

Draft  
Taupō District Council  
Infrastructure Strategy  
2018-48

February 2018

## 1. INTRODUCTION

Infrastructure is essential to all aspects of modern living. We use it on daily basis, and the business community relies on it to create and deliver goods and services to customers. While essential, infrastructure is expensive to build and maintain. The Council provides much of the essential infrastructure that we use every day. We need to plan carefully to ensure this council managed infrastructure is maintained and managed appropriately for future communities and scenarios. We have adopted this Infrastructure Strategy to help the Council and community to make informed choices about major decisions and investments that will need to be made for its infrastructure. There are five themes that will influence the decisions we make about maintaining and managing our infrastructure over the next 30 years. These themes are:

- Population and demographic change
- Protecting the health of our communities and the environment
- Maintaining and renewing our infrastructure
- The resilience of our infrastructure
- Knowledge gaps

By understanding these themes mentioned above, the strategy will identify the issues facing our infrastructure and then discuss the options available for responding to the issues. As part of the discussion, this strategy will:

- Outline the most likely scenario for managing our infrastructure assets over the next 30 years, and;
- Show the projected capital and operating expenditure associated with managing our assets,
- Identify the significant decisions about capital expenditure that Council expects it will have to make; and
- Include the assumptions on which the scenario is based and providing information of the level of certainty or uncertainty associated with the scenario.

This strategy will be updated every three years to reflect the changing themes, knowledge of our assets and assumptions and to identify the impacts of these changing circumstances. Over time our knowledge will improve through improved performance and condition information. This will enable improved accuracy of asset renewal profiles and better investment decisions. Providing infrastructure is an important part of our role – it is expected that in 2018-19, spending on infrastructure will account for about 76 per cent of operational expenditure and 89 per cent of capital expenditure.

The Local Government Act requires Council to include the water supply, sewerage and the treatment and disposal of sewage, stormwater drainage and the provision of roads and footpaths infrastructure assets in the infrastructure strategy.

In the 2015 Infrastructure Strategy, we only included these mandatory infrastructure assets. However for this Infrastructure Strategy we have decided to include the following Council infrastructure assets:

- Water supply
- Sewage treatment and disposal
- Stormwater drainage
- Roads and footpaths
- Solid waste
- Community facilities like the AC Baths, the Taupō Events Centre, the Great Lake Centre and community halls.
- Parks and reserves

While there are some limitations to the information we hold on our community facilities and parks and reserves we have included these assets as we consider it is important to outline the complete picture for Council's infrastructure assets. The main gaps in the information we hold on our facilities is condition information and strategic direction for both parks and reserves and, facilities and therefore

limited knowledge of financials for years 11 to 30. We will gather more information over the course of this strategy so we can improve our knowledge of our facilities and parks and reserves. This will enable us to plan for more effective long term management of this infrastructure in the future. In future infrastructure strategies we will also consider including assets within Council's investment portfolio, such as forestry and property, in subsequent versions of the infrastructure strategy.

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## 2. ASSUMPTIONS

The following assumptions have been made in preparing this infrastructure strategy:

### Natural Environment

- Our district is at risk of a range of natural hazards such as earthquakes, flooding, tsunami, debris flows, slips, tornado, fire and volcanic activity.
- Our district is susceptible to many environmental processes, such as erosion.
- Climate change impacts will not be significant between the 2018 and 2028 infrastructure strategies but we will review data on an ongoing basis to see if this needs to change for infrastructure strategies from 2031.

### Service Delivery

- When we are required to renew the resource consents, that we hold for our infrastructure, consent conditions will get more restrictive.
- Infrastructure needed for growth related development will be paid for by development contributions.
- The agreed levels of service are maintained.
- No change to the method used to deliver services.
- No change to the management of services.

### Economy

- The wider economy remains stable.
- There will be economic influences that will impact on Council's business that are out of its control.
- There will be contractors available to deliver the projects identified.

### Legislation

- No new unfunded mandates from central government.
- Central government's water allocation strategy is consistent with current policy.
- Legislative change is anticipated over the next 10 years. Where direction has been provided by Central Government this has been taken into consideration. If unknown the status quo has provided the baseline for decisions.
- Legislation changes beyond 10 years is unknown.
- There will be a continued focus on environmental quality and therefore an increase in environmental standards.
- There is no reorganisation of local government that affects the Taupō District Council.

### Population and demographics

- Population growth across our district is expected to reflect the medium population projections provided by Statistics New Zealand and outlined in the Taupō District Demographic Snapshot.
- Limited structural change to population for years 1-3, increased aging structure by year 10 and until year 30. An aging population will put added pressures on specific services and may require different services.
- The percentage of property owners that do not live in the district will remain unchanged between years 1 and 3. We need to do more work to understand what this will be beyond year 3.

### Land use

- The level of growth for the district occurs as forecast in the Demographic Snapshot.
- Capacity for residential land which is already zoned will be more than sufficient for the next 30 years. Industrial/commercial land which is already zoned will be sufficient for at least the next 10 years. Further assessment of and provision of industrial/commercial zoned land will be undertaken as part of the district plan review.

### Knowledge of state of infrastructure

- Current knowledge about the condition of underground infrastructure is not as comprehensive as we would like, but over the past three years we have gained a greater understanding of the condition of our assets, especially the wastewater network in Atiamuri and Mangakino and the condition of our AC water mains. More work will be done over years 1 to 7, to further improve this knowledge.
- We have undertaken modelling on our roading network to help us determine more appropriate profiles for the renewal of both our road surfacings and pavements. Although there is further work to do the early results suggest that both surfacing and pavement renewal programmes will need to be increased.
- Current knowledge about the condition of our facilities is also not as comprehensive as we would like. This will be further developed over the first 3 years of the 2018 LTP.

**Funding**

- Funding levels agreed within the Long-term Plan are maintained across the first 10 years of the strategy.
- Inflation is consistent with BERL LGCI predictions.
- All financial figures in this document are inflation adjusted.
- NZTA financial assistance rates will remain at the current level for the period of the strategy.
- The increasing aging population is likely to affect the affordability of rates for a large proportion of the aging population.

### 3. UNCERTAINTIES

Uncertainties	Level of uncertainty H/M/L	Potential effects
Growth	L	We may not be able to provide infrastructure for growth at the appropriate time and location. Council will ensure that we keep monitoring growth and adjust timing of projects accordingly.
Decline	L	We may experience population decline in some areas. This may cause surplus infrastructure capacity, resulting in affordability issues. We will keep monitoring and adjust the timing of projects and assess whether the projects are needed at all.
Demographic change	L	Demographic changes could result in a change in the demand for the types of infrastructure that we provide and we may not have programmed or allocated funding for this. This may mean that infrastructure will not be provided when required. We need to ensure that we understand the demands of the community to ensure that we know what infrastructure is needed, when and where the infrastructure is needed and that projects are programmed and that funding is allocated accordingly.
Peak population	M	The timing and intensity of our peak population (as a result in an influx of visitors) could result in a greater number of people for our current infrastructure to cope with. We need to gather information on the timing, quantum and location of peak population and keep monitoring and adjust timing of projects accordingly.
Non resident population	H	A change in our resident /non resident percentages could change the capacity required in our infrastructure at certain times of year. In 2016 42% of our property owners did not reside in the district. Surplus housing stock from declining populations in some parts of the district, could be purchased as holiday homes resulting in a higher non resident population. We need to understand whether this may happen and what the impacts on infrastructure could be.
Condition of assets	M	Although we have gained some knowledge of the condition of our underground assets over the past 3 years we still have further condition assessment work to be done This means that some of our renewals decisions are still planned on when we expect the end of life of the asset to occur, rather than making decisions based on the actual condition of the asset. This may compromise levels of service and means that there is an increased risk of an asset failing, resulting in increased replacement costs. Once we have complete information on the condition of all our assets we can then accurately forecast the timing of replacement and forecast finances.
Future funding	M	We may not be able to do projects that are planned in the capital schedule as future funding is not certain. We will prioritise projects, decide not to do projects or change the timing of them.
Natural hazard	M	We do not know the timing or quantum of natural hazards or even if they will happen at all. This could result in a loss of some or all services. Recovery from an event may be delayed and more expensive
Legislative changes	M	We do not know the timing or content of legislation changes so the impacts could be far reaching. We do know that environmental standards are increasing however we do not know the extent of these

Uncertainties	Level of uncertainty H/M/L	Potential effects
		changes. This will result in increasing compliance costs to meet these new standards which could result in affordability issues.
Level of service and types of services required by community	M	We do not know what changes in levels of service the ratepayer will request over the 30 years. With an aging population they are likely to be things such as wider footpaths, more walkways and cycleways and leisure facilities as well as demand for services to those that do not currently have them. This could result in higher costs and affordability issues.
Technology	H	Advances in technology such as electric and autonomous vehicles and treatment of wastewater, are all underway. However we are uncertain how soon they will be available and at what cost and therefore how they will affect the provision of council infrastructure services.

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## 4. COUNCIL VISION AND LONG-TERM DISTRICT STRATEGY 2018-28

### Council vision

Our infrastructure contributes significantly to the Council vision, 'To be the most prosperous and liveable district in the North Island by 2022'. Infrastructure that is safe, efficient and meets the needs of our community, will assist us in achieving our Council values of 'world class, authentic, resilient, charming, vibrant, quality, value.'

### The Long term district strategy

The Long-term District Strategy outlines the ways that Council will reach our vision. Its key strategic guidelines are:

- Ensuring the Taupō District remains a great place to live
- Promote economic development
- Protect our water resources and use them wisely.
- Maintain the quality infrastructure that we have
- Keep rates and debt at a reasonable level while making us more resilient to future changes

The Long-term District Strategy can be accessed here.

If we focus on achieving the strategic guidelines above, it will help ensure that the Taupō District is a prosperous and liveable district.

### Where we want to be in 30 years

Our existing infrastructure network is in good condition and we have planned to ensure that we have enough capacity to cater for the expected changes in population and land use. Our operating and renewal programmes are based on maintaining what we have while delivering the current level of service. We will also be assessing the condition of our underground assets and community facilities, in particular to help ensure we are spending money on the right things at the right time.

In particular in 30 years we want to:

- Have safe, good quality drinking water.
- Protect the environment.
- Understand the condition of all assets so we can accurately forecast renewals to maintain assets at the required level of service.
- Recognise and respond to the potential increase/decrease in demand on infrastructure from population growth/decline in the district and parts of the district.
- Recognise and respond to changing demographics (in particular an aging population) of the district and parts of the district and the desire for changes in the provision of services.
- Understand the implications of our high non-resident population and peak holiday population and recognise that this makes us different to other districts and how this impacts on the provision of services

One of the components of creating a strong financial foundation is ensuring that we maintain our infrastructure to meet the current and future needs of the community. We need to look after what we already have. Infrastructure is also important for economic development. Building and maintaining quality infrastructure is one of the critical parts of the foundation required for a resilient and growing economy.

Along with the basic three waters and transport infrastructure, Council provides a range of community infrastructure. Facilities like libraries and parks are provided to enhance the social environment and encourage a closer knit and well functioning community. These facilities also provide an important economic benefit, creating a community environment that is attractive for people to live and work. We also provide a landfill, transfer stations and rubbish and recycling collections to ensure that waste in our district is disposed of safely.



There is a fine line balancing wants and needs with affordability and sustainability and working within our financial strategy. Therefore we need to prioritise our capital spend on the need for infrastructural upgrades for drinking water and wastewater to meet legislation and consent requirements along with those place making projects that drive a prosperous community.

Looking after our environment especially our water has implications for this infrastructure strategy. Our water takes, use of water and treatment and disposal of wastewater, construction and maintenance of roads can all have impacts on our environment.

Council is required to prepare a financial strategy as part of its Long-term Plan. The purpose of the financial strategy is to facilitate prudent financial management by the local authority. The financial strategy and infrastructure strategy are interrelated as we cannot achieve our goals for infrastructure if we are not able to adequately fund this work. Conversely, it is difficult to keep rates affordable and sustainable and prudently manage our borrowings when new and upgraded infrastructure is required as a result of changing environmental standards and changes in demographics.

### Financial strategy

The financial strategy continues the focus set out in the Long-term Plan 2012-22 and 2015-25 on prudently managing our investments and borrowings, keeping rates affordable and sustainable and looking after the assets we have while maintaining levels of service.

The strategy outlines the Council’s financial vision for the next 10 years and the impacts on rates, debt, levels of service and investments. It will guide the Council’s future funding decisions and, along with the Infrastructure Strategy, informs the capital and operational spending for the Long Term Plan 2018-2028. It identifies the challenges that we want to respond to with our financial goals.

We have set ourselves a number of financial goals that we intend to achieve by 2028. These goals support our three key principles for this financial strategy:

- Keeping rates affordable and sustainable
- Looking after the assets we have while maintaining levels of service
- Prudent management of our investments and borrowings

These goals are intended to assist in addressing the challenges that we have identified.

<b>Financial Prudence</b>	<ol style="list-style-type: none"> <li>1. Run a balanced budget in every year of the long term plan. This means that operating income will meet or exceed operating expenditure in each year.</li> <li>2. Maintain Council’s AA Standard &amp; Poors (S&amp;P) credit rating</li> </ol>
<b>Income</b>	<ol style="list-style-type: none"> <li>3. Annually review fees and charges revenue to ensure that they are set at the appropriate levels.</li> <li>4. Continue the sale of surplus land assets to reduce debt.</li> <li>5. Investigate opportunities for growing non-rate revenue to reduce the reliance on rates.</li> <li>6. Complete the removal of the TEL income rates subsidy by June 2020.</li> </ol>
<b>Rates</b>	<ol style="list-style-type: none"> <li>7. Maintain the limit on rates revenue at 80% of operating revenue.</li> <li>8. Limit rates increases to LGCI + 1.5% in each year of the long term plan.</li> <li>9. Investigate taking a district wide approach to the funding of the separate water schemes to achieve financial sustainability for the water activity.</li> </ol>

<p><b>Expenditure</b></p>	<p>10. Continue to fund 100% of the wearing out of assets over their lifetime (funding of depreciation) in each year of the long term plan.</p> <p>11. Continue to fund the growth component of capital expenditure projects by development contributions and developer agreements.</p> <p>12. Improve the delivery performance of the planned capital expenditure programme by implementing a new planning and project management framework.</p> <p>13. Increase third party funding for new community projects by building closer relationships with other agencies, government departments and community groups.</p> <p>14. Look after the assets we have by providing sufficient renewal budgets from reserve funds or loans to meet the asset renewal programmes outlined in the asset management plans.</p>
<p><b>Borrowing</b></p>	<p>15. Maintain gross external borrowing below 200% of operating revenue.</p> <p>16. Maintain borrowing costs to below 10% of revenue in each year of the long term plan.</p>
<p><b>Levels of service</b></p>	<p>17. Maintain levels of service as set out in the long term plan 2018-28.</p>
<p><b>Planning for emergency events and contingencies</b></p>	<p>18. Grow the disaster recovery reserve contributions from \$100k per annum to \$500k per annum by 2028. This will grow the disaster recovery reserve to \$5.0m by 2028. Due to the uncertainty of disaster events, no drawdown of the fund has been budgeted.</p> <p>19. Maintain the capital of the TEL community fund to be available as part of a disaster recovery fund</p> <p>20. Maintain appropriate insurance cover, activity budgets and committed borrowing facilities to mitigate costs related to unexpected events.</p>

It is always a balancing act between meeting the wants and needs of our communities whilst keeping rates affordable and sustainable. The financial strategy was prepared with this at the forefront of our thinking.

## 5. CONTEXT

### Geographic

The Taupō District is located at the centre of the North Island and has a total area of 6,970km<sup>2</sup>. This is made up of 6,354km<sup>2</sup> of land area and the remainder in waterbodies. The district makes up a significant part of the Taupō Volcanic Zone and straddles the Taupō Fault Zone. Lake Taupō was formed in the crater of a volcanic caldera. Its geomorphology means that at times it experiences earthquakes and volcanic activity.

There is an estimated usually resident district population of 32,907 people (Census 2013). Settlement is characterised by the two principal towns of Taupō and Turangi that provide functions and services typical of provincial New Zealand towns. Taupō, the largest town, has a population of about 20,850 and is located on the northern shores of Lake Taupō. Turangi is situated on the southern shores of the lake. Mangakino is on the shores of Lake Maraetai at the northern end of the district and is the third largest settlement.

Lake Taupō is one of the district's most distinguishing features and is a resource of national significance. The lake is the largest body of fresh water in New Zealand and is an integral part of major power generating schemes. It offers some of the best trout fishing in the world, and provides for a wide range of other active and passive recreational activities. The district is characterised by pumice, free-draining soils.

