2021 - 30 Year Infrastructure STRATEGY

South Waikato District Council

STRATEGY

Infrastructure Strategy

1. Executive Summary

1.1 Purpose

The purpose of the 30-year Infrastructure Strategy (the Strategy) is to identify significant infrastructure challenges for South Waikato District Council (Council) over the next 30 years and the principal options for managing those challenges.

Providing and maintaining Council's infrastructure requires good asset management practices and strategic thinking. This Strategy assists Council in taking a long-term view of South Waikato's infrastructure needs. The Strategy is an indicative estimate of Council's future infrastructure needs. It is a statement of current assumptions and thinking on what infrastructure will be required to address the major issues facing the district over the next 30 years.

The Strategy outlines Council's approach to managing and investing in the district's infrastructure including what will be required, when, and how much it will cost across the following infrastructure classes:

- Water
- Wastewater
- Stormwater
- Land transport

The Strategy draws together information from the Three Waters Strategy and Land Transport Strategy and informs the Asset Management Plans (AMPs) for each of the classes.

The 30-year goal is to provide infrastructure in an efficient and effective manner that enables the provision of the agreed level of service for current and future customers in a sustainable manner.

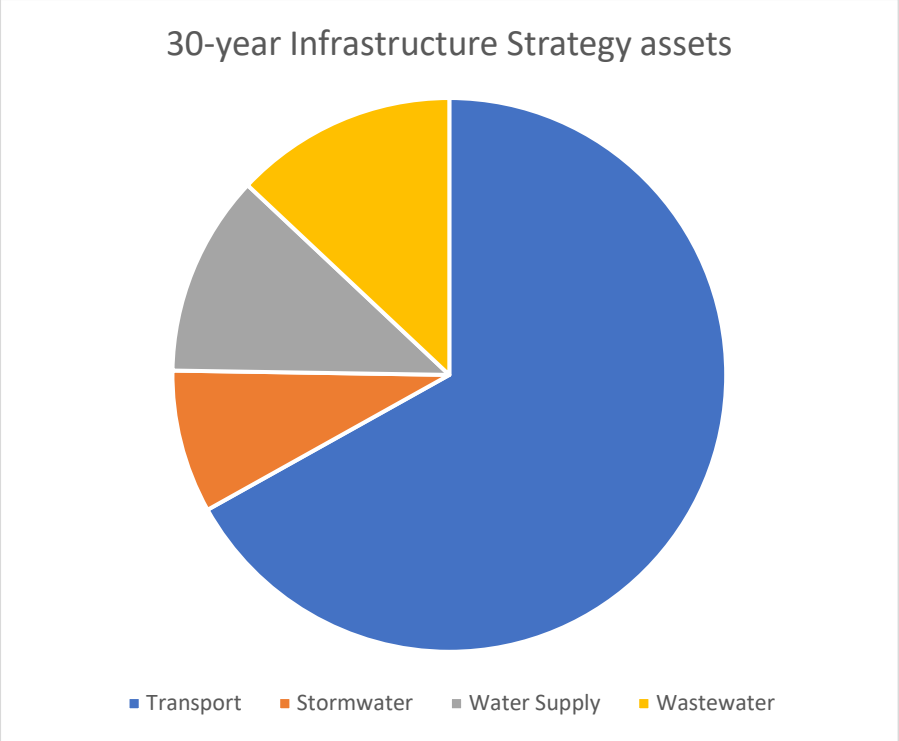
1.2 Scope

The Infrastructure Strategy includes the following assets:

- Transportation: sealing (surface layer of a road), pavements (below the surface), kerb and channel, rural drainage, traffic signs, bridges and large culverts, street lighting, footpaths, parking and vegetation control.
- Water supply: headworks, bores, reservoirs, pumps, treatment plants, underground pipe networks and all ancillary assets.
- Wastewater treatment: pump stations, treatment plants, underground pipe networks and all ancillary assets.
- Stormwater: major culverts, lined channels, underground pipe network, detention structures, swales, wadies and ancillary assets.

Table 1 and Figure 1 provide a breakdown of assets owned by Council covered by the 30-year Infrastructure Strategy.

Asset Class	**Replacement Cost ($millions)**
Transport	$371
Stormwater	$46
Water Supply	$65
Wastewater	$72
Total	**$555**



1.3 Infrastructure Strategic Challenges

In order to deliver Council outcomes, Council needs to focus on its infrastructure investments.

The following challenges are the most important infrastructure matters for Council to address:

- Renewals: Managing the replacement of existing assets by informed decision making.
- Population Growth: Responding to an increase in demand for services.
- Resilience: Planning for service disruptions.
- Compliance: Maintaining or improving public health outcomes, improving environmental outcomes and providing a safe transport system.
- Levels of Service: Maintaining sustainable delivery of existing levels of service and managing expectations for improved levels of service.
- Recovery: Responding to natural disasters, the effects of the COVID-19 pandemic and planning for future pandemics.
- Climate change: Planning for climate change in our renewals and replacement programme, and new infrastructure.
- Critical assets: Proactively maintaining and replacing critical assets to maintain the level of service, to protect the environment, and the health and wellbeing of the community.
- Asset management improvement: Identifying improvements to Council's asset management practices to enhance asset information and systems to enable informed decision making.
- Relationships: Maintaining relationships with residents and ratepayers, tangata whenua, Waka Kotahi, Waikato Regional Council, community partners, central government and government agencies.

1.4 Population Projections

Census results show that the population in the South Waikato declined from the District's inception in 1989 through to 2013. Since the 2013 census the district has experienced growth in population with annual population growth recorded.

The population trends show that there is a demand for growth related infrastructure at the present time. The other trend that has emerged is that the average age of our residents is increasing with the proportion over 60 years of age increasing significantly. This will have infrastructure implications as the needs and requirements change for the community. Ultimately this could lead to a change in the community's level of service expectations that will be delivered by Council.

Population projections have been researched by Natalie Jackson Demographics Ltd for low, medium and high growth projections. Council has adopted the medium growth projection for its forward planning. Under this scenario, it is assumed that the "urban areas" will experience the following annual population growth:

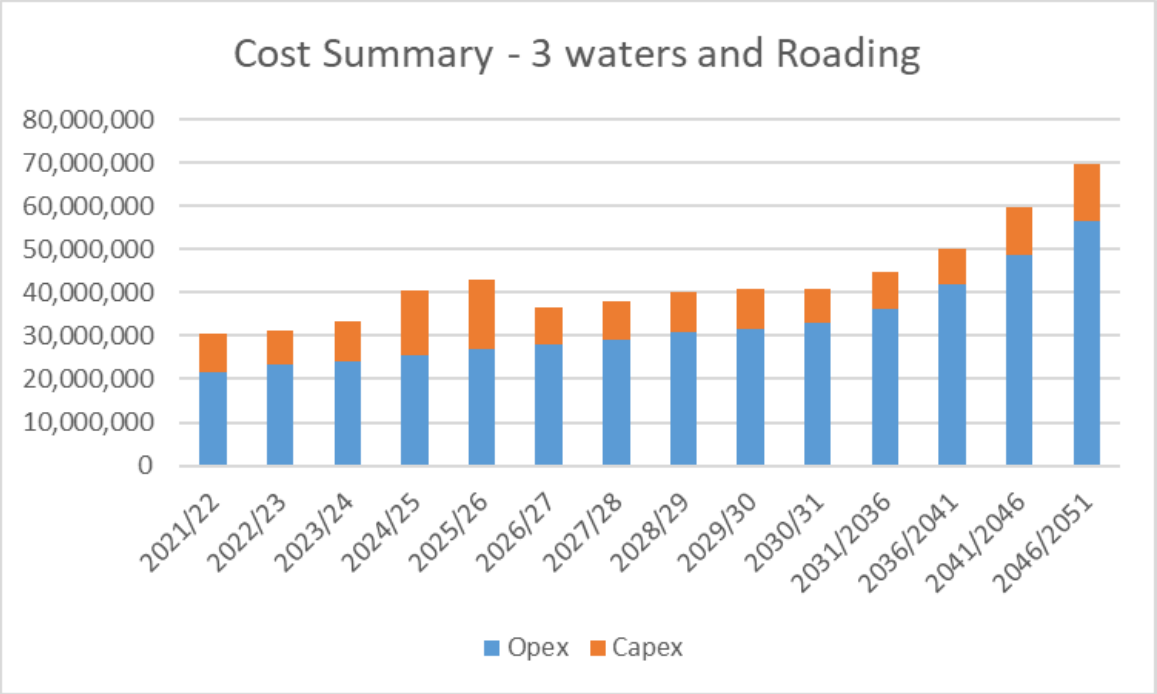
- Tokoroa 0.3%
- Putāruru 1.0%
- Tīrau 1.0%
- Arapuni 1.0%

1.5 Investment / Financials

The 30-year forecasted operational expenditure and capital expenditure for 3 waters and roading infrastructure assets is summarised in the table and figure below.

Year	Opex	Capex	Total
2021/22	21,653,656	8,973,271	30,626,927
2022/23	23,245,073	8,009,433	31,254,506
2023/24	24,220,165	9,068,648	33,288,813
2024/25	25,431,303	15,169,644	40,600,947
2025/26	26,778,002	16,036,461	42,814,464
2026/27	27,932,622	8,753,360	36,685,982
2027/28	29,120,557	8,896,078	38,016,634
2028/29	30,686,547	9,521,762	40,208,309
2029/30	31,562,453	9,302,672	40,865,125
2030/31	33,121,994	7,839,657	40,961,651
2031/2036	36,224,928	8,669,766	44,894,694
2036/2041	41,994,620	8,201,541	50,196,161
2041/2046	48,683,274	11,125,063	59,808,337
2046/2051	56,437,258	13,412,657	69,849,914

Note: From 2031 onward the 5 yearly amounts shown are the annual average.



The renewal programme for wastewater and water reticulation networks over the next 30 years will be based on the results of performance, maintenance, breakage history, criticality and condition of specific assets. A programme of condition assessments is carried out. The assets are selected based on remaining life, criticality, performance and maintenance history. The information is analysed to determine what pipes will be replaced and when they will be replaced.

Network modeling has been carried out to assess where pipe sizes need to be increased to provide the level of service and where additional capacity is required to cater for growth.

The result of the condition assessments and network modeling inform the forward works programme.

Council has financially assessed the risks around not having adequate reserves for replacement of existing assets. We have looked at current reserve levels, the funding requirements of replacing assets and the projected rates revenue we will receive to establish the funding position over the next 30 years.

Figures below show depreciation funding versus replacement expenditure for the next 50 years.

The black line shows the level of renewals required based on the current lives. The red line shows the level of renewals required based on current lives less 10%. The blue line shows current lives plus 10%. The green shaded portion represents the renewals requirement with a +/- 10% variation in lives.

The blue dotted line shows the expected depreciation expense, while the red dotted line shows the amount of depreciation that is funded.

For water supply, wastewater and stormwater, depreciation funding includes the existing accumulated depreciation reserves. Hence, there is a separation between the red and blue lines.

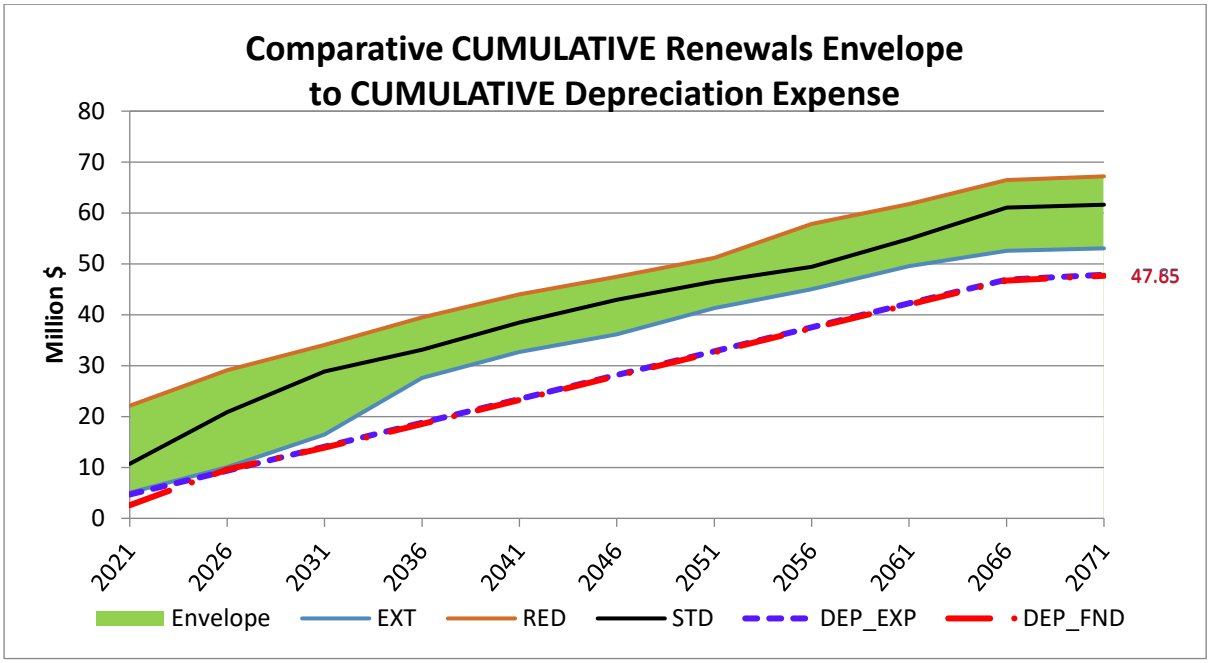
Council has determined to reduce stormwater asset depreciation funding to 0% from 2021 to 2031. Depreciation funding for water supply and wastewater assets will be reduced to 55% from 2021 to 2031. Depreciation funding is proposed to be increased to 100% from 2032 onwards for stormwater, water supply and wastewater.

Depreciation funding will be reviewed during the next LTP cycle. The outcome of the three waters reform will be considered as part of the review.

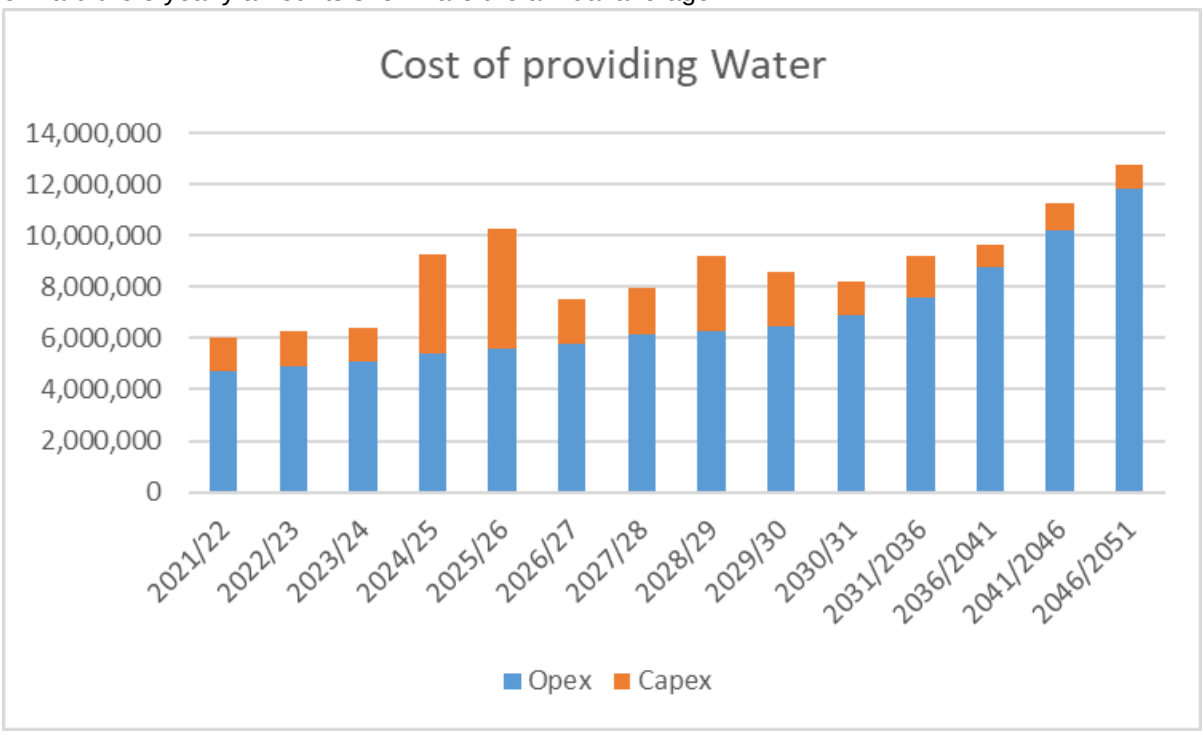
Water Supply

The projected accumulation of replacement costs shown in the graph below is based on the design life of the assets. Council will be implementing a programme of condition assessments based on performance and maintenance history, to determine the remaining service life of the assets. The condition assessment programme will then inform the actual replacement programme.

Projected water reticulation replacement:



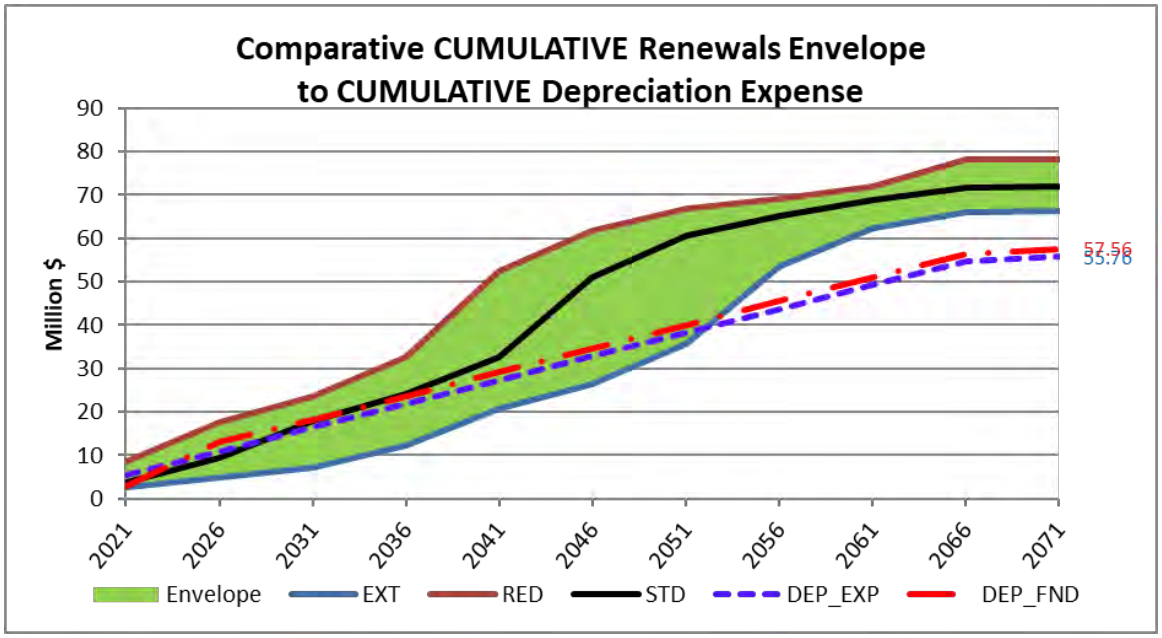
The 30-year capital and operating cost of water is detailed in the graph below. From 2031 onward the 5 yearly amounts shown are the annual average.



