Te Kaunihera o Te Hiku o te Ika
Far North District Council

2024 Infrastructure Strategy

FEBRUARY 2024

Contents

Document control

PROJECT MANAGEMENT	
Name	Designation

PLAN PREPARED / REVIEWED / UPDATED BY:		
Date	Name	Designation

COUNCIL CONSIDERATION / ADOPTION		
Date	Minute No.	Reason / Decision

1. Introduction

1.1. About the strategy

1.1.1. Strategy purpose

The Infrastructure Strategy (strategy) aims to ensure responsible stewardship of Far North District Council's (FNDC / Council) infrastructure assets and services. It has been prepared in accordance with the requirements of section 101B of the Local Government Act 2002 and modified as part of the Long Term Plan Lite requirements as a flood damaged council. This strategy has a 5-year planning horizon (greater than minimum of 3 years under the Long Term Plan Lite regime).

The Far North District has been severely impacted by significant weather events. There have been at least ten different significant weather events since July 2022 impacting the Te Tai Tokerau Northland Region. Specifically, storm flooding and Cyclone Gabrielle caused considerable damage to roads across the Far North District.

FNDC is one of the flood damaged councils that has Government's approval to undertake a Long Term Plan Lite. This allows for a three-year plan instead of the statutory 10-year Long Term Plan and 30-year Infrastructure Strategy. This is a temporary change to support local authorities during the recovery phase from the recent extreme weather events. The Local Government Act has been amended to allow the Infrastructure Strategy to be prepared for the shorter Long Term Plan Lite timeframe with a focus on the damaged infrastructure to facilitate the recovery.

However, we wish to prepare for the future and put in place the right building blocks for the 2027 Infrastructure Strategy particularly growth planning, climate adaptation and improving the asset management practices for the non-core activities. The approach adopted for the 2024 strategy is setting up the right upfront strategic planning (top down) and with supporting underlying data (bottom up). It will take a few Long Term Plan cycles to achieve an evidence-based strategy.

1.1.2. Strategy scope

The 2024 Infrastructure Strategy covers the includes the core infrastructure assets in accordance with section 101B (6) of the Local Government Act 2002:

- Land transport.
- Water supply.
- Wastewater.
- Stormwater.

Our 2024 strategy also covers the non-core assets at a high level in the front sections only. The non-core assets are:

- Built spaces including community buildings and halls, and libraries.
- Maritime assets including jetties, wharves and boat ramps.
- Open spaces including cemeteries, parks and reserves, and playgrounds.
- Solid waste including consented closed landfills and Resource Recovery Centre.

1.1.3. Strategy layout

The strategy has been structured to show clear distinction between Our Present (Sections 1, 2, 4 and 5), Our Direction (Section 3) and Our Future (Sections 6, 7 and 8). The strategy layout is shown in the table below. The non-core activities are covered only in Our Present sections.

Table 1 Strategy layout

Strategy focus	Strategy section	Description
Our Present	Section 1 Introduction	Identifies the infrastructure assets included in this strategy.
		Summarises progress on implementing the key actions identified in the 2021 Infrastructure Strategy at district level.
		Illustrates the linkages between strategic documents.
		Sets the scene for our present – district geographic context and tangata whenua, and assets at a glance.
	Section 2 Strategic Context	Sets the scene with the various new legislation at a national level.
		Provides the Far North context with trends covering population growth, economic and tourism trends, and natural hazards.
		Overview of the significant weather events and flood recovery efforts.
		Overview of the community and waste activities, regional collaboration initiatives and growth planning.
Our Direction	Section 3 Our Direction	Discusses the significant infrastructure issues at district level and management responses to them.
Our Present	Section 4 How We Manage Our Infrastructure	Describes our asset management approach.
		Describes the levels of service framework.
		States confidence in the asset data used for this strategy.
	Section 5 Risk Management	Describes Council's risk management approach, and the impacts of climate change on our assets.
		Identifies the critical assets.
Our Future	Section 6 Managing Our Assets Over the Next 5 Years	Documents the current asset state in terms of age, condition and performance for each activity.
		Discusses the service levels and identifies the key challenges for each activity.
		Identifies the principal options for the significant issues and documents implications, cost and when, for each activity. Identifies the financial forecasts associated with the actions proposed and funding sources for each only.
	Section 7 Financial Summary	Identifies the financial forecasts associated with the actions proposed and funding sources for the combined activities.
	Section 8 Financial Assumptions and Uncertainty	Details specific planning and financial assumptions for the Infrastructure Strategy.
	Section 9 Strategy Improvement	Summary of the key actions to address the identified weak areas in the strategy.

1.2. Achievements since 2021

We have made some progress on implementing the key actions identified in the 2021 Infrastructure Strategy, as outlined below at district and activity levels.

Table 2 Achievements at district level

Significant challenges – key themes	Strategic responses	Achievements since 2021
Managing our assets	Continue to invest in our asset management programme	Water supply and wastewater hydraulic models and stormwater models developed are being finalised. Programme Darwin, intended to improve asset management practices, was disestablished in anticipation of the move to the abandoned Water Services Entities.
	Optimise the way infrastructure is funded and delivered	Work completed to support a Development Contributions Policy are (refer to Section 2.6 for details): • The draft Growth Planning Review (April 2023) included mapping data in GIS. • The Development Contributions Policy Gap Analysis (May 2023) identified required information for the different activities.
Managing change	Implement the Climate Change Roadmap	There was slower progress than expected in implementing the 2020 Climate Change Roadmap due to various management structural changes. A Climate Action Implementation Plan is being developed to put the Climate Action Policy into action (refer to Section 5.2).
	Integrate strategic infrastructure delivery with land use planning	A full review of its District Plan is still underway. A new District Plan has been proposed (Proposed District Plan). The original submission period closed in October 2022. A spatial mapping tool has been produced to assist the public in understanding those submissions seeking spatial outcomes (such as rezoning) for specific properties.

The delivery of the planned capital works programme was impacted by COVID lockdowns for Northland and the Auckland Region's restrictions which isolated Northland from the rest of the country and key supply chains. These impacts have been compounded by inadequate internal resourcing.

Table 3 Achievements at activity level

Activity issues	Achievements since 2021
Water supply	• The new 14km pipeline from Sweetwater, near Awanui, to the town of Kaitāia to improve the town's resilience during dry weather. • The leak detection project commenced resulting in successful identification and repairs being undertaken. • Council confirmed a partnership with Te Tai Tokerau Water Trust which is building a mid-North water storage reservoir and delivery system. • Initiatives to improve water resilience including increased water conservation messaging and education. • Water Safety Plans and reporting for Taumata Arowai. • Installation of new sample points and online monitoring equipment of water quality in the network.
Wastewater	• Taipa Wastewater Treatment Plant upgrade is progressing with additional aeration, Electrocoagulation trial initiated, and ongoing investigation into Discharge to Land. • Opononi Wastewater Treatment Plant upgrade is in detailed design to meet new 3 year consent timeframes. • Detailed design to reduce Kaitaia's wastewater overflows is expected by mid-2024 with construction scheduled for FY2025.

Activity issues	Achievements since 2021
	• Upgrades to Kaitaia's Wastewater Treatment Plant is being coordinated with the consent renewal for which consultation has started. • The Kaikohe Wastewater Treatment Plant Working Group has identified a preferred upgrade option for which feasibility is now being investigated. • Construction of a replacement aeration tank for Hihi Wastewater Treatment Plant is expected by mid-2024, after which the working group will consider upgrade options.
Stormwater	• Investment in training to improve accuracy in classifying service requests / complaints has resulted significantly lower stormwater service requests /complaint numbers than the average in previous years. • Pipe renewals in Commerce Street with additional storage expected in FY2025. • Remediation works in Mangonui, Cable Bay, Russell, Kaitaia and Awanui. • Construction of network upgrades in Kaitaia, Moerewa, Omapere and Whatuwhiwhi are expected to commence in 2024.
Land transport	• Strengthening forestry road network. • Asphalt re-surfacing. • IDSNZ dTIMS rutt progression model and High-Speed Crack Analysis model. • Unsealed Centre of Excellence. • Dry dock repair to the Ferry.
Built spaces	• Management structure – The new management structure has consolidated the asset functions into one team under Property and Facilities Group (previously dispersed under Infrastructure and Asset Management). • Animal shelters – New purpose-built south facility located in Kaikohe. • New toilets facilities added throughout the district.
Maritime assets	• Management agreement with Far North Holdings Limited (FNHL) with increased budget subject to approval. • Acquisition of addition land at Opononi for boat trailer parking.
Open spaces	• A new management system (Discover EverAfter) in place for searching cemetery family / genealogy records. • New pump tracks and playgrounds opened in 2021/22 at Awanui, Ahipara, Kerikeri and Kaikohe catered for the youth in the communities. • Agreed core level of service for open space management with community boards prior to tendering new Open Spaces Management operation and maintenance contract.
Solid waste	• Service delivery review – A Section 17A Review of the services was completed in 2022 prior to the existing contracts expiring. • Strategic planning – A Waste Assessment was completed to establish the planning foundations for FNDC's review of its Waste Management and Minimisation Plan. • The opening of a new recycling centre at Waitangi making it easier for residents to recycle and reduces solid waste going to landfill.

1.3. The Far North – the place we live

1.3.1. The Far North – our rich Māori history

The great explorer Kupe, who many iwi trace their lineage too, is said to have first set foot in New Zealand on the shores of the Hokianga Harbour. Many Māori believe that Kupe gave birth to the nation we know today.

Te Tai Tokerau Northland is rich in Māori culture, from the language to the legends, the kai (food) to traditional performances, and most importantly, the sacred and significant places. The Far North has a rich Māori history and significance nationally including the Waitangi Treaty Grounds, New Zealand's most important historic site.

Tāngata whenua have a long and rich association with the Far North. Council recognises this long settlement and therefore the special position of tāngata whenua within this district, and the significant and long-term role Māori have in Council's decision making.

1.3.2. Our district

The Far North District is the northernmost territorial local authority in New Zealand. The Far North ranks as the14th largest district by land area compared to other districts. The land area and main townships are shown in the map below.

Around half of the population reside in small urban settlements located throughout the district. The largest townships are Kerikeri and Paihia on the east coast, Kaitāia to the north and Kaikohe, located between the east and west coast. The rest of the population lives in rural or semi-rural settlements.

Figure 1 Map of Far North District

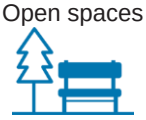
The coastline of the Far North is one of the district's defining geographic features - it is unique, diverse and extensive. We generally have high rainfall during spring, autumn and winter with prolonged dry spells during summer. This seasonal rainfall can lead to low flows in our smaller river catchments. Long periods without rain affect the amount of water that is available to supply communities and commercial and industrial activities. The Far North District has a diverse range of soils and rock strata, including highly productive soils, and much of our land is prone to erosion which affects our infrastructure.

The Far North District is part of the Te Tai Tokerau Northland Region and along with neighbouring Whangārei and Kaipara District Councils.

1.3.3. Assets at a glance

We own and manage $3.1 billion (replacement value) of infrastructure assets (including three water assets) which can be summarised as follows.

Table 4 Asset summary

Activities	Description	Replacement value ($)
Land transport 	• 2,507km network length - 908km sealed and 1,598km unsealed • 550 bridges • 234km footpaths • 24km cycleways • 1 Hokianga Ferry	$2,318,400,925 *(as at 30 June 2023)*
Built spaces 	• 73 community buildings • 19 community halls • Council offices - 3 hubs and 2 satellite offices • 6 libraries, 1 mobile library and 1 museum at the Te Ahu centre • Public toilets - 69 owned and 73 maintained	$83,765,281 *(as at October 2023)*
Maritime assets 	• 31 wharfs / jetties • 27 boat ramps • 45 boat trailer carpark areas	$28,977,200 *(as at June 2023)*
Open spaces 	• 500 hectares of parks and reserves (including sports fields) in over 30 locations • 11 active cemeteries • Waipapa Sports Hub • 28 playgrounds • 3 motor camps	$43,310,532.35 *(as at October 2023)*
Solid waste 	• 1 Council Resource Recovery Centre at Kaitāia and 1 private facility contracted at Waipapa • 12 Community Recycling Centres • 4 consented closed landfills	$10,016,491 *(as at June 2023 and excludes Council owned assets at the closed landfill sites)*
Water supply 	• 376,391m of pipes • 1,902 values • 1,249 hydrants • 10,226 meters • 23 treatment water storage • 11 treatment plants • 17 pump stations • 11 water sources	$169,965,718 *(as at June 2022)*
Wastewater 	• 290,005m gravity mains • 155,266m pressure pipes • 13,406 service connections • 788 domestic pump stations • 16 treatment plants • 153 pump stations • 16 treatment plants • 12 wetlands • 1 borefield • 73 septic tanks	$284,120,019 *(as at June 2022)*
Stormwater 	• 181,234m of line assets (culverts, channels, pipes) • 5,077 point assets (catchpits, manholes, soak holes • 30 other assets (spillways, grills, inlets/outlet structures) • 69 floodgates • 1 pump station • 31 ponds	$174,871,228 *(as at June 2023)*
		$3,113,427,394

1.4. Strategic linkages

The partnership with tāngata whenua is embedded into the way FNDC works today although it is recognised this is evolving. The new Te Kuaka - Te Ao Māori Committee was established in late 2022 (refer to main Long Term Plan for details). Its membership includes all councillors and representatives from the 12 iwi (generally the chairs).