Geothermal resources significantly characterise the district, with features including mud pools, hot mineral springs, steam and sulphur and various geothermal fields such as Mokai, Ohaaki, Rotokawa, Tauhara, Tokaanu and Wairakei. A number of power stations, supported by these fields, add significantly to the local economy. In the Taupō Volcanic Zone, there are elevated levels of arsenic in soils and waters as a result of geothermal activity. Some lakes and rivers have arsenic concentrations above the World Health Organisation's limit for arsenic in drinking water (0.01 mg/L).

### Funding

Council funds the management of infrastructure assets through targeted rates, the general rate and subsidies from Central Government, like New Zealand Transport Agency and Ministry of Health.

Under Section 101(3) of the Local Government Act the Council is required to outline how each group of activities that Council undertakes are funded and the reasons why. The infrastructure groups of activities are funded the following ways for the following reasons:

Water supply 100% targeted rate (by users of the scheme)

Reason: Individual property owners connected to or accessing Council's water supply benefit and are identifiable so a targeted rate for each scheme is considered the most effective way to charge for this activity. Metered water supplies (rural and commercial) are also charged.

Transport 100% general rate

Reason: A strong and safe transport network benefits the community as a whole and is a key component of the district's social and economic development. Users of the roads receive a direct benefit through an integrated road network. The general rate is the most effective way of funding this activity. Subsidies from central government (which include the District's share of petrol taxes) and development contributions are the most efficient way of targeting contributors.

Stormwater 100% general rate

Reason: The service is provided primarily for its environmental benefits to mitigate pollution and erosion effects on waterways. Stormwater services are also provided, to a lesser degree, for public safety (flooding risk from stormwater).

Wastewater 100% targeted rate (charged on a sliding scale)

Reason: Direct users of the wastewater system clearly receive the benefit. There is also a high public benefit in relation to the promotion of public health. A targeted general rate is applied to ratepayers that are connected to a wastewater scheme. This is considered the most efficient method of funding as the benefit users receive is the same regardless of volume. It is also not considered practical to measure and make specific household charges.

Parks and reserves 90%-100% general rate, 0%-10% fees and charges

Reason: As the majority of parks and reserves in the District are available for the enjoyment of the public at any time the general rate is an effective way of funding this activity. Where Council is able to charge for specific parks and reserves fees and charges are the most appropriate funding mechanism. A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Sportsgrounds 90%-100% general rate, 0%-10% fees and charges

Reason: The community benefits from being able to use the facilities for general recreation, while clubs and individuals also benefit from the grounds at other times. There is also an economic benefit through national and regional sports tournaments that bring sports people and their families to the District. These services can be partly funded separately by fees and charges, but there are limits to how much clubs, especially for school sports, can pay. This is reflected in the small fee and charge component. A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Facilities

Pools: AC Baths 35%-45% fees and charges, 55%-65% general rate, Mangakino Pool and Turangi Aquatic Centre 5%-15% fees and charges 85%-95% general rate

Reason: Users are clearly identifiable. However, swimming pools provide a range of benefits to our communities. The Turangi and Mangakino pools recognise a significant public funding component (85%-95%) on the basis of wider social responsibility.

A public funding input (55%-65%) for the AC Baths is based on the economic and social benefits accruing to the wider community from the operation of the pool facility. There is also a wider range of services provided at the AC Baths which accounts for the higher level of fees applied. A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Taupō Events Centre: 25%-35% fees and charges, 65%-75% general rate

Reason: The venue is used by groups and individuals which creates the ability to apply fees and charges. Council supports the use of the venue as it assists in meeting the social needs of current and future generations. This support is recognised in the split between fees and charges and the general rate. Increasing the fees and charges is likely to result in a reduction in community use. A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Great Lake Centre: 15%-25% fees and charges, 75%-85% general rate.

Reason: The venue is used by groups and individuals which creates the ability to apply fees and charges. Council supports the use of the venue as it assists in meeting the social needs of current and future generations. This support is recognised in the split between fees and charges and the general rate. Increasing the fees and charges is likely to result in a reduction in community use. A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

When considering the funding of infrastructure assets, Council must consider the period over which the benefits of infrastructure assets occur to ensure the costs are shared fairly between today's beneficiaries and future beneficiaries. This is referred to as intergenerational equity. Infrastructure assets are made up of parts such as pipes, pump stations, manholes, tanks, buildings and playground equipment. All these components have a different estimated life, which are outlined in the Property,

plant and equipment Accounting Policies, ranging from two to 100 years. The capital costs for these projects need to be shared by the beneficiaries over the lifetime of the assets. For operating costs, the period of benefit for the rates share is generally ongoing as Council regularly provides the service. The capital costs are shared over the generations that will benefit from the asset.

Community halls: 0%-10% fees and charges, 90%-100% general rate

Reason: The primary beneficiaries are those that use the Community Halls. However, the wider community benefits through enabling communities to be active and connected.

A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Public toilets: 100% general rate

Reason: Given the impracticality of charging individuals and the wider community benefit of providing amenities for residents and visitors to the District the general rate is considered the most appropriate source of funding.

100% general rate is therefore considered the most appropriate and efficient funding source.

Superloo: 30%-50% Fees and Charges, 50%-70% General Rate

Reason: The District benefits from having visitors and providing public amenities is part of ensuring visitors enjoy their stay. Beyond user charges, the costs are only borne efficiently by the whole community and limited transparency benefits from distinct funding would be less than the transaction costs. The Superloo was built to offer a first class service and a fee reflects the enhanced service applied.

A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

District libraries: 0%-10% fees and charges, 90%-100% general rate

Reason: The District Libraries provide social and cultural benefits to the individuals that visit. There is also a wider community benefit which includes an ability to encourage education, a social environment and an important source of supplying public information. These community benefits are recognised in the split between fees and charges and the general rate.

A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Taupō Museum and Art Gallery: 5%-15% Fees and Charges, 85%-95% General Rate

The Museum and Art Gallery provides cultural or recreational benefits to the individuals that visit. There is also a wider community benefit which includes economic, social and cultural benefits of protecting our history. These community benefits are recognised in the split between fees and charges and the general rate. Increasing the fees and charges is likely to result in a reduction in use.

A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Housing for the elderly: 40%-60% fees and charges, 40%-60% general rate

The beneficiaries are the tenants who receive accommodation at affordable prices. There is a public and social benefit in having housing for the elderly units reflecting a community that cares.

A split of fees and charges, and the general rate is therefore considered the most appropriate and efficient funding sources.

Cemeteries: 0%-20% UAGC, 80%-100% fees and charges

Reason: Interment and maintenance of the district's cemeteries are mainly of private benefit. The users are the deceased and those related to the deceased and as such can be linked to individuals. There is an element of public good in terms of ensuring that public health requirements are maintained.

A split of fees and charges, and a UAGC is therefore considered the most appropriate and efficient funding sources.

### **Asset Management Plans**

The Council manages \$1.2 billion worth of infrastructure and other assets such as our water networks and community facilities. Council uses the asset management approach to ensure assets are managed in an affordable, efficient, sustainable and effective manner to minimise the financial impact on Taupō District ratepayers and residents.

Asset Management Plans (AMPs) have been developed for water, wastewater, stormwater, transportation, solid waste, parks and reserves and facilities. Asset management plans, except those for parks and reserves and facilities, set out a 30-year programme for the management of specific groups of assets. They are tactical plans for achieving strategies resulting from the strategic planning process. AMPs are a key component of the council planning process linking with the infrastructure strategy, the 10-Year Plan and the Annual Plan.

They combine management, financial, engineering and technical practices to ensure that the level of service required by customers is provided at the lowest long term cost to the community. They demonstrate that Council is managing the assets responsibly. The main benefits derived from Asset Management planning are:

- Improved understanding of service level options and standards.
- Minimum lifecycle (long term) costs are identified for an agreed level of service.
- Better understanding and forecasting of asset related management options and costs.
- Managed risk of asset failure.
- Improved decision making based on costs and benefits of alternatives.
- Clear justification of forward works programmes and funding requirements.
- Improved accountability over the use of public resources.
- Improved customer satisfaction and organisational image.

Assumptions on the life cycle of key assets can be found within the Accounting Policies.

### **Levels of Service**

Our target levels of service for each type of asset are identified in the asset management plans. They are derived from the following principles:

- **Community Outcomes:** Provide guidelines for the scope of current and future services offered and manner of service delivery, and define general levels of service which the community wishes to receive.
- **Customer Expectations:** Information gained from customers on expected quality and price of services.
- **Statutory Requirements:** Legislation, regulations, environmental standards and Council bylaws that impact on the way assets are managed (i.e. resource consents, building regulations, health and safety legislation). These requirements set the minimum level of service to be provided.
- **Strategic and Corporate Goals:** Provide guidelines for the scope of current and future services offered and manner of service delivery, and define specific levels of service which the organisation wishes to achieve.

As part of the development of the Long-term Plan 2018-28 the Council identified the need for a review of “levels of service” for several areas of service. Council regularly measures resident and non-resident ratepayer’s satisfaction with services, the most recent measure was commissioned in August 2016. Analysis of this information together with data available through complaints, suggestions, reviews and service requests, identified the following services would benefit from a review:

- Footpaths
- Cycle ways and other cycle facilities

- Litter control
- Noise control
- Dog control (barking, roaming)
- Water (leaks, toby issues)
- Street lighting issues

The purpose of this level of service review was to understand the levels of satisfaction with current service levels, whether there is any desire to reduce or increase service levels, and the cost implications. As a result of that review no significant changes were proposed to the current levels of service for footpaths, cycle ways and other cycle facilities, litter control, noise control, dog control (barking, roaming), water (leaks, toby issues) and street lighting other than that provided by the upgrading of water schemes to meet the drink water standards (a legislative requirement). This will be an increase in the level of service for those schemes

There are several projects included this long term plan which will increase the level of service provided to the community such as the transportation projects relating to improving traffic flow through Taupo's CBD and place making. These have largely arisen due to community feedback since the review in 2016.

In the latter years of this strategy it will be necessary to review the investment in infrastructure to maintain services at current levels. Council will need to consider the services, the level at which they are provided and what the district can afford. This is needs to be monitored in subsequent reviews of the infrastructure strategy.

## 6. THEMES

Five themes have been identified through the development of the infrastructure strategy and the underlying Asset Management Plans that describe the changing environment within which we will need to plan for, maintain and build infrastructure. These themes often relate to more than one type of infrastructure. As the infrastructure strategy covers 30 years we will need to continually monitor and update these themes to ensure we are working with the most up to date information.

### **Theme one: Population and demographic change**

The Demographic Snapshot outlines that the population and demographics of the district are going to substantially change over the next 30 years. The projections show that:

- The districts population will continue to grow to 2038 and will then decline. :
- The urban areas of Taupō town and Kinloch will continue to grow until 2038 and then start to decline. The population of Taupō town will increase from 24,190 in 2013 until it peaks at 27,260 in 2038 before slowly starting to decline. In Kinloch the population is projected to increase from 520 in 2013 to 780 in 2028 and then remain stable. The towns of Turangi and Mangakino have been experiencing population decline for some time and it is projected that this decline will continue.
- Currently there are an average of 2.4 people in each household. This is expected to decrease to 2.2 people per household in 2038. This trend towards fewer people in one household is driven by a number of factors, but is heavily influenced by our aging population.
- The projected increase in population for Taupō town and Kinloch couple with the declining household size will result in greater growth in the number of households in these areas in the next 20 years. In 2013, there were 10,079 households in Taupō town, which is projected to increase to 11,709 in 2028 and 12,391 in 2038. In Kinloch the 217 households in 2013 are projected to increase to 339 in 2028 and peak at 355 in 2038.
- The aging population is demonstrated by the projected increase in the percentage of the district's population aged over 65 years. It is expected to nearly double from 5,800 in 2013 (17 % of the population) to 11,100 in the next 25 years (28% of the population).
- In 2016 42% of our property owners did not live in the district and in 2013 32% of our dwelling stock was unoccupied. This indicates that about 30% of our housing stock across the district are used as holiday homes. This methodology for calculating the number of holiday homes across the district is rather simplistic and likely to be inaccurate.
- There are large variations in the percentage of holiday homes across the district. For example we believe that in places such as Taupō approximately 30% of the houses are holiday homes, whereas in settlements such as Kuratau, Whareroa, and Omori, approximately 90% are holiday homes.

These population and demographic projections have important implications for the infrastructure and services that we provide over the next 30 years and beyond.

### **Theme two: Protecting the health of our communities and the environment**

An important part of providing infrastructure is protecting the health of our communities and ensuring that our use of natural resources and discharges do not adversely affect our environment and therefore our attractiveness as a visitor destination and future economic development.

The use of natural resources and the discharges to the environment are managed through regional plans. These plans require resource consents for the use of natural resources, such as water, and discharges to the environment such as to water, land and air. The approach to natural resource allocation and use in regional plans is changing as water bodies become fully allocated to users and monitoring is showing environmental degradation from resource use and discharges. Legislation and regional plans, which regulate natural resource use, are being changed to include more stringent environmental standards for resource use and allocation. For example, the 2017 changes to the



National Policy Statement for Freshwater Management which are aimed at ensuring freshwater quality improves nationally over time. Variation No. 5 - Lake Taupō Catchment to the Waikato Regional Plan, which became operative in July 2011, seeks to protect the health of Lake Taupō by reducing the nitrogen leaching from land uses in the catchment entering the lake. This introduced policy and rules to manage land use in the Lake Taupō catchment by controlled farming practices and placing tighter controls on new urban development in the catchment.

The treaty settlement process has resulted in the introduction of legislation that settles historical grievances. This legislation has set up processes to improve the quality of important cultural sites like rivers such as the Rangitaiki River Forum and the Waikato River Authority. Both these forums are likely to result in changing environmental standards in regional plans to ensure the health and the mauri of the Waikato, Waipa and Rangitaiki rivers are restored. An example is the Healthy Rivers/Wai Ora Proposed Waikato Regional Plan Change 1 which address the issue of declining water quality in the Waipa and Waikato Rivers by introducing regulations that further control land and resource use within the catchment of these rivers. The Ngāti Tūwharetoa Claims Settlement Bill requires the establishment of a joint committee, Te Kōpua Kānapanapa, to prepare and approve Te Kaupapa Kaitiaki which will promote the sustainable and integrated management of the Taupō Catchment environment for the benefit of Ngāti Tūwharetoa and all people in the Taupō Catchment. The document needs to be prepared within 18 months of settlement date and the Taupō District Council must recognise and provide for the vision, objectives, desired outcomes, and values of Te Kaupapa Kaitiaki when it prepares or reviews its district plan. Also communities and Council are more aware of the environment and seek to ensure damage to the environment is avoided or reduced.

All these factors have resulted in increasing environment standards particularly in regional plans, especially for discharges that affect water quality as a result of:

- Increased environmental and cultural expectations from our community.
- New legislation from central government, such as the National Policy Statement for Freshwater Management
- Legislation resulting from Treaty Settlements.

Council treats, stores and distributes water for residential, commercial and industrial properties in Taupō, Turangi, Mangakino and 16 other settlements in the district. Demand for water changes throughout the year peaking in the summer months, Easter and around the main events when many visitors are in Taupō. This water comes from Lake Taupō, rivers and bores and is regulated through consents from Waikato Regional Council. Much of this raw water comes from Lake Taupō where all of the available water has already been allocated. While Council has consent to take more water than it is currently distributing we need to ensure that we have access to sufficient raw water to provide for population, economic growth and seasonal variations. This means it will be increasingly difficult for Council to not only retain our existing consent volumes but also get consents for increased water takes in the future to meet this increasing demand and it is likely that any increased demand for water will have to be catered for within our existing allocation. Council will either have to look for new sources of raw water or reduce the use of drinking water by ensuring it is all used wisely. In the 2016/17 year the average urban daily household water consumption was approx 1.25m<sup>3</sup>/day/HEU. This is a high average urban daily water usage which we believe results from water not being used wisely such as using treated water to water gardens.

Due to the dispersed nature of our settlements in the district, council provides water through 19 water schemes. It is important that drinking water provided by these schemes is safe to drink. The contamination of the Havelock North's water supply in August 2016 and the subsequent Government Inquiry has demonstrated this. To safeguard the health of our communities we must ensure that all our water schemes comply with the drinking water standards and our water safety plans. The water safety plan for each scheme sets out how we will manage our water supplies to ensure that the water is safe to drink. Taupō, Mangakino, Turangi and Atiamuri water schemes are fully compliant with the drinking water standards and Waitahanui will be by June 2018 when it is connected to the Taupō

scheme. The other 14 water schemes all comply with bacterial compliance of the drinking water standards but not protozoa or chemical compliance and need upgrading to comply fully with the drinking water standards and ensure all health risks are minimised. These upgrades come at considerable cost. Currently the users of each scheme fund the costs associated with upgrading each water scheme so affordability is an issue.

Much of Councils infrastructure requires consents from the Waikato Regional Council to operate as it uses natural resources for example, discharges to land from our wastewater treatment plants. Council focuses on reducing the impacts of the operation of its infrastructure on the environment to an acceptable level in order to protect the environment and ensure that the district is a great place to live.

