developing a regional approach to climate change impacts including coastal protection, longer term development areas and areas to stop developing. This will include a programme to consider the management of three waters, rail and road assets at risk and how to protect taonga.
- Developing a 50 to 100 year regional three

waters strategy to support anticipated growth, including upgrades to infrastructure (including bulk infrastructure) that supports growth in key development areas and improves environmental outcomes. This work is already underway locally through master planning exercises in Levin for the Water Supply and Wastewater network.

- Increase rapid transit rail/bus network accessibility, capacity and frequency including inter-regional connectivity.
- Significantly improve multi-modal connections to rapid transit stops as part of master planning and delivery of higher density urban development in major centres, and at nodes. Levin rail hub will be one of these key nodes.
- Establish a connected regional cycling network by eliminating pinch points on the network and delivering transformational projects to improve access.

At a local level, Council is proactively planning for changing land use and infrastructure through undertaking integrated growth planning. This includes the development of

a Blueprint for Horowhenua that will provide a long term vision and action plan for our district; as well as, master plans, and the implementation of plan changes for growth areas such as Tara-Ika (to the east of Levin), Waitāreere Beach and Foxton Beach.

This Strategy was also developed in the context of significant legislative change. Despite the Three Waters Review, that proposes the creation of multi-regional entities to take over the delivery of the three waters functions from local government, our planning in the Long Term Plan (LTP) has been undertaken on the assumption we will retain our three waters assets. Increased emphasis is being placed on climate change, in response to the Zero Carbon Act, and planning is being undertaken in response to upcoming changes resulting from the implementation of the National Policy Statement for Freshwater as part of the Government's freshwater priorities.

Partnership with Tangata Whenua

The Horowhenua district covers an area that contains the rohe of:

- Muaūpoko
- Ngāti Apa
- Ngāti Raukawa
- Rangitāne

Council values iwi as our treaty partners and will continue to develop these relationships when delivering our infrastructure services. This includes building on advances made from removing wastewater discharges from water to land based disposal methods, improving stormwater discharge and taking a collaborative approach to consenting processes and key projects of interest.

This 30-year Infrastructure Strategy is part of Council's strategic planning framework that includes Activity Management Plans, and the Financial Strategy. The Infrastructure Strategy sets out a 30-year plan for managing the infrastructure assets for:

- Land Transport
- Water Supply
- Wastewater
- Stormwater
- Community Facilities
- Community Infrastructure
- Property

Purpose and Scope

The Infrastructure Strategy will help the Council and the community make informed decisions and plan for major investments that may be required in the next 30 years.

The purpose of the Strategy is to identify the significant infrastructure issues for the Horowhenua district over the next 30 years, the options for managing the issues and the implications.

It initially sets out the significant challenges for the district, and outlines how Council intends to manage its infrastructure assets, particularly in relation to:

- The replacement of existing assets.
- Responding to changes in population growth and increasing demand.
- Changes to levels of services.
- Public health and environmental outcomes.
- And improving resilience of our infrastructure assets.

The most likely scenario is provided for each activity which identifies the significant decisions that will be required, when those decisions are required, the options and approximate costs.

The projected capital and operating expenditure is provided for all activities.

Council Activities not included

Solid Waste

The Solid Waste activity is not covered in this Strategy. A Solid Waste business review is considering the future of Council's operation, ownership and involvement in service provision in the solid waste area. Until decisionmaking for this is complete, there is uncertainty over what assets will be owned, or activities managed, by Council.

Non-Council Infrastructure

Both Central Government and the private sector provide and maintain other infrastructure groups vital for needs of the community. These include the state highway network, the rail network, communications, and electricity and gas networks. These services are not covered under this Strategy.

Infrastructure Delivery

Council will deliver the capital programme through:

Continuing to develop a long term procurement plan to engage with the market on the roll out of Council's planning, design and construction contracts over the 3 year Long Term Plan cycle.

Optimising Council's current multi-year collaborative three waters and roading contracts.

Working with neighbouring councils to optimise regional procurement plans, collaborate on contract opportunities and share resources.

Regularly engage with contractors/consultants and their supply chain to maintain awareness of the work programme and align with opportunities and constraints as they arise.

Infrastructure Funding

Council uses debt (loans) to fund the cost of providing new infrastructure for growth and increases to levels of service, to ensure future generations pay their fair portion of the cost of the new assets which they will use. We are also proposing to re-introduce the use of development contributions to pay for capital projects associated with growth.

Council aims to use rates to fund the replacement (renewal) of assets, ensuring that current generations contribute to the asset replacement as they use the asset. Council has not always funded renewals from rates in the past. This has resulted in the need to loan fund some of those renewals to maintain assets which is not sustainable.

Council is also committed to exploring other sources of revenue, such as external grants, to pay for infrastructure needed to meet the Needs of the growing community. Further detail is provided as part of the Financial Strategy.

Goals

Our infrastructure assets account for to the majority of Council's spending. The goals identified in this Strategy align with the purpose of local government in providing for the economic, social, cultural and environmental wellbeing of the community, and Council's Community Outcomes of:

- Strong Community
- Vibrant Economy
- Outstanding Environment
- Fit for Purpose Infrastructure
- Partnership with Tangata Whenua

To continue to support the wellbeing and future growth of the district, Council aspires to achieve the following infrastructure related goals:

<p>Goal 1</p>	<p>Provide affordable levels of service through prudent infrastructure management.</p> <p>Council will strive to ensure that the levels of service provided to the community are delivered at an affordable level. This will be achieved through careful asset management. This means Council will not over or under invest in maintenance and renewal treatments, and improvement work will be well planned to ensure expected levels of service are provided but not exceeded.</p>
<p>Goal 2</p>	<p>Engage with our community to ensure customer expectations match infrastructure investment.</p> <p>Council will foster stronger partnerships with our community. This will enable the community to gain a stronger understanding of infrastructure investment options and for Council to better understand the community's priorities and spending appetite.</p>
<p>Goal 3</p>	<p>Ensure infrastructure is fit for purpose for our current community whilst also facilitating growth.</p> <p>Horowhenua is experiencing unprecedented levels of growth, which presents significant infrastructure challenges. Council will strive to provide the infrastructure required to enable growth, while not compromising the affordability of infrastructure for our current community.</p>
<p>Goal 4</p>	<p>Provide infrastructure which supports wellbeing and enables a sustainable community.</p> <p>Council will provide infrastructure which supports and improves the wellbeing of the entire community, while delivering infrastructure which supports beneficial environmental outcomes.</p>



Significant Challenges for the District & How We Will Manage Them

Population Growth & Increasing Demand

Challenge

For a long period, the Horowhenua district had a relatively stable population. However, since 2014 our population has been growing at a rate of 2% per annum. The population of the Horowhenua district at the 2018 Census was 33,261, and is projected to be 36,708 by June 2021. Moving forward our district's population is projected to grow at a rate of; 2.6% per annum from 2021 until 2031, increasing to 2.9% per annum until 2051. This means our population will increase to over 62,000 by 2041 and over 80,000 by 2051.

The increase in population means the number of houses throughout the district will more than double by 2051. The current number of houses is estimated to be 16,606 as of June 2021. This is anticipated to grow by 21,145 to 37,751 by 2051.

This growth will have a number of impacts on demand across the infrastructure activities included in this strategy. To ensure Horowhenua remains a great place to live

Council needs to ensure infrastructure is provided in a manner that proactively meets demand to support affordable property prices, and that user satisfaction and needs are met for our community infrastructure and facilities. The challenges being faced include:

- Increased and changing demand on the roading network due to population growth and the Ōtaki to North Levin (Ō2NL) expressway, which will require upgrades such as road widening, intersection upgrades or additional active transport provision.
- Increased demand for water supply, particularly for Levin where the volume of water that can be taken from the Ōhau River is dependent on water flow.
- Increased stormwater discharge and the requirement for Council to gain resource consents for stormwater discharges.
- The lack of reticulated stormwater networks (outside of those for the roading network) throughout the district.
- Increased pressure on the wastewater reticulation network and the wastewater treatment plants which will require upgrades, particularly for Levin.
- Increased pressure on existing parks, reserves, sportsgrounds, and open space, and demand for new facilities brought on by growth.
- Vesting of new reserves and open space in Council resulting from new subdivisions.
- An increase in the roading network that will require additional tree and berm maintenance.
- Additional pressure on Council's cemeteries.
- Water space shortage during peak times at the Levin Aquatic Centre and the building at Foxton Pool being no longer fit for purpose.
- Demand for building land to facilitate the growth in housing required over the term of this Strategy including housing of an affordable nature.

Our Response

To address these challenges Council is proactively planning for future assets and activities to ensure they will be fit for purpose for the growing community. This planning has already started, and occurs early in the LTP to ensure that required projects can be completed just-in-time to meet growth demands. The focus on just-in-time delivery is to ensure infrastructure is not delivered too early, but right when needed. There is a risk that growth may occur differently than in Council's assumption, therefore, actual growth patterns in the district will be monitored and work programmes adjusted yearly as required. [**This approach has led to changes proposed through the LTP Amendment, and reflected in this Strategy.](#)

For the specific activities the following approaches are being undertaken:

- A high level of planning is being undertaken for the Land Transport network early in the LTP to provide an increasingly comprehensive understanding of the growth related upgrades required (including as a result of Ō2NL), with budget assigned in the LTP to complete the growth related upgrades.
- Water demand management, such as leak detection and water metering of new houses continues to be undertaken to reduce demand on the water supply network. Additionally, planning for increased water storage capacity, such as the development of a water reservoir, is underway to take more

water from the Ōhau River in high flows, and store it for when the river has low flows.



- Sustainable stormwater management is incorporated into all planning, design and delivery aspects of our infrastructure. This includes working collaboratively with developers to mitigate the effects of residential and industrial growth on our stormwater systems and waterways.
- A master plan [is beinghas been](#) developed for the Levin Wastewater Treatment Plant to inform a decision on whether upgrades should
- be undertaken to the existing wastewater treatment plant and land based disposal option, or whether a new plant is required.
- Development planning is being undertaken for the major reserves. Investment is planned to further develop key sporting hubs for the district, such as Donnelly Park and Levin Domain.
- Council is beautifying only those areas that provide maximum value for the majority of the population and is in the process of ensuring it only plants street trees suitable for the site.
- Council is in the process of producing development plans for its cemeteries.
- Council is evaluating its land-holdings to facilitate growth which will include new developments at the Kilmister Block in Foxton Beach and considering non-core land for housing developments including affordable housing.

- Development planning is being undertaken for both the Levin Aquatic Centre and Foxton Pool to ensure the facilities are fit for purpose for the projected growth and increase in demand.



Ageing Infrastructure & Renewals

Challenge

A considerable amount of development occurred in the district 60-70 years ago, meaning the district has old and ageing infrastructure, particularly for the three waters network. Additionally, across all of the infrastructure activities, there has been historic underfunding of renewals. As ageing of assets occurs, reactive maintenance will increase. A key challenge for the district is the balance between reactive maintenance, programmed maintenance, and the inevitable rehabilitation or replacement of assets that have both physically and economically run past the point of repair.

Our Response

Council's approach to managing the ageing infrastructure network and renewals has the following key aspects:

- Asset maintenance and renewals strategies are developed to stabilise the average asset useful life of all Council's infrastructure.
- Pressure management implemented in Levin since 2017 has resulted in a 15% reduction of network pressures which extends the remaining asset life of pipes
- Continual improvements to asset condition assessment programmes, alongside a focus data collection and analysis will help inform

efficient maintenance and renewal strategies across all of Council's infrastructure.

- Renewal programmes are informed using analysis of remaining useful lives, condition

The need to replace our ageing infrastructure

assessments. Renewal programmes are phased smoothly, preventing cost or resource capacity spikes over the LTP period. This is the most effective way to address renewal from funding planning and delivery point of view.

- Just-in-time provision. Ensuring assets are renewed only when necessary and just before upgrades are required due to increasing maintenance costs or as a result of growth pressure.
- Future-proofing where appropriate. When undertaking renewal work, also undertaking improvements to cater for growth where required. This approach will reduce long term costs associating with retrofitting assets and will be assessed on a case by case basis, considering the balance between the benefits of undertaking the improvement works and the desire for just-in-time infrastructure provision identified above.
- Council is planning to catch up on the required renewals for water and wastewater over the 30 year plan. A consistent programme of stormwater renewals over the 30 year period is planned, however due to investment needed for growth approximately \$19 million of required renewals will not be completed during the 30 years. This will be reassessed during the next long term plan.

A considerable amount of development occurred in the district 60-70 years ago, meaning the district has old and ageing infrastructure, particularly for the three waters network. Across all of the infrastructure activities, particularly for the three waters network, there has been historic underfunding of renewals. A key challenge for the district is making smart decisions around when to replace these ageing assets.

Continual assessment of asset condition and monitoring of reactive maintenance costs are undertaken to inform decision making. This ensures that we replace our older assets at the best time. We plan to replace our assets just-in-time to ensure we get the greatest use possible out of them. When replacing assets we consider whether any upgrades are needed to meet increasing demands. This approach ensures our infrastructure is future proofed for increases to demand where appropriate.

The renewal of assets is budgeted for based on the age of the assets. However, before renewals are undertaken condition assessments are undertaken. If the condition of assets differs from what is expected from the age of the asset, renewals may be required earlier or later than planned.

For our roading infrastructure we have reliable information about the condition of the assets. However we have less certain information about the condition of all of our three waters infrastructure. We mitigate the impact of this uncertainty through our maintenance contracts which ensures that any asset failures can be resolved in a timely manner. We continue to improve our asset data as assets are replaced, but given the long life nature of many of our assets, it will take some time for confidence levels to increase as data collection depends on the requirement to undertake work on these assets.

If renewals are required earlier than planned unbudgeted expenditure may be required, maintenance costs may increase, and there could be increased risk of disruption in services and anticipated improvements in levels of service could be delayed.



Challenge

The global climate is changing, with more and more emphasis being placed on climate change response. This response is occurring at all levels of government – national, regional and local. The Zero Carbon Amendment Act provides the framework for climate change policies to contribute to the Paris Agreement and prepare for and adapt to climate change impacts.

In the long term it is expected climate change will result in gradual change in environmental conditions throughout the district by 2041 such as increasing temperatures of between 0.7°C and 1.1°C, increases in precipitation, sea level rise of 0.3 metres and an increase in extreme rainfall events by ~14%¹. A study by Horizons Regional Council shows there is likely to be an impact within the next 30 to 50 years on coastal areas, from a combination of rising tides and coastal erosion. Flooding is the most frequently experienced natural hazard in the district, with the district also at risk of earthquakes and tsunamis.

Our infrastructure activities are experiencing the following challenges:

- All infrastructure assets are at risk of damage resulting from earthquakes. There is a range of resilience in the infrastructure assets to

earthquakes, however, a significant event could create damage for many assets.

- Land Transport Network is highly dependent on private vehicles which contribute to New Zealand's greenhouse gas emissions. The Land Transport Network is also at risk of road closures and slips, from heavy rain, flooding and earthquakes, resulting in the need for increased reactive maintenance. Our resilience to climate change in the Land Transport Activity is poorly understood.
- The three waters network has a number of climate change related risks, including the flows of the Ōhau River for the Levin water supply in the event of increased dry periods, heavy rainfall putting pressure on the wastewater networks through inflow and infiltration and creating challenges for land based disposal. Increased heavy rainfall can also cause potential flooding of the stormwater networks.
- Community infrastructure has the potential to be damaged by storm events, particularly the street tree network. Storm events can also create erosion along the coast and rivers, and excessive rain on reserves can cause issues for sports fields.

Our Response

Opportunities for climate change mitigation and resilience are considered throughout all of Council's infrastructure and planning activities, this includes:

- Urban planning practices which encourage active transport friendly developments to reduce reliance of private passenger transport.
- Consideration of the location of the development of our infrastructure assets to reduce risks associated with climate change and increase resilience.
- Increased investment in active transport and advocacy for improved public transport, such as rail and buses with the aim to reduce transport climate emissions.
- Undertaking a programme of renewals and maintenance to reduce inflow and infiltration into the wastewater network.
- Undertaking planting of indigenous species e.g. Spinifex and Pingau to provide resilience to Council's dune systems from storms and localised erosion. Council is also considering established back dunes for succession planting.
- Proactive street tree management to reduce hazards such as wind-throw in storm events.
- Increased tree planting to act as carbon sinks.
- Development of wetlands to mitigate the effect of increased overland flow and stormwater.
- Increasing understanding of risks (e.g. stormwater catchment management plans).
- Planning for future water sources and storage to future-proof the Levin water supply.

¹ per degree of warming for a 1 hour, 1 in 100 year event

Changes to Levels of Service

Challenge

As the population grows, there is increasing customer expectations across all activities for improved levels of service. This includes; increased demand for improvements such as for greenspace development, the standard of service for rural residential properties, stormwater, the quality and supply of water, the provision of aquatic facilities, and demand for active transport methods. This growing customer expectation is often a result of new residents moving from urban centres that have greater facilities, and it is important that the Horowhenua provides desirable facilities and services to encourage and support growth.

Our Response

To meet changing customer expectations, Council is undertaking development planning across all of the activities identified in this strategy to identify the upgrades and projects required to meet these increasing demands. This includes development planning for parks and reserves and aquatics, active transport improvements, and the future-proofing of our three waters network. The implementation of development plans will be timed alongside population growth and increased demand on services, and will also be balanced with affordability considerations.

Public Health and Environmental Outcomes

Challenge

Council's infrastructure assets provide a significant contribution to public health and environmental outcomes. In particular the roading network contributes to public health and safety, as safer roads can cause less harm from accidents, and the provision of walking and cycling infrastructure can promote physical exercise. The three waters networks through water takes, and wastewater and stormwater discharges have an impact on environmental outcomes. Council's wastewater discharges are now all land-based (rather than river based) which supports improved environmental outcomes. Providing water which is safe to drink is also critical for ensuring public health. Access to parks and reserves, and community facilities such as community centres and aquatic centres contribute to physical and mental wellbeing by encouraging physical activity, as well as, social wellbeing by enabling opportunities for community connection and support services.

The challenges across the activities covered in this Strategy are diverse:

- The ongoing challenges for land transport are creating safer roads, and improving the provision of active transport assets.
- Challenges for the three waters network are providing services for a growing population,

continuing to provide water that is safe to drink, as well as reducing potential environmental impacts from water takes and wastewater discharges. Resource consents required for stormwater discharges will potentially require investment in the pre-treatment of stormwater prior to disposal.

- The National Policy Statement for Freshwater will result in higher environmental standards and increased costs to meet them.
- For parks and reserves there are ongoing challenges of securing sufficient funding to meet the requirements Horizons Regional Pest Plan.
- Upcoming requirements for the strengthening or demolition of earthquake-prone buildings remains a challenge for our property assets. The costs associated with these works are significant, and while Council has disposed of many of these properties in recent years there will be a number, such as the Levin and Shannon Grandstands, Surf Life Saving Clubs and the Levin Memorial Hall which are likely to remain under Council ownership.
- The majority of public toilets are in excess of 50 years old and many are constructed of difficult to clean materials. There is a need to improve a number of these facilities by introducing more modern surfaces and in some cases complete replacement.