Te Pae o Uta - te Ao Māori Framework has been developed to guide FNDC staff to improve Council's responsiveness and inclusion of Te Ao Māori across the organisation. The Te Pae o Uta has three goals with supporting focus areas as shown in the following figure. These goals have been woven through this strategy. An Implementation Plan is being developed to support staff to use the framework in their day to day decision making process.

Figure 2 Te Pae o Uta - goals and focus areas

Council's vision and mission illustrates the connection between people and place. Council's vision is:

He Whenua Rangatira – A district of sustainable prosperity and wellbeing.

Council's mission is:

He Ara Tāmata – Creating Great Places Supporting our People.

Council is committed to working with tāngata whenua and supporting Māori contribution to decision making processes with special regard to the views of mana whenua in Far North District. The link between Council's vision, Mana Whenua, Community Outcomes, and asset management framework are shown in the figure below. Importantly, this link is in two directions. Our strategic documents direct our infrastructure planning, the nature and level of our asset management investment, and our asset management system provides key information and inputs that inform our strategic thinking.

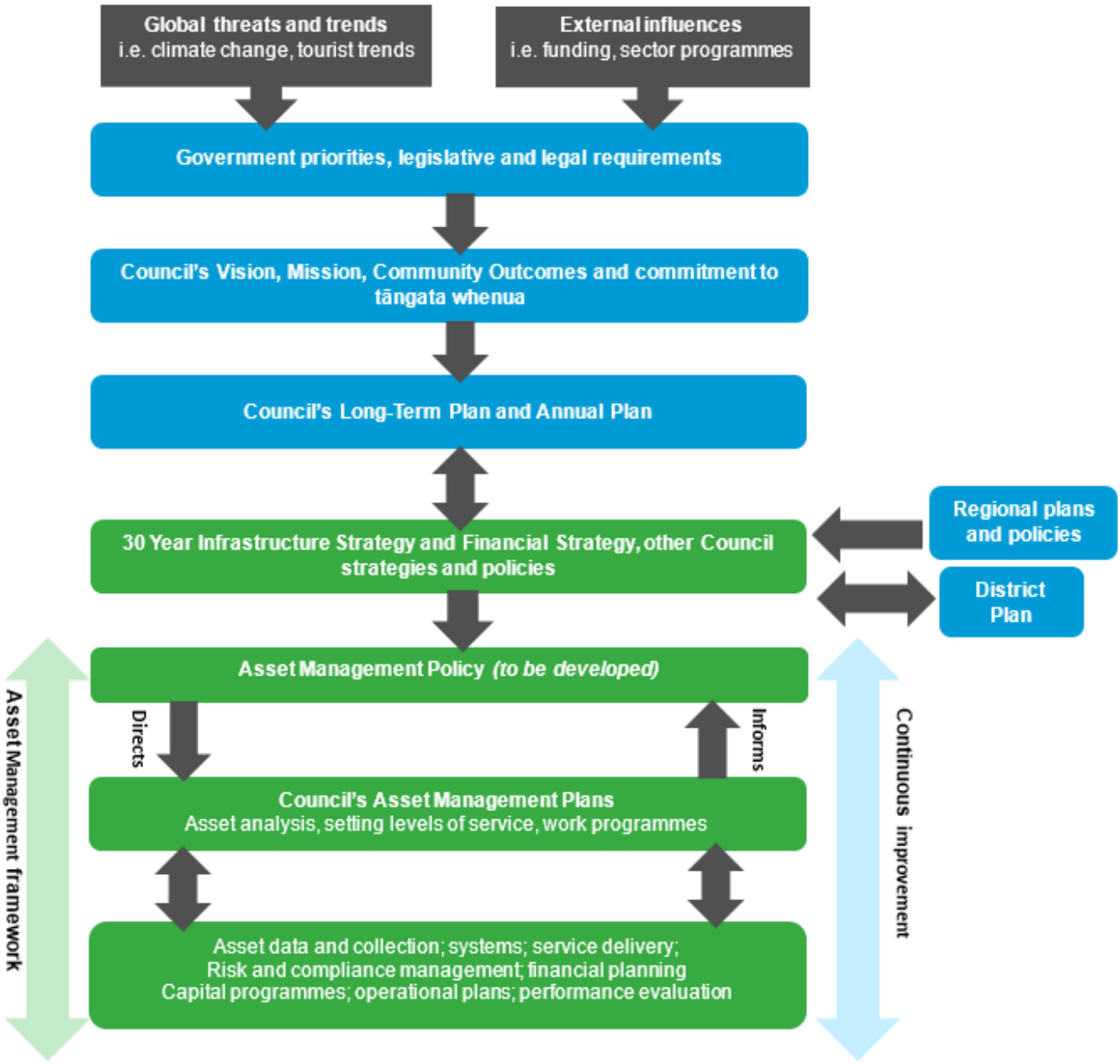


Figure 3 Relationship between strategic documents and asset management framework

The strategic priorities for the 2024 Long Term Plan are shown in the figure below. It shows the linkages between the four well beings and the Community Outcomes. Repairing Far North's transport network is high priority.

Figure 4 Strategic priorities for 2024 Long Term Plan

2. Strategic Context

2.1. National context

There are various sector changes that will impact long-term planning for Council's assets. These are described in the table below with the impacts at activity level discussed in later sections of this strategy.

Table 5 Summary of Government's reform programmes

Government reform programmes / legislative changes	Description
Government's three water proposals	The new Government is implementing its Local Water Done Well policies. This will be achieved through legislative amendments in a staged approach. A framework and transitional arrangements for the new water services system will be established. Alternative models include regional / sub regional Council Controlled Organisations. This strategy will be updated as required as the Government implements its repeals of the legislation and preferred model for three waters.
Resource management system reforms	The new Government intends to repeal the Resource management system reforms. The Natural and Built Environment Act 2023 is being repealed and the Government is now working on fast-track consenting.
Government's Emergency Management Trifecta Programme	This will impact how National Emergency Management Agency and Local Civil Defence Emergency Management Groups interact during emergencies.
Waste management changes	The Government released its new Te rautaki para | Waste strategy in April 2023 along with changes to kerbside recycling services. The changes particularly impact local government as it sets national targets to be met by 2030. Minimum standards for diverting waste from landfill start in 2026.
Future for Local Government	The Future for Local Government Panel released its final report in June 2023. It has made 17 recommendations for the incoming government to decide after the general elections in October 2023. The report presents an opportunity for councils to better position themselves to deliver community aspirations.

2.2. The Far North - our context

2.2.1. Population trends

The Far North District is home to approximately 74,700 (based on Infometrics 2023 estimates). This is a 1.4% increase from the year earlier (2022). Our population is projected to continue to grow. It is projected to increase to 79,594 by 2032 (based on Infometrics 2022 estimates under the medium growth scenario). The annual growth rate reduces to about 0.8% per annum for the next ten years (2022 to 2032).

The key demographic factors that impact the district and used for infrastructure planning purposes are:

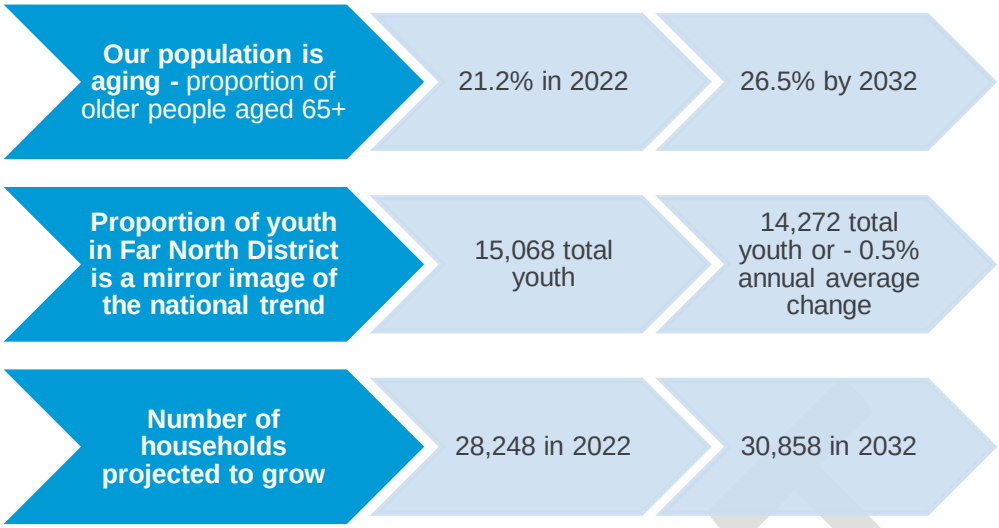


Figure 5 Key demographic factors

Source: Infometrics, 2022 estimates, medium growth scenario

Greenfield development is predicted in the following six areas over the next ten years (2022 to 2032):

- Kerikeri
- Kaitaia
- Kaikohe
- Taipa – East Coast Bays
- Paihia
- Kawakawa.

There are also communities with non-growth / declining populations and are mainly located on the west coast. These are rural communities with a higher proportion of Māori population.

2.2.2. Economic trends

Economic statistics - The Far North economy continued to expand at 1.2% pa against a decline for the region at -0.6%pa and more subdued economic expansion nationally at 1.7%, as shown in the figure below. Solid employment growth in the Far North District at 3.6%pa helped achieve this economic growth, slightly higher than regional and national rates at 3.0%pa each. This economic growth has been limited from more restrained population growth, spending, and primary sector earnings.

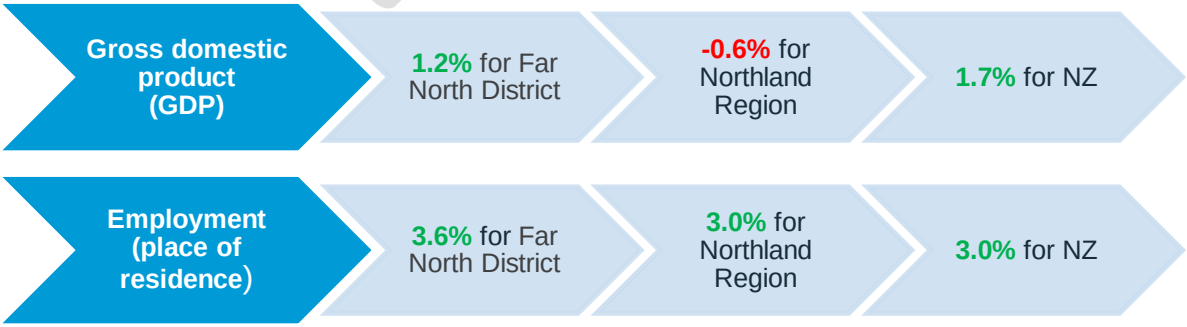


Figure 6 GDP and employment growth (September 2022 to September 2023)
Source: Infometrics (September 2023)

The top four district's main industries (as percentage of GDP) are:

- Agriculture, forestry and fishing at 12.4%.
- Property operations at 11.1%.
- Rental, hiring and Real Estate Services at 9.5%.
- Construction at 7.4%.

Economic innovation - The new leading edge Ngawha Innovation and Enterprise Park (Park) at Kaikohe (opened in June 2023) is transforming the traditional economies of Far North District and the wider Te Tai Tokerau Northland Region. It has been designed to create employment opportunities for one of the most deprived yet potentially successful communities. The Park provides modern facilities to encourage more collaboration between businesses and to co-locate research and development activity.

It also has an education and training precinct focused on working with providers to deliver skills needed by the businesses at the Park and wider district. The Park is seeking to provide pathways to work and further education by working together with local schools, the Ministry for Social Development, Department of Corrections and Probation Services.

Regional Economic Development Strategy Te Rerenga Strategy (draft) - The four Northland councils (including the Regional Council) have prepared the draft Te Rerenga – Tai Tokerau Northland Economic Wellbeing Pathway. It set a vision for a sustainable, innovative, and prosperous economy. It focuses on the wellbeing of people and the planet alongside traditional economic measures. The draft Regional Economic Development Strategy Te Rerenga has not been endorsed by the Joint Regional Economic Development Committee or FNDC.

2.2.3. Tourism trends

Tourism trends is considered in terms of visitor numbers and peak season:

Visitor numbers – There were 1.75m visitors to the Te Tai Tokerau Northland Region in the 12 months to 1 July 2023. Visitor numbers have rebound post COVID but are not necessarily at the same level. They were also impacted by bad weather and multiple road closures. There are 92 cruise ships expected for the 2023/24 season to the Bay of Islands against the pre COVID height of 83 in the 2019/20 season. This has a significant impact to region's economy.

Seasonal peaks - Parts of the Far North District experiences volatility in the number of people in the district including:

- Seasonal workers for the horticulture industry.
- Domestic and international tourists.
- Summer season with holiday makers using their holiday homes or short term rental accommodation, camp grounds etc.

