

Infrastructure Strategy 2018-2048

Te Rautaki
Hanganga Metarahi

February 2018



Definitions and Interpretations

Asset Management Plan (AMPs)

A plan developed for the management of one or more infrastructure assets that combines technical, financial and other techniques over the life of the asset to provide an agreed Level of Service to the community at optimum cost.

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.

3Waters

Infrastructure that relates 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 as described under section 101A of the Local Government Act 2002.

Statement of Service Provisions (SSPs)

A requirement of the Long Term Plan is that each Group of Activities sets out the Levels of Service, costs and rationale as to why Council supplies the activity/service 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, to understand condition of our underground assets.

Long Term Plan (LTP)

Council's key strategic planning document outlining the Council's financial situation as well as the level of service Council is committed to for the activities it undertakes and capital work programme for at least ten years.

Legislation

A reference in this strategy to any law, legislation or legislative provision includes any statutory modification, amendment or re-enactment, and any subordinate legislation or regulations issued under that legislation or legislative provision.

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Introduction

“Sustainable Infrastructure for the District’s growing communities”

Horowhenua District is located in the lower North Island, which is experiencing significant population growth compared to past years.

This increased growth means the District must maintain a high standard of planning and manage cost-effective infrastructure to achieve long-term sustainability.

This document is Horowhenua District Council’s 30-year Infrastructure Strategy. It is part of a strategic planning framework including Asset Management Plans, the Long Term Plan and the Financial Strategy, which are all based on Significant Forecasting Assumptions. The Infrastructure Strategy sets out a 30-year plan for maintaining and improving the Levels of Service for:

-  **Water Supply**
-  **Wastewater**
-  **Stormwater**
-  **Land Transportation**

The Strategy’s goals and objectives align with Council’s Community Outcomes and in particular the aspirations of:



The District’s future aspirations are supported by a large investment in public infrastructure services. To continue to support the wellbeing and future growth of the District, infrastructure aspires to achieve the following goals:

- Goal 1** Ensure adequate infrastructural capacity to meet the demands of current and future generations while being affordable for the community
- Goal 2** Increase the reliability and resilience of the existing and future infrastructure
- Goal 3** Ensure sustainable use of resources and protection of critical environmental values

To support and achieve the goals of the Strategy, the 30-year objectives for managing infrastructure will ensure that:

- Levels of Service agreed in the Long Term Plan can be met. This means Council ensures the assets are capable of the required service delivery i.e. fit for purpose.
- The Levels of Service are affordable for the community. This means ensuring the most cost-effective options are used for operating, maintaining and renewing the assets. The community must be able and willing to pay for these.
- The Levels of Service are adaptable to the community’s demand for change. This means Council needs to be able to predict changes in demand for service and plan for the right of response to those changes.

Infrastructure is a service the Horowhenua District Council provides its communities, and accounts for the majority of Council’s spending. This Strategy will identify the proposed needs to achieve sustainable long-term infrastructure, the estimated costs of the proposals, and significant challenges Council may face.

Background

The Horowhenua District is on the brink of change, with new residents buying and building homes and businesses bringing new industry and offices.

Only 1-2 hours outside of Wellington, bordering Kāpiti Coast District to the south, Tararua District to the east, Palmerston North and part of Manawatu District to the north, and the Tasman Sea to the west, Horowhenua is in a prime location for substantial growth. Growth is something new to the District over the last five years and has become obvious over the past three years, increasing at a higher rate than originally forecasted in the 2015-2025 LTP. This increased growth, combined with other challenges, has brought the need for more attention to long-term sustainable infrastructure.

History

Horowhenua came into being on 1 November 1989 as part of a round of local government amalgamations. The District was made up of parts of the former authorities of Levin Borough, Foxton Borough, Shannon Borough and Horowhenua County. A considerable amount of development occurred 60-70 years ago (pre-amalgamations), meaning the District has old and aging infrastructure. In recent years Council began rigorous infrastructure upgrade programmes, making substantial improvements. Over the next 30 years the District will need to proactively replace many assets as they reach the end of their useful life.



Tanagata Whenua

Māori began to settle in the District in the 14th century. Today Council exercises functions within the rohe of:

- Muaūpoko
- Ngāti Apa
- Ngāti Raukawa
- Rangitāne

The Local Government Act 2002 requires Territorial Authorities to maintain and improve the ability of Māori to contribute to local government decision-making. Council must have regard to the relationship between Māori and their ancestral lands, water, sites, wāhi tapu and other taonga of national importance.

These relationships must be recognised and provided for by decision makers.

For many reasons, the Treaty of Waitangi considerations and the Resource Management Act (RMA) 1991 have a direct impact for long-term infrastructure management. This includes consultation required as part of the resource consent process as well as consulting with Māori on the provision of infrastructure, relating to the likes of discharging waste to land, or water extraction.

Council continues to develop a culture that strengthens its relationships with Iwi groups in the District through proactive consultation and positive engagement.

Sustainability

A key theme throughout this Strategy is Council's focus on sustainable infrastructure. This involves the challenges, proposed solutions, decisions, and actions taken to achieve long-term infrastructure solutions: Sustainable infrastructure solutions should:

- Promote the efficient and effective use of resources
- Deliver equity for present and future generations
- Avoid, mitigate and remedy any adverse effect on the environment, and
- Promote the creation of liveable communities with a sense of place and identity.

Assets Covered in this Strategy

The term infrastructure includes core assets that provide a structural foundation for the community. For Council, it specifically covers assets for:

- Water supply
- Wastewater collection, treatment and disposal
- Stormwater, and
- Land transport network.

The assets include things like:





- Network pipelines and fittings on the pipelines
- Treatment plants
- Roads, footpaths, streetlights and street signs, and
- Other assets associated with transport within the road corridor
- Drinking water supply schemes – treatment to distribution.

The value of the four asset groups is shown in Table 1. The values are as at 1 July 2016, and are expressed in millions of dollars

The questions taken into consideration to help ensure sustainable outcomes are:

- Will the type of infrastructure built or being maintained, continue to serve the Community into the future?
- Can the infrastructure be maintained or renewed given the limited resources available to the Community?
- Does the infrastructure create effects or impacts that erode the quality of our natural environment?
- Does the method of maintaining or constructing this infrastructure have local or global impacts environmentally, socially or economically?

Table 1: Core Infrastructure Replacement Costs

Activity	Category	Replacement Cost (in millions)	Depreciated Replacement Cost (in millions)
 Water Supply	Treatment	\$29.1	\$16.5
	Reticulation	\$95.9	\$46.7
 Wastewater	Treatment	\$31.1	\$22.7
	Reticulation	\$134.9	\$60.9
 Stormwater	Reticulation	\$52.9	\$35.6
 Land Transport	Road	\$250.0	\$167.2
	Facilities and Structures	\$26.9	\$12.2
	Footpaths	\$25.5	\$8.0
	Drainage	\$29.5	\$11.6

The valuations are based on the asset data available in IPS and RAMM. Council is actively updating its asset database. As part of this updating, asset conditions could be updated, and new assets found.

This affects valuations, which in turn affects annual depreciation. The ripple effect of asset data cleansing affects Council's annual operating expense and may affect funding of depreciation.



Council Activities not included

Solid Waste and Parks & Property activities and assets are not covered in this Strategy.

A Solid Waste business review is considering the future scale of Council's operation, ownership and involvement in service provision in the solid waste area. Similarly, a Property Strategy, currently being prepared, is expected to discuss options for the future ownership and provision of Property assets, both land and buildings.

Until discussions and decision-making for these two strategies are complete, there is considerable uncertainty over what assets will be owned by Council at all. For now, the scale of overall assumptions over such a long planning horizon outweighs the benefit of discussing these activities in this Strategy.

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.

Legislative Framework

“Services provided by infrastructure assets today must be sustainable to meet the future and growing demands of the community”

Section 101B of the Local Government Act (LGA) 2002 and its amendments requires each local authority to prepare and adopt an Infrastructure Strategy as part of its Long Term Plan. This strategy is required to cover a period of at least 30 consecutive financial years.

The Infrastructure Strategy will help the Council and the community make informed decisions over the next three to ten years, and will put the Council in a better position to understand and plan for major investments that may be required in the next 30 years. District-wide, proposed expenditure on these activities for the planning period is presented later in this Strategy.

In complying with these requirements, the Infrastructure Strategy identifies:

- Significant infrastructure issues and the actions to be taken to address the gaps in both the shorter and longer term,
- Options and associated expenditures for managing them over the period covered by the Strategy, considering factors that impact on the nature and cost of infrastructure provision, and
- The key planned projects to deliver the infrastructure to enable growth.

As the demand for additional or improved infrastructure increases, the biggest challenge

facing local authorities today is getting the funds needed to upgrade ageing or obsolete infrastructure, and to build new infrastructure to meet increased levels of service and growth. Proposals to meet each of these challenges are presented later in this Strategy.

It is important to identify where there are infrastructure gaps and which gaps have a high priority, so resources and efforts are focused on these first. Council's Levels of Service have been developed to help define and identify the key strategic priorities around our infrastructure. They will identify what infrastructure is important to the community and what is needed to meet the Council's legislated obligations.

The key pieces of legislation and regulations that determine Council's legislative obligations for infrastructure include, but are not limited to:

- Health Act 1956,
- The Health (Drinking Water) Amendment Act 2007 (replaces the Water Protection Regulations 1961),
- Local Government Act 2002,
- Building Act 1994,
- Resource Management Act 1991,
- Health and Safety at Work Act 2015
- New Zealand Drinking Water Standards (2005) revised 2008,

- Civil Defence Emergency Management Act 2002,
- Public Works Act 1981,
- Horizons Regional Council's One Plan.

There are also key challenges that the Horowhenua District will likely face over the next 30 years, and these give rise to strategic issues that will need to be monitored, analysed and responded to over this extended period.

At a high level the important issues for the three waters and roading are:

- Ensuring our services enable our District to develop, grow and be prosperous
- Ensuring our services enable the community and the environment to be healthy
- Balancing District requirements for services with community affordability
- Monitoring and managing the risks associated with operating our critical infrastructure
- Predicting, monitoring and mitigation of unauthorised discharges to the environment
- Making better use of public education and demand management to help deliver more effective services
- Planning for climate change, and
- Water sustainability.

Assumptions

Population

One of the Significant Forecasting Assumptions made in this Strategy and LTP Supporting Information is the population growth of the District. Population is influenced by factors including employment opportunities, 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.

The population growth projections are shown in Table 2. Population figures to 2038 were taken from Sense Partners socio-economic projections. Population increase from 2038 to 2048 has been assumed to be constant.

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 2: Population Growth Over 30 Years

Last Year	This Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
32,348	32,758	33,158	33,596	34,017	34,388	34,787	35,215	35,586	35,944	36,421	36,886	37,281	37,738	38,171	38,650
Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48
39,106	39,500	39,862	40,259	40,684	41,128	41,514	41,958	42,302	42,742	43,174	43,602	44,064	44,630	45,149	45,802

By 2038 about 17% of the population will be aged 0-14 years old; about 25% will be 15-39 years old; about 30% will be 40-64 years old; and about 28% will be 65 or older.

Socio-economic projections factored in the effect the New Zealand Transport Agency's Wellington Northern Corridor project will have on population growth. Age demographics are based on 50th percentile projections.

Figure 1 shows the forecasted age demographics for the District over the planning period of the Strategy.

Ownership

Council currently owns and operates the infrastructure assets outlined in this Strategy. Operations and maintenance of assets is done by (Horowhenua Alliance Council engineers working with Downer staff) and the overall responsibility for service delivery rests with Council. This Strategy assumes the current ownership and operating model will continue for the next 30 years.

Council has reliable asset data and has a good understanding of the assets it owns. As part of large subdivisions, assets are lodged with Council and the asset database is updated. In addition, all infrastructure is designed and tested as per the Council's engineering standards.

Levels of Service

This Strategy assumes Levels of Service targets proposed in the Asset Management Plans won't change.

Where Level of Service capital expenditure is proposed, this is to meet mandatory Levels of Service that are not currently being met (largely in Water Supply and Wastewater Group of Activities). Council has assessed the SSPs (Statement of Service Provisions) and identified changes required to provide meaningful information.

Where the District Plan has changed an area's land use to residential zone (growth areas), the areas may be entitled to

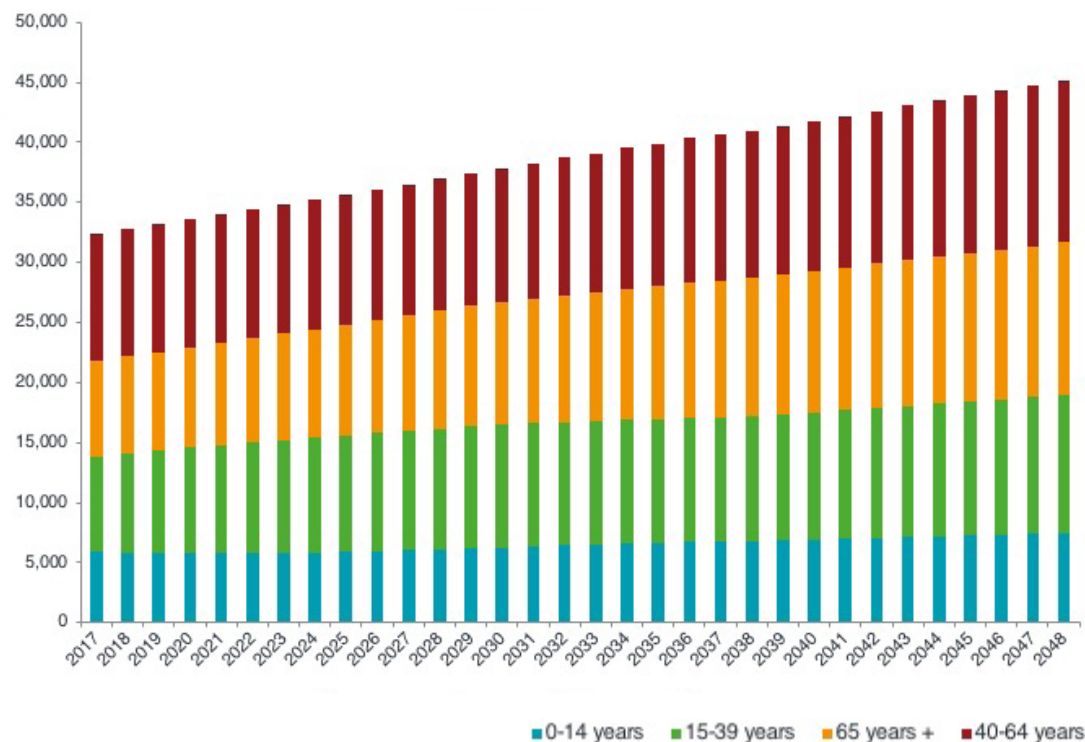


Figure 1: Population Age Trend

alter the Level of Service. The investments required, if any, to meet Levels of Service in growth areas are part of this strategy.

Council has upgraded all its water treatment plants to meet the drinking water standards compliance and also implemented telemetry to effectively and efficiently manage treatment plants.

The key Levels of Service have legislative standards and requirements, some of which relate to customer satisfaction. All Levels of Service are outlined in Appendix 1.

Council is working collaboratively with Horizons Regional Council on the stormwater discharge consent at Levin and Foxton, and has budgeted for about \$287,000 in the first three years towards increasing the Level of Service. Council has also budgeted for about \$700,000 in the first two years towards treatment and improvement of stormwater discharge at Lake Horowhenua which is partly funded by Ministry of Environment.





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 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 3.