Every year, we inspect and clean part of our waste water network in an effort to avoid any overflows. Despite this, there are still a number of wastewater overflows that happen every year. There is an ongoing issue with people flushing or putting things down the drains that shouldn't be there, with cooking fat and wet wipes causing the biggest issues. They tend to collect and build up quickly in areas where there is tree root intrusion causing blockages. Larger objects that have been found in the system include building materials, rubbish, clothes, and curtains. Many of these overflow incidents see raw effluent entering the lake. This is unacceptable to both the community and the Council.

Environmental requirements are increasing and will continue to become more stringent in the future. This is driven by:

- More stringent environment standards in regional plans, especially for discharges that affect water quality.
- Increased environmental and cultural expectations from our community.
- New legislation from central government, such as the National Policy Statement for Freshwater Management
- Legislation resulting from Treaty Settlements.

This is already making getting consents, for water takes for water supply, discharges to land from wastewater treatment plants, the discharge of stormwater to water and the discharge of solid waste and leachate to land, more time consuming, more difficult and more costly. This will continue in the near future and we will be required to invest in more sophisticated treatment and new technology particularly for wastewater and stormwater treatment. This will result in greater capital costs for these infrastructure projects.

### **Theme three: Maintaining and renewing our infrastructure**

A key strand of Councils district strategy for many years has been to look after the infrastructure assets that we have whilst maintaining levels of service. Generally, the majority of our infrastructure network is in good condition. It is important that we look after and maintain this infrastructure by undertaking renewals at the appropriate time. This will maximise the investment that we have in our infrastructure and avoid the infrastructure failing, resulting in expensive repairs. It will also ensure that there is no interruption in service to communities.

When components of our infrastructure are due to reach their expected end of life, we replace these components. This is undertaking renewals. If we carry out renewals too early, then this is an unnecessary cost to Council. If we wait too long to carry out renewals, then there is the risk that the asset may fail, resulting in expensive repair costs and possible disruptions to our infrastructure networks. Asset renewal planning is at various stages across the asset groups, from renewal based on detailed asset condition information to renewal based on life expectancy. It is difficult to assess the useful life of an asset. While there are standard useful lives and while manufacturers often give a minimum useful life, there are a number of factors that can dictate the ultimate useful life of an asset. These relate to a range of aspects, including construction methods, environmental constraints, topography and soil types. Using life expectancy can result in additional unbudgeted expense and disruption to the service if assets fail before they are due to be renewed based on life expectancy assessments. For example the AC water main in Rifle Range Road that burst in November 2014 was due for renewal in 2015/16 based on its life expectancy. Also the condition information that we hold

about our assets varies. Generally, we have better condition information about our above surface assets than we have about our underground assets.

We identified in the 2015 long term plan that we did not know enough about the condition of our underground pipe networks. So we included a ten year programme to better understand the condition of our underground networks, principally wastewater and water pipes, in the 2015 LTP. During the first three years of this project we have completed the assessment of the Mangakino and Atiamuri wastewater networks and have commenced condition assessment in Turangi and Taupō. The assessment work we have completed to date has enabled us to develop accurate renewal programmes for the wastewater network for both Mangakino and Atiamuri based on comprehensive condition information. The information we have collected has also enabled us to better target future condition assessment work of the wastewater network.

The majority of stormwater assets have an expected age of 100+ years and are approximately 50% through that period. We have completed assessing the condition of 35% of the underground stormwater network. This showed that it is anticipated that some of the older assets (35% of assets) will meet or exceed their anticipated design lives.

The condition assessment completed so far on water mains has identified the need for renewal of some 135 km of asbestos concrete pipes and 42km of galvanised pipes across the district over the next 10 years. There is also a further 35km of AC pipe that needs renewal beyond the 10 years. This has been programmed in the 2018 LTP. Asset Management Plans will be updated to reflect a renewals programme based on this accurate condition assessment as it is obtained.

Modelling has recently been completed on our roading network to help us determine more appropriate profiles for the renewal of both our road surfacing and pavements. Although there is further work to do, the early results suggest that both surfacing and pavement renewal programmes will need to be increased. This has been included in the 2018 LTP and will be further refined as data integrity is improved.

Parks and reserves renewals are based on the condition and lifespan of the asset. This work has been undertaken to provide a robust renewals programme for 10 years. However our asset management programmes are not mature enough to provide detailed financial information for parks and reserves for years 11 to 30.

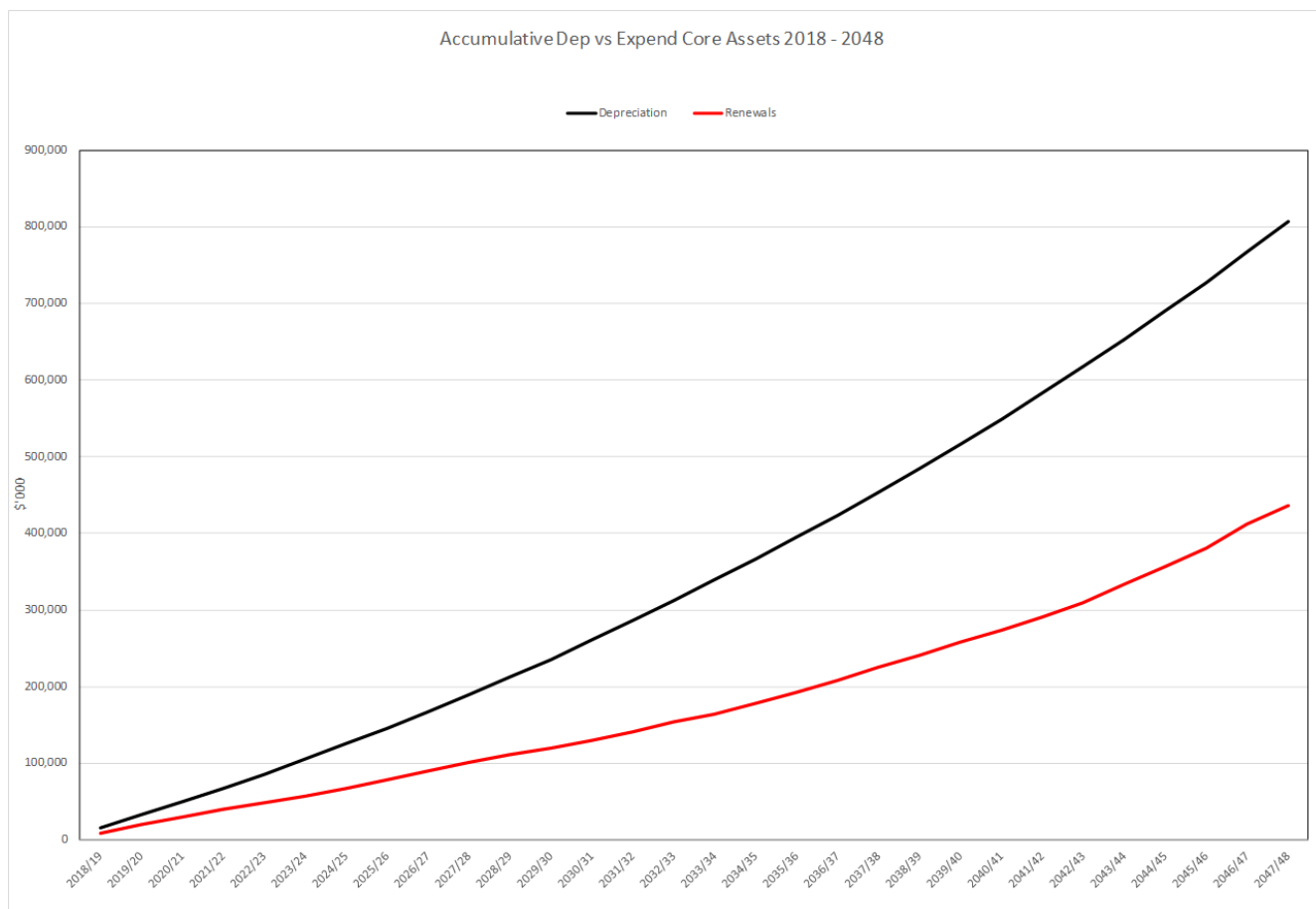
Community facilities renewals are based on life expectancy. Except for essential services like the server room for our information technology, facility component, community facility assets are replaced when they fail. In the past, we have focused on the cosmetic condition of our facilities. We do not have detailed structural, seismic, asbestos and fire risk information for all of our buildings. We need to gather this condition information and then ensure buildings are brought up to standard where required. This will require some significant expenditure between years 1 and 3.

Due to the condition assessment programmes over the last three years we now better understand the condition of our water, wastewater and stormwater underground assets which has resulted in a more accurate and refined renewals programme particularly for our underground water, wastewater and stormwater underground infrastructure assets over the next 10 years. This will ensure that we continue to maintain levels of service. The focus on increasing the knowledge of the condition of Council's assets will continue in this strategy. Council will achieve this by continuing its investment in condition assessment programmes for its assets and also by continuing its investment in robust asset management systems that capture the full the information about the assets to enable Council to plan asset renewal programmes and provide for the funding of those renewals as outlined in the asset management plans.

The Council funds 100% of depreciation of its assets over the assets lifecycle. Depreciation is the reduction in the value of an asset over time, due in particular to wear and tear. The funding of depreciation is designed to ensure that today's ratepayers pay their "fair share" for the amount of the

council’s assets that they consume, essentially through wear and tear. This means that Council is setting aside funding for the eventual replacement of these infrastructure assets.

A review of the expected renewal expenditure against the depreciation to be funded across the core infrastructure assets for the 30 year period shows that across all those assets the value of the renewal expenditure varies from 40% - 60% of the value of depreciation collected. See graph below. Depreciation reserves collected during the period will be required to fund anticipated forward renewal programmes beyond the 30 year time horizon. As asset condition and associated modelling becomes more refined then renewal profiles can be developed with more certainty.



Water renewals are at the higher end of the range at 60% primarily due to the targeting the renewal of AC and galvanised water mains over the next 15 years. These mains represent approximately 30% of the pipe network. The balance of the network is mainly plastic pipe with a life expectancy in the order of 100 years with much of it in the earlier stage of that period.

Wastewater renewals tend to be more focussed by geographical area with the current renewal programme focused on the Mangakino township. Based on age the next significant period of renewals is likely to be in the 30 - 50 year time horizon. This profile is being further refined with the conditions assessment programme that commenced in the 2015 LTP.

The majority of stormwater assets have an expected age of 100+ years and are approximately 50% through that period. Based on recent condition assessment of some of the older assets (35% of assets) it is anticipated that the stormwater asset will meet or exceed their anticipated design lives. That being the case depreciation collected on these assets is unlikely to be required until at least the second or third 30 year period.

Transport renewals are primarily renewing the pavement or resurfacing it. There is also a relatively small stock of bridges and larger culverts the majority of which are also in the first half of an expected

age in the order of 100 years. Due to this age, renewal of these assets are unlikely until beyond the 30 year time horizon.

Pavement deterioration modelling run in 2017 identified an increase in the pavement renewal or resurfacing programme from \$2.5m to \$4m. There is however further work required to improve the accuracy of the data on which the modelling is based to enable a more accurate programme to be confirmed.

With the investment in condition assessment/renewal planning and subsequent renewals it is anticipated that any theoretical backlog based on age will be significantly refined and reduced during this LTP cycle.

#### **Theme four: Resilient infrastructure**

We need to ensure our communities are resilient to disruptions to our infrastructure networks. These can be from failures in the network, such as a water main bursting, or from natural hazards such as flooding and earthquakes. Infrastructure is necessary so we need to make sure it's resilient and can continue uninterrupted in times of network failure and all but catastrophic natural hazards.

Natural hazards can include such events as storms, flooding, landslip, earthquake and volcanic eruption. Whilst we cannot predict exactly when such natural hazards may occur we do hold information that provides us with likelihood and severity of events that may occur. As a result of climate change we know that the number of significant weather events will increase, that rainfall events will worsen, droughts will occur more often and seas will rise. While sea level rise isn't a concern for the Taupō District we need to take into account the other impacts of climate change and other natural hazards, such as flooding and earthquakes, when managing our infrastructure to ensure our communities are resilient to natural hazards. The continued operation of Council infrastructure and services is important during and after natural hazard events (e.g. a resilient water supply that people can rely on). The Christchurch earthquakes showed how communities can be significantly impacted and that planning ahead of an event is critical for how a community can cope. In addition, resilience can be developed by ensuring planning is done which leads to new and renewed infrastructure being designed to cope with such events. For example, as we are expecting greater rainfall events then we need to ensure that new and renewed stormwater infrastructure is able to cope with the size and intensity of these rainfall events. (eg. pipe sizing).

There is also the potential for disruption in supply to customers of essential services due to a component of one of our infrastructure networks failing. For example, there could be serious economic impacts to businesses if there is a disruption to the water supply because many businesses would no longer be able to operate. For example a water main on Tamamutu Street burst in April 2017 and resulted in loss of water supply for surrounding dwellings for a number of hours. System failure can happen because loss of power, mechanical or electrical malfunction. It is important to design resilience in to the supply of services so if failures occur backup systems can be used and service can continue. In particular Council needs to ensure security of supply for water especially in areas of growth. A number of water supply reservoirs are planned in the next 30 years to ensure there is security of supply for water.

#### **Theme five: Knowledge gaps**

In the 2015 infrastructure strategy we did not include our parks and reserves and facilities infrastructure as it was not mandatory to do so. For the 2018 strategy we have decided to include both of these asset classes because although there are some limitations in the information we hold on our facilities and parks and reserves we consider it is important to outline the complete picture for Council's infrastructure assets. The main gaps in the information we hold on our facilities is condition information and strategic direction for both parks and reserves and facilities and therefore limited knowledge of financials for years 11 to 30. Over the years we have focused our asset management on our essential infrastructure of water, wastewater, stormwater, solid waste and transportation with less emphasis on parks and property.

Whilst we have included parks and reserves and facilities in the strategy we recognise that we have a number of knowledge gaps in these areas principally relating to the lack of strategic direction, a lack of understanding about community needs, lack of condition assessment and no policy or process for acquisition and disposal. As a consequence of this we also lack a clear financial picture for both parks and facilities beyond the 10 years of the LTP.

### **Parks and reserves**

Currently parks and reserves planning is piecemeal as we do not have a strategic direction for our parks and reserves.

We do not have a good knowledge about the use of and the community needs and requirements for our parks and reserves in different part of the district. Different communities in the district have different needs. This means that in some areas we may be providing a higher levels of service than our communities need and under providing in other areas. If we don't understand our community's needs, we don't know whether our parks and reserves are fit for purpose.

We also do not have guidelines for the minimum standard of acceptable developed land that we receive from developers. Often when a residential development occurs, the developer will vest new reserve land with Council. Currently we do not have any guidelines for whether land that we are offered is acceptable or not.

### **Facilities**

We have a legacy of inheriting buildings, often in poor condition with no current users from other organisations. For example, when a sports club or community group that owned club rooms that were located on Council reserve has disbanded there has been an expectation that Council would take over the ownership of these buildings. Often, these buildings are in a poor condition and Council incurs large costs to maintain and find new uses for these buildings or remove them. We have no criteria for what buildings we accept nor any process for the acquisition or disposal of buildings.