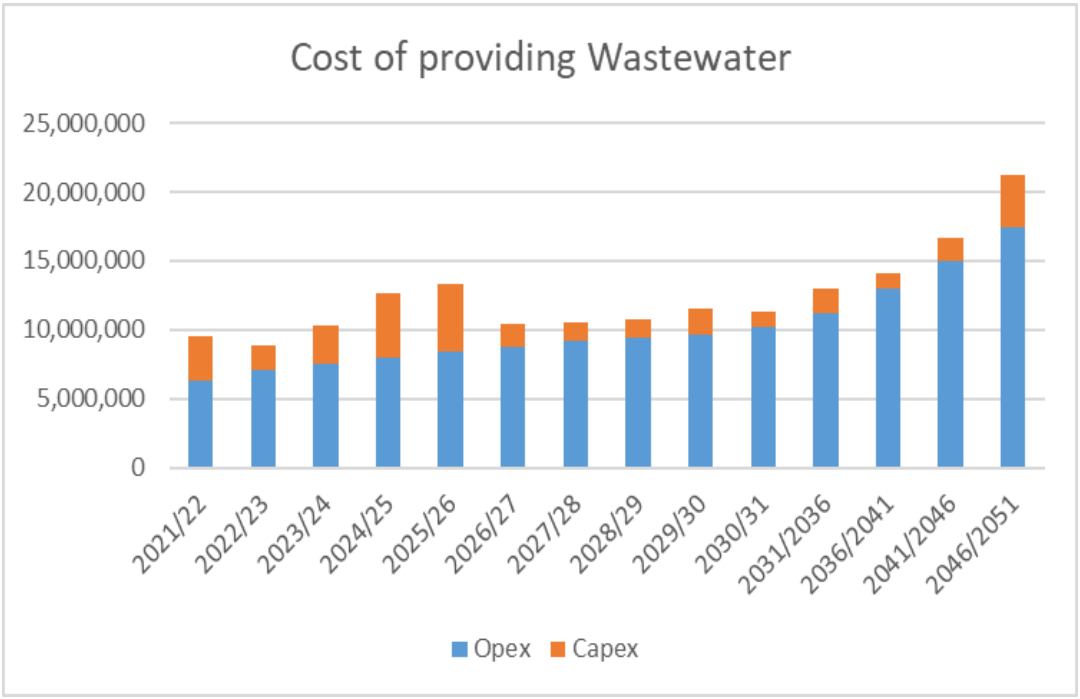
Wastewater

For wastewater, in the later years of the LTP the forecasted depreciation collected is less than the expected costs for asset replacement. Council is comfortable with this because the expected upgrades in the wastewater plant are very likely to reduce asset replacement required in the later years.

Projected wastewater reticulation replacement:



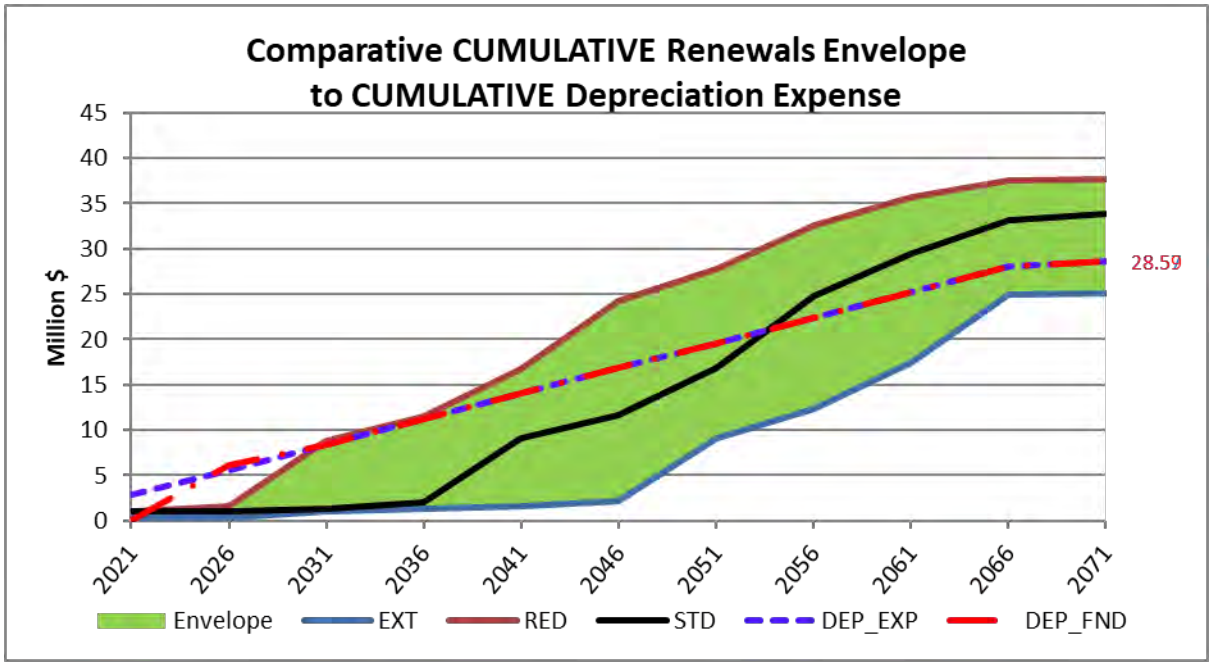
The 30-year capital and operating cost of wastewater is detailed in the graph below. From 2031 onward the 5 yearly amounts shown are the annual average.



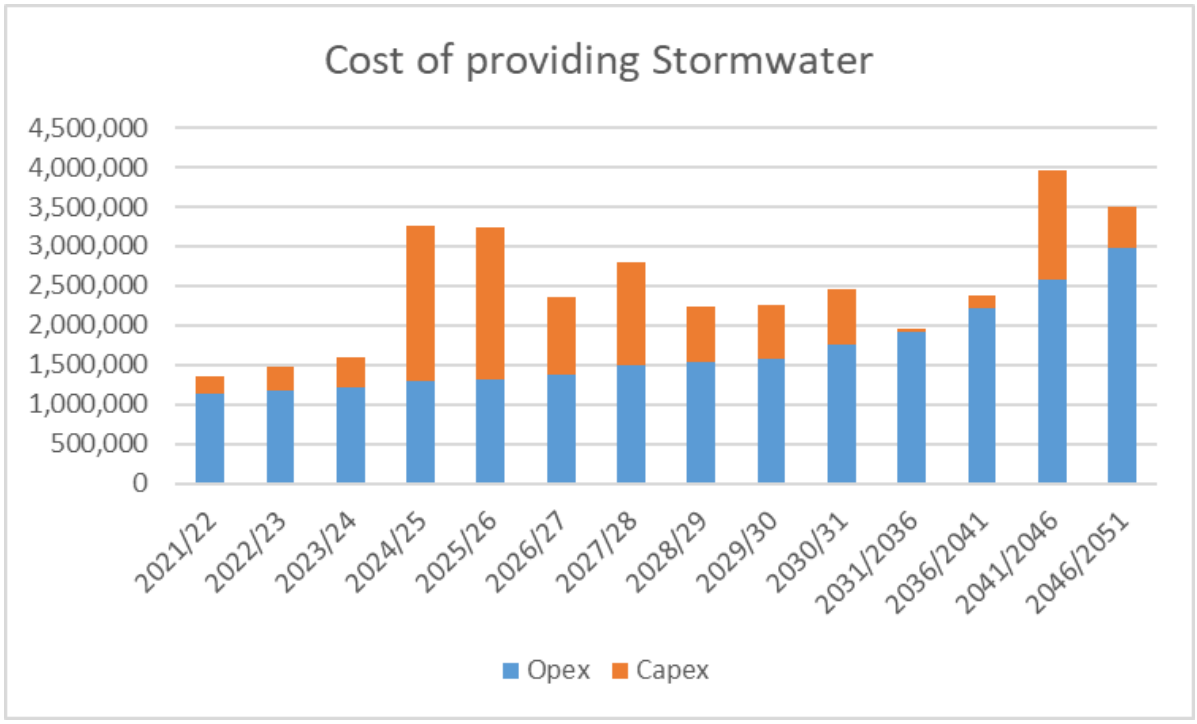
Stormwater

For stormwater, the level of depreciation funding collected from ratepayers is enough to pay for the future replacement of assets**.**

Projected stormwater reticulation replacement:



The 30-year capital and operating cost of stormwater is detailed in the graph below. From 2031 onward the 5 yearly amounts shown are the annual average.



The graph above reflects an increase in the stormwater capital expenditure in years 2024 to 2026. The increase in expenditure is due to projects that maintain or increase the level of service.

The major projects are:

- Piping of open drain from Scotia Glen to Golf Street, Putāruru
- Improvements to drainage at Countdown interaction with State Highway 1
- Drain and culvert improvements at Arapuni Street, Putāruru

Roading

Council does not put aside funding in an asset replacement reserve for the future replacement of our roads like it does for other core assets. Paying for upgrades, replacements, and maintenance to our roading network is paid for from rates that are collected in the same year that expenditure occurs. This is because:

• Council does not usually undertake significant improvements or additions to our roading network (i.e. we don't build new roads or significantly upgrade our roading system). Annual traffic counting provides evidence that there is still capacity within the network. If Council did build a new road, then it would be loan funded so that the cost of building is borne by those who benefit from it.

• The pattern of expenditure on roading that we term as capital (for accounting purposes) is very similar from year to year. It is largely determined by the level of funding from Waka Kotahi (NZTA) and our historical spend to maintain our level of service. Our roading services team smooth the roading programme so that the projects are balanced between the years, and therefore the budgets do not vary greatly so there is no need to build a financial reserve for future capital expenditure. The programme is based on performance, condition and age and in line with Council's annual replacement targets.

Bridge replacement is the exception to this as the cost of building new bridges is significant but is only required every few years. Most of our bridges do not need replacement for 30-60 years. Estimates have indicated that putting aside $170,000 in an asset replacement reserve will provide adequate funding for bridge replacement.

The One Network Road Classification (ONRC) is a national classification system which divides the roading network into six categories, to enable operational and culture change in road activity management. A customer focused, business case approach associated with ONRC allows Council to bid for budget from the National Land Transport Programme so that funding is targeted to where it is needed the most. Council has progressively been working on the classification impacts, particularly for road maintenance now and in future contracts.

On 31 May 2021 Waka Kotahi officially advised Council to reduce their 3 year subsidised work maintenance programme from $22,640,000 to $20,000,000. This is for the period 2021/22 to 2023/24. The changes made that influence levels of service include the removal of new footpath extensions, maintaining our current level of service for roadside vegetation control, and a reduction of our pavement rehabilitation programme by approximately one third. This essentially is an approach to "maintain what we have" with the lowest level of risk to the network.

Reducing our pavement rehabilitation programme will be the highest risk item where staff will have to adopt a holding strategy on sites that have been deferred. This might include a "sacrificial" surfacing treatment in an attempt to slow down the rate of failure until Council is able to undertake the necessary road strengthening work. Council has received many service requests around the standard of vegetation control so an additional allowance was made to lift this level of service. This has now been removed, following Waka Kotahi's request to reduce our programme, but is considered to be a low risk item as it will only effect the aesthetics of the road corridor in the rural area. Vegetation control that effects road safety will be undertaken.

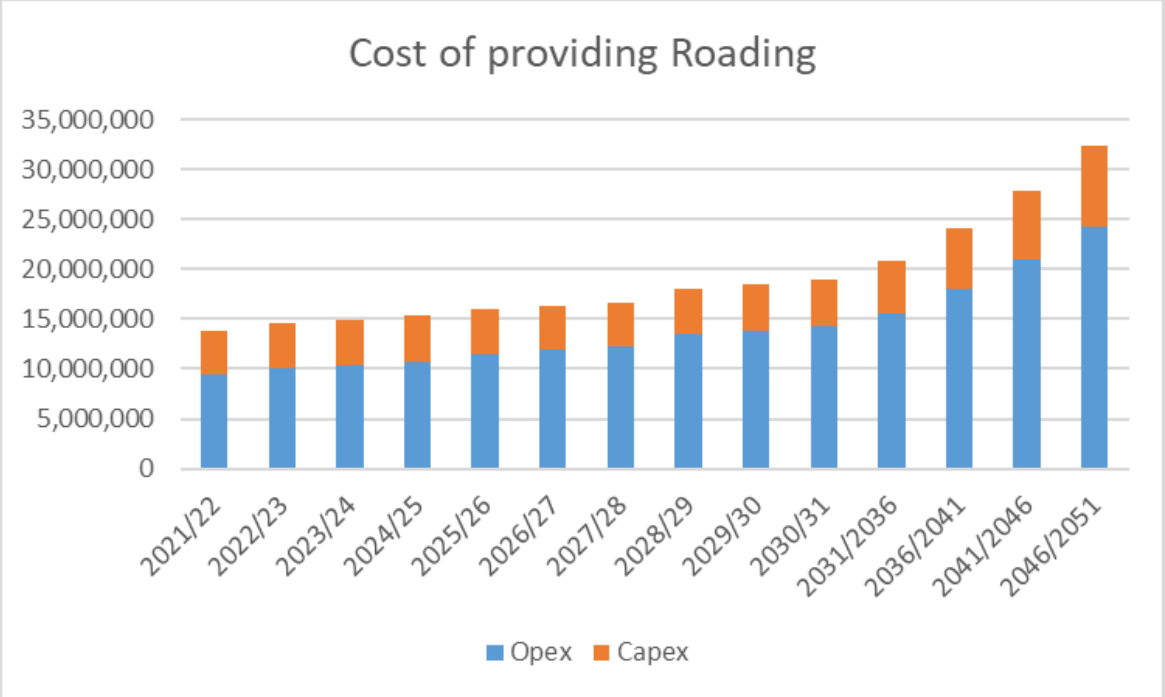
The local share of these total savings has been retained in the event funding becomes available at a later date from Waka Kotahi and as a safeguard against costs increasing once we tender the maintenance contract in June 2022. There is therefore a nil impact on rates.

Council has assumed that in year four of the strategy spending will be increased to address the previous three years of lower funding. We have assumed that over the 30 years covered by the strategy that the overall spend will be averaged out.

The table below contains the recommended average annual levels of renewal quantities over the next 20 years.

	Average Annual Quantity (cl.km/yr.)	**Annual % Network / Year**
Rehabilitation	3.4	0.7%
Chip Resurfacing	30.1	6.0%
Thin AC Resurfacing	0.2	0.0%

The 30-year capital and operating cost of Roading is detailed in the graph below. From 2031 onward the 5 yearly amounts shown are the annual average.



1.6 Asset Management Improvement Programme

Providing and maintaining Council's infrastructure requires good asset management practices and strategic thinking. Understanding what assets we own and what key information (criticality, performance, condition and age) is required is fundamental to asset management.

Gaps in our asset knowledge of Council's infrastructure have been identified. A range of options have been considered to fill those gaps in order to allow Council to make good decisions that are fit for purpose. Funding for the improvement programme is identified in the 2021-31 Long Term Plan.

1.6.1 Performance Gaps

Information on how well assets are performing is missing in some areas. Collection of additional information will allow a better understanding of how our existing assets are currently performing. The information can also be used to assess how much capacity is available in our existing infrastructure to support growth.

1.6.2 Infrastructure Requirements

Key data required for forecasting and planning has been identified and a gap analysis of the existing data sets carried out.

Gaps in the management of our infrastructure assets have been identified as follows:

- Missing buried asset depths and invert levels in our asset management system.
- Our system of assessing the consequences of an asset failing needs review (criticality assessment)
- Asset condition data is missing or not current.
- Correct age of assets.
- Reliable condition assessment to be collected on assets near end of life or that have performance issues.
- Data on maintenance of existing assets not being captured in asset management system and linked to those assets.
- Process of asset data capture needs review.
- Succession planning for replacement of staff.
- New technology to assist with data capture.
- Integration of finance and audit of assets to determine confidence in data accuracy.
- Making better use of our asset system functionality.

1.5.3 Forward Works

The following issues have been identified as requiring further investigation:

- Audit and/or investigate asset data for missing data, accuracy, and to confirm manhole locations, depths and pipe diameters.
- Tokoroa and Tīrau flood hazard modelling for a 100-year event. Modelling includes all existing urban development and projected growth for the next 30 years. Modelling for Putāruru has been completed.
- Investigate identified inconsistencies in asset information.
- Prioritising which asset catchment areas need to be addressed first, based on level of service needs.
- Investigate new technologies to assist with data capture.
- Investigate integration of finance and asset systems
- Audit of assets to determine confidence in data accuracy.
- Maintenance costs to be collected and attributed to assets.

- Upgrade and develop the monitoring and telemetry systems to allow improved performance monitoring.

1.7 Significant Infrastructure Issues

This Strategy relates to Council's wastewater, water supply, stormwater drainage and transport infrastructure assets. The tables on the following pages summarise the significant infrastructure issues facing Council, the proposed response to those issues, and the implications of taking or not taking the action proposed by the response. In many instances, the same principal response option is capable of addressing several infrastructure issues. The proposed responses are then developed into projects to be actioned.