There is higher demand from the domestic than international visitors as shown in the figure below (for the Northland Region). Russell and Pahia attract the international tourists by vehicles and / or cruise ships.

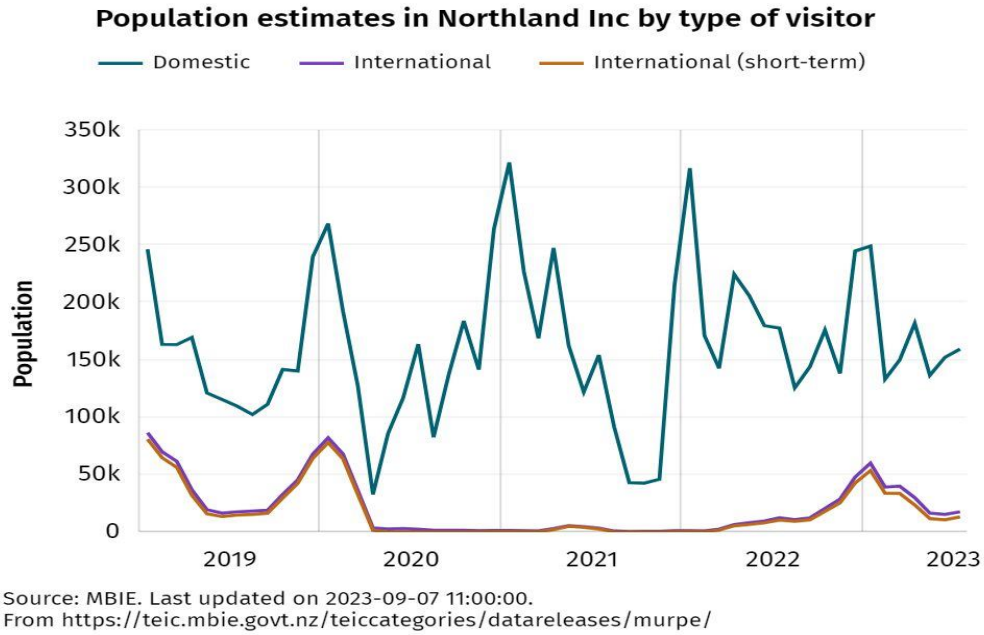


Figure 7 Visitor numbers to Northland Region
Source: Monthly unique local and visitor populations, MBIE (October 2023)

2.2.4. Natural hazards

The Far North District is subject to several natural hazards including:

- Inundation including both storm-related coastal events and tsunami as well as high intensity rainfall events.
- Other weather hazards, earthquakes, landslides, fire and volcanic activity.

Slippage and flooding are the main hazard areas of effect:

- Slippage - The significant weather events since July 2022 and the impact on the road network is covered below.
- Flooding - There is a high flood risk for many settlements, infrastructural assets and primary production activities due to Northland's weather systems, coupled with a history of widespread development on flood-prone land. The major settlements at significant risk from flooding include Kaitāia, and Kerikeri-Waipapa. There are also many other smaller settlements at risk, such as Kaeo, several settlements throughout the Hokianga and several east coast communities.
- Primary productivity is impacted through inundation and loss of stock and damage to pasture. Inundation of flood waters for greater than 72 hours can result in pasture die-off and impacts productivity.

Council is preparing and adapting for the impact of natural hazards with a multi-faceted approach. This includes our District Plan with objectives to ensure that development is discouraged in potentially hazardous areas such as flood prone areas. We have GIS maps which identify hazards and suspect ground conditions. Northland Regional Council also identifies hazard areas such as coastal hazard, indicative areas of flooding and erosion prone.

2.3. Flood recovery

There have been at least ten different significant weather events since July 2022 impacting the Te Tai Tokerau Northland Region. Specifically, storm flooding and Cyclone Gabrielle caused considerable damage to roads across the Far North District. Cyclone Gabrielle caused the highest road damage on record for a single event.

There were 487 slips caused by back-to-back storms and cyclones since July 2022. Most slips (312 as at November 2023) have already been repaired. The remaining sites are complex and have required detailed inspections by engineers to confirm repair options. The 38 most complex slips will require specialised engineering and formal procurement processes to be undertaken due to the cost and risk before contracts can be let. Some of these repairs may take up to three years to complete.

FNDC is requesting Government Funding Support for the estimated $7.8 million local share component of the total repair estimate of $29.1 million.

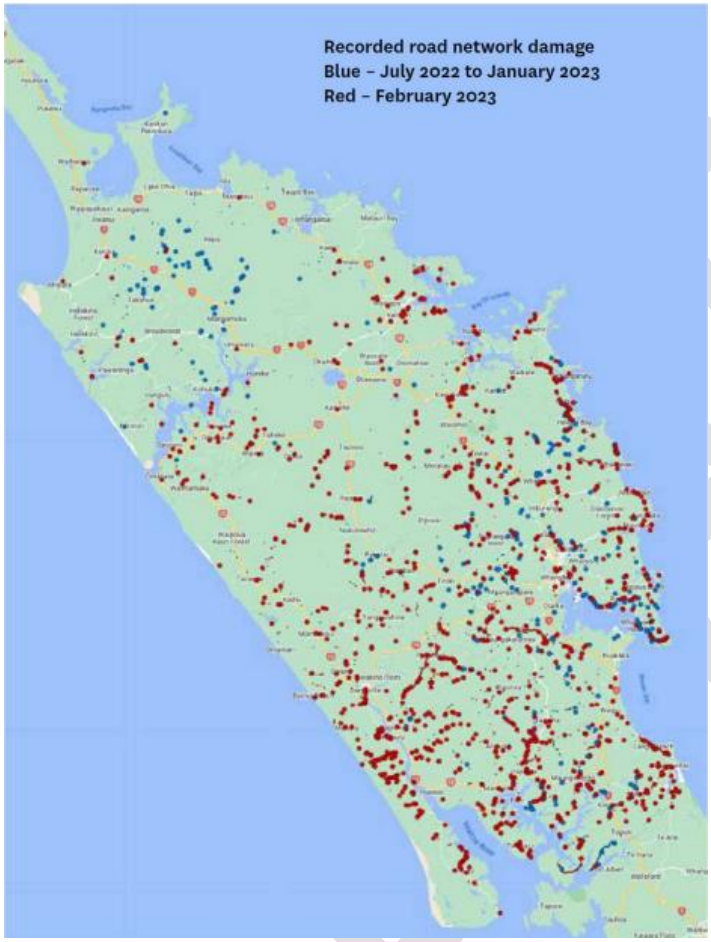


Figure 8 Damage to the road network due to Cyclone Gabrielle

2.4. Strategic Challenges for Non-Core Assets

2.4.1. Overview of non-core assets

The provision of the built spaces, open spaces, maritime assets is important as they contribute to the liveability and wellbeing of our communities. The solid waste assets and services provide public health protection with the safe removal of refuse. It also promotes waste minimisation and diversion from landfills to protect the environment and address carbon emissions from the waste sector.

Council's asset management maturity for the non-core assets is still evolving. FNDC is not required to cover the non-core assets in the 2024 Infrastructure Strategy as part of the 2024 Long Term Plan Lite process. However, it wishes to put in place the right planning blocks for the 2027 Infrastructure Strategy, particularly for the non-core activities.

2.4.2. Strategic challenges - community activities

Council wishes to lift its asset management practices for built spaces, open spaces and maritime assets including having the right data and information to inform the strategy. It is recognised that this will take time to build internal people capability, set up appropriate processes, collect asset data and store it in an asset management system. There is currently no asset management system for managing the non-core assets. The selection and implementation of a preferred system is a high priority improvement action.

Overall, there is reasonably reliable data for maritime assets compared with built and open spaces assets. FNHL in partnership with FNDC undertakes regular inspections and condition assessments of the maritime assets.

Coupled with improving its asset management practices, FNDC also wishes to understand community's aspirations and how built spaces, open spaces and maritime assets support this. As a first step, strategic documents are proposed to be developed to guide future decision making to ensure appropriate asset provision at the right time and in the right location. These are:

- Community Facilities Strategic Approach.
- Housing Strategy.
- Open Spaces Strategy (under development).

The key issues in managing the built spaces, open spaces and maritime assets are summarised in the table below:

Table 6 Key issues – built spaces, open spaces and maritime assets

Focus areas	Activity	Key issues
Management	Built spaces, open spaces	There is a lack of strategic documents to guide elected members to make sound decisions for built and open spaces assets. This results in fragmented decision making.
	Built spaces	There is a mixed model of ownership for Council buildings. The current ownership model needs to be reviewed before any new buildings are built to ensure they are aligned to FNDC's strategic direction.
	Open spaces	Asset ownership of three water assets located in parks and reserves requires clarification including maintenance responsibilities. There are also legacy asset ownership issues with sea walls, stop banks and carparks.
	Maritimes assets, open spaces	The impacts of climate change will impact open space assets (such as walking tracks along coastlines) and maritime assets (particularly the coastlines such as wharves and boat ramps). Far North 2100 considers infrastructure retreat.
	Maritimes assets	Changes in demographic and population particularly in eastern areas with high growth. This results in high demand for maritime assets and services including parking and can cause safety issues.
People	All	There has been loss of people capability and capacity with the various management structure changes.
Process	Built spaces, open spaces	Deferred maintenance and renewals, the need to minimise rate increases and a historic underinvestment in this activity has resulted in poor quality assets.
Data	Built spaces, open spaces	There is limited utilisation data available for built and open spaces assets. Understanding current demand is important to plan for future growth.
		Asset data is not always used to inform asset management planning. Condition data has been collected for most asset groups but not always stored in a system.
System	All	There is currently no asset management system for managing the built spaces There have been various system reviews completed but no preferred system has been agreed corporately to date.

2.4.3. Strategic challenges - solid waste activity

The solid waste activity in the Far North, and across the country, is currently undergoing significant change, triggered by:

- National waste sector disruption from the Government releasing its Te rautaki para | Waste strategy in early 2023, along with announced changes to standardise kerbside collection services and introduce national targets for the amount of household waste diverted away from landfill. As part of this, there is a new requirement for kerbside recycling services to be provided by Council before 2027 and kerbside food collection services by 2030 (although timing may change by the new Government).
- The recommendations from the Section 17A review of the Solid Waste Service, completed in late 2022, have been modified to incorporate the direction set by the central Government.
- Council's 2017 Waste Management and Minimisation Plan was reviewed at the end of 2023 and the decision was made to update the plan to set new objectives and targets for the next six years, in line with central Government's Waste Strategy and the Far North's broader values.
- Contracts for the operation of Council's network of Refuse Transfer Stations and Community Recycling Centres will expire towards the end of 2024 and replacement contracts are in the process of being procured so these services remain available. In light of the changes described above, pricing for additional services has been included and the replacement contracts will include options for including kerbside collection services in the future.

The key issues in managing the solid waste activity are summarised in the table below:

Table 7 Key issues – solid waste activity

Focus areas	Key issues
Management 	Historically FNDC has let the private market provide kerbside collection services. Mandated changes mean FNDC in the future will need to provide kerbside recycling and food collection services as a minimum and community engagement to encourage behaviour change to support circular economy and waste minimisation. The proposed kerbside collection services are being investigated including the timing.
People 	There is only one dedicated person for the solid waste activity, with no back up and increasing demands with additional services and community engagement expected.
Process 	There is no proactive management of the leachate systems at the closed landfills.
Data 	There is general uncertainty in the extent and quality of solid waste data from kerbside and commercial sources due to these being private services. There is also a lack of transparency in solid waste volumes which makes setting appropriate reduction and diversion targets a challenge.
System 	There is currently no formal asset register for the solid waste activity. Finance's Fixed Asset Register is the default asset inventory list.

2.5. Land drainage activity

Council also owns four land drainage schemes - Kaitaia, Kaikino, Motutangi and Waiharara. These are mostly managed by the separate land drainage committees including setting works programmes and setting targeted rates. The land drainage network consists of open channels and some floodgates. The primary purpose of the land drainage network is to allow landowners to drain their land for pastoral use.

There was limited existing land drainage data and information to develop an activity management plan to inform the 2024 strategy. It is intended that this be improved to inform the 2027 strategy and included as an activity.

2.6. Regional collaboration

2.6.1. Northland context

As a remote district, regional collaboration and maintaining relationships are essential for FNDC in responding to legislative changes as well as connecting with Government agencies such as the Department of Internal Affairs and Waka Kotahi.

We regularly collaborate with neighbouring Whangārei and Kaipara District Councils at management level with various activity specific forums. To a lesser extent, the three district councils collaborate with Northland Regional Council for a regional integrated planning approach. This will increase with the development of the long-term Regional Spatial Plan as required by the new Spatial Planning Act 2023.

There have been regional strategic documents prepared jointly including:

- Regional Economic Development Strategy Te Rerenga (draft) (refer to Section 2.2.4).
- Regional Accessibility Strategy (draft and still to endorsed by Northland Forward Together and FNDC).

Historically, there has been limited regional collaboration for solid waste assets and services. This is partly due to FNDC letting the private market provide kerbside collection services. However, there is opportunity for greater regional collaboration with disruption in the waste sector and the Government's mandated requirements.