Table 3: Asset Data Confidence Rating

Asset class	Data confidence grade	Method of Assessment
 Water	B - Data based on sound records, but has minor shortcomings. Dataset is complete and estimated to be accurate $\pm 10\%$. <i>Asset data is being updated with work orders on monthly basis.</i>	Asset data analysis
 Wastewater	B - Data based on sound records, but has minor shortcomings. Dataset is complete and estimated to be accurate $\pm 10\%$. <i>Asset data is being updated with work orders on monthly basis.</i>	Asset data analysis
 Stormwater	B - Data based on sound records, but has minor shortcomings. Dataset is complete and estimated to be accurate $\pm 10\%$. <i>Asset data is being updated with work orders on monthly basis.</i>	Asset data analysis
 Land Transport	B - Data based on sound records, but has minor shortcomings. Dataset is complete and estimated to be accurate $\pm 10\%$. <i>Asset data is being updated with work orders on monthly basis.</i> Note: Apart from bridges, the condition assessment programme has been developed in first three years of LTP and information on assets will be updated in RAMM.	Asset data analysis

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

Council is continuously updating asset data condition. All renewals are planned not just on the basis of age but also consider material type, criticality, incident history and the road sealing programme. The expected 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. There is table of all assumed asset lives in Appendix 2 and an Asset Data Confidence Grade description in Appendix 3.

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, the data would have a high confidence rating but if most of the data is based on estimates, the confidence would be low.

Inflation

The financial forecasts for the first 20 years have been adjusted for inflation, in accordance with projections based on the BERL Local Government cost index. These inflation rates are detailed in the Financial Strategy. The financial forecasts for years 20 to 30 assume a constant inflation of 2.6% each year.

There is a risk that these predictions and future rates of inflation are subject to large number variables which are beyond Council’s control and are difficult to forecast. The level of uncertainty for this assumption increases over the years; 2018 to 2020/21 – Low-Moderate, 2021/22 to 2027/28 – Moderate and 2028/29 to 2038 – High.

Significant Challenges for the District

Growth and the Ageing Population

The growth projections assumed for the decisions to be made in this Strategy have been derived from Sense Partners and factor in the effect the New Zealand Transport Agency's Wellington Northern Corridor project will have on household population growth. The growth rates are based on 50th percentile projections.

Compounding the impact of the growth will have on our ability to maintain and renew assets is the increasing size of the over-65 age group. The proportion of the population aged 65 and over in both the Horowhenua and Kāpiti Coast Districts is among the highest in the country and is projected to remain so. This could have an impact on affordability.

To promote growth in the District, Council has planned various new water supply and wastewater schemes for communities not currently served. These new schemes are presented under individual activities, with their expected expenditure, in Section 11. Council has budgeted for preliminary design and investigation of these new schemes in first three years, then construction in a phased manner.

There is a risk that growth may occur differently than in Council's forecast, as outlined in the previous Assumptions section. Council will monitor actual growth patterns in the District and may prioritise new schemes accordingly. With new schemes come additional costs to ratepayers and there is a risk around rates affordability becoming an issue for Horowhenua's ageing population. This affordability issue has been considered as part of the financial strategy.

Wellington Expressway

The Wellington Northern Corridor (Levin to Wellington Airport) includes construction of 110 km of expressways from Wellington to north of Levin and includes the following stages:

- Transmission Gully (Linden to Paekakariki)
- Paekakariki to PekaPeka
- PekaPeka to Ōtaki; and
- Ōtaki to North of Levin

The effects these expressways will have on the District include:

- The impact of the construction phase on local labour, plant and machinery resources
- Increase in demand for temporary accommodation on the local rental housing market while the northern reaches of the expressway are under construction (this could last for years at a time)
- Increased traffic and volumes of local roads with shortened commuter distance from Levin to Paraparaumu and further south to Porirua and Wellington, particularly where the effect is that the travelling distance will be reduced by up to 40 minutes in off-peak time; and
- Shortage of land in Kāpiti Coast putting pressure on land in Horowhenua. The Transmission Gully section in particular will quickly make land in Kāpiti Coast less available and less affordable. Council will need to service growth proactively.

The overall effect of the Wellington Expressway will be to continue to push development northwards and into the Horowhenua District. The combination of these factors will likely have a significant and long lasting impact on the Horowhenua District's population and economy.

Ageing Infrastructure

Areas of the District have been built over decades, and today there is both underground and aboveground infrastructure that is well past its expected life. As ageing 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.

There are risks of high running maintenance costs and loss of service through failure of old assets. A significant part of the proposed asset renewal programme aims to reduce these risks by replacing assets that have reached an age where ongoing performance is lost.

Council has historically fallen short in the level of renewals required to keep networks in appropriate condition and performance levels. Within each Activity, the renewals backlog has been identified and Council intend to bridge those backlogs in this planning period (within 30 years). If the existing assets are not maintained there is a risk of failing to meet the Levels of Service agreed with community, and the possibility of unexpected and unplanned capital expense to meet the Levels of Service, which could affect Council's financial performance and have legal consequences.

Council considers various parameters while prioritising renewals: age, condition, failure history, criticality, road sealing programme to manage the risk of asset failure and optimisation of renewal budget. Council has condition assessment programme and has also budgeted for reactive renewals to mitigate risk of sudden asset failures.

Climate Change and Coastal Change Impact

In the long term it is expected climate change will have two principal impacts on the Horowhenua District – an increased risk from severe natural hazards, and a gradual change in environmental conditions such as rainfall and tide levels.

Over the next 40 years it is expected average temperatures will rise between 0.2°C and 2.2°C in the Manawatū-Whanganui Region, evaporation will increase, enhanced westerly winds will occur, heavy rain will become more frequent, and average rainfall will increase.

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. Areas of land in Waitārere, Waikawa and Foxton Beaches have been predicted to be at risk from storm surge and inundation.

The assessed impact on infrastructure from coastal change is negligible in the 30-year horizon and there is no immediate response in this Strategy to these risks. However, Council will ensure future reports produced by the likes of Horizons Regional Council or the National Institute of Water and Atmospheric Research (NIWA) are studied to confirm predicted trends and will act in response to any predicted changes if necessary.

Climate change has the potential to bring flash floods. Considering large parts of the District have a high groundwater table and clay soil, stormwater management is key to infrastructure planning. Council has planned various Level of Service upgrades for stormwater networks to mitigate existing issues of flooding. Currently there are no impacts to the useful life of assets due to higher water tables, this includes coastal roading assets.

Resilience: Flooding and Earthquake

Flooding Risk

Flooding is the most frequently experienced natural hazard in the District, and the likelihood of a major flood occurring in any year is high. The other natural hazards occur less frequently, but have the potential to cause significant adverse effects and pose a risk to people and property. The Koputaroa, Moutoa and Makerua areas are former swamps and are served by drainage schemes which have enabled the land to be farmed. There are ongoing reviews and upgrades to the schemes to meet the demands of farming systems. Land in these areas is subject to flooding, particularly if the pump systems fail.

Wider areas of the District are prone to flooding. While Horizons Regional Council is responsible for flood control, large-scale flood events have a significant impact on the ability of the Council to continue to deliver its services.

Council has put some mitigation measures in place by way of development controls in the District Plan to determine where development can happen, in turn determining where infrastructure is required.

Earthquake Risk

Earthquake fault lines run through the Horowhenua District and their existence means the District is vulnerable to earthquakes. An earthquake could potentially cause devastation to both above- and below-ground infrastructure in developed areas through ground rupture, liquefaction or ground deformation. Fault or ground rupture can happen during a very large earthquake, where the movement creates discrete breaks at the ground surface. This is a particular risk to buildings, structures and infrastructure.

The known active faults are predominantly located in the Taranaki Ranges, away from any areas of intensive development and settlement, so the risks of fault or ground rupture are most likely in the District's hill country as shown in figure 2.

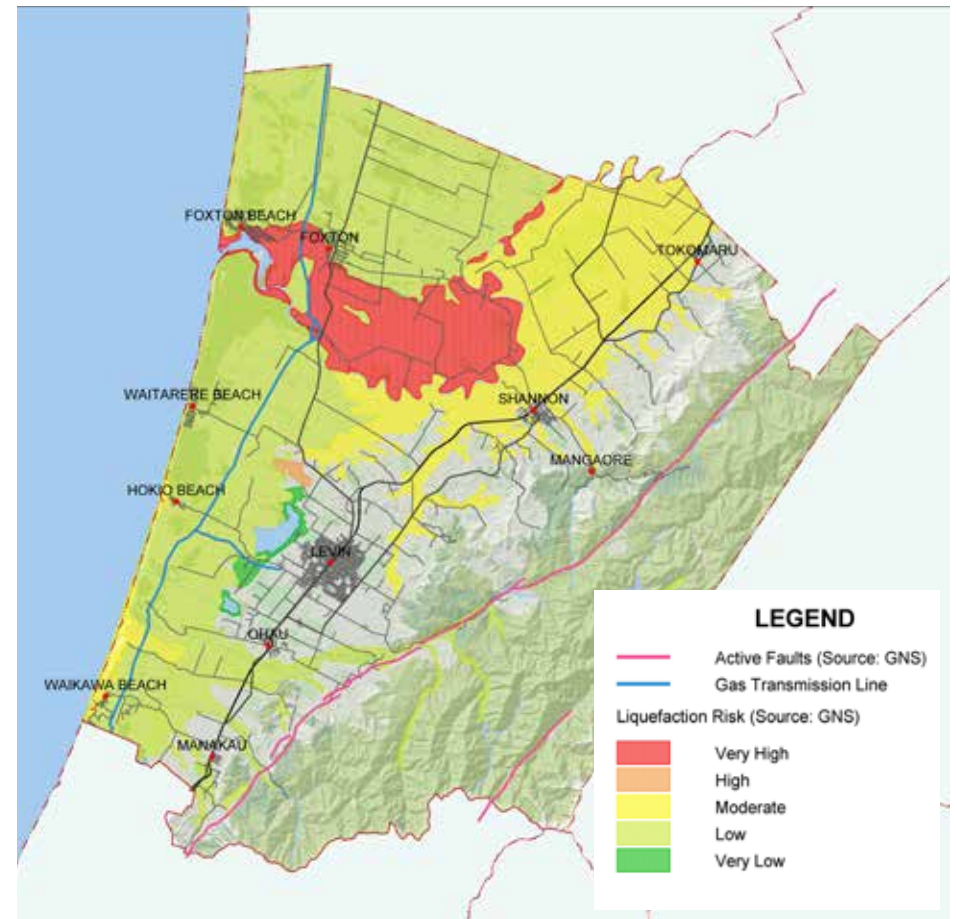


Figure 2: Capital Fault Lines

Council is a member of the New Zealand Local Authority Protection Programme (LAPP) scheme that insures infrastructure at replacement cost value. Above-ground assets such as reservoirs and buildings are insured with Aon Insurance through the Manawatū-Whanganui Local Authority Shared Services Agreement.

The Council has mapped locations of major fault lines, coastal hazard areas, and flood-prone areas. The information on maps are used to identify future growth areas and assist in infrastructure planning and risk mitigations.

Infrastructure Groups

This section summarises the most likely scenarios of total operating and capital expenditure for the four Infrastructure Activity Groups, as well as significant issues and risks considered over the next 30 years.

The costs outlined in this section have been modelled in the Draft Financial Strategy and presented in the LTP Supporting Information. All figures include inflation.

Issues affecting all infrastructure

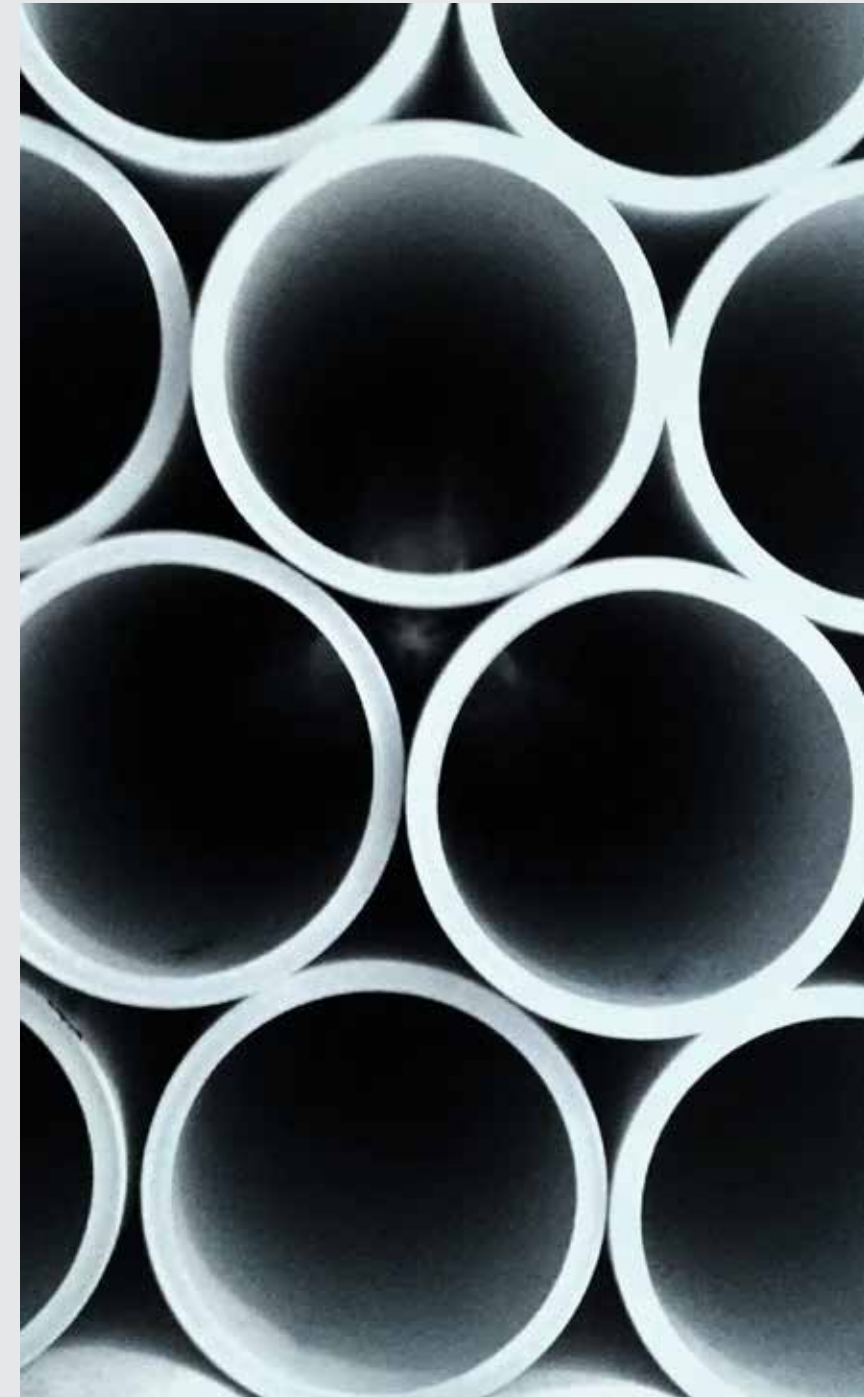
A large amount of the District's infrastructure was built in the 1960s and 1970s. With an average age of 60 years, many of these assets are now reaching, or have already passed, the end of their expected life. Maintaining these ageing assets becomes more difficult as their age increases. The District is now facing the challenge of balancing the increasing maintenance and renewal costs.

The key issue for Council's infrastructure assets is not what needs to be provided, but how to maintain existing assets funded over time. Managing infrastructure assets well is the foundation for Council's ability to provide new facilities for the community in the future.

