



# Infrastructure Strategy



TE KAUNIHERA Ā ROHE O  
**WHAKAAHURANGI**  
**STRATFORD**  
DISTRICT COUNCIL

Long Term Plan 2021-31

**DOCUMENT QUALITY ASSURANCE**

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# 1. Introduction

Section 101B of the LGA requires that the Council must, as part of its Long Term Plan (LTP), prepare and adopt an Infrastructure Strategy for a period of a least 30 consecutive years.

The Infrastructure Strategy (IS) 2021-2051 is a significant infrastructure strategy developed by the Stratford District Council ('the Council') spanning the 30-year period between 2021 and 2051. The IS has been prepared along with the LTP 2021-2051, for the purposes of identifying:

- significant infrastructure issues for the Council over the 30-year period;
- the principal options for the management of those issues; and
- Implications of the identified options.

The IS considers a number of asset and lifecycle management issues including:

- response to growth in the service demand and increase in service levels;
- Maintenance or improvement of public health and environmental outcomes;
- Asset resilience through appropriate risk management.

It presents an overview of how the Council will manage its core infrastructure assets over the 30-year planning horizon. The IS presents the most likely cost scenario for the management of the

assets, following the identification of the long-term significant issues and options.

The Council has an important stewardship role for the infrastructure assets and for the services they deliver. Council's vision for its significant infrastructure assets is: *'Infrastructure is resilient, fit for purpose, affordable and meets the needs of today without compromising the needs of tomorrow'*.

Infrastructure provides the foundation for efficient delivery of services and enables population and economic growth. It supports the fabric of modern living and is taken for granted until something fails or no longer provides the expected service. Infrastructure enables the Council to achieve desired community outcomes and meet asset ownership goals and objectives.

The IS aims to ensure core services provided by Council meet the agreed level of service and the infrastructure assets that deliver them are fit for purpose and can meet the needs of a changing community today and in the future. The IS will guide Council's decision making process and inform the community of the Council's long-term priorities with respect to the core services it delivers. It presents the Council's approach for addressing identified issues within the core local government infrastructure categories.

This Stratford District Council IS covers the four core local government infrastructure categories:

- Roading (and transport);
- Stormwater and drainage
- Sewer treatment and disposal;
- Water supply

Flood protection and control is addressed where it falls under each respective core service category. This IS describes the:

- Growth and Demand Drivers;
- Significant Issues the Council will address over the next 30 years;
- Options for addressing the identified issues, including the Council's preferred option;
- Significant Assumptions underpinning the strategy including Risks, Consequence, Mitigation;
- Level of Service, Risk and Lifecycle Management Strategies;
- Council's 30-year Investment Funding Strategy, including Capital and Operating Expenditure;
- Timeline for Investment.
- The IS is reviewed and updated every three years in line with the LTP.



## 2. Mission, Vision, Values, Priorities and Community Outcomes

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The Stratford District Council is the territorial authority for the Stratford District. Council's role in accordance with the Local Government Act 2002 (LGA) is to:

- Enable democratic local decision-making and action by, and on behalf of communities;
- Promote the social, economic, environmental, and cultural well-being of communities in the present and for the future

The Stratford District Council's **Mission Statement** is 'To serve the district and its communities through advocacy, promotion, services, facilities and positive leadership'

The Stratford District Council's **Vision Statement** is 'A vibrant, resilient, and connected community – in the heart of Taranaki'

The Stratford District Council's **Values** are:

<b>Integrity</b>	<i>Be loyal to the organisation and trustworthy, honest and courteous with everyone we deal with.</i>
<b>Teamwork</b>	<i>Work together in the same direction, assist each other and have respect for others. Maintain a positive attitude and encourage teamwork.</i>
<b>Excellence</b>	<i>Be effective in everything we do using our experience and knowledge. Do the right thing at the right time. Be efficient by being cost effective and ensure prudent management of public money and assets.</i>
<b>Pride</b>	<i>Take pride in our performance and our organisation.</i>
<b>Commitment</b>	<i>Have commitment and respect for each other, our business and our customers.</i>
<b>Innovation</b>	<i>Examine alternatives, challenge the obvious and have a flexible attitude.</i>

The Council's key **Priorities** over the next 30 years are to:

- Ensure the provision of long-term, affordable core services to the community;
- Maintain agreed levels of service;
- Optimise the replacement of ageing infrastructure;
- Maintain compliance with legislative requirements; and
- Manage changing customer expectations and needs in a cost-effective manner.

The Council's **Community Outcomes** have been identified in workshops with Elected Members and reviewed as part of the LTP process.

An assessment of the achievement of the Community Outcomes through the delivery of the four Core Infrastructure Services of Roading; Water; Wastewater and Stormwater, is provided below.

## Achievement of Community Outcomes through the delivery of Core Services

Community Outcomes		Roading	Water	Wastewater	Stormwater
<b>Vibrant community</b>	<ul style="list-style-type: none"> <li>We celebrate and embrace our community's cultures and traditions</li> <li>We tell our unique story</li> <li>We will develop strong relationships with iwi, hapu, and marae</li> </ul>	✓	✓	✓	✓
<b>Sustainable environment</b>	<ul style="list-style-type: none"> <li>Our natural resources can be enjoyed now and by future generations.</li> <li>We are committed to working towards zero waste</li> <li>We have well planned and resilient infrastructure that meets the current and future needs of the district</li> <li>We strive to understand and support Te Ao Māori values and principles</li> </ul>	✓	✓	✓	✓
<b>Connected communities</b>	<ul style="list-style-type: none"> <li>Our neighbourhoods are safe and supported</li> <li>We enable positive healthy lifestyles, through access to health, social and recreation services</li> <li>We have a strong sense of belonging</li> <li>We value opportunities to be involved and work together as a community</li> </ul>	✓	✓	✓	✓
<b>Enabling economy</b>	<ul style="list-style-type: none"> <li>We are a welcoming and business friendly District</li> <li>We encourage a strong and diverse local economy</li> <li>We promote opportunities to visit, live and invest in the district</li> <li>We support economic opportunities for Māori</li> </ul>	✓	✓	✓	✓

### 3. District Overview

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The Stratford District is a beautiful land-locked area situated in the heart of the Taranaki region and encompassing approximately 2,170km<sup>2</sup> of land. To the north, west and south of the district are the New Plymouth and South Taranaki districts in the Taranaki region; to the east, the district is bordered by the Ruapehu and Whanganui districts within the Horizons region.

Within the Stratford District are four distinct geographical areas:

- The alpine and bush environment of Te Papakura o Taranaki;
- The ring plain around Taranaki Maunga;
- The hill country located between the ring plain and the eastern hill country; and
- The eastern hill country to the boundary with Ruapehu District Council.

The district's population as at 2020 ranks 10th smallest out of the 67 districts in New Zealand. The rural landscape supports large farming, forestry and Department of Conservation reserves. The Stratford District is a growing tourist destination owing to key attractions such as the Te Papakura o

Taranaki, the Manganui Ski Field, Forgotten World Highway (SH43), Dawson and Mt Damper Falls.

The Stratford District is home to many settlements, with the four main centres being Stratford, Midhirst, Toko and Whangamomona.

Stratford is the main town in the Stratford District. It is located on the banks of the Patea River roughly 48 km south-east of New Plymouth and 30 km north of Hawera at the junction of State Highways 3 and 43.

Stratford with a population of approximately 9880 (Statistics NZ, June 2020) is near the geographic centre of the Taranaki region and the largest settlement of the Stratford District. The town is central Taranaki's main rural servicing centre, and the administrative base of the Stratford District Council and the Taranaki Regional Council.

Midhirst is located approximately 4 km north of Stratford, on State Highway 3. Inglewood is 17 km north of Midhirst and New Plymouth is 35 km to the northwest. An estimated 234 (Statistics NZ 2013) people live in Midhirst.

One of the most distinctive features of Midhirst is the towering concrete and glass

milk-powder drying plant, which was one of New Zealand's most advanced in its time (1980). The factory closed after amalgamating with Kiwi Dairies in 1983 and is now used for bulk grain storage.

Toko is located 10 km east of Stratford, at the intersection of East Road (State Highway 43) and Toko Road. It is situated on a railway, the Stratford–Okahukura Line, the western portion of which was operated as a branch line known as the "Toko Branch" prior to the line's completion.

The Toko Stream flows through the area to join the Patea River. An estimated 1,188 (Statistics NZ 2013) people live in or around Toko. This includes people living in the settlement and those living in the surrounding rural areas.

Whangamomona is a rural settlement 65 km North East of Stratford on State Highway 43. Once quite a thriving settlement and the headquarters of the Whangamomona County Council with a hotel, a number of stores and a post office, it suffered decline from the mid 20th Century with only the hotel remaining as a business in town. Today an estimated 150 people live in and around Whangamomona.

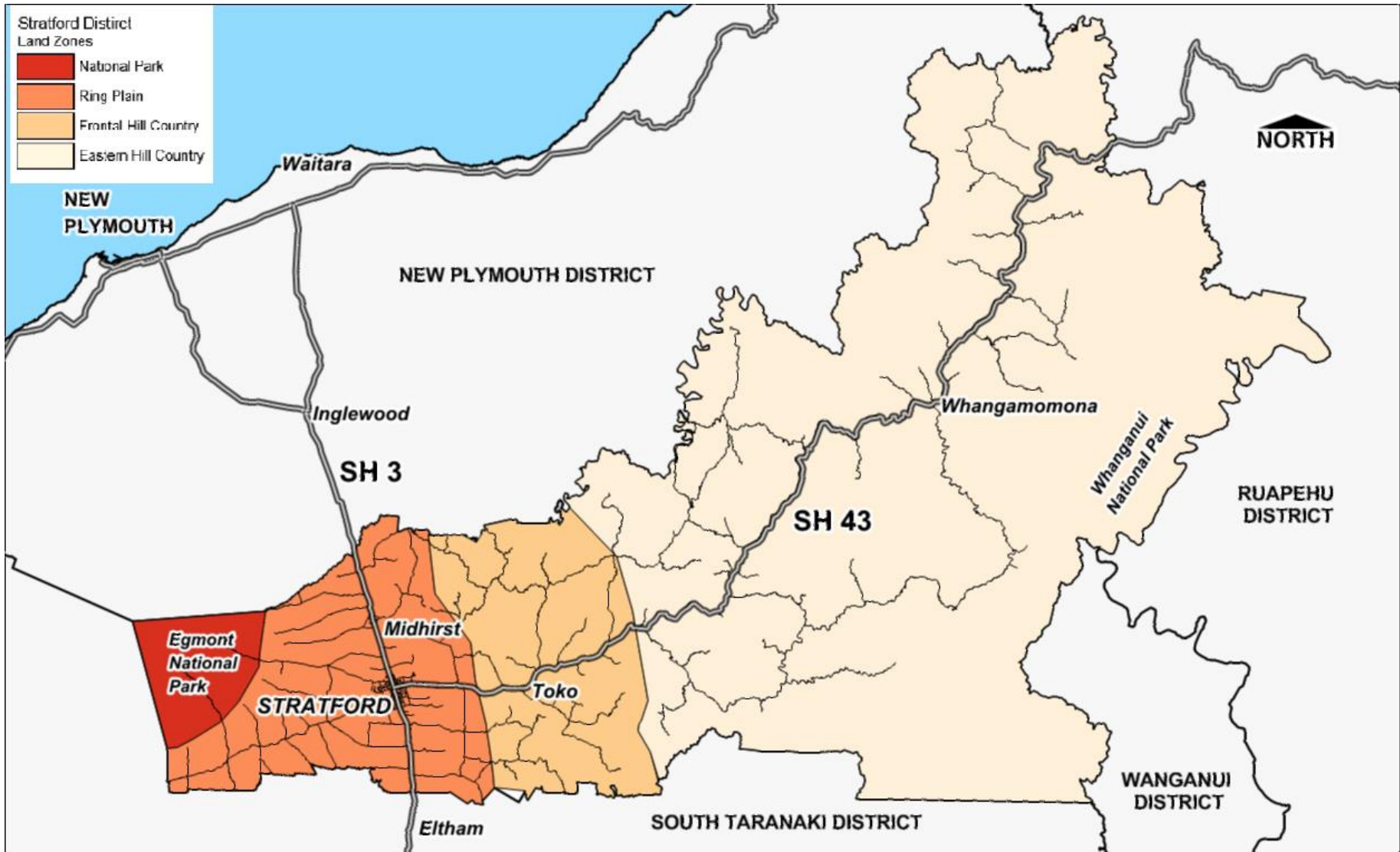


Figure 1 - The Stratford District 2020



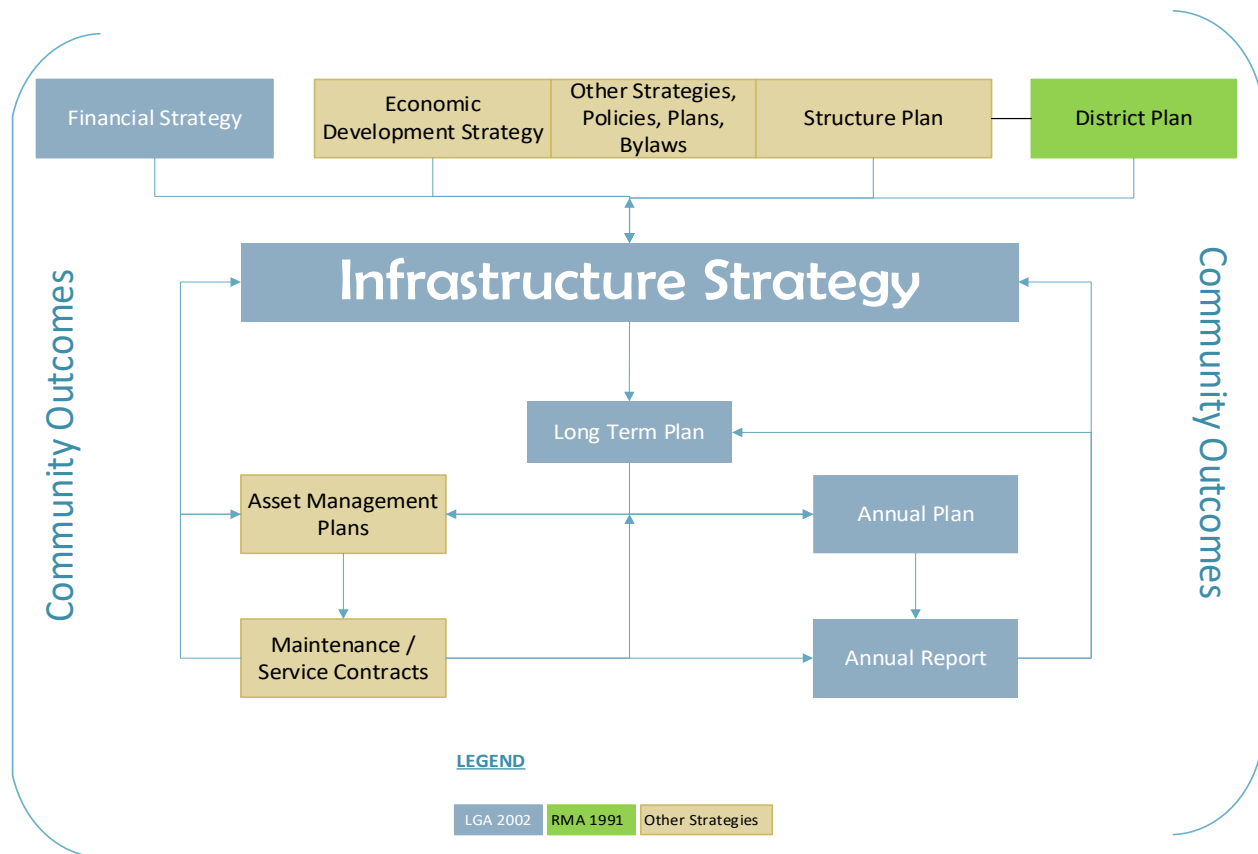
## 4. Legislative and Strategic Context

The Legislative and Strategic context of the IS is presented in Figure 2.

Section 101B of the LGA (2002) requires that the Council must, as part of its Long Term Plan (LTP), prepare and adopt an Infrastructure Strategy for a period of a least 30 consecutive years. One principle by which a local authority should perform its role in Section 14(g) of the LGA is that a *local authority should ensure prudent stewardship and the efficient and effective use of its resources in the interests of its district or region, including by planning effectively for the future management of its assets*.

Undergirding the preparation of this long-term strategic document is the principle to ensure that the Council maintains the sustainable delivery of its core services to the community.

Figure 2 – Legislative and Strategic Context



## 5. Growth and Demand Forecast

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The future growth and demand for services in the district can be attributed to a number of factors including:

- Population growth;
- Economic development;
- Tourism;
- Regulatory Changes; and
- Land-Use Changes.

Anticipated impacts of growth and increased demand include:

- Increased demand for services and the infrastructure that delivers these services;
- Increased pressure on existing infrastructure; and
- Increased maintenance and renewal costs.

Demand increases can impact affordability positively as well as negatively, depending on how these are managed. The uncertainties and reliability of these assumptions are discussed in the *Significant Assumptions* Table in Section 8.

### Population Growth

Data obtained in the 2019 Infometrics report advises that the Stratford District population was 9,860 in 2019 and has had a growth of 1.3% from the previous year. The source of the growth was due to:

- 78% natural increase; and
- 22% due to net migration.

Population growth has averaged 0.2% in the last 20 years, and averaged 0.7% in the last 10 years. In the last 3 years population growth has increased annually by 0.8% on average. An annual average population growth of 0.5% is anticipated over the next 8 years, centred around the urban area and mostly as a result of births. The average age of Stratford residents is expected to increase over the next 30 years from 40 to 42 years. 580 residents (5% of the district population) are aged 80+. Maori make up 13% of district population - 48% of which are under the age of 20.

### Economic Development

This district's economic development strategy as well as its participation in Tapuae Roa – Make Way for Taranaki, the regional economic development strategy, set a direction for economic development and identify priorities and measurable goals for the district. It is anticipated that both strategies will enable and support economic growth and development in the Stratford District.

The two biggest contributing industries in Stratford are the Agriculture and Forestry sector contributing 27% (Dairy Farming making up 16% of this) of district GDP, and the Electricity and Gas Supply contributing 16%. Stratford has the region's largest electricity

generation site at Contact's 575MW gas powered plant – it is considered a nationally significant generation site.

### Tourism

Tourism currently makes up 2% of Stratford District's GDP. Potential growth opportunities are:

- Walking and Cycling;
- Forgotten Highway; and
- Taranaki Mounga.

The Visitor Sector Action Plan (VSAP) is one of six action plans developed as part of the *Tapuae Roa – Make Way for Taranaki* – Regional Economic Development Strategy. The action plan describes the current regional sector dynamic, growth objectives, challenges, opportunities and the actions required to achieve sector growth. It is anticipated that the VSAP will facilitate growth in the Stratford District.

### Land Use Changes

The Council is preparing a 30-year Structure Plan to identify key growth areas in Stratford in addition to a review of its District. The core infrastructure assets will be planned to service these areas accordingly. Given the proximity and centrality to key employment generators and tourist areas in the region, the creation of

new and affordable residential lots is expected to support the growth forecast for the Town.

The Council has recently successfully completed the creation of a quality and affordable subdivision in one of the identified growth areas by supplying new residential lots to jumpstart and facilitate growth in the district. The uptake of the newly created lots was quick and attracted homeowners from all parts of the Taranaki region and beyond. Council may yet lead another venture such as this.