2.6.2. Management of Far North's assets

There are various custodial arrangements for managing FNDC's core infrastructure and maritime assets as summarised in the table below.

Table 8 Summary of asset custodial arrangements

Activity	Asset custodian	Responsibility	Description
Land transport	Northland Transportation Alliance (NTA)	Operational and maintenance, renewal and capital planning, Activity Management Plan development, road corridor access approvals.	NTA was established in 2016 and is a collaborative alliance between FNDC, Whangārei and Kaipara District Councils, Northland Regional Council, and Waka Kotahi. It combines and co-locates the individual council staff and resources.
Three waters	Far North Waters Alliance	Operational and maintenance, renewal and capital planning, Asset Management Plan development, consent monitoring compliance, drinking water compliance.	This is an alliance between FNDC and Ventia for managing the three water assets. Council and contractor's staff co locate and work as one team.
Maritime assets	FNHL	Operational and maintenance, renewal and capital planning, user fees administration, condition inspection reports, operating consents.	FNHL provides the day to day operational management of the maritime assets as well as technical asset management functions.

2.6.3. Long term and integrated planning

We will need to work with Far North Waters Alliance and NTA particularly for long term planning. The functional roles and responsibilities are relatively straight forward for the technical asset planning and service delivery elements. However, there are areas of overlaps in responsibility, particularly in strategic and growth planning, and relationships with iwi and key stakeholders. Essentially, FNDC is the *plan maker* and the entities are the *plan takers*.

The functional roles and responsibility aspects are defined in the table below and highlights the shared areas of responsibility (shown as shaded). There are areas where responsibilities are shared due to the nature of the work, complex issues, and understanding existing relationships.

Table 9 Functional roles and responsibilities

Key functions	Core activities	FNDC role	Entity role
Strategy	Identifies Community Outcomes for district	R	I
	Establishes long term policy and strategy for district	R	C
	Prepares Long Term Plan	R	C
	Prepares 30 Year Infrastructure Strategy	R	R
	Updates growth model for district	R	R
	Manage growth planning to identify the expected location, timing, and sequence of future development capacity	R	R
	Aligns three waters bulk infrastructure with district's growth maps and Infrastructure Schedule	I	R
	Establish service level outcomes for all assets including three waters and land transport	R	C
	Relationship with iwi and key stakeholders for three water assets	R	R
Technical asset management	Prepares Three Waters Asset Management Plan and Land Transport Activity Management Plan	I	R
	Collects and analyses asset data		R
	Integrates three waters and land transport asset management with Long Term Plan and 30 Year Infrastructure Strategy	R	C
Investment planning and prioritisation	Integrates planning processes	R	I
	Capital works prioritisation for three waters	C	R
	Uses the Te Ao Māori framework in growth planning decision making	R	I
Plans and manages network	Develops three waters and land transport forward works programmes	I	R
	Develops asset management delivery plans		R
	Monitors compliance and performance of three water and land transport assets	I	R
Service delivery	Delivers three waters and land transport capital works programme	C	R
	Delivers three waters and land transport operations and maintenance		R

Key for functional roles:

- R – Responsible
- C – Consult
- I – Informed.

Planning for infrastructure will be an iterative process particularly with information flows, data gaps, aligning strategic priorities and building relationships. The mechanisms for managing the integrated planning process and functional roles are:

- FNDC/NTA – Have developed an Integrated Transport Strategy (ITS) to address key transport issues faced by the district. A series of workshop developed the ITP Recommended programme of works.
- Far North Waters Alliance – annually through the Alliance Agreement.

The effectiveness of the integrated planning framework will be formally reviewed every three years sequenced with the Long Term Plan.

2.7. Growth planning

2.7.1. Where we are at

Council recognises its growth planning practices need to improve. FNDC is a reasonably sized district council based on population and geographic spread coupled with steady population growth. It needs to lift its practices and work towards planning for growth long term.

Significant work is underway / completed to improve the robustness of FNDC's strategic growth planning framework. These are:

- **Growth Planning Assessment** – Reviewed the current growth planning process and identified the required evidence base to support a Development Contributions Policy, Infrastructure Strategy and Spatial Plan. The draft Growth Planning Review (April 2023) included mapping data in GIS.
- **Development Contributions Policy Gap Analysis** – A stocktake of the existing evidence base to assist with a project plan for the preparation of a Development Contributions Policy. The Development Contributions Policy Gap Analysis (May 2023) identified required information for the different activities.
- **Spatial Plan** – FNDC is undertaking spatial planning to provide for growth and changes in the district. The Kerikeri-Waipapa Spatial Plan is the first spatial planning project being undertaken as part of the implementation of Far North 2100. FNDC will commence a project to develop a District Wide Spatial Strategy in 2024 that will inform long term growth and spatial planning objectives for the district.

The following activity specific tools have also been built to help with infrastructure planning including running scenarios:

- Transport network planning model.
- Water supply, wastewater, and stormwater hydraulic network models.

2.7.2. *How do we get there*

FNDC wishes to plan long term for growth with a 30-year horizon and understand where bulk infrastructure is required to service development. The outputs from the planning tools will inform our strategic planning and investment decisions.

We will achieve these desired growth planning outcomes through the multi-faceted approach. However, it will take time to lift our growth planning practices. In the interim, we will undertake various initiatives to build our growth planning capability and capacity. The future and interim growth outcomes and the alignment with Te Pae o Uta - te Ao Māori Framework are described in the following table.

Table 10 Future and interim growth outcomes

Focus areas	Alignment with Te Pae o Uta – Te Ao Māori framework	Interim growth outcomes – *transition*	Future growth outcomes – *aspirational*
People	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – people	• Recruit to build an internal growth team including planning engineer. • Work across Council teams to build sound evidence for infrastructure planning. • Start to build cultural competency and capability for growth planning to strengthen awareness internally.	• Capable and fully resourced internal growth team to proactively plan long term and build relationships internally and externally.
Relationships	Whainga (Goal) 1 - Increased Participation In council structures and decision-making processes - relationships	• Build relationships with tangata whenua to understand growth / non-growth communities with Te Ao Māori view. • Continue to foster the relationships with NTA and Far North Waters Alliance so infrastructure planning is integrated. Both entities are informed of FNDC's planning timeframes so there is alignment.	• We will develop long term growth plans to inform NTA and Far North Waters Alliance on providing bulk infrastructure to service development areas. • We will collaborate with neighbouring Whangārei and Kaipara District Councils and be guided by Northland Regional Council's Regional Spatial Plan for regional integrated planning approach.
Planning tools	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – process	• Continue to use the Proposed District Plan to inform growth planning until spatial planning tools are developed and ready to use. • Develop and implement the prioritised work programme including the completion of a Far North District Wide Spatial Strategy. • The process to develop the various growth planning tools are inclusive of Māori needs and issues. • Develop sub district area plans (as detailed chapters of the District Wide Spatial Strategy) so identified growth areas are ready to go live in accordance with the Proposed District Plan	• We will have accurate and fit for purpose spatial planning tools available to run scenarios to inform investment decisions. • We will have useful outputs from the spatial planning tools, sub district area plans and network planning models (land transport and three waters) to inform bulk infrastructure size, location, and timing. • The planning outputs identify the expected location, timing, sequence of future development capacity in the growth areas and benefit areas. • Continually review the process effectiveness and any new legislative, national or regional requirements such as regional spatial plans.
Decision making	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – engagement	• Identify the growth driven capital projects at FNDC, NTA and Far North Waters Alliance for the 10 year horizon. • FNDC's proposed approach to growth planning is described in the Long Term Plan and Infrastructure Strategy documents. • Start to use the Te Ao Māori framework in growth planning decision making internally.	• We will have 30 year horizon of infrastructure requirements including major capital projects that will inform our Long Term Plan, Financial Strategy and Infrastructure Strategy processes. • The Te Ao Māori framework is used in growth planning decision making internally with FNDC staff.

Focus areas	Alignment with Te Pae o Uta – Te Ao Māori framework	Interim growth outcomes – *transition*	Future growth outcomes – *aspirational*
		• FNDC starts to develop an anticipated timetable of development by areas so sequenced and scheduled by decades and populate in the Infrastructure Schedule. FNDC communicates the final Infrastructure Schedule internally and externally with infrastructure providers (including NTA, Far North Waters Alliance and Waka Kotahi).	• Undertake effective communication with Māori communities with growth planning particularly for non – growth / declining areas. Design the infrastructure alongside the hapu and within the communities. • We will plan for growth based on sound evidence to ensure urban sustainability and affordable infrastructure. • FNDC formally documents the district's growth planning approach and Infrastructure Schedule in a Future Development Strategy (or similar). • We will identify and implement an appropriate mechanism for funding investment in the infrastructure that is required to support growth in our district.

3. Our Direction

3.1. Our significant challenges

In preparing this strategy, four strategic district infrastructure issues have been identified that are at the forefront of infrastructure planning and decision making. These are:

1. Sufficient evidence to make sound infrastructure decisions.
2. Lack of integrated planning particularly for growth planning.
3. Climate change impacts on the district and resilience of critical infrastructure.
4. Wellbeing of our community for healthy and sustainable outcomes.

3.2. Our management response

The key strategic issues, implications and Council's management response, and the alignment with Te Pae o Uta - te Ao Māori Framework are summarised in the following table.

Table 11 Strategic district issues

Strategic issue	Alignment with Te Pae o Uta – Te Ao Māori framework	Implications	Council's management response
1. Sufficient evidence to make sound infrastructure decisions.	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – process	• We know that we need to continue to invest in our infrastructure assets. We need to keep ahead so there is not an unsustainable deficit that is unaffordable for our current and future ratepayers. Investment is also required to ensure that our assets meet the levels of service to our communities, predicted growth, meets legislative requirements, and resilient to any disruption. • We know that our underlying asset data to make good decisions need improving particularly for the non-core activities. We need to lift our AM capability to enable sound infrastructure decisions.	• Identify the missing asset data gaps through the 2024 AMP development including the Improvement Programmes with prioritised actions. • Set up adequate processes and systems as well as people capability to ensure asset data is kept up to date, accurate and complete. • Continue to implement the various transport asset data improvements identified with the Te Ringa Maimoa Data Quality Reports (Waka Kotahi partnership programme to lift AM capability). • The process to improve the robustness of underlying data is inclusive of Māori needs and issues.
2. Lack of integrated planning particularly for growth planning.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – engagement	• Far North's resident population has been steadily growing and is predicted to continue to grow. Greenfield development is predicted in specific areas including Waipapa, Haruru and Kerikeri South. • We need to plan for growth based on sound evidence to ensure urban sustainability and affordable infrastructure. • It will be a challenge to plan for growth with the core infrastructure effectively managed outside of FNDC at NTA and Far North Waters Alliance.	• Continue with our growth planning processes and fit for purpose tool development (refer to Section 2.4.3 for management response for growth planning). Test the introduction of a Development Contributions Policy in the 2024 LTP. • Start to use the Te Ao Māori framework in growth planning decision making internally. • We will work collaboratively with Far North Waters Alliance and NTA on planning for growth long term. FNDC will be the ***plan maker*** and the entities will be the ***plan takers***.
3. Climate change impacts on the district and resilience of critical infrastructure.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – engagement	• We are already experiencing impacts such as cyclones and record flood events. The Far North District is particularly susceptible to weather related events with our communities being cut off for long periods due to the state highways and our local roads being flood damaged. • Food supplies were unable to come into our district as well as agricultural produce unable to leave. Tourist numbers were impacted with the State Highways cut off including cancelled cruise ships to the Bay of Islands.	• We will implement our prioritised work programme for climate change adaptation planning and implement across our activities (refer to Section 5.5.2 for strategic response to climate change). • Renewals planning – Our critical assets are the priority for our renewal programmes. Noncritical assets are managed on reactive repairs / replacement. We renew our assets with a risk-based approach. Proactively improve transport network resilience and reliability when undertaking capital and renewals works.

Strategic issue	Alignment with Te Pae o Uta – Te Ao Māori framework	Implications	Council's management response
		• A key focus is strengthening the infrastructural resilience of our infrastructure assets. Infrastructure resilience is tested in the Far North District as it is exposed to a variety of natural hazards coupled with climate change including landslides, flooding, and storms. These natural disasters can cause considerable damage to infrastructure assets and affect delivery of service.	• Operational transport response – NTA will continue with its operational response including closed roads due to road slips or under slips. NTA will continue with road drainage maintenance including hotspots in urban areas and vulnerable sections of the rural network that are prone to blockages and cause flooding. • Alternative transport routes – NTA will continue to accommodate emergency diversions from State Highway routes in collaboration with Waka Kotahi. We will invest in risk mitigation on vulnerable sections of the transport network. • Remote communities - We will continue to utilise emergency planning for potentially isolated communities. We will explore capital investment options to strengthen resilience for the isolated communities where practical and affordable. We will develop Community Adoption Plans and undertake community education. We will work alongside the hapu and within the communities to understand the issues and design culturally useful solutions.
4. Wellbeing of our community for healthy and sustainable outcomes.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	• Far North District continues to experience higher levels of deprivation compared to other parts of the country when using the New Zealand Deprivation Index. On a scale of one to ten (least to most deprived scores), Far North District is assessed individually as having a score of 8.1. • There is also a risk of increasing existing inequities and creating new and additional inequities particularly with housing in the Far North District. Identified housing issues include increasing waiting lists for social housing. • Research has shown that housing often fails to meet the needs of diverse populations. A recent publication by the Royal Society Te Apārangi (2021) highlighted inequalities in housing, particularly for Māori. • Inequities have grown in the Far North District with cost of	• Our community puts a high value on communal spaces for their wellbeing. We are strengthening our strategic planning framework including developing Open Space and Housing Strategies to improve inequities and liveability in our communities. • We will work iwi and hapu to understand the issues in developing strategies that impacts their wellbeing. • Continue to seek external funding where applicable to offset the large capital projects and impact on the general rates. • Undertake sound activity management planning so capital expenditure can be forecast over the longer term to smooth any short-term spikes.