Developing partnerships with other Councils or service providers can be complex and has risks. However, there are local government financial constraints that can make it difficult to ensure infrastructure continues to meet the needs of the community. Forming partnerships can provide Council with ways to achieve infrastructure development that it can't manage on its own.

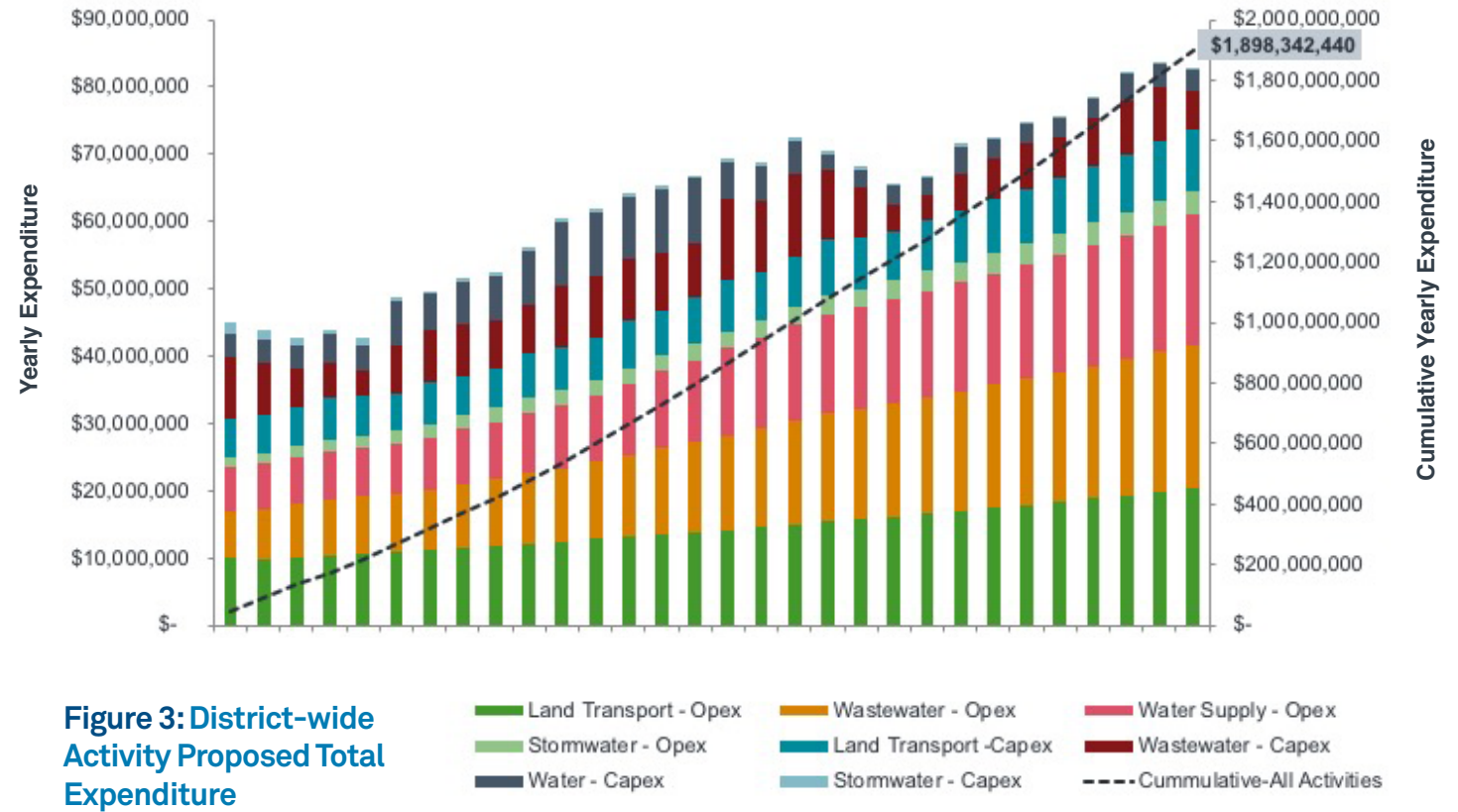
As part of a partnership and collaborative approach, Council has entered into a new Alliance-based contract model with Downer from July 2017 for an initial period of five years. Council engineers and Downer staff co-jointly make up the Horowhenua Alliance and manage operations and maintenance of 3Waters and also the renewal works.

Another key issue is around our condition assessments and managing the discovery of existing assets. While our asset data confidence is grade B, there is still the possibility of a 10% level of error. Considering we have been conducting condition assessment of critical assets and also have planned to continue the condition assessment programme for the next three years, the risk of sudden asset failure is low. To manage and mitigate that risk, we has budgeted separately for District-wide unplanned renewals.



High Level Expenditure Overview

The total capital and operational expenditure for Water Supply, Wastewater, Stormwater, and Land Transport is expected to be approximately \$1.9 billion. Figure 3 models the 30-year total infrastructure expenditure for the District.





Water Supply

- Provide safe drinking water to defined urban and rural areas in (and land immediately adjoining) Levin, Foxton Beach, Foxton, Shannon and Tokomaru. These urban and rural areas and the controls and standards within them are defined in the Horowhenua District Council Water Supply Bylaw 2014.
- Council owns river intakes, groundwater bores, water treatment plants and storage facilities, pump stations, and underground pipe networks including accessories. Council's water supply is managed by Council staff and contractor's staff as a team – Horowhenua Alliance.
- Council ensures there is an adequate supply of water for firefighting as well as business and residential use.

Water Supply Issues

Since 2010 the asset register of pipes, fittings and treatment plant components has been updated to improve the accuracy of key data and enable better long-term decision-making.

Council now has a much clearer picture of the possible end-of-life scenarios for most of its assets than it did six years ago and understands many of the pipes and fittings on the network will fail in the medium term (1-10 years). Council is actively monitoring maintenance history as part of identifying renewals projects. The intention is to ensure maintenance costs do not outweigh outright renewals. The backlog of about \$22.5 million for the water supply network has been adjusted equally over the planning period of 30 years.

A further issue is increasing restrictions on the water source under Horizons Regional Council's One Plan. 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. This requires full engagement in Council's Water Demand Management Plan, but also greater attention to occurrences of broken pipes and undetected leaks in the public network. Council has planned for water demand management by installing pressure reducing valves, leak detection, continuous monitoring and then assessing its impact through an annual water balance study.

An infrequent and irregular rainfall pattern over the last year has posed issues for the water supply schemes. Council issued "boil water notices" to various schemes during times of heavy rainfall which caused high turbidity in raw water.

Similarly, during dry periods Council has issued "conserve water notices" for various water supply schemes. Council has identified the risk of long dry periods and raw water availability for the District and hence will explore options of identifying a new raw water source and a storage reservoir. The high level cost of which are \$35million and about \$100million. These costs are not part of the current financial strategy. Council will first explore the options available for new raw water source and a storage reservoir and also understand the cost implications and then look for funding options.

Council has Water Safety and Drought management plans for water supply schemes and has various processes to test and measure its effectiveness.

Water Supply Activity Risks

Table 4 sets out the key risks, and actions proposed to mitigate or control risks in the Water Activity. The full risk assessment is in the Water Asset Management Plan.

Table 4: Key Risks & Proposed Action

Risk Description	Rating	Proposed Action
Service failure through ageing assets	High	Maintain continuous renewal programme to replace most at-risk assets
Changes in Legislation	High	Proactively monitor industry movements
Climate Change	High	Have resilience in the network – storage & sources
Growth Projections	High	Monitor actual growth annually and plan to construct infrastructure in phases
Construction of new works on private land	High	Improve consultation methods, including external and internal processes
Inconsistent strategic documents	Significant	Improve co-ordination and education across the organisation regarding long-term and strategic planning requirements
Poor contract management	Significant	Improve scoping of projects at design phase, increased project audit. This action is now undertaken by the Horowhenua Alliance
Continuity planning to ensure rapid restoration of service	Significant	Improve Business Continuity Plans, increase provision of back-up power

Water Supply Activity Principal and Alternative Options

Issues specific for the Water Activity are presented in Table 5, including principal and alternative options. All major projects over \$50,000 are presented for the first three years as well as any major projects over the next 30-years. Preferred approaches for addressing the issues and these options have been factored into the capital and operational expenditure estimates. A full schedule of projects is in Appendix 4.

Table 5: Water Supply Level of Service Issues and Options

Level of Service Issues	Principal and Alternative Options	Year(s)	Cost Impact
Water Sustainability	Preferred Option: Installing pressure reducing valves (PRVs) at Levin water supply network to reduce pressure in the network, which will help reduce leakages in the network. Hydraulic modelling is a tool that helps planning of network management, installation of PRVs and meeting of LoS.	1-3	\$311,472
	Alternative Option: <i>Installing water meters to all residential areas.</i> Meters will help keep track of the use of water and help identify leaks in the system.	n/a	n/a
	Alternative Option: <i>Investigate additional water sources</i> The existing water sources would be retained and an additional water source investigated.	n/a	n/a
	Alternative Option: <i>Investigate additional water storage</i> Extra water storage would be created for use during dry periods.	n/a	n/a
Drinking Water Compliance: Tokomaru WTP	Infrastructure works at Tokomaru.*	1	\$149,000
Drinking Water Compliance: Foxton Reservoir	Upgrade works at Foxton WTP.*	1	\$75,000
Renewals of Water Supply network and treatment plant.	Renewals of water supply network to maintain the LoS.*	1-30	\$86,030,099

*The principal options are required by legislation, status quo is not an option.

Note: Investigations with unknown cost impacts and years will be part of a feasibility study if required.

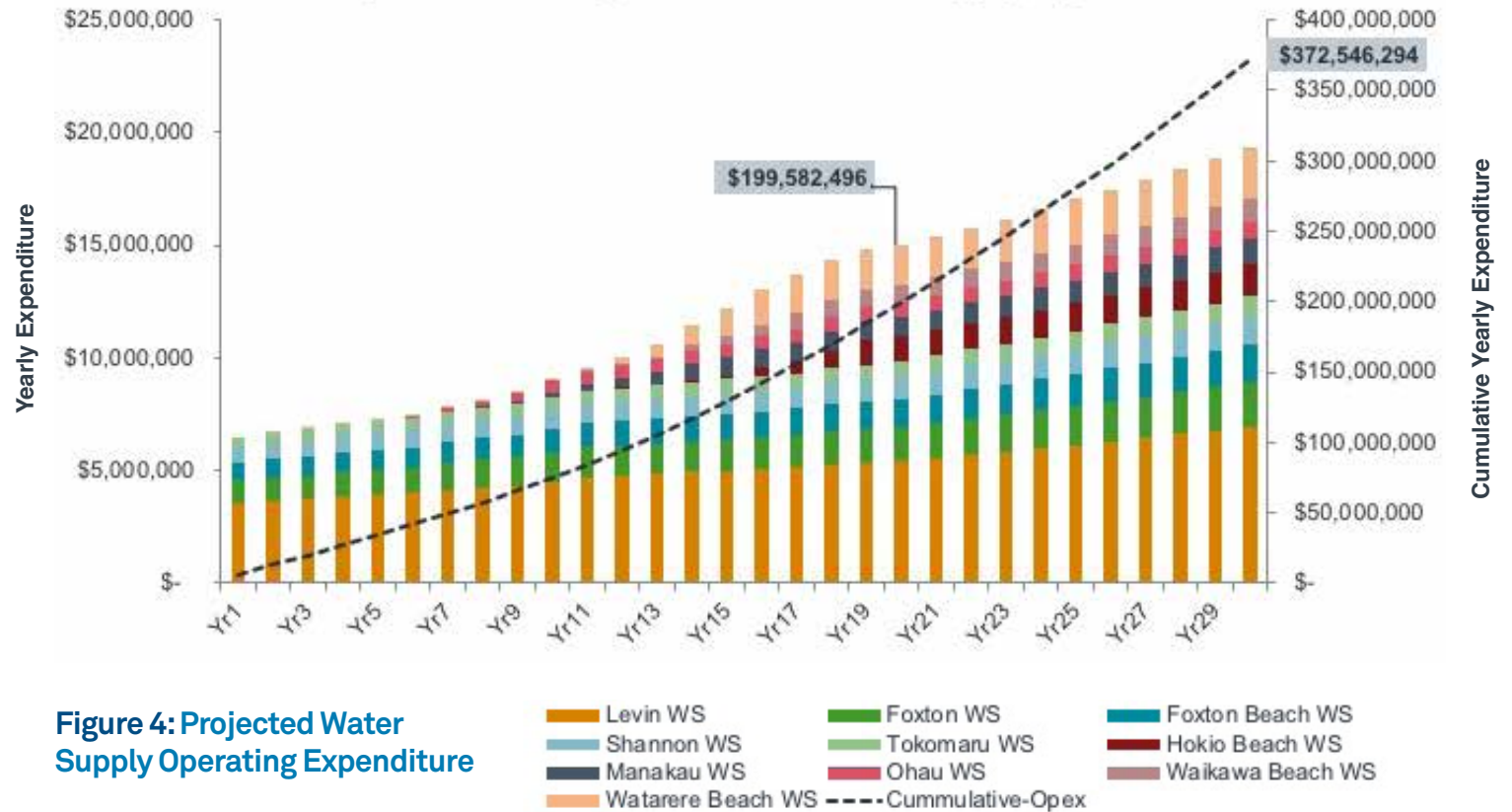
Growth		Waitāreere Beach	Waikawa	Ōhau	Manakau	Hōkio	Levin & Foxton
Planning for Growth – Proposed new schemes							
Preferred Option	Investigation and design of proposed new water supply schemes	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	-
	Construction for both existing settlements and growth areas	Year 11-15 \$19,888,676	Year 10-16 \$7,975,460	Year 4-9 \$5,848,834	Year 7-13 \$9,037,022	Year 14-18 \$11,859,011	-
Alternative Option	Investigation and design of proposed new water supply schemes	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	-
	Construction for only growth areas	Year 11-15 \$11,566,660	Year 10-16 \$4,868,660	Year 4-9 \$4,813,660	Year 7-13 \$5,922,558	Year 14-18 \$6,587,160	-
	Status quo	No cost impact	No cost impact	No cost impact	No cost impact	No cost impact	-
Network upgrades to service growth areas							
Preferred Options	There will be water supply network upgrade requirements at Levin and Foxton to service growth areas						Year 1-12 \$6,973,500

Water Supply Operating Expenditure

The forecast of operating expenditure by scheme is presented in Figure 4. It includes direct costs relating to the physical operating and maintenance of the networks, and indirect costs such as interest on loans and depreciation. The costs have been adjusted to reflect anticipated increases or decreases in maintenance activities resulting from asset additions or renewals.

The operating expense in the first 20 years is about \$199 million and 30 years about \$372 million.

The increase in operating costs is largely because of servicing loan repayments for the proposed new water supply schemes.



Water Supply Capital Expenditure

The renewals are for reticulation, source extraction and treatment. Renewals, Level of Service and growth forecasts are presented in Figure 5.

The major expenditure in the planning period is largely renewals and growth.

The renewals include the backlog of \$22.5 million.