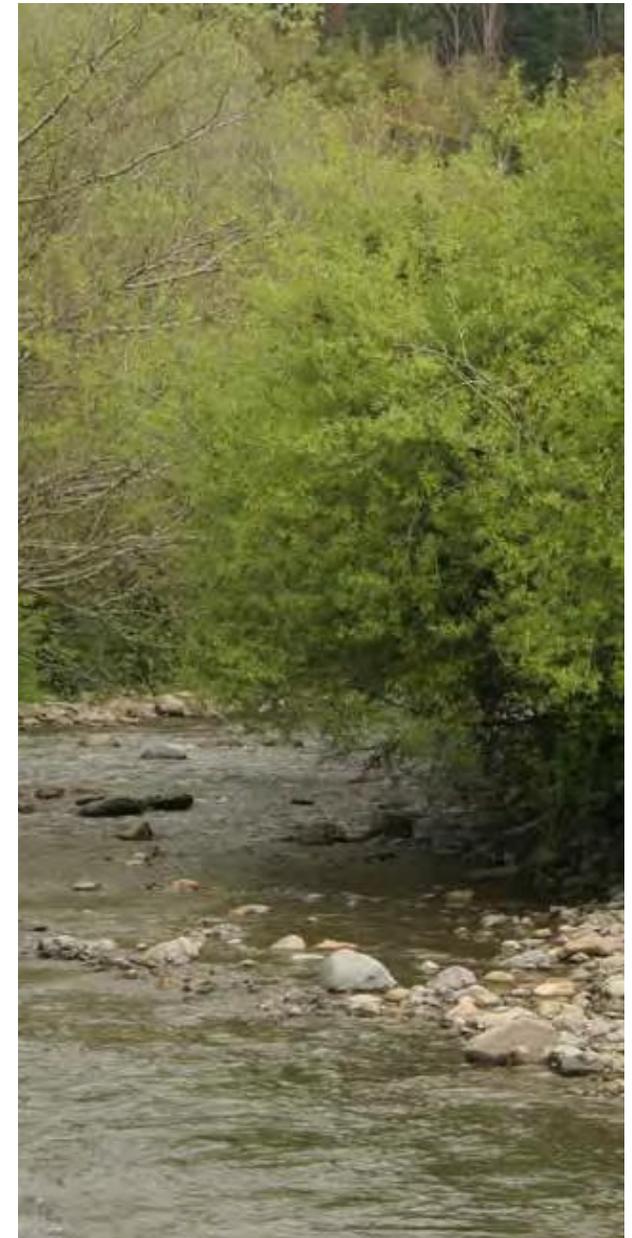
- It is likely Covid-19 will be an ongoing feature of public health concerns over the medium to long term. This will require a higher level of maintenance in publicly accessible buildings as and when necessary to reduce transmission.
- There is an ongoing need to continue to ensure aquatic facilities, provide adequate water treatment to protect the public from illness.

Our Response

The approaches to managing these challenges are equally diverse:

- For the Land Transport Network significant investment is being included for safety improvements and improvements to walking and cycling facilities across the roading network. Changes to setting of speed limits will be adequately resourced.
- Council will continue to actively engage with Horizons on the implementation of the National Policy Statement for Freshwater for the three waters activity and has budgeted to cover increasing compliance costs associated with increased requirements for environmental outcomes.
- Costs of compliance with the Horizons Regional Pest Plan are budgeted for.

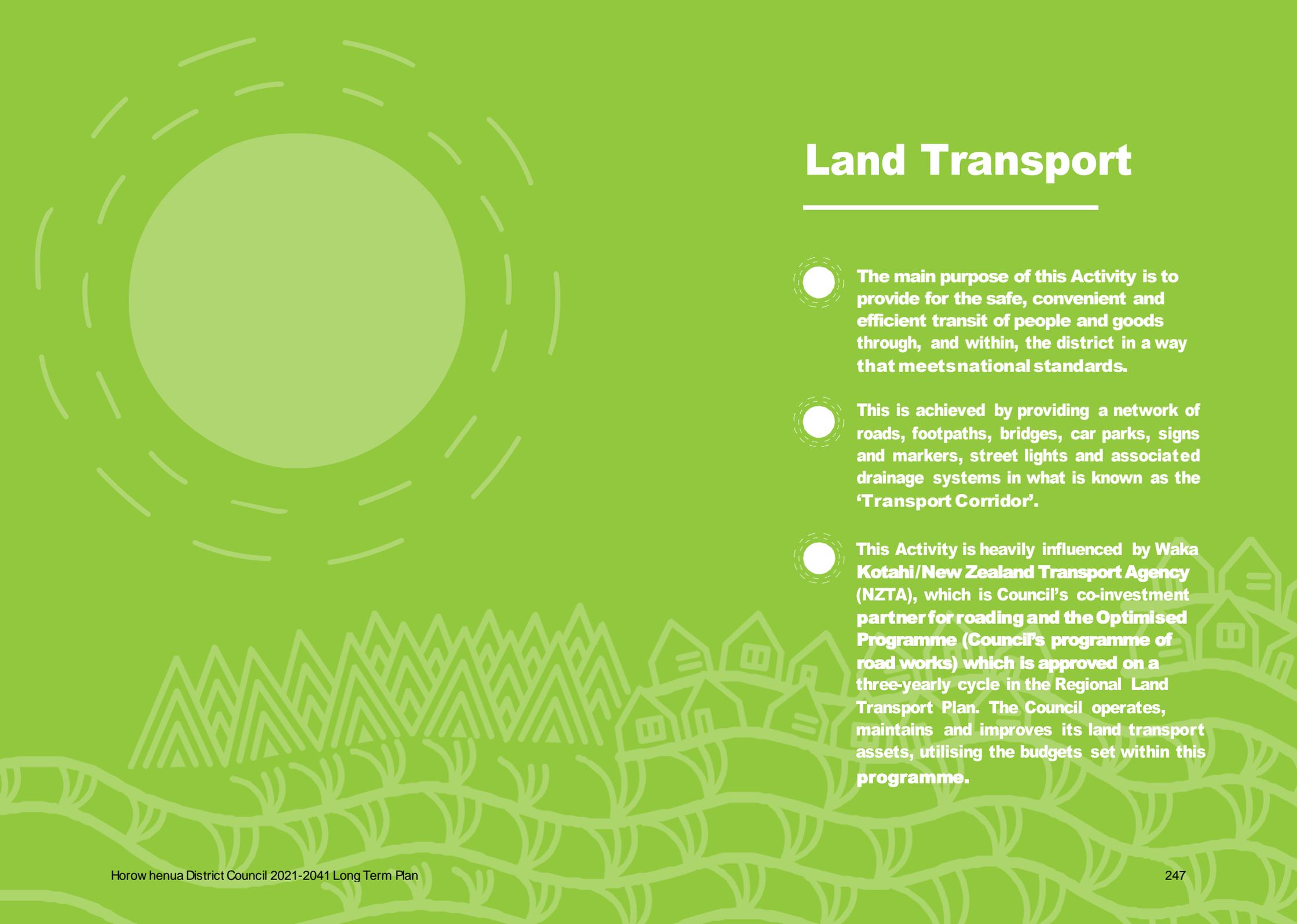
- Non-core property that is earthquake-prone will continue to be disposed of in accordance with Council's Property Strategy, whereas those considered core will be strengthened or demolished in line with the relevant legislation over the course of this plan.
- Budgets for minor (public toilet improvements) and major (replacement of public toilets) have been identified
- Any redevelopment or new aquatic provision will continue to provide adequate water treatment to protect human health.



Infrastructure Groups

This section summarises the most likely scenario for each Activity, including the key issues, significant decisions that will be required, when those decisions are required, the options (including the preferred option) and costs.

The costs outlined in this section have been modelled in the draft Financial Strategy.
All figures include inflation.



Land Transport

- **The main purpose of this Activity is to provide for the safe, convenient and efficient transit of people and goods through, and within, the district in a way that meets national standards.**
- **This is achieved by providing a network of roads, footpaths, bridges, car parks, signs and markers, street lights and associated drainage systems in what is known as the ‘Transport Corridor’.**
- **This Activity is heavily influenced by Waka Kotahi/New Zealand Transport Agency (NZTA), which is Council’s co-investment partner for roading and the Optimised Programme (Council’s programme of road works) which is approved on a three-yearly cycle in the Regional Land Transport Plan. The Council operates, maintains and improves its land transport assets, utilising the budgets set within this programme.**

Land Transport Significant Issues

- Increasing competition and demand on resources is threatening our ability to deliver adequate planning, quality data and physical works, resulting in increased costs and delays.
- Anticipated growth impacts (both residential and industrial) and increases to State Highway capacity are leading to changes in demand.
- Significant harm to the community is caused by injury crashes, caused by a high risk transport network and poor driver behaviour, disproportionately affecting vulnerable users.
- Stronger than predicted growth has accelerated deterioration, resulting in poor asset condition.
- Resilience of Infrastructure to natural hazards and climate change is poor or poorly understood, resulting in safety issues, access limitations and reactive maintenance.
- The changing needs and expectations (mobility, active modes) of the community require additional investment to meet Level of Service for all modes.

Land Transport Activity Principal and Alternative Options

Issues specific to the Land Transport Activity are shown in the following tables, including the preferred and alternative options. The preferred options have been factored into the capital and operational expenditure budgets.



Significant Decisions Required

Changes in network demand caused by the Ōtaki to North of Levin Expressway

The Ōtaki to North of Levin Expressway (Ō2NL) will cause transformational changes to traffic demand across the local road network. The main entrances into Levin will be relocated, forcing dramatic traffic movement changes. The existing local road network is not appropriately developed to cater to these changes and increases in traffic movements. Significant transport planning is required to determine the most appropriate network improvements required to provide an acceptable level of service when Ō2NL is opened in 2029. Currently, the level of funding assistance from Waka Kotahi for this work has not been confirmed.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Stage network improvements over the next 10 years (preferred option).</p> <p>This option would spread the required local road improvements over the next 10 years, enabling consistent progress without placing unrealistic demands on ratepayers or contractors.</p>	2021	<ul style="list-style-type: none"> • \$30M over 10 years (2021/22 – 2031/32)
<p>Stage network improvements over the next 5 years.</p> <p>This option would spread the required local road improvements over the next 5 years, this option would reduce the risk of the required upgrade works being undelivered by 2030 when Ō2NL opens, but would be placing a significant funding demand on ratepayers over the next 5 years.</p>	2021	<ul style="list-style-type: none"> • \$30M over 5 years (2021/22 – 2026/27)
<p>Delay network improvements for 5 years.</p> <p>This option would delay the required local road improvements over the next 5 years. This option would delay inevitable funding demands until 2026/27, but concentrate the funding demands over the final 5 years. This option also greatly increases risk of not delivering required upgrades by the time Ō2NL opens, as contractor and material resources is expected to be difficult to secure once Ō2NL construction has started.</p>	2021	<ul style="list-style-type: none"> • \$30M over 5 years (2026/27 – 2031/22)

Asset deterioration is accelerating

Our condition assessments and asset data analysis indicated that the current level of investment in renewals is insufficient, causing asset deterioration. The most likely cause of this is due to higher than expected traffic growth over the last 5 years, and pressure to keep renewal expenditure low from Waka Kotahi. The most significant increase is in sealed roads resurfacing budgets.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Increase renewals spending to stabilise asset condition (preferred option). Increase funding to allow more targeted renewals in key areas to prevent further asset deterioration. This option allows assets to continue providing an acceptable level of service without requiring strong funding demands, and provides the best value for money in the long term.</p>	2021	<ul style="list-style-type: none"> • \$0.9M per year increase on average • 60% subsidised
<p>Increase renewals spending to improve asset condition. Increase funding to provide a higher level of service but at a higher cost.</p>	2021	<ul style="list-style-type: none"> • \$1.2M per year increase • 60% subsidised
<p>Increase renewals spending to the bare minimum to meet reporting requirements. Increase funding by a small amount by allowing asset condition to continue to deteriorate, while meeting minimum renewal requirements set by Waka Kotahi. This option would result in a significantly higher long term cost as asset useful lives will deteriorate rapidly, resulting in higher future renewals costs and immediate increases to reactive maintenance costs.</p>	2021	<ul style="list-style-type: none"> • \$0.75M per year increase • 60% subsidised

Low level of community use and satisfaction with active transport infrastructure

There are low levels of satisfaction with the level of service provided for walking and cycling across the district. The majority of the district's road network have no dedicated infrastructure for cyclists and the footpath network coverage is very poor. Both walking and cycling facilities score very low in Council's community satisfaction surveys.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Increase funding for active transport improvements (preferred option). Increase spending on walking and cycling facilities to improve levels of service and increase safety of vulnerable road users. The proposal includes bundling the currently unsubsidised shared pathway budget in with the subsidised cycling facilities budget to increase total spend without increasing the overall local share.</p>	<p>2021</p>	<ul style="list-style-type: none"> • Cycling facilities total expenditure \$1M/year average. • \$600k/year spending increase – no overall increase to local share. • Walking facilities \$350k/year. • \$100k/year increase – 60% subsidised.
<p>Increase cycling facilities spend, keep walking facilities spend the same. From a local perspective, not increasing cycling facilities spending is illogical, as by bundling the current shared pathway budget in with the subsidised cycling facilities budget results in more subsidised spending with no local share increase. Keeping walking facilities spending the same would slow the rate of improvement and the community would remain with a low level of service for longer.</p>	<p>2021</p>	<ul style="list-style-type: none"> • Cycling facilities total expenditure \$1M/year average. • \$600k/year spending increase – no overall increase to local share.

Land Transport Operating Expenditure

Land transport operating expenditure relates to the cyclic maintenance of the network, including activities such as repairing potholes, cleaning small land slips and maintaining signs. Network and asset management is also included in this

category. Forecast expenditure over the 30 year planning period is shown in Figure 1. Figures have been adjusted for inflation. This shows the operational expenditure over the 30 year period is projected to be **\$480,858,090**.

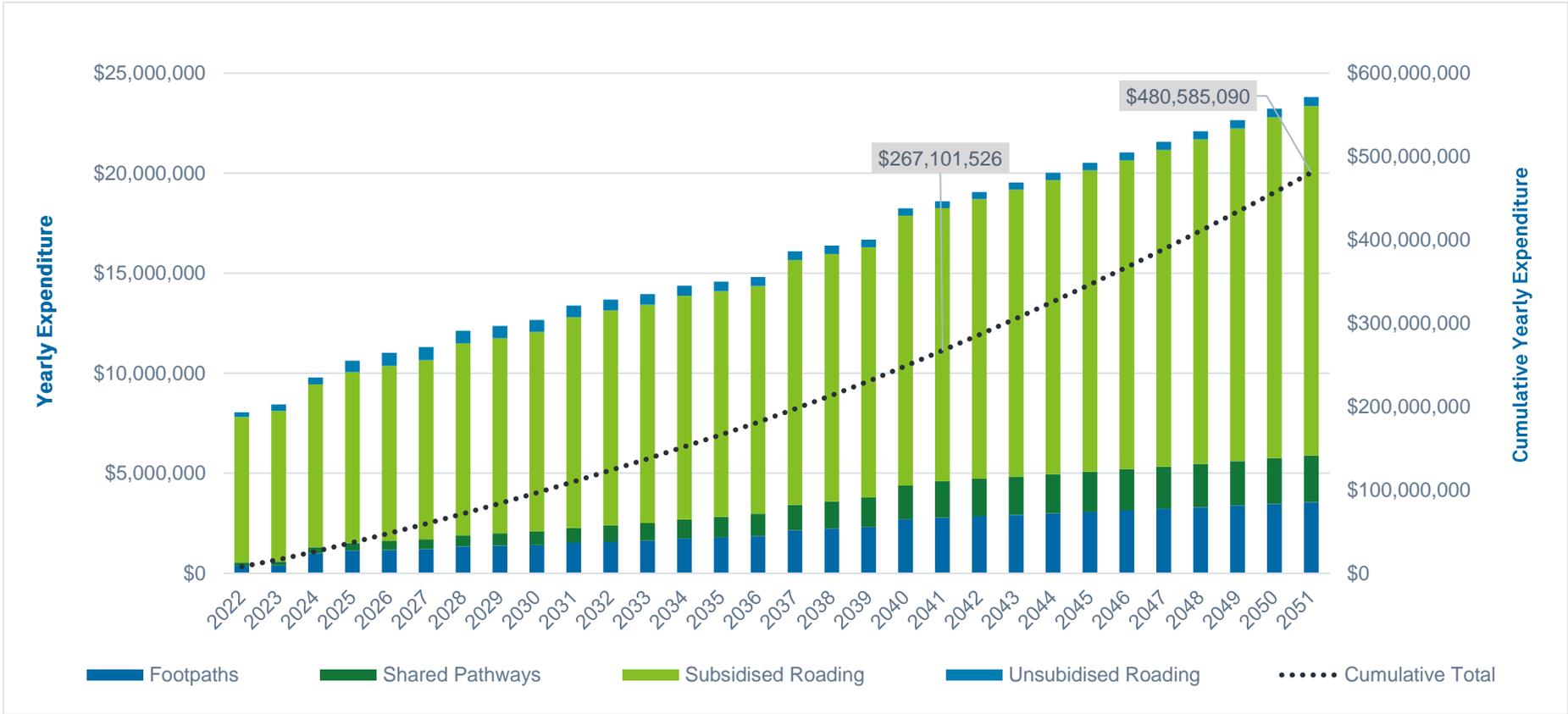


Figure 1: Land Transport Operating Expenditure

Land Transport Capital Expenditure

Figure 2 shows the projected capital expenditure programme for the Land Transport Activity. Figures have been adjusted for inflation. The Land Transport capital expenditure can be broken down under renewals, improvements and growth. Renewals include activities such as resurfacing or rehabilitation road pavements. Improvements include activities such as safety

improvements and constructing new footpaths. Growth includes projects that are needed to meet a growing population. The total capital expenditure programme over the next 30 years is projected to cost **\$617,353,767**. The majority of expenditure is proposed for renewals – **\$477,219,855** over the 30 year period.

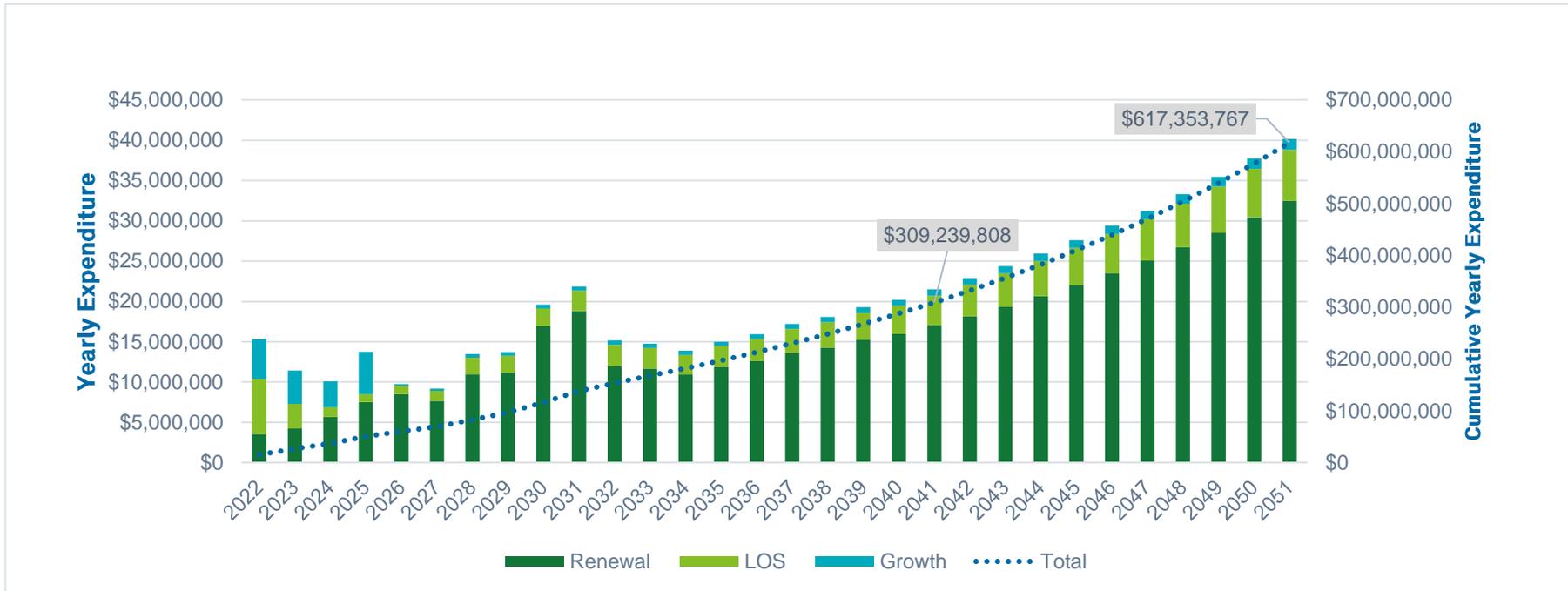


Figure 2: Land Transport Capital Expenditure



Water Supply



Council provides a safe drinking water to over 13,000 households and businesses in Levin, Foxton Beach, Foxton, Shannon and Tokomaru.