Strategic issue	Alignment with Te Pae o Uta – Te Ao Māori framework	Implications	Council's management response
		living pressures and significantly increase in demand for emergency housing.	

4. How We Manage Our Infrastructure

4.1. Asset management approach

4.1.1. Overall asset management approach

Council is committed to providing good quality infrastructure assets that serve the needs of the community. The asset management approach is for the sustainable management of its assets and activities. Effective asset management requires the balance between levels of service, risk and cost as shown in the figure below.

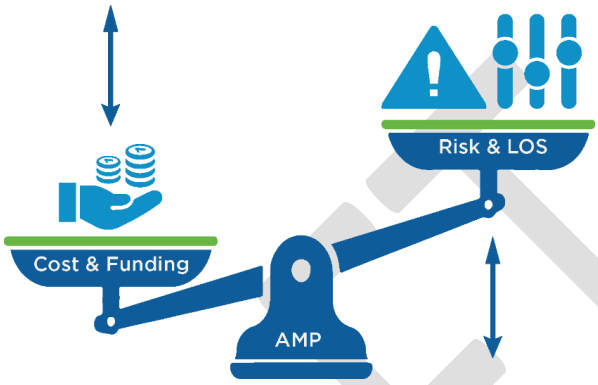


Figure 9 Asset management balancing act

An Asset Management Policy sets out the requirements for appropriate management of its assets and activities. It also defines the principles and responsibilities that an organisation applies when managing its infrastructure assets. FNDC currently does not have a documented Asset Management Policy. The development of an Asset Management Policy is recognised as a high priority improvement action as it will ensure consistency across the diverse range of infrastructure assets including those managed by various custodial arrangements.

4.1.2. Building asset management capability

We wish to lift our internal asset management capability and capacity, particularly for non-core assets. Council's asset management practices are still evolving and the focus is on getting the right building blocks in place. This will be through investing in people coupled with data, processes and systems. The technical 2024 Asset Management Plans (where developed) have identified improvements based on the opportunities identified through the plans' development consistent with good industry practice. Note that Asset Management Plans still need to be developed for the three water activities.

4.1.3. Capital works delivery

There have been significant underspends over the last two years mainly due to:

- Restrictions due to COVID lockdowns in the Northland Region. This was impacted again with Auckland Region's restrictions cutting the Northland Region off from the rest of the country.
- Inadequate internal resourcing to deliver the planned works.
- Various management restructures hampering activity resourcing and inconsistent, clear strategic direction.

Capital works delivery continues to be a focus for Council and has been identified as one of FNDC's top risks. We are building confidence in the delivery of the capital works programmes through the following practices:

- Increasing internal capability and capacity.
- Embedding the project management improvements as business-as-usual practices.
- Strengthening project management, reporting and governance controls so there is transparency for Far North's community, elected members and our funding partners.

There is a higher level of renewals increasing over the five year period. This is to repair the district's flood damaged road network and to be more proactive in three water assets.

As part of Council's strategic community wellbeing priority, gaining external funding is important for the Far North District. Our funding partners need to be assured that we have sound project management practices for delivering the capital works programmes.

4.1.4. Evidence base improvements

Asset condition and performance enables an assessment of the current asset state. Having knowledge of asset condition enables more accurate prediction of maintenance requirements and timing for renewals. Condition and performance are better indicators of current asset state rather than using age (as this tends to be theoretical, based on design lives, and is not always available).

Council is committed to improving its knowledge and understanding of the assets as this information is used to inform its investment decisions (refer to Section 4.3 Reliability of Information). Improving data reliability will take time and recognised as strategy improvements to inform the 2027 Infrastructure Strategy.

4.2. Levels of service

4.2.1. Levels of service framework

Levels of service describe the outputs Council is expected to deliver through the management of the physical assets from a customer, legislative or regulator point of view. The Levels of Service Framework is the structure to align the Council's Vision and Community Outcomes to delivery of the services and contractual performance measures. The Levels of Service Framework is shown in figure below.

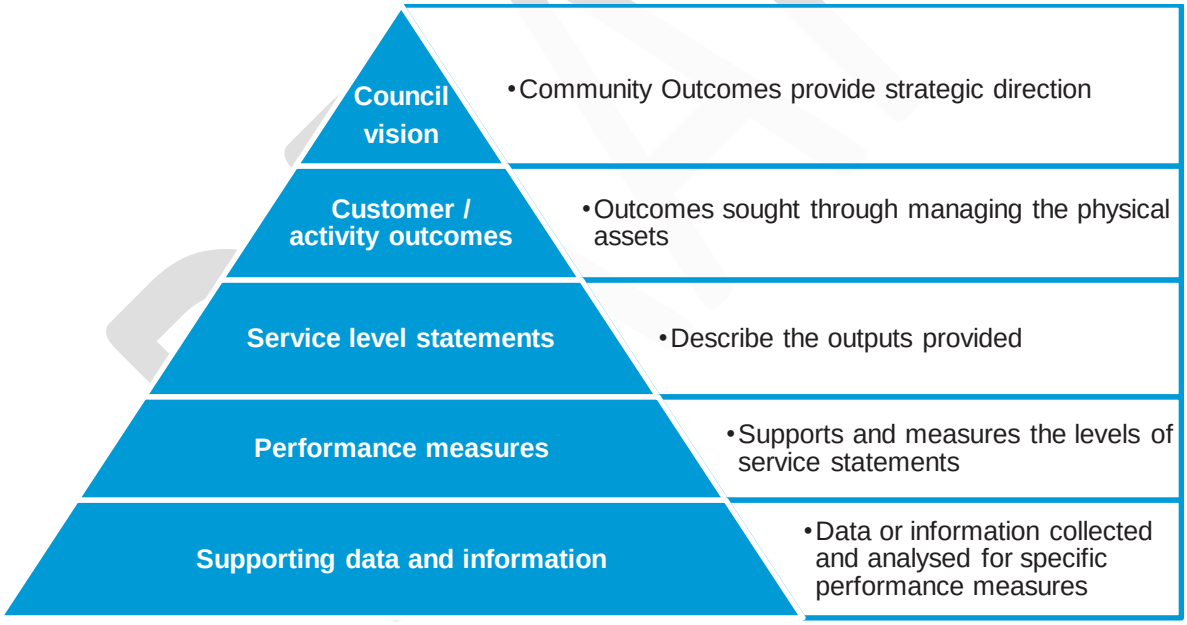


Figure 10 FNDC's Levels of Service Framework

4.2.2. Transport customer levels of service

The customer levels of service for the land transport activity are summarised in the table below including performance for 2022/23 based on the Annual Report. It is noted that many of the performance measures were not achieved in 2022/23 due to the high frequency of weather-related events.

The levels of service are based on the mandatory performance measures as set by the Department of Internal Affairs, Waka Kotahi's requirements and good industry practice. The Transport Activity Management Plan provides the supporting detail and technical levels of service, performance measures and past results against targets. Recent results on Smooth Travel Exposure and roughness performance measures are provided in Section 6.1 Land Transportation.

Table 12 Customer levels of service – land transport

Community Outcomes	Customer Outcomes	Customer Levels of Service	Achieved (2022/23 results)
Communities that are healthy, safe, connected, and sustainable 	Safety	To maintain the district's roading network in a satisfactory condition and in accordance with national safety and engineering standards – measured by fatalities and serious injury crashes.	Not achieved
	Quality	Measured by Smooth Travel Exposure.	Achieved
		Maintained to roading contract requirements.	Not achieved
	Condition	Measured by road resurfacing percentage.	Not achieved
		Measured by road rehabilitation percentage.	Not achieved
		To maintain the district's footpath network and infrastructure to high standards.	Achieved
Connected communities that are prepared for the unexpected 	Responsiveness	Responding to customer service requests – urgent and non-urgent.	Not achieved
		Hokianga Ferry Service will run in accordance with advertised timetable.	Achieved
A wisely managed and treasured environment that recognises the role of tangata whenua as kaitiaki 	Environmental Sustainability	Effects of the natural environment are minimised	Proposed / Not measured

Key:

No data, new measure	Improvement/Achieved	Needs attention	Not achieved

4.2.3. Three waters customer levels of service

The customer levels of service for the water supply, wastewater and stormwater activities are summarised in the table below including performance for 2022/23 based on the Annual Report. The levels of service are based on the mandatory performance measures as set by the Department of Internal Affairs and good industry practice.

Notes on compliance with drinking water requirements:

- Drinking water compliance was reported against two different requirements for 2022/23.
- Taumata Arowai introduced the Drinking Water Quality Assurance Rules that came into effect on 14 November 2022 and reporting was required from 1 January 2023.
- From 1 July to 31 December 2022, compliance was measured against Part 4 and Part 5 of the Drinking Water Standards 2005 (revised 2018).
- From 1 January to 30 June 2023, compliance was measured against Drinking Water Quality Assurance Rules (2022) with a target of 100% bacteria and protozoa compliance.

It is noted that the stormwater performance measure on system performance was not achieved in 2022/23 due to the high frequency of weather-related events, and as a result higher volume of Request for Service.

Table 13 Customer levels of service – three waters

Community Outcomes	Customer Outcomes	Water supply (2022/23)	Wastewater (2022/23)	Stormwater (2022/23)
Communities that are healthy, safe, connected, and sustainable 	Safety	To provide reliable and sustainable water supply, ensuring sustainable development and adequate water supply in times of emergency *(against both reporting requirements as noted above)*	Provide reliable wastewater infrastructure, protecting the environment and community *(dry weather overflows)*	To enable sustainable development through urban stormwater infrastructure *(number of flooding events)*
		To provide reliable and sustainable water supply, ensuring sustainable development and adequate water supply in times of emergency *(customer complaints)*	Provide reliable wastewater infrastructure, protecting the environment and community *(total number of complaints received by the territorial authority)*	
	Quality / condition	To provide reliable water networks	To provide reliable wastewater networks	To enable sustainable development through urban stormwater infrastructure *(for stormwater performance and customer satisfaction)*
Connected communities that are prepared for the unexpected 	Responsiveness	To provide reliable and sustainable water supply, ensuring sustainable development and adequate water supply in times of emergency *(median response times where the local authority attends a call-out in response to a fault or unplanned interruption to its networked reticulation system)*	Provide reliable wastewater infrastructure, protecting the environment and community *(median response times where the territorial authority attends to sewerage overflows resulting from a blockage or other fault in the territorial authority's sewerage system)*	To enable sustainable development through urban stormwater infrastructure *(median response time to attend a flooding event)*
A wisely managed and treasured environment that recognises the role of tangata whenua as kaitiaki 	Environmental Sustainability	To provide reliable and sustainable water supply, ensuring sustainable development and adequate water supply in times of emergency *(percentage of real water loss from the local authority's networked reticulation system)*	Provide reliable wastewater infrastructure, protecting the environment and community *(compliance with the territorial authority's resource consents for discharge from its sewerage system)*	To enable sustainable development through urban stormwater infrastructure *(compliance with the territorial authority's resource consents for discharge from its stormwater system)*
		To provide reliable and sustainable water supply, ensuring sustainable development and adequate water supply in times of		

Community Outcomes	Customer Outcomes	Water supply (2022/23)	Wastewater (2022/23)	Stormwater (2022/23)
		emergency *(average water consumption is within accepted industry limits)*		

4.2.4. Proposed changes to levels of service

The service areas where Council wishes to improve its actual performance and / or changes to the levels of service are described in the table below. These are discussed further in Section 6 of the Infrastructure Strategy at the activity level.

Table 14 Proposed changes to levels of service

Activity	Proposed changes to levels of service
Land transport 	• The mandatory levels of service as set by the Department of Internal Affairs will remain unchanged. • The land transport sector is introducing a new framework called differential levels of service. This will enable a better understanding between levels of service, risk and cost. • Council is introducing the differential levels of service with the with 2024 AMP / funding round in collaboration with NTA.
Water supply, wastewater, stormwater 	• There are no proposed changes to the levels of service for the three water activities as it has been assumed that the mandatory levels of service will remain unchanged until the form of the three water services is determined by the new Government.

4.3. Reliability of information

Council is committed to improving its knowledge and understanding of the assets. It is important that the data and information used in renewal planning is sound. This provides assurance that the forward works plans represent good use of funds.

The data quality for the non-core assets need to improve and has been identified as a strategic challenge. Council wishes to improve its data collection and quality in relation to its non-assets.