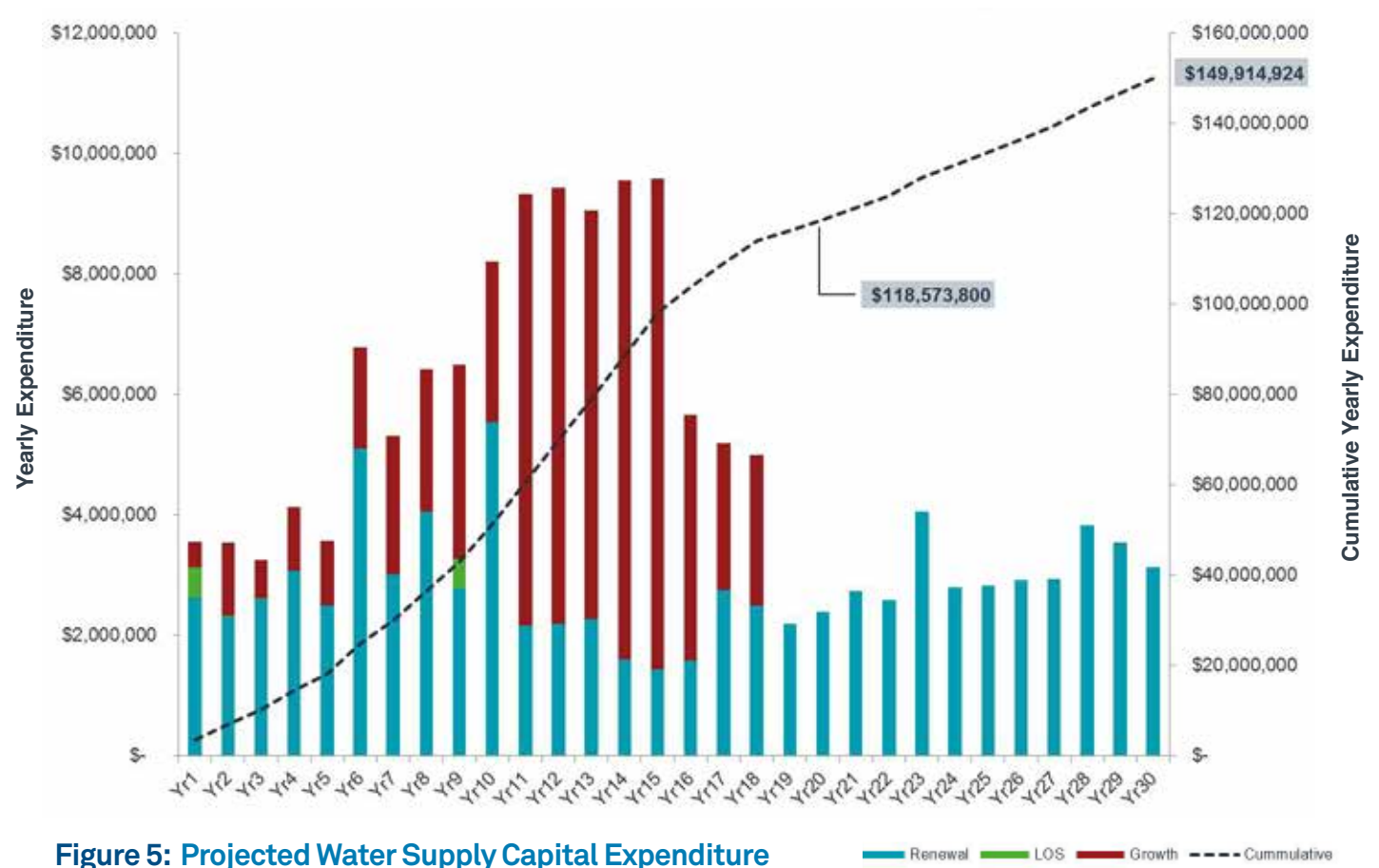


Figure 5: Projected Water Supply Capital Expenditure

Renewal LOS Growth Cumulative

Figure 6 presents the capital expenditure proposed for water supply schemes. The new programmes proposed for water supply are included in the expenditure to promote growth in the District and account for about \$62.8 million.

The renewals include the backlog of \$22.5 million.

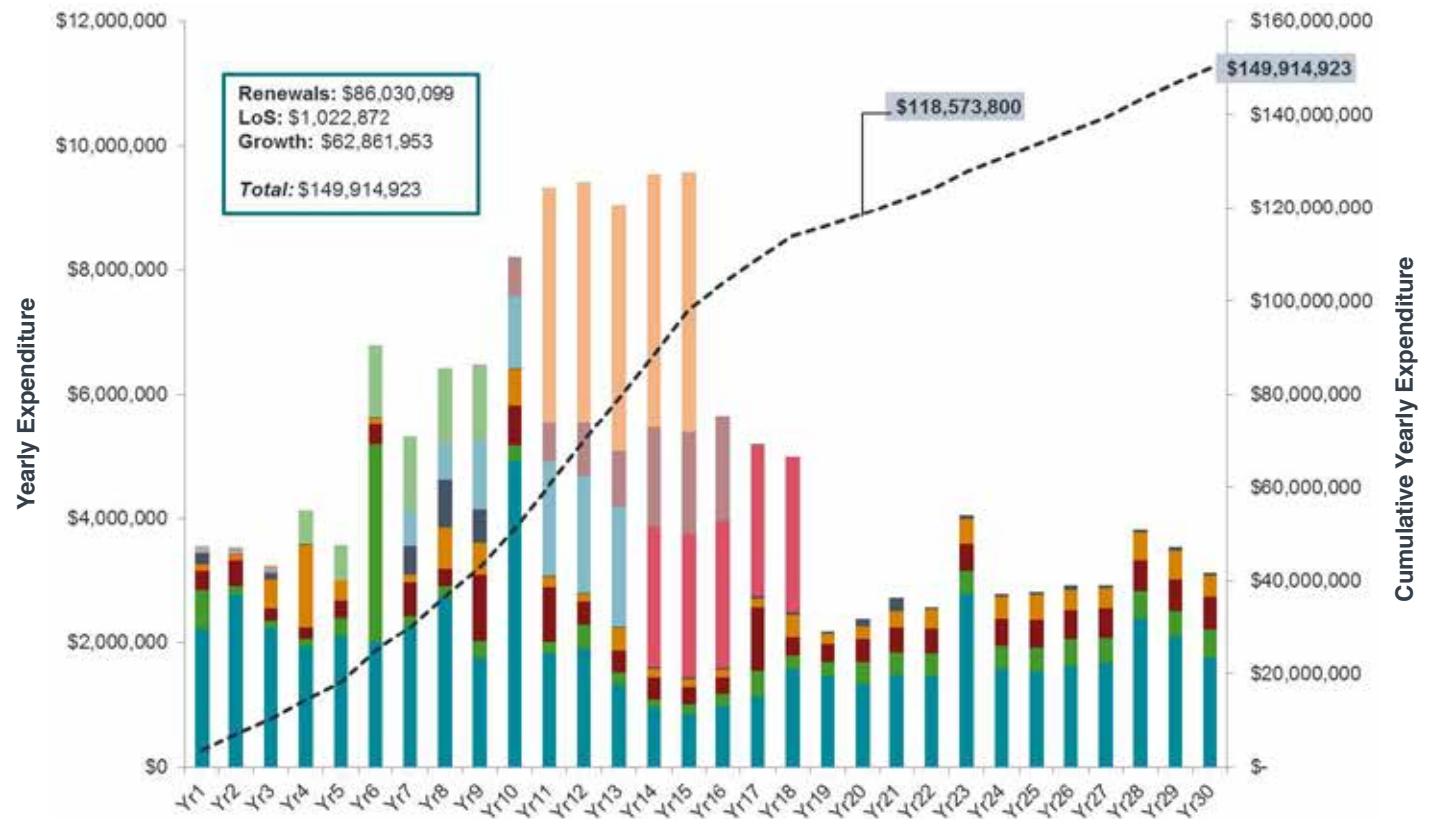


Figure 6: Water Supply Expenditure





Wastewater

- Council's Wastewater Activities provide for the collection, transportation, treatment and discharge of treated residential, commercial and industrial wastewater effluent from urban sewerage schemes in Levin, Foxton, Foxton Beach, Shannon, Tokomaru and Waiterere Beach.
- Council owns and maintains piped wastewater systems, pumping stations, wastewater treatment plants and 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.
- The collection network is reliable and has minimal blockages or overflows

Wastewater Significant Issues

As with the Water Supply networks, the asset register of wastewater pipes, fittings and treatment plant components has been updated to improve the accuracy of key data and enable better long-term decision-making.

This has included an ongoing programme of CCTV (closed-circuit television) inspections of pipes. The same issues identified in the Water networks are present in the Wastewater network; balancing maintenance costs with renewals.

The CCTV inspection programme also revealed significant amounts of inflow and infiltration of stormwater into the network, meaning Council is treating unacceptably high volumes of wastewater, especially in peak flow periods. The Capital Renewal programme later in this section will address this issue by improving the integrity of pipeworks and reducing the amount of stormwater entering the wastewater system. The backlog of about \$18.9 million for wastewater network has been adjusted equally over this 30 years plan.

Wastewater Activity Risks

Table 6 sets out the key risks, and actions proposed to mitigate or control risks in the Wastewater Activity. The full risk assessment is in the Wastewater Asset Management Plan.

Table 6: Key Risks & Proposed Action

Risk Description	Rating	Proposed Action
Service failure through ageing assets	High	Maintain continuous renewal programme to replace most at-risk assets
Changes in Legislation	High	Proactively monitor industry movements
Growth projections	High	Monitor actual growth annually and plan to construct infrastructure in phases
Construction of new works on private land	High	Improve consultation methods, including external and internal processes
Inconsistent strategic documents	Significant	Improve co-ordination and education across the organisation regarding long-term and strategic planning requirements
Poor contract management	Significant	Improve scoping of projects at design phase, increased project audit. This action is now undertaken by the Horowhenua Alliance.

Wastewater Activity Principal and Alternative Options

Issues specific for the Wastewater Activity are shown in Table 7, including principal and alternative options. All major projects over \$50,000 are presented for the first three year as well as any major projects over the next 30-years. Preferred approaches for addressing the issues and these options have been factored into the capital and operational expenditure estimates. A full schedule of projects is in Appendix 4.

Table 7: Wastewater Level of Service Issues and Options

Level of Service Issues	Principal Options	Year(s)	Cost Impact
Compliance with Horizons One Plan and meeting consent conditions placed on function around treatment and disposal of wastewater	Implement appropriate technologies and programmes that can achieve compliance with the One Plan and also with specific consent conditions for existing wastewater schemes*	1-30	Various projects \$19,125,966
Ageing asset (renewals)	Catch-up of deferred renewals and continuation of on-going renewals and rehabilitation programme*	1-30	Network & Wastewater Treatment Plant - \$148,221,749

*The principal options are required by legislation, status quo is not an option.

Growth

		Waikawa	Ōhau	Manakau	Hōkio	Levin & Foxton
Planning for Growth – Proposed new schemes						
Preferred Option	Investigation and design of proposed new wastewater supply schemes	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	-
	Construction for both existing settlements and growth areas in	Year 10-16 \$9,840,887	Year 4-13 \$20,263,688	Year 7-13 \$7,006,480	Year 14-18 \$15,528,169	-
Alternative Option	Investigation and design of proposed new wastewater supply schemes	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	Year 1-3 \$76,840	-
	Construction for only growth areas	Year 10-16 \$8,517,935	Year 4-13 \$8,293,760	Year 7-13 \$4,077,660	Year 14-18 \$8,517,935	-
	Status quo	No cost impact	No cost impact	No cost impact	No cost impact	-
Network upgrades to service growth areas						
Preferred Options	There will be wastewater supply network upgrade requirements at Levin and Foxton to service growth areas					Year 1-4 \$7,075,762

Wastewater Operating Expenditure

Figure 7 shows the projected operating expenditure for all the District's wastewater schemes. It includes direct costs relating to the physical operating and maintenance of the networks, and indirect costs such as interest on loans and depreciation. Costs have been adjusted to reflect anticipated increases or decreases in maintenance activities resulting from asset additions or renewals.

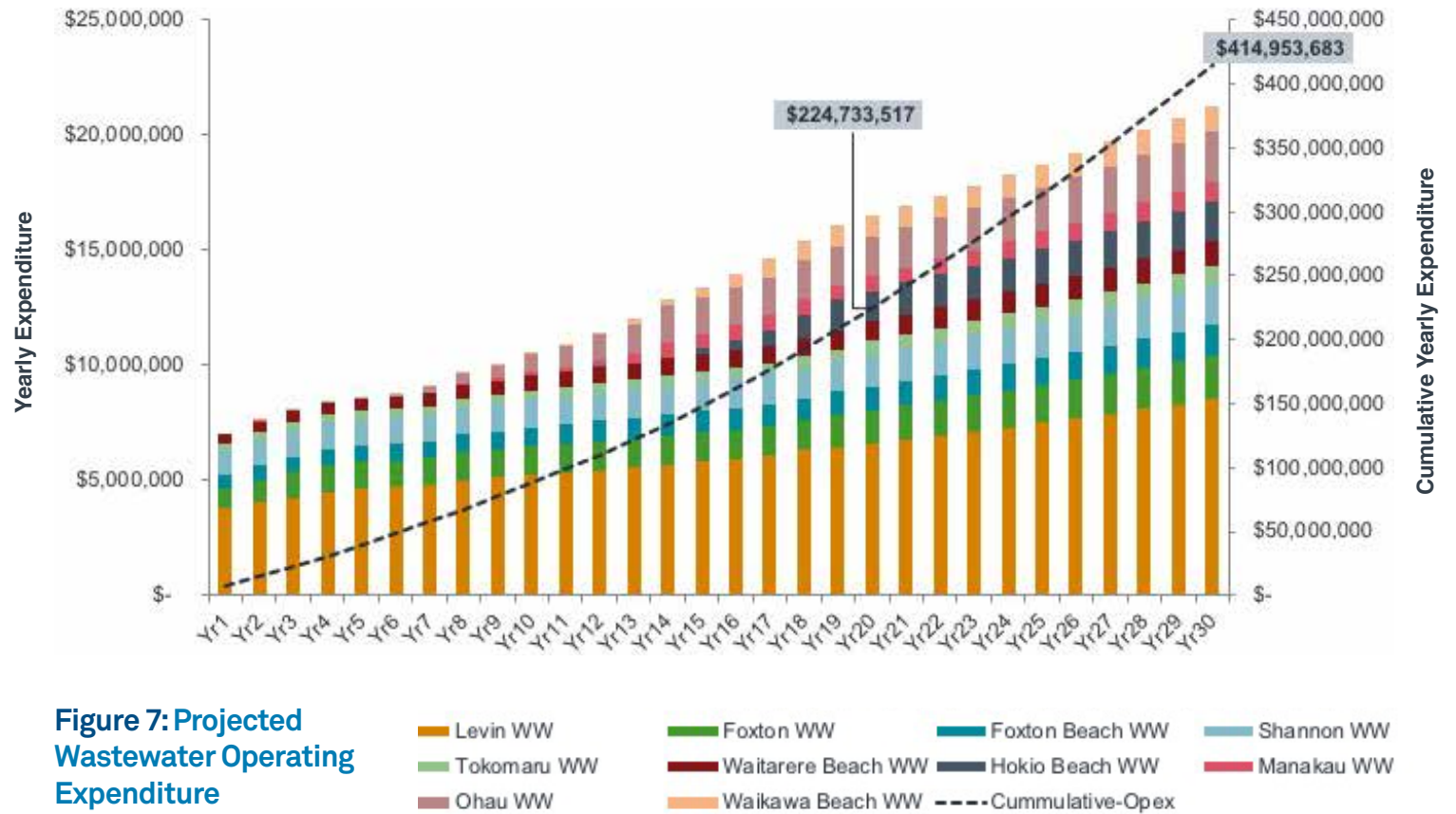


Figure 7: Projected Wastewater Operating Expenditure

- Levin WW
- Foxton WW
- Foxton Beach WW
- Shannon WW
- Tokomaru WW
- Waitarere Beach WW
- Hokio Beach WW
- Manakau WW
- Ohau WW
- Waikawa Beach WW
- - - Cumulative-Opex

Wastewater Capital Expenditure

Figure 8 shows projected capital expenditure for all the District's wastewater schemes. The proposed capital expenditure is about \$227 million, of which about \$60 million is for proposed new schemes to promote growth in the District.