1.7.1 Infrastructure Strategic Issues and Decisions

Stormwater

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Develop infrastructure capacity to address identified capacity issues.	Resilience	Do nothing - Existing infrastructure not providing required level of service.	2021-2024	290,000	Rates
	Flood hazard mapping has identified areas where existing properties may be inundated. Prepare catchment management plans to protect secondary flow paths. Develop a programme of work to address any identified capacity shortfalls.	Resilience	Do nothing – Failure to protect secondary flow paths will increase risk of inundation to existing development. In the identified flood hazard areas, the stormwater system relies on secondary and overland flow paths to drain water from properties.	2021 -2024	500,000	Rates
District wide	Aging Infrastructure – Implement stormwater pipe condition assessment programme. Implement prioritised renewal programme.	Renewals	Do nothing – Increased risk of network failures resulting in flooding of property.	Annually, 2021 - 2051	62,000	Depreciation reserves

Wastewater

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Tokoroa	Renew resource consent for WWTP and upgrade treatment plant to comply with resource consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2021-2024	200,000	Rates
	WWTP- Sludge treatment upgrade. Enabling works to cope with additional solids from Total Nitrogen and Total Phosphorous upgrades. Meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements. Not meeting consent conditions	2021-2024	9,500,000	Rates
	WWTP- Wetlands to be constructed to meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2021-2024	2,500,000	Rates
	WWTP – Total Phosphorous upgrade to meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2032-2034	500,000	Rates
	WWTP- Total Nitrogen upgrade to meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2022	5,000,000	Rates

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Develop reticulation infrastructure to meet future growth needs and meet level of service.	Relationships, Resilience, Growth	Do nothing - Unable to determine if existing infrastructure has capacity to service new development.	2021 - 2045	7,757,000	Development Contributions, Rates
	WWTP upgrade to comply with resource consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2024- 2026	8,130,000	Rates
	WWTP – Wetlands to be constructed to meet new consent conditions	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2021	1,080,000	Rates
	WWTP - Total Nitrogen upgrade	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2026	7,418,000	Rates
	WWTP - Total Phosphorous upgrade	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2040	225,000	Rates
Tirau	WWTP upgrade - wetlands	Resilience, Compliance, Growth	Do nothing - Levels of service not met, non-compliance with resource consent	2021	826,000	Rates
	WWTP Total Nitrogen & Total Phosphorous upgrade	Resilience, Compliance, Growth	Do nothing - Levels of service not met, non-compliance with resource consent	2045	2,857,000	Rates
District wide	Aging network infrastructure – Implement wastewater pipe network and pump stations condition assessment programme. Implement prioritised renewal programme.	Renewals	Do nothing - No renewals resulting in potential for levels of service not met. Potential for non-compliance.	Annually, 2021 - 2051	824,000	Depreciation reserves

Water Supply

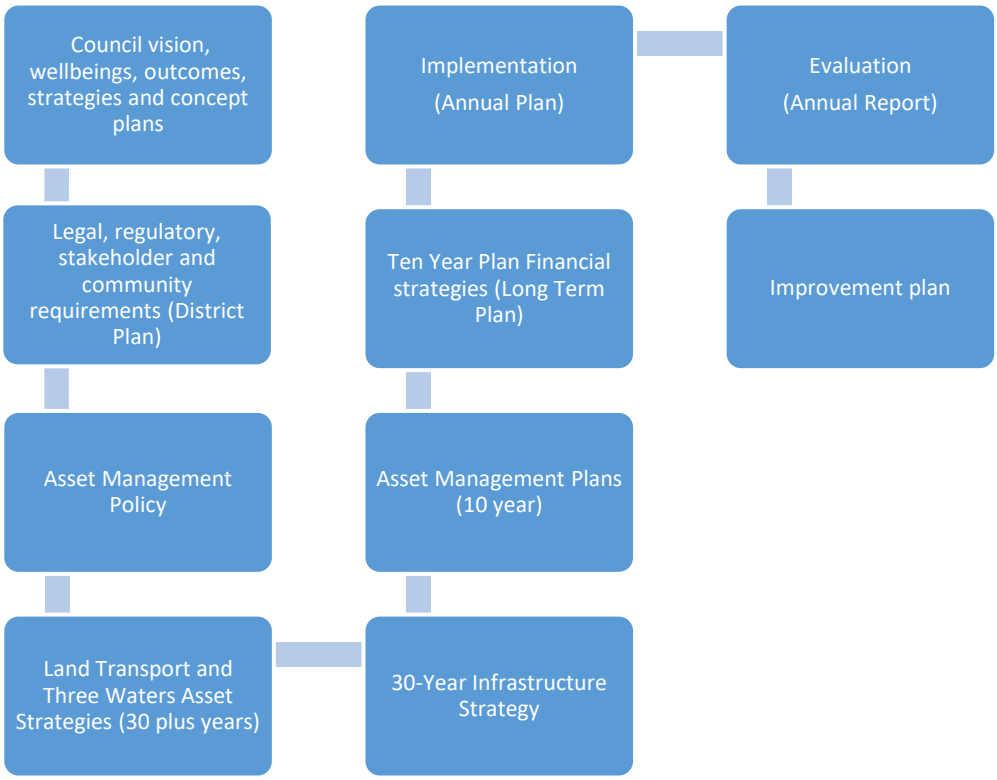
Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Replacement of Te Waihou pipeline to allow for increased demand.	Resilience, Growth	Do nothing- Unable to service increased demand for water	2035	3,000,000	Development Contributions Rates
District wide	Replacement of aging water supply network infrastructure, reservoirs, communication and electrical assets. Implement water network condition assessment programme. Implement prioritised replacement programme.	Renewals	A delayed replacement programme will have increasing risk of service outages as more asset replacements become overdue. Do nothing - No renewal resulting in potential for levels of service not met.	Regular annual replacement programme over next 30 years. Annually, 2021 - 2051	923,000	Depreciation Reserves

Land Transport

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Access road from	Growth	Do nothing – Site Development cannot proceed	2021-2025	1,200,000	Development Contributions
District wide	Road network renewals. Pavement renewal and resurfacing	Renewal	Do nothing - No renewal resulting in no allowance for growth and potential for levels of service not met.	Annually 2021 - 2051	2,549,000	Rates
	Safety Improvements	Compliance	Do nothing - No improvement to safety of users using road network	Annually 2021 - 2051	410,000	Rates
	Cycling/ walking	Relationship	Do nothing – No improvement of transport mode choice	Annually 2021 - 2051	80,000	Rates

2. Asset Management Objectives / Framework

The framework below outlines the asset management objectives of Council and how the asset management system will enable those objectives to be achieved.



This approach meets legislative requirements and supports good asset management practice.

Council's vision for the district along with community, stakeholder and legislative requirements; and the asset management policy informs the Land Transport Strategy and the Three Waters Strategy. The outcomes, strategies and objectives within the asset strategies are compiled into the 30-year Infrastructure Strategy.

The 30-year Infrastructure Strategy identifies the issues that will arise, or are likely to arise, over the next 30 years in terms of delivery of services. The strategic issues identified in the 30-year Infrastructure Strategy are analysed and scoped before being added to the Asset Management Plans.

The first ten years of the expenditure programme are consulted on with the community as part of the Long Term Plan (LTP) process. The LTP sets out how Council will balance competing demands from the community while delivering agreed levels of service.

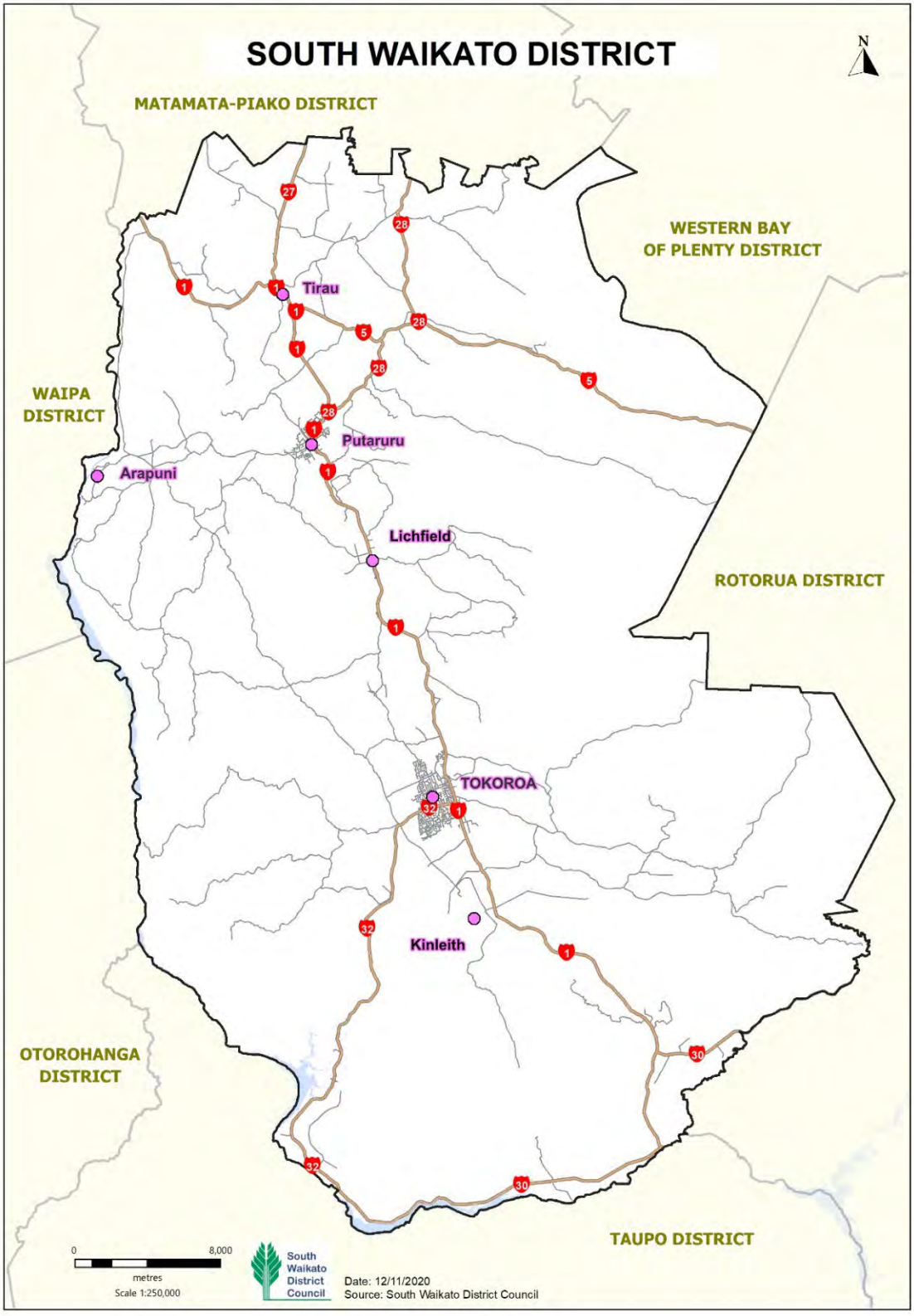
For each year of the LTP an Annual Plan is prepared that includes any issues that have arisen since the preparation of the LTP. Any significant changes from the LTP are consulted on with the community.

At the completion of each year an Annual Report is prepared which details Council's delivery of services. Opportunities to improve our performance in the delivery of services to the community are detailed in the improvement plan.

3. Strategic Context

3.1 Location

The district is wholly within the Waikato Region.



Tokoroa is the largest township in the South Waikato District. Putāruru is located 20km to the north of Tokoroa, with Tīrau at the northern end of the district. Smaller settlements include Arapuni, and Lichfield. Kinleith is a large wood processing complex.

3.2 Physical Context

The geology of the South Waikato District reflects major historic volcanic events in the Taupo, Rotorua and Tīrau zones. The geology is influenced by the action of the Waikato River and other waterways.

The temperate climate provides an annual rainfall of approximately 1,500mm and the prevailing wind is from the south west. The Kaimai and Mamaku ranges to the east south east and the significant area of forestry around Tokoroa and in the southern part of the district have an influence on weather patterns and air temperature.

Land Transport

The total roading network consists of local roads, state highways, private (mainly forestry) roads and unformed (paper) roads. In addition to the carriageway, the roading infrastructure also includes bridges and large culverts, signs and road marking, footpaths, street lighting, drainage, railings and carparks.

The district is traversed by State Highways 1, 5, 27, 28, 30 and 32 that have a significant bearing on the traffic that travels through the district and the use made of local roads. Council exercises its interest in the operation and management of state highways directly through close liaison with Waka Kotahi - NZTA and indirectly through input to the Regional Land Transport Programme through the Regional Land Transport Committee.

Three Waters

Stormwater collection and disposal, wastewater collection and treatment, water supply networks and treatment service the communities located in Tokoroa, Putāruru, Tīrau and Arapuni. Water supply is also provided to dwellings in Lichfield and Athol.

3.3 Hazards

Industrial and Road Hazards

Our district has two registered major hazard facilities. The first being the Oji Fibre Solutions (NZ) Limited operated Kinleith Mill which, during its manufacturing processes uses a large amount of chemicals and is the only chlorine manufacturing facility in New Zealand. The second is the Fonterra Limited dairy factory at Tīrau, which manufactures ethanol for commercial use.

Forestry is another major industry within our district that presents as a significant hazard with the potential for rural and forest fires, especially with the change in climate. This has been evident in other areas of New Zealand and around the world. It is not only the forestry industries that are at risk of fires but also our native bush and biodiversity.

Our district is serviced by several state highways and our local road network. Unfortunately, traffic accidents do occur. Following is a table of the number of accidents causing fatalities or serious harm, from 2015 to June 2020.

Accident Result	2015	2016	2017	2018	2019	June 2020
Fatal	9	4	8	5	7	3
Serious harm	12	11	23	29	20	8

Natural Hazards

The South Waikato is located between 100m and 350m above sea level and is contoured to form a gully through the middle of the district. This encourages a progressive flow of water from *maunga* (mountain) to *moana* (sea). Although increased sporadic rainfall is predicted and increased westerly

winds, the natural contour of the land positions the district in a favourable location to build resilience for a natural weather disaster.

The district does have to consider the secondary impact of natural disasters as our perceived safe haven can become an ideal location for resettlement of communities from surrounding districts that may be impacted by coastal erosion, volcanic activity, geothermal activity or flooding. Our district does have to be aware of the effect that our decision-making has on surrounding districts.

Floods

Recent flood modelling work in Putāruru has identified some properties may be impacted by 100-year floods. Council is investing in improved stormwater management systems in the township to mitigate issues from future development. Council has mapped out the known flooding areas and funding is in place to address these issues. Flood modelling work is underway to assess flood risk in the Tokoroa and Tīrau townships. Within Tokoroa the SH1, Leith place intersection and Swanston Street was upgraded in 2019 to mitigate regular flooding on State Highway One. This was a joint venture between Council and NZTA.

Tsunami

Our district is fortunate to be located inland and is unlikely to incur the physical impacts caused by a tsunami. However, our district is a suitable place for recovery or resettlement for communities that have been impacted by a tsunami. This scenario could put added pressure on our infrastructure, housing stock and social services. It is important that our district plans for such an event and that we are aware of recovery plans to accommodate coastal communities following a tsunami.

Earthquakes

Our district has one fault line within it, the Kerepehi Fault located at the northern end of the district. The Taupo Volcanic Zone is located immediately east of the district and is an area of active faulting and geothermal activity. We are likely to experience some level of earth shaking in our district due to movements on fault lines within and outside our district.

Council will continue to suvey buildings within the district to monitor building earthquake resilience and to ensure compliance with the Building Act 2004.

3.4 Population Projections

Census results show that the population in the South Waikato declined since it was created in 1989 through to 2013. Since the 2013 census the district has experienced growth in population with annual population growth recorded.

The population trends show that there is a demand for growth related infrastructure at the present time. The other trend that has emerged is that the average age of our residents is increasing with the proportion over 60 years of age increasing significantly. This will have infrastructure implications as the needs and requirements change for the community. Ultimately this could lead to a change in the community's level of service expectations that will be delivered by Council.

Population projections have been researched by Natalie Jackson Demographics Ltd for low, medium and high growth projections. Council has adopted the medium growth projection for its forward planning. Under this scenario, it is assumed that the "urban areas" will experience the following annual population growth:

- Tokoroa 0.3%
- Putāruru 1.0%
- Tīrau 1.0%
- Arapuni 1.0%

3.5 Infrastructure context

Over the last ten years, Council's strategy focussed on improving the condition of core infrastructure assets. In the water supply and wastewater activity areas, improvements to the infrastructure have been undertaken in order to meet resource consent conditions, drinking water standards and other legislative requirements. These infrastructure improvements support public health outcomes and achieve improved environmental outcomes.

While these improvements have been carried out, Council has also taken a prudent approach to financial management.

The demographic trend supports Council's decision to adopt an approach which involves ongoing improvements to meet changing regulatory requirements and maintaining the infrastructure to meet service delivery expectations.

In the last ten years Council has invested in capital projects in the four activities covered by this Strategy.

Some of the key projects completed in this period were:

- Refurbishment of the Lake Moananui dam.
- Disinfection upgrades to drinking water supplies.
- Tokoroa Wastewater Treatment Plant upgrades (drum filter, centrifuge, gas flare and digester).
- Road safety improvements (realignments, speed reduction and intersection improvement).
- Footpath and mobility crossing improvements.
- Establishment of public transport services.
- LED street lighting installed.
- Modelling of three waters infrastructure for capacity to support growth.

This Council and its predecessors have been involved in the provision of core infrastructure since the mid-twentieth century, providing services to residents in the district. These services have been historically provided by Council and future investment projections are made on the assumption that Council will continue to provide these services. Therefore, future investment is assessed to meet environmental requirements of resource consents, health standards, directives from Central Government on land transport and other legislative requirements.

Growth is forecast at higher levels in Putāruru, Tīrau and Arapuni but there is still growth forecasted in Tokoroa. The ability for Putāruru's infrastructure to support growth has been assessed. Areas where capacity needs to be increased to support greater demand for services have been identified and projects scoped to provide for the forecasted demand. These projects are detailed in section 8.

The potential to service growth in Tīrau and Tokoroa is currently being assessed. Areas where capacity needs to be increased have been identified and projects will be scoped.

4. National and Regional Context

4.1 Three Waters

Council is required to give effect to ten pieces of legislation and other guidance for drinking water supplies, wastewater and stormwater infrastructure:

4.1.1 Settlement Acts

Settlement Acts with iwi are relevant to the management of the three waters within the South Waikato. These include:

- Affiliate Te Arawa Iwi and Hapu Claim Settlement Act 2008.
- Raukawa Claims Settlement Act 2014.

- Ngāti Koroki Kahukura Claims Settlement Act 2014.
- Ngāti Hauā Claims Settlement Act 2014.

Due to the Waikato River traversing the district, these Acts are also relevant:

- Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010.
- Ngāti Tūwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010.

In addition to the above, the following has relevance to Te Waihou River:

- Ngāti Hinerangi Deed of Settlement.

Each of these have specific purposes, however, common themes include the importance of the Waikato River for iwi and to restore and protect the health and wellbeing of the rivers within the region for future generations.

4.1.2 Vision and Strategy Waikato River Te Ture Whaimana o Te Awa o Waikato

The Vision for the Waikato River is:

Our vision is for a future where a healthy Waikato river sustains abundant life and prosperous communities who, in turn, are all responsible for restoring and protecting the health and wellbeing of the Waikato river, and all it embraces, for generations to come.

The Waikato River Authority was established in 2010 as the custodian of the Vision and Strategy for the Waikato River. The Authority is also the body responsible for overseeing the implementation of the clean-up of the Waikato River. Regional and district plans are required to give effect to the Vision and Strategy for the Waikato River.

4.1.3 Resource Management Act 1991 (RMA)

The purpose of the RMA is to promote the sustainable management of natural and physical resources. The RMA governs water takes from both ground and surface water sources (water supply) and discharges (wastewater and stormwater).

4.1.4 National Policy Statement for Fresh Water (NPS)

The Freshwater NPS was introduced in 2011, updated and replaced in 2014, and amended in 2017 and 2020. The NPS directs regional councils, in consultation with their communities, to set objectives for the state of freshwater bodies in their regions and to set limits on resource use to meet these objectives. There are requirements for regional councils to improve water quality and report on the achievement towards the targets every five years. The NPS is going to have a significant influence on the rules and requirements of regional plans in the future.

4.1.5 Waikato Regional Policy Statement (RPS)

Regional councils are required to produce a RPS every ten years. The RPS sets the framework for how freshwater resources throughout the region are to be managed.

4.1.6 Waikato Regional Plan

The Waikato Regional Plan (WRP) sets the rules to achieve the outcomes set in the RPS. There are rules that govern issues such as water allocation, water quality and discharges to the environment. The WRP is reviewed every ten years.

The Healthy Rivers Wai Ora Plan Change 1 (PC1) will influence how the three waters are managed with requirements to review and mitigate nutrient discharge from wastewater. The hearing for PC1 has been held and a decision made. Council has appealed the decision. At the time of writing, Council is awaiting the outcome of our appeal.

4.1.7 Waikato Freshwater Strategy

This strategy has been prepared by the Waikato Regional Council and recognises that the way that water is managed throughout the Waikato is not appropriate. It recognises that there is simply not enough water to go around for everyone who wants to use it and identifies new approaches for how water will be managed in the future.

4.1.8 Health Act 1956 and Health (Drinking Water) Amendment Act 2007

The Health Act 1956 and subsequent Amendment Act are applicable to water supply in the region. These set out the requirements for the Drinking-Water Standards of New Zealand and also the duties that drinking water suppliers are required to adhere to.

4.1.9 Health and Safety at Work Act 2015

The Health and Safety at Work Act 2015 and related regulations require that workers and others are given the highest level of protection from workplace health and safety risks, so far as is reasonably practicable. This includes risks to both physical and mental health.

4.1.10 Water Services reforms

The Water Services Bill before Parliament is to implement the Government's decision to comprehensively reform the drinking water regulatory system, with targeted reforms to improve the regulation and performance of wastewater and stormwater networks.