Council owns river intakes, groundwater bores, water treatment plants and water storage facilities, pump stations, and underground pipe networks including all associated accessories within the reticulation network. Council's water supply is managed, operated and maintained by Council staff and contractor's staff as a team – Horowhenua Alliance.

Water Supply Significant Issues

- Ageing infrastructure resulting in a need to increase our renewals programmes.
- Growth – anticipated growth is leading to increased residential, commercial and industrial demand.
- An increasing population ~~will putis putting~~ added pressure on all our water supply reticulation systems, this issue is particularly acute_
- in Levin. ~~It will be a challenge~~Measures proposed here are to ensure we can to meet community expectations of a consistent water supply and maintain a contingency supply for emergencies.
- Water storage and supply for Levin during dry periods. Levin's water supply is from the Ōhau River, and consent conditions mean that the water take is affected by river flows. This means in the dryer periods, the amount of water that can be taken from the river is low and will not be able to cope with increased demand.
- Workforce shortage in Three Waters industry and loss of knowledge.
- Ongoing asset management and asset data improvements required.
- The need to improve the resilience of infrastructure with regard to natural hazards and climate change.

Water Supply Activity Principal and Alternative Options

Issues specific to the Water Supply Activity are shown in the following tables, including the preferred and alternative options. The preferred options have been factored into the capital and operational expenditure budgets.



Significant Decisions Required

Demand for Water – Water Demand Management / Response to Growth

One of the most significant water supply issues the district faces is demand exceeding supply. On average Horowhenua consumes 300 l/d/p which is above average.

Seasonal limitations to our water takes, such as low river levels over the dry months of summer have become more frequent and longer in duration in the past years. This coupled with peak demand during summer are resulting in water restrictions. Under current usage, there is about a 24 hour water storage capacity which is very low. Increasing supply capacity to the Levin water reticulation system will mitigate this risk to our largest growth area and provide options for extending reticulation supply to other areas in the future if required.

Water Master Plan

We are in the process of improving our water master plan, which takes a long term view of water supply within our district. This incorporates the Water Demand Management work done to date as well as using computer models of our water system to identify where we need to make improvements. The Water master plan includes the following;

- Further improvement work on Water Demand Management in Levin, Shannon and areas but not Foxton Beach.
- Increasing water storage capacity in Levin.
- Finding alternative water supply source for Levin, including supplementary sustainable water supply.
- The requirements for a reticulated water supply to growing smaller settlements such as Waitārere Beach and Ōhau, which will only be considered once a long term water source for Levin has been secured.

2023 Update

Strategic upgrade of the Levin Water Treatment Plant to increase capacity of the clarifiers, filters and chemical dosing plant, increase treated water storage capacity and to improve the backwash water process and re-use, \$21.5 between 2024-2030.?

The Poads Road Water Reservoir
This project is to build a large scale off-river raw water reservoir to improve resilience and reliability of the Levin and Ohau drinking water supply and meet the projected demand from a growing population. This will provide raw water

storage of 700,000 m³ (or at least 30 days storage). It is in our current LTP, but the funding was spread out over many later years to reduce the impact it would have on rates. We need to bring this project forward to ensure we do not run out of water as we continue to grow. To make sure this project is finished in time we need to begin this project now and increase funding for it by \$4.05 million.

Foxton Beach Wastewater Treatment Plant upgrades

The Foxton Beach Wastewater Treatment Plan needs to be upgraded over the next 10 years. These upgrades include improving the treatment process of wastewater, increasing the capacity that the plant can store and discharge, and to become more resilient to climate change. We also have some costs associated with renewing the consent for this plant in 2028. All up we need to spend \$7 million on the Foxton Beach Wastewater Treatment Plant.

Water Demand Management

Water intake restrictions from rivers under Horizons Regional Council's One Plan are imposed on Council as part of Water Intake resource consents. This is a particularly acute issue for Levin. This approach is aimed at maintaining river life during the dry weather of summer. The One Plan also seeks to make Council and the community increasingly conscious of the amount of water being used and to lower the rates of unauthorised or wasteful water use.

Whatever long term decisions we make about our future water supply, in the short term

we need to reduce the amount of water we use. Finding and securing more water will be necessary in the medium (< 5 years) to long term but our water resources will last longer if we avoid wasting water today. Reducing our consumption will also delay the requirement for new sources of water, delaying the costly investment required for new infrastructure.

Our primary water demand management are:

- Applying water restrictions; already practicing this during summer period
- Detecting and repairing leaks in the network. This is an ongoing programme
- Consider implementing universal water metering
- Reducing water pressure within the distribution network (less coming out of the tap and less pipe leakage). This has been applied in certain places
- Encouraging the use of private water tanks. This is part of the Master Plan for developing areas
- Educating our communities about water conservation

Levin Water Supply

[LTP 2021-2041](#)

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Improve water source and treatment capacity for Levin (preferred option).</p> <ul style="list-style-type: none"> • Long term water source/storage. • Supplementary water supply. • Continue current water demand management initiatives. 	<p>2024 – water source</p>	<ul style="list-style-type: none"> • \$18.3M over the 30 year period.
<p>Secure a new water source only.</p> <ul style="list-style-type: none"> • Retain current water treatment capacity. • Continue current water demand management initiatives. 	<p>2024 – water source</p>	<ul style="list-style-type: none"> • \$16.3M over the 30 year period.
<p>Status quo – Water Demand Management.</p>	<p>2020/21</p>	<ul style="list-style-type: none"> • Targeted water reticulation renewals as identified from leak detections, \$1.0 – 1.2M. • Continuous water demand management including education programme, \$250 – \$300k.

[LTP Amendment 2021-2041](#)

<u>Principal and Alternative Options</u>	<u>Year decision needs to be made</u>	<u>Cost Impact</u>
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Further Improve water source, treatment capacity and demand management for Levin (preferred option).

- Levin Water Treatment Plant
- Bring forward additional funding for Poad’s Road Reservoir as required sooner (Supplementary water supply).
- Introduce water meters/leak detectors to enhance current water demand management initiatives.

Status quo – Improve water source treatment capacity for Levin.

2024 – water source

- Additional \$21.5M for Levin Water Treatment Plant
- Additional \$4.05M (Poad’s Road Reservoir)
- Additional \$6.1M for water meters/leak detectors

2023/24

No additional funding

Future Reticulated Water Supply Schemes for Smaller Settlements

Note: As part of the development of the 2018-38 Long Term Plan, Council consulted on whether to implement water supply schemes for settlements that do not currently have this service. Based on this feedback from the community, Council agreed to proceed with feasibility studies for Ōhau and Waitārerere Beach. However, as a result of recent growth and the adopted growth assumptions, Council will first focus on securing a long term water source for Levin before reconsidering the options for a reticulated water supply to the district's smaller settlements. Community consultation on any proposal would occur prior to any decision being made.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
Implementation of a reticulated water supply for Ōhau and Waitārerere Beach (preferred option).	Ōhau: 2029 Waitārerere Beach: 2032	<ul style="list-style-type: none"> • Ōhau: \$16.3M from 2029/30 to 2034/35. • Waitārerere Beach: \$23.7M from 2033/34 to 2039/40.
Status Quo – do not implement a reticulated water supply for Ōhau and/or Waitārerere Beach.	Ōhau: 2029 Waitārerere Beach: 2032	<ul style="list-style-type: none"> • No cost impact

Ageing Infrastructure – what we need to renew

We have been leak detecting the water reticulation network both on a reactive and proactive basis. This will be further extended to water treatment plants to condition assess structures. We are also in the process of improving asset capture process for all assets at the treatment plants. This would improve and achieve the useful life of assets so that reactive asset maintenance/replacement can be reduced.

Asbestos Cement (AC) pipes, which were widely used in the 1960s, are now approaching the end of their life. Not only are they susceptible to leakage and earthquake, they also reach a point that they are irreparable. Replacing AC pipes with modern materials with a longer life expectancy will also reduce the long-term cost of funding depreciation.

We are in the process of grouping renewals geographically and develop an asset condition and maintenance programme to maximise opportunities for procurement efficiencies and to minimise disruption to the community.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Renewal backlog and improved asset condition and asset data collection (preferred option).</p>	<p>2020/21</p>	<ul style="list-style-type: none"> • Require additional \$1.5M on average per annum for a period of approximately 30 years. • Develop and implement proactive condition assessment for improved data collection and work programme, \$300k.
<p>Status quo – minimal renewal and reactive condition assessment. Critical assets likely to fail and disruption to our community.</p>	<p>2020/21</p>	<ul style="list-style-type: none"> • Targeted water reticulation renewals as identified from leak detections, \$1M.

Resilience against natural hazards and climate change

Our climate is changing, with predictions of long dry spells in summer, drought and short and intense rain becoming more frequent. Storm events are increasing in our district and across the country. This brings challenges to our water supply source as river flow levels dramatically reduce during a dry period in summer. For a continuous water supply, it is necessary to have sufficient water storage capacity.

Our district contains earthquake fault lines which impose a particular risk for our ageing Asbestos Cement (AC) pipes which is quite brittle material in nature.

Levin Water Reticulation Renewals

To make sure that we have a reliable water supply network in Levin we need to keep up maintenance. This means replacing the water mains as they reach the end of their life and begin to break and leak. Greater investment is required than identified in the LTP 2021-2024 due to cost increases. An additional \$4.8M is proposed to achieve this, bringing the total in the LTP 2021-41 once amended to \$27M.

Shannon Water Reticulation Renewals

Some of the water mains that form the Shannon water supply network are aging and need to be replaced. This will be done through a \$4.5 million renewals program between 2024-2026.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Increase resilience in our water network and changing AC pipes progressively (preferred option).</p> <ul style="list-style-type: none"> • Build necessary resilience (additional line and/or cross connection for critical services). • Where necessary build water storage tanks, cost to be determined. • Provide supplementary sustainable water supply, cost stated in above section. • Encourage sustainable growth by promoting onsite water tanks. No cost implication. 	<p>2020/21</p>	<ul style="list-style-type: none"> • Increase water reticulation renewals, cost estimate of \$0.5 – \$1M per annum.

<p>Status quo. Disruption possible to our level of service in our community due to frequent water supply outages.</p>	<p>2020/21</p>	<ul style="list-style-type: none"> • No additional cost on current renewals budget of \$1M per annum, but an expected increase in reactive repairs overtime.
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<p><u>Principal and Alternative Options</u></p>	<p><u>Year decision needs to be made</u></p>	<p><u>Cost Impact</u></p>
<p><u>Increase resilience in our water network and changing AC pipes progressively (preferred option).</u></p> <ul style="list-style-type: none"> • <u>Build necessary resilience (additional line and/or cross connection for critical services).</u> • <u>Levin Water Reticulation Renewals programme increased for materials cost adjustment (4.8M)</u> • <u>Shannon Water Reticulation Renewals programme to replace aging water mains (\$3.5M)</u> • <u>Where necessary build water storage tanks, cost stated in above section.</u> • <u>Provide supplementary sustainable water supply, cost stated in above section.</u> • <u>Encourage sustainable growth by promoting onsite water tanks. No cost implication.</u> 	<p><u>2023/24</u></p>	<ul style="list-style-type: none"> • <u>Additional \$8.3M to increase water reticulation renewal in Levin and Shannon</u>
<p><u>Status quo.</u> <u>Disruption possible to our level of service in our community due to frequent water supply outages as current budget not adequate to cover work required</u></p>	<p><u>2023/24</u></p>	<ul style="list-style-type: none"> • <u>No additional cost</u>

Water Supply Operating Expenditure

The forecast of operating expenditure for Water Supply across each scheme is presented in Figure 3. Figures have been adjusted for inflation.

Figure 3 shows the projected operational expenditure for the 30 year period is **\$565,783,555**. It shows the biggest investment is required for the Levin scheme – **\$377,683,912** across the 30 year period.



Figure 3: Water Supply Operating Expenditure

Water Supply Capital Expenditure

The proposed capital expenditure programme for Water Supply is presented in Figure 4 and Figure 5. Figures have been adjusted for inflation. Figure 4 shows the projected capital expenditure for the 30 year period is **\$243,499,150**.

The major expenditure in the planning period is largely renewals and growth. Figure 5 shows the most significant investment required for the Levin scheme which has a total proposed capital expenditure to **\$156,600,726** over the 30 year period.

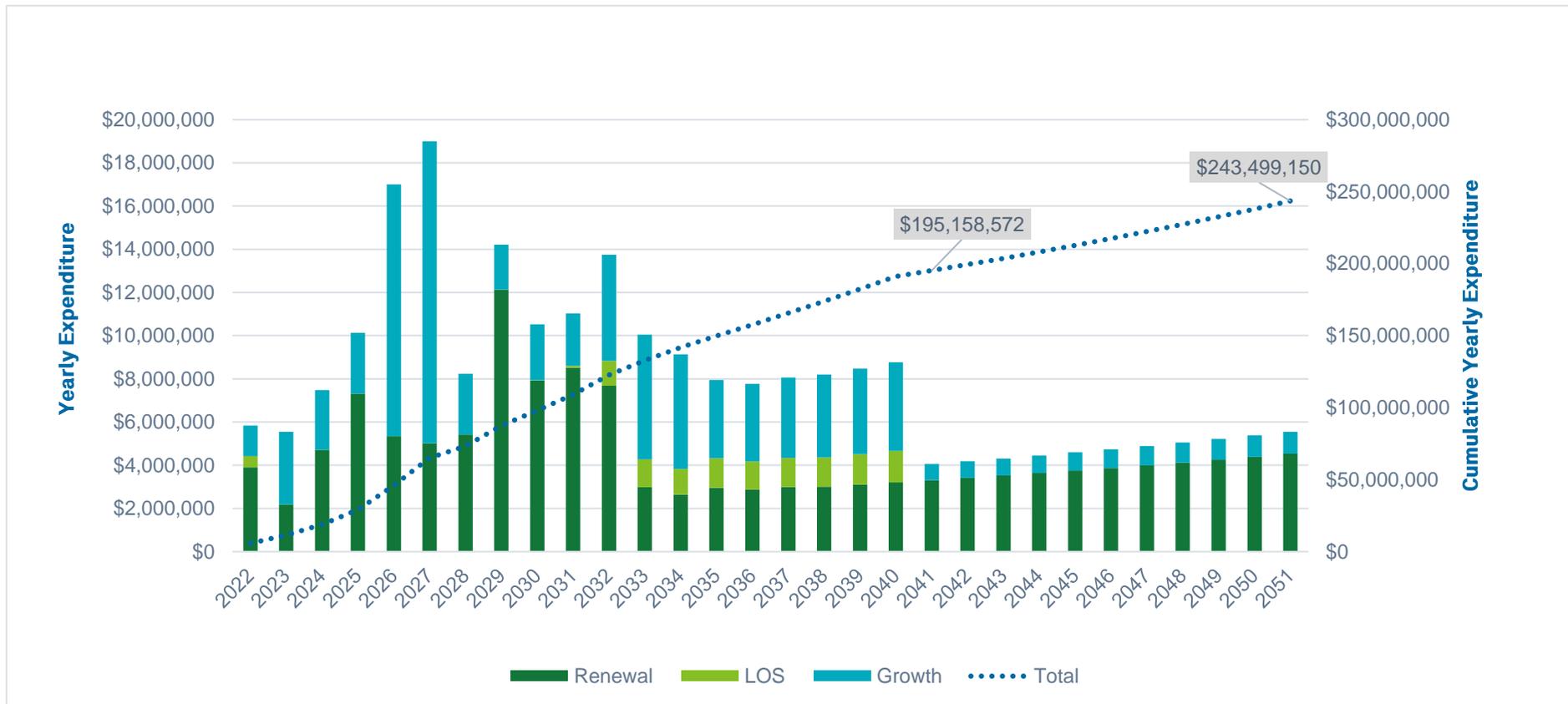


Figure 4: Water Supply Capital Expenditure

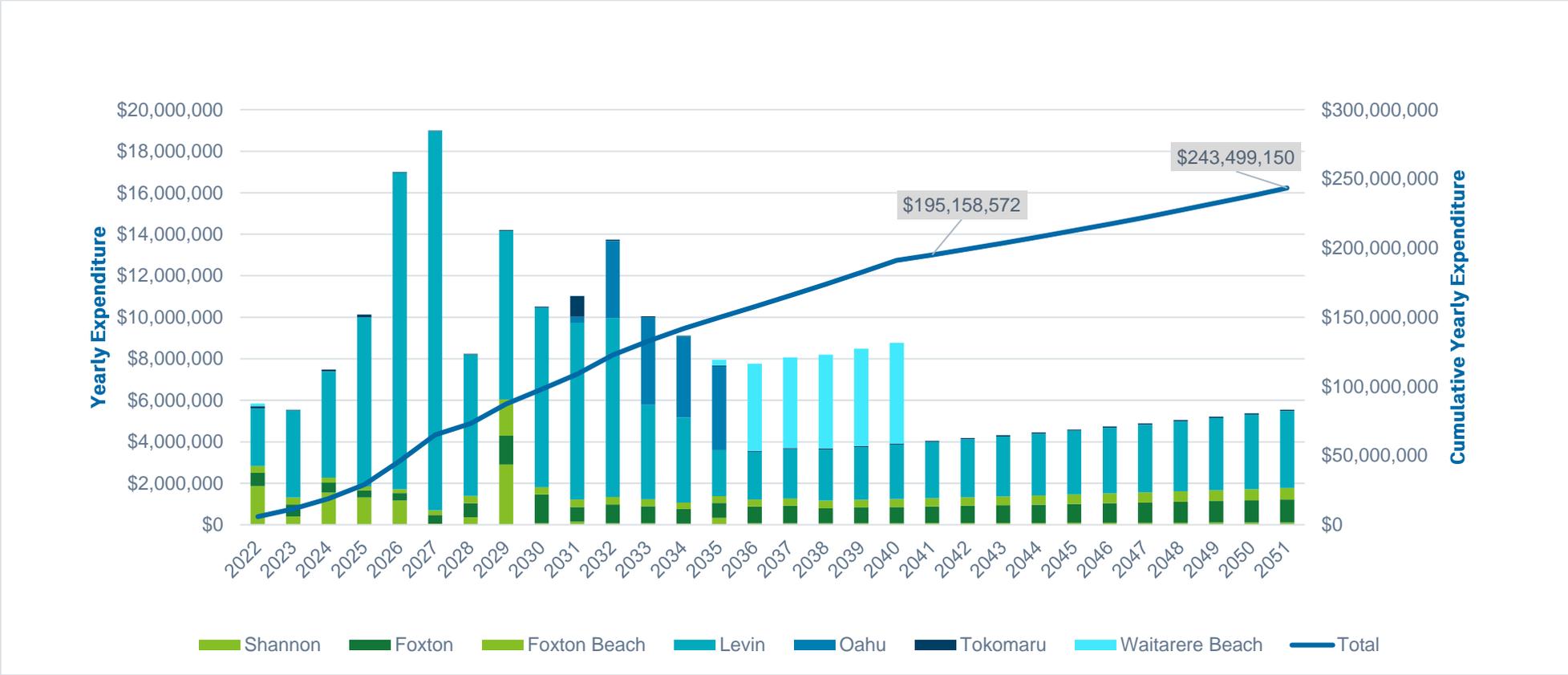


Figure 5: Water Supply Capital Expenditure – by scheme

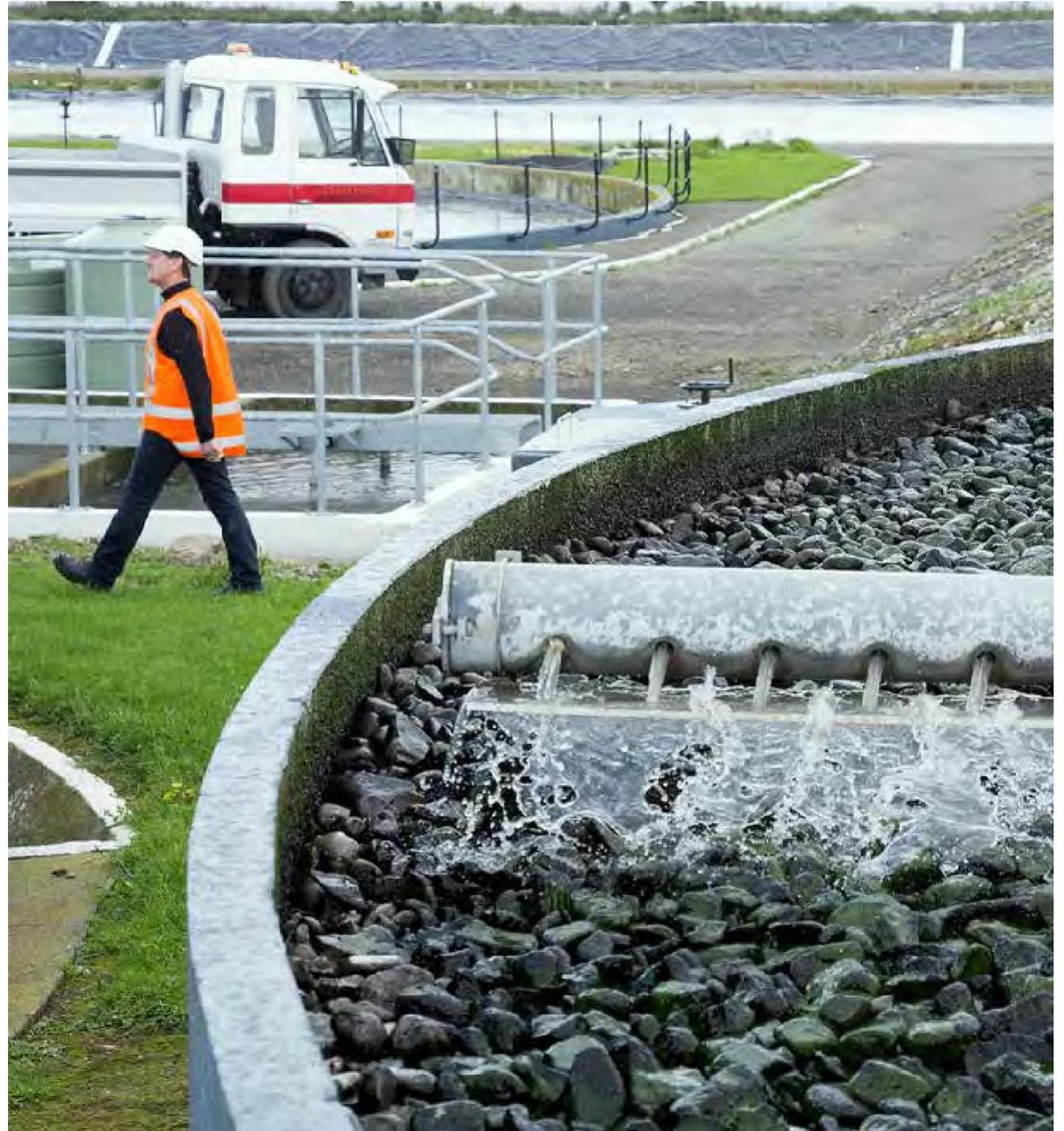
Wastewater

Council owns, operates and maintains piped wastewater systems, pumping stations, wastewater treatment plants and treated effluent discharge facilities throughout each of the urban schemes, including land. Council's wastewater system is managed by Council staff and contractor's staff as a team – Horowhenua Alliance.