### **Relationships with Tangata Whenua**

While there are no formal agreements with Iwi, engagement occurs regularly with Iwi Authorities that have mana over whenua within the Stratford district, on project by project as the need arises. The Council is currently undertaking engagement with all the Iwi groups in the Stratford District, including;

- Ngaruahine Iwi Authority;
- Te Runanga o Ngāti Ruanui Trust;
- Ngaa Rauru Kiihahi;
- Te Runanga o Ngāti Mutunga;
- Ngāti Maru Wharanui Pukehou Trust
- Te Atiawa Iwi Authority
- Te Runanga o Ngāti Tama.

### **Regulatory Changes**

The SDC regularly reviews regulatory changes that may or will affect the delivery of our core services. This primarily includes updates to resource consents and changes to drinking water legislation and standards.

Regulatory changes, as seen in recent times, are likely to require the implementation of stricter outcomes from Territorial Authorities such as the Council. For example, current changes to the National Policy Statement for Freshwater (FVNPS) 2020, will have an impact on the management and cost of core service delivery of the 3-Waters Activity, with a direct impact on rates.

Also expected to have a key impact on future Water, Wastewater and Stormwater operations is the 3-Waters Reform through new legislations including:

- Taumata Arowai – Water Services Regulator Act 2020; and
- Service Delivery – the Water Services Bill.

### **The Three Waters Reform**

The Water Services Bill is a companion to the *Taumata Arowai - the Water Services Regulator Act 2020* which was passed earlier in the year, and provides the new *Drinking Water Regulator - Taumata Arowai* with significant new powers.

The Bill is a part of a broader Three Waters reform programme. It proposes a new regulatory regime for managing drinking water supply. The obligations on drinking water suppliers proposed by the Bill are more onerous than those under the existing Health Act regime.

The Bill will replace the existing regime set out in Part 2A of the Health Act 1956 and will replace it with a new regulatory regime that applies to all drinking water suppliers.

The Council signed a Memorandum of Understanding (MoU) with central government to work together to identify approaches that consider the design features of the 3 waters reform and is participating in the exploration of future service delivery options. The central government expects to create new water service delivery entities that are:

- of significant scale (most likely multi-regional) to enable benefits from aggregation to be achieved over the medium to long-term;
- asset owning entities, with balance sheet separation to support improved access to capital, alternative funding instruments and improved balance sheet strength; and
- structured as statutory entities, with competency-based boards;

The Council expects to make a decision in late 2021, to either stay with the new water service delivery entity or opt out. Any decision to participate is likely to be given effect to at some point in the 2023/4 financial year.

Reference to the Government's reform strategy and timeline, including highlighting when it is proposed that there would be further engagement and consultation with communities is available at

<https://www.dia.govt.nz/Three-Waters-Reform-Programme>

## 6. Infrastructure Assets Information, Condition and Performance

The Council maintains its core infrastructure assets to support the delivery of its agreed level of service. The Council's core assets are in four categories:

- Wastewater;
- Roads;
- Stormwater; and
- Water supply.

Asset Management Plans (AMP) are maintained for all major assets, including the four core asset categories above. The AMPs contain information on the life, age and condition of the assets. They also contain details of the asset's location; valuation; useful lives; condition assessment system and data accuracy/confidence.

A summary of Council's core assets as at 30 June 2018, including the associated Optimised Replacement Cost (ORC), is provided below.

### Wastewater Assets

The Council's wastewater assets only cover the Stratford urban area.

Asset Group	Quantity
Reticulation	55,256 km
Point and Plant	3,348 No.
<b>Total ORC</b>	<b>\$8,204,118</b>

### Road Assets

The Council Roading assets include all land transport infrastructure assets including walking and cycling facilities.

Asset Group	Quantity
Sealed Roads	393 km
Unsealed Roads	207 km
Footpaths	68 km
Bridges/Large culverts	157 No.
Culverts	2950 No.
Tunnels	5 No.
Retaining Walls	250 No.
Signs	4802 No.
Markings	2,252 No.
Guard Rails	828 No.
Streetlights	755 No.
Surface Water Channels	747 km
<b>Total ORC</b>	<b>\$199,683,860</b>

### Water Supply Assets

The Council owns and operates three urban water supplies servicing the Stratford, Midhurst and Toko Communities. Table below is a total of all 3 water supplies.

Asset Group	Quantity
Reticulation	85,272 km
Fittings	9,273 No.
Treatment	108 No.
<b>Total ORC</b>	<b>\$14,534,675</b>

### Stormwater Assets

Asset Group	Quantity
Reticulation (pipes)	19.8 km
Points – Inlets, Outlets, etc.	Varies.
<b>Total ORC</b>	<b>\$5,979,266</b>

Data for the roading and 3-Waters infrastructure assets are held in the RAMM and AssetFinda databases respectively. More details are provided in the respective AMPs.

## Asset Condition and Data Confidence

Grade	Condition	Description
1	Very Good	Asset in structurally sound and excellent physical condition. No work required
2	Good	Asset in structurally sound and acceptable physical condition. Minor work required (if any)
3	Fair	Asset is structurally sound but shows deterioration. Moderate work required to return asset to agreed level of service
4	Poor	Asset failure likely in the short term. Significant work required now to return asset to agreed level of service
5	Very Poor	Asset has failed/is about to fail. Renewal/Replacement required Urgently.

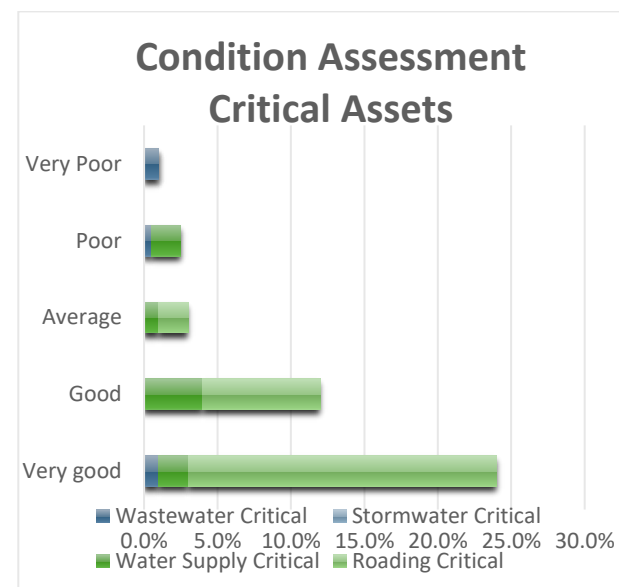
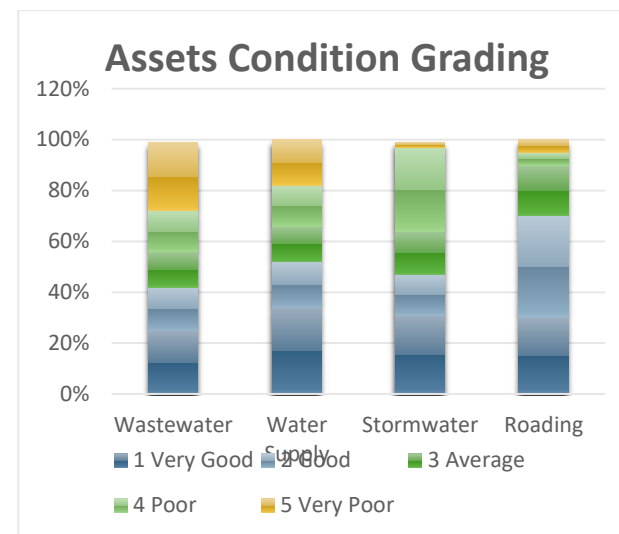
Asset condition is a measure of an asset's physical integrity, while asset performance is a measure of whether the asset is delivering level of service requirements. Knowing the condition of an asset is a core part of what the Council and its contracting partners do as it enables more accurate prediction of its performance and supports its development, maintenance and renewal/replacement requirements. The Council has no backlog or deferred maintenance in its work programme.

The Stratford District Council identifies the condition of its infrastructure assets by a combination of the following, based on risk and asset criticality, with higher risk assets inspected and assessed more rigorously:

- Asset Age;
- Visual targeted inspections;
- Analysis of collected statistical data; and
- Maintenance monitoring.

The Stratford District Council has developed a condition grading system to support the classification of our infrastructure assets at the group level. Using the system, assets are ranked from 1-5 as illustrated in the table above. The figures below provide a summary of the condition grading for our core assets, and our critical assets.

Given that some data in our asset database is either incomplete or unsupported, the Council's overall confidence level in the condition data assessment is '*Reliable to Uncertain*'. Therefore, the Council uses a combination of visual inspection, maintenance monitoring and other methods to support the development of its maintenance and replacement forward works programmes. The Council is able to continue to deliver on agreed service levels, knowing the asset condition presented above. Council's approach to monitoring the condition of its assets is as described in Section 7.





While Council's overall confidence around its data quality is *'Reliable to Uncertain'*, the Council's confidence level for the 3-Waters is *'Reliable'* for its critical assets and *'Reliable to Uncertain'* for non-critical assets. With regards to roading assets, confidence is *'Reliable to Highly Reliable'* for the critical assets and other assets that receive regular inspections (such as structures, footpaths and carriageways). For other non-critical assets, the confidence is average, translating to *'uncertain'*.

This uncertainty stems from data held around the age of the non-critical assets, which have been deduced from the approximate date of construction, and also from the quality of data held on our service connections. However, given these are non-critical assets, impact of premature asset failure on continued service delivery is very low, as any disruption to service is limited to a few properties. The associated financial impact is also very low.

It is important to note that these assets do not fail simultaneously, as they are individual assets - any failed part can be isolated and managed, so the risk and consequences of failure is very low. This is evidenced from our annual performance indicators reported every month to the Council and summarized in the Annual Report. Our track record is good. Our strategy to mitigate the impacts of this *Uncertainty* is to be ready at all times to respond to all asset failures. Therefore we have, on hand or ready access to, supplies to replace any failed asset. Our contractors are on board as per the requirements of their maintenance contract.

		Data Confidence Level				
		Highly Reliable	Reliable	Uncertain	Very Uncertain	Unknown
Wastewater	Critical		✓			
	Non-Critical		✓	✓		
	TOTAL		✓	✓		
Stormwater	Critical					
	Non-Critical			✓		
	TOTAL			✓		
Water Supply	Critical		✓			
	Non-Critical		✓	✓		
	TOTAL		✓	✓		
Roading	Critical	✓	✓			
	Non-Critical		✓	✓		
	TOTAL		✓			

The Council continues to validate the data in the AssetFinda database - as assets are replaced. Our maintenance contractors interact directly with our asset management system and provide corrections and updates to the condition data which is reviewed and/or updated as new data becomes available. Assets that are frequently interacted with therefore, are better documented than those that only get dug up as part of upgrades, renewals or repair work. It will take some time for the assessment of our *'confidence level'* of our non-critical assets to be *'Reliable'*.

The charts above provide snapshots of the overall *Condition Grading Assessment* for all assets –critical and non-critical; the table below provides a summary of the *Data Confidence Levels*.

## 7. Critical Assets and Significant Infrastructure Issues

### Critical Assets

Critical assets are defined as those assets that if they fail, are likely to have more significant consequences than others and have adverse significant economic, social and environmental impacts on the community.

Generally, the Council takes a risk-based approach to monitoring the condition of assets and conducts condition assessments of its critical assets. Where assets have low risk because they are in the first half of their life, condition monitoring is low. If the consequences of running an asset through to failure are high, the Council, through its AMP and systems employ a more intensive monitoring regime and targeted inspections to collect more information on the asset condition. The Council has assessed the risk of sudden asset failure as minor.

The Council establishes criticality using the Activity and Corporate rating levels. The Council's *Criticality Rating Criteria* is provided below.

Rating	Description
1	<b>Critical with no redundancy -</b> Failure of equipment compromises H&S directly failure to supply drinking water to hospital)
2	<b>Critical with no redundancy -</b> Failure of equipment does not

Rating	Description
	compromise H&S but affects production or Level of Service
3	<b>Critical with redundancy -</b> Failure of equipment does not compromise H&S but affects production or Level of Service

Activity level criticality is based on certain the criticality criteria – this is detailed in the AMP. The Council's *Corporate Level Criticality* ranking for its core assets is presented below.

Rating	Description
1	Roading, Water Supply assets.
2	Wastewater (Sewage).
3	Solid Waste and Stormwater.

Further details of Asset Criticality evaluation in addition to the Operating management of critical assets are described in detail in the respective AMP.

For non-critical assets that only affect a limited number of residents and no critical users (schools, medical centres, etc.), the Council's approach is to maximise the useful life of the asset - until it breaks. Reinstatement of non-critical assets is generally achievable within 4 hours. The Council manages

flexible operating and renewal budgets that accommodate the re-prioritisation of such failed assets.

The Council has identified a number of significant issues in the medium and long term that are potentially detrimental to the Council's core assets. The *Significant Issues and Options* by asset Group are presented in the Appendix. Cost implications of the most likely scenario (key projects) for addressing these issues are presented in Section 14.

### Significant Infrastructure Issues

The *Significant Infrastructure Issues* are key challenges that must be addressed to enable the delivery of agreed service levels both now and in the future. These challenges are typically renewal, resilience, service standards, changes in legislation, growth demand. These are categorised under four broad categories and include:

- Natural Disasters/Climate Change -
  - Resilience
- Financial Issues:
  - Limited Resources, Funding Assistance and Subsidies;
  - Financial Uncertainty;
- Operating Issues:
  - Legislative Changes;
  - Levels of Service Increase
- Strategic Issues:
  - Renewal of Aging Assets;
  - Growth and Demand changes

#### Significant Issue 1:

#### Natural Disasters/ Climate Change - Resilience

The Taranaki region is susceptible to significant adverse effects from natural hazards. Natural disasters can result in heavy loss of property and threaten lives and livelihoods, forcing communities to learn to live with these hazards.

While it is not possible to reduce the incidence of natural hazards, steps can be taken to reduce the vulnerability of the community to their impacts. Natural hazards that are of concern to the Council include:

- Volcanic activity within next 50 years;
- Flooding, mainly surface flooding;
- Earthquake;
- Windstorm; and
- Land instability and erosion.

#### **Significant Issue 2:**

##### **Financial Issues - Limited Resources, Funding Assistance and Subsidies, Financial Uncertainty**

The continued delivery of robust and well maintained infrastructure for the district, at the agreed level of service, depends heavily on our continued ability to attract funding assistance and subsidy from our key partners. Our major Partner is the New Zealand Transport Agency (NZTA) who currently provides a 61 % Funding Assistance rate (FAR) for all Rooding Activities.

Our ability to continue to finance our projects, either by loan or otherwise, hinges on:

- The number of rateable properties;
- The amount to be collected via rates from our ratepayers;
- Any alternative systems that may be included to replace or supplement the existing funding inadequacies.

Funding alternatives are as per Council's *Revenue and Financing Policy* (Section 16).

#### **Significant Issue 3:**

##### **Operating Issues - Legislative Changes, Levels of Service increase**

There have been considerable legislative changes over the last decade which create a degree of uncertainty and require the Council to be more vigilant in meeting its obligations. Recent legislative changes that will have on-going impact on Council's delivery of its core services include:

- The 3 Waters Reform, including
  - Taumata Arowai – Water Services Regulator Act 2020; and
  - Service Delivery – the Water Services Bill; and
- The *National Policy Statement for Freshwater* (FVNPS) 2020; and
- The Resource Management Act Reform into three new pieces of legislation being the:
  - Natural and Built Environment Act;
  - Strategic Planning Act; and
  - Climate Change Adaptation Act.

The Council is anticipating further changes in legislation which will increase the overall cost of asset management and core services delivery, while also being cognisant of the possibility of the 3-Waters activities being removed from Council responsibilities and being aggregated into larger regional or multi-regional entities.

#### **Significant Issue 4**

##### **Strategic Issues - Renewal of Aging Assets, Growth and Demand Changes**

All Council's assets are aging. Many aging assets are due for replacement at approximately the same period. The implication of this is that burden of the cost of renewal or replacement of these assets will fall on the people living in the Stratford District within a certain era.

The Council aims to ensure that the cost of infrastructure replacement is not entirely borne by future generations. Through robust asset management planning, the Council will spread the cost of replacement in a way and at a rate that is fair and affordable to Stratford residents through time. Examples of assets due for replacement at the same period are Bridges and underground pipe network.

There are multi-faceted impacts of aging population on our district. The Council considers that its infrastructure assets support the social demands of the current state; however, an increase in the aging population will require that the Council improves levels of service it currently delivers. Footpaths, for example, will require widening across the district to accommodate mobility scooters, etc.

## 8. Significant Assumptions - Risks, Uncertainties, Impacts and Mitigation

Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
<b>1. FINANCIAL ASSUMPTIONS</b>				
<p><b>Revenue</b></p> <p>Council revenue will cover expenditure, providing for a balanced budget. The majority of revenue will be raised from rates, user charges and NZTA funding assistance</p> <p>The number of rating units will not change significantly over the period of the Infrastructure Strategy.</p> <p>Sources of funding for operating and capital expenditure do not change, but will remain as per the Revenue and Financing Policy.</p> <p>Funding Assistance from NZTA will remain at 61 % for all works categories.</p>	<p>Council revenue and reserves do not cover expenditure.</p> <p>The predicted rate take is not realised.</p> <p>Sources of funds are not realised.</p> <p>NZTA funding assistance reduction</p>	<p>Medium to High</p>	<p>A significant impact from changes in funding or funding sources may result in a revised operational and capital works programme, or changes in the level of user fees and charges, borrowing or rating requirements.</p> <p>Operating, maintenance, renewal and level of service improvement budgets are affected.</p> <p>Planned capital, maintenance and renewal works deferred or cancelled.</p> <p>Asset ownership may need to be reviewed.</p> <p>Potential social, environmental and public health implications as a result of reduced service levels.</p>	<p>Levels of revenue from user charges have been set at realistic levels in accordance with the ratios outlined in the Revenue and Financing Policy.</p> <p>There is a concentration of risk associated with a small number of industrial consumers for some revenue streams (e.g., extraordinary water charges).</p> <p>Regular liaison is maintained with these consumers.</p> <p>Funding for projects and assets is considered before the commencement of each project or asset.</p> <p>The rating base is reviewed annually when determining the rates for the year.</p> <p>Any changes to NZTA funding have historically been communicated well in advance.</p>
<p><b>Cost</b></p> <p>Costs will remain stable over the entire period of the Infrastructure Strategy</p>	<p>Costs are higher or lower than anticipated.</p>	<p>Low</p>	<p>Variability of prices, such as for oil, could cause variability in costs.</p> <p>Higher cost of project delivery</p>	<p>The Council and management will review its budget annually through the LTP/Annual Planning process and may adjust work programmes/budgets where necessary.</p>
<p><b>Capital Expenditure Do-ability</b></p>	<p>Costs fluctuate significantly at any</p>	<p>Medium to High</p>	<p>Price fluctuation hinder the completion of entire capital projects</p>	<p>Capital budget costs are inflated over the entire strategy period.</p>

Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
Costs will remain stable over the entire period of the Infrastructure Strategy	time over the strategy period.		Service disruption or reduced levels of service as a result of non-completion of projects	
<p><b>Inflation Rates</b></p> <p>The inflation rates remain as indicated in financial tables.</p>	Inflation rates differ from those assumed.	Medium	A significant change in inflation will result in changed revenue and expenditure. This could be significant and may adversely affect the ability of the Council to set affordable rates in future	The Council will review its budget annually through the LTP/Annual Plan process and may adjust work programmes /budgets when necessary.
<p><b>Useful Lives</b></p> <p>Infrastructural assets useful lives were determined during the certified valuations using specifications from suppliers.</p> <p>All assets will be replaced at the end of their useful life unless noted otherwise, based on:</p> <ul style="list-style-type: none"> <li>• The asset's theoretical useful life;</li> <li>• The asset condition;</li> <li>• The asset technology becoming obsolete;</li> <li>• The asset's capability to perform intended work.</li> </ul> <p>Depreciation costs are based on their respective lives.</p> <p>Unit cost assumptions used are the same as used during the most recent Certified Valuation and were determined using latest contracts, construction projects and supplier information.</p>	<p>Those assets wear out earlier or later than estimated.</p> <p>That the useful asset life information held is incomplete or inaccurate</p> <p>That Council activities change, resulting in decisions not to replace existing assets.</p>	Low	<p>The financial effect of uncertainty is likely to be immaterial.</p> <p>Depreciation and interest costs would increase if capital expenditure was required earlier than anticipated.</p> <p>Subsequent depreciation calculations will result in incorrect revenue setting, resulting in incorrect rates collection and leading to insufficient funds.</p>	<p>Reprioritisation of capital projects</p> <p>Update useful life information of infrastructure assets regularly</p> <p>Council has a comprehensive asset management planning process. Where a decision is made not to replace an asset, this will be factored into capital projections.</p>



Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
<p><b>Resource Consent</b></p> <p>Renewed resource consents will have similar conditions as the expiring resource consents and will not include significant cost triggers.</p>	<p>New resource consents to replace expiring consents include significant cost triggers.</p>	<p>Medium</p>	<p>Capital, Operating, maintenance and renewal budgets are affected.</p> <p>Council unable to meet resource consent conditions</p>	<p>The conditions imposed on new consents are dependent upon the legislative environment and environmental standards and expectations that exist at that time.</p>
<p><b>2. OPERATING ASSUMPTIONS</b></p>				
<p><b>Levels of Service</b></p> <p>The demand for Council Services and customer expectations regarding levels of service will not change significantly and therefore there will be no significant effects on asset requirements or operating expenditure.</p>	<p>There are significant increases in customer expectations regarding demand for services and/or the level of service provided.</p>	<p>Low</p>	<p>Infrastructure and service provision do not meet customer and stakeholder needs and expectations.</p> <p>Maintenance, renewal/replacement, and performance monitoring requirements increase.</p> <p>Customer and stakeholder needs are not met.</p> <p>Customer confidence is eroded.</p>	<p>Regular reviews of Community expectations against levels of service, via customer surveys as well as feedback received.</p> <p>Minor changes may be made to service levels where budget, contracts and resources allow. These will generally occur within existing budgets.</p> <p>Major changes in service levels will be confirmed with the community via consultation. These will generally require increase to fees or rates, depending on how the service involved is funded.</p>
<p><b>Legislation</b></p> <p>It is assumed that there will be no significant legislative changes that affect infrastructure and service delivery.</p>	<p>There are significant changes in legislation that require a different and/or higher level of service delivery, maintenance or performance standard.</p>	<p>Medium</p>	<p>The ability to meet Levels of Service requirements will be altered.</p> <p>Maintenance and renewal planning and funding requirements will be increased</p>	<p>Current infrastructure and service provision meets good practice and will be able to adapt within reasonable timeframes.</p> <p>Ongoing discussion with Elected Members and stakeholders on the implementation of possible service level improvement requirements e.g. in the water sector - universal water metering.</p>

<b>Significant Assumptions</b>	<b>Risk</b>	<b>Risk and Uncertainty Assessment</b>	<b>Potential Impacts and Implications</b>	<b>Mitigation / Control Description</b>
<p><b>Resource Consents</b></p> <p>Renewed resource consents will have similar conditions as the expiring resource consents and will not be significantly altered.</p> <p>Any resource consents due for renewal during the ten year period will be renewed accordingly.</p>	<p>Conditions of resource consents are altered significantly.</p>	<p>Low</p>	<p>Council is unable to renew existing resource consents upon expiry.</p> <p>Breach of Consent conditions</p>	<p>Appropriate planning and on-going interaction and/or consultation with regulators and other parties for resource consent applications/renewals should ensure that they are obtained.</p> <p>Monitoring of compliance with existing resource consent conditions will provide a record of compliance for future processes.</p> <p>The renewal of consents is dependent upon the legislative and environmental standards and expectations that exist at that time.</p>
<b>3. STRATEGIC ASSUMPTIONS</b>				
<p><b>Population Growth</b></p> <p>The current population is projected to increase based on an assumption of medium growth by Infometrics Model 2020.</p> <p>Note: Population projections do not represent forecasts, but indicate what the future size and structure will be if the underlying assumptions regarding births, deaths and migration prevail.</p>	<p>That growth is higher than projected thereby putting pressure on Council to provide additional infrastructure and services.</p>	<p>Medium - High</p>	<p>Accelerated infrastructure deterioration rate;</p> <p>Increased maintenance and renewal/ replacement needs;</p> <p>Maintenance and renewal/replacement requirements exceeds current programme of works and funding allocations;</p> <p>Compromised ability to meet Levels of Service requirements.</p>	<p>Council will continue to monitor population change in the District. Generally, small increases in population can be managed within the existing level of service.</p> <p>Declines in population will not necessarily reflect lower number of ratepayers as the number of people per household is declining but will impact affordability.</p> <p>Where growth requires additional infrastructure (e.g., subdivisions), Council can require financial contributions for this work. Costs over this amount may result in additional Council expenditure which is likely to be funded out of debt.</p>
<p><b>Asset Management Plans</b></p> <p>AMPs are complete; they include renewal and capital programmes for all major infrastructural assets and</p>	<p>Asset Management Plans are incomplete. Condition ratings</p>	<p>Low - Medium</p>	<p>Current Levels of Service are not clearly defined.</p> <p>Improvement planning is not adequately tracked and/or</p>	<p>Significant investment made in asset management systems and practices as well a condition assessment of assets.</p>

Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
<p>are based on sound assessments of asset condition, lifecycle and demand management.</p> <p>AMPs are peer reviewed in accordance with the Asset Management Policy.</p> <p>The following asset parameters are assessed in order to develop the renewals programme:</p> <ul style="list-style-type: none"> <li>• Asset Criticality;</li> <li>• Material type</li> <li>• Asset Age</li> <li>• Asset Condition</li> <li>• Asset Performance (e.g. pipe bursts, leaks, valves not working, blockages and flooding)</li> </ul>	<p>and life cycle demand assumptions are erroneous.</p> <p>Asset Management Plans are not peer reviewed.</p>		<p>resources and time needed is not adequately allocated.</p> <p>Misalignment between projected and actual budgets</p> <p>AMPs present a weak business case for investment.</p> <p>AM improvement is inhibited.</p>	
<p><b>Asset Disposal/Acquisition</b></p> <p>There are no substantial asset disposals that will impact significantly on the plan.</p> <p>There are no substantial asset acquisitions that will impact significantly on the plan.</p>	<p>Policy changes result in substantial asset disposal.</p> <p>Policy changes result in substantial asset acquisition.</p>	<p>Low</p> <p>Low - Medium</p>	<p>Maintenance and renewal planning and funding requirements will be reduced.</p> <p>Maintenance and renewal planning and funding requirements will be increased</p>	<p>Regular review of levels of service, population growth and legislative environments, which would be the most likely drivers of asset disposal and/or acquisition.</p>
<p><b>Programming of Works</b></p> <p>The recommended programme of works will be carried out.</p>	<p>The recommended programmed work is not carried out.</p>	<p>Low</p>	<p>Identified problems/opportunities are not responded to.</p> <p>The rate of deterioration to infrastructure is accelerated.</p>	<p>On-going monitoring of work programmes.</p> <p>Identification of root-cause of delays / failure to deliver.</p>

Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
			Compromised ability to meet agreed LoS.	
<p><b>Staff</b></p> <p>Current staff members possess the necessary education and skill sets to adequately perform their designated functions.</p> <p>Current staffing levels are adequate and stable.</p>	<p>Staff leaving results in staff skill levels falling below the standard required - Skills shortage</p> <p>Staffing levels are not adequately maintained.</p>	Low - Medium	<p>Loss of institutional knowledge</p> <p>Inadequate Operating management of infrastructure and/or delivery of service.</p> <p>Demand on Council activities not being met by Council staff.</p> <p>Negative impacts on customer service and reputational damage.</p>	<p>Active training and recruitment programmes ensuring suitably qualified staff</p> <p>Strong relationships with key contractors and suppliers are maintained to ensure availability and competency of critical resources</p>
<b>4. HAZARD ASSUMPTIONS</b>				
<p><b>Resource Consents</b></p> <p>Resource Consent Conditions will be understood, met.</p>	<p>Non-compliance with Resource Consent Conditions</p>	Low - Medium	<p>Breach of Resource Consent Conditions</p>	<p>Suitably qualified and skilled staff</p> <p>Appropriate technology used to control consent conditions;</p> <p>On-going consultation with regulators</p>
<p><b>Water Supply Contamination</b></p> <p>Water quality will be maintained</p>	<p>Water contamination occurs</p>	Low - Medium	<p>Breach of Resource Consent Conditions</p> <p>Public health and safety impacts</p> <p>Negative publicity eroding public opinion.</p> <p>Unexpected financial costs.</p>	<p>Implement regular and systematic routine testing of raw and treated water including for a range of heavy metals.</p> <p>Suitably qualified and skilled staff</p> <p>Appropriate technology used to control consent conditions;</p>

Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
			Unexpected legal implication for Council.	On-going consultation with regulators
<p><b>Contractors Availability</b></p> <p>Council contracts out the majority of its operations and services. It is assumed that:</p> <ul style="list-style-type: none"> <li>Contractors will be available to undertake all contracted works;</li> <li>It is assumed that all contractors will adhere to the terms of the contract</li> </ul>	<p>Contractors are unavailable to undertake works</p> <p>Contractor breaches terms of contract</p> <p>Contractor financial situation declines.</p>	Low - Medium	<p>Operations and services are disrupted</p> <p>Compromised Asset and public safety</p> <p>Substandard completed works</p> <p>Negative publicity eroding public opinion.</p> <p>Unexpected financial costs.</p> <p>Unexpected legal implication for Council.</p>	<p>Regular monitoring of and interaction with engaged contractors to ensure acceptable performance.</p> <p>Healthy contracting environment within the district and region that allows for substitution of any one contractor- if significant issues experienced.</p>
<p><b>Natural Disasters</b></p> <p>Current planned Incident Response would be effective until Level 4-5 at which point this will be treated as per Civil Defence / Emergency Management protocols.</p>	<p>The current Incident Response Plans are not effective until Level 4-5.</p>	Low	<p>Provision of service is disrupted.</p> <p>Structural integrity of infrastructure is compromised.</p> <p>Public safety is compromised.</p> <p>Recovery from a major event is inhibited.</p>	<p>Infrastructure resilience incorporated into design, planning and maintenance of assets.</p> <p>High-level planning on a regional basis with mutual support during events.</p> <p>Contractual arrangements to ensure resource availability.</p>
<p><b>Pandemic/COVID-19</b></p> <p>It is assumed that the current "Service Continuity Plan" would be effective in maintaining continuity of service in a pandemic event.</p>	<p>Service continuity Plan is not effective and continuity of</p>	Low - medium	<p>Provision of service is disrupted.</p> <p>Operation and maintenance of infrastructure is compromised.</p> <p>Public safety is compromised.</p>	<p>Staff, being essential workers are set up to operate remotely. Others are able to continue operating essential services, with minor disruption to service levels.</p>



Significant Assumptions	Risk	Risk and Uncertainty Assessment	Potential Impacts and Implications	Mitigation / Control Description
	service is unable to be maintained			<p>Infrastructure resilience incorporated into design, planning and maintenance of assets.</p> <p>High-level planning on a regional basis with mutual support during events.</p> <p>Contractual arrangements to ensure resource availability.</p> <p>Comply with national/regional Pandemic Action Plan</p>
<p><b>Climate Change</b></p> <p>Climate change will impact on the Council's operations and will require an appropriate response to adapt and prepare for potential impacts.</p>	<p>The effects of climate changes are more or less severe than expected.</p>	<p>Low – medium</p>	<p>Unrealised effects of climate change are likely to create additional costs to mitigate their impacts, such as improving protection of critical infrastructure.</p> <p>More severe weather events resulting from climate change may increase damage to infrastructure and place pressure on Council finances.</p>	<p>Council activities will build appropriate mitigation responses into infrastructure development.</p> <p>The Council will continue to monitor Climate change science and the response of central government and adapt its response where required.</p>
<p>Further details on the significant assumptions are provided in the <i>Council Profile and Significant Forecasting Assumptions – Long Term Plan 2021-2031</i> underpinning the Council's <i>Financial Strategy 2021-2031</i></p>				

## 9. Risk Management

The management of risks is key for the continued delivery of service and minimising disruption to service delivery for all our infrastructure assets. Thus, are **'resilience'** projects are mainly derived from the mitigation measures identified in our Risk Management framework and from legislative requirements.

The Council's risk management framework is designed to be effective within its specific internal and external environments, and potential sources of risk and aims to:

- establish a systematic and structured approach to managing risks across the Council; and
- embed risk management practices into business strategy, planning and core operations to ensure that key risks are proactively identified, managed and communicated.

The Council has identified a number of risks in its Corporate Risk Register, under six broad risk areas:

- Data and Information;
- Health and Safety;
- Financial;
- Compliance and Legislative;
- Operational; and
- Reputational and Conduct.

Risk management activities are based on the ISO31000 Risk Management Standard which directs governance and management responsibilities to frame, assess, respond and monitor the identified risks.

The Council's risk management approach is underpinned by principles that will ensure the

minimisation of risks for the principal asset systems as a result of the non-achievement of critical business objectives and impact of system failure.

The following are Council's risk management principles:

- Adds value by contributing to the achievement of Stratford District Council's objectives and improving performance;
- An integral part of the Stratford District Council's planning, processes, and decision making;
- Structured approach that is well-defined, transparent, and aligned with good practice;
- Responsive to change by monitoring, reviewing, and responding to the changing environment;
- Pragmatic by focusing on the most important risks and allowing informed risk taking;
- Explicitly addresses uncertainty based on best available information; and
- Undergo continuous improvement as we get better at identifying and managing risks and opportunities.

Benefits of applying effective risk management include:

- Improved achievement of the Council's strategic direction, objectives and priorities;
- Reduced risks – significant risks are identified and managed and early warning of problems and emerging risks are addressed, with appropriate design and operation of internal controls;
- Improved decisions – decisions are made after analysis of risk;
- Improved planning and resource allocation – risks are prioritised and included in business

planning so that resources are better managed; and

- Increased accountability and transparency – clarity of key risks and the responsibility and accountability for their management.

The issues identified under these risk areas are consistent with the significant assumptions presented in the Section 8 of the IS. The top 10 risks for each Core Infrastructure Asset are provided in the respective AMPs and their attached Appendices.

The Council has adopted an Insurance Framework which:

- acknowledges the relevance of insurance and how it fits into its risk management function;
- Ensures that, following a risk event, the Council is effectively positioned to return in a timely manner to its pre-event state; and
- Considers Council priorities and the financial impact to ratepayers of risk mitigation through insurance.

## 10. Asset Management Policy, Principles and Objectives

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The Council's Asset Management Practices are as detailed in the respective AMPs. Each AMP includes improvement planning which enables the Council to close the gaps between its existing asset management practice and best practice. This will ensure the desired outcome of improved asset management and delivery of agreed service levels to the community.

### Asset Management Policy

The *Asset Management Policy* establishes the management framework for managing infrastructure assets in a structured, coordinated and financially sustainable manner. The objectives of this Policy are to:

- Provide for a consistent approach to asset management planning within Council and ensure plans reflect the strategic direction of Council;
- Demonstrate to the community that Council recognises the critical importance of managing the District's assets and related activities in an effective and sustainable manner in order to deliver appropriate Levels of Service to current and future generations; and
- Confirm a coordinated process for each asset/activity area that links their contribution to the Community Outcomes with specific Levels of Service performance requirements

and desired improvement priorities and strategies.

### Asset Management Principles

The Council's overarching principles for sound asset management are:

- Asset management goals and objectives will be aligned with corporate objectives and community outcomes;
- Capital, operation and maintenance, and renewal/replacement works will be aligned with asset management objectives;
- Sustainable and suitable development will be considered in the options for asset development and service delivery;
- Optimal replacement/lifecycle asset management strategies will be developed;
- Asset replacement strategies will be established through the use of optimised lifecycle management and costing principles;
- Funding allocation for the appropriate level of maintenance in order for assets to deliver required Levels of Service;
- Growth and demand forecasting will be integrated as part of all asset management planning to meet current and future needs of the community; and
- Ensure the design, construction and maintenance of assets, so far as reasonably practical, are without risk to the health or safety of any person.

### Asset Management Objectives

The Council's Asset Management objectives are to:

- Provide for good quality infrastructure and local public services that are efficient, effective and appropriate for current and future generations;
- Meet the foreseeable needs of the community;
- Ensure that assets are planned for, created, replaced and disposed of in accordance with Council priorities as determined in the Long Term Plan;
- Ensure all legal delegations are met;
- Ensure customer expectations are properly managed;
- Provide technical and professional advice that enables elected members to make sound well informed decisions concerning the management of assets;
- Assets are managed to meet agreed customer levels of service;
- Assets are managed and delivered in accordance with the strategies stated in the Asset Management Plans;
- Ensure data collection systems are in place to collect, store, maintain and use for prudent management of Council owned assets.

## 11. Levels of Service and Lifecycle Management

### Levels of Service

Levels of Service (LoS) define the form and quality of service that the Council provides to the community. They represent a balance between what the community wants and what the community is willing to pay for. Asset management planning helps to determine the relationship between the LoS and the cost of service. The Council's asset management approach will ensure that it maintains the agreed LoS over the next 30 years.

In general, the Council is planning to keep its levels of service the same. In order to maintain the current service levels, the Council is planning to spend more than has been spent in recent years on infrastructure. This increased spending is being balanced with the affordability of our ratepayers to fund the additional cost of service, as detailed Council's Financial Strategy. With this additional Investment our assets will be more resilient and provide a reliable environment for our residents and businesses to live, work and play.

Once determined, the relationship is evaluated through the Long Term Planning process in consultation with the community. The agreed LoS are used to:

- Communicate the proposed LoS;
- Develop strategies to the deliver LoS;
- Develop targets to measure performance;
- Identify and evaluate the costs and benefits of services offered; and

- Enable customers to assess customer values such as accessibility, quality, safety, and sustainability.

As such, LoS cannot be defined beyond the 10-year planning horizon of the LTP.

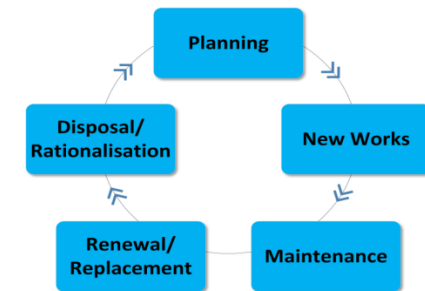
Current and Planned LoS are presented in the respective AMPs for each core Infrastructure asset. The performance monitoring of the agreed LoS delivery is undertaken through performance measures and targets. The results of the performance monitoring are reported internally and externally through the:

- monthly reports to Elected Members, which is also accessible to the public via the Council website; and
- LTP, Annual Plan and Annual Report to our customers, key stakeholders and partners.

### Lifecycle Management

Lifecycle Management (LM) involves the planning; procurement, management; renewal/replacement and disposal of the assets for the delivery of the agreed LoS. The Council will employ robust LM strategies to maintain the delivery of the LoS as agreed with the Community, and amended via the LTP process. The rate of asset renewal is intended to maintain the overall condition of the asset system at a standard, which reflects its age profile, and ensures that the Community's investment in the District's infrastructure is maintained. The level of expenditure on cyclic asset replacement varies from year to year, reflects:

- Asset age/life;
- Asset condition; and
- Asset Criticality.