Recent legislation, Taumata Arowai – the Water Services Regulator Act 2020 establishes Taumata Arowai, the water services regulator and sets out Taumata Arowai's objectives, general functions, and operating principles.

On 8 July 2020, the Government announced a funding package of $761 million to provide immediate post-COVID-19 stimulus to local authorities to maintain and improve three waters infrastructure, support reform of local government water services delivery arrangements, and support the operation of Taumata Arowai. Council has entered into a Memorandum of Understanding with Government receiving $3.88 million to improve water services.

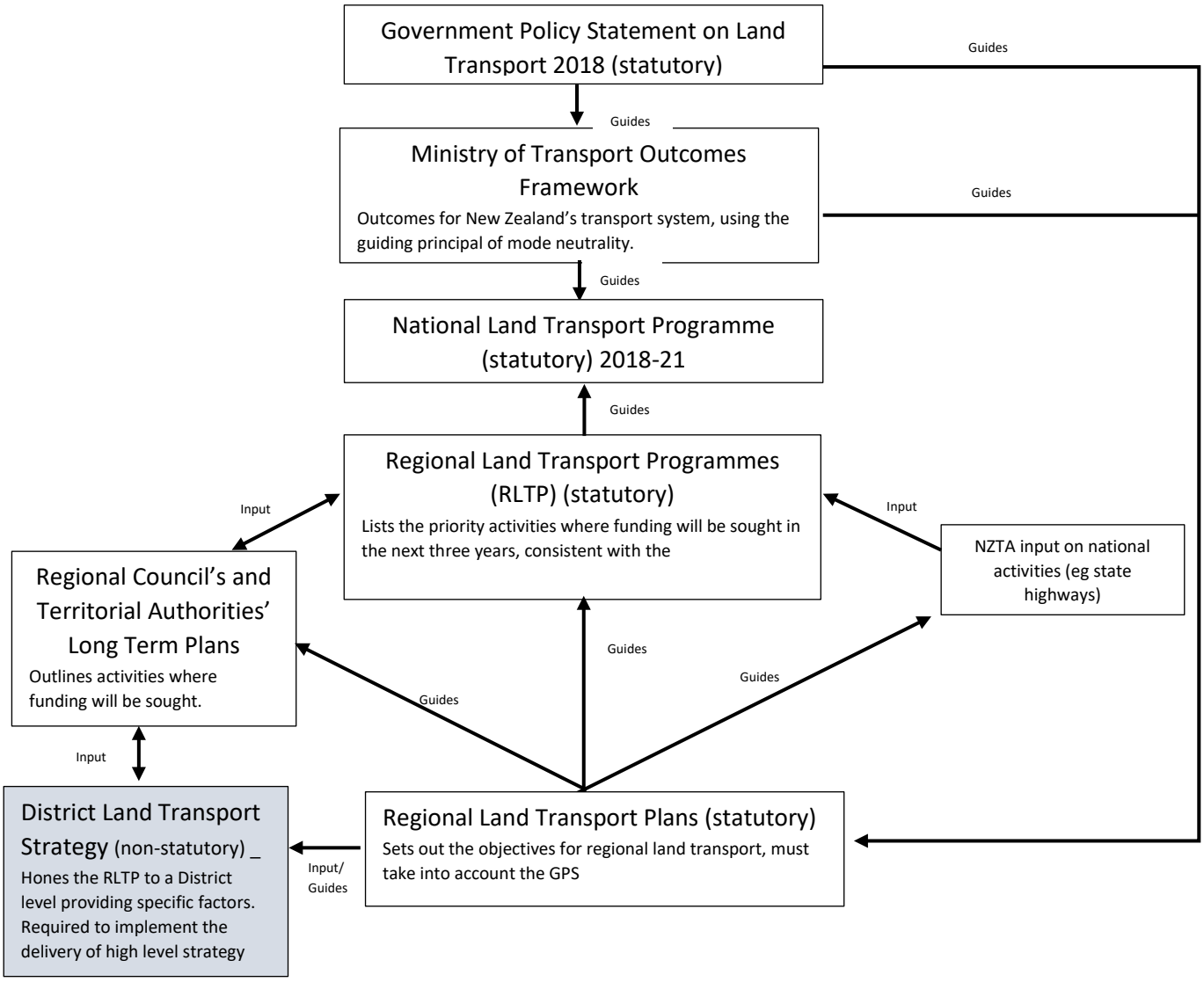
4.2 Land Transport

When working with land transport infrastructure, Council is required to give effect to the following:

- Government Policy Statement on Land Transport 2021 (Final version to be released and effective from July 2021)
- National Land Transport Programme
- Waikato Regional Land Transport Plan
- District Land Transport Strategy

4.2.1 Transport Documentation Hierarchy

The figure below provides an overview of how the different key national, regional and local documents interrelate with each other. The District Land Transport Strategy (DLTS) has been highlighted.



Policy and strategy context for the South Waikato District Land Transport Strategy

Details of the programmes plans and interrelationships with the District Land Transport Strategy are provided in Appendix Six.

5. Vision and Community Outcomes

The vision for LTP 2021-31 is ***'Healthy people thriving in a safe, vibrant and sustainable community'***

Community Outcomes

Community outcomes are what Council aims to achieve in meeting the current and future needs of communities for good quality local infrastructure, local public services, and performance of regulatory functions.

The outcomes have a role to play in strategic direction setting and help in prioritising improvements to activities and services provided by Council.

Council has identified three outcomes, and each have implications for the provision and maintenance of infrastructure for the district.

RESILIENCE Kia Eke Panuku

A resilient district with good infrastructure and services, a sound financial position, rates affordability and a healthy environment that has the ability to anticipate, resist, respond to and recover from significant change or events.

GROWTH Te Tupunga Ohanga

Activities and strategies that facilitate sustainable economic growth and lift community pride.

RELATIONSHIPS Ngā Hononga

Strong relationships with iwi and Māori, Pacific Peoples, community and business groups that can achieve growth and a resilient community.

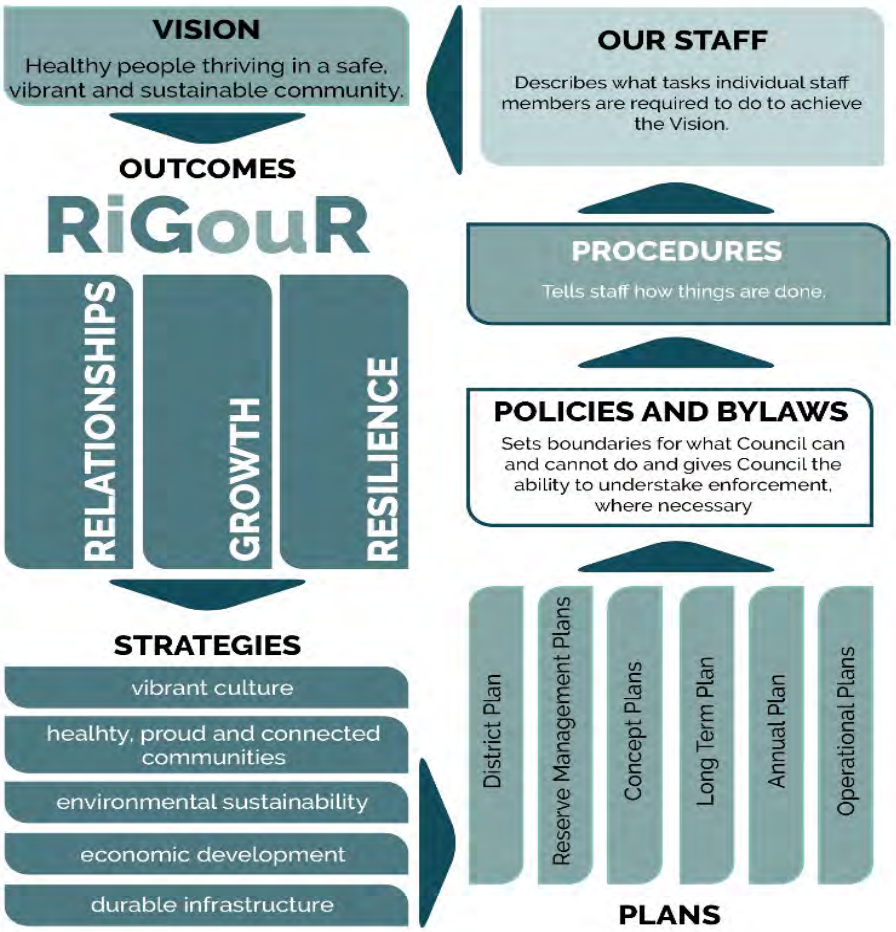
Key strategic focus areas

The following focus areas were presented to Council to consider how these issues could be developed into strategies that would achieve the outcomes:

- Caring for our environment.
- Community engagement and partnership.
- Connecting our Communities.
- Iwi partnerships and Māori engagement.
- Recognise/understand our diverse cultures.
- A customer centred approach (internally and externally) that provides a balanced view of expectations.
- Creating a safe community.
- Prudent financial management and rates affordability.
- Facilitate growth and economic development to support jobs and community prosperity.
- Leisure activities to support community wellness.
- A positive district perception that we are a great place to live, work and play in.
- Council infrastructure and assets that are appropriate and affordable and are ready now and for the future.
- Process improvement and innovation.
- Our Council whānau and their development, safety and wellbeing.

The 15 key focus areas have been consolidated into the following five key strategies:

- Vibrant culture.
- Healthy, proud and connected community.
- Environmental sustainability.
- Economic development.
- Durable infrastructure.



6. Infrastructure Challenges

To deliver Council outcomes and implement the strategies Council needs to focus its infrastructure investments.

The following challenges are the most important infrastructure matters for Council to address:

- Renewals – managing the replacement of existing assets by improving the information available to better informed decision making.
- Population change – responding to an increase (or decline) in demand for services.
- Resilience – planning for service disruptions.
- Compliance – maintaining or improving public health outcomes, improving environmental outcomes and providing a safe transport system.
- Levels of service – maintaining sustainable delivery of existing levels of service and managing expectations for improved levels of service.
- Recovery – responding to effects of the COVID-19 pandemic and planning for future pandemics.
- Climate Change – planning for climate change.
- Critical Assets – proactive maintenance and renewal programme for critical assets.
- Asset Management – improving asset management practices.

6.1 Renewals

Infrastructure assets have a finite life. They require replacement when they get to the point where they no longer provide the required level of service, or the risk of them failing is unacceptable. Council plans for the renewal and replacement of assets. Accurate information on asset condition and the performance of those assets is essential for Council to make informed decisions about how the infrastructure assets in the district should be managed. Council has a mandate to maximise benefits from investments utilising ratepayer money and to be financially prudent.

Our Strategic Outcome	***Our Goals***	***Our Response***
Sufficient and accurate information to make informed decisions.	We will plan for and manage the maintenance and upgrading of Council's land transport and three waters infrastructure through effective monitoring of assets.	We will collect, store and manage three waters asset data (asset condition, age etc) in accordance with best practice. We will collect and manage land transport asset data.
	We will have a high level of knowledge of discharges from wastewater and stormwater sources.	We will monitor the discharges from Council's three waters infrastructure, in particular those from WWTPs.
	We will maintain existing assets, improving resilience through sound asset management.	We will utilise asset condition and monitoring data to make informed decisions that are financially prudent and ensure sound stewardship of public assets.

6.2 Population Change

The South Waikato District is experiencing a period of population and commercial/industrial growth, following a long period of slow decline. Council needs to understand these changing growth patterns and plan for effective and efficient provision of three waters infrastructure to meet both current and future demands. This will be undertaken through clear planning of how and where development should occur within the district. Growth in the district is likely to involve both areas for residential development and commercial/industrial purposes.

The Putāruru growth plan has been developed and future growth planning is being undertaken for Tīrau and Tokoroa. This growth planning is important to be able to make informed decisions and to ensure that demand is met while maintaining financial prudence of investment in three waters infrastructure.

It is important that Council comprehensively plans for the location of growth to ensure infrastructure is provided in an efficient and effective way over the long term. One of Council's main roles is to determine the optimal timing and location of infrastructure to enable the district to grow. This means investing in efficient and effective infrastructure solutions at the right time and the right place.

Fragmented growth on multiple fronts leads to inefficiencies in infrastructure provision. Land is unable to be developed due to constraints by infrastructure sized only for previous individual developments resulting in Council needing to retrofit infrastructure to allow greater capacity. Infrastructure investments would also need to be duplicated across the district to allow for growth on multiple fronts.

The 2021-31 Long Term Plan and this Strategy propose to initially focus greenfield investment in strategic infrastructure to unlock the Putāruru growth cells. This investment in infrastructure is forecast in the next five years to create the necessary strategic infrastructure to enable residential development.

Our Strategic Outcome	***Our Goals***	***Our Response***
Understand and plan to meet current and future demands.	We will understand and plan for the District's growth trends and dynamics.	We will understand future industrial and residential growth aspirations and ensure future three water demand can be met, where appropriate and land transport needs are met.
	We will provide sufficient water supply, wastewater treatment, stormwater and transport infrastructure to support future growth aspirations.	We will develop a water demand profile using future growth projections that determines the 80 year water supply requirements for the district.
		We will ensure our infrastructure is capable of meeting the district's current and future water supply requirements.
		We will appropriately scale wastewater treatment upgrades and investments in the district to meet growth projections.
		We will ensure that stormwater management is undertaken in accordance with current good practice and required regulatory requirements.

Enable district economic growth and prosperity.	We will maximise economic development opportunities.	We will provide transport links at the appropriate levels of service to support economic growth and productivity.
		We will work with partners to monitor infrastructure, identify upgrades and determine funding mechanisms.
		We will provide better access to markets.
		We will promote the district for industrial and commercial development opportunities.
Provide infrastructure to support and promote land use change and ongoing population growth.	We will protect key freight and tourism corridors.	We will maintain and improve existing parts of the transport system to standards appropriate for their current and planned future use.
		We will plan for and provide better access to markets, employment and business areas.

6.3 Resilience

In general, a pragmatic approach is taken to risk management in individual Asset Management Plans. Identified risk events are grouped into:

- Natural events, where there is no real control over the timing or extent of the event, although probabilities may be understood, eg floods, lightning strikes, earthquakes.
- External impacts, where other service providers are not providing services which impact on the organisation or individuals, eg power supply failures, material supply failures and pandemics.
- Physical failure risks, where condition and/ or performance of the asset or third party damage could lead to failure.
- Operational risks, where maintenance and or management of the asset or asset management activities may impact adversely on the asset.

The main natural hazards potentially impacting on Council's infrastructure assets are volcanic eruption, earthquake and flooding. Resilience is imperative to ensure that the provision of three waters infrastructure will appropriately be able to respond to demands placed on it, both in terms of growth and the ability of the District to be able to respond to natural disasters.

Our Strategic Outcome	***Our Goals***	***Our Response***
Minimise disruption to services.	We will take resilience into account when planning for three waters infrastructure and transport.	We will plan for and implement resilience considerations when considering three waters and land transport infrastructure works.
		We will protect the function of key freight and tourism and transport corridors.

		We will determine the level of service required during incidents and major event, including diversion routes.
Route safety, resilience reliability and accessibility are enhanced	We will enable transport choice and access	We will support different modes of transport in urban areas.
Provide and plan for sustainability	We will protect or enhance the environment	We will work with other key industry partners to capture opportunities that emerging technologies provide for improving the transport system.

6.4 Compliance

Three Waters

We recognise that regulatory and legislative requirements are ever changing, and that Council needs to be able to respond to these changes with regard to the provision of three waters infrastructure.

Public health protection is, first and foremost, a fundamental requirement of Council for water supply. Council is a drinking-water supplier and under the Health Act 1956, councils are required to ensure that they: "…improve, promote and protect public health within its district." (Health Act, Section 23)

Council operates four urban and two rural water supplies. This includes ten reservoirs, ten bore water pumps and 228 km of pipes. In order to ensure regulatory compliance, Council must have adequate and sufficient monitoring information and asset data.

In regard to drinking water, significant changes (including those resulting from the Havelock North inquiry) have changed the regulatory environment. This has influenced the level of treatment and monitoring required for reticulated water supplies to residents within South Waikato District. Reform of three water services is ongoing and further monitoring changes are expected in the near future.

Further, Council must be aware of and responsive to regulatory change and the implications that this may have for the provision and management of the three waters in the District. Changes such as Healthy Rivers/Wai Ora (Waikato Regional Council Plan Change 1) will have implications for the way in which discharges from both wastewater and stormwater sources are required to be managed. Council needs to be able to plan for and implement changes to manage discharges from wastewater and stormwater sources to the environment. It is acknowledged that more stringent guidelines and requirements are likely to be implemented in the future, so Council needs to be able to adapt and respond to these changes.

As with service levels, public health and environmental outcomes are largely dominated by national and regional regulatory considerations. Recent upgrades of infrastructure assets have been to address issues regarding public health and environmental protection. Council's long term approach is to maintain and improve its infrastructural assets as required to gain compliance with national and regional standards.

Land Transport

We are committed to enhancing the safety, reliability and accessibility of our transport system. As a priority we will be progressing road safety initiatives, working collaboratively with key stakeholders. Council will work with regional and national partners to implement speed management that is safe, legible and appropriately consistent with adjacent district's networks and national speed management initiatives.

Our Strategic Outcome	*Our Goals*	*Our Response*
Fully compliant with relevant legislative requirements.	We are committed to minimising the health risk posed by Council water supply.	We will comply with Drinking Water Standards of New Zealand and Health (Drinking Water) Amendment Act 2007 and any subsequent amendments.
		We endorse and will implement the six key principles of drinking water safety recommended by the Havelock North inquiry.
	We will seek to ensure discharges from wastewater treatment plants and stormwater sources are appropriately managed.	We will plan for and implement required upgrades to meet increased expectations in the quality of final systems discharges as agreed through resource consent processes.
	We will be aware of the development of regulatory and legislative change.	We will be actively involved and provide feedback on the development of regulatory and legislative change that affects three waters in our district.
		We will comply with and implement requirements from legislative change.
Route safety, Resilience reliability and accessibility are enhanced.	We will provide a safe transport system	We will provide safe, consistent road environments throughout the district.
		We will work with partners to deliver intersection rationalisation and safety improvements.
		We will participate and provide leadership in safety, including speed management, education and enforcement.
		We will determine the level of service required during incidents and major events, including diversion routes.
		We will work with partners to provide a resilient land transport system.
		We will provide for changes in traffic volumes along local roads as a result of tourism

		and provide safe and appropriate parking facilities.
		We will create a safe town centre environment in collaboration with Waka Kotahi.

6.5 Levels of Service

Three Waters

Council seeks to ensure that the community is informed, with an understanding of what needs to be done, where growth is planned and how the provision of infrastructure is planned to meet that growth. Three waters infrastructure can be expensive, and it is important that communities understand the requirement and reasons for investment, given that ratepayers will be using it and contributing to funding it. Communities will have the chance to input into the plans for infrastructure in the district through the Long Term Plan and Annual Plan processes.

Levels of service for three waters are primarily driven by regulatory and technical considerations. Generally, service levels have been improved in recent times in alignment with those considerations and are expected to be maintained over the Strategy period.

Land Transport

Council needs to provide a transport system that enhances economic growth, social and environmental wellbeing while promoting safety, resilience and flexibility. Our focus will be on mode neutrality, growing public transport and active mode share, particularly for the transport disadvantaged.

On 31 May 2021 Waka Kotahi officially advised Council to reduce their 3 year subsidised work maintenance programme from $22,640,000 to $20,000,000. This is for the period 2021/22 to 2023/24. The changes made that influence levels of service include the removal of new footpath extensions, maintaining our current level of service for roadside vegetation control, and a reduction of our pavement rehabilitation programme by approximately one third. This essentially is an approach to “maintain what we have” with the lowest level of risk to the network.