Council's Wastewater (sewage) reticulation network and pump stations collect sewage from households, businesses and industrial customers. It is then transported to wastewater treatment plants (Levin, Foxton, Foxton Beach, Shannon, Tokomaru and Waitārere Beach) where it is biologically treated and treated effluent from wastewater treatment plants is then applied to land.

Wastewater Significant Issues

- Ageing infrastructure resulting in increase in renewal requirements and compromising performance.
- Anticipated growth is leading to increased residential, commercial and industrial demand on existing infrastructure.
- National Policy Statement for Freshwater 2020 – Horizons Regional Council’s implementation completed by 2027. The implementation of the National Policy Statement will likely create increased requirements for wastewater treatment and disposal.
- Community expectations of environmental management increasing.
- Workforce shortage in Three Waters industry and loss of knowledge.
- Ongoing asset management and asset data improvements required.
- Improving the resilience of infrastructure with regard to natural hazards and climate change.



Wastewater Activity Principal and Alternative Options

Issues specific to the Wastewater Activity are shown in the following tables, including the preferred and alternative options. The preferred options have been factored into the capital and operational expenditure budgets.

Significant Decisions Required

Ageing Infrastructure – what we need to renew

We have been continuously CCTVing wastewater reticulation on a reactive basis. However, proactive (based on age and

incidents) condition assessment of reticulation network are being programmed for informed decision making. Renewals are prioritised based on asset condition and criticality. Condition assessment is further extended to wastewater treatment plants to condition assess structures (specifically Levin Wastewater Treatment Plant). We are also in the process of improving asset capture processes for all assets at the treatment plants. This would improve and achieve the useful life of assets so that reactive asset maintenance/replacement can be reduced.

As network pipes age Inflow and Infiltration allows more stormwater into the wastewater reticulation network which adds increased volume to wastewater treatment plants and increased operational and maintenance cost. This is a significant issue that is predicted to increase in the frequency, and intensity of rainfall will only exacerbate. Therefore, we are in the process of developing a work programme for Inflow and Infiltration, which informs the maintenance and renewal work programme.

LTP 2021-2041

Principal and Alternative Options	Year decision needs to be made	Cost Impact
Renewal backlog and improved asset condition and asset data collection (preferred option).	Start from 2021/22	<ul style="list-style-type: none"> • \$3.6M/year reticulation renewals. • Condition assessment for improved data collection and work programme, \$250 - \$450k over 5 years. • Inflow & Infiltration work programme \$300K in 2021/22 for Shannon and Tokomaru and Levin.
Status quo – Minimal renewal and reactive condition assessment.	Current	<ul style="list-style-type: none"> • No additional cost on current renewal budget of \$0.8M. • Critical assets likely to fail and disruption to our community and increasing reactive maintenance costs.

Response to Growth

As indicated (in previous section), the district is going through a significant population growth. As the population grows the demand on the wastewater system will increase in a number of ways:

- Increased demand on the existing network as a result of anticipated intensification of housing.
- Demand for new infrastructure in new growth areas.

- Increased demand on wastewater treatment plants resulting in upgrade requirements, with the most urgent decision required for Levin.

For the location identified growth areas, please see Horowhenua Growth Strategy 2040.

Wastewater Master Plan

We are in the process of improving our wastewater master plan, which takes a long term view of wastewater treatment, Levin primarily, and within our district.

This will take a holistic approach and big picture of wastewater treatment. Identify upgrades requirement and develop a phased work programme.

- Taking into account National Policy Statement for Freshwater potential implications on our wastewater treatment plants.
- Feasibility study of reticulated wastewater to Ōhau will be reviewed, however, due to capacity concerns, no decision on the provision of a reticulated wastewater supply will be made until the Levin Wastewater Treatment Plant project is completed.

Levin Wastewater Treatment Plant – 2023 Update

The Levin Wastewater Treatment Plant has reached the capacity for organic loading it was designed to process. To comply with our POT consent (the consent from Horizons to discharge treated wastewater to the land known as The POT), we need to increase organic and hydraulic capacity and also increase the removal of biological nutrients (bugs). In other words, we need to increase the amount of wastewater we can treat while also increasing the amount of contaminants we remove from our wastewater. To complete this project, we need to fund an additional \$14.5 million than agreed in the current LTP. This project is set to be completed by 2028. The Levin Wastewater Treatment Plant will reach its capacity under the approved resource consent earlier than previously anticipated due to the significant growth that is projected for Levin. The wastewater master plan will take a long term view of wastewater treatment and identify a detailed solution for future requirements.

Develop Inflow & Infiltration work programme.

[LTP 2021-2041](#)

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Development of the Wastewater Masterplan (preferred option). Investigate and masterplan the future of the district’s wastewater treatment upgrade requirements and reticulation to enable comprehensive consideration of cost and level of service implications.</p>	2024	<ul style="list-style-type: none"> • \$400k between 2021/22 and 2024/25 in investigation and planning cost, providing information for decisions in 2024 (operational expenditure)
<p>Status quo. Most improvements are done on an ad-hoc basis. The Levin Wastewater Treatment Plant and disposal area is limited to current consent conditions. Critical assets could fail causing major disruption in our community and unwanted environmental discharge.</p>	Current	<ul style="list-style-type: none"> • No additional cost on existing capital and operational budgets.

[LTP Amendment 2021-2041](#)

<u>Principal and Alternative Options</u>	<u>Year decision needs to be made</u>	<u>Cost Impact</u>
<p><u>Increased investment in the Levin Wastewater Treatment Plant (preferred option).</u> <u>To increase organic and hydraulic capacity and also increase the removal of biological nutrients (bugs). The amount of wastewater we can treat needs to be increased while also increasing the amount of contaminants we remove from our wastewater. To complete this project, we need to fund an additional \$14.5 million than agreed in the current LTP.</u></p>	2023/24	<ul style="list-style-type: none"> • <u>An additional \$14.5M than in the original LTP 2021-2041</u> • <u>Brings investment to \$33.1M</u>

Status quo.

Most improvements are done on an ad-hoc basis. The Levin Wastewater Treatment Plant and disposal area is limited to current consent conditions.

Critical assets could fail causing major disruption in our community and unwanted environmental discharge.

Current

- No additional cost on existing capital and operational budgets.

Future Reticulated Wastewater Schemes for Smaller Settlements

Note: As part of the development of the 2018-38 Long Term Plan, Council consulted on wastewater supply schemes for settlements that do not currently have this service. Based on this feedback from the community, Council agreed to proceed with a feasibility study for Ōhau. However, as a result of recent growth and the adopted growth assumptions, Council will first focus

on securing a long term option for wastewater disposal for Levin before reconsidering the requirements for a reticulated wastewater supply to growing smaller settlements. Community consultation on any proposal would occur prior to any decision being made.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
Implementation of a reticulated wastewater supply for Ōhau (preferred option).	2029	• \$16.7m from 2030 to 2035.
Status Quo: Do not implement a reticulated wastewater supply for Ōhau.	2029	• No cost impact.

Resilience against natural hazards & climate change

Our climate is changing, with predictions of long dry spells in summer, drought and short and intense rain becoming more frequent. Storm events are increasing in our region and across the country. Predicted changes in future weather patterns and other environmental hazards could have implications for the wastewater network:

- This brings challenges to our wastewater system (reticulation and wastewater treatment plants), high inflow and infiltration during a storm event which could potentially cause environmental discharge.
- Longer dry spells could increase the likelihood of blockages and related dry weather overflows.
- Horowhenua is situated on earthquake fault lines which imposes a great risk for our

ageing Asbestos Cement (AC) pipes which is quite brittle material in nature meaning it is likely to fail. Additionally, critical civil structures in Levin wastewater treatment are very old and earthquake prone. This is likely to result in longer recovery time from medium to major events.

[LTP 2021-2041](#)

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Invest in projects that increase the resilience of our wastewater networks and wastewater treatment plants (preferred option).</p> <p>Resilience will be a key consideration in the wastewater master plan. Additionally, more appropriate and earthquake resilient pipes are installed during reticulation renewal/upgrade work programme.</p> <p>Investing in projects that increase our network's resiliency will result in increased costs upfront. However, this investment reduces the risk of catastrophic damage to the network/critical civil structures and minimises environmental discharges during an earthquake. It is prudent we ensure our network can withstand a medium to major earthquake event, or be restored to service as soon as possible after an event.</p>	2020/21	<ul style="list-style-type: none"> • Improvements related to resilience – \$5.5m over 30 years.
<p>Do not invest in projects that increase the resilience of our wastewater networks and wastewater treatment plants.</p> <p>Not investing in projects that increase the resilience of our network avoids short term cost. However, our community would remain at risk of interruptions to wastewater services and environmental discharge after a medium to major event.</p>	2020/21	<ul style="list-style-type: none"> • No increase in current Capital costs.

Wastewater Operating Expenditure

Figure 6 shows the projected operating expenditure for the Wastewater activity across each of the wastewater schemes. Figures have been adjusted for inflation. Costs have been adjusted to reflect anticipated increases or decreases in maintenance activities resulting

from asset additions or renewals.

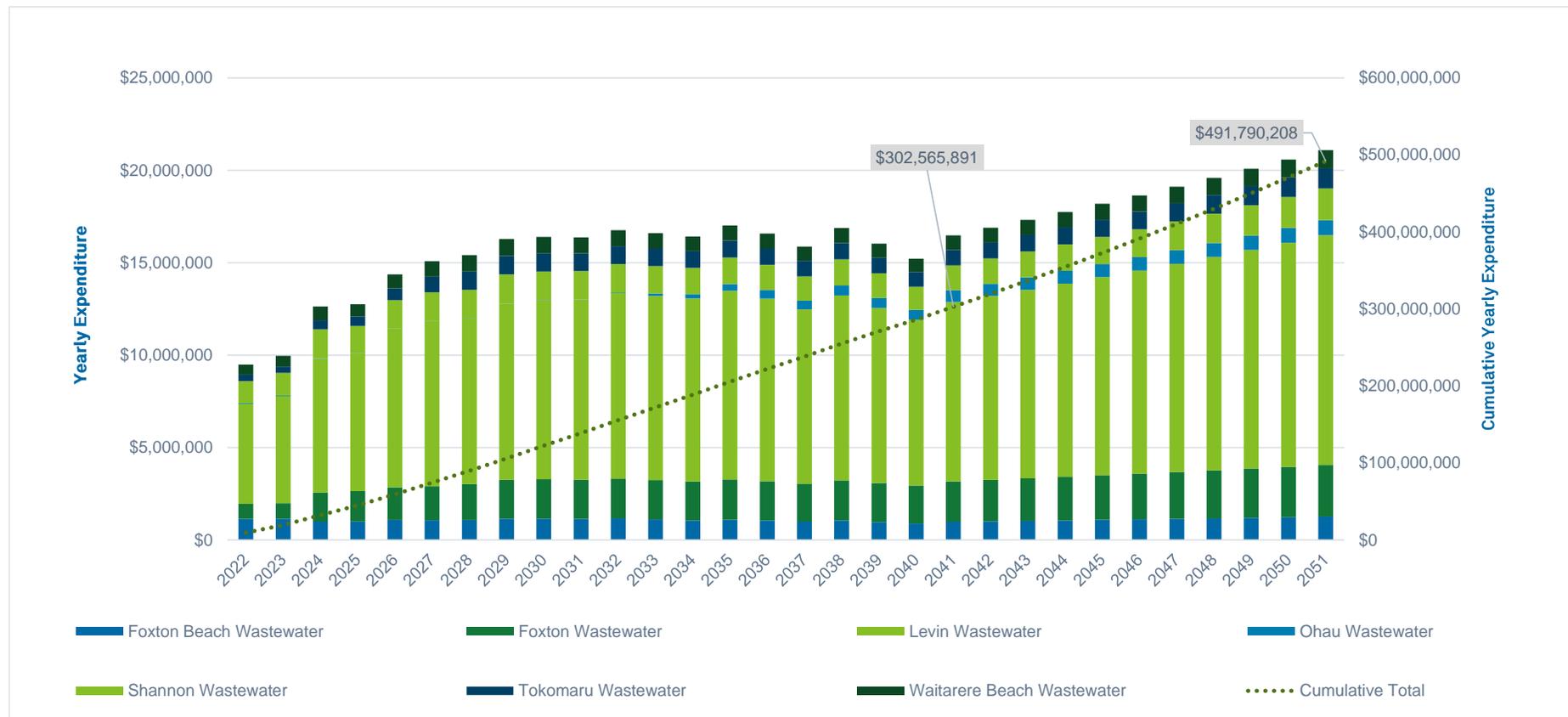


Figure 6: Wastewater Operating Expenditure

Wastewater Capital Expenditure

Figures 7 and 8 show projected capital expenditure for the district's wastewater schemes. Figures have been adjusted for inflation. The proposed capital expenditure is **\$278,219,059** across the 30 year period. The expenditure is mostly required for renewals.

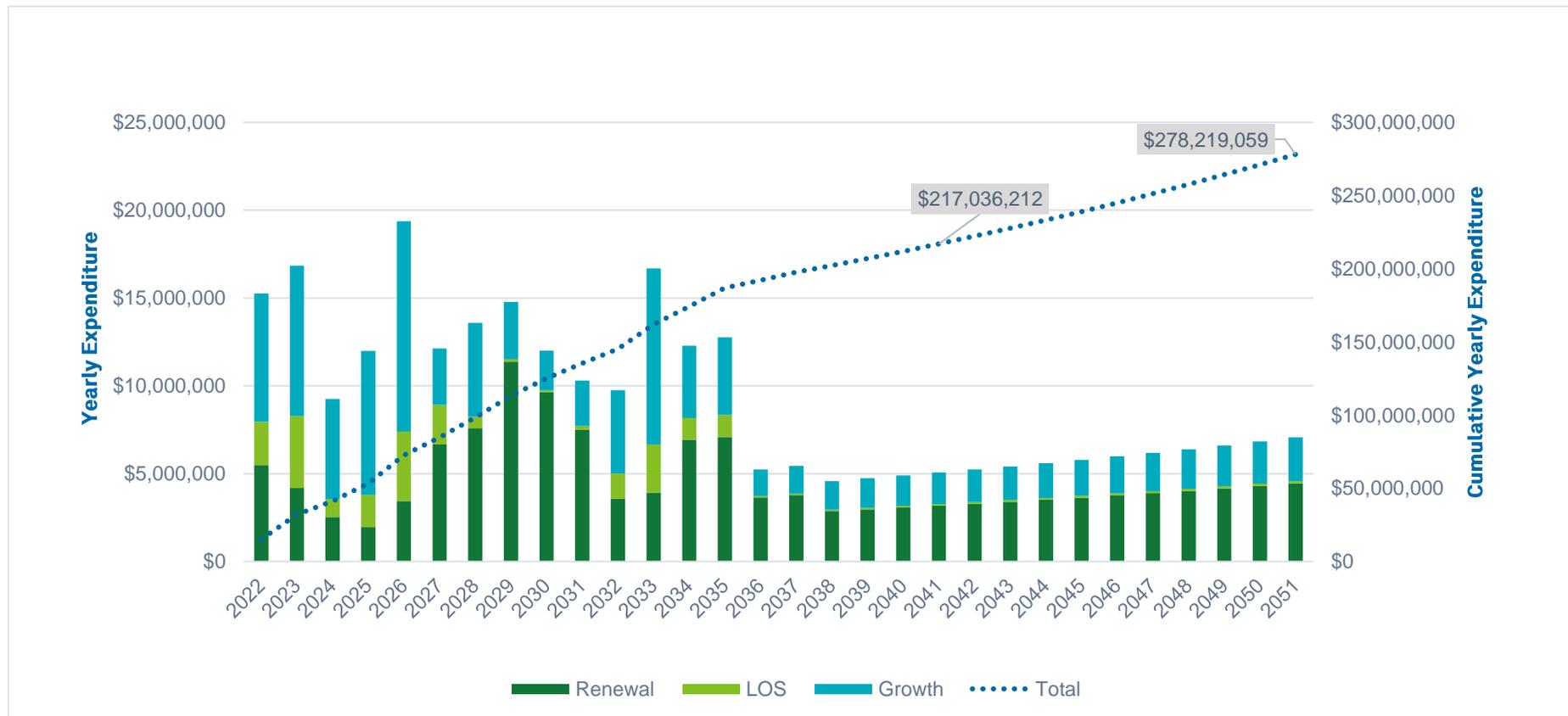


Figure 7: Wastewater Capital Expenditure

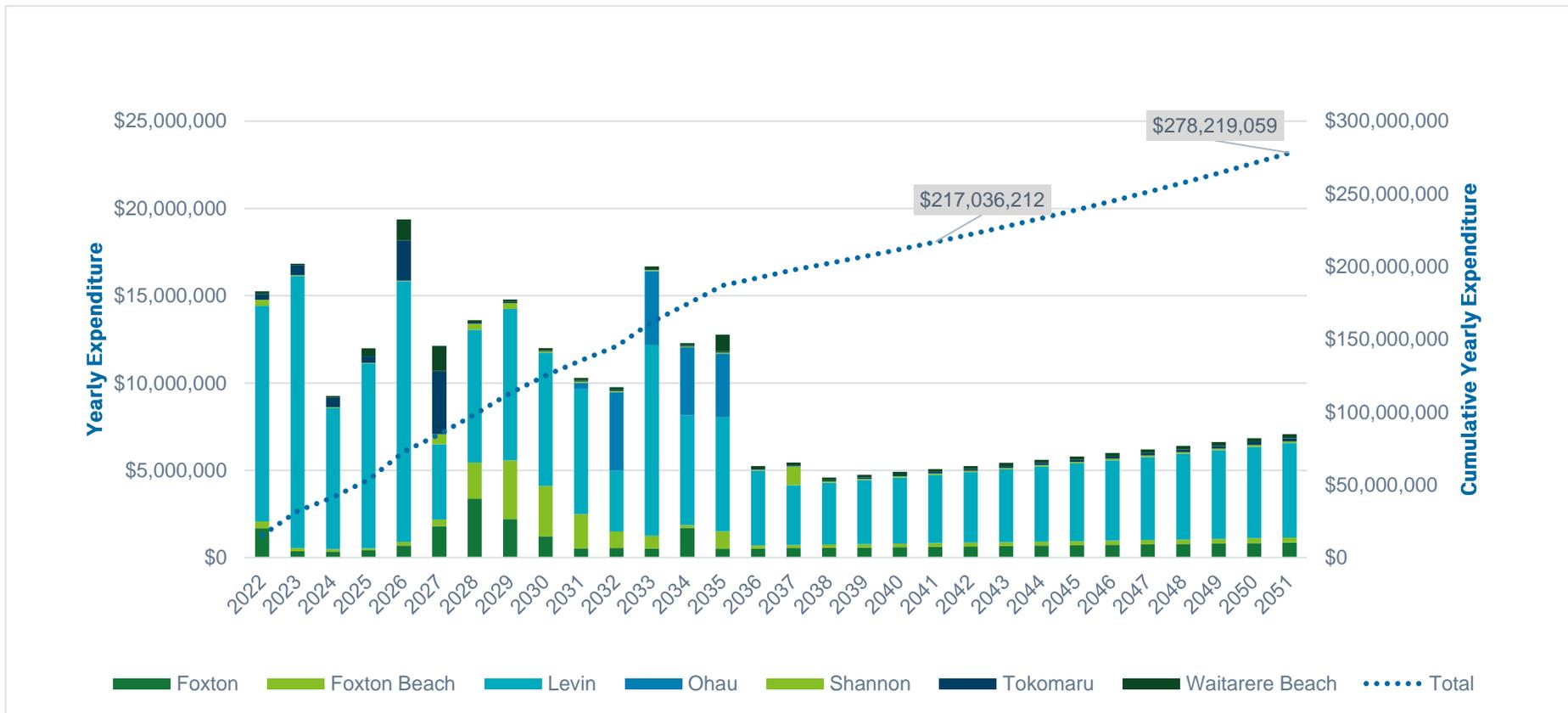


Figure 8: Wastewater Capital Expenditure – by scheme



Stormwater

Council's Stormwater Activity provides piped and open drainage systems to collect the stormwater from roads, footpaths and hardstanding surfaces in from residential and commercial properties. The water is discharged to piped stormwater drainage systems and open and culverted watercourses.