The Council will take into account the key LoS drivers described in earlier sections, including:

- Growth and Demand Forecasts;
- Identified Significant Issues and Options; and
- Potential Risks;

The LM Strategies for the delivery of planned LoS for the next 3 years are described in detail in the respective AMPs and they include:

- Management Strategies;
- Risk Management Strategies;
- Contractual Arrangements; and
- Incident Response Plans.

Further details on these strategies are presented below.

## 12. Asset Management Strategies

The overall management of infrastructure will be driven through strategies aimed at:

- Complying with the legislative and strategic requirements;
- Meeting agreed levels of service;
- Delivering value for money for ratepayers, funding partners and the Council; and
- Balancing customer expectations with the cost of improving the level of service.

These strategies are either under review or currently being prepared and drive the AMPs and Maintenance Agreements with our contractors. The Management Strategy framework fits into Council's overall strategic framework for the Infrastructure

Assets as shown in Figure 3.

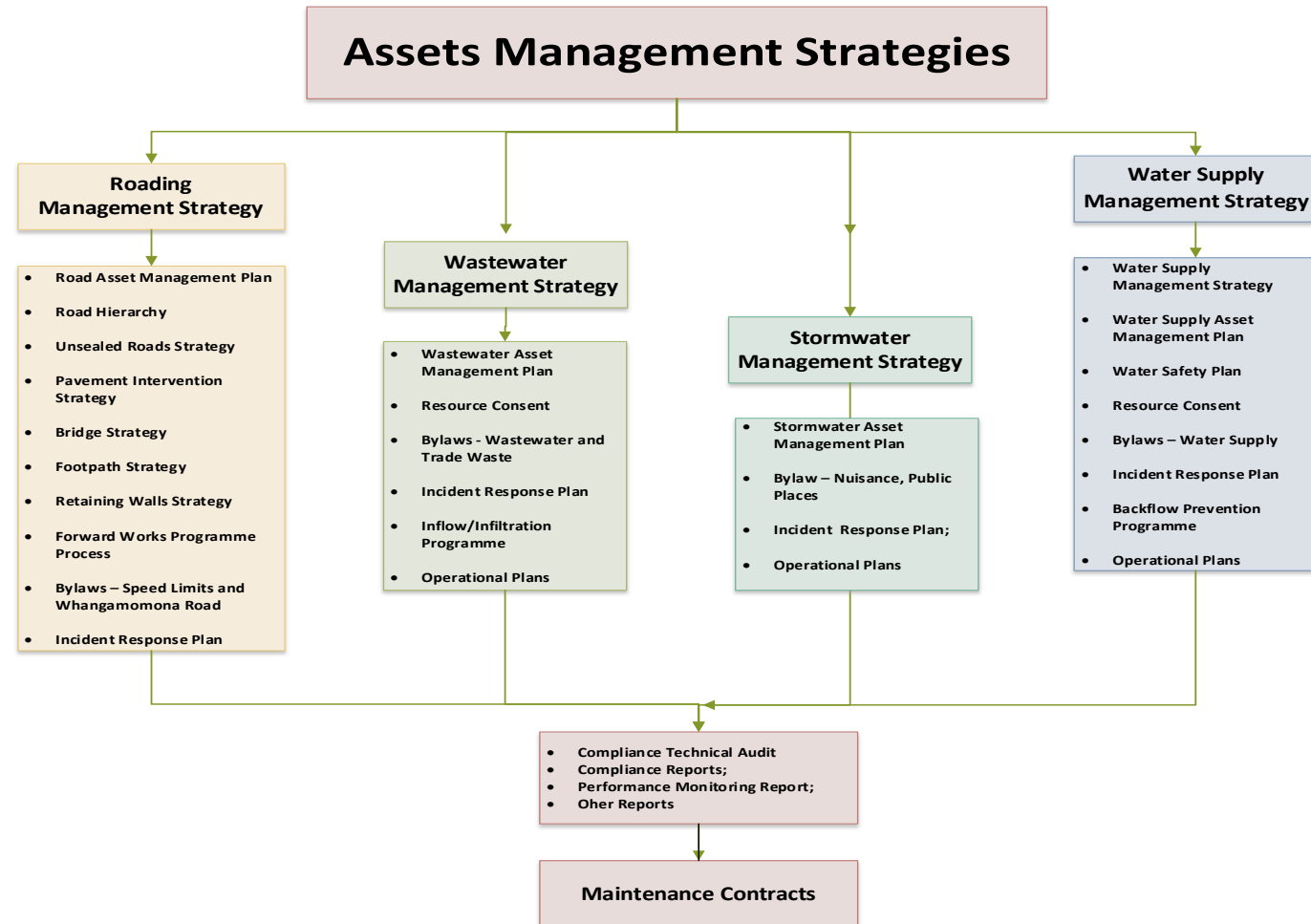


Figure 3: Asset Management Strategies



### 13. Contractual Arrangements

The Council has a number of contractual arrangements for the delivery of the agreed LoS. While these Contractual Arrangements are for current and up to the period agreed under each contract, they are a demonstration of how the Council will continue to deliver the LoS agreed with the Community.

In general, Professional Services are either delivered as part of SDC's 'Shared Service' arrangements or as covered by 'Maintenance Contracts' under each asset group. Physical Works are covered by the maintenance contracts or contracted in accordance with SDC's Procurement Procedures

Activity	Maintenance Arrangement	Operating Arrangement
Roading	A 'General Roading Maintenance, Resurfacing, Rehabilitation and Road Marking Contract' which covers an initial period of three years with the option of two 24-month extensions on satisfactory completion of the initial period. Each 24-month extension is at the Council's sole discretion. This contract was signed in 2019.	Under the Local Government Act (1974), SDC is the road controlling authority and is responsible for the operation and the movement of all traffic, including cyclists and pedestrians, within the District.
	SDC has a contract for the inspection, reporting, maintenance and upgrading of all street lighting assets owned and/or maintained by the Stratford District Council. The Contract covers an initial period of three years with the option of two 12-month extensions on satisfactory completion of the initial period. This contract was signed in 2016.	SDC has a contract for the inspection, reporting, maintenance and upgrading of all street lighting assets owned and/or maintained by the Stratford District Council. The Contract covers an initial period of three years with the option of two 12-month extensions on satisfactory completion of the initial period.
Wastewater (for Stratford)	SDC has a 'Services Maintenance Contract' covering three year service delivery with two rights of renewal. This Contract requires the Contractor to provide physical works and a degree of professional services for significant aspects of the work. The Contract was entered into in 2019. This contract is for the continued operation and maintenance of SDC's wastewater, water and stormwater services.	SDC's Engineering staff are responsible for the operation of both the treatment plant (oxidation ponds) and the pump stations.
Water Supply (Stratford , Midhirst and Toko)		SDC's Engineering staff are responsible for the operation of all three water treatment plants (WTP). The operation of our I & E is as part of a signed shared agreement.
Stormwater		Stormwater system is reticulation only with no need for treatment plant Operating management.

## 14. Key Projects

These key projects are Council's principal options for addressing the 'Significant Infrastructure Issues' discussed in Section 7. They are an outcome of a series of 'Early Conversation' workshops held with Elected Members in 2020. Each *Early Conversation* workshop identified:

- Problems and items for improvement in the delivery of our core services;
- Impact of this on the achievement of Community Outcomes and future-proofing Objectives;
- Options for addressing the identified problems;
- An assessment of each option against Community Outcomes and the identified future proofing objectives;
- Risks and Opportunities associated with each option and
- Principal Options to address each problem area.

Key consideration factors in the determination of the preferred options were support for *Future Requirements, Growth, Higher Level of Service, Health Benefits and Reliability and Efficiency*. Indicative costs of delivering the preferred options are presented in the attached Table and reflected in the 'Investment Funding Strategy' section. Further detail on each key project is provided in the *Significant Issues and Options* sections in the Appendices.

### Brecon Road Extension

This project will address the lack of a crossing over the Patea River in the Stratford Urban area to the west of State Highway 3. Once completed, this link road will provide an alternative crossing to the residents in this western urban area of Stratford, should the bridge over the Patea River on SH3 be closed in an emergency, roadworks, and for planned street events (Christmas Parade, ANZAC Day Parade).

Apart from providing good connectivity between the north and south sides of the Patea River, this route has been identified as a key walking and cycling corridor, to serve schools (one high school and three primary schools), a medical centre, dentist, doctors and kindergartens, TET Multi Sport Centre and hockey pitch as well as the new aquatic centre. At the present time, residents that live in the western half of Stratford, have to travel to SH3, along SH3 over the Patea River to access two primary schools, (St Joseph's, Avon School) and the medical centre on Romeo Street.

This link road will also provide the opportunity to develop an area of land locally known as "50 acre wood", which is currently land-locked. Also, with two of the three emergency services located on Miranda Street, (Fire and Police) this link road will provide an alternative route for these services to attend emergency calls to the south of Stratford, without the need to travel through the Central Business District.

### Walking and Cycling Initiatives

The purpose of the *draft* Walking and Cycling Strategy 2020-2050, currently being reviewed by Elected Members, is to provide a framework to increase walking and cycling participation and safety in the Stratford District and to develop walking and cycling opportunities for tourism.

The walking and cycling initiatives are as identified in the 30-year draft strategy which focuses on walking and cycling to work, school, for recreational activities and to support tourism opportunities in the district. These initiatives are designed to support the social, environmental and health benefits of walking and cycling. The programme and budget for implementation is as per the attached tables, commencing from Year 1 of the LTP.

### Bridge Replacement

Following the latest cycle of bridge inspections which informs the development of the 30 year Bridge Replacement Programme, Council has identified 7 bridges that will need to be replaced by Year 10 (2031). There are a further 14 bridges to be replaced in Years 11 – 20, and a further 36 bridges in Years to be replaced in years 21-30. The remainder of 100 bridges are due for replacement beyond the time scope of this strategy). The Council's total budget over the next 30 years is approximately \$16.5 M.

### **Culvert LoS Improvements**

With changes in climatic conditions, the frequency and intensity of rainstorm events has resulted in Council spending significant funds on remediation works. As a result of the recent changes to the National Environmental Standards for Freshwater, the Council will need to increase the size of the culverts when they are due for replacement, to target outcomes for fish abundance, diversity and passage and address in-stream barriers to fish passage over time. A direct implication of this is that for typical large diameter culvert replacement, a more cost-effective option would be to replace it with a bridge. Improvements programme is as per attached budget and timeframe

### **Footpath Replacement**

With an increasing number of elderly residents using mobility scooters, the majority of the footpaths within the district are of insufficient width to accommodate pedestrian/mobility scooter use. Of the 63km of footpaths within the district, 49km are less than 1.5m in width. In order to address this issue, Council has programmed footpath replacement from Year 1 of the LTP, an increased level of service by widening footpaths to a minimum width of 1.5m. Based on current contract rates, the Council will be able to replace over 2 km of footpaths per year, over a 25 year period.

### **Retaining Wall Replacements**

Inspections data on more than 250 retaining walls throughout the district shows that approximately 50% of these retaining walls are in the *average to very poor* condition, with 58 retaining walls in *“poor”* or *“very poor”* conditions. These have been programmed for replacement over the 10-year life

of the LTP. The remaining retaining walls in *average* condition will form part of a future works programme as their structural condition deteriorates over time.

### **Whangamomona Road Upgrade/Bylaw**

Whangamomona Road is a popular tourist attraction and nationally recognised 4x4 club trail route. With the regional economic development strategy Tapuae Roa – Make Way for Taranaki” referring to this attraction, the existing road requires improvement to improve visitor experience. With the Republic of Whangamomona attracting a unique tourist opportunity for overseas visitors, this road is an important link to Aotuhia Station and the Bridge to Somewhere.

The Council has resolved to upgrade this road to a reasonable condition, and will commission a new Bylaw to define the levels of service and detail the responsibilities of road users on the road. The budget and timeframe for completion is as per attached tables.

### **Universal Water Metering**

The case for Water Conservation in the Stratford District is driven by many factors including resource consent; equity in water tariff system and most importantly, the optimisation of water use and consumption to ensure and support spare capacity for future growth etc.

Our current water-take resource consent from the Patea River requires the Council to undertake and report on our leak detection programme and implement a water use efficiency and conservation programme. The DIA performance measure of

*Adequacy of System* is a mandatory performance measure that monitors the percentage of real water loss from the local authority's networked reticulation system. This is referred to as 'Benchloss'. Under the current tariff system, inequality occurs where a household uses more than its intended allocation of (250 m<sup>3</sup>) only to be subsidised by a smaller household or granny flat which uses considerably less.

With water metering comes more efficient consumption of existing water resources, which will also create spare capacity to support the future growth in Stratford – without the need to increase quantity of water taken from our streams. Water metering will also support our leak detection programme and ensure fairness in the consumption and of water by ensuring that costs lie where they fall.

The Council will now extend its water metering programme to include all properties in the district connected to the Council's water reticulation system. This programme will be supported by the implementation of an electronic meter reading system. The budget for this programme is as per attached tables.

### **2<sup>nd</sup> Trunk Main**

Given growth and increased demand anticipated in the district, the second trunk main will serve to accommodate that demand and reduce the pressure in the existing infrastructure. This critical asset is proposed for implemented in Years 1 and 2, at an estimated budget of \$2.849 M.

### **Emergency Water Supply**

The Case for Additional Water Storage is driven by resilience and growth – resilience in ensuring that the provision of storage capacity for Stratford residents in emergency situations is adequate and to support future growth.

Resiliency analysis has identified approximately 2 days of water supply in the current reservoirs would be available, if there were any incidents that rendered the raw water intake unusable. The addition of a 4,500m<sup>3</sup> water reservoir will provide an additional day of water supply in the event of failure of the water intake and ensure the continued provision of critical clean, safe drinking water for residents, and also process water for industry in Stratford. The continuity of clean and safe water also gives confidence to existing and new industries.

### **Alternative Water Supply**

The need to explore an alternative water supply source for the Stratford Township is mainly driven by Resilience - in the event that we are unable to source water for treatment from the Patea River. The Patea River, supported by the Konini Stream, are currently the sole source of water supply for the Stratford Township.

Inability to source water from the Patea River and Konini Stream may arise as a result of severe drought, poisoning, natural disaster or other extreme weather or climatic event. The starting point is to commission a feasibility study to explore the alternative options available to us. A feasibility study is expected to provide information on groundwater conditions; water supply alternatives;

other alternatives to extend supply, cost evaluations and recommendations, etc. This will be carried out in Year 3 of the LTP, budget as per attached tables.

### **Backflow Prevention**

The implementation of a Backflow Prevention programme is driven by both the Health Act and the Building Code. Hence, the programme is managed by officers of both Waters Services and Building Compliance. The enforcement and monitoring of backflow prevention is an essential activity for Water Services for ensuring the protection of public health.

The Council's Water Supply Bylaw (2019) was adopted by Council in August 2019. Section 18 of the Bylaw requires a backflow prevention device be installed where there is a risk of contamination entering the potable water supply through backflow or syphoning.

Council has adopted Water New Zealand's backflow hazard criteria and are applying it to industries within the Stratford District which are connected to the potable water supply. Inspections of industrial sites have commenced and backflow prevention requirements are being actioned, the process is ongoing.

### **Rider Mains**

The installation of rider mains is a cost-effective way of distributing water in the network. This project continues in Year 1 of the LTP; the implementation timeframe and budgets are as per the attached Tables.

### **Resource Consent - Water Supply**

The Council is currently going through a process of renewing its Water Take consent for Toko Township. This consent expires in June 2021. With the take being from a stream identified as culturally significant, Iwi is a key stakeholder to this consent process and consultation with affected Iwi groups has commenced.

The Council is committed to working with the affected Iwi groups on achieving a sustainable solution and is undertaking a review of the Iwi Management Plan with a view to understanding and achieving its requirements. The Plan requires that water efficiency measures such as metering of water use, which Council is well on its way to implementing – see **Water Metering** section above.

The Council has recently completed the metering of all properties on Council water supply in Midhirst, and we continue to monitor our water loss, which has reduced drastically over the years. Since the installation of the Universal Metering, there has been a considerable drop in the demand for water in Midhirst, with an initial water loss drop of approximately 30% in the first month. The Council has received a letter of support from the District Health Board towards the application. The resource consent process is on-going. The budget for this project is as per attached Tables.

### **Resource Consent – Wastewater**

There are 2 parts to this; the implementation of the current consent and the renewal of the existing consent come 2034.

With the receipt of our new Wastewater Discharge Consent issued in April 2020 with an expiry date of 2034, the Council has programmed to implement the required system upgrade at the set time per the consent condition. The Council will also continue to monitor the performance of the wastewater oxidation pond and provide feedback to the key affected parties on a regular basis. The first stakeholder meeting involving Iwi and Fish & Game was held in August 2020; annual meetings will be held, as a requirement of the resource consent, to discuss performance progress. Intermittent meetings will be held where issues arise to ensure they are addressed promptly.

Discharges to and from the wastewater treatment ponds are being sampled on a monthly basis. A health and safety induction document has been created for the wastewater treatment ponds. A wastewater spillage contingency plan for the wastewater ponds and sewer network has been created. Monitoring of the telemetered data and maintenance of the instruments operating at the wastewater treatment ponds is ongoing.

The implementation of the Trade Waste Bylaw is crucial to the successful implementation of the wastewater discharge consent conditions.

The changes to the national policy statement on freshwater may require, at the expiry of this current consent, that the Council re-directs its wastewater discharge from water to land. If so, Council needs to make an investment in an appropriately sized and suitably location land for this purpose. This investment will be required prior to the expiry of

the current consent in 2034. The budget for this is as per the attached tables.

#### **Trade Waste Bylaw Implementation**

Stratford District Council's Trade Waste Bylaw 2020 (TWB) was adopted by Council in July 2020, with subsequent amendments adopted in October 2020.

Consent conditions, consent templates and other associated documents have been created; applications for trade waste discharges have been received and processed. The initial focus of the consenting process was directed towards bulk tanker discharges, other industries have been identified as requiring consent and are working through the process, the consent process is ongoing.

Although the Local Government Act 2002 has enforcement provisions for breaches of bylaws using the court system, 'minor' offending does not. Offences are being documented within the TWB infringement fees for the offences have been established and included in the LTP fees and Charges schedule. Consultation process has been completed with the Ministry of Justice, and the infringement scheme is now being reviewed by both the Parliamentary Counsel Office and Department of Internal Affairs.

#### **Inflow/Infiltration Programme**

The Inflow/Infiltration programme is a suite of interventions designed to minimise the inflow and infiltration of surface and groundwater into the wastewater pipe network. This is an important part of our annual network maintenance and renewal programme that ensures that only wastewater

collected from households and businesses is transported to the treatment plant.

The requirement for this programme is also echoed in the conditions of our wastewater discharge resource consent which require the Council to provide a report, to the Taranaki Regional Council, with copies to our key Stakeholders - Ngati Ruanui and Fish & Game NZ.

The Council will continue this programme from Year 1 of the LTP, throughout the life of the LTP and beyond where necessary. The budget and implementation timeframe is as per the attached Tables.

#### **Pipework Capacity Increase – Water Supply, Wastewater and Stormwater**

There have been new residential subdivisions and developments, urban infill and other growth-related pressures created in water supply, wastewater and stormwater networks. The consequence of this is that some pipes are requiring upgrades in capacity to accommodate the increased flow.

To accommodate growth and increased demand, the Council has programmed an increase to the pipework capacity throughout the IS planning period. The pipework capacity programme will be undertaken at the time of renewal, commencing from Year 1 of the LTP, budget and implementation timeframe is as per the attached Tables.