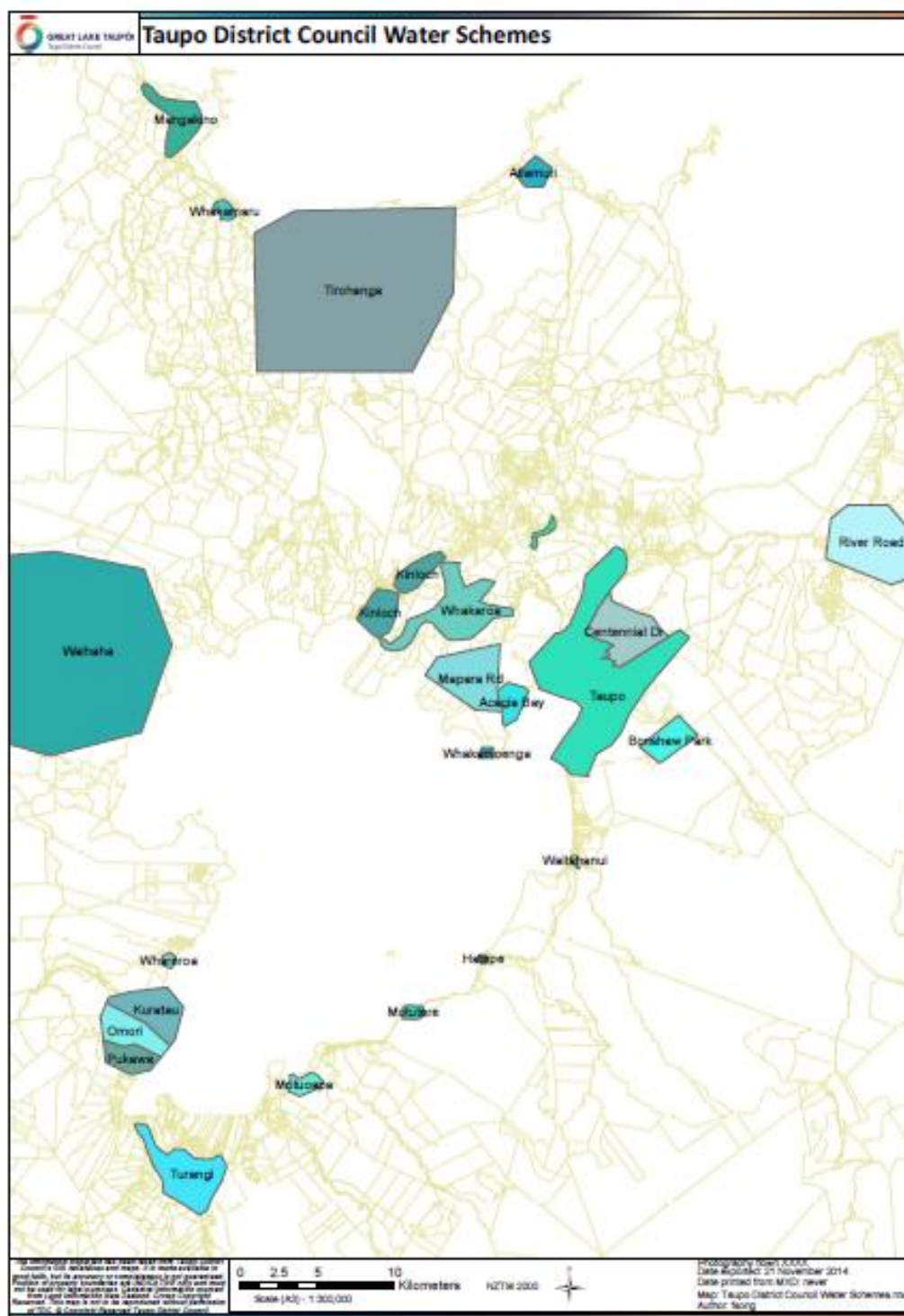
We do not have a comprehensive understanding of the condition of all of our facilities. In the past we have focused on the cosmetic condition of our facilities. We do not have detailed structural, seismic, asbestos and fire risk information for all of our buildings. We need to gather this information and then ensure buildings are brought up to standard where required and health and safety requirements are met. This will require some significant expenditure.

An example of this is the Council administration building on Lake Terrace. Assessments of the building identified significant health and safety issues with the building, including the presence of friable asbestos and a requirement to undertake earthquake strengthening. The majority of staff relocated to five sites in the Taupō CBD during the year, and investigations continued into potential sites and funding options. The Council is now undertaking a project to identify the best solution for a future council building.

## 7. INFRASTRUCTURE OVERVIEW

### WATER

Council has 19 water schemes across the district. Each scheme has its own consent to take water from lakes, rivers, streams and bores within the district. Peak water demand across the district is high, mainly because of irrigation (gardens, golf courses, other recreation), and leaks from the system. Council has developed a water demand management plan to reduce the demand for water.



Taupō District Council water schemes

<b>Asset - Water</b>	<b>Quantity</b>
Asset Value	\$133,000,000 (August 2017)
Water take consents	20
Bores	14
Intake structures at lakes, springs, streams, rivers	20
Reservoirs	62
Pump stations and buildings	47
Pipes (km)	673
Metered water connections	2187
Fire hydrants	2033

#### **Water Assets and Value**

The overall confidence rating for the water asset information is B-.

Water supply is a discrete service that directly benefits the households supplied so each water scheme is funded by a 100 per cent targeted rate on the users of that scheme.

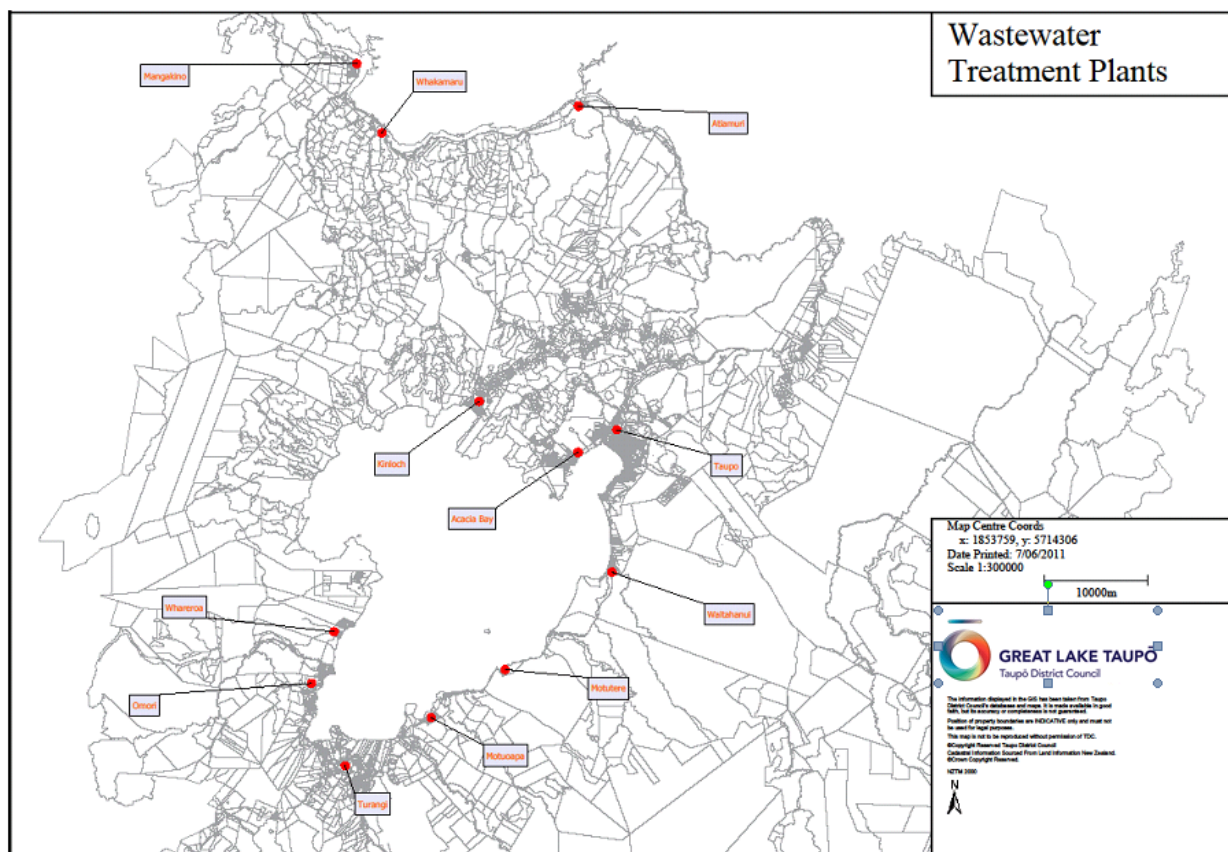
Council has upgraded Taupō, Turangi and Mangakino treatment plants to meet required drinking water standards and has commenced connection of Waitahanui to the Taupō scheme. Council's other smaller water supply systems will also need to be upgraded, at considerable cost to those communities.

Council's water reticulation network is relatively new as much of the district's growth has occurred within the last 30 years. We have however determined that much of the AC pipe laid in the earlier years is nearing the end of its life. Renewal of the majority of this pipe has been provided for in the first 10 years of the strategy. The pipe networks within Turangi and Mangakino (both hydro construction towns) are nearing the end of their predicted life.

#### **WASTEWATER**

Taupō District Council provides wastewater services for 12 towns and communities in the district. Council has 15 consents from Waikato Regional Council to dispose of treated water and control odour. In addition Council is responsible for reducing its nitrogen discharge into the Lake Taupō catchment by at least 20 per cent of 2005 levels by 2020, as part of the Lake Taupō Protection project.





**Taupō District Council wastewater schemes**

Asset - Wastewater	Quantity
Asset Value	\$182,500,000(Aug 2017)
Pipes	411 km
Treatment plants	11
Pumping stations	118

**Wastewater Assets and Value**

The overall confidence rating for the wastewater asset information is **B-**

Ratepayers connected to a council wastewater scheme pay a district-wide targeted rate. This is because users of the wastewater system clearly receive a benefit but there is also a high public benefit in relation to the promotion of public health and benefit to the environment, especially lake water quality of treating effluent.

In the past 10 years, Council has upgraded the Turangi, Taupō, Mangakino and Motuopa plants to meet capacity and consent requirements. Council has also connected the Waitahanui township to the Taupō plant. As consents for other discharges are renewed plant upgrades are planned to meet the new consent requirements.

Council's wastewater reticulation network is relatively new as much of the district's growth has occurred within the last 30 years. Although the pipe networks within Turangi and Mangakino (both hydro construction towns) are nearing the end of their predicted life. Extensive condition assessment of the Mangakino network has been completed and renewals prioritized over the first 5 years of the strategy.

## STORMWATER

Taupō District Council provides stormwater services for 20 towns and communities in the district. Council has three comprehensive discharge consents from Waikato Regional Council to discharge untreated stormwater into lakes, rivers and streams across the district.

Storm water Asset	Quantity
Asset Value	\$85,000,000(Aug 2017)
Pipes	216 km
Catchpits	921
Standard Manholes	3507
Inlets	25
Attenuation ponds	31
CDS units	3
Enviropods	207
Outlets	498

**Stormwater Assets and Value**

The overall confidence rating for the stormwater asset information is **B-**.

The key issues for stormwater management are flooding, degradation in the functioning of overland flow paths, degradation of Lake Taupō, the Waikato River system and other aquatic environments in terms of local effects on water quality and public health and safety.

Climate change is predicted to increase the severity of weather events, so that there will be more intense flows, more often.

Council's stormwater reticulation network is a combined network of pipes and overland flow paths which are relatively new as much of the district's growth has occurred within the last 30 years. Although the pipe networks within Turangi and Mangakino (both hydro construction towns) are nearing the end of their predicted life.

## TRANSPORT

Taupō District Council provides a transport network of 7818km of sealed and unsealed roads and 297km of footpaths to allow goods and people to move around the district safely and efficiently by any transport mode including cycling, walking or passenger transport. State highways represent a significant amount of the roading within the district, including State Highway 1 which is the main north-south route for the North Island. State highways are not included in the quantities below.

Transport Asset	Quantity
Asset – Value	Value (excl land under roading)-\$457 million (30 June 2017)
Roads – sealed	708km
Roads – unsealed	73km
Footpaths	297km
Street lighting	4,169 lanterns
	3,000 poles
Traffic services	28,118 signs & markings
Bridges	21 road bridges (2 with shared ownership)
	4 foot bridges

Transport Asset	Quantity
Culverts	61 large culverts (diameter greater than 2m)
	2,373 small culverts (diameter less than 2m)
Drainage	490 km
Cycle ways	38 km
Parking	97,708m <sup>2</sup>
Structures	9 Taupō urban bus shelters

#### Transport Assets and Value

The overall confidence rating for Transportation asset information is **B+**.

Approximately 50 per cent of transport funding comes from the New Zealand Transport Authority.

Council's transport network is relatively young and as the Taupō district has free draining soils roads generally last longer than in other parts of the country.

### COMMUNITY FACILITIES

We look after 209 buildings. Some of these buildings are community facilities that members of the public visit and some of these facilities assist the running of the Council business such as depots and offices housing Council staff. Some of the buildings are owned by Council and leased out to community groups.

Community Facility Asset	Quantity
Asset Value	\$166,700,000
Swimming Pool	3
Social Housing	40 units in Taupō, 6 units in Turangi and 11 units in Mangakino
Venues	7
Libraries	2
Museum	1
Community halls	12
Council Administration Property	9

#### Community Facilities Assets and Value

We don't have comprehensive condition assessments for all of our buildings. In addition to this, some of the buildings that we own we have inherited and were in a poor condition.

### PARKS AND RESERVES

Parks and reserves play an important part of the daily lives of our residents and also are also focal point for visitors to our district. The open spaces that we provide range from lakefront reserves and playgrounds through to cemeteries and sportsgrounds.

Parks and Reserves Asset	Quantity
Asset Value	\$30,000,000

<b>Parks and Reserves Asset</b>	<b>Quantity</b>
Parks	236
Sportsgrounds	6
Playgrounds	57
Cemeteries	3
Public toilet facilities	57
Lakeshore erosion protection assets	23

**Parks and Reserves Assets and Value**

We will focus on developing a strategic vision for the acquisition and disposal of our reserve land.

### **SOLID WASTE**

Taupō District Council manages solid waste to reduce the likelihood of harm to people and the environment. This asset management plan enables Council to manage and demonstrate its stewardship of solid waste assets on behalf of its communities in order to provide services cost-effectively, both now and into the future.

<b>Solid Waste Asset</b>	<b>Quantity</b>
Asset Value	\$3,900,000 (30 Jun 2017)
Landfill	1
Transfer stations	5

**Solid Waste Assets and Value**

Council provides a landfill and resource recovery centre at Broadlands Road, transfer stations at Turangi, Mangakino, Kinloch, Omori and Whareroa along with closed landfills at Taupō, Mangakino and Turangi. Council also provides 500 street litter and recycling bins and 35 Big Belly solar waste compactors for its communities.

The overall confidence rating for solid waste asset information is **B**.

## 8. ISSUES AND OPTIONS

### Theme: Population and demographic change

#### *Issue one: New infrastructure is required to cater for growth, primarily in Taupō town and Kinloch*

A growing population, combined with fewer people in each house means that the growth in new dwellings is likely to be greater than the growth in population. These new dwellings are expected to be built mainly in Taupō town and Kinloch. Where they are built on land that is currently undeveloped (such as rural land), it will mean that new infrastructure, such as roading, stormwater, water, wastewater and reserves will need to be provided. If development occurs in existing built up areas, or new infrastructure is to be connected to existing infrastructure, then this may result in upgrades being required to existing infrastructure.

If we build new infrastructure in advance of development this would not be efficient use of funding or and could result in significant cost to ratepayers. There is the risk that the development may not occur in the area, or development may take longer to occur than we expect. This would mean that Council would be paying for cost of this development, without receiving any development contributions or new ratepayers to contribute towards these costs. This could have a significant impact on rates. This is why Council prefers to work alongside developers to ensure that new infrastructure is constructed, when it is required.

Options	Implications
We build infrastructure in anticipation of where and when we expect growth to occur.	Capital funds invested in infrastructure before it is required. Funding infrastructure before it is required will result in infrastructure lying idle. This option would not be good use of funding.
We work alongside developers to ensure infrastructure is in place, when and where it is required (the status quo).	Installing infrastructure when it is required by working with developers will result in maximising the use of capital funding.

**Preferred option:** We work alongside developers to ensure the infrastructure is in place as required in time for development.

#### Additional work required to support the preferred option.

- Continue to update demographic snapshot every three years.
- Continue to update the growth model every three years
- Ensure this revised population, demographics and expected growth information is provided to asset managers so it can be used in the infrastructure strategy and asset management plans

#### *Issue two: An ageing population may drive a change in demand for the services that we provide*

Having a higher proportion of the population who are aged 65+ years is likely to result in demand for different services, or changes in the way we deliver some services. Because of this Council may need to adjust the services that it provides to the community. An aging population is likely to result in a wide range of demand from those fit retirees to less mobile aged persons. Examples of this are ensuring that our footpaths are mobility friendly and the provision of additional easy mountain biking tracks, particularly for e bikes. It may also result in people wanting to live within walking distance of our town centres. In turn this is likely to drive demand for an increased number of smaller houses and sections in the town peripheries, which will have an impact on our infrastructure such as water, wastewater and stormwater.

Council needs to ensure that it can respond to changes in services that our customers require. As these demands are likely to change with the changing demographics of our communities we need to regularly ask the community what services and levels of service it wants. Then we can adjust service

delivery accordingly. Council uses surveys and commissions research to understand the levels of services and services required by our community and to monitor the performance of Council's various business units.

Options	Implications
Continue with service delivery for existing services and at existing levels (the status quo)	Cost of existing service levels are generally known. Service delivery and levels of service are unlikely to meet the community's needs and desires.
Understand the ongoing service delivery needs of our community, and adjust service delivery and levels of service accordingly.	Small cost to regularly survey the community to ascertain what services and levels of service they require. Likely to result in a wide range of demands for service which may be costly. Should result in service provision and level of service matching the community's demands.

**Preferred option:** Deliver services and levels to meet changing demands.

*Additional work required to support the preferred option.*

- Regularly survey (every six years) the community to find out what additional services the community desires.