Council owns, operates and maintains piped stormwater drainage systems, pumping stations, and detention areas. Stormwater is closely aligned in both location and function with the Land Transport Group of Activities, and in particular the roading network. Council's stormwater system is managed together by Council staff and contractor's staff as a Team – Horowhenua Alliance.

Private properties are required to provide on-site stormwater management (generally through soak pits).

Stormwater Significant Issues

- Improve the resilience of infrastructure with regard to natural hazards and climate change.
- Predictions of more frequent and intense rainfall mean we need to work toward solutions for flood prone areas.
- Infill development within existing urban areas is increasing the ratio of impermeable surface to uncovered land, which can exacerbate flooding in low-lying areas.
- Meeting community expectations and level of service.

Stormwater Activity Principal and Alternative Options

Issues specific to the Stormwater Activity are shown in the following tables, including the preferred and alternative options. The preferred options have been factored into the capital and operational expenditure budgets.

Significant Decisions Required

Growth and Resilience against natural hazards & climate change

Increased and more intense rainfall ~~over time is likely to~~ events are increasing the frequency of stormwater system overloads, resulting in flooding.

When replacing existing infrastructure or adding new infrastructure we need to consider both the size and type of piping we install to cater for the future. If pipes are undersized they may not cope with increased stormwater flows and will require premature replacement, at a cost to the community.

There are coastal rural communities where stormwater service need improvement on existing infrastructure and new subdivisions developed using sustainable, green stormwater management systems.

The design and layout of new subdivisions also needs to consider existing natural stormwater flow paths. Council is considering sustainable stormwater management systems for new

subdivisions. This means using fewer pipes and pump stations and designing systems that retain natural flow paths and attenuation ponds. This approach can reduce the risk of flooding and result in ecological, more astatic and better community outcomes, for example, recreational, which has physical and mental wellbeing benefits.

Council have developed stormwater Catchment Management Plans (CMPs) which will be used to programme the required improvements to our stormwater infrastructure while also optimising our maintenance and mitigate flooding risks. CMPs are also an integral part of our strategic urban planning processes, to ensure developments of built sustainably.

Managing stormwater within urban areas can be complicated. Pooling of stormwater in certain areas is caused by a wide range of factors. Stormwater network models are being developed for urban and rural areas for better understanding. Additionally, inspections and conditions assessments have been carried out continuously on an ad-hoc basis.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Deliver programme of work from stormwater catchment management plans (preferred option).</p> <ul style="list-style-type: none"> • Use CMP information to develop a prioritised work programme over this strategy period. • Use this information during land development phase to reduce the flooding risk and for ecological benefits and community wellbeing. • Carry out continuous improvements across the district. 	<p>2021/22</p>	<ul style="list-style-type: none"> • \$6M capital expenditure over 30 years.
<p>Retain status quo.</p> <ul style="list-style-type: none"> • Do not upgrade pipes to account for increased rainfall frequency and/or intensity. • Maintaining a reactive approach can lead to detrimental impact and would take a long time to do a 'catch-up' and would cost higher. • Piped systems are 'tried and tested' normally and know where bottlenecks are. However, premature replacement may be required if they are not adequately sized to cater for increasing rainfall frequency and intensity, creating more costs. Therefore, ongoing CMPs and incorporating these into stormwater network models are important to potential 'water sensitive design' benefits. 	<p>Current</p>	<ul style="list-style-type: none"> • No increase on current maintenance, renewal and improvement budgets. • Increase in reactive maintenance costs and emergency flooding management.

<u>Principal and Alternative Options</u>	<u>Year decision needs to be made</u>	<u>Cost Impact</u>
<p><u>Deliver expanded programme of work from stormwater catchment management plans (status quo).</u></p> <ul style="list-style-type: none"> <u>Use CMP information to develop an updated prioritised work programme over this strategy period.</u> <u>Use this information during land development phase to reduce the flooding risk and for ecological benefits and community wellbeing.</u> <u>Carry out continuous improvements across the district.</u> 	<p><u>2023</u></p>	<ul style="list-style-type: none"> <u>An additional \$11.8M/10 years</u> <u>A total of \$18M/10 years</u>
<p><u>Deliver programme of work from stormwater catchment management plans (status quo).</u></p> <ul style="list-style-type: none"> <u>Use CMP information to develop a prioritised work programme over this strategy period.</u> <u>Use this information during land development phase to reduce the flooding risk and for ecological benefits and community wellbeing.</u> <u>Carry out continuous improvements across the district.</u> 	<p><u>Current</u></p>	<ul style="list-style-type: none"> <u>\$6M capital expenditure over 30 years from 2021.</u> <u>No increase on current maintenance, renewal and improvement budgets.</u> <u>Increase in reactive maintenance costs and emergency flooding management.</u>

Stormwater Operating Expenditure

Figure 9 shows the projected operating expenditure for the district's Stormwater activity. Figures have been adjusted for inflation. The operating expenditure for the Stormwater activity is projected to be **\$131,544,232** over the 30 year period.

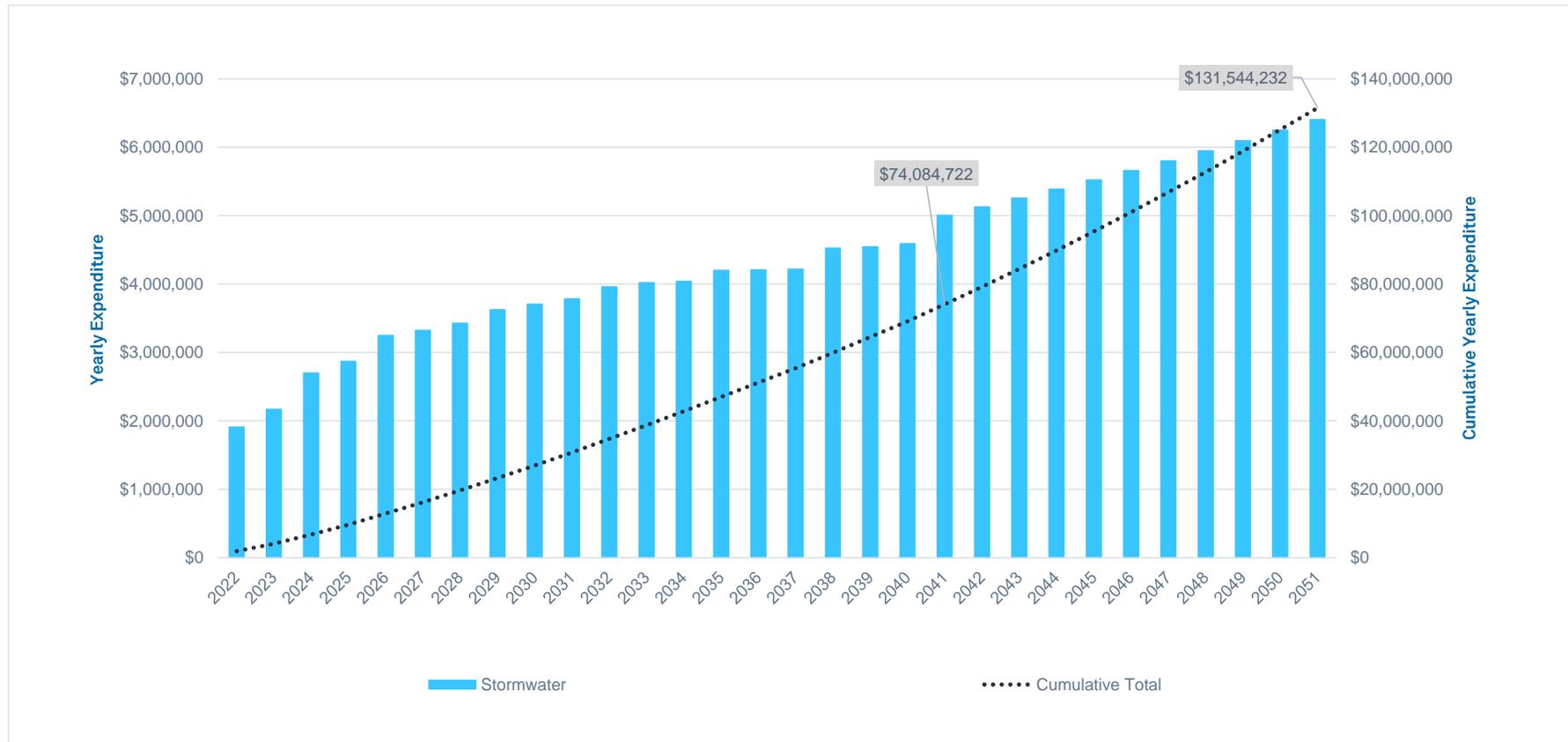


Figure 9: Stormwater Operating Expenditure

Stormwater Capital Expenditure

Figure 10 shows the projected capital expenditure for the district's Stormwater activity. Figures have been adjusted for inflation. The capital expenditure for the 30 year period is projected to be **\$84,930,195**. This expenditure is split between renewals, level of service and growth.

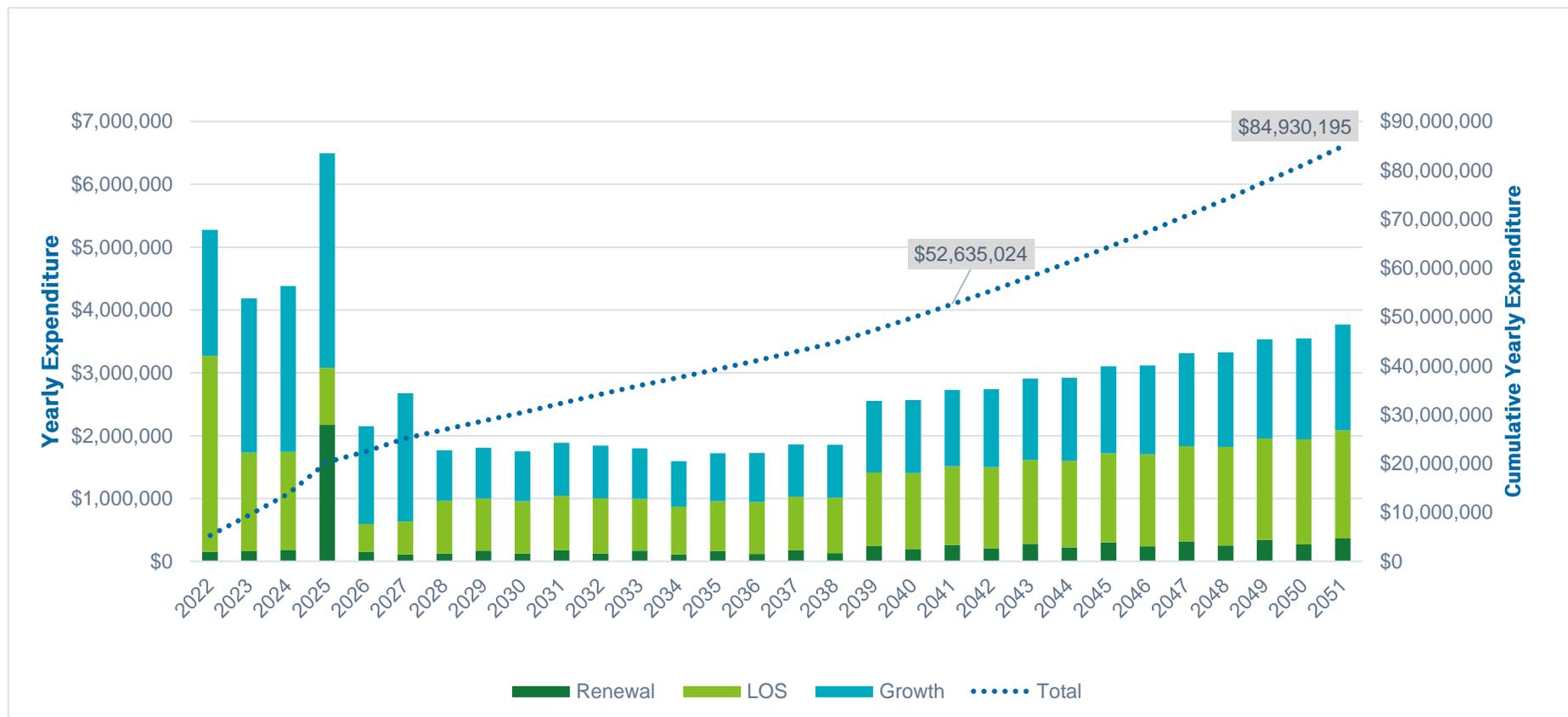


Figure 10: Stormwater Capital Expenditure

Community Facilities

The Community Facilities activity contributes to HDC community outcomes by providing:

- **Multi-functional facilities that provide a wide range of services to both the community and to visitors to the Horowhenua District**
- **District wide library services based in Levin, Foxton and Shannon. They deliver a range of programmes and activities for all ages. Also facilitating online library services.**
- **Aquatic facilities offering public access to swimming pools and programmes, fitness and rehabilitation. They enhance community wellbeing with a range of healthy recreational and social opportunities.**



Community Facilities Significant Issues

- Aquatic Facilities are significantly impacted by projected population growth. There is a clear need for increased water capacity within the aquatic network to meet current and future needs.
- There are gaps in aquatic provision across the current network.
 - There is no permanent leisure provision in the district which is a significant gap in provision, potential visits and revenue.
 - Provision for aquatic sport is constrained.
 - There is limited provision of hydrotherapy facilities.
- Foxton Heated Pool is not fit for purpose. The facility is in poor condition, there is significant condensation within the building and there are significant structural concerns. Addressing the building's problems is a critical issue.
- Activity renewals have historically been deferred resulting in asset failures prior to replacement and higher than anticipated reactive maintenance costs.
- Community Centres are of sufficient size to cater for district growth although there is a need for a refresh of the Youth Space at Te Takeretanga o Kura-hau-pō.

Community Facilities Principal and Alternative Options

Issues specific to the Community Facilities Activity are shown in the following tables, including the principal and alternative options. The highlighted option is the preferred approach for addressing the issues and these options have been factored into the capital and operational expenditure estimates.

Significant Decisions Required

Foxton Pool

There are critical building issues identified at Foxton Pool and if not addressed could impact on the health and safety of users and staff. While the Foxton Pool building is only 13 years old, the facility is in poor condition and suffers from significant condensation issues.

Council has resolved and made the decision to move forward with the Basic All-year Pool (preferred option).

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Indoor and Outdoor Leisure Pool.</p> <p>This options includes the demolition and rebuild of the building, however extending building at front for a multipurpose rooms. Extending the building a rear to include new leisure pool. There are no changes to the existing pools, however adding an indoor leisure pool, adding a splashpad, landscaping at rear and upgrading of changing rooms.</p>	2021	<ul style="list-style-type: none"> • \$9.4 million across 2021/22, 2022/23 and 2023/24
<p>Basic All-year Pool (preferred option).</p> <p>This option includes the demolition and rebuild of the existing building, upgrades to the changing rooms and restoration of the outdoor area to grass. There are no changes proposed to the pools.</p> <p>This option also includes operational changes, extending the operating period to year-round operation and increasing opening hours.</p>	2021	<ul style="list-style-type: none"> • \$2.6 million across 2021/22, and 2022/23
<p>Seasonal Outdoor Leisure Pool.</p> <p>This option creates a seasonal outdoor leisure facility by demolishing the existing building, rebuilding the change room and administration building, adding a new leisure pool and splashpad, restoring the outdoor area and covering the teaching/toddler pool.</p> <p>This option also includes operational changes, with a 5 month operation and slightly longer opening hours, but a reduction in aquacise classes.</p>	2021	<ul style="list-style-type: none"> • \$4.4 million across 2021/22, 2022/23 and 2023/24
<p>Seasonal Outdoor Basic Pool.</p> <p>This option creates a basic outdoor pool by demolishing the existing building, rebuilding the change room and administration building, covering the teaching/toddler pool and restoring the outdoor area to grass. There are no changes to the existing pools.</p> <p>This option also includes operational changes, with a 5 month operation and slightly longer opening hours, but a reduction in aquacise classes.</p>	2021	<ul style="list-style-type: none"> • \$1.9 million across 2021/22, 2022/23 and 2023/24
<p>Permanently Close Facility.</p> <p>This option includes permanently closing the facility, removing the building and pools, and restoring the site to grass.</p>	2021	<ul style="list-style-type: none"> • \$350,000 in 2021/2022

Jubilee Park Aquatic Provision

The Jubilee Park paddling pool is in poor condition and nearing the end of its useful life. The facility is not supervised by lifeguards which presents a health and safety risk.

Horowhenua District Council consulted on the removal of Jubilee Park pool during the 2020/21 Annual Plan the decision was made remove

the existing paddling pool and investigate replacing it with a small-scale splashpad. This is considered a high priority due to the condition of the asset and risks associated with the current unsupervised operation of the paddling pool.

Council has resolved and made the decision to move forward with the development of a splashpad at Jubilee Park in Levin (preferred option).