### **Network Planning and Modelling – Wastewater and Stormwater**

To accommodate growth and increased demand, Council has programmed to increase pipe capacity to cater for high flows. While officers are aware of some pipes within the network requiring increased capacity, the Council will commission a network modelling project on both our wastewater and stormwater networks to reveal how our network systems are behaving.

This modelling will comprise the evaluation of network capacity, the identification of inflow and infiltration into the pipe network (for wastewater); the identification of bottlenecks in the existing or

proposed network and the design of improvements needed to accommodate growth.

The modelling project is expected to reveal the areas for improvement in the network from which priority areas can be programmed for improvement. This is programmed for Year 2 of the LTP.

### **Stormwater Safety Improvements**

The Council's programme for stormwater safety improvements will continue through the IS planning period. Safety improvements consist of safety screening for stormwater inlets, outlets and manholes. The improvement programme

commences from Year 1, budget and implementation timeframe is as per the attached Tables in section 15.

### **Infrastructure Asset Renewals**

The Council's programme for Infrastructure renewals for Roding and 3- Waters Assets continue throughout the infrastructure strategy planning period. The renewal programme is commences from Year 1, budget is as per Table in section 15.

### **Budget Summary**

The budget summary of these key projects is provided below. Details of the implementation timeline are provided in Section 15.



## Key Projects Budget Summary

	No	Project Description	Estimated Budget (\$)		Total Estimated Budget (\$)
			Year of Implementation		
			1-10	11-30	
Roading	1	Brecon Road extension	13,024	-	13,024
	2	Walking and cycling Initiatives	3,824	6,486	10,310
	3	Whangamomona Road Upgrade	531	778	1,309
	4	Bridge and Retaining Walls Replacement	6,228	17,512	23,740
	5	Culvert LOS and Drainage Improvements	7,640	22,052	29,692
	6	Footpath Extensions	-	2,594	2,594
	7	Footpath Replacement	1,943	5,578	7,521
	8	Road Renewals	37,866	149,177	187,043
	<b>Total</b>		<b>71,056</b>	<b>204,178</b>	<b>275,234</b>
Water	9	Universal Water Metering	2,495	-	2,495
	10	2nd Trunk Main	2,912	-	2,912
	11	Emergency Water Supply / Additional Storage / Zoning	4,268	-	4,268
	12	Water Rider Mains	206	839	1,045
	13	Water Supply Infrastructure Renewals	4,999	12,730	17,729
	14	Water Supply Resource Consent - Renewal	310	787	1,096
		<b>Total</b>		<b>15,190</b>	<b>14,356</b>
Wastewater	15	Wastewater Resource Consent Implementation and Renewal	726	27,532	28,259
	16	Wastewater Pipework Capacity Increase plus campervan drainage	1,200	3,933	5,133
	17	Wastewater Network Planning and Modelling	52	229	281
	18	Oxidation Pond desludging	656	1,246	1,901
	19	Wastewater Reticulation Renewal	1,190	3,933	5,123
	20	Inflow/Infiltration Programme	2,417	7,211	9,628
	<b>Total</b>		<b>6,241</b>	<b>44,085</b>	<b>50,326</b>
Stormwater	21	Stormwater Network Planning and Modelling	31	229	260
	22	Silt Retention Lake Bypass	265	918	1,183
	23	Stormwater Pipework Capacity Increase	1,548	4,917	6,464
	24	Stormwater Safety Improvements	1,346	3,737	5,082
	25	Stormwater Infrastructure Renewals	769	2,174	2,943
	<b>Total</b>		<b>3,959</b>	<b>11,974</b>	<b>15,933</b>
		<b>GRAND TOTAL</b>	<b>96,445</b>	<b>274,593</b>	<b>371,038</b>



## 16. Investment Funding Strategy

Section 102 of the LGA requires that the Council *'must, in order to provide predictability and certainty about sources and levels of funding, adopt the funding and financial policies listed'* below:

- A *Revenue and Financing Policy*; and
- A *Liability Management Policy*; and
- An *Investment Policy*; and
- A policy on *Development Contributions (CD) or Financial Contributions (FC)*; and
- A policy on the *Remission and Postponement of Rates on Maori freehold land*.

The Council may also adopt either or both a *Rates Remission Policy* and a *Rates Postponement Policy*. The Council has adopted all the relevant funding and financial policies which guide Council's funding and financial decisions.

### Revenue and Financing Policy

The Revenue and Financing Policy sets out Stratford District Council's policies in respect of the funding for capital and operating expenditure. The current policy has been reviewed. The funding sources are detailed in the LTP 2021-2051 and include general and targeted rates, borrowing, grants and subsidies, etc.

### Treasury Management Policy

The Council's Treasury Management Policy incorporates the Liability Management Policy and the Investment Policy requirements of the LGA. It guides the Council to prudently manage its revenue, expenditure, assets, liabilities, reserves

and investments, in the interest of the Council and district ratepayers.

### Development and Financial Contributions Policy

The Council's Development and Financial Contribution Policy is consistent with the purpose as set out in Section 106 of the LGA. The Council does not require Development Contributions, however, the Financial Contributions Policy meet the requirement as set out in Section 108 (g) of the Resource Management Act (RMA) 1991

### Investment Funding Strategy

The Stratford District Council's Investment Funding Strategy (IFS) incorporates its *Funding Impact Statement (FIS)* and sets out how the Council plans to finance its overall operations to meet its objectives now and in the future. Future-Proofing the delivery of services is a key objective of this strategy.

This IFS provides the long term financial forecasting for all the core assets and activities maintained and delivered by the Council, and presents the funding sources determined for each of these to ensure a sustainable long-term approach to planning, asset management and service delivery.

Capital projects and activities, including Renewal or Replacement projects and Level of Service Improvements, for the next 30 years will be funded through one or a combination of the following sources:

- Loans;
- Grants;

- Reserves; and/or
- Subsidies.

Given the present funding regime, the Council anticipates that the Rooding Activity projects will continue to be 61 % funded by NZTA. The Council expects that all Level of Service Improvement projects for all the Three-Waters Activities will be funded 100% from Loans; Renewal or Replacement projects will be equally funded from Loans and Reserves.

While the cost of capital projects driven by growth or led by a private Developer is borne by the Developer, any Council-led projects in support of growth will be accounted for within the particular project budget. A summary of Council's Capital Investment funding is shown in below.

## 17. 30-Year Capital Expenditure Estimates

The Council's total projected 30-year Capital and Operating Expenditure Estimates are presented separately in the Tables and Charts below. The Capital and Operating Expenditure Estimate Tables and Charts - by Asset group - are presented in the Appendices.

The figures in Years 1 – 10 are as per the 2021-2031 LTP. Inflation has been accounted for as *BERL* Indictors have been applied to all expenditure figures for Years 1 to 10 and Year 10 rate applied to Years 11 to 30. Where there are no additional capital works, expenditure figures in Years 11 – 30 are equal to figures in Year 10.

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
<b>Roading</b>															
Level of Service Improvement	350	619	1,221	929	7,028	5,554	417	306	630	324	1,816	1,816	1,816	1,816	<b>24,643</b>
Replacements	5,413	4,983	4,920	4,983	4,977	5,085	5,436	5,446	5,983	6,452	44,364	47,607	50,850	54,093	<b>250,591</b>
<b>Stormwater</b>															
Level of Service Improvement	252	292	533	275	283	291	300	310	321	331	2,524	2,032	2,950	2,294	<b>12,990</b>
Replacements	53	55	56	167	59	61	63	65	67	122	590	524	629	430	<b>2,943</b>
<b>Water Supply</b>															
Level of Service Improvement	1,780	1,904	369	673	390	401	4,289	37	38	-	210	170	197	262	<b>10,720</b>
Replacements	695	812	510	414	443	496	452	486	502	498	4,117	2,766	3,645	2,989	<b>18,826</b>
<b>Wastewater</b>															
Level of Service Improvement	800	362	381	273	281	288	238	184	178	838	29,597	2,819	2,098	2,360	<b>40,697</b>
Replacements	213	252	258	200	228	211	218	262	271	305	1,639	1,639	1,967	1,967	<b>9,628</b>
<b>TOTAL</b>	<b>9,556</b>	<b>9,280</b>	<b>8,247</b>	<b>7,914</b>	<b>13,690</b>	<b>12,387</b>	<b>11,413</b>	<b>7,097</b>	<b>7,991</b>	<b>8,871</b>	<b>84,857</b>	<b>59,374</b>	<b>64,151</b>	<b>66,211</b>	<b>371,038</b>
<b>Key Assumptions:</b>															
1. Capital expenditure Figures in Years 1 – 10 are as per the 2021-2031 LTP;															
2. <i>BERL</i> Indictors have been applied to Capital expenditure figures for Years 1 – 10 and Year 10 rate applied to Years 11 to 30; and															
3. Where there are no additional capital works, capital expenditure figures in years 11 – 30 are equal to figures in Year 10.															

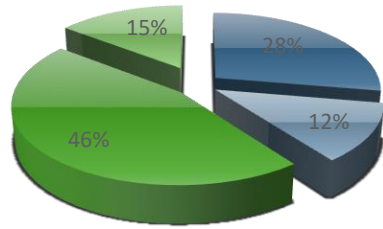
### Total Capital Expenditure - 2021 - 2051



	Rooding	Water	Wastewater	Stormwater
Replacement	250,591	18,826	9,628	2,943
Level of Service	24,643	10,720	40,697	12,990

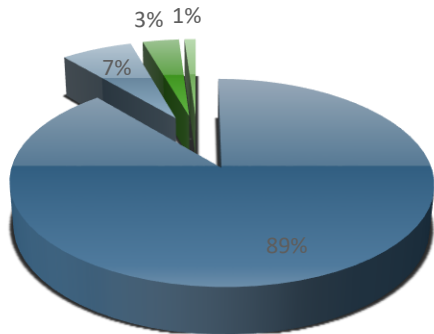
■ Replacement ■ Level of Service

### Level of Service Budget 2021-2051



■ Rooding ■ Water ■ Wastewater ■ Stormwater

### Replacement Budget 2021 - 2051



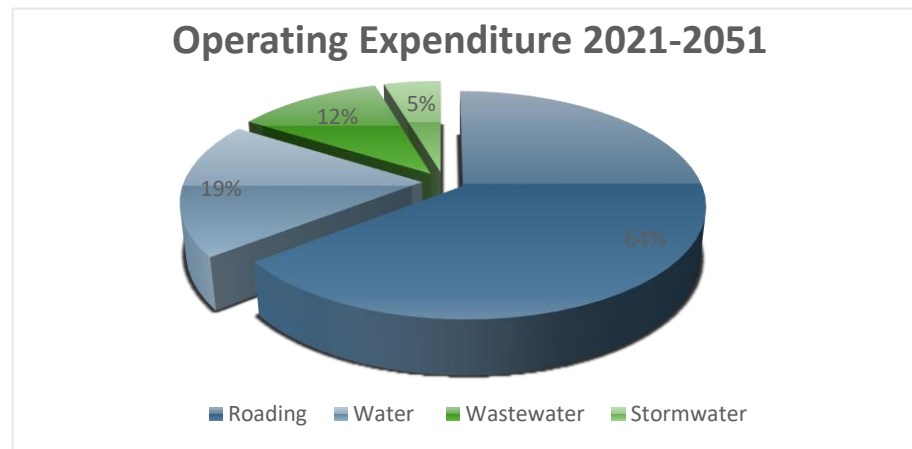
■ Rooding ■ Water ■ Wastewater ■ Stormwater

## 18. 30-Year Operating Expenditure Estimates

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
<b>Roading</b>	6,413	6,448	6,498	7,070	7,234	7,528	8,072	8,191	8,314	8,839	45,000	45,250	45,500	45,750	256,107
<b>Water Supply</b>	1,815	1,835	1,969	2,025	2,083	2,149	2,319	2,495	2,510	2,608	13,500	13,750	14,000	14,250	77,308
<b>Stormwater</b>	356	366	386	430	446	464	510	527	543	589	3,000	3,250	3,500	3,750	18,117
<b>Wastewater</b>	1,045	1,059	1,097	1,187	1,196	1,233	1,334	1,338	1,363	1,473	8,000	8,250	8,500	8,750	45,825
<b>TOTAL</b>	9,630	9,710	9,953	10,716	10,964	11,380	12,242	12,559	12,739	13,519	69,500	70,500	71,500	72,500	397,357

**Key Assumptions:**

1. Operating expenditure Figures in Years 1 – 10 are as per the 2021-2031 LTP;
2. BERL Indicators have been applied to Capital expenditure figures for Years 1 – 10 and Year 10 rate applied to Years 11 to 30; and
3. Operating Expenditure Figures for Years 11 – 30 are equal to Figures in Year 10.





## 19. Appendices

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- **Appendix 1: Roading**
  - Significant Issues and Options
  - 30 –Year Capital Expenditure
  - 30-Year Operating Expenditure
  
- **Appendix 2: Water Supply**
  - Significant Issues and Options
  - 30 –Year Capital Expenditure
  - 30-Year Operating Expenditure
  
- **Appendix 3: Wastewater**
  - Significant Issues and Options
  - 30 –Year Capital Expenditure
  - 30-Year Operating Expenditure
  
- **Appendix 4: Stormwater**
  - Significant Issues and Options
  - 30 –Year Capital Expenditure
  - 30-Year Operating Expenditure

## Appendix 1: Roding

### Significant Issues and Options

The Significant Infrastructural Issues for the Roding Activity are detailed in the Roding Asset Management Plan and summarised below.

- Increasing heavy commercial vehicle use and forestry activity is impacting on the Roding network;
- The geology, geography, environmental conditions (i.e. waterways) combined with poor drainage control to adequately with the impacts of extreme weather events;
- Increased demand for safe and accessible urban transport infrastructure;
- Reduction in deaths and serious injuries as a result of driver behaviour and road condition;
- Replacement of aging bridges and retaining walls;
- Maintaining levels of service with an increase in the population who are on fixed incomes (pensions); and
- The future of Whangamomona Rd as a tourist destination.

The options for addressing these significant infrastructural issues drive the Long-term financial forecast for the Roding Activity.

### Issue 1: Increase in HCV's and forestry activity, coupled with current standard of assets is resulting in reactive investment and inefficient allocation of resources

Response Options	Implications of options
Maintain road structural integrity	<ul style="list-style-type: none"> <li>• Accommodate increasing demand of heavy commercial vehicles on the transport network.</li> </ul>
Strengthen key structures	<ul style="list-style-type: none"> <li>• Accommodate both HPMV and 50MAX vehicles. All vehicles including the forestry/ agriculture/oil and gas industry are able to efficiently use key routes.</li> </ul>
Maintain current service levels for bridges	<ul style="list-style-type: none"> <li>• Ensure the structural condition of the existing bridges is able to meet the agreed level of service</li> </ul>

### Issue 2: The geology, geography, environmental conditions (i.e. waterways) and poor drainage control has reduced the ability of the network to cope with extreme weather events

Response Options	Implications of Options
Culverts function to allow the passage of water from roadside drains.	<ul style="list-style-type: none"> <li>• Annual culvert inspections to ensure they function along with assessing those due for replacement.</li> <li>• Increase the capacity of culverts to cope with more intense rainfall events.</li> <li>• Consider the option of replacing large diameter culverts with bridges to meet the New Environmental Standards requirements for fish passage.</li> </ul>
Improvements to outlet controls to reduce the risk of underslips occurring.	<ul style="list-style-type: none"> <li>• Reduces the possibility of underslips forming therefore the roding network remains open for use</li> </ul>
Roads are not closed due to un-planned events e.g. flooding, slips	<ul style="list-style-type: none"> <li>• Increase the maintenance programme to clear and maintain roadside drains to prevent un-planned closures</li> <li>• Improved resilience of the road network in the Stratford district</li> </ul>
Access to productive land is retained.	<ul style="list-style-type: none"> <li>• Enables the district to thrive and prosper as access to the markets is maintained</li> </ul>
The community has reasonable access to the land transport network	<ul style="list-style-type: none"> <li>• Ensures connectivity to the rural communities.</li> </ul>

### Issue 3: Increased demand for safe and accessible urban transport infrastructure

Response Options	Implications of options
Future infrastructure requirements	<ul style="list-style-type: none"> <li>• Support increase in tourism</li> <li>• Access to and through the district is maintained</li> <li>• Suitable parking areas on Mt Taranaki</li> <li>• Attractive Urban streets</li> <li>• Development of urban cycleways</li> <li>• Construction of the Brecon Road Extension</li> </ul>
Footpaths improved	<ul style="list-style-type: none"> <li>• Meet current and future levels of service</li> <li>• For all suitable urban streets</li> <li>• Safer footpaths- reducing the risk of personal injury incidents occurring.</li> <li>• Suitable for all users, including mobility scooters and wheelchairs.</li> <li>• Improved road safety for pedestrians.</li> </ul>
Provision of urban and rural cycle routes for commuting and recreational use	<ul style="list-style-type: none"> <li>• Encourages a healthier lifestyle through active transport systems</li> <li>• Greater use and uptake on active modes of transport</li> <li>• Increase in cycling tourists staying within Stratford District</li> <li>• Improved environmental benefits from less vehicle emissions.</li> </ul>

**Issue 4: Poor driver behaviour, challenging road conditions, limited experience with local conditions and unforgiving roads and roadsides is resulting in safety issues and deaths and serious injuries.**

Response Options	Implications of options
Promote safe use of the network through 'Roadsafe Taranaki'	<ul style="list-style-type: none"> <li>• Safer use of the transport network resulting in fewer crashes</li> <li>• Supports the physical works undertaken and supports use of alternative modes by reducing the perception that they are unsafe.</li> </ul>

Response Options	Implications of options
Introduce safer speeds to the existing network	<ul style="list-style-type: none"> <li>• Reduction in the number and severity of crashes</li> <li>• Achieves consistency with national guidance/best practice.</li> <li>• Improved amenity for walking and cycling where speeds are lowered</li> <li>• Improved efficiency for freight and general traffic where speeds are raised.</li> <li>• Speed limit reviews to reduce the number of death and serious injury crashes throughout the district</li> </ul>
Undertake minor improvements to the existing network Infrastructure	<ul style="list-style-type: none"> <li>• Reduction in crashes and therefore deaths and serious injuries</li> <li>• Able to respond to community requests for safety management and improvements of a minor nature; such as pedestrian islands</li> <li>• Geometrical improvements to key routes throughout the district</li> <li>• Use of road signage and roadmarking to highlight roadside hazards</li> </ul>
Undertake major improvements to the existing network infrastructure	<ul style="list-style-type: none"> <li>• Reduction in crashes, their severity and therefore deaths and serious injuries</li> <li>• Able to undertake safety transformation project improvements on key routes.</li> <li>• Improved resilience and reliability of the network.</li> <li>• Geometrical improvements to key routes throughout the district</li> </ul>

**Issue 5 – Replacement of aging bridges and retaining walls**

Response Options	Implications of Options
There are 46 bridges for replacement between Year 30-40;	<ul style="list-style-type: none"> <li>• No firm cost estimate - Increase annual budget by \$400k in years 21-30 per</li> </ul>

Response Options	Implications of Options
Many bridges are currently single lane.	<ul style="list-style-type: none"> <li>Consider widening to two lane – this will increase replacement costs. Replace like for like at this stage. Can be reviewed at time of replacement.</li> </ul>
Over 250 retaining walls have been identified.	<ul style="list-style-type: none"> <li>Replacement of retaining walls in poor condition to continue over the period of this strategy. Annually - \$200k for years 0-10 to replace the “very poor” rated structures</li> </ul>
Replacing these structures ensures the community remain connected.	<ul style="list-style-type: none"> <li>Council may need to loan fund the replacements, depending on the number of bridges being replaced each year.</li> </ul>