Each year also includes programmed pipeline and pump station renewals. Pipeline renewals are based firstly on CCTV inspection and secondly on the expired lives of the pipelines. The existing backlog of renewals is proposed to be adjusted in the current planning period. It is expected that as the renewals progress over this period, levels of infiltration will progressively reduce and result in lower volumes of peak flow effluent needing treatment.

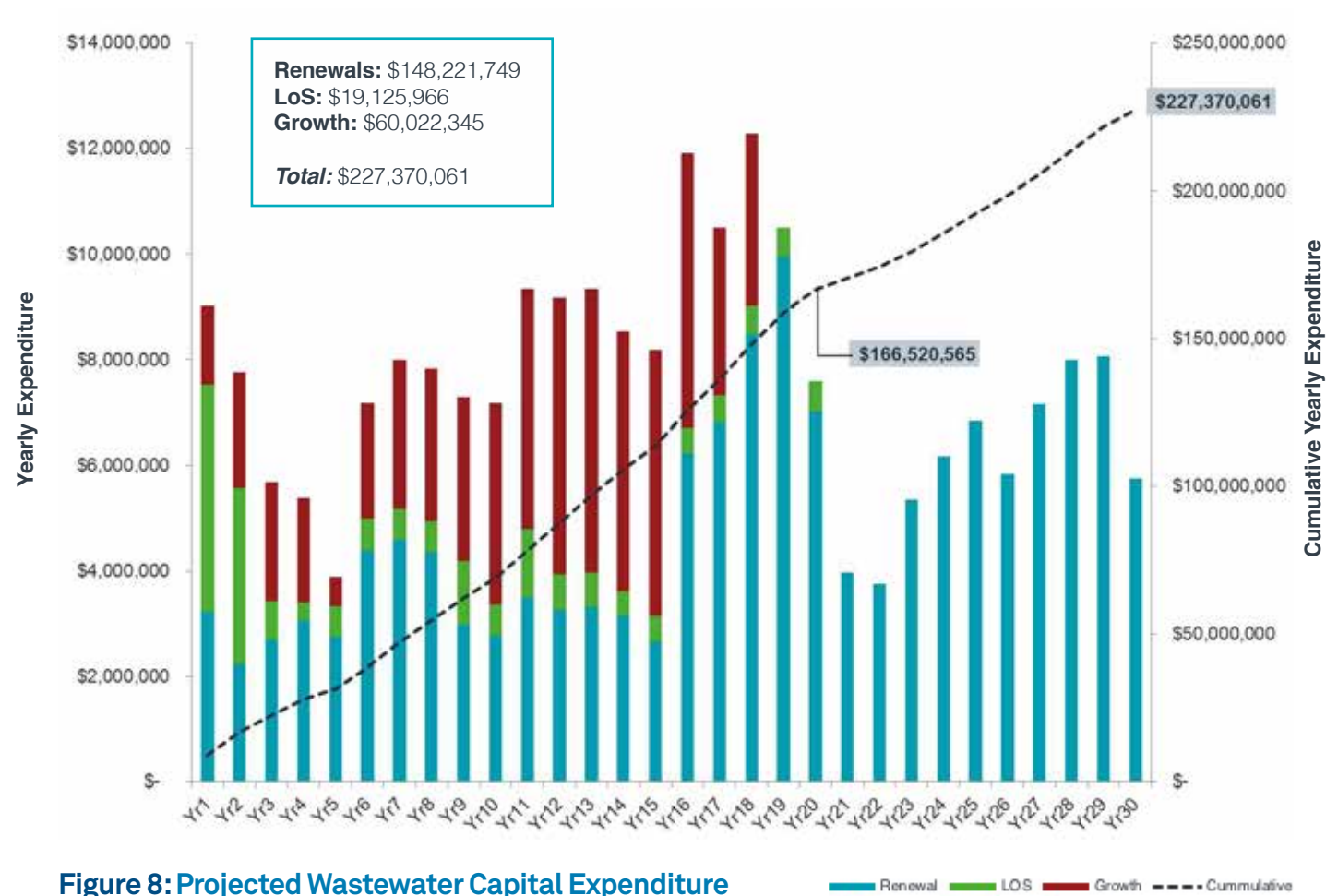


Figure 8: Projected Wastewater Capital Expenditure

Figure 9 presents capital expenditure scheme-wise for wastewater activity. The new schemes proposed are for Waikawa Beach, Ōhau, Hōkio Beach and Manakau, and account for approximately \$60 million.

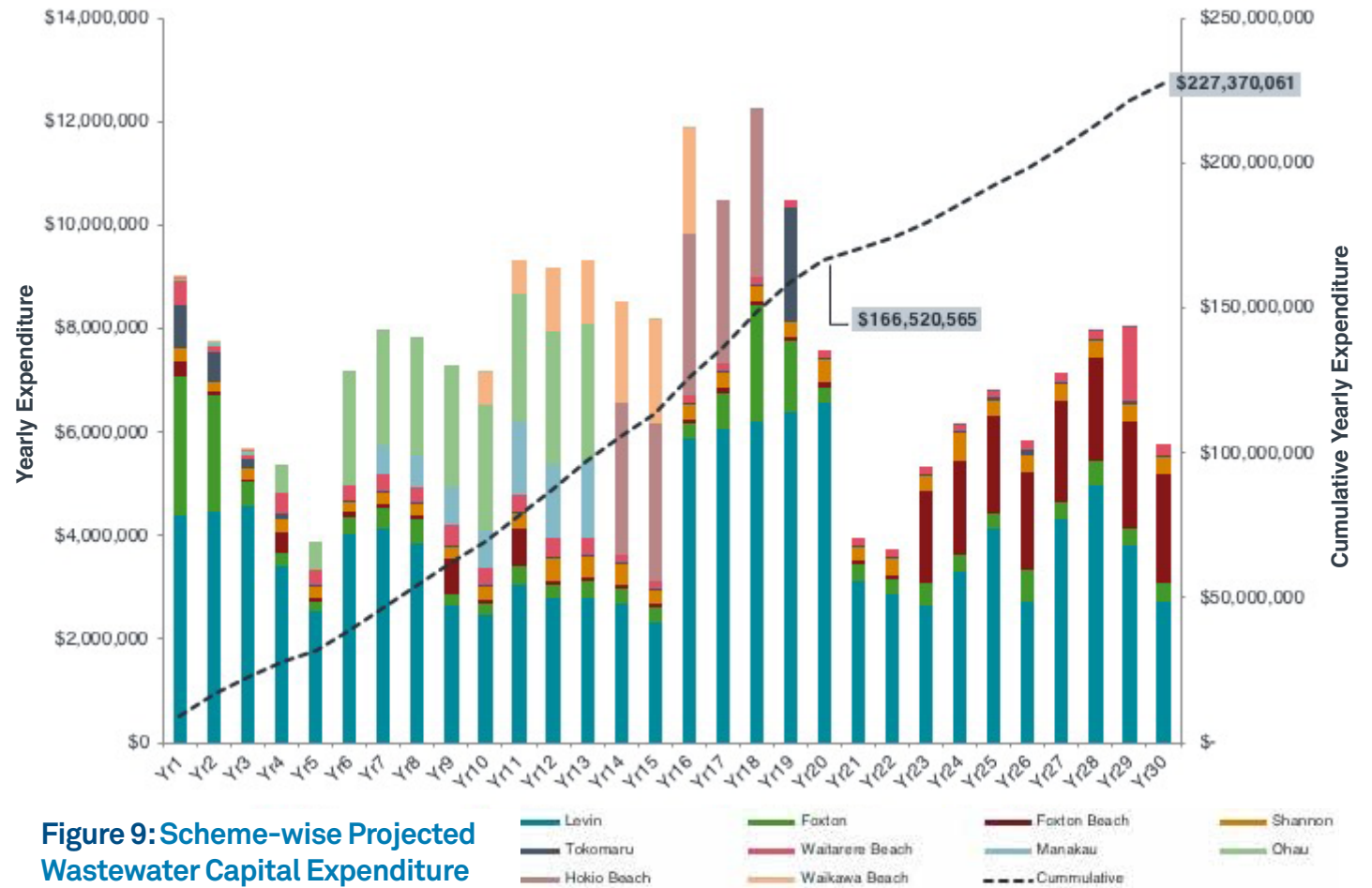


Figure 9: Scheme-wise Projected Wastewater Capital Expenditure

Stormwater

- Council's Stormwater Activities provide piped and open drainage systems to collect the stormwater from roads, footpaths, berms and hardstanding areas in any connected residential and commercial properties. The water is discharged to piped stormwater drainage systems and open and culverted watercourses.
- Stormwater management keeps roads in a safe condition during rainfall events and also helps reduce the risk of flooding for residential and commercial properties.
- Council owns 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 wastewater system is managed together by Council staff and contractor's staff as a team – Horowhenua Alliance.

Stormwater Significant Issues

Council has developed Stormwater Catchment Management Plans (CMP) for various settlements to better understand the effects of stormwater.

CMPs have considered various rainfall patterns and have identified ponding/flood areas. Council has planned to target these identified areas to manage stormwater effectively.

The quality of freshwater in streams, river systems and water catchments in general are affected by runoff, erosion and wastewater effluent disposal both within the District and from outside it. Stormwater systems and runoff need to be considered within the whole catchment.

Some of these issues have been addressed by the National Policy Statement for Freshwater Management 2014. This National Policy Statement has an implementation period ending in 2025 and is the responsibility of Horizons Regional Council. However, it is likely the implications for Council will be better catchment management requirements and stricter conditions on resource consents for the Wastewater and Water Activities.

In accordance with National Policy Statement for Freshwater Management 2014, Council is working collaboratively with Horizons Regional Council on the stormwater discharge consent at Levin and Foxton. Council has budgeted for about \$287,000 in first three years towards increasing the Level of Service. Council has also budgeted for about \$700,000 in the first two years towards treatment and improvement of stormwater discharge at Lake Horowhenua which is partly funded by Ministry of Environment.

Stormwater Activity Risks

Table 8 sets out the key risks, and actions proposed to mitigate or control risks in the Stormwater Activity. The full risk assessment is in the Stormwater Asset Management Plan

Table 8: Key Risks & Proposed Action

Risk Description	Rating	Proposed Action
Asset Knowledge	Significant	Continuous updating and collection of stormwater asset data
Inability to meet Level of Service and growth	High	Complete Stormwater Catchment Management plans
Inconsistent strategic documents	Significant	Improve co-ordination and education across the organisation regarding long term and strategic planning requirements
Construction of new works on private land	High	Improve consultation methods, including external and internal processes
Poor contract management	Significant	Improve scoping of projects at design phase, increased project audit
Loss of telemetry system	Significant	Upgrade telemetry system

Stormwater Activity Principle and Alternative Options

Issues specific for the Stormwater Activity are shown in Table 9, including principal and alternative options. All major projects over \$50,000 are presented for the first three year as well as any major projects over the next 30-years. Preferred approaches for addressing the issues and these options have been factored into the capital and operational expenditure estimates. A full schedule of projects is in Appendix 2.

Table 9: Stormwater Level of Service Issues and Options

Level of Service Issues	Principal Options	Year(s)	Cost Impact
Works identified through Catchment Management Plans	Catchment Management Plans have identified projects to mitigate stormwater issues *	1-30	\$10,738,554
Lake Horowhenua water quality improvement project and discharge consent	Improving the discharge quality of stormwater at Lake Horowhenua and working towards discharge consent*	1-3	\$998,965
Renewals of stormwater network	Renewing the network to maintain the existing Level of Service*	1-30	\$2,852,809

Growth	Principal Option	Year(s)	Cost Impact
Planning for growth	Planning for growth across District*	1-30	\$1,467,751

*The principal options are required, status quo is not an option.

Stormwater Operating Expenditure

Figure 10 shows the projected operating expenditure for all the District's Stormwater systems.

It includes direct costs relating to the physical operating and maintenance of the networks, and indirect costs such as interest on loans and depreciation. Costs have been adjusted to reflect anticipated increases or decreases in maintenance activities resulting from asset additions or renewals.

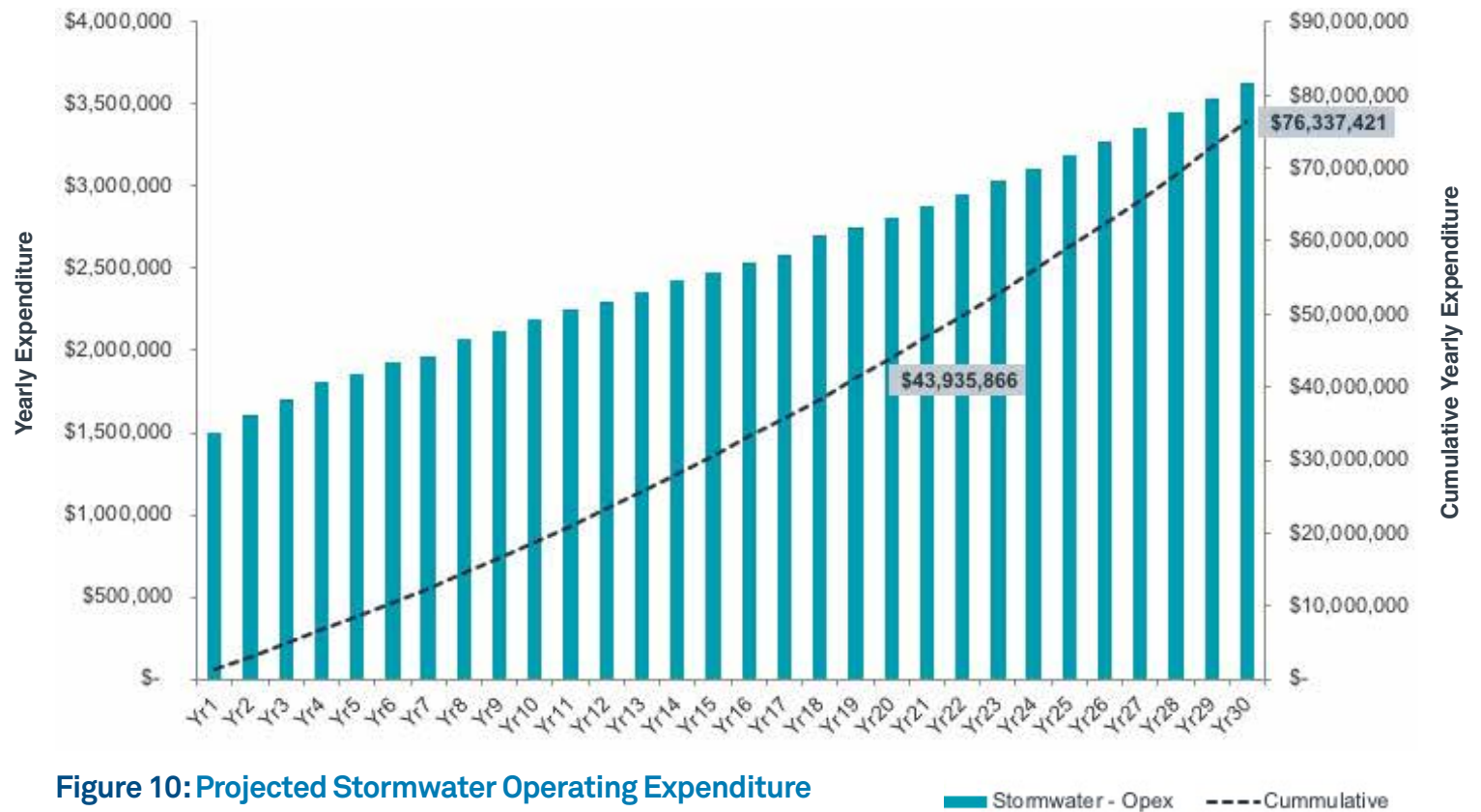


Figure 10: Projected Stormwater Operating Expenditure

Stormwater Capital Expenditure

Figure 11 shows the projected capital expenditure for the District's stormwater systems. The expenditure is largely related to the Levels of Service improvements across the District to alleviate flooding.