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Development of a Splashpad at Jubilee Park in Levin (preferred option).</p> <p>Given the risks associated with the current unsupervised paddling pool and the condition of the asset it is planned to be removed and replaced with a Splashpad to ensure an aquatic provision remains at Jubilee Park.</p>	2021	<ul style="list-style-type: none"> • \$313,497 across 2021/22 and 2022/23
<p>Close and remove the paddling pool.</p> <p>Do not replace the paddling pool with another aquatic option.</p>	2021	<ul style="list-style-type: none"> • \$30,000 in 2021/22

Levin Aquatic Centre

Levin Aquatic Centre is the district's main aquatic centre. The facility is heavily used and is under significant demand pressure, which is forecasted to increase with population growth. A key conclusion is the facility is under-sized to service the Levin and district population and needs to be expanded to cater for current and future demand. Before a preferred option is selected for the redevelopment of the site, a business case needs to be developed to provide a case for investment.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
Development of a Business Case to support funding applications (internal and external) and provide a strong case for investment (preferred option).	2024	<ul style="list-style-type: none"> • \$165,000 in 2024/25
Undertake Strategic Aquatic works. Meets customer expectation, in line with a number of Council's strategic plans, and reduces growth related pressure for the term of the plan.	2026	<ul style="list-style-type: none"> • \$25.0m in 2027 to 2041

Community Facilities Renewals

Adopting a planned maintenance schedule rather than reactive will extend the life of critical plant and assets and ultimately result in less unplanned closures.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Facility renewals required to maintain the existing levels of Service (preferred option).</p>	<p>Years 1 - 30</p>	<ul style="list-style-type: none"> • \$45,544,541 over 30 years
<p>Defer the asset renewals programme. Defer the asset renewals programme. Not recommended due to an increased probability of failure and decreased reliability of critical plant and assets.</p>	<p>2021</p>	<ul style="list-style-type: none"> • \$0 - \$45,544,541 over 30 years

Community Facilities Operating Expenditure

The largest proportion of the operating costs for Community Facilities relate to Libraries and Community Facilities (63%) compared with Aquatics at 37%. These costs are shown below in Figure 11. Figures have been adjusted for inflation. The proposed operational expenditure for the 30 year period is \$373,956,649.

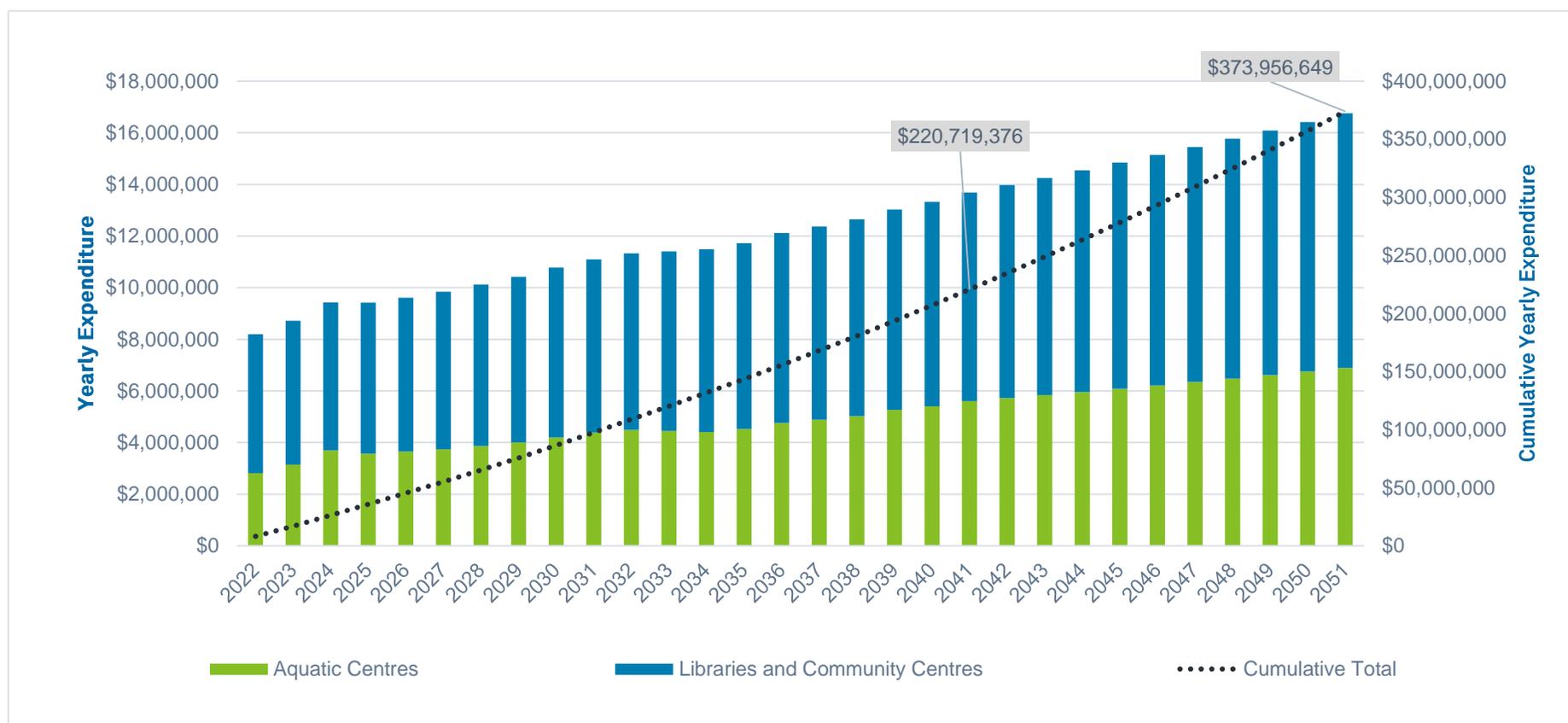


Figure 11: Community Facilities Operating Expenditure

Community Facilities Capital Expenditure

In the capital expenditure programme for Community Facilities is provided as Figure 12 below. Figures have been adjusted for inflation. The majority of the expenditure is for renewals, with Level of Service improvements associated with Foxtan Pool redevelopment and the Levin splash pad. There are with smaller peaks in relation to the Aquatic Facility every five years to account for a facility closure and significant maintenance work.

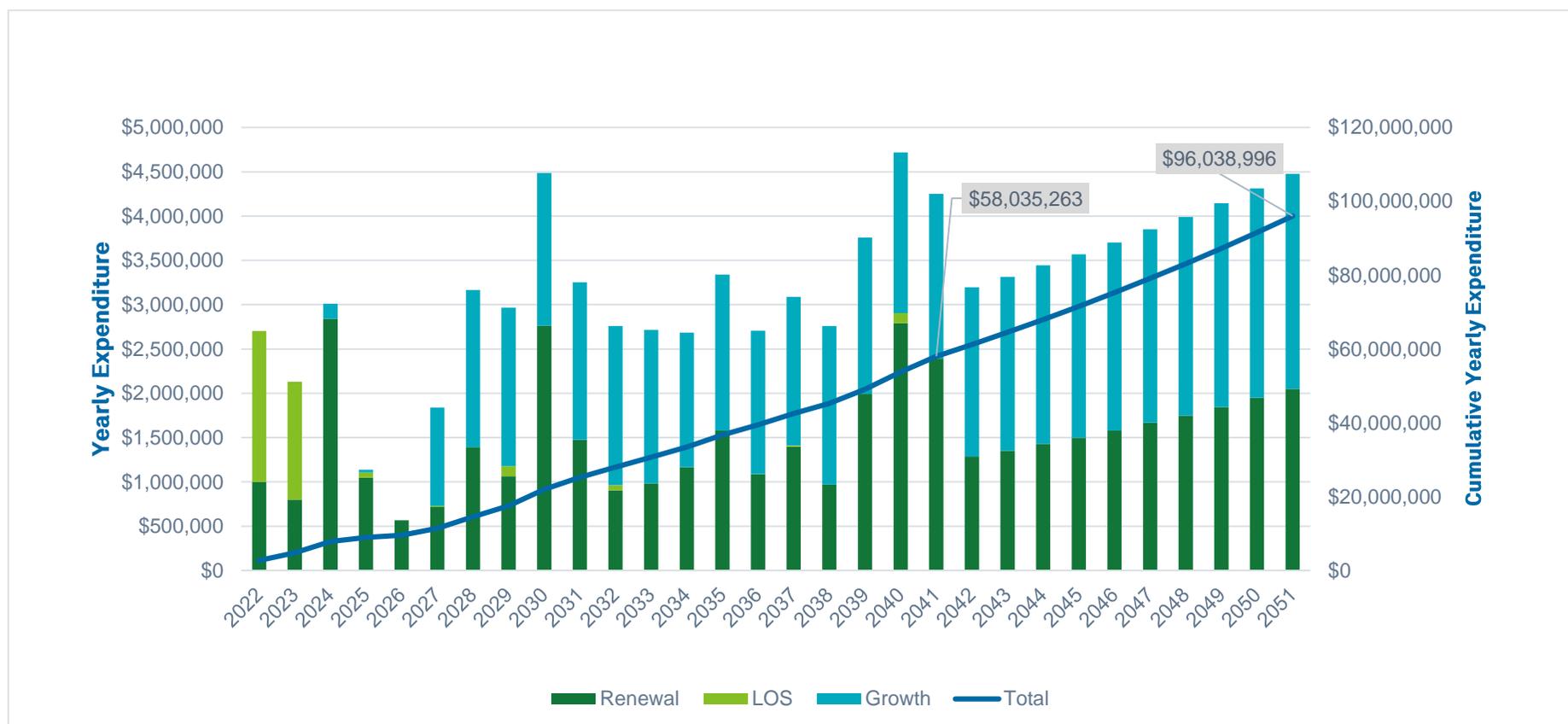


Figure 12: Community Facilities Capital Expenditure
Horowhenua District Council 2021-2041 Long Term Plan

Community Infrastructure

- **The main purpose of this activity is to provide for formal and informal recreation and play in order to meet required community outcomes, and provide safe well managed cemeteries primarily for the residents of the district.**
- **This is achieved by providing good quality and accessible open space for the use of residents and visitors, and ensuring cemeteries are well managed and have sufficient capacity to meet a range of end of life choices.**
- **This activity includes reserves, sportsfields, cemeteries, beautification, urban cleansing, memorial halls, and public toilets with the majority of services being rate-payer funded.**

Community Infrastructure Significant Issues

- The district's Parks and Reserves renewals have historically been deferred leading to a significant 'bow-wave' effect that has led to asset failures prior to replacement.
- Customer expectation is leading to an upwards pressure on provision both in terms of improvements to recreational space (sportsgrounds, reserves), and access to informal recreation i.e. walkways and cycle ways.
- In common with many other areas of Council services, Community Infrastructure is being impacted by growth with many new subdivisions vesting reserves and open space with Council.
- The effects of climate change and an increased level of environmental awareness will provide ongoing challenges to Council's Community Infrastructure portfolio, as Government moves toward a carbon zero 2050, and declared a 'climate emergency' in December 2020.
- Council has a number of Community Infrastructure Buildings requiring strengthening or demolishing under the provisions of the Building (Earthquake-prone Buildings) Amendment Act 2016.

Community Infrastructure Activity Principal and Alternative Options

Issues specific to the Community Infrastructure Activity are shown in the following tables, including the preferred and alternative options. The preferred options have been factored into the capital and operational expenditure budgets.

Significant Decisions Required

Renewals

The district's Parks and Reserves renewals between 2011 and 2016 were deferred leading to a significant 'bow-wave' effect that has led to asset failures prior to replacement. From 2016 the rate of reserve renewals was increased so

that it was largely in line with depreciation until under the influence of Covid-19, when Council decided to defer reserves renewals programme as part of the 2020-21 Annual Plan as a response to the pandemic.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Complete Renewals funding as indicated in the renewals schedule (preferred option).</p> <p>This maintains existing levels of service and ensures assets are replaced prior to failure.</p>	2021	• \$49,743,853 over 30 years
<p>Defer the asset renewals programme.</p> <p>This will negatively affect levels of service, increase customer dissatisfaction, likely exacerbate failures leading to higher end costs.</p>	2021	• \$49,743,853 over 27 years

Customer Expectation

Whilst the Community Infrastructure portfolio is well received by residents (generally 93% satisfied), there is a growing interest in developing local Community Infrastructure. Specifically, Waitārere Beach Domain, Holben Reserve, improving facilities at Donnelly Park, Playford Park, and the Manakau Domain.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Complete business case for strategic parks upgrades. Meets customer expectation, facilitates the rationalisation of sportsfields in Levin, is in line with a number of Council's strategic plans, and reduces growth related pressure for the term of the plan.</p>	2021	• \$24,991,625 over 30 years
<p>Defer decisions on the business case for strategic parks upgrade. Does not meet customer expectations, risks a loss of service in an expanding market, raises the likelihood of customer dissatisfaction, and condenses the timeframe and cost in which to accomplish the works.</p>	2021	• \$24,991,625 over 30 years
<p>Cancel some or all of the works. Fails to address customer expectations, reduces LoS, does not allow for growth, and likely to result in customer dissatisfaction.</p>	2021	• 0-\$24,991,625 over 30 years

Growth

Another significant impact for the Community Infrastructure portfolio is the projected growth of the Horowhenua. It is anticipated that population will lift from the current 35,000 persons in 2020/2021 to in excess of 80,000 by 2051. There are clear implications for Council in this regard with a significant number of new subdivisions occurring which has three downstream impacts being:

1. Additional strain on an already fatigued asset;
2. The need to provision extra recreational facilities for an increasing population;
3. Additional cost to maintain an intensifying and growing asset base.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Fund the Capital Growth budget (preferred option). Deals with growth-related pressures, consolidates and improves Level of Service.</p>	2021	• \$ 25,937,163 over 30 years
<p>Defer elements of the Capital Growth budget to 2024. This approach would see ongoing pressure in the Community Infrastructure portfolio and is likely to result in less satisfaction with the services as the impacts of growth materialise. It would also see similar costs develop over the course of the plan, accompanied by higher peaks in loan requirements in what might not be as advantageous to borrowing as is current. This would increase the overall costs of debt funding.</p>	2021	• \$25,937,163 over 30 years
<p>Fund only some elements of the capital growth budget. This approach will provide an uneven approach to managing growth, leading to pressure points in some areas, likely an increase in customer dissatisfaction, and may become a demotivator to would-be new residents.</p>	2021	• 0-\$25,937,163 over 30 years

Environmental Awareness

In an increasingly environmentally aware society, global warming and environmental sustainability have achieved an ever increasing profile. Council can assist in reducing the impacts of global warming and maintaining a sustainable environment in a number of ways.

Council has for a number of years been developing coastal resiliency by replacing marram dunes which have low resiliency

to localised coastal erosion with native sand-binding species such as Spinifex and Pingau. It also manages a significant number of street and park trees which act as a carbon sink. However, Council's street tree stock which was planted within a relatively narrow timeframe is reaching the end of its useful life. There is as such a need to develop a tree planting and fell and replant programme.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Programmed beautification is undertaken, as is stream management works, and forestry felling and replant at Target Reserve (preferred option).</p> <p>The programme builds resiliency into the urban tree canopy, foreshore and streams (via riparian planting), thereby improving bio-diversity and environmental outcomes. The replanting of Council's limited forestry holding mitigates issues as they relate to the emissions trading scheme, and maintains the balance of Council's carbon credits.</p>	2021	• \$3,385,263 over 30 years
<p>Works relating to environmental improvements are deferred until 2024.</p> <p>This approach would see ongoing pressure in the Community Infrastructure portfolio and is likely to result in less satisfaction with the services. It would also see similar costs develop over the course of the plan, accompanied by higher peaks in loan requirements in what might not be as advantageous to borrowing increasing overall costs of debt funding.</p>	2021	• \$3,385,263 over 30 years

Regulation and Legislation

Changes to the Building Act that came in to force on 1st July 2016 divided New Zealand into areas of risk for seismic activity; those areas being high, medium, and low. Horowhenua falls under the high risk category. In accordance with the legislation Council completed an assessment of its buildings in 2014 and identified a number of earthquake prone buildings it owns including –

1. Grandstand at Levin Domain;
2. Grandstand at Shannon Domain;
3. Levin Memorial Hall;
4. Foxton Memorial Hall;
5. Coronation Hall (Mavtec).

Subsequently Council resolved to dispose of the Foxton Memorial Hall and that a ten year lease would be granted to Mavtec to pursue and complete earthquake strengthening via a Lotteries bid. However, this still leaves the strengthening or demolishing of the two grandstands and the Levin Memorial Hall outstanding (the Levin Memorial Hall is to serve as a small business incubator in the town centre).

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Funds are provided to complete the necessary earthquake strengthening for the grandstands and Levin Memorial Hall (preferred option).</p> <p>This provides for maintaining existing levels of service with works to be completed between 2021 and 2024 but does not meet potential growth targets.</p>	2021	• \$4,856,733, prior to 2031
<p>Funds are provided to demolish and remove all three structures.</p> <p>This reduces the LoS at Levin and Shannon Domain and removes any option for Council to make a refurbished community hall available as a small business incubator.</p>	2021	• \$500,000 – \$650,000 prior to 2031
<p>Defer any decision until 2024/2025.</p> <p>This option defers the decision.</p>	2021	• \$4,856,733 prior to 2031

Community Infrastructure Operating Expenditure

Figure 13 shows the operating expenditure for the Community Infrastructure activity. Figures have been adjusted for inflation. The proposed 30 year operating expenditure is **\$279,848,258**.

The largest proportion of the operating costs for Community Infrastructure relate to the maintenance of Reserves (including

playgrounds) (44.2%), which is understandable as it is this sub-activity that will be impacted most by future subdivisions as a symptom of growth.

The second largest operational cost is in relation to Sportsfields.

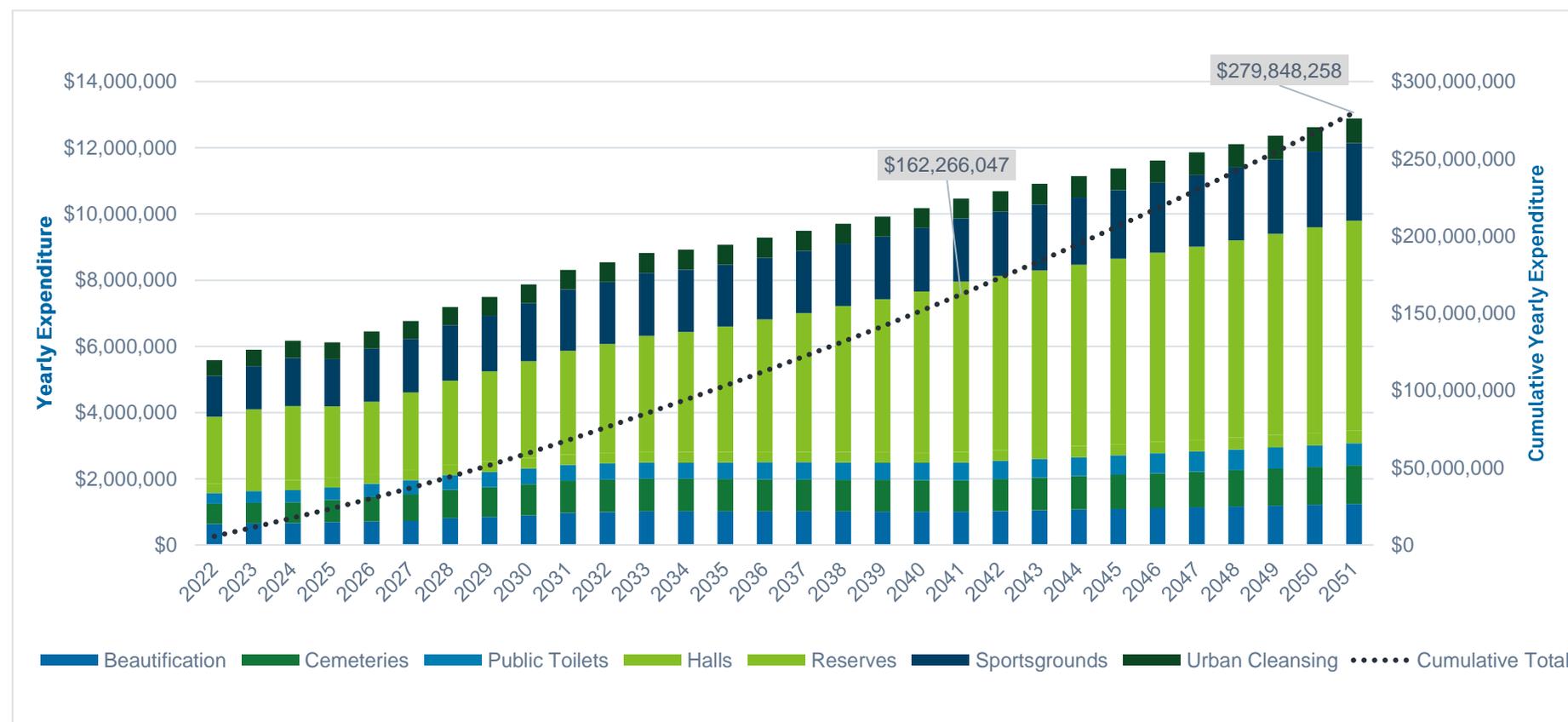


Figure 13: Community Infrastructure Operating Expenditure

Community Infrastructure Capital Expenditure

Figure 14 shows the proposed capital expenditure for the Community Infrastructure activity. Figures have been adjusted for inflation. The proposed capital expenditure over the 30 year period is **\$128,912,601**.