The data confidence in the non-core and three water activities is summarised in the table below at major asset level with detail in each Asset Management Plan (based on asset management specialist knowledge). In particular, there is low confidence in the three waters asset data compared to the other activities. The data reliability of transport assets is covered in Section 6.1.

Table 15 Summary of data confidence

Activity	Major asset classes	Asset age	Asset condition	Inventory completeness	Overall
Built spaces 	Community buildings	A	C	C	C
	Community halls	A	C	C	C
	Housing for the Elderly	A	C	C	C
	Libraries	A	C	C	C
Maritime assets 	Boat ramps	C	B	B	B
	Wharves / jetties	C	B	B	B
Open spaces 	Cemeteries	C	B	C	C
	Parks and reserves	C	B	C	C
	Playgrounds	C	B	B	B
	Structures	C	C	C	C
Solid waste 	Resource Recovery Centre	B	B	B	B
	Consented Closed Landfills	D	C	C	C
Water supply 	Reticulation	C	D	B	C
	Plant	D	D	C	D
Wastewater 	Reticulation	C	D	B	C
	Plant	D	D	C	D
Stormwater 	Reticulation	D	C	C	D
	Plant	D	D	D	D
Land drainage 	Stopbanks	E	E	E	E
	Land drainage pump stations	D	D	D	D

Key:

- A: the data is accurate (±5%) and based on reliable documentation
- B: data is based on some supporting documentation but is less certain (±15%)
- C: uncertain data, fair amount of assumptions and local knowledge used to reach the conclusions (±30%)
- D: very uncertain data where there is no formal documentation to base an assessment on (±40%)
- E: Unknown.

5. Risk Management

5.1. Risk management approach

Council takes a comprehensive approach to risk management including:

- Policy - Council's Risk Management Policy (2019).
- Governance - Te Miromiro - Assurance, Risk and Finance Committee.

FNDC is committed to ensuring sustainable and effective management of risks at all levels. The approach for managing the infrastructure balances risk and performance while providing cost effective services. At an activity level, these infrastructure risks need to be considered holistically as part of the asset management planning approach including considering criticality in decision making.

FNDC's Strategic Leadership Team reviews the corporate risks on regular basis and closely monitor the top ten risks.

5.2. Climate change impacts and actions

5.2.1. Regional predictions and context

Climate change is a major issue facing all infrastructure providers and the built environment. Changes in climate such as rainfall, temperature and wind are already occurring and impacting regions differently. Climate change predictions for the Upper North Island include:

Figure 11 Climate change predictions for Upper North Island
Source: NIWA's snapshot for Zone 1

The Far North District's geographical attributes make it susceptible to climate change impacts and extreme weather events. The long and indented coastline is prone to coastal erosion. The top of the North Island in particular Far North is impacted by multiple and extreme weather systems. This results in communities being cut off when roads are damaged or submerged and houses are flooded. The entire district is effectively cut off when the critical state highways fail due to landslips.

These extreme weather events have direct impacts on the economy and the community. The movement of goods, services, residents, and visitors is restricted when the local road network and state highways are severed for long durations. Potential impacts on the state highways may also make the Far North unattractive to tourists. Cruise ships scheduled to dock at the Bay of Islands were cancelled in the 2002/23 season due to multiple road closures as international visitors were unable to go on planned day trips.

The impacts of extreme weather events on our district's infrastructure in the last three years has been significant. Our roading network has been particularly impacted with significant number of slip events over the last three years.

Climate change is impacting our district already, and we will need to change our approach to infrastructure management and planning to respond. The changes will require us to think about how to build resilience throughout our network, and to reconsider the ways that our infrastructure supports the wellbeing of our communities. It will require us to consider how we can ensure that our communities are able to continue to be connected through extreme weather events, and whether the current infrastructure solutions continue to be appropriate.

5.2.2. Management response to climate change

Council wishes to lift its management practices in responding to climate changes. Council's strategic response to climate change requires the creation of policies, plans and tools which will require community consultation and involvement. It will also require working alongside Māori to involve them on making resilient communities.

Our Māori community have strong cultural and ancestral connections with their whenua. Our infrastructure supports the connection of their kainga, marae, urupā and other culturally significant sites. As we consider our infrastructure and planning responses to climate risks and hazards, we will need to engage with local iwi and hapu to ensure our solutions are culturally appropriate.

Council's strategic response and the alignment with Te Pae o Uta - te Ao Māori Framework are summarised in the table below.

Table 16 Strategic response to climate change

Management category	Alignment with Te Pae o Uta – Te Ao Māori framework	Issues / risks	Council's strategic response / proposed actions
Policies	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – policy	• There are no existing documented rules on how FNDC will respond to climate change in a consistent way across its infrastructure assets, and how it will be considered in decision making.	• Policy - A draft Climate Action Policy has been developed and it is expected to be endorsed / adopted in late 2023. • Plan - A Climate Action Implementation Plan is being developed to put the Climate Action Policy into action and ultimately become part of business as usual. It will be applied across Council's staff and service providers. • Governance - A Reference Group has been formed to provide oversight of implementing the Climate Action Policy. It includes representatives across FNDC's teams and NTA. The Reference Group will periodically report on progressing the Climate Action Implementation Plan.
Plans	Whainga (Goal) 1 - Increased Participation In council structures and decision-making processes – relationships – decision making	• The work programme covers many projects with competing priorities.	• Prioritisation - The proposed climate change projects have been prioritised using a quadrant to guide decision making on the climate risk levels against acceptable solutions.
Tools	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	• Threat to Council infrastructure and the wider community due to natural disasters and climate change. • Māori wellbeing may not have been incorporated into the community adaptation planning approach.	• Hazards - Strengthening resilience by identifying hazards better. A 3D map (online platform) has been prepared of the Far North District's hazards. It includes social and cultural factors. • Vulnerability – A risk model has been developed to run scenarios and to test options for impacted communities as well as infrastructural solutions such as submerged road sections. This is similar to the model developed for Christchurch City Council with the impact of earthquakes on homes, roads and utilities. • Community adaptation planning – We need to build community resilience by engaging with them to understand their area specific issues. The goal is for each community to develop a plan for how to adapt. We intend to start one macro level Community Adaptation Plan each calendar year that are area specific. These projects will be multiyear, and it is intended to work towards three projects running at any given time. There will also be about 3 smaller / micro projects per year including marae based. We will work alongside the hapu and within the communities to understand the issues and design culturally useful solutions. • Community education – We intend to roll out tools and calculators suitable for community groups to learn about preparing for climate change and awareness on sustainability. The focus is on schools, libraries, maraes, and businesses.

5.2.3. Activity level actions

Our specific proposed actions at activity level are outlined in the table below with further detail in each Activity / Asset Management Plan.

Table 17 Activity response to climate change

Activity	Alignment with Te Pae o Uta – Te Ao Māori framework	Issues / risks	Council's strategic response / proposed actions
Land transport	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	• Road slips / under slips. • Erosion undermining road sections and bridges. • No / limited access to communities with single roads. • The Far North District is cut off due to damage to state highways and / or local roads isolating communities and stopping the movement of goods, services, and visitors.	• Identification of critical bridges and culverts and development of renewal management strategies. • Increased frequent inspection / maintenance of road drainage systems. • Identification of vulnerable road corridors to water erosion, slips, undermining. • Working with Waka Kotahi, Whangārei and Kaipara District Councils to strengthen the critical routes into Far North District. Influencing Waka Kotahi to invest in the resilience of state highway routes to Far North District. • Roll out the development of Community Adaptation Plans for each community with a focus at those most at risk, • We will work alongside the hapu and within the communities particularly in remote areas to strengthen resilience and preparedness for natural disasters.
Built spaces	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – processes	• Existing facilities designed to legacy standards that have not considered climate change impacts such as higher intensity and more frequent rainfall events, warmer temperatures. • The energy efficiency of the existing buildings is not proactively monitored.	• Working towards a risk-based renewals and investment strategy. • Explore applying for Energy Efficiency and Conservation Authority (EECA) funding to install monitors to improve building energy efficiency.
Open spaces	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – engagement	• Existing parks designed to legacy standards that have not considered climate change impacts such as higher intensity and more frequent rainfall events. • The parks and tracks are vulnerable to slips, fallen trees and wash outs.	• Working towards a risk-based renewals and investment strategy. • Build resilience into the repairs to the track and improved damage. • Work with Māori to seek sustainable long term solution for at risk tracks.
Maritime assets	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – engagement	• Some boat ramps may be impacted by coastal inundation risk resulting in them being unusable.	• Review and monitor at risk boat ramps and potential infrastructure retreat. • Discuss with hapu on the impact of some boat ramps not being available for use long term.

Activity	Alignment with Te Pae o Uta – Te Ao Māori framework	Issues / risks	Council's strategic response / proposed actions
		• Scheduled cruise ships to the Bay of Islands due to severe weather events resulting in loss of visitors to the district and economic impact.	
Solid waste	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – processes	• Erosion risk of closed landfills increases.	• The closed landfills are regularly monitored, and rock protection is used to mitigate the erosion risk where necessary.
Water supply	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – processes	• Prolonged droughts may result in restrictive consent conditions for water takes from streams and waterways. • Vulnerability of critical pipelines to land slips.	• Upgrade treatment plants / reconfigure supply areas to address reduction in demand due to restrictive consent conditions for water takes from rivers and streams. • Continue to use seismically resistant materials for critical assets.
Wastewater	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – processes	• Inflow and infiltration increase and reduces pipeline capacity during storm events resulting in more frequent wet weather overflows. • Pump station vulnerability due to flooding inundation.	• Develop a cost effective infiltration and inflow programme to prioritise the catchments for remedial works.
Stormwater	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	• Increased flooding due to pipe capacity issues. • Land stability issues causing increased sediment runoff into waterways.	• Continue to monitor flooding risk to residential properties with the more intense and frequent storms. • Design new stormwater infrastructure in line with our engineering design manual. • Continue to invest in flood mitigation projects to improve the resilience of flood prone urban areas.

5.3. Critical assets

A key element of Council's asset management planning approach is to define the critical and non-critical assets. This helps with the day-to-day operations of the infrastructure as well as the renewal strategies. An overarching principle is not to have any unforeseen critical asset failures.

Council's risk-based approach to renewing the assets gives priority to public health and safety issues first then critical assets. This ensures the provision of resilient infrastructure. We are still evolving in using criticality in our investment decision making. The most critical assets are shown in the table below at activity level (some are not owned by Council but shown for completeness).

Table 18 Summary of critical assets

Activity	Critical assets
Land transport 	• Roading network and its bridge stock as lifelines for communities • Single access roads to communities • Assets along lifeline routes • State Highways 1, 10, 12 & 15 (owned by Waka Kotahi) are connectors between communities and freight routes • Hokianga Harbour Ferry
Built spaces 	• Housing for the Elderly • Animal shelters • Civil Defence building (EOC) – Kaikohe • Potable water supply to facilities (private systems)
Open spaces 	• Cemeteries • EV charging stations • Sport centre buildings • Significant structures (particularly bridges, high structures or structures over roads) • Seawalls, stopbanks, and floodgates • Playground structures
Maritime assets 	• For medical / community - Te Karaka, Opononi, Rawene, Narrows and Kohukohu • For fuel – Pukenui, Mangonui, Clansman, Totara North, Doves Bay, Russell and Opua • For tourism – Waitangi, Russell, Opua and Paihia
Solid waste 	• Refuse Transfer Station network • Resource Recovery Centre at Kaitāia • Closed landfills including the leachate management systems • The transportation network for the continued execution of solid waste services • Contracted assets (for services mandated by public health requirements)
Water Supply 	• Raw watermains • Pipes greater than 250mm in diameter • Pipe intersects state highway carriageway • Pipe crossing aerial (simple support or no support) • Mains between water sources / head works and reservoirs • Rising mains, pump stations, treatment plants, reservoirs, and pressure control valves • Telemetry links • Generators – plants and pump stations
Wastewater 	• Pipe bridges • Pipe intersects state highway carriageway • Pipe crossing aerial (simple support or no support)

Activity	Critical assets
	• Trunk and rising mains • Pump stations • Treatment plants including inlet and outline lines • Telemetry links • Generators – plants and pumps stations
Stormwater 	• Pump stations • Culverts and ponds and detention dams • Pipe intersects state highway carriageway • Flume crossing aerial (simple support or no support)
Land drainage 	• Stopbanks • Floodgates • Pump stations • Land drains

6. Managing Our Assets Over the Next 5 years

6.1. Land Transportation

6.1.1. Activity overview

The roading network is vital infrastructure for connecting our communities and ensuring safe access to the places that make visiting and living in the Far North an enjoyable experience. The importance of the roading network in the Far North cannot be overstated. It connects our communities to the rest of the Northland Region and south to the Auckland Region, and allows the movement of goods, services, and visitors. The Hokianga Ferry Service provides a vital link between the Rāwene and Kohukohu communities on either side of the harbour.

The maintenance and management of the local roading network is a core function of Council. Transportation forms Council's largest asset group with roading and footpaths accounting for 81% of Council's core assets. FNDC's road network is mainly unsealed at 64%. It is one of the largest local roading network in New Zealand after Auckland Transport at 7,716km, Southland District Council at 4,961km and Clutha District Council at 2,903km.