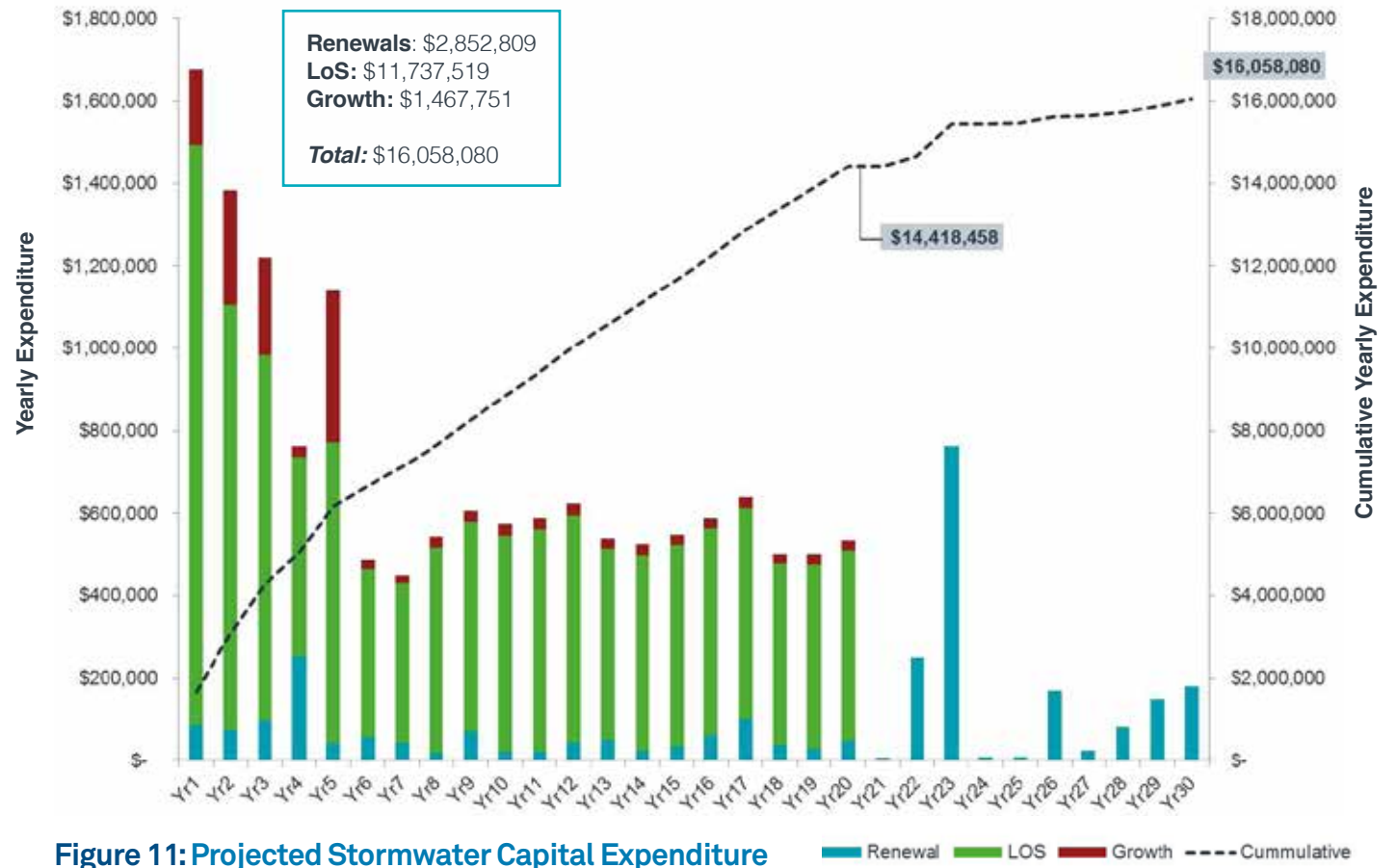


Figure 11: Projected Stormwater Capital Expenditure

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 the 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 Transportation Significant Issues

The District's road network has historically had insufficient maintenance and renewal spending.

Funding for surface renewals and basic maintenance now needs to increase to reduce the forward pressure on basic levels of service.

There is a lack of data on the important features of the road network, especially for bridges and retaining walls. A concerted effort is now being made to build the knowledge base on these assets, which both have significant replacement values.

There were no growth or decline issues identified.

Land Transport Activity Risks

Table 10 sets out the key risks, and actions proposed to mitigate or control risks in the Transport Activity. The full risk assessment is in the Transport Activity Management Plan.

Table 10: Key Risks & Proposed Action

Risk Description	Rating	Proposed Action
Service failure through ageing assets	High	Maintain continuous surface renewal programme to ensure Level of Service can be met.
Asset knowledge	Significant	Continuous updating and collection of bridge and retaining wall data.
Inconsistent strategic documents	Significant	Improve co-ordination and education across the organisation regarding long term and strategic planning requirements.
NZTA funding	2018-21 low 2022-28 moderate 2029-38 high	If NZTA does not approve the requested subsidy in any one year then Council will have to increase rates, debt, or reduce the Level of Service.
Bridge renewals	Low	

Land Transport Activity Principal and Alternative Options

Issues specific to the Transport Activity are shown in Table 11, including the principal and alternative options. All major projects over \$50,000 are presented for the first three years as well as any major projects over the next 30-years. Preferred approaches for addressing the issues and these options have been factored into the capital and operational expenditure estimates. A full schedule of projects over \$0.5 million is in Appendix 4.

Table 11: Land Transportation Level of Service Issues and Options

Level of Service Issues	Principal Options	Year(s)	Cost Impact
Inadequate surface resealing programmes	Road sealing programme, footpath renewals and bridge maintenance activities.*	1-30	\$210,778,669
Bridge renewals	Bridge renewal for Poads Road.*	1	\$500,000
	District wide bridge renewals.*	4-20	\$3,878,550

* The principal options are required, status quo is not an option.

Land Transportation Operating Expenditure

The largest portion of operating costs for roading relates to traffic services such as street light maintenance and electricity, and road corridor maintenance like vegetation control, minor slip repairs and roadside mowing.

Street electricity costs should reduce with the installation of LED lights. However, the long term cost impact of this has not yet been assessed. Forecast expenditure over the 30-year planning period is shown in Figure 12.

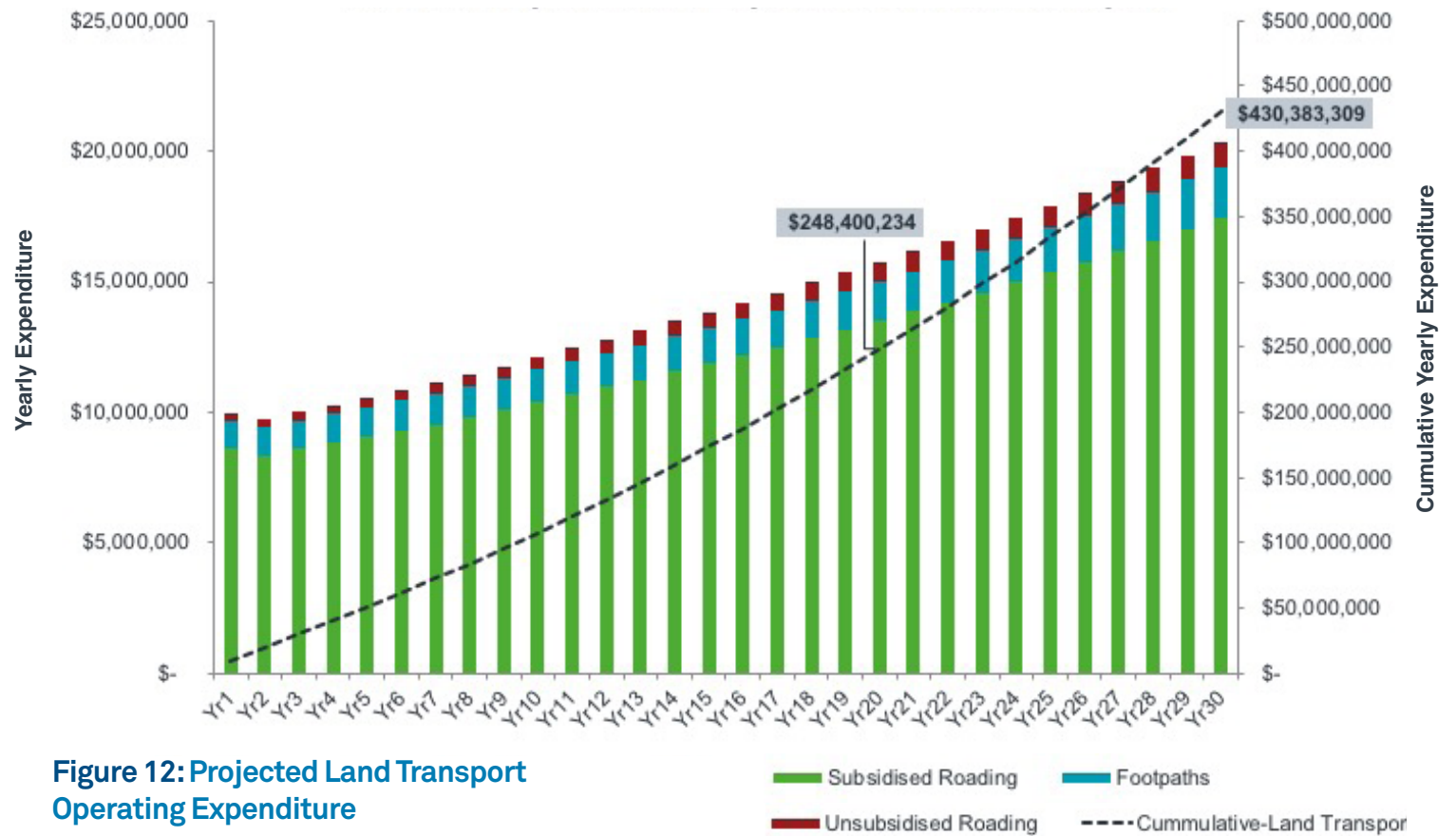


Figure 12: Projected Land Transport Operating Expenditure

Land Transportation Capital Expenditure

Most capital expenditure in land transport for this District is spent on resealing road surfaces and rehabilitation of existing roads.

The extent of the work needed on the network's bridges is not fully understood yet but will be improved with ongoing inspection work. There is an allowance for inspections and repair of bridges in Years 2018, 2021 and 2024.

The estimates in this forecast, presented in Figure 13, are inflation-adjusted.

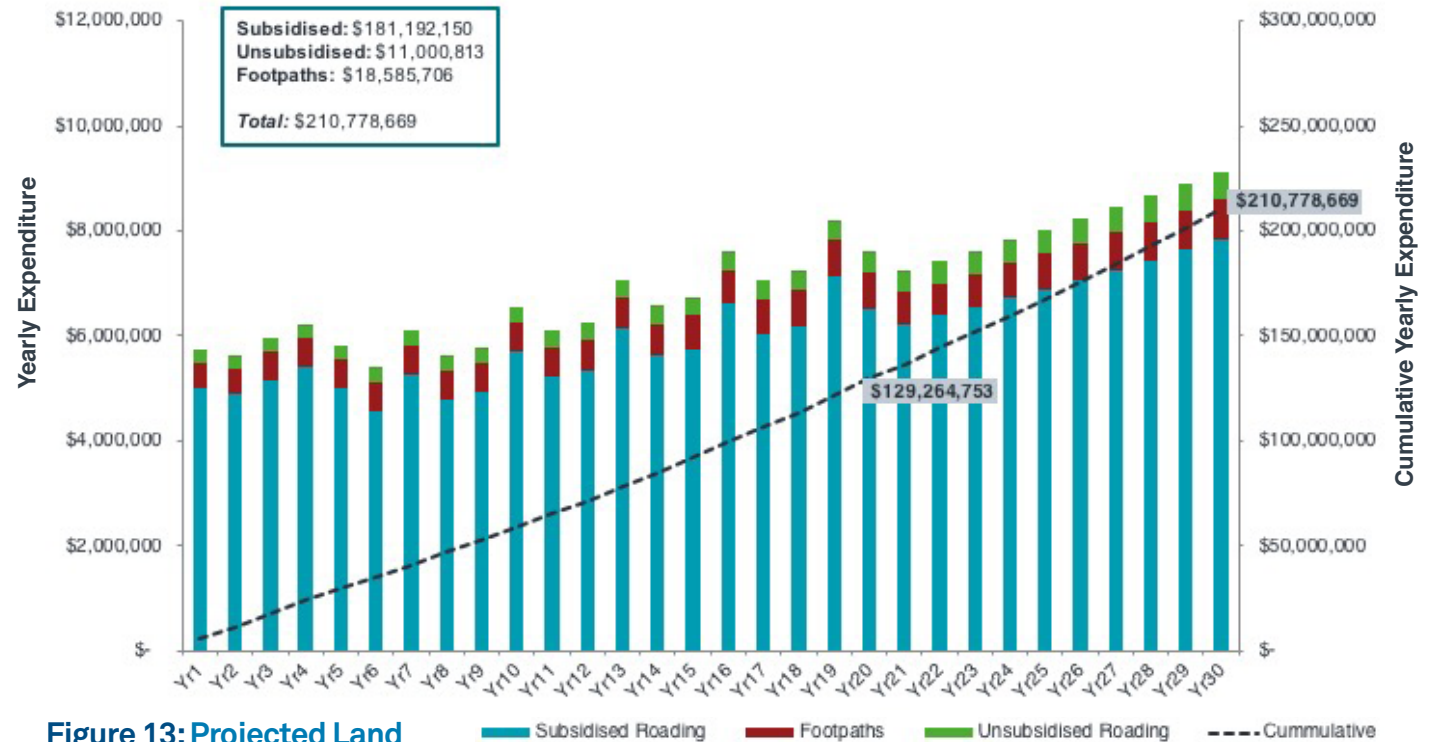


Figure 13: Projected Land Transport Capital Expenditure

Total Operating Cost of Most Likely Scenario

Figure 14 shows the most likely total operating expenditure for all core infrastructure activities. The proposed expenditure is about \$1,274 million for the planning period.