The greatest capital expenditure for Community Infrastructure across the 30 year period arises from the Reserves. The biggest proportion of spending is on levels of service projects, followed by renewals.



Figure 14: Community Infrastructure Capital Expenditure

Property

- **The main purpose of this activity is to provide fit for purpose facilities and land to deliver Council Activities that meet required community outcomes.**
- **This is achieved by providing good quality and accessible facilities and land that meet current and future demand.**
- **This activity includes: camp grounds; commercial property; Council building; Endowment Property; General Property; and Residential Housing.**
- **This activity also allows for managing building maintenance in a range of other activities including Infrastructure and Community Facilities, and managing building renewals in Infrastructure (primarily three waters and solid waste).**
- **This activity also includes managing maintenance and renewals of Council's Fleet.**

Property Significant Issues

- Council has a significant quantity of non-core property which does not perform well in terms of economic or community outcomes, and has as such resolved (LTP 2018-2038) to get down to core property only by 2028. However many of its properties are encumbered via legislation that will need revoking/lifting to enable sale.
- Council has a diverse portfolio of core and non-core property. There is a need to ensure that renewals are completed on core property to ensure the property is 'fit for purpose', and complete necessary works on non-core properties until they are disposed of.
- Council has a number of Community Infrastructure Buildings requiring strengthening or demolishing under the provisions of the Building (Earthquake-prone Buildings) Amendment Act 2016.

Property Principal and Alternative Options

Issues specific to the Property Activity are shown in the following tables, including the preferred and alternative options. The preferred options have been factored into the capital and operational expenditure budgets.



Significant Decisions Required

Renewals Funding

Historically, Property renewals have outstripped depreciation potentially leading to a poor focus on core property required to achieve Community Outcomes. Completion of the renewals programme:

- Reduces the likelihood of catastrophic failure.
- Maintains Level of Service.
- Minimises downstream costs.
- Maximises the assets life.
- Retains the value of the asset.
- Facilitates the appropriate depreciation cycle.

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Complete Renewals funding as indicated in the renewals schedule (preferred option).</p> <p>This maintains existing levels of service and ensures assets are replaced prior to failure.</p>	2021	<ul style="list-style-type: none"> • \$35,754,413 over 30 years
<p>Defer the asset renewals programme.</p> <p>This will negatively affect level of service, increase customer dissatisfaction, likely exacerbate failures leading to higher end costs, and potentially introduce a random factor in managing the financial costs of delivering the service over the term of the plan.</p>	2021	<ul style="list-style-type: none"> • \$35,754,413 over 30 years

Seismic Strengthening

The Building (Earthquake-prone Buildings) Amendment Act 2016 requires Council to complete earthquake strengthening of its earthquake prone buildings by June 2031. Council is in the process of strengthening the Foxton Beach Surf Life Saving Club but there is still the need to resolve the issue around its

surf life-saving club at Waitārere Beach. Council is currently completing a feasibility study for the surf life-saving club building and will make a formal decision on an option once the study has been completed.

Council has resolved and made the decision to move forward with the demolition and rebuild of the surf life-saving club at Waitārere Beach (preferred option).

Principal and Alternative Options	Year decision needs to be made	Cost Impact
<p>Funds are provided to demolish and rebuild the surf life-saving club at Waitārere Beach (preferred option).</p> <p>This provides for maintaining existing level of service with works to be completed between 2021 and 2024 and will meet additional demand brought on by growth.</p>	2021	<ul style="list-style-type: none"> • \$3.3M prior to 2023/24.
<p>Funds are provided to demolish and remove the surf life-saving Club at Waitārere Beach but not build a new facility.</p> <p>This reduces current LoS and is contrary to earlier Council direction to support the building of a new surf life saving club.</p>	2021	<ul style="list-style-type: none"> • \$30,000 – \$60,000 prior to 2023/24.
<p>Defer any decision until 2024/2025.</p> <p>This option defers the decision.</p>	2021	<ul style="list-style-type: none"> • \$0

Property Operating Expenditure

The operating expenditure for Property is shown as Figure 15. Figures have been adjusted for inflation. The expenditure over the 30 year period is **\$106,750,227**. The majority of this expenditure is on general property. Council sold its pensioner housing in 2017 and the majority of its commercial portfolio in 2019. The last commercial property (Focal Point) will

be sold by July 2021.

Property operating expenditure is composed of the sub-activities General Property; Council Building; Campgrounds; and Endowment Property. In addition, the activity also allows for the maintenance of Halls; Public Toilets; Aquatic Centres; Community Hubs; and Libraries which are part of the Community Facilities portfolio. It

similarly carries out maintenance on a number of infrastructure properties. Operational budgets include grounds maintenance; building cleaning; cleansing and hygiene services; heating, ventilation and air-conditioning; and means of escape and access to public buildings.

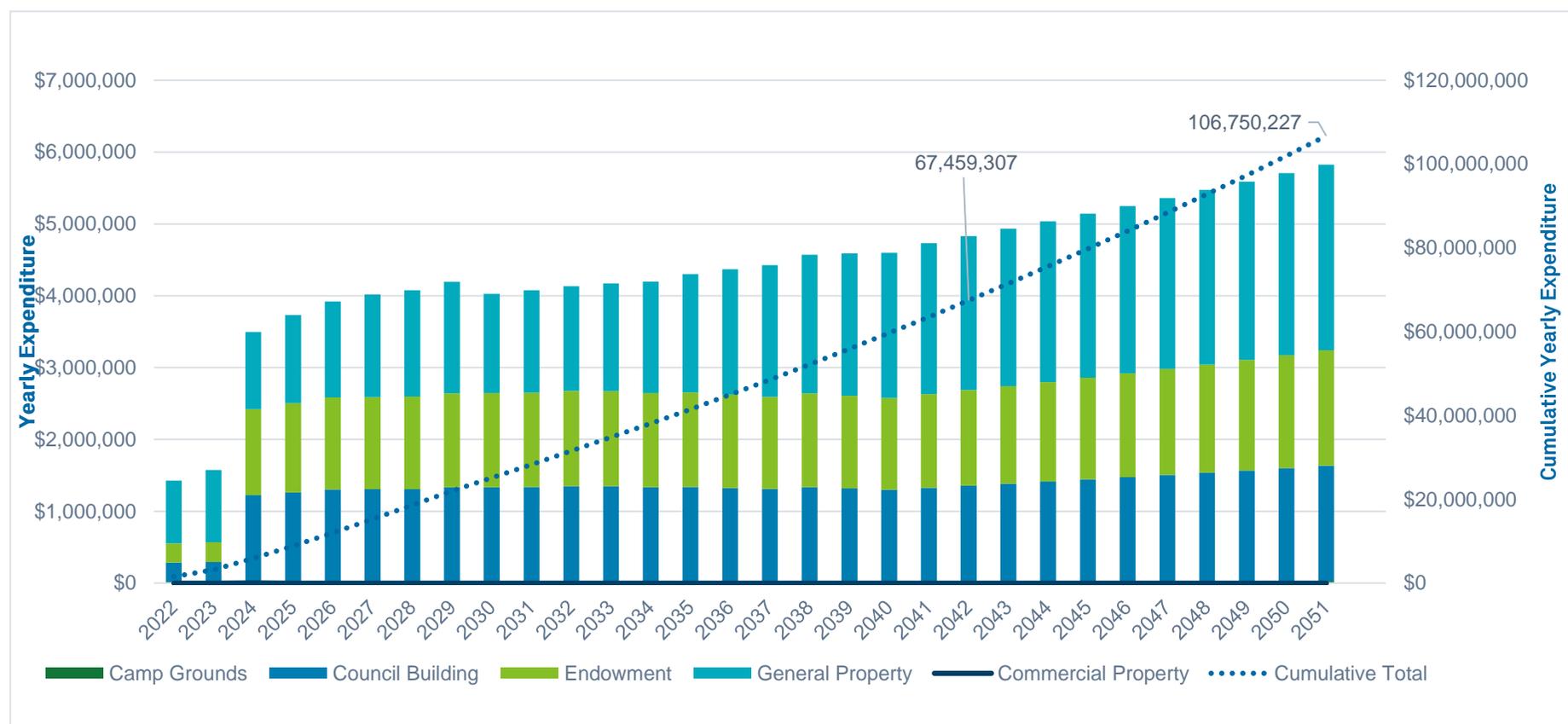


Figure 15: Property Operating Expenditure

Property Capital Expenditure

Figure 16 shows the projected Capital Expenditure for the Property activity. Figures have been adjusted for inflation. The proposed capital expenditure of the 30 year period is **\$39,510,595**. The largest proportion of capital expenditure is on renewals, with limited

budget for growth. No allowance has been made for Level of Service improvements in the capital expenditure profile for property over the course of the plan. This represents Council's desire to dispose of non-core property.

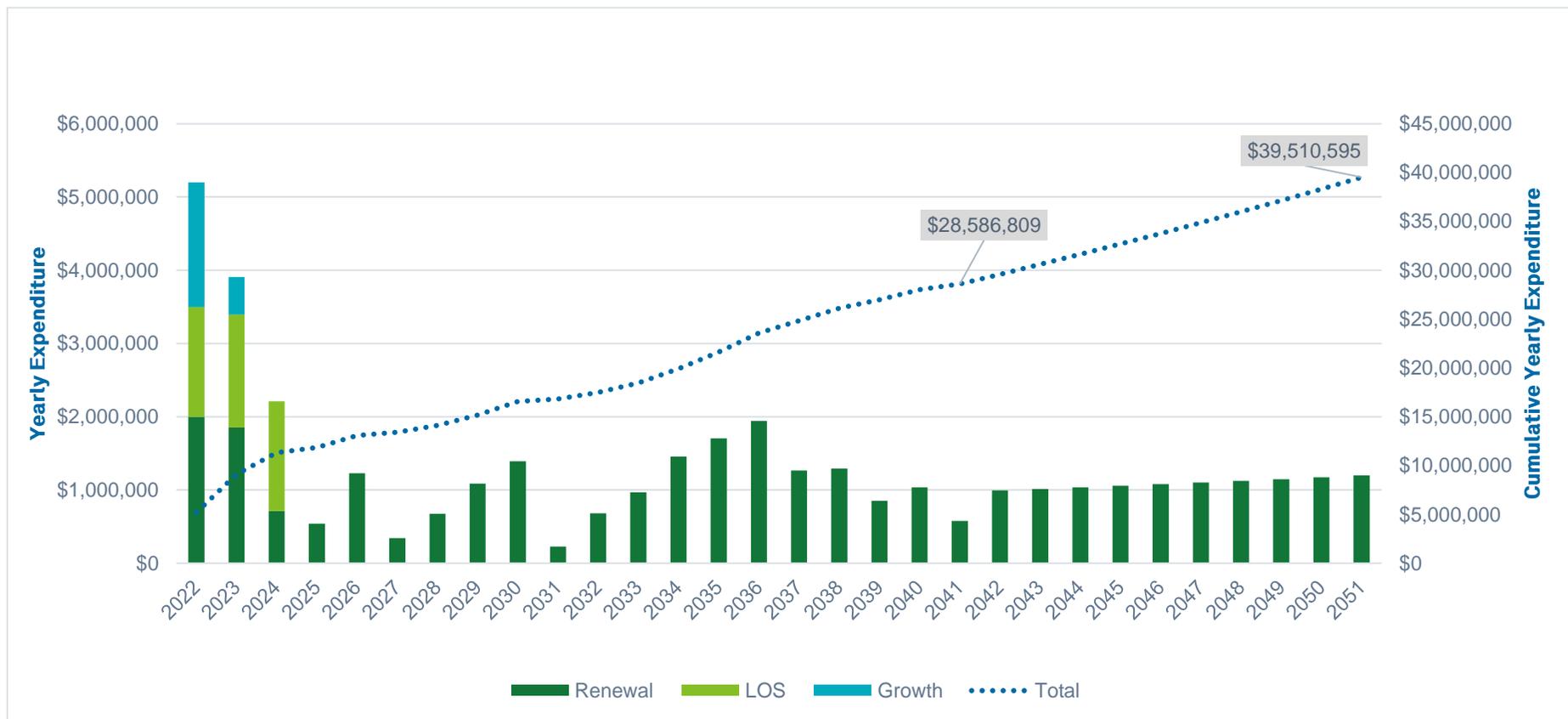


Figure 16. Property Capital Expenditure.

Total Cost of Most Likely Scenario

Figure 17 shows the most likely total operating expenditure for all activities covered by this Infrastructure Strategy.

The proposed operating expenditure is **\$2,740** million for the 30 year period.

Figures have been adjusted for inflation.

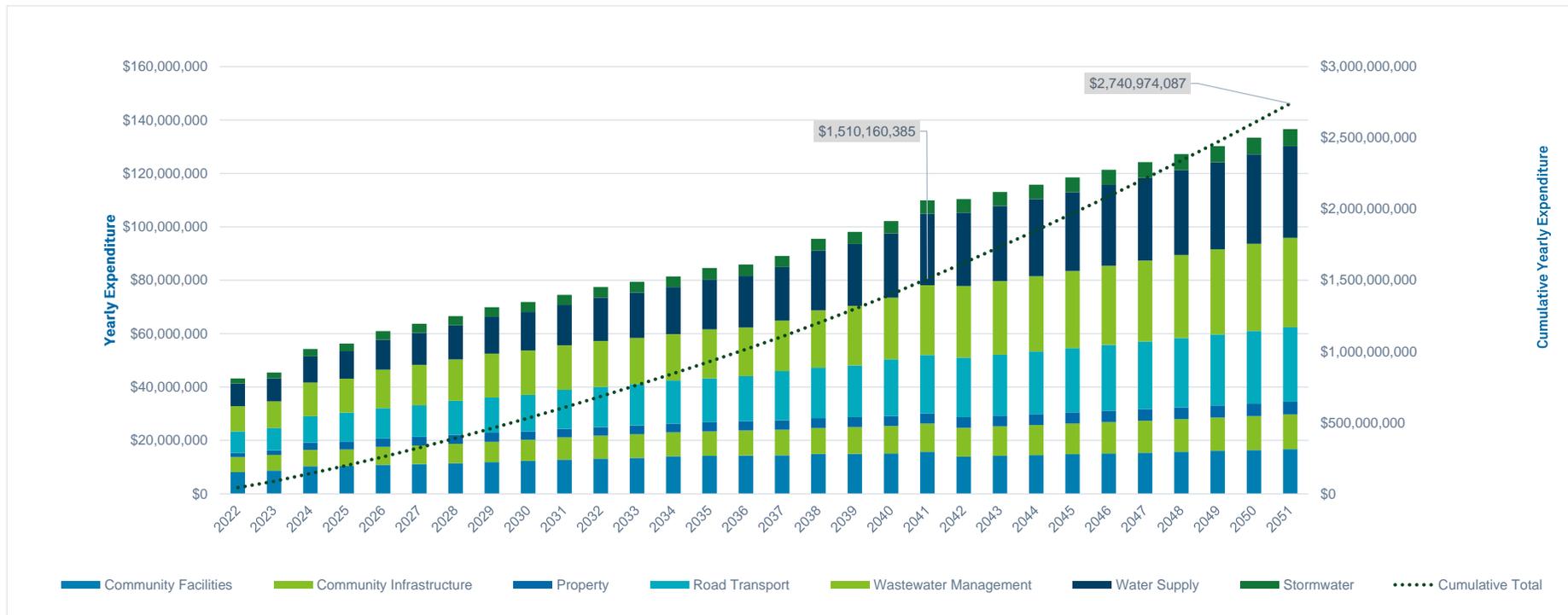


Figure 17: Projected Operating Expenditure - All activities included in this Infrastructure Strategy

Most Likely Capital Cost Scenario

Figure 18 shows the most likely total capital expenditure for all activities covered by this Infrastructure Strategy. The total capital expenditure is **\$1,528** million for the 30 year period.

Figures have been adjusted for inflation.

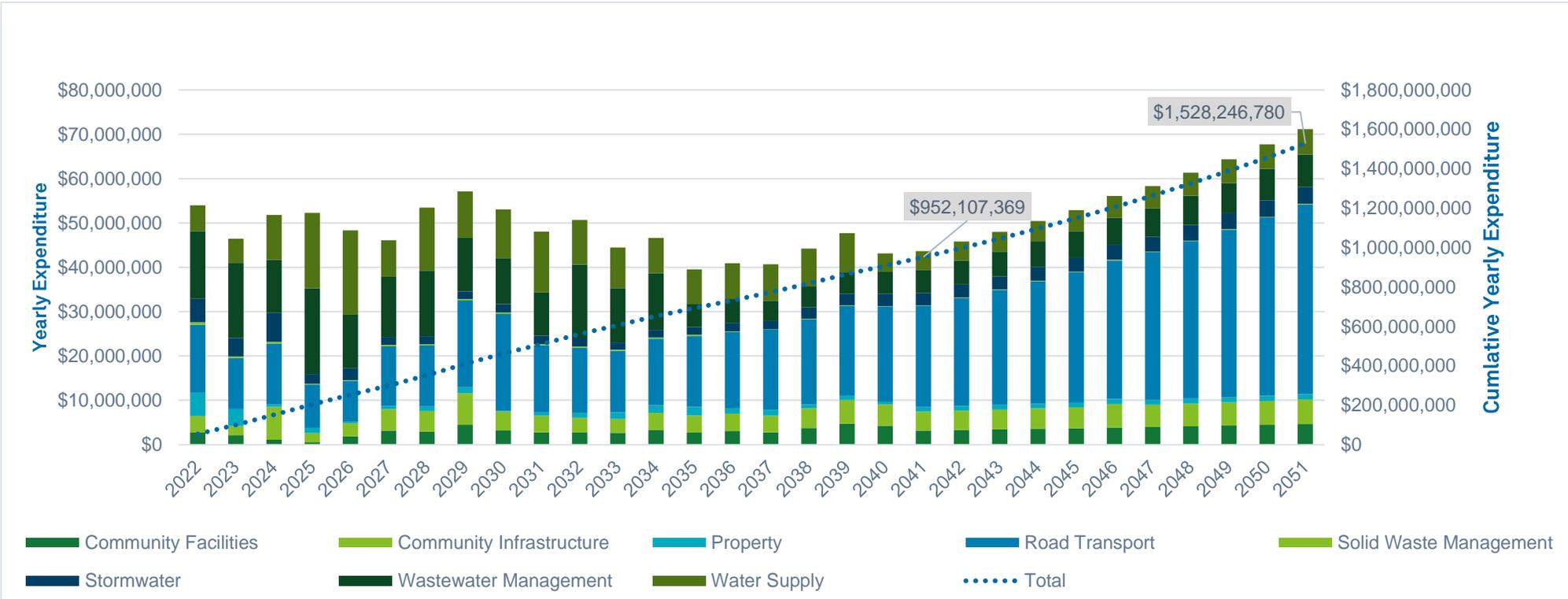


Figure 18: Projected Capital Expenditure - All activities included in this Infrastructure Strategy

Assumptions

This Infrastructure Strategy is based on a number of assumptions. These assumptions include:

- Population
- Demographics
- Households
- Levels of Service
- Data and Information
- Lifecycle of Significant Assets

Population

The Horowhenua District's population has been growing at a rate of 2% since 2014 (StatsNZ, 2020).