The map below shows the importance the State Highway network plays in accessing the Far North District. The State Highways connect all the major centres (except Kerikeri) in the Far North District. However, about half of the population lives in smaller settlements which are serviced by local roads, often single access roads.

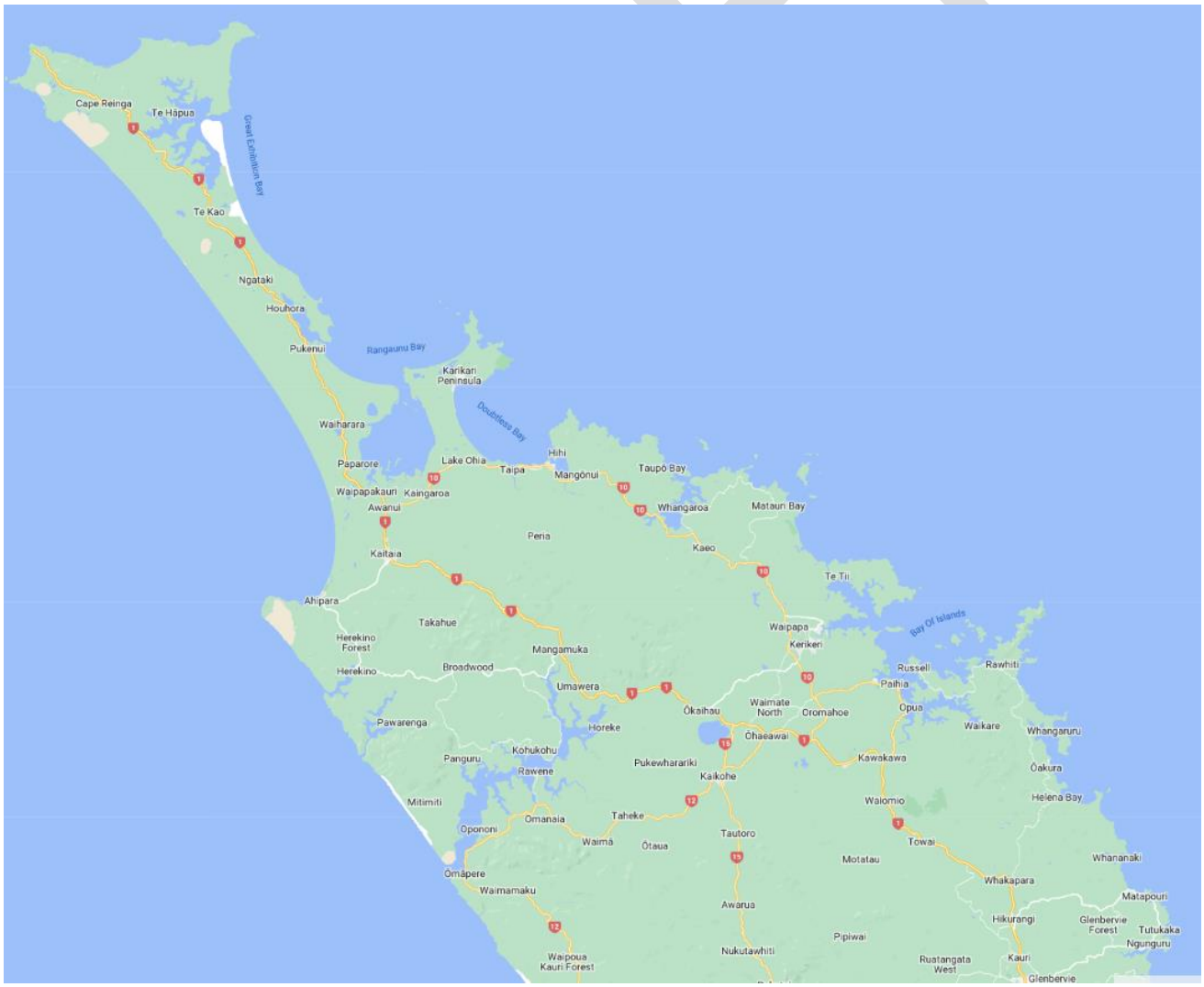


Figure 12 Map showing State Highways in Far North District

6.1.2. Asset summary

Key transport assets include 2,507 km of roads 36% sealed and 64% are unsealed as shown in figure below, and a vehicle ferry service across the Hokianga Harbour.

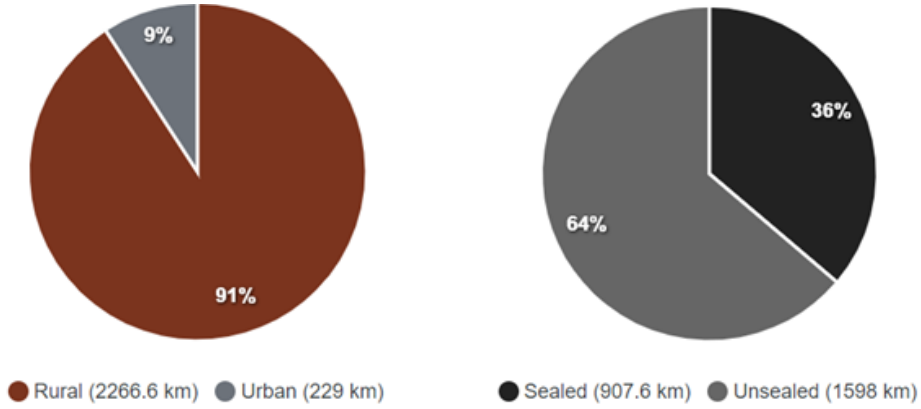


Figure 13 Network characteristics

Council owns and manages $2.3 billion (replacement value as at June 2023) of transport assets including the Hokianga Ferry. The major transport asset classes are summarised in the table below.

Table 19 Transport asset summary

Far North District Council				
				
2,509km Total Road Network	**910km** of Sealed Roads	**1,598km** of Unsealed Roads	**723** Bridges and Large Culverts	**26,978** Drainage Systems
				
234km of Footpaths	**87km** of Cycleways	**1,995** Streetlights	**17,715** Signs	**Hokianga Ferry Service**

6.1.3. Asset age profiles

FNDC have a significant quantity of Primary and Secondary class roads in terms of resurfacing either beyond or approaching end of life. Due to impacts recognised with the problem statement these roads are being pushed. When surfacing does occur these roads are often beyond pre-seal and reseal and need to be manged into the pavement rehabilitation programme.

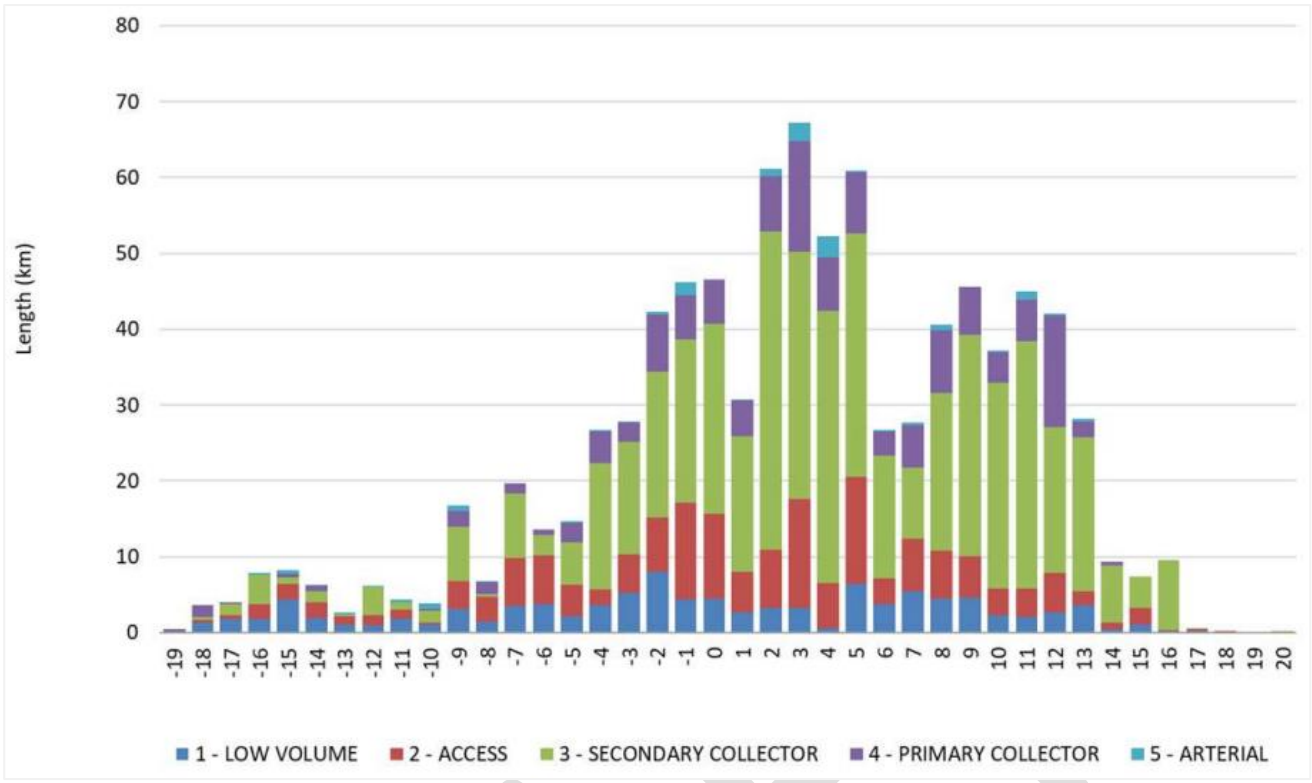


Figure 14 Surface remaining life profile (years) by road category.
Source: NTA AMP

6.1.4. Asset condition and performance

This section provides an overview of the current state of the transport assets as measured by condition and performance. Road quality is covered in the following section, Transport Levels of Service. The table below illustrates the condition distribution of the main asset groups.

Table 20 Condition distribution

	Excellent	Good	Average	Poor	Very Poor	Unknown
Bridges	7%	45%	39%	8%	2%	0%
Culverts	15%	49%	25%	9%	1%	1%
Retaining Walls	45%	22%	18%	1%	2%	11%
Footpath	52%	37%	9%	2%	0.3%	0%

Source: NTA AMP

FNDC length of rutting greater than 20mm in depth, reaching terminal pavement failure, is generally static and declining. The last plan has manged to arrest the rutting issues. However, the length of network greater than 20mm rutting is still concerning and represent a large quantity and requires continued delivery of this plan as proposed.

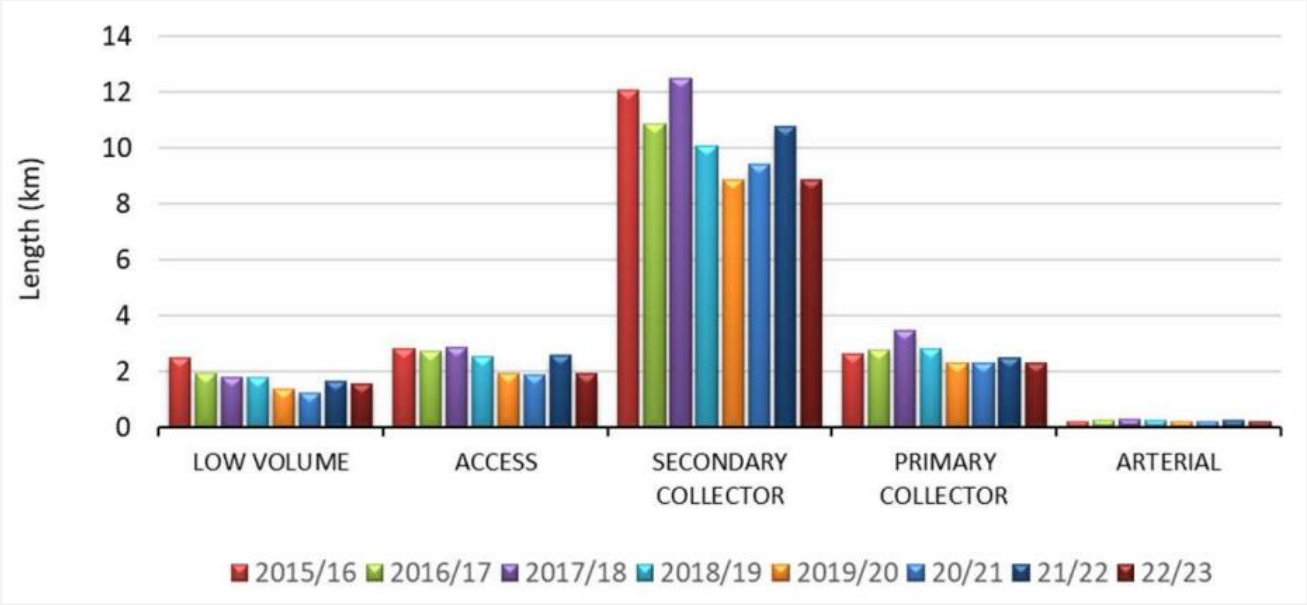


Figure 15 Length of rutting >20mm depth

The Kohu Ra Tuarua – Hokianga Ferry was built in 1999 and has a design life of 30 years. The vessel is maintained under the Maritime Operator Safety Systems (MOSS) and has a Certificate of Survey in compliance with Maritime New Zealand Rules. The Ferry has various servicing schedules based on hours used and during these periods planned maintenance works are undertaken to ensure the Ferry is safe and seaworthy. The Ferry will need to be replaced within 5-7 years.