Reducing our pavement rehabilitation programme will be the highest risk item where staff will have to adopt a holding strategy on sites that have been deferred. This might include a “sacrificial” surfacing treatment in an attempt to slow down the rate of failure until Council is able to undertake the necessary road strengthening work. Council has received many service requests around the standard of vegetation control so an additional allowance was made to lift this level of service. This has now been removed, following Waka Kotahi’s request to reduce our programme, but is considered to be a low risk item as it will only effect the aesthetics of the road corridor in the rural area. Vegetation control that effects road safety will be undertaken.

Our Strategic Outcome	***Our Goals***	***Our Response***
Have access to adequate (capability/capacity) resources to deliver service	We will ensure that the right people are tasked with delivering the three waters.	We will ensure that appropriate resources are in place to deliver three waters and transport services in the District, noting that at times the volume and type of work may require expertise and capacity that is beyond that held in-house.

		We will look to grow local resources to fill requirements for delivering three waters services where appropriate.
		We will look into opportunities to collaborate and partner with other local authorities.
Enhance travel through appropriate transport mode choice and better connectivity	We will enable transport choice and improved access.	We will develop a holistic district approach in conjunction with Waikato Regional Council and other partners for enhanced public transport and active transport mode share.
		We will explore opportunities to improve the mobility of socially disadvantaged communities, including implementation of technology solutions to support transport needs.
Contribute to improved health and wellbeing for local communities	We will provide increased access to economic and social opportunities.	We will grow public transport and active transport mode share.

6.6 Recovery

The local economy was impacted by COVID-19 from the end of January 2020, with massively reduced demand from the Chinese economy for logs (the forestry industry directly supports over 20% of jobs/GDP and 39% export earnings). This impacted on employment both direct and indirect.

In the post COVID-19 environment, initiatives are being developed to aid economic recovery. These initiatives include the built environment. Land transport system initiatives will be driven from national, regional and local levels. Three waters initiatives will be driven at a local level. Our infrastructure strategic outcomes will need to remain cognisant of these factors as they emerge.

6.6.1 Council application to Crown infrastructure Partners (CIP) funding

Council, in conjunction with the South Waikato Investment Fund Trust (SWIFT) and other key stakeholders lobbied Government for co-investment into the local economy, accelerated Provincial Growth Fund (PGF) applications and identified shovel ready infrastructure projects for consideration by Crown Infrastructure Partners (CIP).

- SWDC submitted four projects to the CIP in response to the Shovel Ready Infrastructure Initiative from Government
- SWDC identified a project for consideration by the PGF/Provincial Development Unit for infrastructure investment funding. SWIFT also made applications for a number of projects to CIP/PGF.
- In total Council and SWIFT submitted six projects ready for co-investment with Government totalling $88m.

South Waikato Crown Infrastructure Partners (CIP) Funding - Potential Project												
Project Details			Impact (H/M/L)			Readiness			Project Value			
Name	Location	Project Owner	Economic	Community	Employment	Spade Ready (Date)	Key Constraints	Fast Track - When	Total $/m	Already Funded $/m	Funding Gap - Govt Ask $/m	Other Project Links
Infrastructure development to support residential and business development in Putāruru	South Waikato	SWDC	H	H	H	1/07/2020	1. Contractor capacity - Labour / plant. 2. Materials availabiliy. 3. Current Procurement Process/Timescale	Jul-20	16.5	3.8	12.7	
Tīrau Domain Accessibility Enablement Project	South Waikato	SWDC	L	H	M	1/10/2020	1. Contractor Capacity - Labour / plant	Sep-20	3.6	1	2.6	
Tokoroa Indoor Heated Swimming Pool safety project	South Waikato	SWDC	M	H	L	1/10/2020	1. Specialist Contractor Availability. 2. Current Procurement Proces/Timescale. 3 Building Consent timescales	Sep-20	7	0.8	6.2	
Wastewater Treatment, Digestor & Wetlands creation for Healthy Rivers	South Waikato	SWDC	H	H	H	1/07/2020	1. Accelerate Resource Consents through Waikato Regional Council under RMA. 2. Major earthworks weather dependent (Spring start). 3. Engineering capacity	Jul-20	38.1	12.6	25.5	
Trades Training Centre & Digital Hub ** (Note PGF & CIP applications)	South Waikato	SWIFT	H	H	M	1/11/2020	1. Contractor capacity - Labour / plant. 2. Materials availabiliy.	Oct-20	13.9	3.1	10.8	Maraetai Road Intermodal Business Park (MRIBP)
Maraetai Road Intermodal Business Park (MRIBP) *** (Note PGF Application)	South Waikato	SWDC	H	M	M	1/08/2020	1. Contractor capacity - Labour / plant	Jul-20	9.1	5.27	3.83	Trades Training Centre & Digital Hub
Total Projects 6									**$88.20**	**$26.57**	**$61.63**	

Note: The programming of the above projects is over the next 10 years which will be altered if their CIP funding application is successful.

Council and SWIFT were successful with one application. The tertiary training project, “Trades Training Centre and Digital Hub was successful and will receive $10.8 million funding from central government.

The application for Maraetai Road Intermodal Business Park (MRIBP) was not successful. This application has been resubmitted for further consideration in the next funding round.

6.6.2 Crown Infrastructure Partners Shovel Ready Projects

As outlined previously, the projects that Council has applied for funding assistance will include:

- Infrastructure development to support residential and business development in Putāruru, specifically the three waters infrastructure to deliver growth identified in the Putāruru Concept Plan.
- Tīrau Domain accessibility enablement project to ensure safe and universal access to the domain facilities for Tīrau and wider community.
- Swimming pool network upgrades and safety improvements to enhance user experience at the district's pool facilities, without increasing user charges.
- Wastewater treatment plant upgrades and wetland development throughout the district to deliver significant improvements to water quality in the upper Waikato and Waihou River catchment, while maintaining the values held by hapu, iwi and Māori.
- Maraetai Road Intermodal Business Park (MRIBP) to develop and deliver an industrial zoned park adjoining the Tokoroa Road Rail Terminal.

The financial assistance from central government is critical to the South Waikato's continued success as we work together to pull through the current pandemic crisis.

6.6.3 Built Environment

COVID-19 has not had a direct effect on the built environment, but there could be improvements to the built environment that could create short term and long term employment, housing and community infrastructure.

Recognition of supply chain and contractor / supplier limitations around the delivery of goods and services and their timeframes will be extremely important in the future. Resources will be limited and there will be extreme competition for some construction and related sector services as a large amount of local and central government projects are launched.

6.7 Climate change

The Ministry for the Environment has identified the three major impacts associated with climate change are floods, coastal hazards and droughts. The effects of climate change can be felt by changes in long term averages and in the frequency and intensity of extreme events.

Increased frequency and intensity of extreme rainfall events will result in the drainage systems being at capacity more often, resulting in secondary flow paths been utilised more often. Flooding that may occur during an extreme event is projected to extend to more properties.

A complete catchment assessment has been carried out for Tokoroa, Putāruru and Tīrau. These catchment assessments allow for climate change projections and inform Council of the potential flooding hazards in the existing urban areas and in future areas of urban development. The information obtained is being used to identify and prioritise drainage projects.

Our Strategic Outcome	***Our Goals***	***Our Response***
Provide and plan for climate change	We will protect our community.	We will work with other key industry partners to capture opportunities that emerging technologies provide for to improve the transport system.
		We will take into account the effects of climate change in the planning and design of new infrastructure.

6.8 Critical assets

Critical assets are those that have the highest consequence of failure. Assessing the criticality of our assets allows the programmes for conditions assessments, maintenance and replacement to be prioritised based on that criticality. In an emergency the information will also assist in re-establishing services.

Council's critical assets are those that provide drinking water, wastewater disposal and allow access for emergency services and lifelines.

The criticality of infrastructure is part of the considerations taken into account when planning the renewal of assets. As part of the 2021- 2031 LTP the strategy for the renewals, planning and budgeting of our wastewater and water supply has taken into consideration the criticality as well as age, performance, maintenance history, hydraulic modelling results and growth projections.

The criticality of our assets has also been assessed taking into consideration cultural, economic environmental, and health impacts. The criticality of our pipe networks has been assessed and are reported in our AMPs and in our asset management system.

All of our water supply and wastewater plant assets are considered critical as failure of these components could result in significant impacts to our community or the environment.

Council has installed systems to mitigate the risk, such as alarms at pumping stations, wastewater treatment plant and water supply headworks, treatment plants and reservoirs.

The existing criticality framework was developed and implemented in 2009. A review of the current criticality framework has been identified as an asset management improvement. When completed, the list of critical assets will be updated.

Our Strategic Outcome	***Our Goals***	***Our Response***
Critical assets remain operational	We will protect our community and the environment.	We will identify and proactively maintain our critical assets.

6.9 Levels of Service

Council has defined specific levels of service that describe what the customer will receive from a particular activity.

Key Performance Indicators (KPIs) have been developed for the purpose of monitoring and reporting by the service provider, to ensure that the service is being delivered to the defined performance level.

A service level gap exists when the reported results of service level monitoring are lower than the service level target. From this point, improvements can be developed that may involve altering the parameters of fixed assets, altering process features or reviewing the level of service.

Asset management plans document the long term approach to managing the assets to provide the agreed level of service to the community while also meeting any resource consent condition and legislative requirements. The key challenge is to provide the level of service in an efficient and effective manner that is sustainable for current and future rate payers.

Key issues that Council has to consider to achieve this objective are:

- Backlog - modelling of our networks has indicated that some parts of our three waters networks are not providing the level of service that is considered current best practice.
- Population growth – increasing demand on our services will trigger a need to upgrade the infrastructure when the existing assets can no longer provide a satisfactory level of service.
- Aging population - changes in the population can lead to changes in the levels of service desired by the community. Meeting some of those changes would require investment in new infrastructure or modification of existing infrastructure.

- Legislative compliance - changes in legislation can lead to unplanned increases in infrastructure investment to meet more stringent health or environmental standards. These will need to be met to continue to operate and provide the service.
- Consent compliance - future consent conditions are expected to have lower levels of contaminants allowed to be discharged necessitating new infrastructure to achieve compliance. These will need to be met to continue to provide the service.
- Climate change - climate change is projected to affect the provision of stormwater drainage during events and water supply during summer.

6.9.1 Current levels of service

Roading and Footpaths

Activity	Level of Service
Resealing of road and cycleways	Council maintains its sealed road surface as part of its renewal targets set by the Asset Management Plan.
Pavement (road) rehabilitation	Council's roading network allows its users to travel efficiently to their desired destinations.
General maintenance	Users of our roading network can expect their enquiries and service requests relating to the roading network to be responded to in a timely manner.
Road safety programme	Council continues to provide a safer roading network.
Footpaths	Council has a footpath network that allows its users to travel safely and easily to their desired destination.

Water Supply

Activity	Level of Service
Drinking water treatment and distribution	Council operates and maintains four urban and two rural water supplies. This includes ten reservoirs, ten bore water pumps and 228 km of pipes. We ensure that residents who are serviced by Council's water supply have high quality water available at all times, for drinking and to meet other household and business needs. Council is responsible for looking after the network and making sure all statutory requirements and environmental standards are met. (List to follow)

Wastewater

Activity	Level of Service
Wastewater collection and treatment	Council maintains about 167km of sewer pipes and 18 pumping stations that make up the district's wastewater network. Each year the wastewater network carries about 55,430 cubic metres of sewage effluent to Council's treatment plants, ensuring that sewage is treated and disposed of to comply with environmental standards.
	Residents can expect timely responses to interruptions to the wastewater reticulation system.
	Residents can expect a reticulated wastewater treatment system that is reliable and does not fail unnecessarily.
	Council operates its wastewater treatment system in an environmentally responsible manner and ensures that it complies with the conditions of the resource consents it holds with the Waikato Regional Council.

Stormwater

Activity	Level of Service
Stormwater collection	Council effectively manages stormwater and maintains 123 km of the stormwater networks so that there are no flooding events.
	The network complies with all statutory requirements and that public health and safety risks are minimised. This work includes maintaining the network and monitoring stormwater for contaminants to ensure harmful contaminants do not enter waterways.
	Residents who experience flooding can expect to have the flooding issues investigated by Council in a timely manner.
	The stormwater network is reliable.

6.9.2 Customer Satisfaction

The overall results are presented below. In previous Annual Reports, Council has compared the results from surveys taken over the years. For some of our results, a significant amount of people answered, 'don't know', for example the Croad Place Recycling Centre, because the facility isn't used by Putāruru and Tīrau residents. For this reason, 'don't knows' are excluded from the data. A number of activities have a (UoS) associated, this indicates where Users of Services have been targeted.

The table below shows customer satisfaction levels for the 2017/18, 2018/19 and 2019/20 financial years per Council activity.:

Council Activity	2018 Satisfaction Level	2019 Satisfaction Level	2020 Satisfaction Level	2020 Sample size
Overall satisfaction with Council's **Water Management**	85%	84%	80%	361

Council Activity	2018 Satisfaction Level	2019 Satisfaction Level	2020 Satisfaction Level	2020 Sample size
How well the stormwater network is maintained	75%	73%	72%	331
Ability of stormwater network to keep roads and footpaths free from flooding	71%	71%	68%	377
Ability of stormwater network to protect your property from flooding	82%	83%	79%	350
Wastewater system reliability	95%	97%	98%	275
How Council treats and disposes of wastewater	94%	96%	94%	186
Odour of the water	84%	88%	86%	314
Reliability of the water supply	98%	95%	96%	324
Taste of the water	83%	84%	81%	318
Clarity of the water	84%	88%	86%	314
Pressure of the water	90%	90%	87%	321
Overall satisfaction with Councils **Waste Management**	82%	85%	81%	368
Putāruru, Tīrau, Waotu and Okoroire recycling points	82%	82%	79%	156
The Croad Place Recycling Centre	93%	87%	87%	169
Management of loose litter and bins in and around the town	76%	78%	79%	370
The services for managing general waste	85%	82%	77%	316
Kerbside recycling services	84%	85%	78%	310
The services for managing green waste	84%	74%	76%	214
Kerbside rubbish collection	94%	93%	88%	271
Overall satisfaction with Councils **Road and footpaths**	75%	77%	71%	386
Provision of dedicated walkways/other cycleways around the South Waikato	82%	79%	74%	344
How well the urban roads are maintained	73%	76%	71%	395
Availability of footpaths/crossing points for mobility scooters/wheel chairs	79%	76%	70%	316
Adequacy of cycleways on our roads	43%	54%	43%	305
How well footpaths are maintained	76%	75%	71%	367
The safety of roads	76%	72%	70%	390
How well rural roads are maintained	66%	66%	65%	366
Overall satisfaction with Councils **Parks, Reserves and Open Spaces**	91%	93%	93%	354
Satisfaction with other parks and reserves	92%	92%	91%	345
Satisfaction with playgrounds	93%	93%	91%	275
Satisfaction with cemeteries	93%	96%	92%	251
Satisfaction with sports grounds	93%	95%	92%	301
Overall Satisfaction with Councils **Public Facilities**	91%	94%	90%	344
Satisfaction with swimming pools (UoS)	94%	93%	88%	170
Satisfaction with public toilets (UoS)	62%	69%	64%	183

Council Activity	2018 Satisfaction Level	2019 Satisfaction Level	2020 Satisfaction Level	2020 Sample size
Satisfaction with South Waikato Sport and Events Centre (UoS)	96%	98%	98%	203
Satisfaction with community halls (UoS)	91%	91%	94%	103
Satisfaction with libraries (UoS)	97%	96%	97%	219
Library opening hours (UoS)	96%	96%	95%	219
Range of books and materials available at the libraries (UoS)	94%	97%	97%	219
The library charges (UoS)	94%	90%	95%	219
The overall service delivered by the library (UoS)	99%	98%	97%	219
The way that the libraries connect with local groups (UoS)	93%	95%	96%	219
Overall Satisfaction with Councils Rates and Values (**Value for money**)	77%	75%	69%	344
Rates being fair and reasonable	71%	64%	59%	316
Fees for other services (like pool entry fees, dog registration fee, taking out a library book) being fair and reasonable	82%	82%	79%	306
The ease of making payments	94%	93%	92%	316
Overall Satisfaction with Councils **Regulatory Services**	86%	83%	80%	241
Satisfaction with animal control (UoS)	78%	81%	83%	84
Satisfaction with managing and issuing building consents (UoS)	80%	68%	69%	30
Satisfaction with managing and issuing resource consents (UoS)	71%	67%	56%	14
Satisfaction with managing liquor licensing (UoS)	66%	70%	81%	13
Satisfaction with licensing premises such as cafes, restaurants and hairdressers (UoS)	63%	78%	61%	8
Overall Satisfaction with Councils **Communication**	80%	74%	77%	377
Participation in decision making	69%	69%	68%	335
Overall Satisfaction with Councils **Reputation**	80%	78%	77%	379
Quality of services and facilities	84%	78%	76%	389
Leadership	79%	75%	74%	375
Trust	72%	67%	71%	380
Financial Management	68%	59%	62%	325
Satisfaction with making a complaint or a request for service				
How easy it was to make your enquiry or requests (UoS)	79%	83%	84%	148
How long it took to resolve the matter (UoS)	51%	50%	53%	148
The information provided being accurate (UoS)	71%	71%	65%	148
How well Council staff understood your request and how well they communicated with you (UoS)	67%	76%	73%	148
The resolution or outcome achieved (UoS)	56%	55%	55%	148

Council Activity	2018 Satisfaction Level	2019 Satisfaction Level	2020 Satisfaction Level	2020 Sample size
How would you rate Council overall for how well they handled your enquiry (UoS)	56%	60%	65%	148

7. Asset management improvement

Providing and maintaining Council's infrastructure requires good asset management practices and strategic thinking. Understanding what assets we own and what key information is required is fundamental to asset management.

Gaps in our asset knowledge of Council's infrastructure have been identified. A range of options have been considered to fill those gaps in order to allow Council to make good decisions that are fit for purpose.

7.1 Performance Gaps

Performance can be measured in terms of levels of service and performance measures, outages, demand vs capacity and cost of maintenance. Information on how well assets are performing is missing in some areas.

Collection of additional information will allow a better understanding of how our existing assets are currently performing. The information can also be used to assess how much capacity is available in our existing infrastructure to support growth.

7.2 Infrastructure requirements

A key requirement is to understand what asset data is required to effectively and efficiently manage the assets to provide the agreed levels of service to our customers. Key data required for forecasting and planning has been identified and a gap analysis of the existing data sets carried out.

The primary issues are:

- Availability of resources to collect and maintain data.
- Accessibility of assets to obtain the data.
- Availability and cost of different data collection methods.
- Collecting the data required to make informed decisions.
- Funding and prioritisation of data collection.
- Confidence in the accuracy of the data for decision making.
- Understanding the risk that we are managing.
- Understanding the needs of the organisation.
- Assess if the additional information will make a material difference to the management of the assets and outcomes.

Gaps in the management of our infrastructure assets have been identified as follows:

- Missing attribute data in our asset management system.
- Framework for deciding which assets are critical needs reviewing.
- Asset condition data to be collected on assets near end of life or have performance issues.
- Data on asset maintenance is not being captured in asset management system.
- Process of asset data capture needs review.

- Auditing of asset data.

7.3 Forward works

A detailed forward works programme for asset improvement has been identified and is attached (Appendix 1).