**Issue three: An aging population on fixed incomes facing increasing infrastructure costs may result in rates that are unaffordable for our ratepayers**

Having an aging population and increasing infrastructure costs could result in substantial financial burden on the ratepayer. A declining population with more people on fixed incomes puts pressure on future funding of infrastructure as there are fewer people to contribute towards the cost of paying for maintenance and upgrades of the infrastructure networks. This challenge will make maintaining levels of service difficult. We may need to look at alternative ways of service delivery or innovative solutions as communities may struggle adapting to lower levels of service. There may be alternative funding models that could be considered to pay for increasing infrastructure costs.

We have assumed that an increase in people aged 65+ will mean that a greater proportion of our ratepayers will be on small fixed incomes. However a proportion of our ratepayers may also retire with substantial funds.

Options	Implications
Do nothing	Rates are likely to rise and may become unaffordable for some who will then move out of the district.
Maintain current levels of service by looking at innovative solutions	The success of this will depend on the reason rates have increased and whether there is an innovative solution for addressing the increase. For example, an increase in water rates for ensuring compliance with drinking water standards for a small settlement could be addressed by changing the funding model for water and spreading the costs across the district rather than across the small settlement.
Lower levels of service	Whilst this should keep rates affordable it may be unacceptable to the community.

**Preferred option:** Where possible maintain current levels of service by looking at innovative solutions

Additional work required to support the preferred option.

- Undertake a project to establish projections for the proportion of our ratepayers that will be on a low fixed income.
- Ensure affordability is a consideration during the development of the financial strategy

***Issue four: It is projected that our population will decline but there is uncertainty about what the impact will be on the number of dwellings that need to be serviced by infrastructure***

It is projected that in the long term, most of rural New Zealand will experience population decrease. However for the Taupō District the impact of this population decline is unknown due to the high number of holiday homes in our district. We do not know how this projected decline in population and therefore number of houses for sale will impact on the number of holiday homes in the district and therefore the demands on the current infrastructure serving the existing housing stock. For example the recent decline in population in Mangakino has resulted in an increased holiday home ownership in the town and no decline in the use of infrastructure at peak holiday times. If the population decline results in more of the existing housing stock owned as holiday homes there will be little or no impact on the provision of infrastructure. Also there will be similar number of ratepayers (although a higher proportion will reside elsewhere) to fund the provision of infrastructure.

We need to know more about the numbers and location of dwellings we will need to service in the long term future to better plan for the provision and maintenance of our infrastructure.

Options	Implications
Do nothing	We will continue to provide infrastructure services to all dwellings in declining areas whether required or not. This is not effective use of funding. We may have higher incidents of unpaid rates as houses sit empty.
Provide infrastructure and long term capacity for the projected number of households	This will enable better long term infrastructure planning.

**Preferred option:** Provide infrastructure and long term capacity for the projected number of households

Additional work required to support the preferred option.

- Undertake a project to accurately identify the numbers of and future trends for holiday home ownership in the district and in particular how holiday home ownership will respond to declining populations.

**Theme two: Protecting the health of our communities and the environment**

***Issue five: Some of our communities may face a health risk without safe and clean drinking water supplies***

For each of Council's 19 water schemes we are required to produce a water safety plan which describes the health risks facing each scheme and what we will do to mitigate the risks. The water safety plans also describe when the scheme will be upgraded to meet the Drinking Water Standards. Because of the cost involved and the resources required to upgrade our drinking water schemes, we have prioritised the order of the upgrades based on risk. Generally this is based on how many people they service, because if something were to go wrong, more people will be affected. The upgrades to the Taupō, Turangi and Mangakino water schemes have already been completed with Waitahanui expected to be connected to the Taupō scheme by June 2018. The upgrades to the other water schemes need to be programmed.

Options	Implications
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Ensure upgrades to our water supplies are in line with the timeframes set out in the Long-term Plan 2018-28 and our water safety plans. These timeframes are developed and prioritised based on risk.	Cost of \$25 million over 10years. Compliance with water safety plan. Ensures communities are not at risk.
Take longer to upgrade our water supplies than what is specified in our water safety plans.	Spreads the cost over longer time period but puts communities at risk for a longer period of time.

**Preferred option:** Ensure upgrade our water supplies in line with the timeframes set out in water safety plans. These timeframes are developed and prioritised based on risk.

***Issue six: The availability and supply of raw water will come under increased pressure***

It will become increasingly difficult to retain our existing consent volumes of raw water and in the future it will be very difficult to obtain consents for more raw water from the Lake Taupō/Waikato River catchment to meet the demand from new industries and households. So any significant growth of residential and or industrial development will likely need to be met from our current allocation of raw water. At the current time, this is not an issue because a growth component has been included in our current water take. However we need to decide how we are going to address this issue in the future.

Currently our average urban daily household water consumption is high. This can be reduced and make our existing allocation go further by using water demand management measures to encourage users to reduce their water use. These techniques can range from communication and education programmes on using water responsibly right through to water metering. Council already uses education water demand techniques and imposes restrictions on use during drought periods and when our population (and consequently our water use) increases during peak periods. Council needs to seriously consider tougher water demand measures within the next six years to reduce urban daily household water consumption to ensure there will be adequate water for future new industries and households.

Options	Implications
Do nothing	No cost but we might restrain economic development. This will have impact on the future economic growth of the district.
Take a proactive approach to water demand management	Costs range from education and communication which can be catered for within existing budgets, to water meters which will incur not only the cost of implementation but also the ongoing operational costs.

**Preferred option:** Take a more proactive approach to water demand management by undertaking a project in the next six years to evaluate the different options and implement the preferred option to reduce urban daily household water consumption.

Additional work required to support the preferred option.

- Continue to monitor average urban daily household water consumption.

***Issue seven: Protection of the environment will drive increased costs for council's wastewater and stormwater discharges***

There has, and will continue to be, an increase in environment standards particularly in regional plans for discharges that affect water quality. These increasing environmental standards are a result of:

- Increased environmental and cultural expectations from our community.
- New legislation from central government, such as the National Policy Statement for Freshwater Management



- Legislation resulting from Treaty Settlements.

Council holds regional council consents for discharges to water and land, particularly for discharges of treated wastewater, stormwater and solid waste. More stringent regional council controls over the quality of discharges (both direct and point source) into Lake Taupō were introduced in 2005 and became operative in 2011 and are currently being introduced to the Waikato River catchment.

This impacts on the management of wastewater in the Lake Taupō and Waikato River catchments. While large reductions of nitrogen across all of our wastewater treatment plants has already occurred in the Lake Taupō catchment it is important that these gains are maintained and work is programmed to improve discharges in the Waikato River catchment. The programme of upgrades identified in the Long-term Plan 2018-28 to these wastewater treatment plants is to ensure we meet anticipated or existing consent requirements.

Council is also coming under increasing pressure from both the public and Waikato Regional Council to improve the quality of stormwater discharges. Stormwater is discharged into our lakes, rivers and streams and we recognise the importance of keeping these clean and healthy and protecting our environment so we have implemented a programme of installing Enviropods, which remove litter and debris from stormwater, along the lake and treatment devices at stormwater outlets. However further improvements are likely to be required when our comprehensive stormwater consent is renewed in 2027.

Further upgrades are likely to be required for both our wastewater and stormwater discharges in the 30 year period as environmental standards become more stringent. Such upgrades will require innovative technology and will be expensive.

Options	Implications
Ensure that we improve our discharges to protect the environment, in line with resource consent requirements (the status quo)	Provided for within existing budgets. Improvements in waste water treatment plants to meet consent requirements will cost \$13 million
Improve our discharges to levels beyond what we are required to by resource consent conditions.	Costs unknown but will be in excess of what is provided for in existing budgets. Improvements to stormwater discharges \$1.6million.

**Preferred option:** Ensure we are improving our discharges to protect the environment and comply with consent requirements.

*Additional work required to support the preferred option.*

- Continue to monitor the quality of wastewater and stormwater discharges
- Early engagement with regional council for consent renewals
- Continue to be involved in the formulation of Healthy Rivers/Wai Ora: Proposed Waikato Regional Plan Change 1 following on from lodging a submission in 2017.
- Become involved in any other plan changes to the regional plan that will affect our wastewater and stormwater discharges.

**Issue eight** *Every year we have a number of wastewater overflows with many of these entering the lake. This is unacceptable to the Council and community.*

Every year, we inspect and clean a portion of our waste water network in an effort to avoid any overflows. Despite this, there an increasing trend of wastewater overflows occurring. There is an ongoing issue with people flushing or putting things down the drains that shouldn't be there, with cooking fat and wet wipes causing the biggest issues. They tend to collect and build up quickly in areas where there is tree root intrusion causing blockages. Larger objects that have been found in the system include building materials, rubbish, clothes, and curtains. Many of these overflow incidents see raw effluent entering the lake. This is unacceptable to both the community and the Council.

Council currently spends about \$700,000 annually on renewing and repairing wastewater pipes, and another \$150,000 inspecting and cleaning them in an effort to avoid any overflows. We are also developing a public education programme to encourage people to stop flushing and putting things down the drains that they shouldn't.

However, we need to invest more heavily in a preventative programme that will allow us to proactively identify potential blockages in a timely manner. Such a programme would include using blockage detection technology and water jetting to clear the blockages and increasing the amount of camera surveillance we undertake to ensure any potential issues are identified and addressed early.

Options	Implications
We continue our current programme of spending about \$700,000 on renewing and repairing wastewater pipes, and another \$150,000 on inspecting and cleaning.	No change to existing annual budgets of about \$700,000 for renewal and repair of wastewater and sewerage pipes, and about \$150,000 for inspecting and cleaning wastewater and sewerage pipes, Likelihood of overflows to the lake remains the same..
Our preferred option is to increase our annual operational budgets to undertake more preventative work. We have increased our budget by \$2.33 million over the 10 years of the Long-term Plan for the work to take place. This would be in addition to the \$700,000 we currently spend on renewing and repairing wastewater, and the \$150,000 we spend on inspecting and cleaning each year. It would also mean we would expect to have less spills to the lake and we would reflect this in our performance targets.	Likelihood of overflows to the lake reduces.

**Preferred option:**

Our preferred option is to increase our annual operational budgets to undertake more preventative work. We have increased our budget by \$2.33 million over the 10 years of the Long-term Plan for the work to take place. This would be in addition to the \$700,000 we currently spend on renewing and repairing wastewater, and the \$150,000 we spend on inspecting and cleaning *each year*. It would also mean we would expect to have less spills to the lake and we would reflect this in our performance targets.

Additional work required to support the preferred option.

- Undertake a public education programme to encourage people to stop flushing things down the drains that shouldn't be there

**Theme three Maintaining and renewing our infrastructure**

*Issue nine: A range of council's assets may be nearing the end or are already at the end of their useful life and need renewal, however we do not know how many assets this issue potentially affects*

A key component of Council's district strategy for many years has been to look after the infrastructure that we have while maintaining levels of service. Council programs renewals of infrastructure assets based on detailed asset condition where possible or on life expectancy. Using life expectancy can result in additional unbudgeted expense and disruption to the service if assets fail before they are due to be renewed based on life expectancy assessments. To accurately programme renewals we need accurate condition assessment of our infrastructure assets. This coupled with robust asset management systems that capture the full the information about the assets enable Council to plan

asset renewal programmes and provide for the funding of those renewals as outlined in the asset management plans.

Council started a ten year condition assessment programme of some of our assets in 2015. So we now better understand the condition of our roading, water, wastewater and stormwater underground assets and now have a more accurate and increased renewals programme particularly for our water main and roading infrastructure assets over the next 10 years. This will ensure that we maintain levels of service.

Whilst we have much more information on the condition of our roading, some of our wastewater, water and stormwater assets we are still basing renewals of some of our infrastructure assets on life expectancy. This can result in additional unbudgeted expense and disruption to the service if assets fail before they are due to be renewed based on life expectancy assessments

We have also programmed a comprehensive condition assessment of our facilities in years 1 to 3 in this LTP to ensure that they meet health and safety standards for structural, seismic, asbestos and fire risk for all of our buildings. We need to gather this condition information and then ensure buildings are bought up to standard where required. This will require some significant expenditure.

Options	Implications
Infrastructure is renewed based on life expectancy.	No cost for condition assessment but costs of replacing assets that fail before they are due to be renewed under life expectancy assessment is usually high. Possible loss of service due to asset failure.
Provide for condition assessment programmes for water, stormwater and facilities. Infrastructure renewal is planned (optimisation based on investigation)	Costs for undertaking condition assessment projects. Optimising the life of the network and optimising the costs associated with renewals. Less costs in the long run. No loss of service for ratepayers.

**Preferred option:** Condition assessment is programmed for all infrastructure assets and infrastructure renewal is planned (optimisation based on investigation).

#### Theme four: Resilient infrastructure

*Issue ten: The district is vulnerable to a wide range of events (including natural hazards) that could cause significant damage and disruption to council's services at any time*

Council needs to ensure that our infrastructure and our communities are resilient to disruptions to our infrastructure networks, whether it be through a natural hazard, such as flooding and earthquakes, or failures in the network, such as a water main bursting. Resilience can be developed by ensuring planning for new and renewed infrastructure being designed to cope with such events. For natural hazards this means taking account of these when planning new or upgrading existing infrastructure. For example as we are expecting greater rainfall events then, for example, we need to ensure that new and renewed stormwater infrastructure is able to cope with the size and intensity of these rainfall events (e.g. pipe sizing). For security of supply, we need to ensure that there are contingencies when there is a failure in the network. For example 5 water reservoirs are planned over the 30 years of the strategy. We are also planning to install burst control valves in our existing reservoirs. This will ensure storage capacity is retained in the event of a significant network failure.

Options	Implications
Accept that we live with the risk of natural hazards and disruptions to our infrastructure networks	No cost. Likelihood of disruptions to supply as a result of network failures or natural hazards.
Plan for failures in infrastructure and natural hazards and build in feasible contingences	Some costs but communities will have necessary services in the event of a failure in the network or natural hazard. When we build new infrastructure we include resilience in the project. We do not plan for resilience for large scale natural hazards.

**Preferred option:** Plan for natural hazards and network failures and build in feasible contingences

*Additional work required to support the preferred option.*

- Continue to obtain information on the extent and likelihood of known natural hazards
- Continue to obtain up to date climate change information

### Theme 5 Knowledge gaps

*Issue eleven: We have knowledge gaps across facilities, parks and reserves which mean we are not strategic in our provision of parks and reserves and facilities*

We have some knowledge gaps for our parks and reserves and facilities. For parks and reserves these gaps are:

- A lack of understanding about community needs for parks and reserves
- A lack of overall vision for our parks and reserves
- No agreed level of service across the district
- No criteria to ensure suitable spaces are acquired for future parks and reserves

The knowledge gaps for facilities are:

- No understanding of whether they are meeting community needs
- No criteria for what buildings we accept from other parties
- No process for the acquisition or disposal of buildings.
- No comprehensive understanding of the condition (structural, seismic, asbestos and fire risk) of all of our facilities and what is required to bring them up to standard and ensure that health and safety requirements are met.

In the future, Council would like to be a lot more strategic about the development of its parks and reserves and the buildings that it owns.

We need a long-term vision and strategic goals and objectives for our parks and reserves across the district. Such a strategy will ensure that our parks and reserves meet the needs of the local community, good networks of parks and reserves are created that meet an overall vision, each community has a similar level of service and suitable spaces are acquired for future parks and reserves.

We would like to maximise the return on what we spend on our facilities by ensuring that we own and maintain buildings that are meeting a community need and meet the required health and safety standards. We may consider disposing of some buildings that are receiving low or little use and we need some specific criteria to determine which buildings we accept from other parties.

Options	Implications
Do nothing	The community is likely to be dissatisfied with their parks and reserves and facilities. Facilities may not meet health and safety requirements. Different parts of the district will receive different

	levels of service. Inefficient use of funding especially for the maintenance of unused facilities.
Develop separate strategies for parks and reserves and facilities and improve our knowledge and condition of facilities.	Small cost to develop the strategies but this can be funded within existing budgets. Will result in increased expenditure for implementation of the strategies. Will result in parks and reserves and facilities that meet the community's needs and meet health and safety requirements.

**Preferred option:** Develop separate strategies for parks and reserves and facilities and improve our knowledge and condition of facilities.