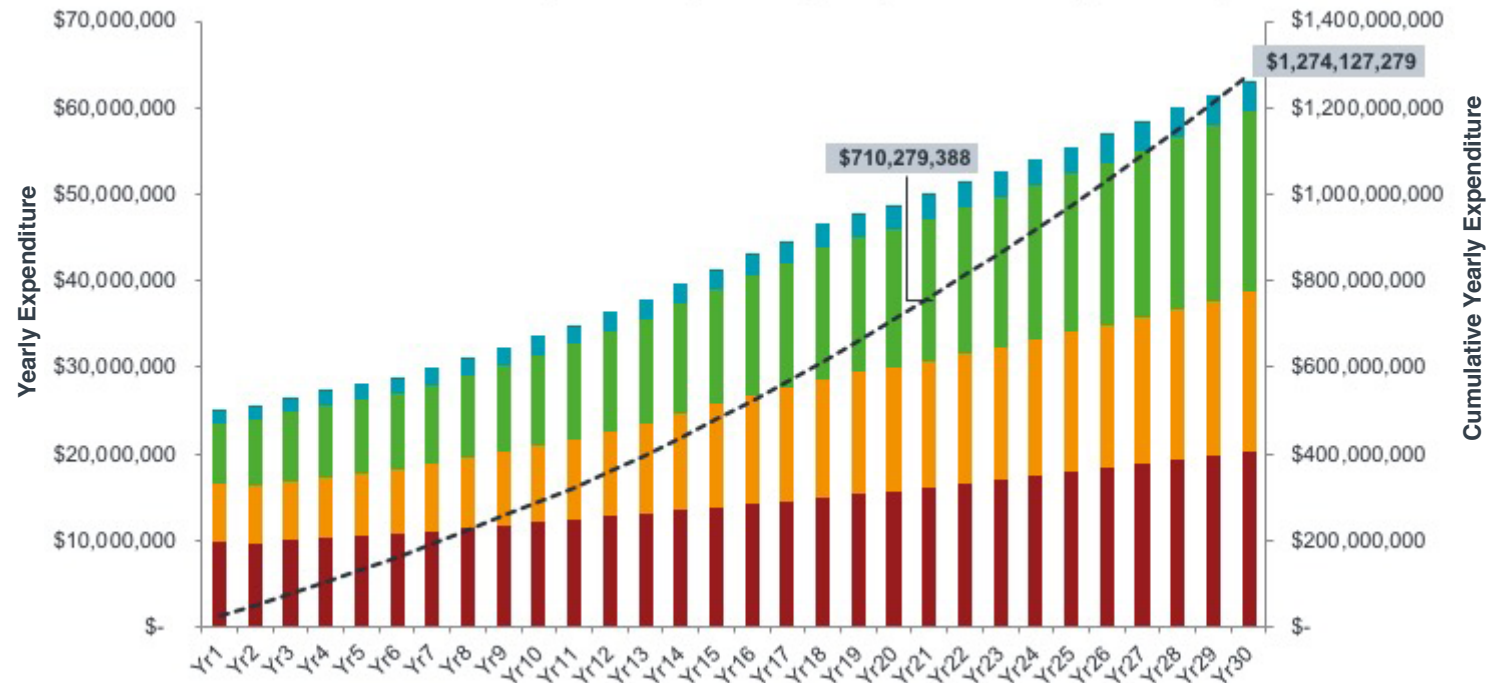


Figure 14: Projected Operating Expenditure - All Core Activities

Most Likely Capital Cost Scenario

Figure 15 shows the most likely total capital expenditure for all core infrastructure activities. The total capital expenditure for all the core infrastructure activities for the planning period is about \$604 million.

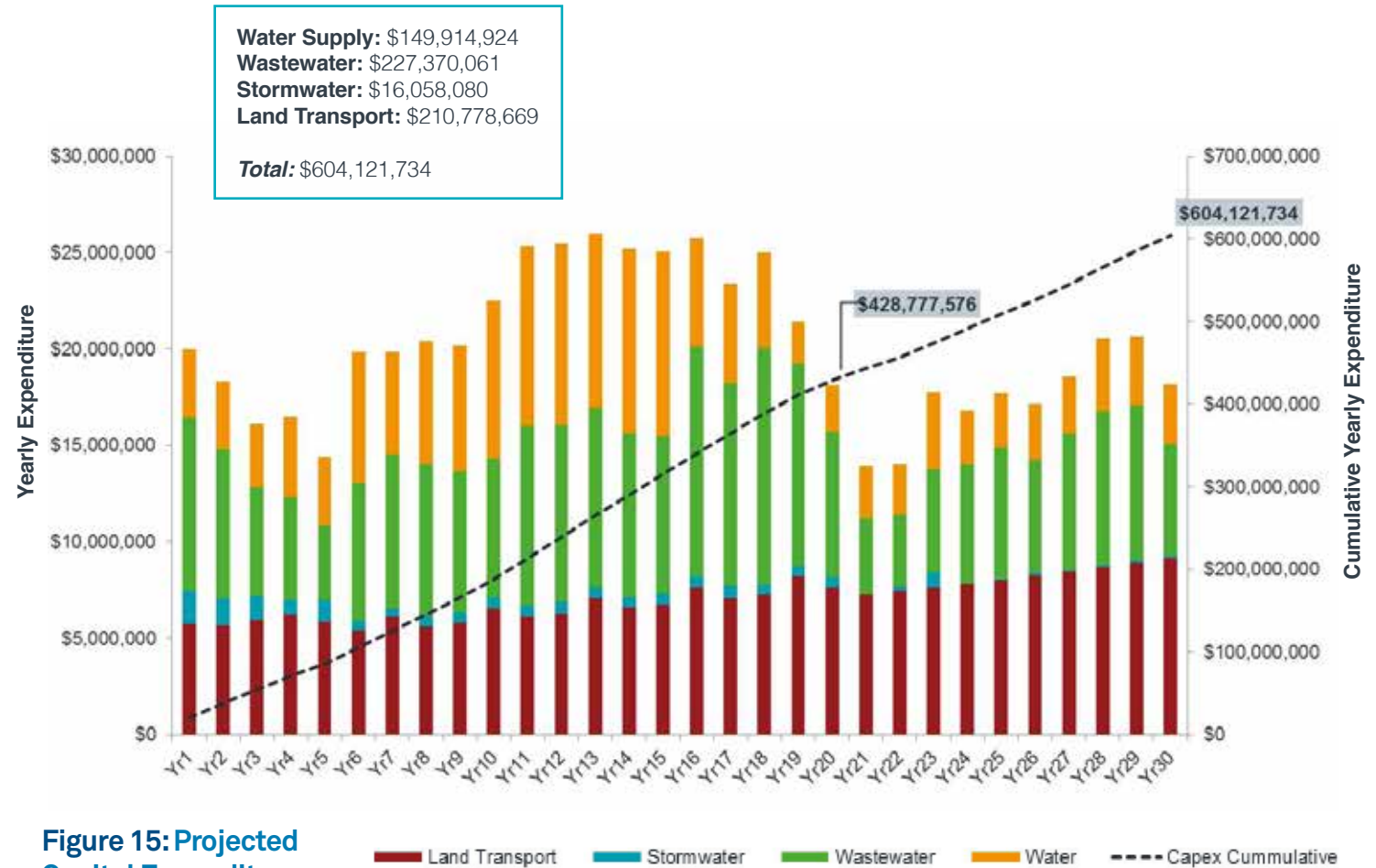


Figure 15: Projected Capital Expenditure - All Core Activities


Appendix 1

Levels of Service

The following tables show the detailed Levels of Service for each Activity.

Service: Water Supply	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Safe water supply*.	Local authority's drinking water supply complies with: (a) part 4 of the Drinking Water Standards (bacteria compliance criteria) in:				
	Levin	Achieve	Achieve	Achieve	Achieve
	Shannon	Achieve	Achieve	Achieve	Achieve
	Foxton	Achieve	Achieve	Achieve	Achieve
	Foxton Beach	Achieve	Achieve	Achieve	Achieve
	Tokomaru	Achieve	Achieve	Achieve	Achieve
	(b) part 5 of the Drinking Water Standards (protozoa compliance criteria) in:				
	Levin	Achieve	Achieve	Achieve	Achieve
	Shannon	Achieve	Achieve	Achieve	Achieve
	Foxton	Achieve	Achieve	Achieve	Achieve
	Foxton Beach	Achieve	Achieve	Achieve	Achieve
	Tokomaru	Achieve	Achieve	Achieve	Achieve
What does this tell me?	This measure informs ratepayers and consumers on whether the water supplied is safe to drink. The New Zealand Drinking Water Standards, monitored by the Ministry of Health, provide a recognised standard for public safety.				

Service: Water Supply	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Drinking water that taste and looks satisfactory*.	The total number of complaints received about any of the following (expressed per 1000 connections):				
	Drinking water clarity	1	1	1	1
	Drinking water taste	1	1	1	1
	Drinking water odour	1	1	1	1
	Drinking water pressure or flow	1	1	1	1
	Continuity of supply	1	1	1	1
	Council's response to any of these issues	1	1	1	1
	Total*	≤6	≤6	≤6	≤6
	What does this tell me?	The number of complaints provides an indication of the quality of the service provided. This measure also provides information on problems requiring attention, such as the need for maintenance, repair, upgrading or new infrastructure.			
Response to faults*.	The median time from when Council receives notification to when service personnel:				
	Reach the site for urgent call-outs^	1 hour	1 hour	1 hour	1 hour
	Confirm resolution of the fault or interruption of urgent call-outs^	8 hours	8 hours	8 hours	8 hours
	Reach the site for non-urgent call-outs*^	3 days	3 days	3 days	3 days
	Confirm resolution of the fault or interruption of no-urgent call-outs*^	3 days	3 days	3 days	3 days
	What does this tell me?	Households and businesses rely heavily on water, so it's important that we provide a timely response when something goes wrong. An urgent call-out is one when no water is being delivered. A non-urgent call-out is where there is still a supply of water.			
Fire-fighting needs are met.	Percentage of the network where fire-fighting flows in urban residential areas meet the NZ Fire Service firefighting water supplies Code of Practice SZ 4509:2008.	80%	80%	80%	80%
	What does this tell me?	The fire service requires a minimum pressure from a water network to effectively control fires. This measure indicates the adequacy of our water network for firefighting.			

 Service: Water Supply	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Water supply has adequate flow and pressure.	<p>Network supply pressure at the property boundary is not less than 250kPa for on-demand connections and 150kPa for restricted flow connections.</p> <p>What does this tell me? The water in the supply network is maintained at positive pressure to ensure that water reaches all parts of the network, that a sufficient flow is available at every take-off point and to ensure that untreated water in the ground cannot enter the network. This measure is used to ensure that these objectives are met.</p>	Achieve	Achieve	Achieve	Achieve
Water supply is sustainable*.	<p>Average consumption of drinking water per person per day (lpcd) within the water supply areas (target based on One Plan Section 6.4.3.1). <i>lpcd – litres per capita per day</i></p> <p>What does this tell me? Careful water management ensures demand does not exceed capacity, that water is allocated efficiently, and that productivity is maximised. A system that treats and transfers less water maximises the value of existing infrastructure. It costs less to construct and maintain, uses fewer chemicals, and less energy. Where there is increasing demand for water, managing demand provides a means for a Community to defer investment in new water infrastructure through more efficient use of existing resources.</p>	350 lpcd	350 lpcd	350 lpcd	350 lpcd
Minimal water losses from network*. <i>*Using the standard of World Bank Institute Band for Leakage</i>	<p>Percentage of real water loss from the network (as measured by the standard World Bank Institute Band for Leakage).*</p> <p>What does this tell me? Water lost from leaking pipes is a key indicator of the performance of our water network. High levels of water loss can show that the network is in poor condition or that it is being operated inefficiently. To reduce the amount of water lost from the network, we will continue with our programme to find and fix leaks. We use the World Bank Institute Band for leakage to calculate how much water is lost from the network. This uses a grading system ranked from Band “A to D”. Specifically HDC’s target is Band “B” represents potential for marked improvements; consider pressure management, better active leakage control practices, and better network maintenance.</p>	Band “B”	Band “B”	Band “B”	Band “B”
Provide water conservation education to the public.	<p>Provide water conservation education.</p> <p>What does this tell me? Water is an important and limited resource that needs to be well managed to ensure sustainability of supply. By managing demand it provides a means for a Community to defer investment in new water infrastructure through more efficient use of existing resources.</p>	Achieve	Achieve	Achieve	Achieve

Service: Water Supply	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Sustainable water supply management	The number of:				
	Abatement Notices,	0	0	0	0
	Infringement Notices,	0	0	0	0
	Enforcement Orders	0	0	0	0
	Convictions	0	0	0	0
	received by the Council in relation to Horizons Regional Council resource consents.*				
	What does this tell me?				
	This measure indicates how well Council is managing the environmental impacts of the water network. Not complying with consent conditions may indicate that Council is not managing its processes adequately or that the infrastructure is no longer adequate.				
Customer Satisfaction	Percentage of customers satisfied with the service, based on the Annual Customer Satisfaction Survey.	84%	84%	84%	84%
	What does this tell me?				
	The percentage of satisfied customers gives us an indication of the quality of service we are providing.				


* These performance measurements are provided by the Department of Internal Affairs and they are mandatory.

^Urgent call-out is defined as a complete loss of service to the water supply.

Service: Wastewater	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Reliable wastewater collection and disposal*.	The number of dry weather overflows from the wastewater system per 1000 connections.*	<2	<2	<2	<2
	<p>What does this tell me? This measure provides information on whether the sewerage system is designed to an adequate standard and is being maintained in a way that minimises harm to the Community. Overflows are when sewage escapes the sewerage system and enters the environment.</p>				
Council provides a good response to wastewater system faults reported*.	The median time (hrs) from when Council receives a notification, to when service personnel reach the site in responding to an overflow or wastewater blockage.*	<1 hour	<1 hour	<1 hour	<1 hour
	The median time (hrs) from when Council receives a notification, to when service personnel confirm a resolution of a blockage or other fault within the wastewater system.*	12 hours	12 hours	12 hours	12 hours
	<p>What does this tell me? This measure shows how quickly we respond when there is a problem with the sewerage system, and how quickly the problem is resolved.</p>				
The service is satisfactory*.	The total number of complaints received (expressed per 1000 connections to the wastewater system) regarding:				
	Wastewater odour;	<4	<4	<3	<3
	Wastewater systems faults;	<6	<6	<6	<6
	Wastewater system blockages;	<8	<8	<8	<8
	Council's response to issues with its wastewater system;	<4	<4	<3	<3
	Total number of complaints received about any of the above.*	≤22	≤22	≤20	≤20
	Percentage of customers satisfied with the service, based on the Annual Customer Satisfaction Survey.	84%	84%	84%	84%
<p>What does this tell me? The number of complaints provides an indication of the quality of the service provided. This measure also provides information on problems requiring attention, such as the need for maintenance, renewals, upgrades, or new infrastructure.</p>					


Service: Wastewater	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Safe disposal of wastewater.	The number of				
	Abatement Notices;	0	0	0	0
	Infringement Notices;	0	0	0	0
	Enforcement Orders;	0	0	0	0
	Convictions	0	0	0	0
	received by the Council in relation to Horizons Regional Council resource consents.*				
	What does this tell me?				
	This measure indicates how well we are managing the environmental impacts of the District's sewerage system. It only includes formal actions taken, as they represent incidents that may have the greatest adverse impact on the environment.				


* These performance measurements are provided by the Department of Internal Affairs and they are mandatory.

 Service: Stormwater	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
An adequate stormwater system*.	Number of flooding events each that occur in the District.*	< 5 per year	< 5 per year	< 5 per year	< 5 per year
	For each flooding event the number of habitable floors affected. (Expressed per 1000 connections to Council's stormwater networks).*	2 or less	2 or less	2 or less	2 or less
	What does this tell me? This measure provides information on whether the sewerage system is designed to an adequate standard and is being maintained in a way that minimises harm to the Community. Overflows are when sewage escapes the sewerage system and enters the environment.				
Response to faults*.	The median response time to attend a flooding event, measured from when Council receives notification to when service personnel reach the site.*	1 hour	1 hour	1 hour	1 hour
	What does this tell me? This measure shows how quickly we respond when there is a problem with the sewerage system, and how quickly the problem is resolved.				
The service is satisfactory*.	The number of complaints received by Council about the performance of its stormwater system expressed per 1000 properties connected to the system.*	<10 per year	<10 per year	<10 per year	<10 per year
	Percentage of customers satisfied with the stormwater service. As per the Annual Customer Satisfaction Survey.	80%	80%	80%	80%
	What does this tell me? The number of complaints provides an indication of the quality of the service provided. This measure also provides information on problems requiring attention, such as the need for maintenance, renewals, upgrades, or new infrastructure.				