7.3.1 Putāruru - Stormwater and wastewater

A survey of manhole lid levels, invert depths, pipe size, bearing and direction of pipes has been undertaken during network modelling in 2019. The survey was limited to manholes where information was required to fine tune reticulation network models. The survey data has been processed and compared to the data in our GIS and asset information system. A forward works programme has been formulated to investigate and address identified inconsistencies. Additional investigations will be prioritised in asset catchment areas where level of service issues have been identified, i.e. flood hazard.

7.3.2 Putāruru Water Supply

Hydraulic modelling of the water supply in Putāruru identified issues for further investigation:

- Structural checking of reservoirs.
- Recording water flows at reservoirs.
- Areas of low pressure or flow.

7.3.3 Putāruru Flood Hazard Mapping

Flood hazard modelling for a 100 year event includes all existing urban development and identified growth planned for the next 30 years.

The following issues have been identified as requiring further investigation:

- Audit stormwater assets for missing data, accuracy and confirm locations, manhole depths and pipe diameters.
- Survey of manholes and inlets/outlets (where deemed required).

7.3.4 Tokoroa and Tīrau – stormwater, wastewater and water supply modelling

Modelling of the three waters networks is underway to establish the following:

- The extent of flood hazard during a 100 year event.
- Identifying critical manholes, inlets and outlets and checking the associated data.
- Comparing new survey data to existing data in our asset information system.
- Create a forward works programme to investigate identified inconsistencies.
- Prioritise which asset catchment areas need to be addressed first based on level of service needs, i.e. flood hazard.

7.4 Three waters maintenance

- Investigate and implement process for capturing maintenance of three waters assets in Assetfinda.
- Investigate and implement process for capturing cost of maintenance of three waters assets in Assetfinda.

7.5 Land Transport

Gaps identified in the land transport area are:

- Strengthen links between levels of service, demand, Asset Management Plans (AMPs) and the Long Term Plan (LTP).
- Demonstrate technical outcomes are being met and align with community outcomes.
- Review monitoring and reporting procedures.
- Complete asset risk assessment.
- Undertake condition inspections of critical assets.
- Develop and implement contingency plans.
- Conduct emergency response exercises.
- Optimise renewals, maintenance, new work and operations.
- Undertake financial sensitivity analysis.
- Improve knowledge of assets.
- Improve demand planning.
- Extend asset system to include all significant groups in one database.
- Review and implement new Standard Operating Procedures (SOPs) and Quality Assurance (QA) procedures.
- Review asset management resource.
- Assess the extension of the roading modelling tool.
- Update transportation strategy.
- Update utilities strategy.
- Review grant application procedures.
- Analyse effects of demographic change.
- Revaluation of land transport assets.
- Update asset plan.
- Review procurement approach.
- Review communication plan.

8. Resource consents

Council has invested in wastewater, stormwater and water supply infrastructure to improve the health and wellbeing of the community. Resource consents are required to operate these systems. The purpose of these consents is to address the impacts on the environment from the operation of the systems that have been created. The resource consents are strategically important to the continued operation of the various systems. The consents are listed in the tables below.

8.1 SWDC Wastewater Schemes

SWDC owns and operates four wastewater schemes within the district at Tokoroa, Putāruru, Tīrau and Arapuni. The largest scheme is at Tokoroa. The discharge consents for the Tokoroa and Putāruru wastewater treatment plants have recently been renewed. The Arapuni discharge consent expires in 2020 and Tīrau in 2023.

Council is currently in the process of obtaining consent renewals for Tokoroa and Arapuni plants. The Tīrau and Putāruru plants have obtained the consent renewals and we are now investigating and implementing treatment plant upgrades to meet the conditions of the new consents.

Wastewater Discharge	Scheme	Activity	Date Granted	Expiry
Consent Number				
111640	Arapuni	Discharge to Land		1Jul 2020
101034	Putāruru	Discharge to Oraka Stream	29 Jun 2020	30 Apr 2055
140124.01.01	Tīrau	Discharge to Oraka Stream	13 Aug 2020	10 Aug 2055
930603	Tokoroa	Discharge to Whakauru Stream	3 May 1995	31 Dec 2011

8.2 SWDC Water Supply Schemes

Council owns and operates six water supply schemes at Tokoroa, Putāruru, Tīrau, Arapuni, Lichfield and Athol. Higher levels of service driven by the Public Health (Drinking Water) Amendment Act 2007 and security of supply are two key issues impacting on all schemes. Consents to take water are critical to maintaining adequate, all year, water supply quantities for domestic and commercial/industrial use.

The following table summarises water supply consent expiry dates:

Water Take				
131427.01.01	Putāruru	Take from Blue Spring - Waihou	31 Jul 2014	31 Mar 2048
130334.01.01	Tokoroa	Take from two bores - Elizabeth Park	1 Dec 2013	31 Dec 2031
103937	Tīrau	Take from Oraka Spring	4 Oct 2001	30 Sep 2022
125251	Arapuni	Take from underground near Johnsons Rd	1 Apr 2013	31 Dec 2031
940284	Lichfield	Take from underground near Ngātira Rd	16 Aug 1994	1 Aug 2029
122363	Putāruru	Take from Glenshea Park	10 Jan 2013	31 Dec 2031

8.3 Stormwater discharge consents

Council has discharge consents for its stormwater networks which service the urban areas of Tokoroa, Putāruru, Tīrau and Arapuni. These all expire in 2025. We have initiated the renewal process for these consents.

Recent changes to the Regional Water Quality Plan mean there will be significant changes to the way stormwater is managed in the future. There will be an expectation that councils will design, monitor and maintain stormwater systems to a high level with the aim of improving water quality before it enters the receiving waters.

The following table summarises the stormwater consent expiry dates:

Stormwater				
105044	Tokoroa	Comprehensive discharge from urban area	18 Feb 2005	14 Feb 2025

105045	Putāruru	Comprehensive discharge from urban area	18 Feb 2005	14 Feb 2025
105047	Tīrau	Comprehensive discharge from urban area	11 Oct 2005	25 Jan 2025
125257	Arapuni	Discharge	19 Dec 2012	14 Feb 2025

8.4 Other consents

There are consents for the landfills, dams, bridges and culverts. The Tokoroa landfill closed at the end of the consented period in October 2020. The remaining landfill consents covering discharges from the closed landfills will not expire until 2034.

Consent Number	Town	Activity	Date Granted	Expiry
Landfill				
102446	Tokoroa	Municipal Waste	27 Feb 2001	31 Oct 2020
102447	Tokoroa	Landfill stormwater to tributary of Pokaiwhenua	27 Feb 2001	31 Oct 2035
102448	Tokoroa	Landfill gas to air	27 Feb 2001	31 Oct 2035
102480	Tīrau	Leachate	7 Feb 2000	15 Dec 2034
102481	Tīrau	Landfill stormwater onto land	7 Feb 2000	15 Dec 2034
102482	Tīrau	Landfill gas to air	7 Feb 2000	15 Dec 2034
102536	Tokoroa	Landfill stormwater onto land	27 Feb 2001	31 Oct 2035
102537	Tokoroa	Leachate	27 Feb 2001	31 Oct 2035
102588	Putāruru	Landfill stormwater onto land	24 May 2000	20 Apr 2035
102589	Putāruru	Landfill gas	24 May 2000	20 Apr 2035
102747	Putāruru	Leachate	24 May2000	20 Apr 2035
Dams				
123518	Tokoroa	Dam Matawara stream to create Lake Moana-Nui	30 Sep 2012	30 Sep 2045
132908.01.01	Tokoroa	Dam - Grampion St	13 Aug 2014	13 Aug 2049
132908.02.01	Putāruru	Dam A near Putāruru Intermediate School	13 Aug 2014	13 Aug 2049
Culverts				
Consent Number	**Town**	**Activity**	**Date Granted**	**Expiry**
104227	Okoroire	Replace two culverts in Tukutupere Stream and tributary - Kakahu Rd		30 Jun 2035

109838	Waotu	Replace culvert in bed of Waipa stream - Wiltsdown Rd		31 Oct 2038
109839	Waotu	Replace culvert in bed of Raparahi stream - Wiltsdown Rd		31 Oct 2038
110562	Putāruru	Install culvert and rock ramp in bed of Pokaiwhenua - Waotu Rd		10 Mar 2039
112477	Putāruru	Install twin culverts adjacent to narrow bridge over Mangakaretu Stream - Arapuni Rd		19 Apr 2040
113943	Putāruru	Install culvert in bed of Pokaiwhenua - Arapuni Rd		17 Mar 2041
Bridge				
105872	Putāruru	Construct a bridge over Waihou Stream for walkway		15 Oct 2036
107293	Putāruru	Construct 11m span bridge over Waihou Stream for walkway		26 Apr 2037
Others				
125252	Arapuni	Discharge from Water Take	1 Apr 2013	31 Mar 2031

9. Significant Infrastructure Issues

This Strategy relates to Council's wastewater, water supply, stormwater drainage and transport infrastructure assets. The tables on the following pages summarise the significant infrastructure issues facing Council, the proposed response to those issues, and the implications of taking or not taking the action proposed by the response. In many instances, the same principal response option is capable of addressing several infrastructure issues. The proposed responses are then developed into projects to be actioned.

9.1 Infrastructure Strategic Issues and Decisions

Stormwater

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Develop infrastructure capacity to address identified capacity issues.	Resilience	Do nothing - Existing infrastructure not providing required level of service.	2021-2024	290,000	Rates
	Flood hazard mapping has identified areas where existing properties may be inundated. Prepare catchment management plans to protect secondary flow paths. Develop a programme of work to address any identified capacity shortfalls.	Resilience	Do nothing – Failure to protect secondary flow paths will increase risk of inundation to existing development. In the identified flood hazard areas, the stormwater system relies on secondary and overland flow paths to drain water from properties.	2021 - 2024	500,000	Rates
District wide	Aging Infrastructure – Implement stormwater pipe condition assessment programme. Implement prioritised renewal programme.	Renewals	Do nothing – Increased risk of network failures resulting in flooding of property.	Annually, 2021 - 2051	62,000	Depreciation reserves

Wastewater

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Tokoroa	Renew resource consent for WWTP and upgrade treatment plant to comply with resource consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2021-2024	200,000	Rates
	WWTP- Sludge treatment upgrade. Enabling works to cope with additional solids from Total Nitrogen and Total Phosphorous upgrades. Meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements. Not meeting consent conditions	2021-2024	9,500,000	Rates
	WWTP- Wetlands to be constructed to meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2021-2024	2,500,000	Rates
	WWTP – Total Phosphorous upgrade to meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2032-2034	500,000	Rates
	WWTP- Total Nitrogen upgrade to meet new consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth; Levels of service not met; non-compliance with Regional Water Plan and legislative requirements.	2022	5,000,000	Rates

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Develop reticulation infrastructure to meet future growth needs and meet level of service.	Relationships, Resilience, Growth	Do nothing - Unable to determine if existing infrastructure has capacity to service new development.	2021 - 2045	7,757,000	Development Contributions, Rates
	WWTP upgrade to comply with resource consent conditions.	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2024- 2026	8,130,000	Rates
	WWTP – Wetlands to be constructed to meet new consent conditions	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2021	1,080,000	Rates
	WWTP - Total Nitrogen upgrade	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2026	7,418,000	Rates
	WWTP - Total Phosphorous upgrade	Resilience, Compliance, Growth	Do nothing - No allowance for growth. Levels of service not met, non-compliance with resource consent	2040	225,000	Rates
Tirau	WWTP upgrade - wetlands	Resilience, Compliance, Growth	Do nothing - Levels of service not met, non-compliance with resource consent	2021	826,000	Rates
	WWTP Total Nitrogen & Total Phosphorous upgrade	Resilience, Compliance, Growth	Do nothing - Levels of service not met, non-compliance with resource consent	2045	2,857,000	Rates
Community	**Most likely scenario**	**Strategic issue**	**Alternative option**	**Probable year of action**	**Cost**	**Funding**
District wide	Aging network infrastructure – Implement waste water pipe network and pump stations,	Renewals	Do nothing - No renewals resulting in potential for levels of service not met. Potential for non-compliance.	Annually, 2021 - 2051	824,000	Depreciation reserves

	condition assessment programme. Implement prioritised renewal programme.					

Water Supply

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Replacement of Te Waihou pipeline to allow for increased demand.	Resilience, Growth	Do nothing- Unable to service increased demand for water	2035	3,000,000	Development Contributions, Rates
District wide	Replacement of aging water supply network infrastructure, reservoirs, communication and electrical assets. Implement water network condition assessment programme. Implement prioritised replacement programme.	Renewals	A delayed replacement programme will have increasing risk of service outages as more asset replacements become overdue. Do nothing - No renewal resulting in potential for levels of service not met.	Regular annual replacement programme over next 30 years. Annually, 2021 - 2051	923,000	Depreciation Reserves

Land Transport

Community	Most likely scenario	Strategic issue	Alternative option	Probable year of action	Cost	Funding
Putāruru	Princess St Access	Growth	Do nothing – Site Development cannot proceed	2021-2025	1,200,000	Development Contributions
District wide	Road network renewals. Pavement renewal and resurfacing	Renewal	Do nothing - No renewal resulting in no allowance for growth and potential for levels of service not met.	Annually 2021 - 2051	2,549,000	Rates
	Safety Improvements	Compliance	Do nothing - No improvement to safety of users using road network	Annually 2021 - 2051	410,000	Rates
	Cycling/ walking	Relationship	Do nothing – No improvement of transport mode choice	Annually 2021 - 2051	80,000	Rates

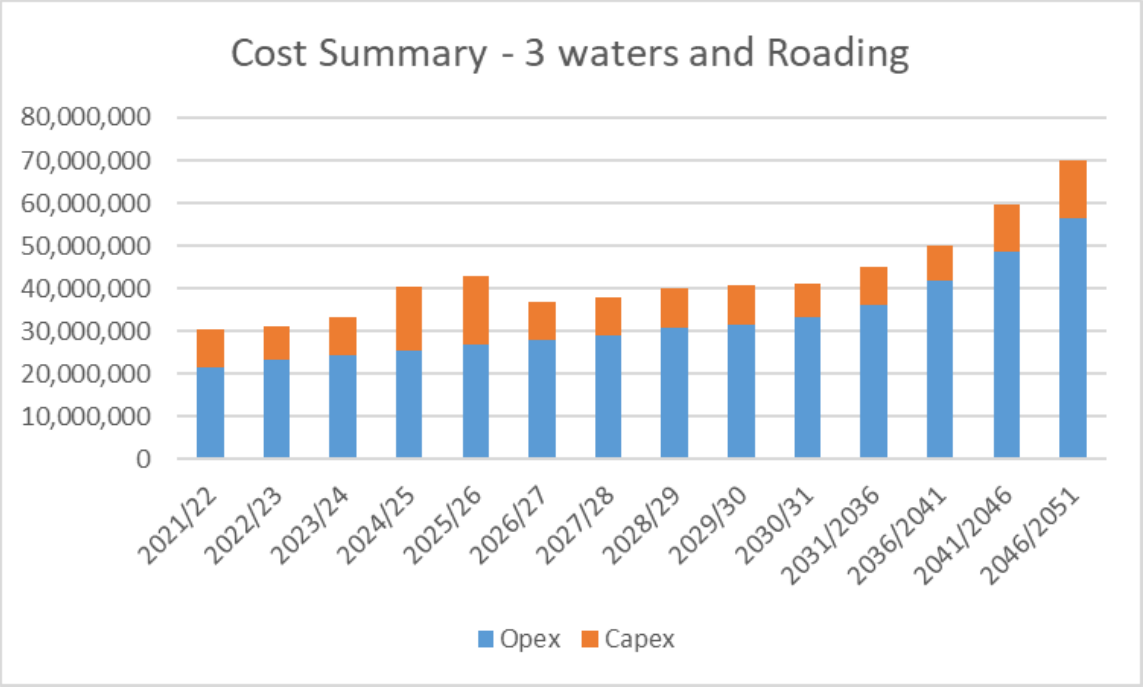
10. Infrastructure Financial Summary

10.1 Thirty-year Cost

In addressing the issues identified in this Strategy the South Waikato District Council expects to spend $309 million on new or replacement infrastructure between 2021 and 2051. Within the same period operating costs are expected to be $1,191 million. The forecasted cost split is shown below:

Infrastructure Activity	Operational Expenditure	Capital Expenditure
	(million)	(million)
Wastewater	$367.5	$67.2
Water Supply	$248.9	$45.0
Stormwater	$62.3	$19.7
Land Transport	$511.8	$176.7
Total	$1,190.5	$308.9

The following figure shows the expected overall annual expenditure for the four infrastructure services from 2021 to 2051. From 2031 onward the 5 yearly amounts shown are the annual average.



10.2 Funding

Funding for renewals is from asset replacement reserves.

Funding for achieving acceptable level of service is from rates. Funding for increased capacity to enable growth is from development contributions.

11. Infrastructure Assumptions and Uncertainties

11.1 Reliability of Asset condition data

Reliability of asset condition data is one of several factors affecting the accuracy of Council's forecasts. Other factors relevant to forecasting of maintenance and replacement programmes include asset material, its age, and the environment where it is located. These factors are then used to assess the remaining useful life of an asset and when it should be programmed for replacement. An assessment is made of the accuracy of the data and a confidence grade given as shown below:

Confidence grade	Label	Description
A	Accurate	Data based on reliable documentation
B	Minor inaccuracies	Data based on some supporting documentation
C	Significant data missing	Data based on local knowledge
D	All data estimated	Data based on a best estimate of experienced person

The results of our assessment are summarised below:

Asset Group	Asset Class	Confidence Grade
	Line	A+
Water	Plant	B-
	Point	B-
	Line	A+
Wastewater	Plant	B+
	Point	A-
	Line	A+
Stormwater	Plant	B
	Point	B-
	Pavement surface	A
	Drainage	C
	Stormwater channel	A
Transport	Footpaths	B
	Railings	B
	Signs	B
	Bridge (including large culverts)	A
	Streetlights	B

One of the key future objectives is to improve our asset management practices. Where new data is obtained, our analysis will be reviewed and, where required, the condition of assets and renewal programmes will be adjusted. Any changes will be reflected in the Long Term Plan, reviewed every three years. Our Infrastructure Strategy will also be adjusted to reflect changes in our knowledge of our assets.

11.2 Infrastructure specific assumptions

Global planning assumptions are covered in the LTP. Assumptions specific to the Infrastructure Strategy are outlined below:

Assumption	Likelihood*	Risks
Construction cost No major change to current costs.	Low	During the Annual Plan process there is the opportunity to reassess forecasted budgets. This is an opportunity to mitigate the effects of this risk. Every three years during the LTP the budgets are reassessed and adjusted taking into account prevailing costs and BERL forecasts for inflation.
Operational and maintenance costs No major change from in costs over next 30yrs.	Low	Inflation factors, using BERL indices, have been applied to budgets over the next 30 years.
Asset lives Assumed lives of assets are reasonable	Pipelines - Moderate	Risk that pipeline asset lives are inaccurate. They are based on industry standard design life and are best assessment of life currently available. Life can be modified based on condition assessments and performance. Most of the network has not been condition assessed and risk that some sections may need renewing sooner than forecast.
Natural Disasters That there is no natural disaster that requires additional funding to reinstate assets.	Low	There is a low risk of a natural disaster occurring during the 30 year period which may require additional significant funding to reinstate assets. Further work is needed to determine the level of resilience required.
Climate change The effects of climate change will be minimal over the planning period	Low	The likely effects of climate change have been factored into our forward planning of our infrastructure.
Growth in Demand Population will increase by 0.3% in Tokoroa and 1% in other towns	Low	Potential changes in demand due to population increase have been analysed and factored into our renewals and new assets programmes.
Changes to level of service Expected changes to level of service are expected to be minor	Low	Significant change to the level of service will require a review of the Infrastructure Strategy to assess the impact on infrastructure.