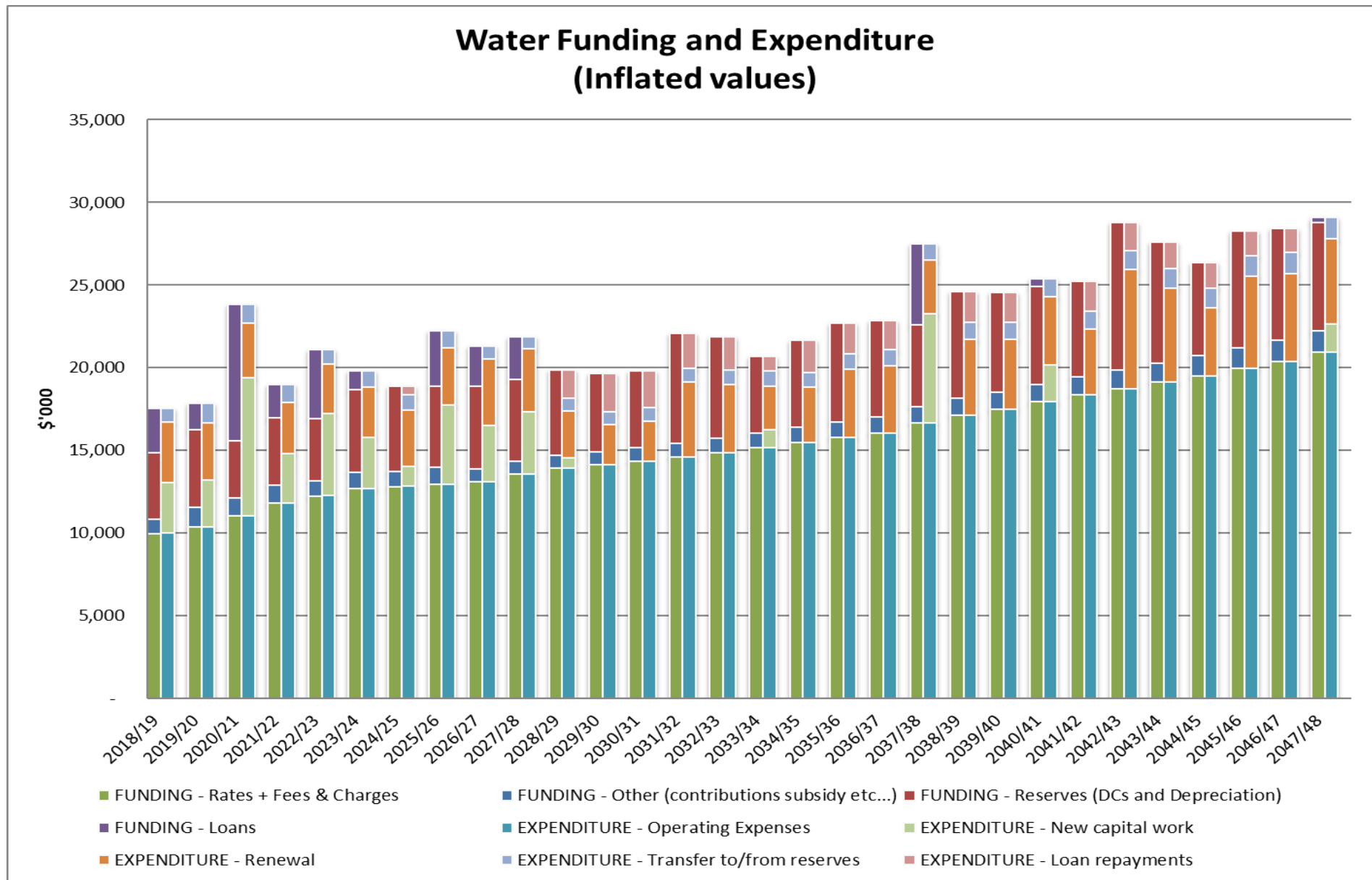
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## 9. FINANCIALS

This section outlines the financial implications of the Council's response to the issues which are outlined earlier in this strategy. The financial projections (most likely scenario) contained in the graph below for capital, renewal and operational expenditure are based on the following influences:

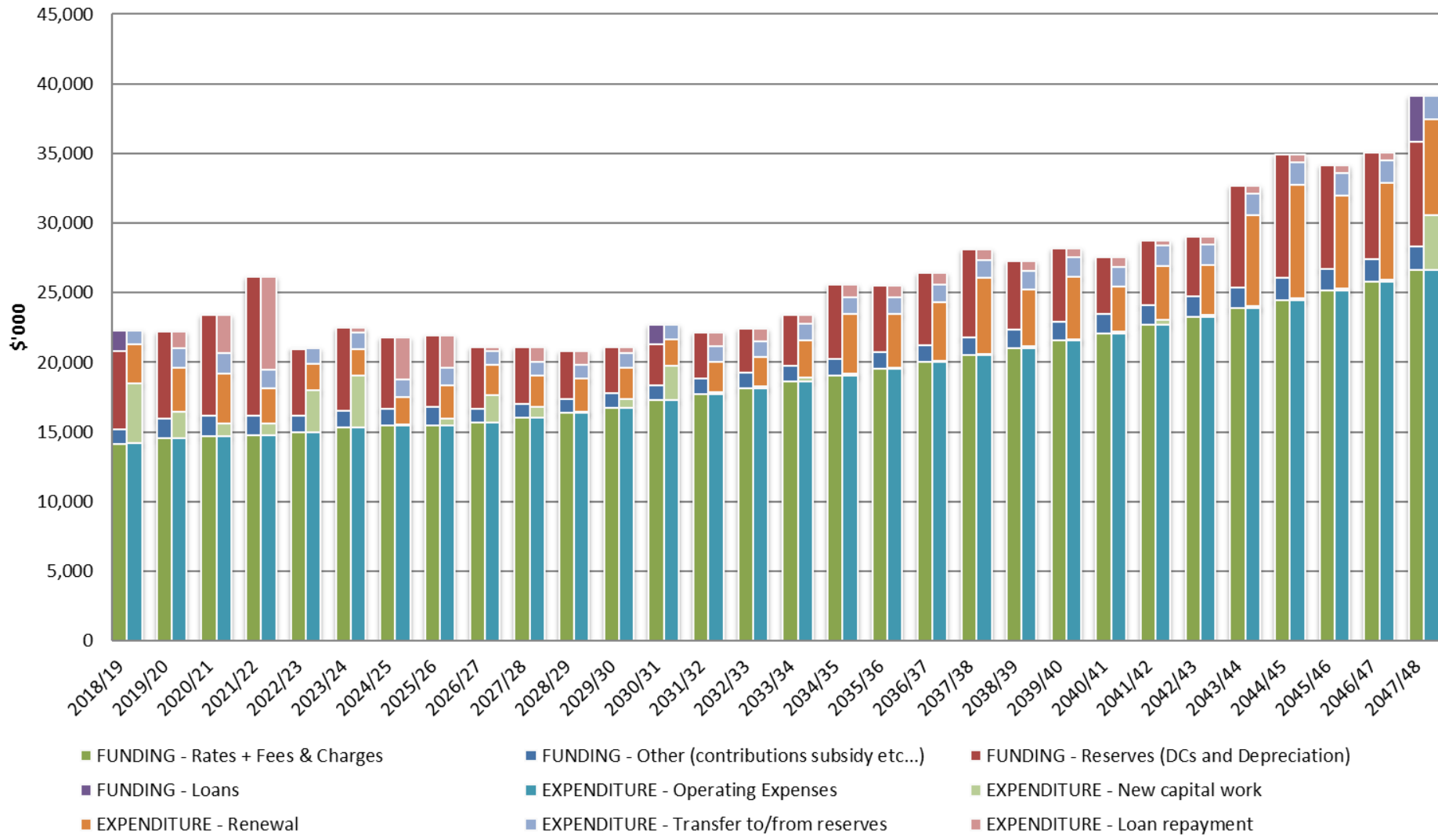
- Levels of service are largely maintained at current levels.
- The need to increase standards for wastewater treatment as resource consents expire.
- The need to increase standards for water treatment to meet the requirements of the Drinking-Water Standards for New Zealand.
- Modest growth is likely until around 2038 when population will decline, with increasing population of older residents.
- More reliable forecasts of renewal profiles for underground assets will continue as more asset condition is acquired. Tables and graphs below allow for inflation projections that are in line with those forecast by BERL for LGCI over the 30 years.
- Funding gap in transportation is unfunded depreciation representing the NZTA subsidy on renewals.

The financial projections are shown in for the 30 years except for parks and reserves and facilities which are for 10 years. The total projected spend over the next 30 years for water, wastewater, stormwater, solid waste and transportation and for 10 years for parks and reserves and facilities are outlined in the following graphs.



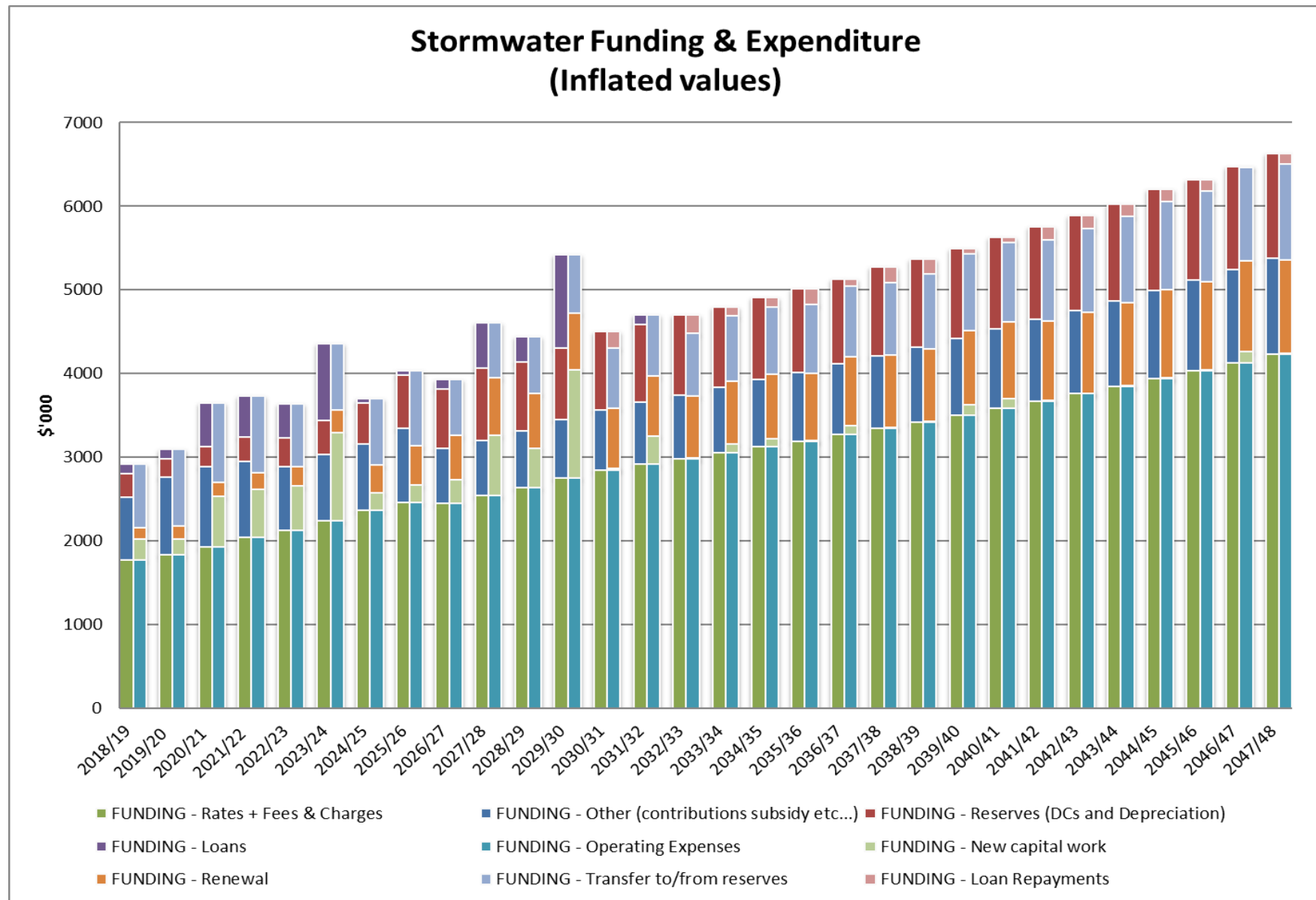
Proposed budget for Water expenditure 2018-48

### Wastewater Funding and Expenditure (Inflated values)



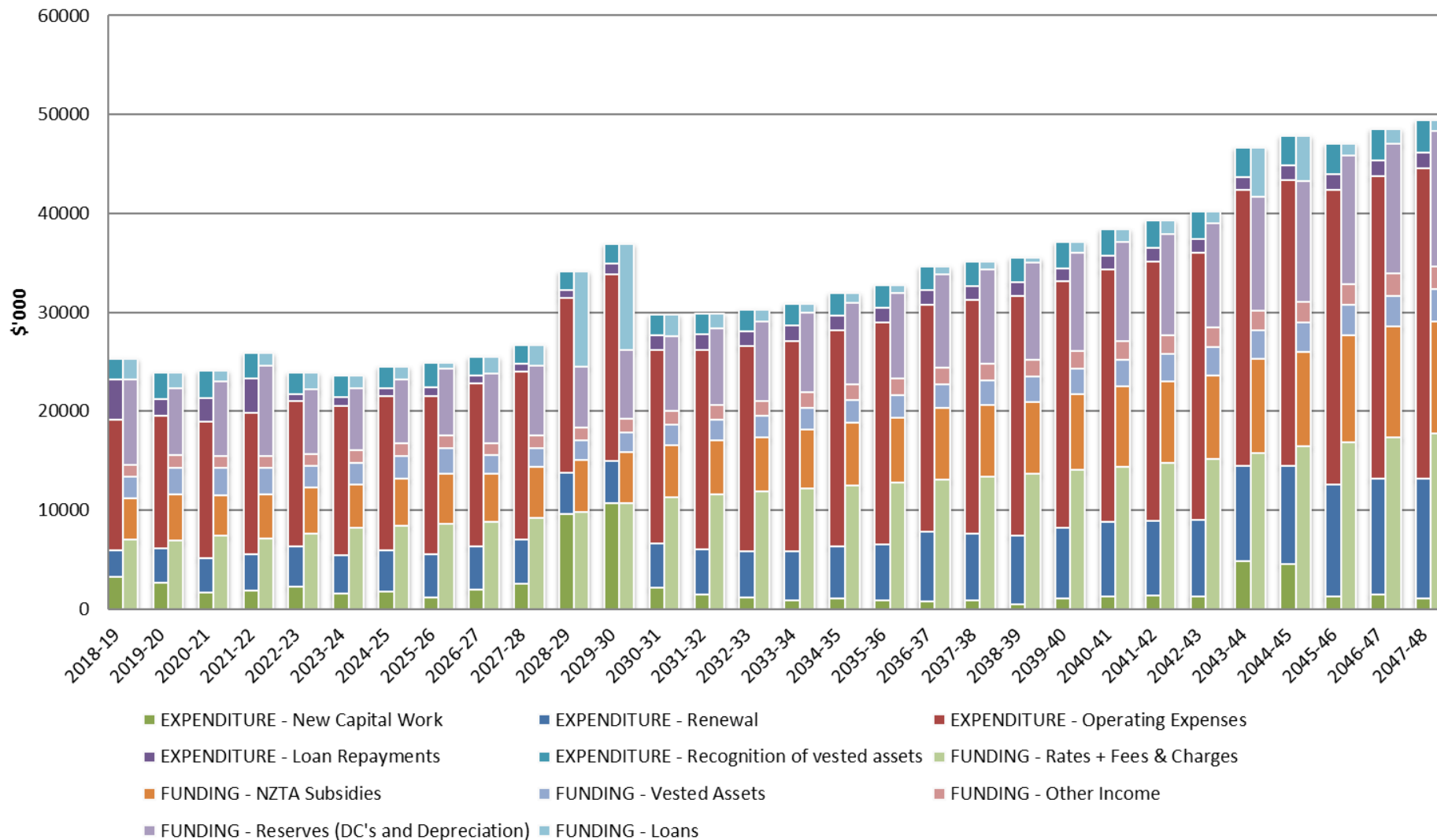
Proposed budget for Wastewater expenditure 2018-48