Population is influenced by factors including employment opportunity, economic development, age and change in age profile, and fertility and mortality rates. Changes in population are difficult to predict, but are vital to understand future requirements for infrastructure services.

Council has adopted the 95th percentile from the Horowhenua Socio-Economic Projections, prepared by Sense Partners. The 95th percentile projections identify the annual average

population growth rate will be:

- 2.6% per annum from 2021 until 2031
- 2.9% per annum 2031 until 2041
- 2.9% per annum 2041 until 2051

The population growth projections are shown in Table 1.

There is a moderate risk that the population growth across the Horowhenua District is at a significantly different rate (much higher or lower) than assumed. The level of this uncertainty will increase over the lifespan of the LTP.

Table 1: Population Growth Over 30 Years

LTP Year	Financial Year	Population	LTP Year	Financial Year	Population
	19/20	35,887	Yr 15	35/36	54,362
	20/21	36,708	Yr 16	36/37	55,674
Yr 1	21/22	37,532	Yr 17	37/38	57,481
Yr 2	22/23	38,431	Yr 18	38/39	59,010
Yr 3	23/24	39,360	Yr 19	39/40	60,772
Yr 4	24/25	40,368	Yr 20	40/41	62,716
Yr 5	25/26	41,444	Yr 21	41/42	64,933
Yr 6	26/27	42,621	Yr 22	42/43	66,664
Yr 7	27/28	43,810	Yr 23	43/44	68,216
Yr 8	28/29	44,968	Yr 24	44/45	69,599
Yr 9	29/30	46,202	Yr 25	45/46	71,965
Yr 10	30/31	47,355	Yr 26	46/47	74,135
Yr 11	31/32	48,562	Yr 27	47/48	76,824
Yr 12	32/33	49,905	Yr 28	48/49	79,243
Yr 13	33/34	51,246	Yr 29	49/50	81,583
Yr 14	34/35	52,792	Yr 30	50/51	83,741

Demographics

The majority of growth in the Horowhenua District's population will occur in the 15-39 years old and 40-34 years old ranges. This assumption is based on the 95th percentile from the Horowhenua Socio-Economic Projections, prepared by Sense Partners.

By June 2051, the age profile of the Horowhenua population will be:

- 0-14 years old: 20%
- 15-39 years old: 29%
- 40-34 years old: 31%
- 65 years old or over: 20%

Each age group will increase by the following number of people between June 2021 and June 2051:

- 0-14 years old: 9,853
- 15-39 years old: 14,164
- 40-34 years old: 14,654
- 65 years old or over: 8,030

There is a low - moderate risk that growth across age profiles will occur at a significantly different rate (much higher or lower) than assumed.

Population Age Trend

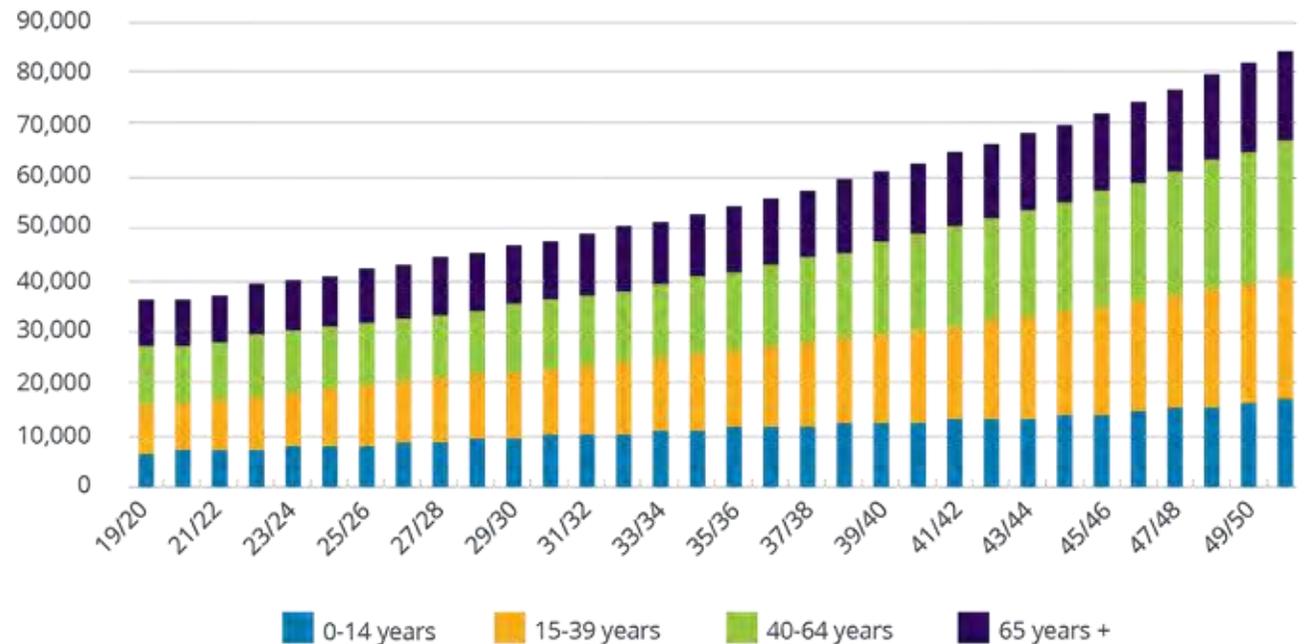


Figure 19: Population Age Trend to 2051.

Table 2: Population Age Trend to 2051

LTP Year	Financial Year	0-14 years	15-39 years	40-64 years	65+ years
	19/20	6,746	9,329	11,269	8,981
	20/21	7,014	9,329	11,269	8,981
Yr 1	21/22	7,014	9,786	11,309	9,176
Yr 2	22/23	7,513	10,536	11,550	9,509
Yr 3	23/24	7,777	10,874	11,629	9,752
Yr 4	24/25	8,036	11,208	11,756	9,975
Yr 5	25/26	8,363	11,550	11,892	10,231
Yr 6	26/27	8,676	11,906	12,041	10,497
Yr 7	27/28	9,015	12,208	12,249	10,771
Yr 8	28/29	9,378	12,511	12,467	11,027
Yr 9	29/30	9,708	12,824	12,776	11,250
Yr 10	30/31	10,023	13,122	13,111	11,500
Yr 11	31/32	10,302	13,415	13,520	11,723
Yr 12	32/33	10,621	13,728	13,894	11,981
Yr 13	33/34	51,246	Yr 29	49/50	81,583
Yr 14	34/35	11,221	14,540	14,743	12,504
Yr 15	35/36	11,444	15,016	15,203	12,759

LTP Year	Financial Year	0-14 years	15-39 years	40-64 years	65+ years
Yr 16	36/37	11,698	15,504	15,697	13,017
Yr 17	37/38	11,920	16,076	16,243	13,271
Yr 18	38/39	12,180	16,626	16,852	13,518
Yr 19	39/40	12,536	17,166	17,500	13,781
Yr 20	40/41	12,830	17,791	18,171	14,022
Yr 21	41/42	13,070	18,461	18,845	14,247
Yr 22	42/43	13,304	19,044	19,602	14,477
Yr 23	43/44	13,537	19,670	20,317	14,744
Yr 24	44/45	13,976	20,228	21,060	15,034
Yr 25	45/46	14,317	20,837	21,844	15,316
Yr 26	46/47	14,832	21,532	22,612	15,638
Yr 27	47/48	15,341	22,155	23,397	15,997
Yr 28	48/49	15,833	22,859	24,212	16,371
Yr 29	49/50	16,271	23,423	25,086	16,783
Yr 30	50/51	16,867	23,950	25,963	17,206

Households

There will be an increase of 21,145 dwellings in the Horowhenua District between June 2021 and June 2051.

This assumption is based on the 95th percentile from the Horowhenua Socio-Economic Projections, prepared by Sense Partners.

The district is assumed to have 16,606 dwellings at June 2021. This figure is based on:

- Census 2018: 15,804 dwellings
- Building consents issued for 2018/2019: 271
- Building consents issued for 2019/2020: 266
- Forecast for 2020/2021: 265

It is assumed the Dwelling Occupancy Rate for the district will be approximately 90%.

The dwelling occupancy rate for the 2018 Census was 85%. However, due to the district's rapid growth, an assumed increase in permanent residents at the coastal settlements and

increased pressure on housing the occupancy rate is anticipated to increase.

Of the new dwellings constructed there will be:

- Occupied: 33,976
- Unoccupied: 3,775

This growth will result in an average of dwellings being constructed per year as follows:

- 2021 – 2031: 434
- 2031 – 2041: 686
- 2041 – 2051: 994

Table 3 shows the forecasted number of households (occupied and unoccupied) for the life of this LTP.

There is a moderate risk that household growth will occur at a significantly different rate (much higher or lower) than assumed.

Table 3: Number of households to 2051

LTP Year	Financial Year	Households	LTP Year	Financial Year	Households
	19/20	16,341	Yr 18	38/39	26,175
	20/21	16,606	Yr 19	39/40	26,981
Yr 1	21/22	16,958	Yr 20	40/41	27,815
Yr 2	22/23	17,299	Yr 21	41/42	28,658
Yr 3	23/24	17,668	Yr 22	42/43	29,531
Yr 4	24/25	18,073	Yr 23	43/44	30,413
Yr 5	25/26	18,508	Yr 24	44/45	31,388
Yr 6	26/27	18,932	Yr 25	45/46	32,365
Yr 7	27/28	19,426	Yr 26	46/47	33,406
Yr 8	28/29	19,906	Yr 27	47/48	34,461
Yr 9	29/30	20,414	Yr 28	48/49	35,555
Yr 10	30/31	20,951	Yr 29	49/50	36,644
Yr 11	31/32	21,497	Yr 30	50/51	37,751
Yr 12	32/33	22,055			
Yr 13	33/34	22,655			
Yr 14	34/35	23,308			
Yr 15	35/36	23,951			
Yr 16	36/37	24,638			
Yr 17	37/38	25,384			

² Based on the average of building consents issued for the past 3 years.

Levels of Service

Level of Service (LoS) targets included in activity statements are measured and monitored continuously and reported to Department of Internal Affairs and part of Finance, Audit and Risk committee reports. There are annual Customer Satisfaction surveys carried out and reported for each activity. Council review LoS performances on an ongoing basis. The result of Customer Satisfaction surveys are used in Activity Management Plans and any gaps identified are addressed.

This Strategy assumes Levels of Service targets proposed in the Asset Management Plans will not change. Customer expectations are increasing, putting pressure on levels of service. Planning is being undertaken to make improvements to Council's infrastructure assets, however, identified levels of services will not change.

The level of uncertainty for this assumption is moderate.



Data and Information

Infrastructure management is working to improve data and information quality. This is needed to establish a more reliable basis for decision making and proposed actions outlined in this Strategy. Council has actively conducted CCTV and condition assessment of pipes to have a better understanding of underground assets. The assumptions related to asset data are that:

- Council will continue to improve processes to better capture asset data, including true operations and maintenance costs;
- Council will update and refine the required renewal expenditure based on the improved data;
- The renewals programmes will continue to be based on condition and performance monitoring; and

- Asset renewal profiles and depreciation rates/ calculations will be reviewed on a regular basis as improved information becomes available.

An assessment of confidence in the data underlying the current Asset Management Plans is shown in Table 5.

Table 4: Asset Confidence Grade Description

Grade	Confidence Description
A Highly reliable.	Data based on sound records, procedure, investigations and analysis, documented properly and recognized as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$.
B Reliable.	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$.
C Uncertain.	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$.
D Very uncertain.	Data based on unconfirmed verbal reports and/or cursory inspection and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy is $\pm 40\%$.
E Unknown.	None or very little data held.

Table 5: Asset Data Confidence Rating

Asset Class	Data Confidence Grade	Method of Assessment
Water	<p>C overall – Data based on sound records, investigations and analysis but has minor shortcomings in treatment plants. All critical asset and majority of non-critical assets information have been captured within water reticulation system. Regular condition assessment are performed via continuous leak detection and 24/7 SCADA monitoring of flow and pressure in our biggest water reticulation network.</p> <p>As for treatment plants, all critical and non-critical assets information have been captured at a high level. Above-ground assets are continuously visually inspected. Feedback from operation and maintenance team are captured continuously. There is an improvement plan for asset-register and as-build at a component level to improve asset data capture and valuation.</p> <p><i>Asset data (GIS) is continuously being updated to capture monthly work orders and incidents.</i></p>	Asset data analysis
Wastewater	<p>C overall – Data based on sound records and investigations but has minor shortcomings in treatment plants. All critical asset and majority of non-critical assets information have been captured within reticulation system. Regular condition assessment are performed via CCTV and visual inspections (pump stations).</p> <p>As for treatment plants, all critical assets information have been captured at a high level. Above-ground assets are continuously visually inspected. Feedback from operation and maintenance team are captured continuously. There is an improvement plan for asset-register and as-build at a component level to improve asset data and valuation.</p> <p><i>Asset data (GIS) is continuously being updated to capture monthly work orders and incidents.</i></p>	Asset data analysis
Stormwater	<p>B – Data based on sound records, but has minor shortcomings. All critical asset information has been captured on GIS. Regular condition assessment are performed, for example, CCTV and Inflow and Infiltration surveys.</p> <p><i>Asset data (GIS) is continuously being updated to capture monthly work orders and incidents.</i></p>	Asset data analysis

Note: This rating is not a condition assessment, Council has a separate condition assessment process to prioritise work programmes.

Asset Class	Data Confidence Grade	Method of Assessment
Land Transport	<p>B – Data based on sound records, but has minor shortcomings. All critical asset information has been captured. Regular condition assessments are undertaken. The NZTA ONRC PMRT Asset Management Data Quality Report for 2019/20 gave our aggregated Overall Percentage Result of data quality metrics at 80%, for data at the Expected Standard or Minor Issues, which correlates with the B assessment given.</p> <p><i>Asset data is being updated with work orders on monthly basis. All data updates are quality assurance checked to a minimum of 5%.</i></p>	Asset data analysis
Community Infrastructure	<p>B – Data based on sound records, but has minor shortcomings. All asset information is captured and used to generate renewal forecasts based on well-established and accurate component life-cycles from a national database. Renewal forecasts from the asset datasets reflect the value of need, and component costs are amended annually to reflect changes in cost of supply and labour. Data is audited before inclusion onto the asset database following renewals. Asset information is reviewed annually by an independent organisation.</p> <p><i>Condition assessments are ongoing and are reviewed by an independent organisation every fifth year.</i></p>	Asset data analysis
Property	<p>B – Data based on sound records, but has minor shortcomings. All asset information is captured and used to generate renewal forecasts based on well-established and accurate component life-cycles from a national database. Renewal forecasts from the asset datasets reflect the value of need, and component costs are amended annually to reflect changes in cost of supply and labour. Data is audited before inclusion onto the asset database following renewals. Asset information is reviewed annually by an independent organisation.</p> <p><i>Condition assessments are ongoing and are reviewed by an independent organisation every fifth year.</i></p>	Asset data analysis
Community Facilities	<p>B – Data based on sound records, but has minor shortcomings. Full independent condition assessments have been undertaken for Community Facilities and this data has directly influenced Capital renewal and maintenance budgets for the 2021-41 LTP. This is the first assessment of this nature for Aquatic Facilities and all critical assets have been captured (plant, pool tank, building and hardware). The data will be independently reviewed every three years in line the Long Term Planning cycles.</p> <p><i>Asset Data is updated annually and full condition assessments undertaken in line with LTP cycles.</i></p>	Asset data analysis

Council is continuously updating asset data condition. All renewals are planned not just on the basis of age but also consider the material type, criticality, incident history, asset performance and the road sealing programme. The expected useful life of each asset type in each Activity is also set in the Asset Management Plans and the Asset Valuation to help determine how long the assets are expected to last for.

A data confidence grading system is used for describing the confidence Council has in the accuracy of the asset data; i.e. if the data was taken from “as-built” drawings and robust asset register, the data would have a high confidence rating but if most of the data is based on estimate, the confidence would be low.

For water and wastewater treatment plants, an improvement plan has been put in place to improve asset register at a component level and as-built. This would help with asset data confidence (currently sitting at C), maintenance and valuations. The implication of the data confidence rating of C for the water and wastewater treatment plants is that there may be unplanned maintenance or renewal costs, or renewals may need to occur earlier or later than planned.

Asset lifecycle – asset condition and asset data confidence of our assets are extensively covered in Activity Management Plans. Performance of our network assets are continuously measured by Level of Service targets, asset data collection are continuously collected (CCTV in wastewater/stormwater pipelines and water leak detection and pressure/flow monitoring via pressure zones in water supply network). Also improvement plans are in place to improve asset data confidence levels.

Lifecycle of Significant Assets

These tables set out the asset lives in years used for each asset type. The asset lives are used to set the depreciation rates for each asset and calculate the Depreciated Replacement Cost (book value) of each asset portfolio. They are also used to set the default renewal intervals for each asset where condition and performance levels are not known.

 Water	
Asset Type	Life
Treatment	1-100
Air-valve	25
Borehole	40
Hydrant	60
Intake	60
Junction	60
Lateral	30-100
Meter	20
Pipe	30-100
Pump Station	100
Pump Station Mechanicals	15
Backflow Preventer	20
Service Meter	20
Sprinkler	10
Storage	50
Valve	60

 Wastewater	
Asset Type	Life
Treatment	1-100
Air-valve	25
Cleaning Eye	80
Junction	80
Lac	80
Lateral	60-100
Lateral Cleaning Eye	80
Manhole	80
Meter	20
Pipe	40-100
Pump Station	60
Pump Station Mechanicals	15
Storage	50
Valve	60

Stormwater

Asset Type	Life
Air-valve	25
Catchpit (sump)	80
Channel	60-100
Culvert	50-100
Detention Area	80
Inlet/Outlet	80
Junction	60
Lateral	80
Manhole	80
Pipe	40-100
Pump Station	100
Pump Station Mechanicals	15
Soak Pit	60
Soak Trench	60
Valve	60

Roading

Asset Type	Life
Crossing	100
Bridge	40-100
Crossing	50
Drainage	50-100
Footpath	20-100
Marking	1
Minor Structure	60
Railing	15-50
Shoulder	40
Sign	12
Street Light Lamp	10-25
Street Light Pole	25-50
Storm Channel	10-100
Traffic Facility	8
Road Surface	3-25
Basecourse	60

Community Facilities

Asset Type	Life
Libraries	
Lending Collection	3-9
Aquatics	
External Building Fabric	3-75
Internal Finishing	10-50
Ceiling	20-30
Fittings and Fixtures	3-30
Floor	10-30
Interior Doors	15-30
Interior Walls	50
Wall Finishes	10-50
Electrical Services	5-20
Fire Services	5-20
Lift/Hoists	5-20
Mechanical Services	5-20
Pool Structure	5-20
Sanitary Plumbing	5-20
Special Services	5-20
Pool Tanks	5-30
Filtration and Treatment System	5-30
Heating Systems	5-30
Air Supply and Extraction	3-22

Property	
Asset Type	Life
Ceilings	10 - 75
Electrical	15 - 40
External Stairs	50 - 75
External Walls	25 - 100
Fences	10 - 75
Fire Services	10 - 40
Fixtures and Fittings	5 - 75
Floor Finishes	10 - 75
Interior Doors	10 - 50
Interior Walls	18 - 25
Mechanical	7 - 35
Roof	10 - 50
Exterior Works	5 - 50
Sanitary Plumbing	20 - 50
Wall Finishes	10 - 75
Windows and Doors	10 - 50
Tanks	35 - 50
Swimming Pools	25 - 50
Special	5 - 50

Community Infrastructure	
Asset Type	Life
Bins	1 - 15
Fences	15 - 75
Electrical	15 - 25
Exterior Works - Access	5 - 50
Exterior Works - Grounds	15 - 50
External Walls	10 - 100
Fixtures and Fittings	1 - 25
Park Furniture	12 - 50
Play Equipment	5 - 50
Roof	10 - 50
Sanitary Plumbing	20 - 35
Special	12 - 50
Bollards	25
Signs	10 - 15
Sports Equipment	3 - 25
Structures	25 - 60
Windows and Doors	25 - 35
Footpath	10 - 50
Gardens	8 - 32
Gates	25 - 50
Jettys	45 - 60
Seats	1 - 15





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