Assumption	Likelihood*	Risks
Council policy No significant policy changes that impact on assets.	Low	Any significant policy change that impacts assets will trigger a review of the Infrastructure Strategy.
Government legislation. The Government has proposed legislation (Water Services Bill) before parliament that changes the operation and provision of water supply, wastewater and stormwater services at local government level.	High	The 30 year Infrastructure Strategy has assumed that ownership of water supply, wastewater services and stormwater services will remain with council for the next 30 years. Government has signalled this is unlikely to be the outcome of the reform process now underway. The exact form of the changes is under development through a consultation process between Government and territorial authorities. Once known, the 30 year Infrastructure Strategy will require review to reflect those changes.

*See Appendix 2 for definition of likelihood.

Appendix 1: Asset Management Improvement Projects

Asset Class	What's required	Timing	Gaps	Task	By who	Priority	Estimate
Water supply, wastewater and stormwater	Track capex costs	2021 - 22	Capitalisation process not mapped.	Review capitalisation policy. Map current capitalisation process. Revise policy and process to reflect current needs of the organisation	Finance, Water and wastewater services, Ops and Maintenance, Infrastructure Strategy, Information Services, Business Innovation	Moderate	Internal Cost $20k
Water supply, wastewater and stormwater	Description of maintenance activity undertaken on the asset.	TBC	Most Maintenance data not been sent to Assetfinda.	Determine what data to collect. Set up process to collect required data. Record maintenance location, details and send to Assetfinda Need to differentiate the extent of repair activities for each of the asset (i.e. collar vs pipe/other fittings)	Water and wastewater services; infrastructure ops and maintenance manager, Infrastructure Strategy manager, finance, business innovation	High	Internal Cost $30k
Water supply, wastewater and stormwater	Cost of maintenance	TBC	Maintenance cost not assigned to assets	Set up process to assign cost to assets	Water and wastewater services; infrastructure ops and maintenance manager, Infrastructure Strategy manager, finance, business innovation	High	Internal Cost $30k
Water supply, wastewater and stormwater	Hierarchy/ naming	2020-2024	Review naming through RATA / BIP review	Review existing data	RATA / BIP, Infrastructure Strategy manager, Infrastructure ops and maintenance	High	Internal Cost $30k

Water Supply	Current asset condition based on age and performance	2021-2051	Only testing AC pipes as these have been identified a been an issue - performance breakages	Confirm process; Review results and review design life of pipes. Update Assetfinda lives. Review modelling to assess performance issues	Water and wastewater services - Retain AC pipe for testing; Phil/ Andrew - arrange testing, assess results, adjust life; AIO update pipe life in AF	Very Low	Lab testing of samples; $20k annually. Should be in Phil Burt's Budgets not required. At this time. Have enough info at present.
	Headworks/ bores	2021-2022	Headworks assets missing or incomplete data	Obtain data and standard across sites.	Infrastructure Strategy, Infrastructure OPs and maintenance, Water and wastewater services	Moderate	Internal Cost $10k
Wastewater	Diameter Manhole	2021-2051	Some manhole diameters need to be confirmed	Run report on missing manhole diameters. Check in field.	Water and wastewater services	Low	Internal Cost $10k
	Criticality of pipes	2021-24	Confirm Criticality of pipe correct	Review criticality of individual pipes	Infrastructure Strategy manager, wastewater engineer	Moderate	Internal Cost $10k
	Condition of critical pipes	2021-2051	Condition of critical pipes inferred from age.	Assessment of condition by CCTV.	Need training for access to confined spaces and appropriate PPE; ie Water and wastewater services.	Moderate	$70k in wastewater for condition /CCTV inspection?

							Phil Burt to confirm
	Current asset condition based on age and performance.	2021-2051	Develop condition assessments process; CCTV not been entered into AMS	CCTV of pipes; Determine pipe condition grade. External consultants	Phil - CCTV pipe condition. Grading done by consultant/ Phil to advise.	High	$70k in existing ops/ maintenance budget?
	Location	2021-2051	When errors are noted in GIS check in field.	Clayton - Identify issues; Phil field check; Lynn update GIS. Locate repairs, Toby's in field	GPS by Infrastructure Strategy, Water and wastewater services	Low	Internal Costs $20k
	Depth - General	2021-2051	Data missing - 90% of depths and lid levels	Survey by staff or surveyor	Survey Consultant - $200/MH or staff cost	Low	$600k
	Performance	2021-2023	Not mapping repairs or recurring maintenance in Assetfinda	Set up system to record spatially where recurring maintenance or breakages and forward to Asset Information Officer	Infrastructure Strategy, Infrastructure OPs and maintenance, Water and wastewater services	Moderate	Internal cost $10k
Stormwater	Asset type	2021-2023	Check, point type, connection types	Review existing data; Field check	Infrastructure Strategy	Moderate	Internal Costs $10k
	Current asset condition based on age and performance	2021-2051	Condition based on age.	Determine pipe condition grade. CCTV of pipes	Phil - CCTV pipe condition. Grading done by consultant/ Phil to advise.	Moderate	In existing operations maintenance budget Confirm with Phil Burt .

							part of $70k year?
	Location	2021-2051	Check location of outlets, inlets, MH, Open drains	Audit percentage of location of assets on an annual basis	Infrastructure Strategy	Moderate	Internal Costs $10k
	Depth, invert levels	2021	Data missing - 90% of depths and lid levels	Desktop assessment of lid levels. Survey depths annually	Staff Survey Consultant	High	$600k
	Critical assets	2021-2024	Confirm Criticality of pipe correct	Review criticality of individual pipes	Infrastructure Strategy manager, wastewater engineer	High	Internal Costs $10k
	Critical assets	2021-2024	Condition inferred from age.	Condition inspection by CCTV	Infrastructure Strategy manager, stormwater engineer	High	In existing operations and maintenance with Phil Burt. Part of $70k/year?
	Flood Hazard Mapping	2021-2051	Data validation process beyond that carried out for modelling May require mitigation of the flooding effects.	Field check relevant asset attributes	Watershed, Stormwater engineer, Infrastructure Strategy manager, Infrastructure Ops and maintenance manger	High	Rerun model $30k; survey $20k - once every 3 years

Plant 3 waters	Asset Details	2021-2024	Assess what useful data is missing	Review data, determine what is useful, collect, enter. Audit.	Infrastructure Strategy, Water Operations and Maintenance, Water and wastewater services	High	Internal Costs $10k
	Hierarchy	2021-2024	Assess Structure changes improve reporting ability may be improved	Review hierarchy	Infrastructure Strategy, Water Operations and Maintenance, Water and wastewater services	Moderate	Internal Costs $30k
	Location	2021-2024	Assess what benefits of having site location of assets ie WWTP and head works etc.	Scope if we can capture this data with GIS and AF; Benefit?	Infrastructure Strategy, Water Operations and Maintenance, Water and wastewater services	Low	Internal Costs $10k
	Condition	2021-2024	Condition assessment of WWTP plant 2014	Undertake condition assessment	Water Operations and Maintenance, Water and wastewater services	High	Internal Costs $10k
Transport		2021-2031 2021-2031	Strengthen links between LOS/Demand /Plan	Alignment between 2021 AMP and LTP On-going community and targeted stakeholder engagement	Operations and Maintenance team/ RATA		$160k in Roading budget for data improvement

		2021-2031		Realistic growth projections working alongside other Council Departments			
		2021-2031		Embedding of the One Network Road Classification (ORNC)			
		2021-2031	Demonstrate Technical/Community Outcomes	Ongoing monitoring and reporting confirmed achievements			
		2021-2031		High levels of satisfaction recorded in quarterly community surveys			
		2021-2031		Align the LOS with the revised Council Outcomes in the 2021 LTP			
		2021-2031		Alignment with the ONRC LOS			
		2021-2031	Review Monitoring and Reporting Procedures	Summary of procedures prepared for review. Generally, effectively carried out. May look at more consistent formatting between different activities.			
		2021-2031		An electronic Register of all SWDC Plans, Bylaws, Strategies and Plans has been prepared to update current status and renewal dates.			

		2021-2031	Complete Asset Risk Assessment	Consideration given to extending to include assessment of failure probability in Land Transport to enable completion of risk profile			
		2021-2031	Condition Inspection of Critical Assets	Implemented of Land Transport for Lifelines			
		2021-2031	Develop and implement Contingency Plans	Ongoing support for, and co-ordination with, Civil Defence and Emergency Management			
		2021-2031		Participation in vulnerability assessment exercise and other activities of the Waikato Engineering Lifelines Group			
		2021-2031	Emergency Response Exercises	Not implemented, apart from working together with CDEM and Lifelines			
		2021-2031	Renewals, maintenance, New work and operations optimisation	Business case approach implementation to assist planning and funding for renewals			
		2021-2031		Benefits and options analysis needs further development			
		2021-2031		Better use of PMRT, particularly for peer group comparisons			

		2021-2031		Consequences of not investing in the network identified			
		2021-2031	Financial Sensitivity Analysis	Business case approach used for all investment decisions			
		2021-2031	Improve Knowledge of Assets	dTIMS modelling			
		2021-2031		Data collection Strategy			
		2021-2031		Better undertaking of Network through continued appropriate, evidence based data collection			
		2021-2031		Continued support by RATA Assets Management Forum			
		2021-2031	Improve demand planning	Growth Plans			
		2021-2031		Better data collection			
		2021-2031	Extend asset system to include all significant groups in one database	Land Transport information will remain in RAMM			
		2021-2031		Support of RATA			
		2021-2031		Improvement use of RAMM through on-going training			

		2021-2031	Review and implement new Standard Operating Procedures and Quality Assurance procedures	Existing SOPs are kept up to date				
		2021-2031		QA procedures need further development				
		2021-2031		Renewal and maintenance strategy to be developed				
		2021-2031	Asset Management Resource review	Review of staff resources completed previously				
		2021-2031		Budgets for external resource				
		2021-2031	dTIMS modelling tool extension	Implemented for Land Transport (see IP14)				
		2021-2031	Transportation strategy updating	Reviewed and update				
		2021-2031	Utilities strategy; assessment and plan updating	Ongoing liaison with various Utilities providers and work programmes				
		2021-2031	Grant application procedures	Maximise NZTA subsidies through smart procurement and good planning				

		2021-2031	Demographic change in demand analysis	Population projections are addressed on a corporate wide basis to ensure consistency in planning and alignment with the LTP process.			
		2021-2031	Revaluation-Land Transport Assets	Completed - 30 June 2020			
		2021-2031	Asset Plan update	2021-31 AMP updated and compliance status review implemented			
		2021-2031	Procurement	Apply the smart buyer principles assessment tool			
		2021-2031		A 'Best for Network' approach with a focus on costs and network ownership by both parties.			
		2021-2031		Working Smarter through better joint planning and decision making.			
		2021-2031		A 'whole of life approach' increase the percentage of planned to reactive works on the network and identifying causes rather than simply 'patching the pothole'.			

		2021-2031		A 'one stop shop' to simplify interactions with clients/users and reduce unnecessary duplication.				
		2021-2031		Providing avenues for innovative solutions and technological advances in industry to be applied, increased the depth of knowledge and skills for both parties, including greater understanding of the political context of decision-making.				
		2021-2031		Flexibility to deal with future uncertainty.				
		2021-2031		Opportunities to extend learnings for both Council and contractors, particularly with cadets.				
		2021-2031		Potential opportunity to bundle contracts with other road authorities (district councils and NZTA).				
		2021-2031		More engagement with the industry				
		2021-2031	Communication	Review and update communication plan				
		2021-2031						
		2021-2031		Maintain relationships with stakeholders				

Appendix Two: Risk Likelihood Matrix

Rating	Description	Likelihood Percentage	Strategic	Operational	Project
			Probability of the risk occurring	Probability of the risk occurring	Probability of the risk occurring
5	Almost Certain	>80% chance of occurring	It is almost certain to occur in most circumstances in the next five years.	It is almost certain to occur in most circumstances in the next year. In relation to Health and Safety risks, definite probability, very limited or no controls. Has happened in the past and no compensating controls were implemented. Without additional controls the event is expected to occur in most circumstances. Is expected to occur again within a short period of time (likely to occur at least once in the next 3 months).	It is almost certain to occur in most circumstances during the life of the project.
4	Likely	50% - 80% chance of occurring	The event will likely occur sometime in the next five years	The event will likely occur sometime in the next year. In relation to Health and Safety risks, event will probably occur in most circumstances. Weak controls e.g. be careful. No auditing carried out to provide assurances. With existing controls in place this event will probably still occur with some certainty.	The event will likely occur sometime during the life of the project.
3	Moderate (Possible)	20% - 49% chance of occurring.	Possibly occur sometime in the next five years.	Possibly occur sometime in the next year. In relation to Health and Safety risks, event could occur in some circumstances. Minimal controls.	Possibly occur sometime during the life of the project.

				Event has occurred in other Councils or industries with similar levels of controls in place. Is expected to occur within the next 1 - 2 years.	
2	Unlikely	10% - 19% chance of occurring.	Unlikely to occur in the next five years	Unlikely to occur in the next year. In relation to Health and Safety risks, event could occur in some circumstances, however more likely through human error by not following the controls. Event has not occurred in the business, but could in some circumstances in the next 2 - 5 years.	Unlikely to occur during the life of the project.
1	Rare (Highly Unlikely)	<10% chance of occurring	Would occur only in rare circumstances in the next five years	Would occur only in rare circumstances in the next year. In relation to Health and Safety risks, event may occur in some exceptional circumstances e.g. serious assault. Improbably: a very small chance of events occurring that may be caused by events not previously seen or certain conditions. Despite effective controls being used an external event or uncontrollable event could occur.	Would occur only in rare circumstances during the life of the project

Appendix Three: Consequence / Impact Table

** Critical Service include those which directly impact the immediate health & safety of the community.*

Descriptor	Insignificant	Minor	Moderate	Major	Catastrophic
Level	**1**	**2**	**3**	**4**	**5**
Achievement of the Vision and Community Outcomes	No impact on the Vision and Community Outcomes	Inconvenience or delay in achieving the Vision and Community Outcomes	Significant difficulty introduced to achievement of the Vision and Community Outcomes Lost opportunity to contribute positively to one or more of the Vision and Community Outcomes	Failure to achieve a specific Community Outcome Lost opportunity to significantly advance a specific Community Outcome	Failure to achieve multiple Community Outcomes Lost opportunity to significantly advance multiple Community Outcomes
Health & Safety (People)	No harm foreseen. First aid injury but no or minimal medical treatment required	Slightly harmful – Medical aid required. Lost time injury < 1 week	Harmful - Serious injury and/or permanent disability. Lost time injury > 1 week	Very harmful - multiple severe injuries/disabilities	Extremely harmful - fatalities
Finance	Negitive financial impact (increased costs, lost revenue or direct loss) SWDC <$5,000 Community <$50,000	Negitive financial impact (increased costs, lost revenue or direct loss) SWDC <$10,000 Community <$100,000	Negitive financial impact (increased costs, lost revenue or direct loss) SWDC <$100,000 Community <$500,000	Negitive financial impact (increased costs, lost revenue or direct loss) SWDC <$500,000 Community <$1,000,000	Negitive financial impact (increased costs, lost revenue or direct loss) SWDC >$1,000,000 Community >$5,000,000
Legal / Regulatory	Contractual, legislative, or regulatory non-compliance but no litigation likely, Internal query	Contractual, legislative, or regulatory non-compliance but litigation unlikely, enquiry by Ombudsman	Contractual, legislative, or regulatory non-compliance with potential for litigation	Contractual, legislative, or regulatory non-compliance with probable litigation, District or Environment Court	Contractual, legislative, or regulatory non-compliance with certain litigation, High Court or Criminal Action

Descriptor	Insignificant	Minor	Moderate	Major	Catastrophic
Level	**1**	**2**	**3**	**4**	**5**
Service delivery	No impact on quality of services delivered. Negligible performance impact. No impact on critical services. Unable to operate for less than 1 day	Minor impact on the delivery or quality of services. Substandard quality of delivery or operation of critical service or activity. Unable to operate for 1 day – 3 days	Some impact on the delivery or quality of services. Workarounds required to maintain operation of critical service or activity. Unable to operate for up to a fortnight	Considerable impact on the delivery or quality of services. Short term inability to deliver critical services or activites. Impedes or significantly delays achievement of key strategic objective, significant workarounds and impact to BAU. Unable to operate for up to 1 month	Major impact on the delivery or quality of service or operation. Sustained inability to deliver critical services or activites. Prevents achievement of key strategic objective major impact to Council. Unable to operate for >1 month
Image & Reputation	External Reputation not affected. No effort or expense required to recover. Customer complaint by	Local Media attention no more than 1 day. Negative association with SWDC brand for single stakeholder. Marginal drop in satisfaction survey results for one quarter.	Regional media attention 1-3 days, little effort or expense required to recover. Negative association with SWDC brand for multipule stakeholders. Potential medium term impacts seen satisfaction survey results for two quarters	Nationwide media attention, greater than 2 days. National headlines, variety of media. Requires effort or expense to recover and mitigate. Significant drop in satisfaction survey results for one year. Significant impacts to attractiveness as provider or partner of choice for multipule stakeholders	Sustained media attention, including international exposure. Significant damage to SWDC brand, requiring urgent effort or expense to recover. Involves unplanned Council time to address. Significant drop in satisfaction survey results for greater than one year.
Environmental	Negligible impact to the environment, and/or effects able to be fully mitigated within 1 week.	Material damage to the environment of local importance, and/or with prosecution possible, and/or effects able to be fully mitigated within 3 months.	Serious damage to the environment of local importance, and/or with prosecution probable, and/or effects able to be fully mitigated within 1 year.	Serious damage to the environment of national importance, and/or with prosecution expected, and/or effects able to be fully mitigated within 5 years.	Serious damage to the environment of national importance, and/or with prosecution certain, and/or effects not able to be fully mitigated.

Descriptor	Insignificant	Minor	Moderate	Major	Catastrophic
Level	**1**	**2**	**3**	**4**	**5**
Organisation Wellbeing	Minor staff morale impact resulting in minor dissention but managed over a short period of time.	Moderate staff morale problems resulting in some staff resignations but managed through minor restructuring.	Major staff morale or other organisational problems affecting performance and productivity may arise and could lead to loss of key staff skills, within one area of council, resulting in skills, knowledge and expertise deficits within this area of council.	Severe staff morale problems for up to 2 months and/or other organisational problems affecting performance and productivity may arise and could lead to loss of key staff within two or more areas of council, resulting in skills, knowledge and expertise deficits.	Long term severe staff morale problems may likely arise leading to loss of a significant number of key senior staff, impacting on skills, knowledge and expertise.
Corporate Information / Systems	Loss of low risk data / information or systems	Loss of moderate risk data / information or systems for a period < 7 days	Loss of moderate risk data / information or systems for a period > 7 days	Loss of high risk data / information or systems for a period < 24 days or	Loss of high risk data / information or systems for a period > 24 days or Unauthorised access to sensitive / private information
Project Delay	Insignificant delays, minimal impact on project timeline. No impact in overall ability to realise planned benefits.	Minor delays, minimal impact on project timeline. Minor impact in ability to realise planned benefits.	Critical tasks not completed on time. Likely downstream impacts to project timelines and delivery dates. Timeline is behind schedule. Moderate impact on ability to realise benefits. Additional effort and manual tasks required to achieve benefits.	Key milestones are missed and significant delay to the project delivery date. Timeline is behind schedule with a key date or critical missed. Major impact on ability to realise benefits. Significant additional work required to achieve benefits. Noticeable impact to intended outcomes.	Severe impact to schedule, and/or missed critical fixed delivery dates. Significantly behind schedule with multiple key dates/milestones have been missed. Critical benefits will not be realised by the project. Significantly reduced probability of attaining primary objectives . Variation and scope changes significantly erode expected benefits.