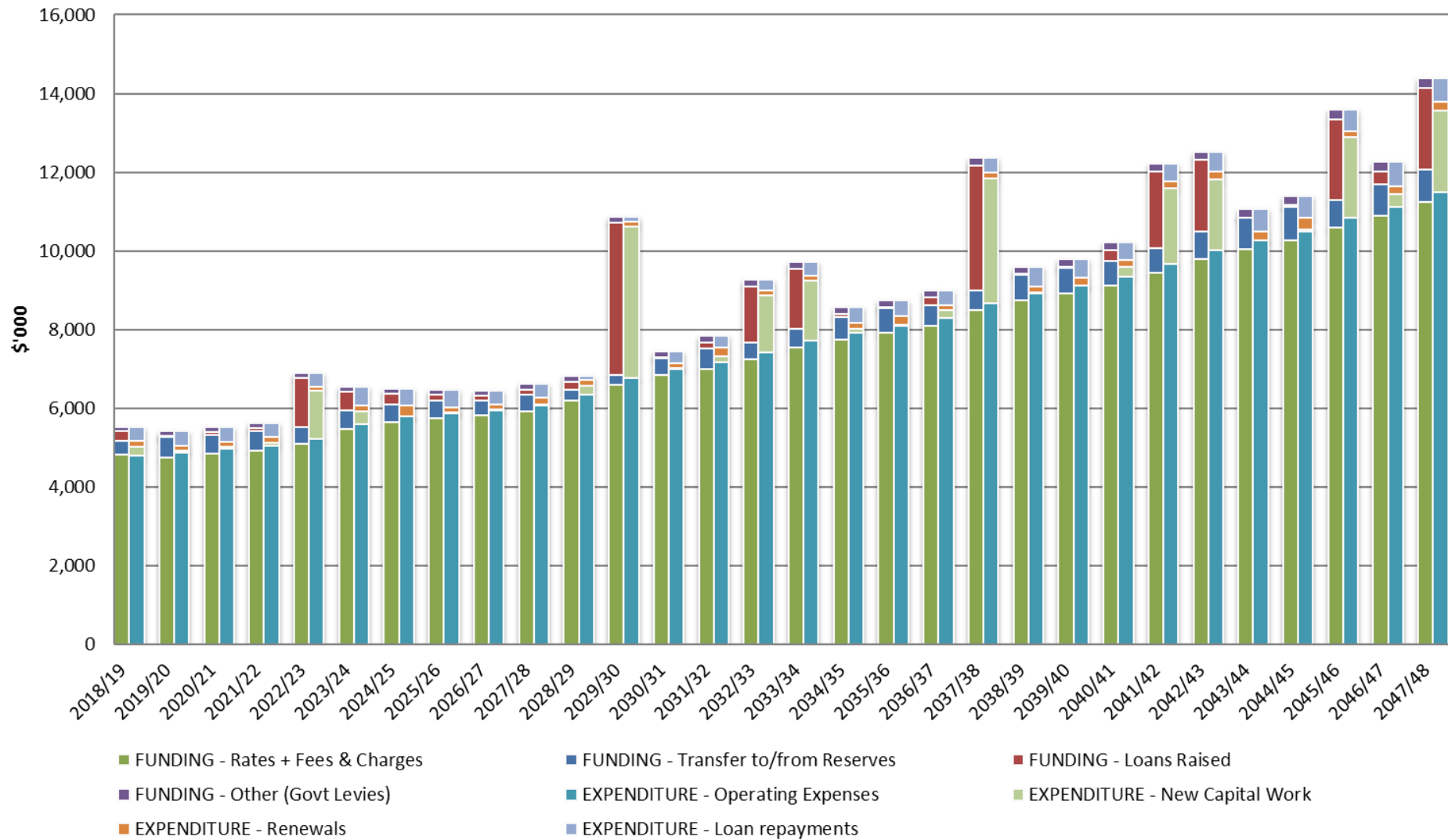
Proposed budget for Stormwater expenditure 2018-48

### Transportation Funding & Expenditure (Inflated Values)



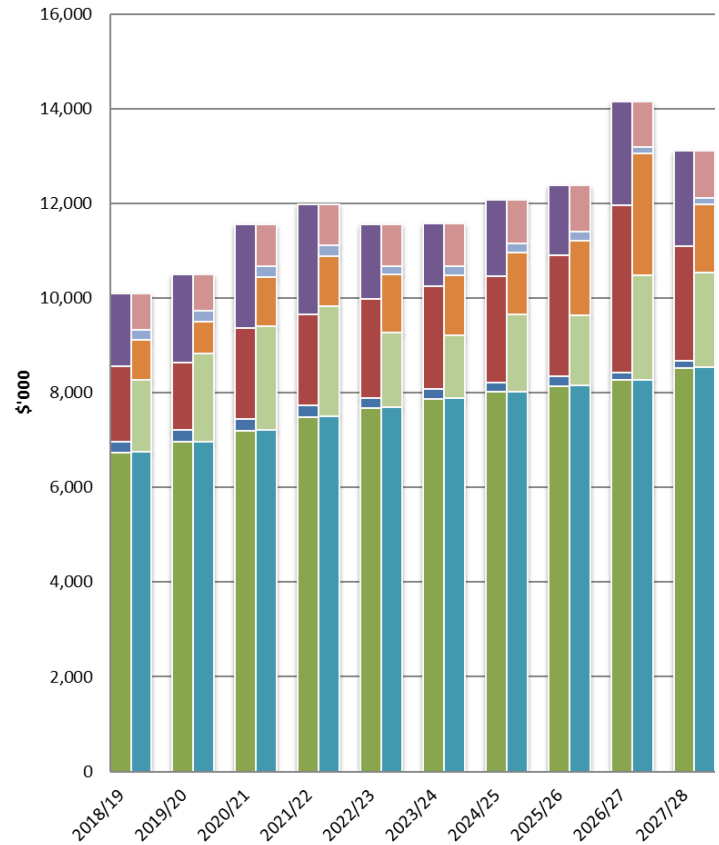
Proposed budget for Transport expenditure 2018-48

### Solid Waste Funding & Expenditure (Inflated values)



Proposed budget for Solid Waste expenditure 2018-48

### Parks & Reserves Funding and Expenditure (Inflated values)

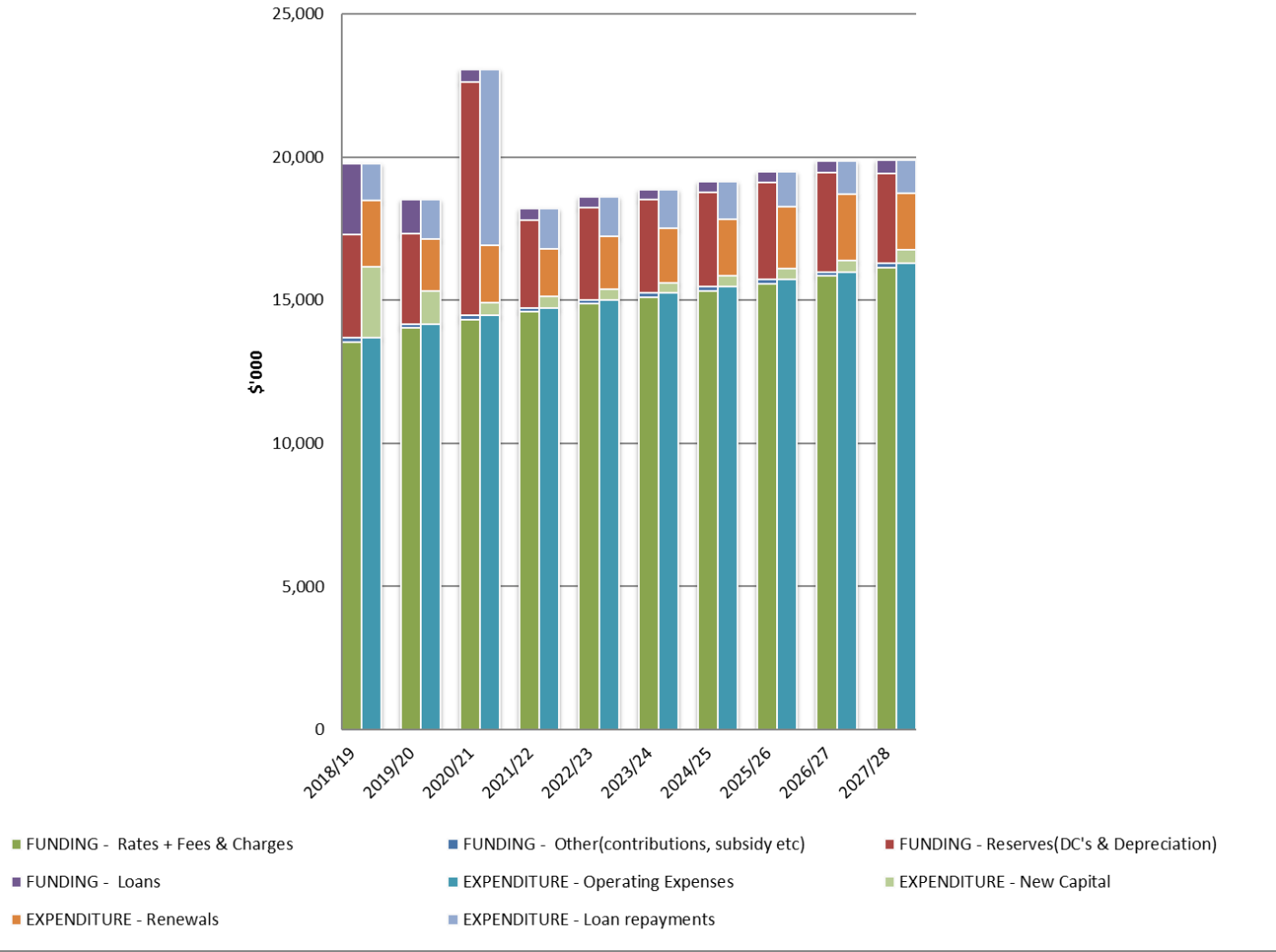


- FUNDING - Rates + Fees & Charges
  - FUNDING - Loans
  - EXPENDITURE - Renewals
- FUNDING - Other(contributions, subsidy etc)
  - EXPENDITURE - Operating Expenses
  - EXPENDITURE - Transfer to/from Reserves
- FUNDING - Reserves(DC's & Depreciation)
  - EXPENDITURE - New Capital
  - EXPENDITURE - Loan repayments

### Proposed budget for Parks and Reserves expenditure 2018-28

(Only 10 years of funding and expenditure information is available)

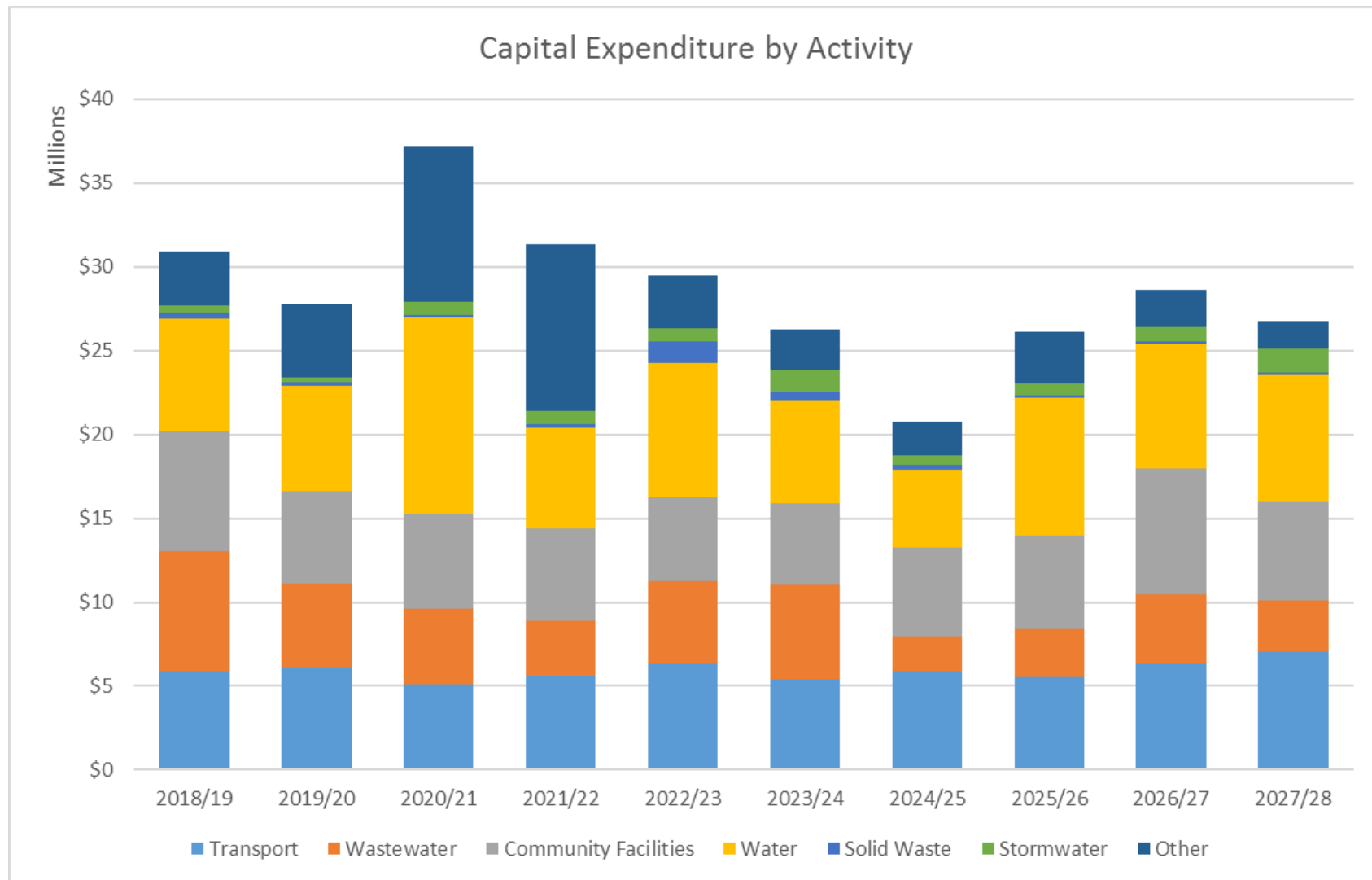
### Facilities Funding and Expenditure (Inflated values)



### Proposed budget for Facilities expenditure 2018-28

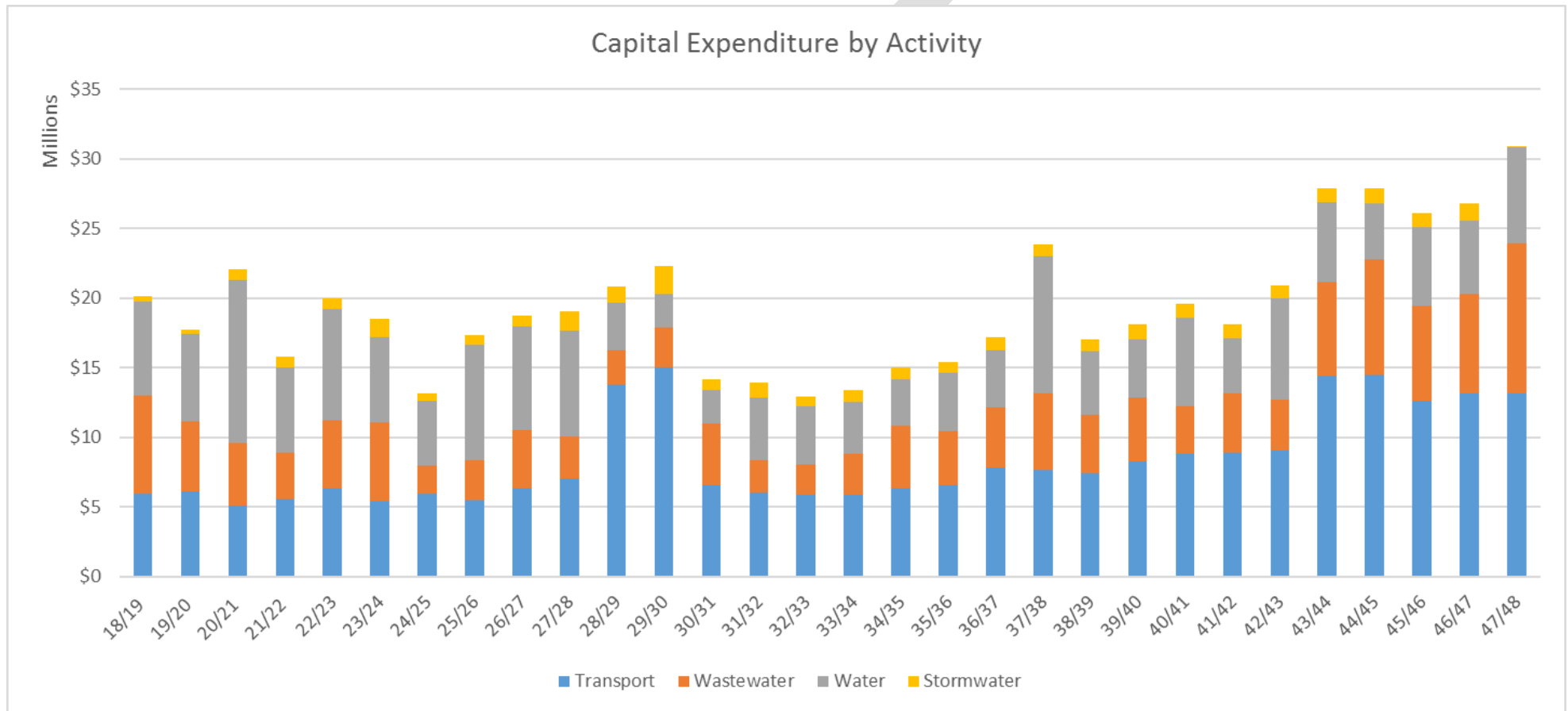
(Only 10 years of funding and expenditure information is available)

The graph below illustrates the proposed capital and renewal expenditure for each group of activities over the first 10 years of the plan



**Capital expenditure by activity 2018-28**

Note - Other includes the groups of activities Economic Development, Community Services, Investments and Democracy and Planning



**Capital expenditure by transport, wastewater, water and stormwater activities 2018-48**

Note: This does not include the Solid Waste and Community Facilities activities

## 10. PROPOSED PROJECTS

This section outlines the significant decisions about capital expenditure that we expect will have to be made, when we expect to make them, the principal options that we expect to consider and the extent of the costs involved with each decision. For each project we have identified where the project is required to maintain or increase level of service (LOS), to cater for growth (Growth) or is a renewal (renewal). This classification has not been completed for projects beyond ten years (2028 onwards). The values included in the tables below have been inflated consistent with BERL LGCI predictions.