**Issue 6 - Maintaining levels of service with an increase in the population who are on fixed incomes (pensions)**

Response Options	Implications of Options
Differential levels of service for road hierarchy	<ul style="list-style-type: none"> <li>Many low volume roads will have minimal maintenance</li> </ul>
Increase in contract prices due to cost escalations and new contracts	<ul style="list-style-type: none"> <li>Review the levels of service, contract specifications to remain affordable</li> <li>Development of a Maintenance Intervention Plan for all maintenance activities to provide the right solution and the right time.</li> </ul>

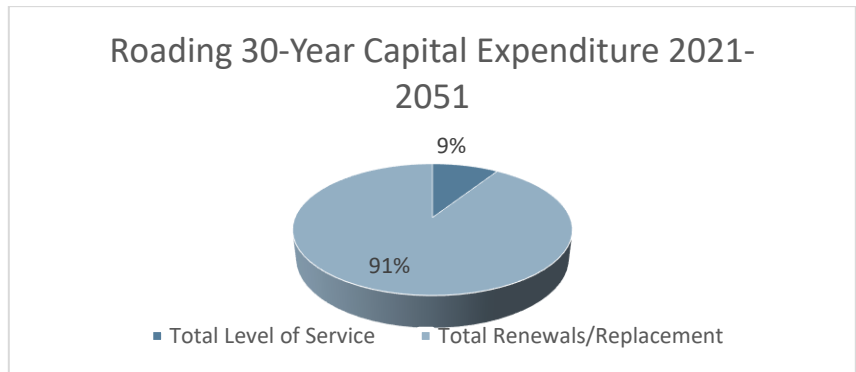
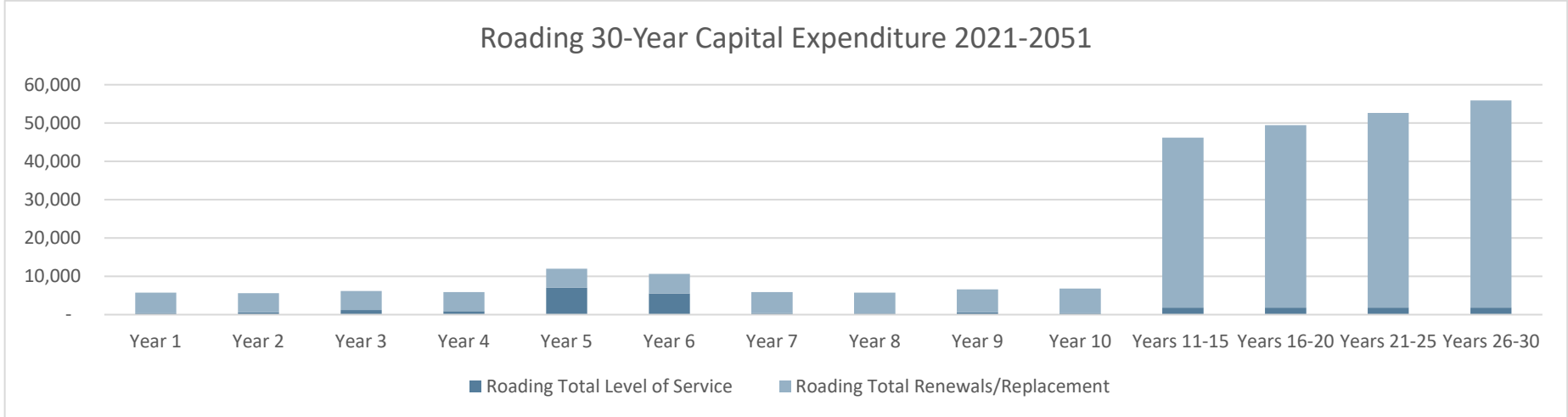
Response Options	Implications of Options
Increase revenue to offset increases in household rates	<ul style="list-style-type: none"> <li>Provides affordable services</li> </ul>
Increase the population of Stratford	<ul style="list-style-type: none"> <li>Bigger rating base to raise revenue</li> </ul>

**Issue 7 - The future of Whangamomona Rd as a tourist destination.**

Response Options	Implications of Options
Investment required to improve the condition of Whangamomona Road	<ul style="list-style-type: none"> <li>Develop a Business Case based on the economic wealth generated by the use of the road to secure funding from NZTA</li> <li>Where are funds sourced for the improvements, community grants, NZTA? - Estimated to be \$500,000 to upgrade the road</li> </ul>
Ongoing maintenance of this road to retain its appeal as a tourist destination	<ul style="list-style-type: none"> <li>Funds incorporated into operational budgets for roading. Cap the level of expenditure to \$40k per annum for minimal maintenance</li> </ul>
Creation of a Bylaw specifically for Whangamomona Road	<ul style="list-style-type: none"> <li>Controls the use of the road by specifically precluding certain types of vehicles</li> <li>Allows for the closure of the road throughout the winter months for maintenance purposes</li> </ul>

***30 –Year Capital Expenditure – Roading***

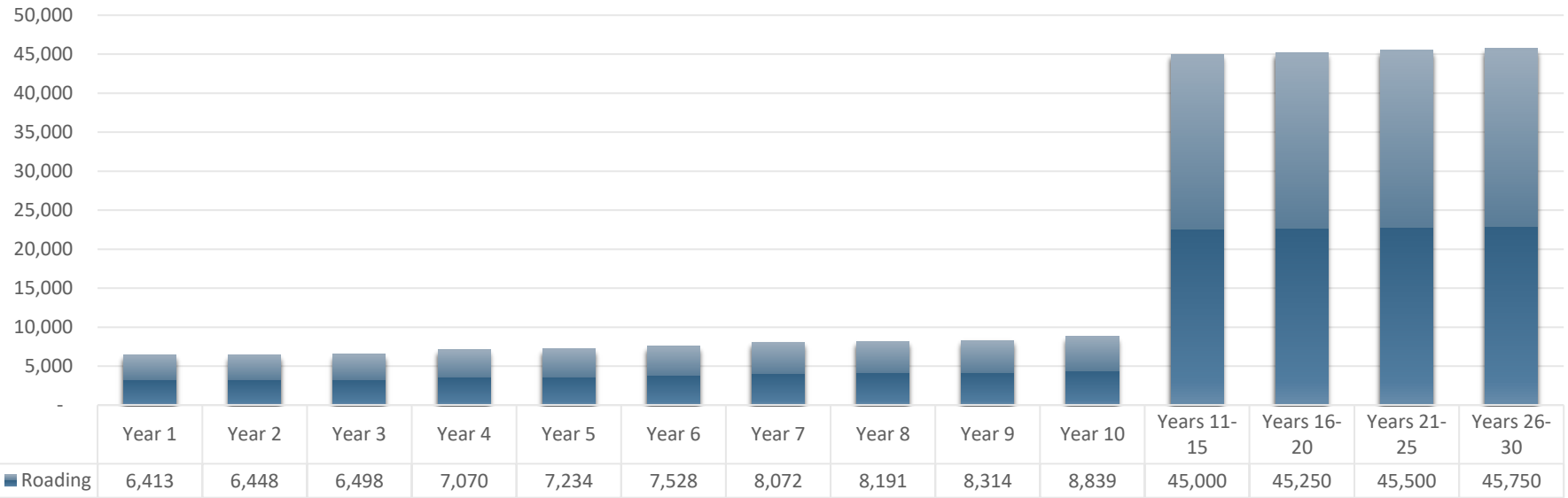
Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Level of Service Improvement	350	619	1,221	929	7,028	5,554	417	306	630	324	1,816	1,816	1,816	1,816	<b>24,643</b>
Replacements	5,413	4,983	4,920	4,983	4,977	5,085	5,436	5,446	5,983	6,452	44,364	47,607	50,850	54,093	<b>250,591</b>



**30 – Year Operating Expenditure – Roothing**

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
<b>Roothing</b>	6,413	6,448	6,498	7,070	7,234	7,528	8,072	8,191	8,314	8,839	45,000	45,250	45,500	45,750	256,107

**Roothing Operating Expenditure 2021-2051**



## Appendix 2: Water

### Significant Issues and Options

The Significant Infrastructural Issues for the Water Supply Activity are detailed in the Water Supply Asset Management Plan and summarised briefly below.

- Water Use Efficiency and Conservation;
- Emergency Water Supply
- Alternative Water Supply;
- Backflow Prevention;
- Improvement in the reticulation system; and
- Resource Consent renewal

The options for addressing these significant infrastructural issues drive the Long-term financial forecast for the Water Supply Activity.

### Issue 1: Water Use Efficiency and Conservation

Response Options	Implications of options
Implement Universal Water metering including electronic water meter reading to all properties in the district connected to the Council's water reticulation system.	<p>This project primarily for water conservation purposes. It is driven primarily by, and therefore, if implemented, will support the following matters:</p> <ul style="list-style-type: none"> <li>• Compliance with council's water take resource consent;</li> <li>• the Department of Internal Affairs (DIA) benchloss requirements;</li> <li>• Equity in water tariff system; and most importantly,</li> <li>• The optimisation of water use and consumption to ensure and support spare capacity for future growth etc.</li> </ul>

### Issue 2: Emergency Water Supply

Response Options	Implications of options
Construct a new water 4,500m <sup>3</sup> reservoir	<p>This project is primarily for additional water storage at the Stratford Water Treatment Plant. It is driven primarily by, and therefore, if implemented, will support the following matters:</p> <ul style="list-style-type: none"> <li>• Resilience in providing an additional day of water supply in the event of failure of the water intake and ensure the continued provision of critical clean, safe drinking water for residents, and also process water for industry in Stratford; and</li> <li>• To support growth – planned or unplanned. The continuity of clean and safe water also gives confidence to existing and new industries which Council contuse to encourage to the district.</li> </ul>

### Issue 3: Alternative Water Supply

Response Options	Implications of options
Commission a feasibility report to explore the alternative water supply options available for the Patea River/Konii Stream Water Take	<p>This project is primarily to investigate alternative water supply options for the Patea River water source - in the face of an emergency that renders the take from the river unusable. This project is primarily driven by resilience. The recommendation of the feasibility study, if implemented, will:</p> <ul style="list-style-type: none"> <li>• Provide redundancy in the water supply source to this critical service; and in turn</li> <li>• Allow the Council to continue to perform its duties and responsibilities, under the Local Government Act, to the people of Stratford</li> </ul>



#### Issue 4: Backflow Prevention

Response Options	Implications of options
Implement a Backflow Prevention campaign for all properties identify as being at risk of contaminating their water supply.	<p>This project primarily for health and safety purposes. It is driven by the requirements of Section 18 of Council's Water Supply Bylaw, which requires a backflow prevention device be installed where there is a risk of contamination entering the potable water supply through backflow or syphoning.</p> <p>Once implementation is complete, the Council can be sure that the risk of contamination as a result of backflow or syphoning is minimised. This risk is part of the corporate Risk Register that must be minimised by Council for the health and safety of its residents.</p>

#### Issue 5: Improvements to the reticulation system

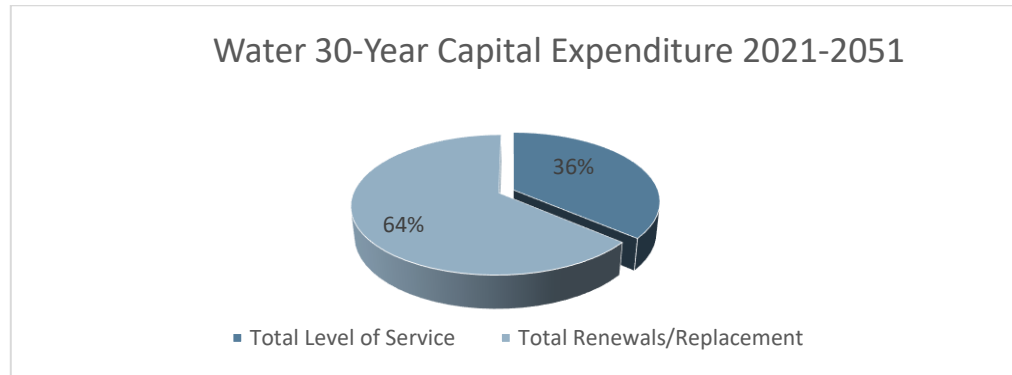
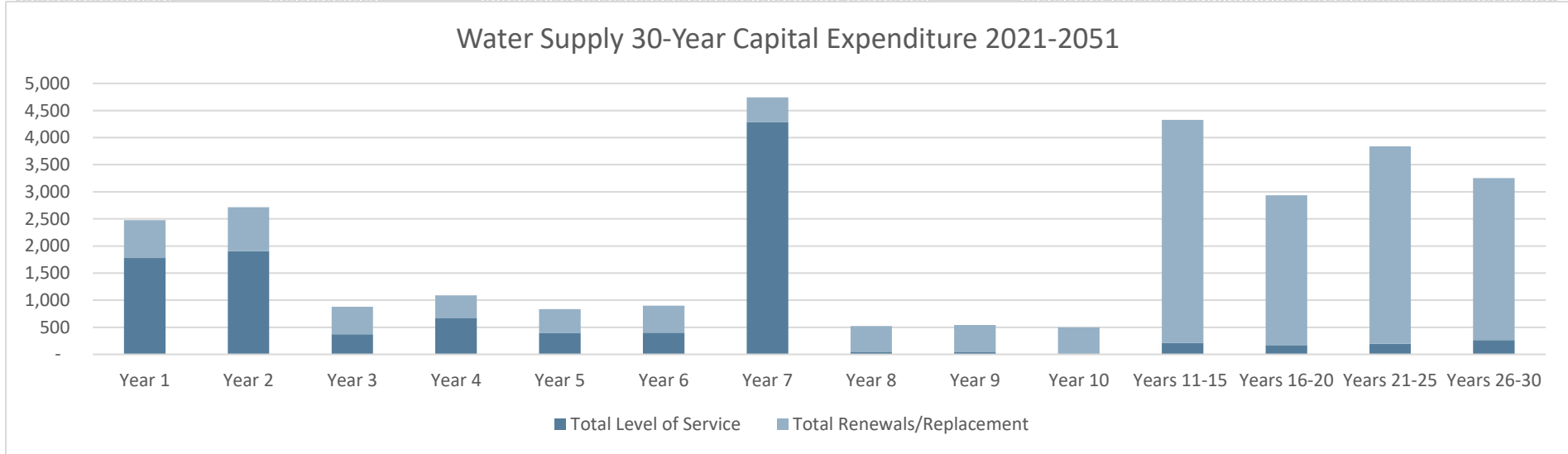
Response Options	Implications of options
Continue with the Implementation of rider mains in the water network	Rider mains represent a cost-effective way of distributing water within the network

#### Issue 6: Resource Consent renewal

Response Options	Implications of options
Undertake to renew the Expiring Resource Consent to take water from the Te Popo Stream at Midhirst. This consent expires in June 2021.	<p>This process is required to satisfy the requirements of the Resource Management Act (1991) for expiring consents. The Council currently takes water from the Te Popo Stream under an authorisation consent from the Taranaki Regional Council, which expires in June.</p> <p>This process is has already commenced and it is expected to take 12 to 18 months to complete. The Council is already in talks with key Stakeholders and affected parties. Supporting documentation will need to be commissioned and submitted to the TRC for the renewal of this consent. In the meantime, The Council can continue to operate under the expiring consent as a renewal application was submitted at least 6 months to the consent expiry.</p> <p>At the completion of this process, the Council will be able to continue to take water from the Te Popo Stream to supply the residents of Midhirst.</p>

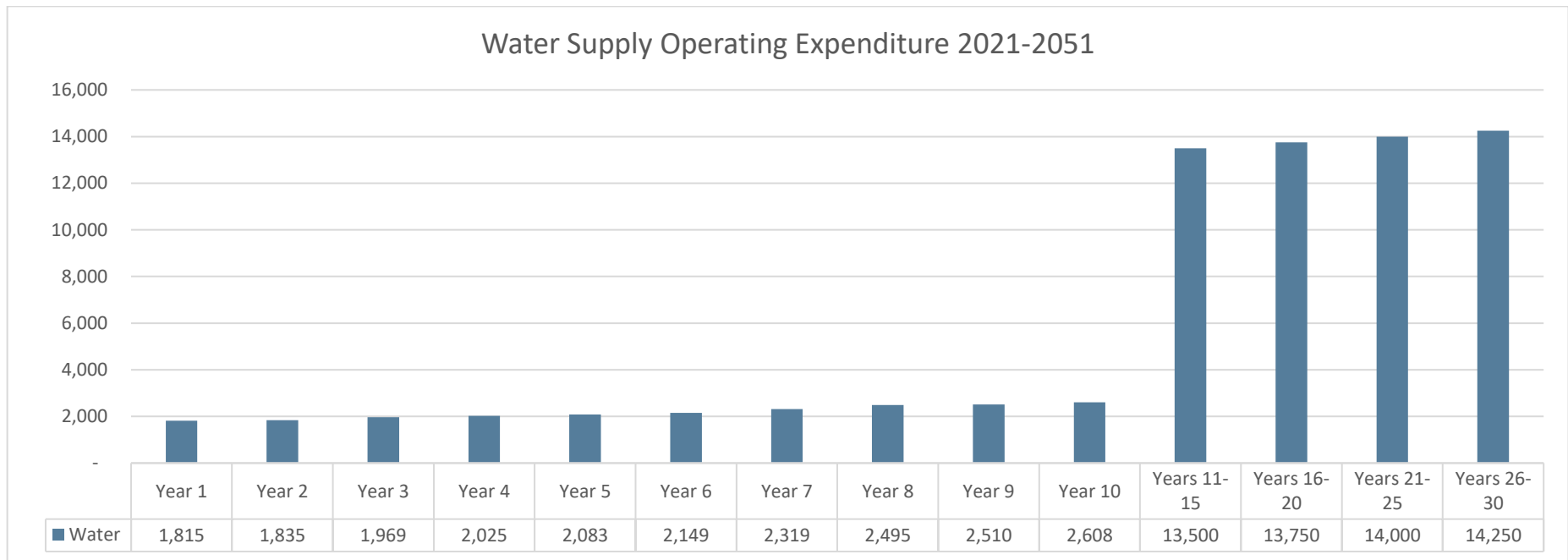
***30-Year Capital Expenditure - Water***

<b>Water Supply</b>	<b>2021/22</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25</b>	<b>2025/26</b>	<b>2026/27</b>	<b>2027/28</b>	<b>2028/29</b>	<b>2029/30</b>	<b>2030/31</b>	<b>2031-36</b>	<b>2036-41</b>	<b>2041-46</b>	<b>2046-51</b>	<b>Total</b>
	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>
Level of Service Improvement	1,780	1,841	369	673	390	401	4,289	37	38	-	210	170	197	262	<b>10,657</b>
Replacements	695	812	510	414	443	496	452	486	502	498	4,117	2,766	3,645	2,989	<b>18,826</b>