Service: Stormwater	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
A sustainable stormwater service.	The number of:				
	Abatement Notices	0	0	0	0
	Infringement Notices	0	0	0	0
	Enforcement Orders	0	0	0	0
	Convictions	0	0	0	0
	received by the Council in relation to Horizons Regional Council resource consents.*				
	What does this tell me?				
	This measure indicates how well we are managing the environmental impacts of the District's sewerage system. It only includes formal actions taken, as they represent incidents that may have the greatest adverse impact on the environment.				

* These performance measurements are provided by the Department of Internal Affairs and they are mandatory.

 Service: Rooding	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
A safe road network*.	The change from the previous financial years in the number of fatalities and serious injury crashes on the local road network. What does this tell me? It is extremely important that our road network is safe for everyone to use. Road crashes can involve factors that are outside of Council's control (such as speed or driver behaviour). It is important that other factors within our control are carefully managed to improve road safety across our region and reduce the number of deaths or serious injuries each year. These include the condition of the road and footpaths, the location of pedestrian crossings, and traffic signals.	0 change or less over a 5 year average.	0 change or less over a 5 year average.	0 change or less over a 5 year average.	0 change or less over a 5 year average.
Roads in good condition*.	The average quality of a ride on a sealed local road network measured by smooth travel exposure. What does this tell me? The roughness of roads can impact on the safety and comfort of road users. As well as on vehicle operating and maintenance costs. Smooth Travel Exposure (STE) is a system of measurement used to assess the quality of the ride on our District's roads. The higher the STE percentage, the smoother the network.	Minimum 85%	Minimum 85%	Minimum 85%	Minimum 85%
Roads that are maintained well*.	The percentage of the sealed local road network resurfaced annually.* What does this tell me? This measure provides information on how well we are maintaining our road network and meeting the targets for road resurfacing set in our Asset Management Plan.	Minimum of 5% of total area	Minimum of 5% of total area	Minimum of 5% of total area	Minimum of 5% of total area
Footpaths are in an acceptable condition*.	Target footpath condition rating (% compliant with Council's standards found in the Land Transport Activity Plan). What does this tell me? Footpaths are an important part of the District's infrastructure. Well maintained footpaths are important for pedestrian convenience and safety.	Minimum 30% in excellent condition Maximum 10% in poor condition	Minimum 30% in excellent condition Maximum 10% in poor condition	Minimum 30% in excellent condition Maximum 10% in poor condition	Minimum 30% in excellent condition Maximum 10% in poor condition


 Service: Roading	How will we measure our performance	Target 18/19	Target 19/20	Target 20/21	Target 21/38
Good response to service requests*.	<p>The percentage of customer service requests relating to roads and footpaths to which Council responds within 15 working days.</p> <p>What does this tell me? Interaction with the Community is a key aspect of our service and response time is a key method of measuring whether Council is listening to its customers.</p>	>95%	>95%	>95%	>95%


* These performance measurements are provided by the Department of Internal Affairs and they are mandatory.


Appendix 2


Asset Lives

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 Supply	
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

 Waste Water	
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
Catch pit (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	160
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

Appendix 3

Asset Confidence Guide Description

Grade	Confidence Description
A Highly reliable	Data based on sound records, procedure, investigations and analysis, documented properly and recognised 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.

Appendix 4

Capital Projects List

These tables list the major capital projects proposed for the 30-year period for each asset group by the first, second and third decade. These are projects greater than \$0.5 million. Note that projects contain a mixture of Level of Service, Renewal, and Growth components. The values below are inflated.

First Decade												
Budget Unit	Description	Primary type	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	Yr 7	Yr 8	YR 9	YR10
STW Stormwater	District-wide improvement works	LOS	1,125,000	535,563			731,234				509,333	523,587
WS Foxton Beach	Foxton Beach reticulation - renewals	Renewal										
WS Levin	Levin reticulation - renewals	Renewal	1,324,000	1,402,200	1,484,818	1,252,680	1,282,778	1,314,859	1,349,040	2,014,840	1,031,092	1,146,180
WS Levin	Levin, North East development plan	Growth		974,935		510,676	522,946	536,024	549,958	564,273	579,492	595,709
WS Manakau	Manakau future supply of water services	Growth							578,200	593,250	1,116,024	1,147,256
WS Waikawa Beach	Waikawa Beach future supply of water services	Growth										626,300
WS Waitāreke Beach	Waitāreke Beach future supply of water services	Growth										
WS Foxton	Foxton reticulation - renewals	Renewal						3,152,270				
WS Hokio Beach	Hokio Beach future supply of water services	Growth										
WS Levin	Levin Treatment Plant - renewals	Renewal										3,106,448
WS Ōhau	Ōhau future supply of water services	Growth				543,745	556,810	1,141,471	1,711,144	1,201,628	1,234,036	
WS Shannon	Shannon - Mangaore reticulation - Renewals	Renewal				1,285,197						
WS Shannon	Shannon Treatment Plant - Renewals	Renewal										532,355
WS Tokomaru	Tokomaru reticulation - Renewals	Renewal									510,309	
WW Foxton	Foxton Wastewater Treatment Plant - Strategic Upgrade	LOS	1,963,000	2,050,000								
WW Foxton	Foxton reticulation renewals	Renewal										
WW Foxton Beach	Foxton Beach - relocate ponds	LOS									609,250	
WW Hōkio Beach	Hōkio Beach future supply of wastewater services	Growth										
WW Levin	Levin - reticulation renewals	Renewal	1,093,796	700,271	1,409,863	1,020,309	1,554,259	3,030,996	3,125,949	2,863,528	1,628,972	1,436,645
WW Levin	Levin Wastewater Treatment Plant - planned renewals	Renewal				660,705						
WW Levin	Levin Wastewater Treatment Plant - Strategic upgrade POT	LOS		512,500	524,300							
WW Levin	Levin Wastewater Treatment Plant - POT	Renewal		512,500								
WW Levin	Levin - network upgrades - pump stations	Growth	748,000									
WW Levin	Levin - network upgrades	Growth		1,379,309	1,411,066	1,444,977						
WW Levin	Levin - Gladstone Green network upgrades	Growth	644,000	715,963	732,447							
WW Manakau	Manakau future supply of wastewater services	Growth							578,200	593,250	731,100	751,560
WW Ōhau	Ōhau future supply of wastewater services	Growth				536,900	546,800	2,183,756	2,240,525	2,298,844	2,360,844	2,426,913
WW Tokomaru	Tokomaru - reticulation renewals	Renewal										
WW Tokomaru	Tokomaru - wastewater treatment plant upgrade	LOS		512,500								
WW Waikawa Beach	Waikawa Beach future supply of wastewater services	Growth										626,300
RDG Footpaths	Footpath renewal	Renewal										
RDG Footpaths	New footpaths	LOS										
RDG Subsidised roading	Subsidised roading - road improvements	LOS	710,000	776,720	846,045	848,960	869,360	890,240	912,480	936,240	961,520	988,480
RDG Subsidised roading	Subsidised roading - renewals	Renewal	2,836,000	2,999,570	3,065,608	3,183,600	3,260,100	3,338,400	3,421,800	3,510,900	3,605,700	3,706,800
RDG Subsidised roading	Subsidised roading - bridge renewals	Renewal				530,600			570,300			617,800
RDG Subsidised roading	Subsidised roading - cycle facilities (shared pathways)	LOS										
RDG Subsidised roading	Subsidised roading - road improvements due to RONS	LOS			522,250	530,600	543,350					

Second Decade

Budget Unit	Description	Primary type	YR 11	YR 12	YR 13	YR 14	YR 15	YR 16	Yr 17	Yr 18	YR 19	YR 20
STW Stormwater	District-wide improvement works	LOS	537,214	551,175					512,726			
WS Foxton Beach	Foxton Beach reticulation - renewals	Renewal	556,643						989,741			
WS Levin	Levin reticulation - renewals	Renewal	1,080,586	1,136,773	1,195,575	818,717	734,083	854,083	1,010,611	1,214,978	1,104,327	951,743
WS Levin	Levin, North East development plan	Growth	611,213	627,084								
WS Manakau	Manakau future supply of water services	Growth	1,819,715	1,867,006	1,915,571							
WS Waikawa Beach	Waikawa Beach future supply of water services	Growth	642,600	867,639	890,208	1,607,420	1,607,420	1,692,070				
WS Waitāre Beach	Waitāre Beach future supply of water services	Growth	3,776,175	3,874,311	3,975,091	4,078,515	4,078,515					
WS Foxton	Foxton reticulation - renewals	Renewal										
WS Hōkio Beach	Hōkio Beach future supply of water services	Growth				2,251,637	2,310,195	2,370,213	2,431,852	2,495,114		
WS Levin	Levin Treatment Plant - renewals	Renewal										
WS Ōhau	Ōhau future supply of water services	Growth										
WS Shannon	Shannon - Mangaore reticulation - renewals	Renewal										
WS Shannon	Shannon Treatment Plant - renewals	Renewal										
WS Tokomaru	Tokomaru reticulation - renewals	Renewal										
WW Foxton	Foxton wastewater treatment plant - strategic upgrade	LOS										
WW Foxton	Foxton reticulation renewals	Renewal							656,672	2,183,289	1,316,350	
WW Foxton Beach	Foxton Beach - relocate ponds	LOS	642,600									
WW Hōkio Beach	Hōkio Beach future supply of wastewater services	Growth				2,948,290	3,024,965	3,103,552	3,184,263	3,267,098		
WW Levin	Levin - reticulation renewals	Renewal	1,948,386	1,668,766	1,664,063	1,555,087	1,178,191	4,718,180	4,840,881	4,966,811	5,095,970	5,228,358
WW Levin	Levin wastewater treatment plant - planned renewals	Renewal										
WW Levin	Levin Wastewater Treatment Plant - strategic upgrade POT	LOS										
WW Levin	Levin Wastewater Treatment Plant - POT	Renewal										
WW Levin	Levin - network upgrades - pump stations	Growth										
WW Levin	Levin - network upgrades	Growth										
WW Levin	Levin - Gladstone Green network upgrades	Growth										
WW Manakau	Manakau future supply of wastewater services	Growth	1,413,720	1,450,460	1,488,190							
WW Ōhau	Ōhau future supply of wastewater services	Growth	2,490,075	2,554,788	2,621,244							
WW Tokomaru	Tokomaru - reticulation renewals	Renewal									2,163,026	
WW Tokomaru	Tokomaru - wastewater treatment plant upgrade	LOS										
WW Waikawa Beach	Waikawa Beach future supply of wastewater services	Growth	642,600	1,221,815	1,253,597	1,980,263	2,031,764	2,084,548				
RDG Footpaths	Footpath renewal	Renewal	508,080	520,800	533,840	547,200	560,880	574,920	589,280	604,000	619,120	634,600
RDG Footpaths	New footpaths	LOS										
RDG Subsidised roading	Subsidised roading - road improvements	LOS	1,016,160	1,041,600	1,067,680	1,094,400	1,121,760	1,149,840	1,178,560	1,208,000	1,238,240	1,269,200
RDG Subsidised roading	Subsidised roading - renewals	Renewal	3,810,600	3,906,000	4,003,800	4,104,000	4,206,600	4,311,900	4,419,600	4,530,000	4,643,400	4,759,500
RDG Subsidised roading	Subsidised roading - bridge renewals	Renewal			667,300			718,650			773,900	
RDG Subsidised roading	Subsidised roading - Cycle facilities (shared pathways)	LOS										
RDG Subsidised roading	Subsidised roading - road improvements due to RONS	LOS										

Second Decade

Budget Unit	Description	Primary type	YR 21	YR 22	YR 23	YR 24	YR 25	YR 26	Yr 27	Yr 28	YR 29	YR 30
STW Stormwater	District-wide improvement works	LOS										
STW Stormwater	District-wide Reticulation Renewals				762,847							
WS Foxton Beach	Foxton Beach Reticulation - Renewals	Renewal										
WS Levin	Levin Reticulation - Renewals	Renewal	951,514	909,875	2,224,922	997,003	938,772	1,018,836	1,051,086	1,754,967	1,436,070	1,087,904
WS Levin	Levin, North East development plan	Growth										
WS Manakau	Manakau future supply of water services	Growth										
WS Waikawa Beach	Waikawa Beach future supply of water services	Growth										
WS Waitare Beach	Waitare Beach future supply of water services	Growth										
WS Foxton	Foxton reticulation - Renewals	Renewal										
WS Hokio Beach	Hokio Beach future supply of water services	Growth										
WS Levin	Levin treatment Plant - Renewals	Renewal	534,860	548,707	563,197	577,688	592,822	608,279	624,057	640,158	656,902	673,969
WS Ohau	Ohau future supply of water services	Growth										
WS Shannon	Shannon - Mangaore reticulation - Renewals	Renewal										
WS Shannon	Shannon Treatment Plant - Renewals	Renewal										
WS Tokomaru	Tokomaru reticulation - Renewals	Renewal										
WW Foxton	Foxton wastewater treatment plant - Strategic Upgrade	LOS										
WW Foxton	Foxton reticulation renewals	Renewal						555,952				
WW Foxton Beach	Foxton Beach - Relocate ponds	LOS										
WW Hokio Beach	Hokio Beach future supply of wastewater services	Growth										
WW Levin	Levin - reticulation renewals	Renewal			1,690,540	1,734,494	1,779,591	1,825,860	1,873,332	1,922,039	1,972,012	2,023,284
WW Levin	Levin wastewater treatment plant - planned renewals	Renewal	2,084,494	1,818,734	1,592,932	2,203,406	2,999,110	1,578,366	3,139,034	3,737,781	2,550,509	1,428,503
WW Levin	Levin wastewater treatment plant - Strategic upgrade POT	LOS	1,022,084	1,048,658	1,075,923	1,103,897	1,132,599	1,162,046	1,192,260	1,223,258	1,255,063	1,287,695
WW Levin	Levin wastewater treatment plant - POT	Renewal										
WW Levin	Levin - network upgrades - Pump stations	Growth										
WW Levin	Levin - network upgrades	Growth										
WW Levin	Levin - Gladstone Green network upgrades	Growth										
WW Manakau	Manakau future supply of wastewater services	Growth										
WW Ohau	Ohau future supply of wastewater services	Growth										
WW Tokomaru	Tokomaru - Reticulation renewals	Renewal									1,303,124	
WW Tokomaru	Tokomaru - wastewater treatment plant upgrade	LOS										
WW Waikawa Beach	Waikawa Beach future supply of wastewater services	Growth										
RDG Footpaths	Footpath renewal	Renewal	606,311	622,075	638,249	654,843	671,869	689,338	707,261	725,650	744,516	763,874
RDG Footpaths	New footpaths	LOS										
RDG Subsidised Rooding	Subsidised Rooding - Road improvements	LOS										
RDG Subsidised Rooding	Subsidised Rooding - Renewals	Renewal	6,220,916	6,382,660	6,548,609	6,718,873	6,893,564	7,072,796	7,256,689	7,445,363	7,638,942	7,837,555
RDG Subsidised Rooding	Subsidised Rooding - Bridge Renewals	Renewal										
RDG Subsidised Rooding	Subsidised Rooding - Cycle facilities (shared pathways)	LOS										
RDG Subsidised Rooding	Subsidised Rooding - Road improvements due to RONS	LOS										
RDG Unsubsidised Rooding	RDG Unsubsidised Rooding	LOS										
RDG Unsubsidised Rooding	Unsubsidised - Shared pathways	LOS									509,943	523,201



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