We have identified the significant decisions about capital expenditure by identifying the capital projects that we believe will have high community interest. They are:

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**Water**

<b>Project</b>	<b>Growth/ LOS/ Renewal</b>	<b>Principal options</b>	<b>Implications</b>	<b>Capital cost and when project will occur</b>	<b>When the decision will be made</b>
Upgrades to the Acacia Bay water supply to comply with the Drinking Water Standards NZ (DWSNZ)	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$4.655 million Years 2018-19 to 2020-21	During Long Term Plan 2018-28 consultation in March/April 2018
Upgrades to the Bonshaw Park water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$1.8 million Year 2027-28	During Long Term Plan 2024-34 consultation in early 2024
Upgrades to the Hatepe water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$700,000 Years 2021-22 to 2022-23	During Long Term Plan 2021-31 consultation in early 2021
Upgrades to the Kinloch water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$8.8 million Years 2018-19 to 2022-23 and 2033-34	During Long Term Plan 2018-28 consultation in March/April 2018
Upgrades to the Motuoapa water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$2.47 million Years 2022-23 to 2023-24	During Long Term Plan 2021-31 consultation in early 2021
Upgrades to the Omori water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$3.5 million Years 2021-22 to 2022-23	During Long Term Plan 2018-28 consultation in March/April 2018

<b>Project</b>	<b>Growth/ LOS/ Renewal</b>	<b>Principal options</b>	<b>Implications</b>	<b>Capital cost and when project will occur</b>	<b>When the decision will be made</b>
Upgrades to the Rakanui water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$1.88 million Year 2027-28	During Long Term Plan 2027-37 consultation in early 2027
Upgrades to the River Road water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$300,000 Year 2021-22 to 2022-23	During Long Term Plan 2021-31 consultation in early 2021
Upgrades to the Tirohanga water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$300,000 Years 2023-24 and 2024-25	During Long Term Plan 2021-31 consultation in early 2021
Upgrades to the Waihaha water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$300,000 Years 2023-24 to 2024-25	During Long Term Plan 2021-31 consultation in early 2021
Upgrades to the Whakamaru water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$300,000 Years 2021-22 to 2022-23	During Long Term Plan 2021-31 consultation in early 2021
Upgrades to the Whakamoenga Point water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$609,000 Year 2026-27	During Long Term Plan 2024-34 consultation in early 2024

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost and when project will occur	When the decision will be made
Upgrades to the Whareroa water supply to comply with the DWSNZ	LOS	Complete upgrades	Compliance with Drinking Water Standards	\$300,000 Years 2023-24 to 2024-25	During Long Term Plan 2021-31 consultation in early 2021
Taupo water reticulation of Five Mile Bay	LOS	Do nothing	Untreated private supply of water	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Reticulate Five Mile Bay	Provision of reticulated water that complies with the Drinking Water Standards.	\$520,000 Years 2019-20 to 2020-2021	

### Stormwater

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
Improvements to our stormwater infrastructure to improve the quality of the water that is discharges	LOS	Do nothing	No improvement to water quality in Lake Taupo	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake improvements	Improvements to water quality in Lake Taupo	\$1.6 million Years 2018-19 through to 2027-28	

### Transport

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
Investigation and installation of a roundabout at the Arrowsmith/Kiddle and Napier-Taupō Road intersection	LOS	Do nothing	Minor improvement to safety at this intersection	Nil	During Long Term Plan 2024-34 consultation in early 2024
		Install a roundabout	Improved traffic safety and flow	\$2.4 million Years 2025-26 through to 2027-28	
Relocation of speed limit sign on Wairakei Drive		Do nothing	Little improvement to safety at this intersection	Nil	During Long Term Plan 2018-28

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
		Relocate speed limit sign	Improved traffic safety and flow	\$127,000 Year 2018-19	consultation in March/April 2018
Norman Smith St intersection signalisation	LOS	Do nothing	Increasing travel times and reduced safety	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Complete intersection signals	Improve travel time and safety	\$479,000 Years 2018-19	
Priority changes for Titirapunga Street - Spa Rd/Titirapunga	LOS	Do nothing	Increasing travel times and reduced safety	Nil	During Long Term Plan 2021-31 consultation in early 2021
		Complete intersection signals	Improve travel time and safety	\$649,000 Years 2020-21	
Spa Rd/Ruapehu St intersections		Do nothing	Increasing travel times and reduced safety	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Complete intersection signals	Improve travel time and safety	\$422,000 Year 2019-2020	
Priority changes for Titirapunga Street - Titirapunga St/Tamamutu St	LOS	Do nothing	Increasing travel times and reduced safety	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Complete intersections signals	Improve travel time and safety	\$502,000 Year 2021-22	
Priority changes for Titirapunga Street - Heuheu Street		Do nothing	Increasing travel times and reduced safety	\$493,000 Year 2022-2023	During Long Term Plan 2021-31 consultation in early 2021
		Complete intersections signals	Improve travel time and safety		
Second bridge crossing at the northern entry to Taupō		Do nothing	Increasing travel times and reduced safety	Nil	During Long Term Plan 2027-37 consultation in early 2027
		Install second bridge	Improve travel time and safety	\$16.9 million Years 2028-29 to 2029-30	
Tongariro Street traffic calming	LOS	Do nothing	Poor linkage between the town centre and the lake	Nil	During Long Term Plan 2021-31

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
		Undertake traffic calming	Improved linkage between the town centre and the lake	\$160,000 Year 2021-22	consultation in early 2021
Lake Tce traffic calming & realignment	LOS	Do Nothing	Poor linkage between the town centre and the lake	Nil	During Long Term Plan 2021-31 consultation in early 2021
		Undertake traffic calming	Improved linkage between the town centre and the lake	\$110,000 Year 2023-24	
Broadlands Road Widening	LOS	Do nothing	Continued conflict between cyclists and vehicles	Nil	During Long Term Plan 2021-31 consultation in early 2021
		Undertake road widening	Reduced conflict between cyclists and vehicles	\$4.35 mill Years 2023-24 to 2047-2048	
Poihipi Road Widening	LOS	Do nothing	Continued conflict between cyclists and vehicles	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake road widening	Reduced conflict between cyclists and vehicles	\$5 mill Years 2018-2019 to 2043-2044	
Waipapa Road Widening		Do nothing	Continued conflict between road users	Nil	During Long Term Plan 2036-46 consultation in early 2036
		Undertake road widening	Increased safety for road users	\$2.8 mill Years 2038-39 to 2046-2047	
Tirohanga widening	LOS	Do nothing	Continued conflict between road users and increasing cost of road maintenance from wear to edge of road	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake road widening	Increased safety for road users and decreased maintenance costs	\$607,000 Years 2018-19 to 2019-20	

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
Broadlands Rd curve easing (11.5-11.7km) and (23.3-23.5km)	LOS	Do nothing	Continued poor alignment	Nil	During Long Term Plan 2024-34 consultation in early 2024
		Undertake curve easing	Improved alignment leading to improved safety	\$477,00 Years 2025-26 to 2027-28	
Spa Road /Paori Hapi Street	LOS	Do nothing	Continued use of CBD as a through traffic route.	Nil	During Long Term Plan 2024-34 consultation in March/April 2024
			Improved transport linkages through the CBD	\$1.75 mil Years 2024-2025 2031-32 to 2032-33	
Paori Hapi St/Gascoigne	LOS	Do Nothing	Increasing travel times and reduced safety	Nil	During Long term Plan 2021-2031 consultation in March/April 2021
		Complete intersection signals	Improve travel time and safety	\$425,000 Year 2023-24	
Paori Hapi St/Ruapehu St	LOS	Do Nothing	Increasing travel times and reduced safety	Nil	During Long term Plan 2024-34 consultation in March/April 2024
		Complete intersection signals	Improve travel time and safety	\$520,000 Year 2024-25	
4 laning Spa Road		Do nothing	Increasing travel time	Nil	During Long Term Plan 2039-49 consultation in March/April 2039.
		Undertake 4 laning	Improving traffic flow along Spa Road	\$8.3 mill Years 2041-42 to 2044-45	
Tauhara/Spa intersection upgrade		Do nothing	Little improvement to safety and travel times at this intersection	Nil	During Long Term Plan 2027-37 consultation in early 2027
		Undertake intersection upgrade	Improved safety and travel times at the intersection	\$1.6 mil Years 2029-30 to 2030-31	
Acacia Bay/Mapara Collector		Do nothing	Increase in travel time	Nil	During Long Term Plan 2027-37 consultation in early 2027
		Construct new collector road	Improved travel times	\$1.44mil	

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
				Years 2028-29 to 2030-31	
Seal extensions	LOS	Do nothing	Continued health , safety and environmental issues	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Seal extensions	Improved health, safety and environmental outcomes.	\$2.54 mil Years 2018-19 to 2023-24	
Tirohanga widening	LOS	Do nothing	Continued conflict between road users	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake road widening	Increased safety for road users	\$607,000 Years 2018-2019 to 2019-20	
Anzac Memorial Drive	LOS	Do nothing	Substandard width of road for volume and type of traffic	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Upgrade the road	Appropriate width of road for volume and type of traffic	\$200,000 Year 2019-20	
SH 5/Lake Terrace	LOS	Do nothing	Little improvement to safety and travel times at this intersection	Nil	During Long Term Plan 2021-31 consultation in early 2021
		Undertake intersection upgrade	Improved safety and travel times at the intersection	\$600,000 Years 2021-22 to 2022-23	

### Facilities and parks and reserves

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
Erosion control at Kuratau foreshore	LOS	Do nothing	Continuing loss of reserve land	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake erosion control	Reduced loss of reserve land due to erosion	\$1.3 million Years 2018-19 through to 2027-28	

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
Erosion control at Taupō Bay	LOS	Do nothing	Continuing loss of reserve land	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake erosion control	Reduced loss of reserve land due to erosion	\$2.8 million Years 2018-19 through to 2027-28	
Upgrades to the private pools at AC Baths which includes upgrading the system to heat the complex	LOS	Do nothing	Private hot pools not available for public use	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake a full upgrade to the private pools	Private hot pools available for public use and system operates more efficiently	\$1.15 million Year 2018-19	
CBD intersection upgrades	LOS	Do nothing	Reducing amenity benefit	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake improvements to CBD intersections	Improved amenity at the intersection	\$2.2 million Years 2018-19 to 2027-28	
A new destination playground in Taupō	LOS	Do nothing	Less families stopping in Taupo	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Install a destination playground	Improved desirability as Taupo as a destination for families	\$484,000 Years 2019-20 and 2020-21	
Parks equipment rationalisation in Turangi	LOS	Do nothing	Poor quality equipment in neighbourhood parks	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Rationalise parks	Improved quality and diverse playground equipment.	\$464,000 Years 2018-19 and 2019-20	
Great Lake Walkway upgrade – widen and improve surface in certain locations	Growth	Do nothing	Congestion on the walkway and reduced user experience	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Undertake upgrades	Enhanced experience of users and enabling	\$1.9 million	



Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
			more people to use the walkway	Years 2018-19, 2020-21, 2022-23, 2024-25 and 2026-27	
Turangi open space upgrades	LOS	Do nothing	No facilities available for sports field users	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Install temporary toilet/changing facilities and then construct permanent toilet/changing facilities	Changing facilities, showers and toilets available for sports fields users	\$100,000 Year 2018-19 \$636,000 Years 2020-21 to 2021-22	
Mangakino Lakefront and public convenience development	LOS	Do nothing	Poor condition of toilets	Nil	During Long Term Plan 2018-28 consultation in March/April 2018
		Install toilet facilities	Renewal of toilets due to condition Enhanced experience for users of the lakefront	\$372,000 Year 2021-22	

### Community facilities

Project	Growth/ LOS/ Renewal	Principal options	Implications	Capital cost	When the decision will be
New Civic Administration Building	LOS	Do nothing	Staff located across five sites in the Taupō CBD	Nil	During the amendment to the Long Term Plan 2018-28. Consultation anticipated in 2018-19/ 2019- 2020
		Build a new civic administration building	The majority of staff in one location.	\$15.7 million Years 2018-19 through to 2021-22	

## 11. FUTURE INFRASTRUCTURE STRATEGIES

This infrastructure strategy has improved on the 2015 infrastructure strategy by including issues for and 10 year financial information for facilities and parks and reserves activities. Further improvement of future infrastructure strategies is required to outline the complete picture for Council's infrastructure assets. This will enable us to plan for more effective long term management of this infrastructure in the future.

We will gather more information over the course of this strategy so we can undertake the following improvements in our next infrastructure strategy:

- Continued development of parks and facilities financial information so it can be included in the next 30 year infrastructure strategy
- Development of a section on critical assets to identify our critical assets and how we are going to manage them. .
- Work towards providing indicative operational costs for the projects identified in the significant decisions about capital expenditure section.
- Consider including assets within Council's investment portfolio, such as forestry and property.

## APPENDIX 1 PLANNED INFRASTRUCTURE CAPITAL EXPENDITURE RELATED TO GROWTH

Activity	Funding area	Project name	Planned capital expenditure	Planned capital expenditure funded from development contributions	Planned capital expenditure funded from other sources
Transport	District Wide	Poihipi Seal widening	905,000	507,876	397,124
Transport	District Wide	Second Bridge Crossing	12,000,000	5,658,782	6,341,218
Transport	District Wide	Oakdale Drive Extension	100,000	2,635	97,365
Transport	District Wide	Mapara Road Footpath	50,000	2,446	47,554
Transport	District Wide	Kinloch Footpath	350,000	10,210	339,790
Transport	District Wide	518 Lake Terrace Footpath	150,000	113,333	36,667
Transport	District Wide	Huka Falls Road Footpath	300,000	13,587	286,413
Water	Kinloch	Kinloch WTP upgrade	7,390,000	2,198,454	5,191,546
Water	Mapara	Mapara water pump station capacity increase	15,000	9,729	5,271
Water	Mapara	Mapara water upgrade Blue Ridge rising main	200,000	90,977	109,023
Water	Taupo	Taupo WTP Capacity Upgrade	1,750,000	1,049,711	700,289
Water	Taupo	Poihipi Reservoir Land	500,000	165,000	335,000
Water	Taupo	Poihipi Reservoir Land	4,100,000	1,353,000	2,747,000
Water	Taupo	Tauhara Ridge Reservoir Land	500,000	500,000	-
Water	Taupo	Tauhara Ridge Reservoir	1,800,000	1,800,000	-
Water	Pukawa/Omori/Kuratau	Omori water DWSNZ upgrade	3,200,000	167,665	3,032,335
Water	Whareroa	Whareroa water DWSNZ upgrade	275,000	63,462	211,538
Wastewater	Kinloch	Effluent Disposal Field	2,200,000	605,926	1,594,074
Wastewater	Kinloch	Kinloch Wastewater TP Balance Tank	1,800,000	492,225	1,307,775
Wastewater	Kinloch	WWTP Upgrade	2,750,000	2,241,362	508,638
Wastewater	Taupo	Control Gates Bridge Siphon 2020-2022	650,000	650,000	-
Wastewater	Taupo	Eastern trunk main capacity upgrade (stage 1) 2025-2027	1,800,000	1,194,683	605,317
Wastewater	Taupo	Southern trunk main upgrade (stage 1) 2019-2021	2,180,000	1,741,162	438,838
Reserve Land	Kinloch	Reserve Purchase Programme	612,500	612,500	-
Reserve Land	Taupo	Reserve Purchase Programme	1,837,500	1,837,500	-
District Parks	District Wide	Great Lake Walkway upgrade	1,750,000	1,750,000	-
<b>Total planned capital expenditure</b>			<b>49,165,000</b>	<b>24,832,225</b>	<b>24,332,775</b>