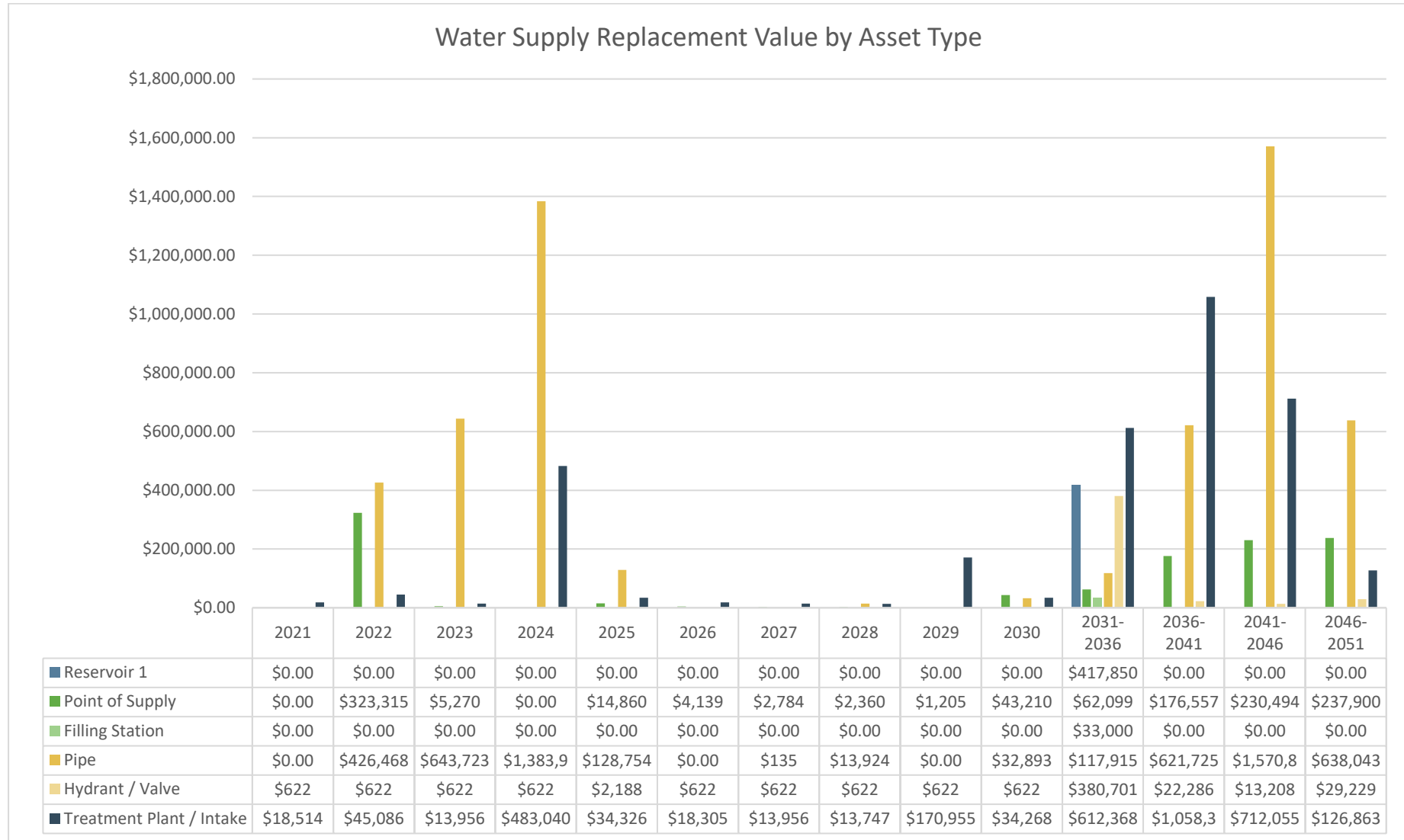


***30 – Year Operating Expenditure – Water***

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
<b>Water Supply</b>	1,815	1,835	1,969	2,025	2,083	2,149	2,319	2,495	2,510	2,608	13,500	13,750	14,000	14,250	77,308



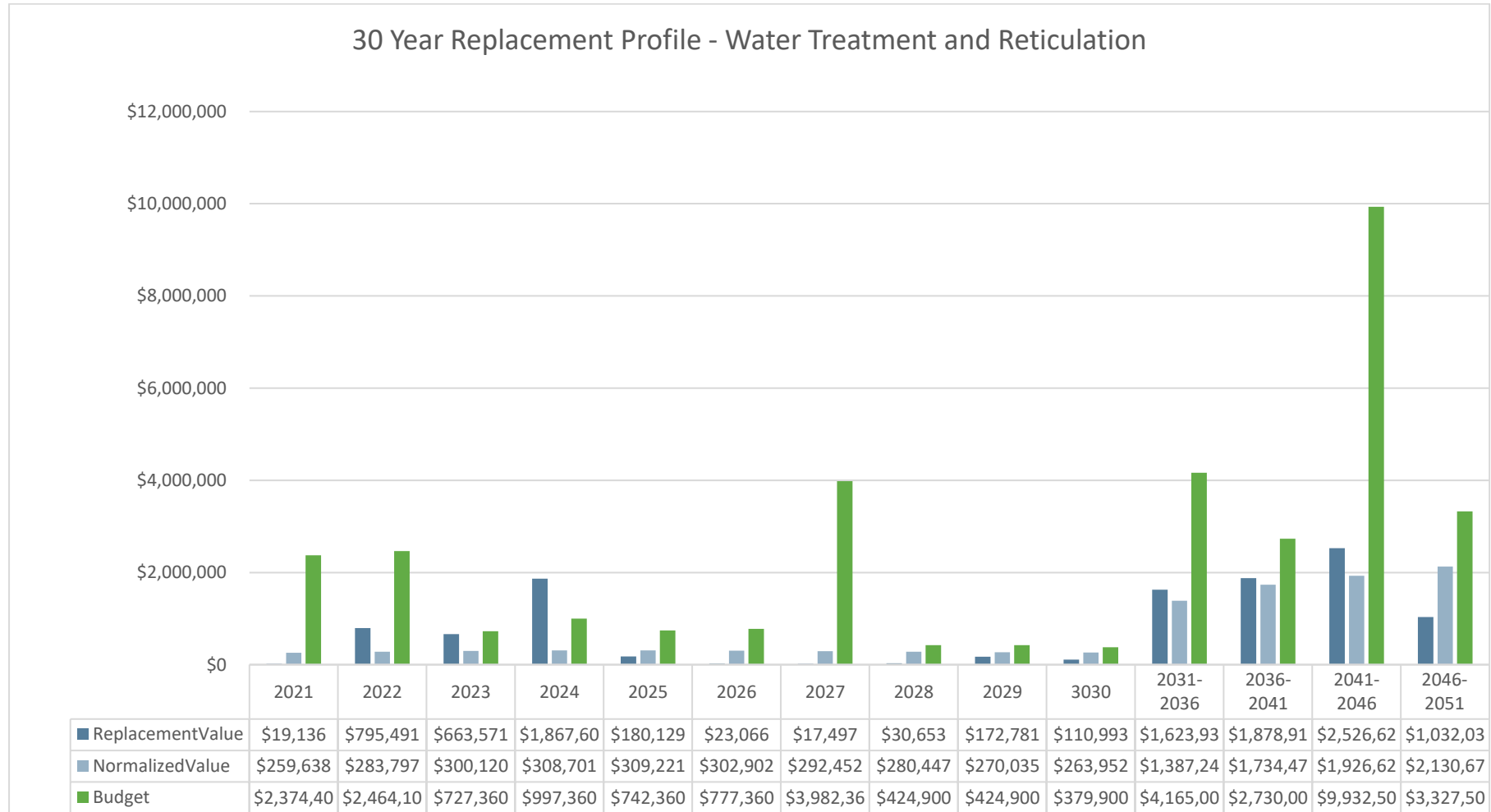
**30 – Year Water Supply Replacement Profile – Replacement Value By Asset Type**



**Legend:**

Replacement value: The total amount to spend on replacement based on Council's Asset Management System data

***30 – Year Water Supply Replacement Profile - Water Treatment and Reticulation***



**Legend:**

*Replacement value: The total amount to spend on replacement based on Council's Asset Management System data;*

*Normalised Value – Total minimum budget recommended for spending to ensure the entire replacement programme is delivered in the long-term.*

*Total Renewal Budget – The optimum budget the Council has determined to spend to optimise the asset and service delivery*

## Appendix 3: Wastewater

### Significant Issues and Options Assessment

The Significant Infrastructural Issues for the Wastewater Activity are detailed in the Wastewater Asset Management Plan and summarised below.

- Resource Consent Implementation;
- Trade Waste Implementation;
- Reticulation overload due to inflow/infiltration;
- Pipework Capacity Issues; and
- Network Planning and Modelling

The options for addressing these significant infrastructural issues drive the Long-term financial forecast for the Roding Activity.

#### Issue 1: Resource Consent Implementation

Response Options	Implications of options
Implement all necessary measures to achieve the conditions of the wastewater discharge consent.	<p>Compliance with the requirements of the wastewater discharge consent is essential for minimising the adverse effects on the environment.</p> <p>With the receipt of our new Wastewater Discharge Consent issued in April 2020, the Council has programmed to implement the required system upgrade at the set time per the consent condition. The Council will also continue to monitor the performance of the wastewater oxidation pond and provide feedback to the key affected parties on a regular basis. The first stakeholder meeting involving Iwi and Fish &amp; Game was held in August 2020; annual meetings will be held, as a requirement of the resource consent, to discuss performance progress. Intermittent meetings will be held where issues arise to ensure they are addressed promptly.</p>

#### Issue 2: Trade Waste Bylaw Implementation

Response Options	Implications of options
Implementation of the Trade Waste Bylaw	<p>This project is to ensure the implementation of the Councils newly adopted Trade Waste Bylaw.</p> <p>Stratford District Council's Trade Waste Bylaw 2020 (TWB) was adopted by Council in July 2020; Council undertook to employ a part time Trade Waste Officer in August 2020 to investigate trade waste discharges within the district and enforce the provisions of the TWB. Following subsequent amendments, the final Trade Waste Bylaw was adopted in October 2020.</p> <p>The successful implementation of this bylaw will ensure that trade wastes are appropriately disposed of, costs lie where they fall and the quality of resulting treated wastes discharging into the receiving environment meets the conditions of our resource consent and requirements of the NES-FW.</p>

#### Issue 3: Reticulation overload due to inflow/infiltration

Response Options	Implications of options
Implementation of Inflow/Infiltration programme, including inspections of private property to identify direct discharge of stormwater to sew	<p>This programme primarily to optimise reticulation capacity during rainfall events, by ensuring there is no inflow or infiltration of water into the wastewater reticulation system.</p> <p>The Inflow/Infiltration programme is a suite of interventions designed to minimise the inflow and infiltration of surface and groundwater into the wastewater pipe network. This is an important part of our annual network</p>

Response Options	Implications of options
	<p>maintenance and renewal programme that ensures that only wastewater collected from households and businesses is transported to the treatment plant.</p> <p>CCTV inspections are undertaken as part of the network conditions assessments therefore no additional costs are incurred. Identifying areas of high infiltration allows Council to better focus funds.</p> <p>The removal of stormwater increases the available reticulation capacity during rainfall events.</p>

#### Issue 4: Pipework Capacity Issues

Response Options	Implications of options
<p>Programme the implementation of pipework capacity increase to support growth.</p>	<p>This programme is to address under-capacity of pipe network to support growth, residential infill and other intense land-use activities.</p> <p>There have been new residential subdivisions and developments, urban infill and other growth-related pressures created in both our wastewater and stormwater networks. The consequence of this is that some pipes are requiring upgrades in capacity to accommodate the increased flow.</p>

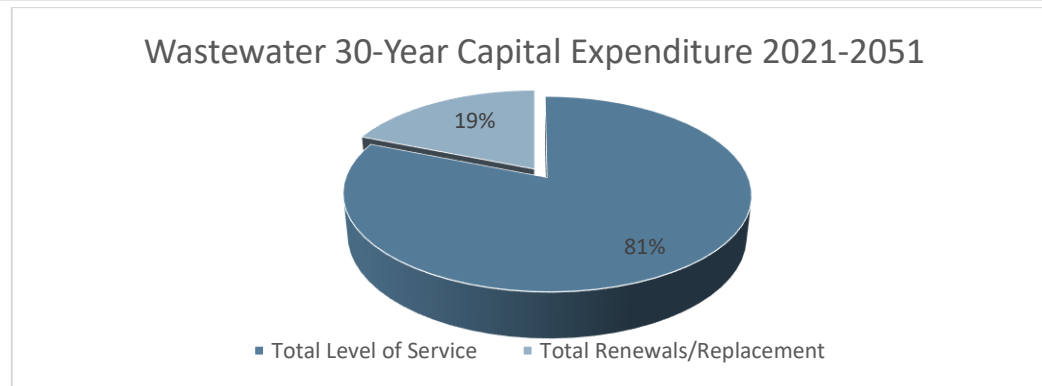
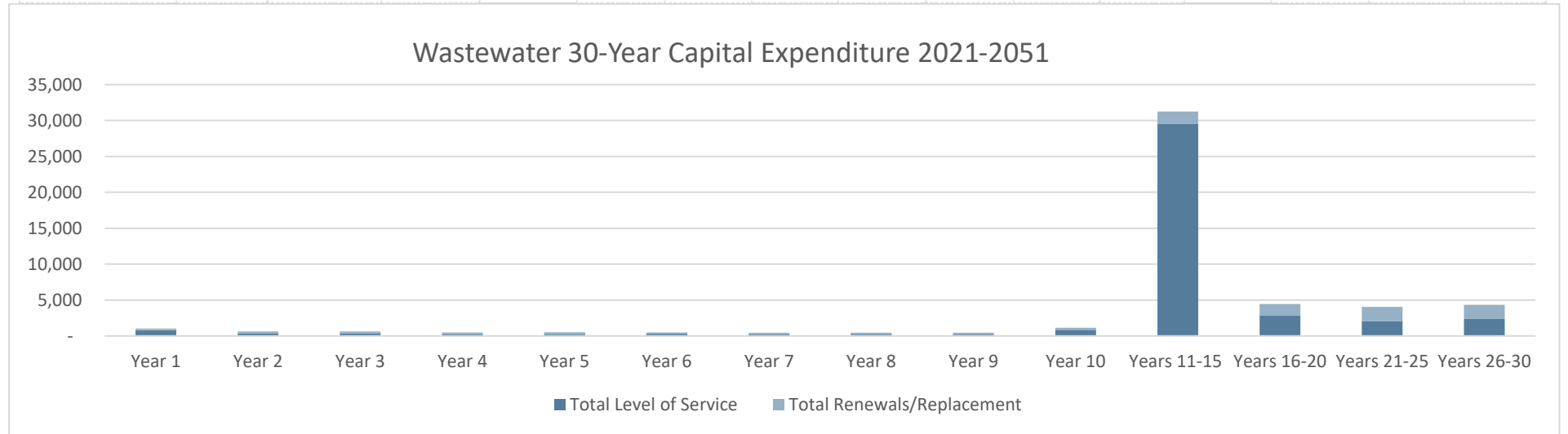
#### Issue 5: Network Planning and Modelling

Response Options	Implications of options
<p>Full review and calibration of the existing Wastewater model</p>	<p>To accommodate growth and increased demand, Council has programmed to increase pipe capacity to cater for high flows. While officers are aware of some pipes within the network requiring increased capacity, the Council is will commission a network modelling project on our stormwater network to reveal how our network systems are behaving.</p> <p>This modelling project will comprise:</p> <ul style="list-style-type: none"> <li>• the evaluation of network capacity;</li> <li>• the identification of inflow and infiltration into the pipe network;</li> <li>• the identification of bottlenecks in the existing or proposed network; and</li> <li>• the design of improvements needed to accommodate growth. The modelling project is expected to reveal the areas for improvement in the network from which priority areas can be programmed for improvement.</li> </ul> <p>The existing model is over 10 years old and needs updating in the near future to provide accurate information on where Council should undertake network upgrades and renewals.</p>



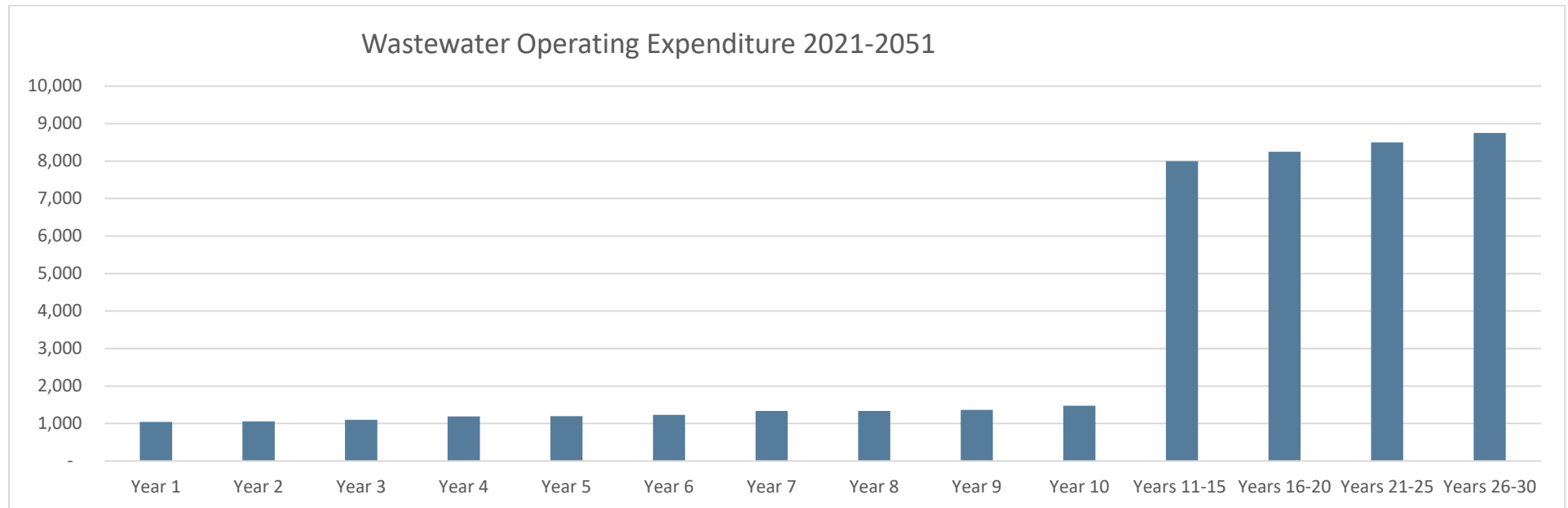
***30 –Year Capital Expenditure- Wastewater***

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Level of Service Improvement	800	362	381	273	281	288	238	184	178	838	29,597	2,819	2,098	2,360	<b>40,697</b>
Replacements	213	252	258	200	228	211	218	262	271	305	1,639	1,639	1,967	1,967	<b>9,628</b>