Appendix Four: Risk Level matrix

This matrix is used to map the likelihood and consequence levels of a risk and provide a pictorial representation of the relativity of strategic, operational and project risk across South Waikato District Council.

		CONSEQUENCE				
		Insignificant (1)	**Minor (2)**	**Moderate (3)**	**Major (4)**	**Catastrophic (5)**
LIKELIHOOD	Almost Certain (5)	Moderate 5	Significant 10	High 15	High 20	High 25
	Likely (4)	Low 4	Moderate 8	Significant 12	High 16	High 20
	Moderate (possible) (3)	Low 3	Moderate 6	Significant 9	Significant 12	High 15
	Unlikely (2)	Low 2	Low 4	Moderate 6	Moderate 8	Significant 10
	Rare (highly unlikely) (1)	Low 1	Low 2	Low 3	Low 4	Moderate 5

Appendix Five: Risk Treatment Matrix

This table details the required actions based upon risk rating:

Risk Rating	Risk Acceptability	Accountability	Actions Required	Risk Treatment Requirements
High	Unacceptable	CE or Council	Urgent	• Immediate action required. Likely to prevent achievement of objectives • Treatment plans / controls require CE/Council input / sign-off • Risk owned by CE • Controls (cost/implementation) may not be viable leading to cessation of activity/programme • Regular monitoring & reporting to ET & FAR committee
Significant	Unacceptable	Executive Team	Important	• Advise Executive team. Action plans and management responsibility specified and scrutiny required (as agreed). May prevent achievement of objectives. • Treatment plans / controls require detailed planning & decision making by Executive team & implementation by project team • Risk owned by ET level • Control owner assigned to ensure risk treatment implementation is effective • Requires regular monitoring and monthly reporting to ET
	• Council will not accept >Significant level risks. Risk treatment strategies must be undertaken to modify the risk (by reducing the consequence or likelihood / transferring the risk / eliminating the risk or retaining the risk by informed)			
Moderate	Tolerable under certain situations	Department or General Manager	Operational	• Management ownership and controls identified and generally managed within normal budget parameters • Risk is regularly monitored to ensure risk exposure is managed effectively • Investigate feasibility of risk treatment strategies for any Moderate risks with controls identified as Fair or Poor • Risk may be shared / transferred i.e. insurers • Risk reported to ET on three monthly basis as part of normal risk reporting cycle
Low	Acceptable	Department Manager or Coordinator	Capture in risk register	• Accept the risk as it is as it is within acceptable risk tolerances. • Ensure risk is captured • Risk should be managed via routine procedures & internally reported

Appendix Six: Land transport

1. **Government Policy Statement on Land Transport (2018)** The current strategic direction of the Government for land transport investment is summarised in the Government Policy Statement on Land Transport 2018-2021 (GPS). The key strategic priorities outlined in the GPS relate to safety and access, whilst supporting strategic priorities including the environment and delivering value for money (see *diagram below*).

Strategic direction of the Government Policy Statement on Land Transport 2018 - Source Minister of Transport

The DLTS, prioritises investment in the following:

- Providing a safe transport system, free of death and serious injury.
- Providing increased access to economic and social opportunities.
- Reducing the need to travel by private motor vehicle (excluding commercial vehicles) through:
    - Reducing the need to travel long distances to employment, education, and recreation.
    - Supporting modal shift for trips in urban areas to more effective, low cost modes like walking, cycling and public transport.

- Resilience of the land transport system by placing greater focus on resilience to climate change impacts.
- Delivering the right infrastructure and services at the right level at the right cost. The strategic direction of the GPS 2018 is about maximising the impact of money spent and that decision makers should take into account the full range of benefits and costs over the whole of investments and be cognisant of possible future changes and uncertainty whilst being transparent about decisions and reporting.
- Reducing greenhouse gas emissions, as well as adverse effects on the local environmental and public health. The term *environment* also recognises the importance of urban form and creating liveable communities.

The Government assesses transport projects against these objectives to determine investment priorities. Therefore, it is imperative that the strategic outcomes for the DLTS have strong alignment and strategic fit with these national strategic priorities. An evaluation has been undertaken in the table below (Table 1) to demonstrate the alignment of the DLTS strategic outcomes to the GPS strategic priorities. In terms of scaling, ++ indicates that the strategic objective is directly aligned, + is somewhat aligned, and 0 is neutral.

Correlation between GPS Objectives and DLTS Strategic Outcomes

GPS 2018 **Strategic Outcomes**	**Safety**: *Is a safe system, free of death and serious injury*	**Access**: *Provides increased access to economic and social opportunities*	**Access**: *Enables transport choice and access*	**Access**: *Is resilient*	*Protects or enhances the* ***environment***
DLTS 1: Route safety, resilience, reliability and accessibility are enhanced	++	+	++	++	+
DLTS 2: Enable District economic growth and prosperity	+	++	++	+	0
DLTS 3: Enhance travel through appropriate transport mode choice and better connectivity	+	++	++	++	++
DLTS 4: Provide infrastructure to support and promote land use changes and ongoing population growth	+	++	++	++	+
DLTS 5: Contribute to improved health and wellbeing for local communities	++	+	++	+	+
DLTS 6: Provide and plan for Climate Change and Sustainability	0	+	++	++	++

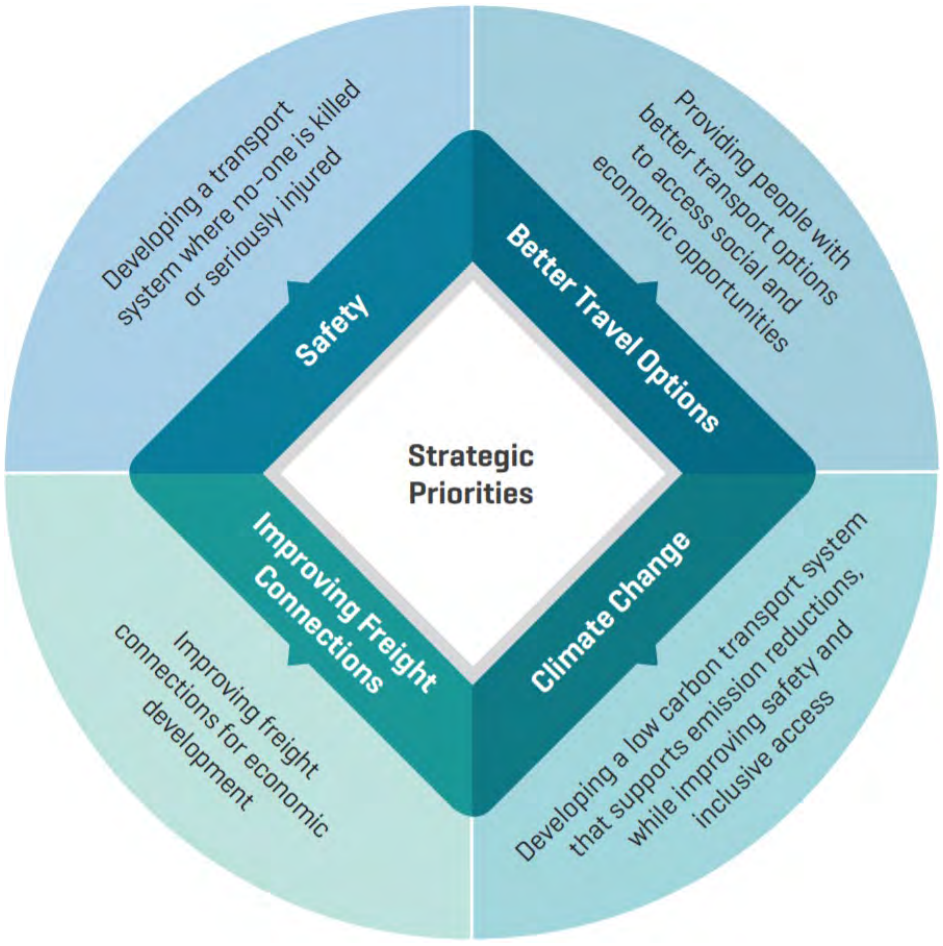
The table above demonstrates that there is strong alignment between the GPS objectives and the strategic outcomes of the DLTS. It should be noted that value for money needs to be demonstrated for all investment through an appropriate business case process, once the detail of specific interventions has been determined.

The Government typically reviews and updates the GPS every three years, which may result in changes to strategic priorities throughout the life of this Strategy, with a new draft GPS currently released by the Ministry of Transport for feedback (as discussed in the following section). The 2018 GPS included relatively large changes in comparison to the previous GPS, and this was therefore one of the catalysts for this updated DLTS. The current GPS is still in effect and will remain so until the new GPS is confirmed.

2. Government Policy Statement on Land Transport 2021-2031

Government released its draft GPS 2021- 24 for consultation in March 2020 and used feedback from submissions to develop the final GPS. The GPS 2021 will be published shortly with the aim of it being operational from in July-2021. While the consultation process may result in changes, this DLTS should take account of the direction that the new GPS points towards. The DLTS also recognises that further changes may be made to the GPS to enable recovery mechanisms for the recovery from Covid-19.

The key changes in the draft GPS 2021 from GPS 2018 are that the strategic priorities for land transport investment have changed to include better travel options, improving freight connections and climate change. Safety remains a key priority, within the context of the Road to Zero safety policy. There is no longer a separation into key and supporting priorities (when compared to the GPS 2018). The investment priorities for the draft GPS 2021 are summarised in the diagram below:



Strategic Investment Priorities GPS 2021: source Minister of Transport

The draft GPS 2021 retains the key principle of mode neutrality and government is still seeking an investment outcome that sees a higher proportion of all trips to be made by alternatives to road-based transport by 2031. To that end, the new GPS proposes four new activity classes which separate public transport investment into fixed infrastructure and passenger services, together with activity classes for rail and coastal shipping.

The implications of the draft GPS 2021 for the DLTS will be that National Land Transport Fund (NLTF) support will increasingly be focused on a broader range of outcomes than has traditionally been sought from the transport system. Also, alternative funding sources may be more appropriate for the types of intervention that the DLTS could require, including funding for rail freight improvements from the Crown, and the Provincial Growth Fund for regional / local interventions that may not have sufficient priority for NLTF funding.

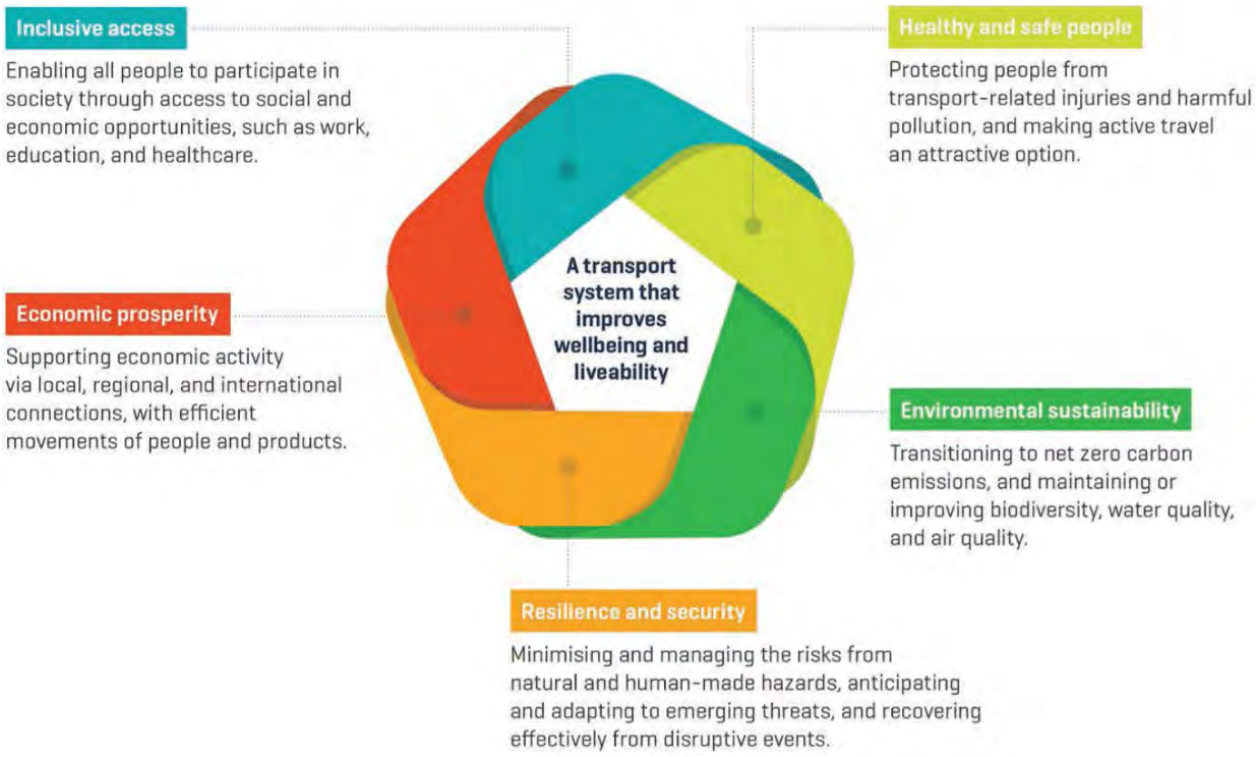
3. Ministry of Transport Outcomes Framework

The Ministry of Transport Outcomes Framework 2018 (Outcomes Framework) defines a set of outcomes for New Zealand's transport system, which are used to assess funding from the NLTF.

The Outcomes Framework details a guiding principle of *mode neutrality* under which the five Outcomes are to be implemented. Mode neutrality involves two important aspects:

- Making sure all modes and options are considered and evaluated to find the best system solution.
- Making users and decision-makers more aware of the benefits and costs of transport choices, to incentivise robust decision-making and smart travel choices.

The five outcomes for the transport system have an overall purpose of a transport system that improves wellbeing and liveability within New Zealand. The five key outcomes are summarised in the figure below:



Key Outcomes of the MOT Outcomes Framework. Source: Ministry of Transport

The implications of the Outcomes Framework for Council primarily flow through from the GPS and regional level documents, such as the Regional Land Transport plan (RLTP). The alignment of the

DLTS with the Outcomes Framework is important, in terms of securing funding for investing in the District Transport System through the NLTF, and to align initiatives with relevant statutory plans and policies.

4. Regional Land Transport Plan (2018 update) 2015-2045

The RLTP sets out the strategic direction for land transport in the Waikato Region. The RLTP was updated in 2018 to give effect to the GPS Land Transport 2018. The key pressures and issues in the region were summarised in the RLTP in terms of problem statements as follows:

- **Economic development / strategic corridors** with the problem *growth in the upper North Island is impacting on strategic corridors and hindering economic development*.
    - This is given a 40% weighting under the RLTP.
    - Objectives relate to: an efficient and resilient land transport system that advances regional economic wellbeing and facilitates freight movement on strategic corridors in the upper North Island, and a planned transport response that supports future growth areas.
- **Safety** with the problem *system failures and user behaviours expose road users to risk, resulting in a disproportionate number of deaths and serious injuries.*
    - This is given a 35% priority weighting under the RLTP.
    - Objectives relate to the land transport in Waikato region is a safe system, working towards zero deaths and serious injuries.
- **Access and mobility** with the problem *a changing social, demographic and technological landscape is impacting on the ability to connect people to essential services, employment and recreation.*
    - This is given a 25% priority weighting under the RLTP.
    - Objectives relate to a transport system that provides an inclusive range of integrated, quality transport choices for all users to meet their social, economic and cultural needs.

These key problem statements and objectives have informed the development of the DLTS key issues and strategic outcomes and an alignment assessment is provided further through this section. Under each of the RLTP issues, policies and implementation methods are outlined within the RLTP. Collectively these inform how key transport partners (including district councils) will work together to advance transport outcomes for the region and the Upper North Island. The RLTP including problems, objectives, priorities, policies and methods have been taken into consideration through the development of this DLTS.

RLTP priorities are summarised as:

- Strategic corridors:
    - Protecting the function of our interregional and intraregional strategic corridors (road and rail).
    - Directing investment to priority strategic corridors.
    - Improving network resilience.
    - Growing connected regional cycle trails.
- Managing growth:
    - Providing transport options and infrastructure in high growth areas (Hamilton, north Waikato).

- Safety:
  - Progressing key short term road safety priorities – leadership, safe speeds and safe road use.
- Maintaining what we have:
  - Maintenance of existing transport assets.
  - Maximising efficiencies/values for money.
- Access and mobility:
  - Growing public transport and active transport mode share.
  - Improving access and mobility for rural areas and transport disadvantages.
  - Growing interconnected cycle and pedestrian networks in urban areas.

Putting a South Waikato District lens over the above priorities of the RLTP, the DLTS should focus on:

- Safety, particularly road safety for all road users and modes of transport.
- Protecting key freight and tourism corridors (road and rail).
- Maintaining existing assets and improving resilience through sound asset management.
- Maximising economic development opportunities (for instance, supporting manufacturing, forestry, agriculture and other emerging industries associated with tourism and cycle trails).
- Focusing on mode neutrality and growing public transport and active mode share (for instance through improving urban pedestrian and cycleway networks) particularly for improving outcomes for the transport disadvantaged.
- Broadening connections to the district through public transport offerings (eg Urban Connector and the total mobility bus services from Taupo through the district to Hamilton's tertiary education and medical facilities), rationalisation of services, and integrating with other users (such as St John or Red Cross) to maximise accessibility.
- Supporting community-led transport initiatives, providing customised service provision options.
- Positioning South Waikato to address climate change, sustainability and environmental concerns, for instance through the adoption and promotion of new technologies for reducing vehicular carbon emissions.

These have informed the strategic outcomes and initiatives outlined in Section 7. An evaluation has been undertaken in the table below (Table 2) to demonstrate the alignment of the DLTS strategic outcomes to the RLTP objectives. In terms of scaling, ++ indicates that the strategic objective is directly aligned, + is somewhat aligned, and 0 is neutral.

Alignment of the DLTS Strategic Outcomes with the RLTP Objectives

RLTP 2018 Objectives **Strategic Outcomes**	**Economic development / strategic corridors**: An efficient and resilient land transport system that advances regional economic wellbeing and facilitates freight movement on strategic corridors in the upper North Island.	**Economic development / strategic corridors**: A planned transport response that supports future growth areas.	**Safety**: Land transport in the Waikato region is a safe system, working towards zero deaths and serious injuries.	**Access and mobility**: A transport system that provides an inclusive range of integrated, quality transport choices for all users to meet their social, economic and cultural needs.
DLTS 1: *Route safety, resilience, reliability and accessibility are enhanced.*	++	++	++	++
DLTS 2: *Enable District economic growth and prosperity.*	++	++	0	+
DLTS 3: *Enhance travel through appropriate transport mode choice and better connectivity.*	+	+	+	++
DLTS 4: *Provide infrastructure to support and promote land use changes and ongoing population growth.*	++	++	+	0
DLTS 5: *Contribute to improved health and wellbeing for local communities.*	0	0	++	++
DLTS 6: *Provide and plan for climate change and sustainability***.**	+	+	0	++