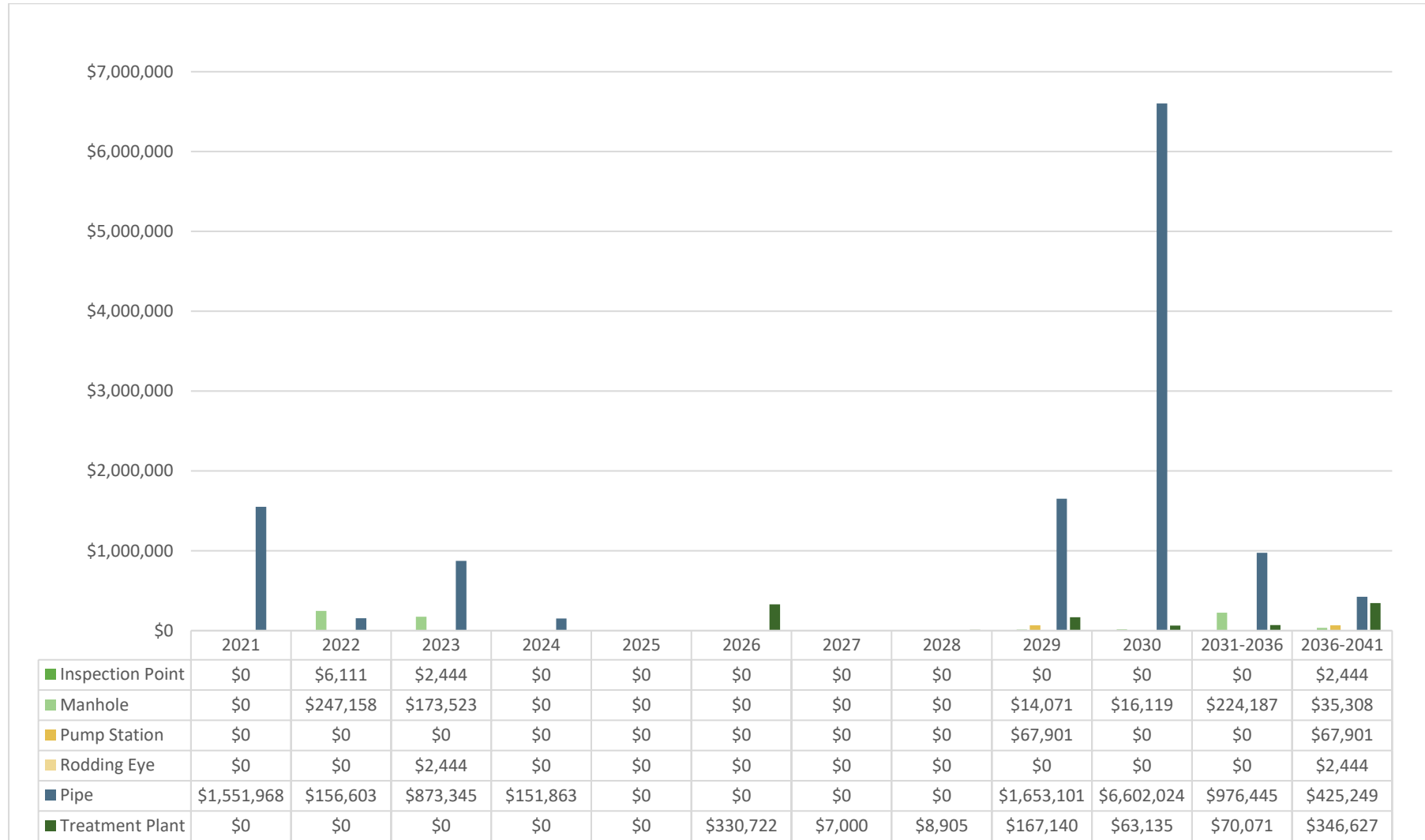


***30 – Year Operating Expenditure - Wastewater***

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
<b>Wastewater</b>	1,045	1,059	1,097	1,187	1,196	1,233	1,334	1,338	1,363	1,473	8,000	8,250	8,500	8,750	45,825



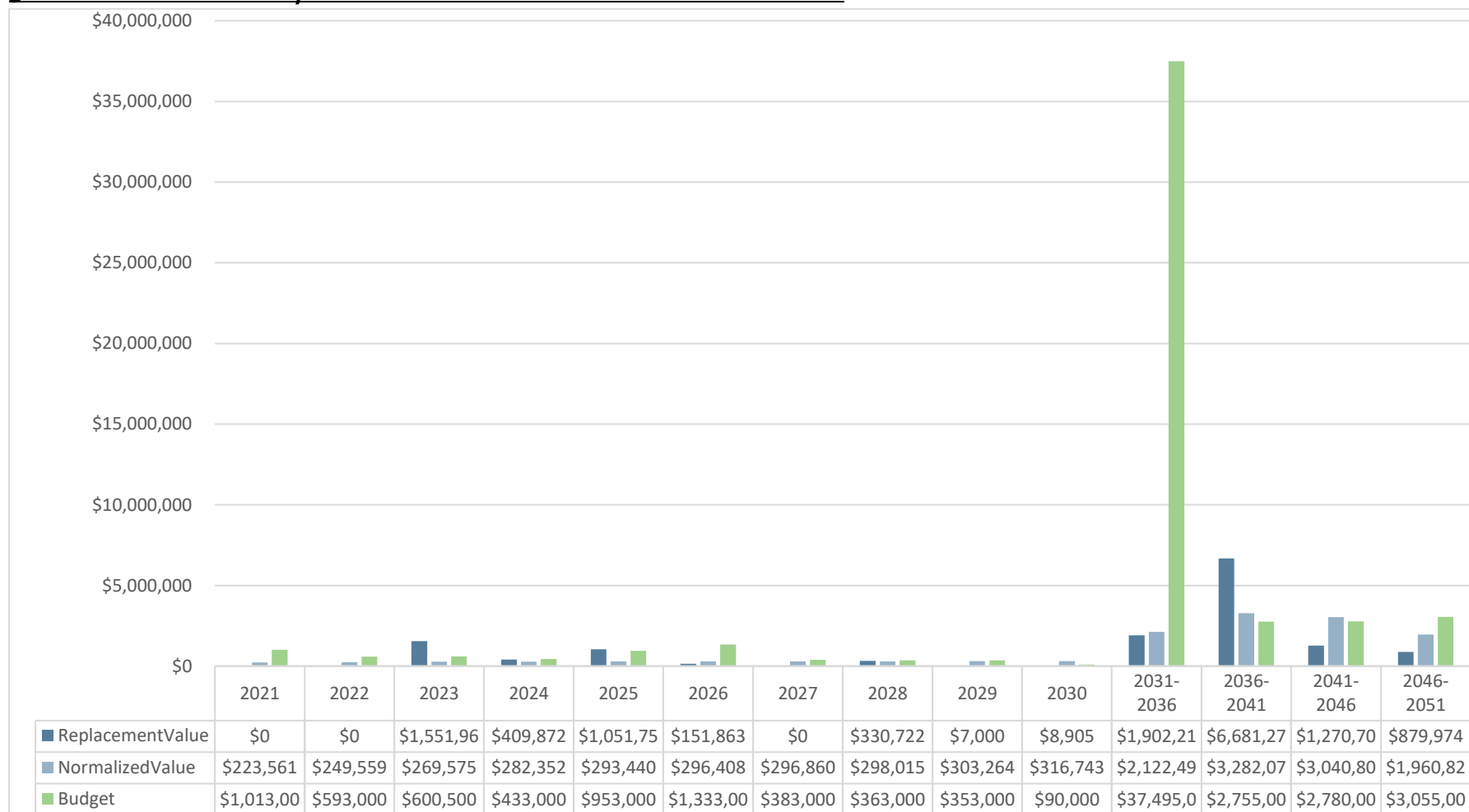
***30 – Year Wastewater Replacement Profile – Replacement Value By Asset by Type***



**Legend:**

*Replacement value: The total amount to spend on replacement based on Council's Asset Management System data*

### 30 – Year Wastewater Replacement Profile - Treatment and Reticulation



**Legend:**

*Replacement value: The total amount to spend on replacement based on Council's Asset Management System data;*

*Normalised Value - Total minimum budget recommended for spending to ensure the entire replacement programme is delivered in the long-term.*

*Total Renewal Budget - The optimum budget the Council has determined to spend to optimise the asset and service delivery*

## Appendix 4: Stormwater

### Significant Issues and Options

The Significant Infrastructural Issues for the Stormwater Activity are detailed in the Stormwater Asset Management Plan and summarised below.

- Network Planning and Modelling;
- Pipework Capacity Issues;
- Stormwater Safety Improvements
- Climate Change; and
- Replacement of Stormwater tunnels

The options for addressing these significant infrastructural issues drive the Long-term financial forecast for the Stormwater Activity.

#### Issue 1: Network Planning and Modelling

Response Options	Implications of options
Commission a new Wastewater model	<p>To accommodate growth and increased demand, Council has programmed to increase pipe capacity to cater for high flows..</p> <p>While officers are aware of some pipes within the network requiring increased capacity, the Council will commission a network modelling project on our stormwater network to reveal how our network systems are behaving.</p> <p>This modelling project will comprise</p> <ul style="list-style-type: none"> <li>• the evaluation of network capacity;</li> <li>• the identification of bottlenecks in the existing or proposed network; and</li> <li>• the design of improvements needed to accommodate growth.</li> </ul> <p>The modelling project is expected to reveal the areas for improvement.</p>

#### Issue 2: Pipework Capacity Issues

Response Options	Implications of options
Programme the implementation of pipework capacity	This programme is to address under-capacity of pipe network to support growth, residential infill and other intense land-use activities.

increase to support growth.	There have been new residential subdivisions and developments, urban infill and other growth-related pressures created in both our wastewater and stormwater networks. The consequence of this is that some pipes are requiring upgrades in capacity to accommodate the increased flow.
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#### Issue 3: Stormwater Safety Improvements

Response Options	Implications of options
Conduct an inlet structure study, and its implementation, to ascertain the extent of potential upgrades required to meet public safety requirements	Knowledge of what inlet structures are in the network and whether they are adequate is not at an appropriate level. This study will help Council gain the appropriate level of knowledge required to plan for the construction of new, safe stormwater inlet structures.

#### Issue 4: Climate change

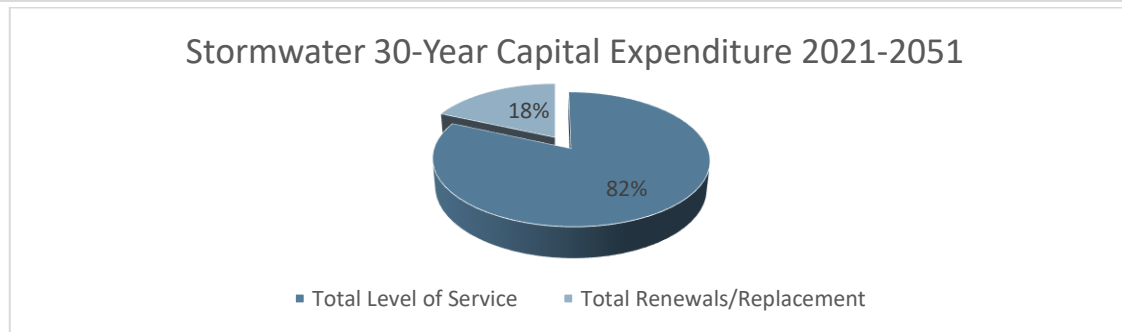
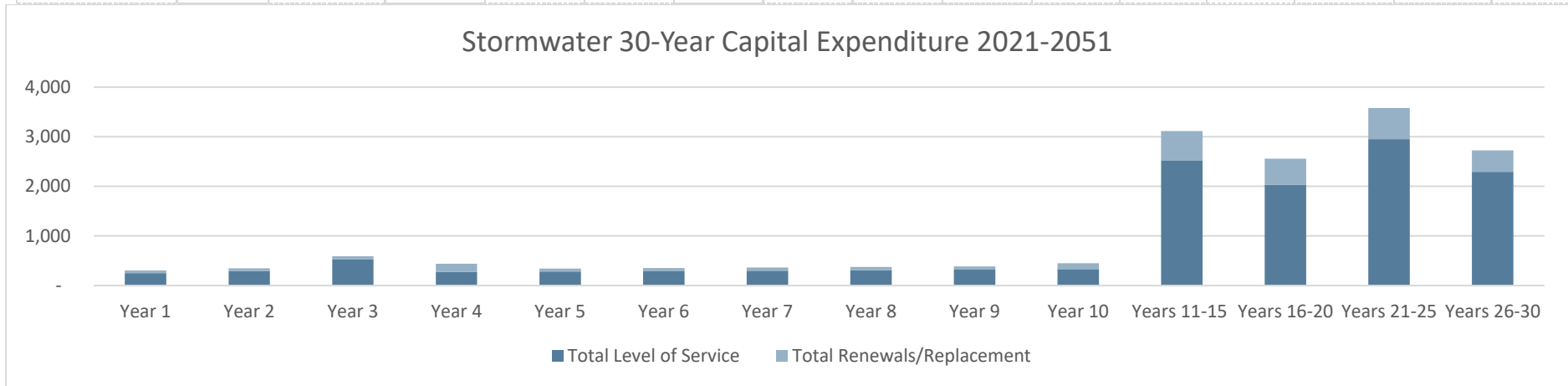
Response Options	Implications of options
Create a catchment management plan to support upgrade of existing assets to accommodate a 1 in 100 year storm event	Should improve stormwater management in the existing network

#### Issue 5: Replacement of stormwater tunnels

Response Options	Implications of options
Consider rerouting of larger waterways/pipeline/tunnels to be more accessible and within public land or easements	Properties currently connected to existing infrastructure will need to be accounted for in any new design route

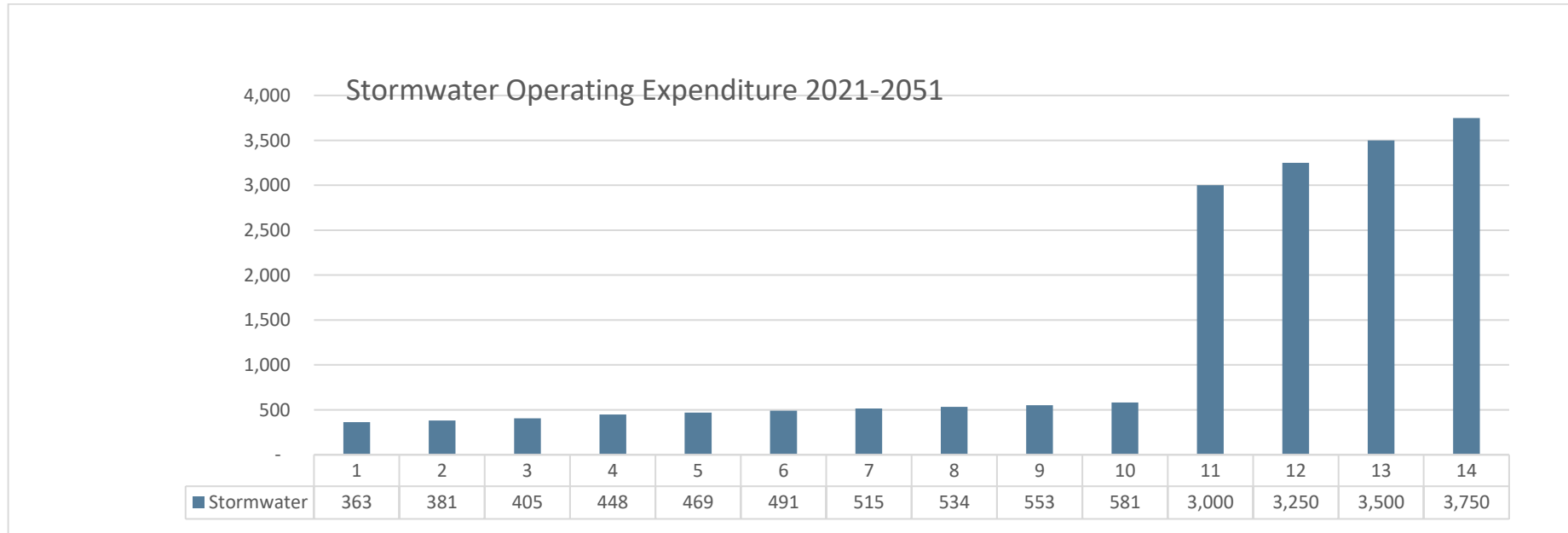
***30 – Year Capital Expenditure - Stormwater***

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Level of Service Improvement	252	292	533	275	283	291	300	310	321	331	2,524	2,032	2,950	2,294	<b>12,990</b>
Replacements	53	55	56	167	59	61	63	65	67	122	590	524	629	430	<b>2,943</b>



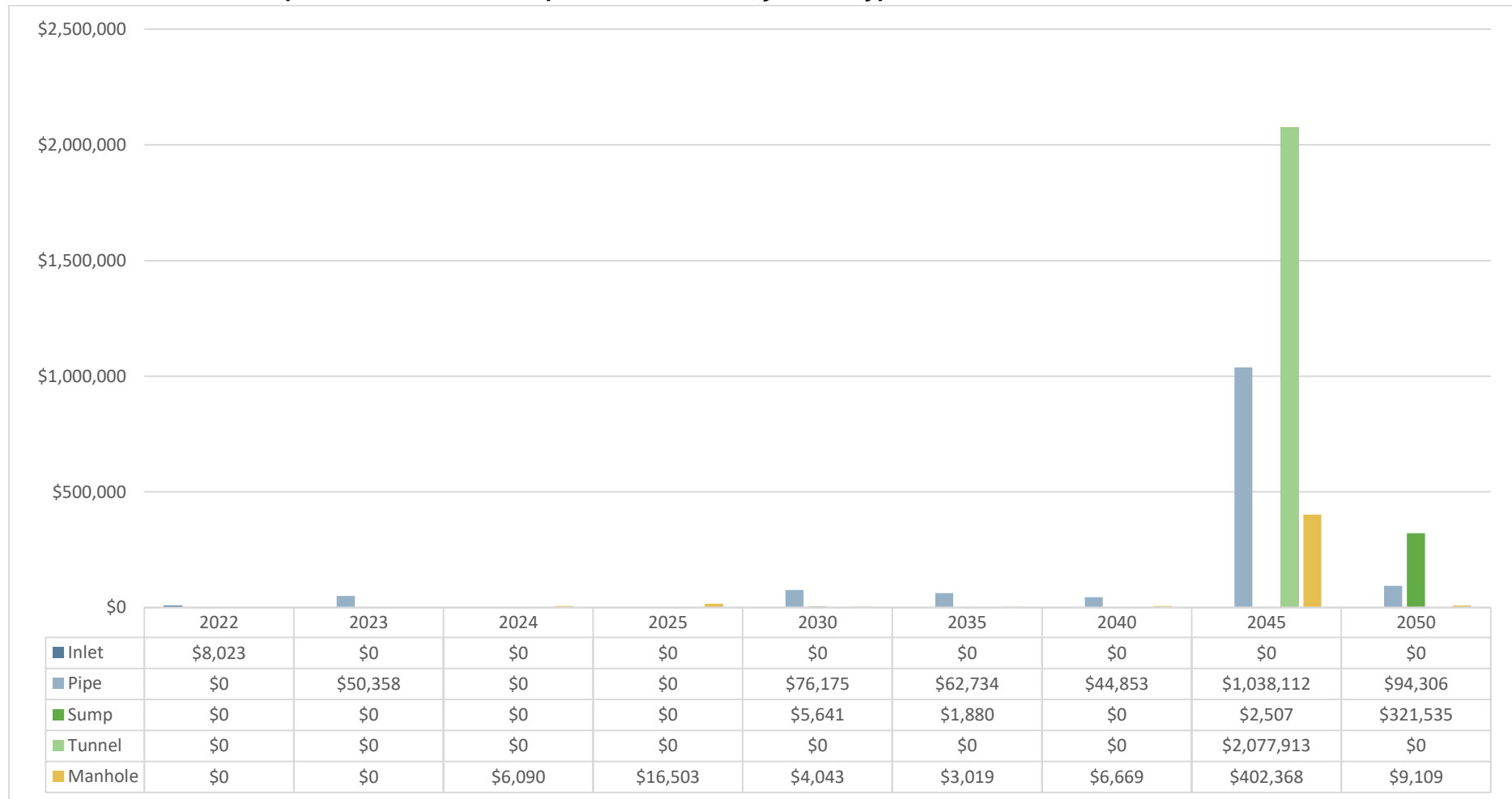
**30 – Year Operating Expenditure – Stormwater**

Year	1	2	3	4	5	6	7	8	9	10	11-15	16-20	21-25	26-30	Total
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
<b>Stormwater</b>	363	381	405	448	469	491	515	534	553	581	3,000	3,250	3,500	3,750	18,241





***30 – Year Stormwater Replacement Profile – Replacement Value by Asset Type***



**Legend:**

*Replacement value: The total amount to spend on replacement based on Council's Asset Management System data;*

***30 – Year Stormwater Replacement Profile - Reticulation***



**Legend:**

*Replacement value: The total amount to spend on replacement based on Council's Asset Management System data;*

*Normalised Value – Total minimum budget recommended for spending to ensure the entire replacement programme is delivered in the long-term.*

*Total Renewal Budget – The optimum budget the Council has determined to spend to optimise the asset and service delivery*