6.1.5. Te Ringa Maimoa – Data Quality

Confidence of the land transport asset data is measured via Te Ringa Maimoa Data Quality reports. FNDC scored low in asset inventory and condition categories and below the national average as shown below.

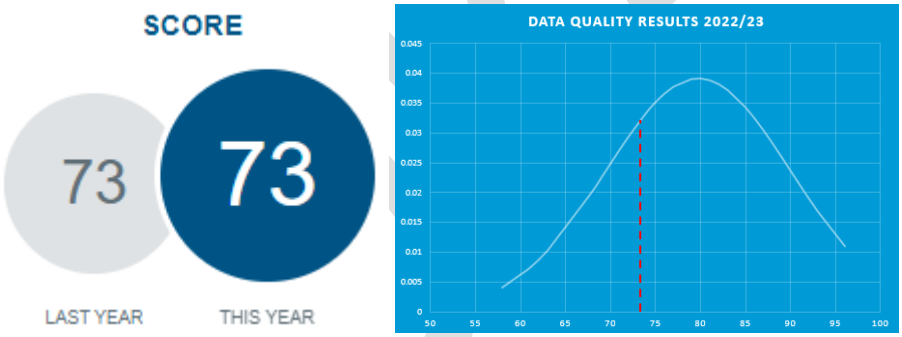


Figure 16 Te Ringa Maimoa Data Quality results & National benchmarking

6.1.6. Road safety

Road safety is the most important measure of the network performance. The road safety trends for the last 5 years are shown in the figure below. This shows that the overall number of crashes have been increasing, with the rural connectors category still showing the highest quantity of crashes.

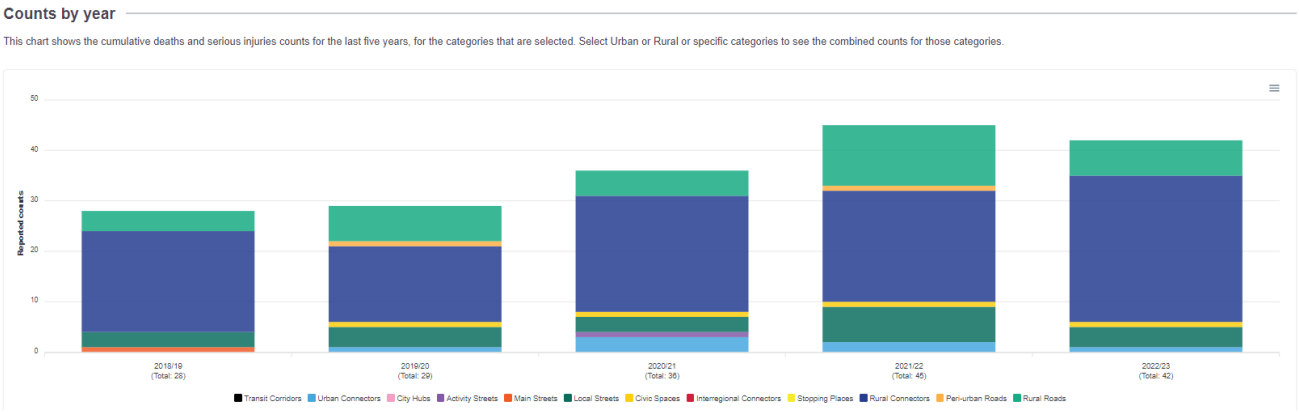


Figure 17 Road safety trends by years

6.1.7. Road quality

The average quality of roads is measured in terms of Smooth Travel Exposure (STE). The STE results for 2023 distributed over the road categories of the One Network Framework are shown in the figure below. This shows that average quality of roads is improving (the arrows on top of each bar graph show the trend direction for that road category).

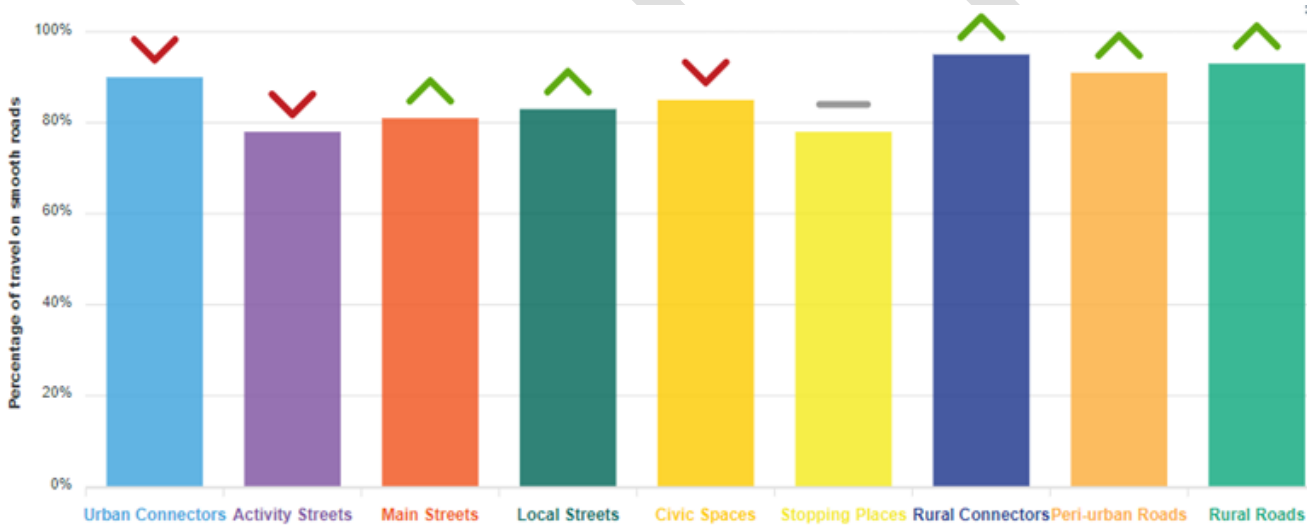


Figure 18 STE results and trends for 2023

6.1.8. Key challenges – land transport

The key challenges for the land transport activity are summarised in the table below with further detail in the Activity Management Plan.

Table 21 Key challenges for land transport activity

District infrastructure issues	Key challenges	Discussion / management response
Sealed Roads	Backlog of works, cost escalations and deterioration of the pavements.	Carryout an adequate programme of pavement renewals that will enable the sealed pavement to be maintained in a fit for purpose condition while optimizing the long-term maintenance costs. Ensure our sealed roads are suitable for the traffic demands, particularly freight, while optimizing the long-term maintenance costs.
Drainage	Backlog of works, cost escalations and associated deterioration of the pavements.	Adopt the NTA's Drainage Plan and Maintenance Intervention Strategy to identify water-tables in areas that are high risk for water ingress, flooding, and scour. Continue to inspect culverts annually to address blocked culverts. Carry out an adequate programme of drainage repairs that enable proactive treatment of these high-risk areas which should prolong the life of the pavement and surfacing and will reduce the amount of water flooding across roads.
Network Resilience	FNDC have few transport options and the network is also vulnerable to slips and flooding during storm events.	Adopt the NTA's Resilience Plan and Maintenance Intervention Strategy to identify retaining walls and slip repairs and flood mitigation measures. Inspect existing retaining walls and flood protection structures. Carry out an adequate programme of retaining wall renewals and slip repairs that enable proactive treatment of high-risk areas which should minimise delay and disruption on key roads, tourist routes and will provide security of access for isolated communities.
Unsealed Roads	FNDC has a large proportion of unsealed roads which results in high levels of community dissatisfaction due to dust, poor road condition and adverse health impacts to residents.	Adopt the Centre of Excellence (CoE) recommendation to strengthen structural pavement layer and place a Paige- Green compliant material over the pavement. Develop a proactive programme of works.
Structures	The condition of structures including retaining walls and bridges, is limited. FNDC has a large number of aging, poor condition and weight restricted bridges that are unable to carry 50MAX traffic impacting on freight movements.	Implement an annual inspection programme. Implement a strategy that creates a forward works programme. Fund the forward works programme.
Road Safety	Trends in deaths and serious injury crashes are increasing	Minor safety improvements, intersection improvements, pedestrian and cycling facilities, geometry improvements, road safety programmes.

6.1.9. Significant issues and options

Significant issues and options for the land transport activity and alignment with the alignment with Te Pae o Uta - te Ao Māori Framework are summarised in the table below. The highlighted option is preferred as the most likely scenario and when Council expects significant decisions will be required. Note that risk is assessed with the option undertaken. Indicative cost estimates are provided for evaluating wide range of options only and not part of Long Term Plan budgets (this applies to water supply, wastewater and stormwater).

Table 22 Significant issues and options for land transport activity

District infrastructure issues	Significant land transport issue	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
Wellbeing of our community for healthy and sustainable outcomes	**Sealed Roads -** Due to the combination of significant cost escalation due to the COVID pandemic, the limited construction season due to the Climatic storm events through 2021-23 and the moderation of the optimised programme for the last LTP, the backlog of renewals has increased, and the road pavements are evidencing accelerated deterioration increasing maintenance costs and renewal requirements.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	1. Do nothing.	– Worsening of pavement condition over time (e.g. more potholes and failures) and an increase in long-term maintenance costs, slower travel times and potential safety issues. – Greater cost and work required to bring network back into specification / maintain levels of service.	3	$0	H
			2. Moderate programme to viable budget increases.	– Continuation of a moderated programme of pavement renewals do not reduce the backlog of required works and will increase the maintenance needs and costs of the network. – Address the poor condition thin asphaltic (TAC) surfacing as these surfaces allow water ingress and premature (and expensive) pavement failure.		$45m	H
			3. Continue with proposed programme of works to bring the desired levels of service to the network and reduce any backlogs to build resilience into our network.	– Most long-term cost-effective programme for sealed roads. – Maintaining freight routes to a higher standard will make these roads better able to cope with the increasing freight loads over time, reduce continual disruptive maintenance patching and more resilient to adverse weather events.		$99m	M
Wellbeing of our community for healthy and sustainable outcomes	**Drainage -** Due to the combination of significant cost escalation due to the COVID pandemic, the limited construction season due to the Climatic storm events through 2021-22 and the moderation of the optimised programme for the last LTP, the backlog of renewals has increased, and the road pavements are evidencing accelerated deterioration increasing maintenance costs and renewal requirements.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	1. Do nothing, continue with ad-hoc reactive maintenance.	– Inadequate control of water flows to keep pavements free of water ingress resulting in pavement failure, flooding and scour of roads, particularly on the unsealed network.	2	$0	H
			2. Adopt the NTA's Drainage Plan and Maintenance Intervention Strategy.	– Able to identify inadequate water-tables in areas that are high risk for water ingress, flooding and scour. – Proactive treatment of these high-risk areas which should prolong the life of the pavement and surfacing and will reduce the amount of water flooding across roads.		$14m	M
Climate change impacts on the district and resilience of critical infrastructure	**Network Resilience** – Far North roads are vulnerable to slips and flooding during heavy rain events, which is only expected to get worse over time due to the effects of climate change.	Whainga (Goal) 1 - Increased Participation In council structures and decision-making processes – decision making	1. Do nothing.	– Worsening of pavement condition over time (e.g. more potholes and slip failures) and an increase in long-term maintenance costs, slower travel times and potential safety issues including cutting access to communities	2	$0	H
			2. Implement the NTA's Resilience Plan and maintenance intervention strategy (MIS) to develop a prioritized programme of retaining wall & slip repairs and flood mitigation required on key arterial routes, tourist routes and on roads that form the only vehicle access to isolated communities.	– Addressing slips and flood mitigation in a proactive manner will reduce the likelihood of catastrophic failure and will reduce ongoing maintenance costs. – It will minimise delay and disruption on key arterials, tourist routes and will provide security of access for isolated coastal communities. – Considering the impacts of climate change in low-lying coastal areas will help planning of new roads and coastal protection in these areas. This will help future proof the road network from potential sea level rise.		$33m	M
			3. Investigate alternative to expand the resilience strategy to a Corridor Network Resilience Analysis and FWP.	– Improved and more focused programme for resilience works. – Providing fit for purpose detour routes for the state highway network and key local arterials would enable traffic and freight flows to negotiate the detour efficiently and safely.		$50m	M
Wellbeing of our community for healthy and sustainable outcomes	**Unsealed Roads** – FNDC has a large proportion of unsealed roads which results in high levels of community dissatisfaction due to dust, poor road condition and adverse health impacts to residents.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	1. Do nothing.	– Continual worsening of pavement condition with increased potholing, corrugations, gravel loss and dust which is leading to high levels of customer dissatisfaction, and health concerns.	3	$0	H
			2. Continue with current programme of re-metalling roads on an ad-hoc basis.	– Continual high maintenance costs. – Continuing to maintain the unsealed network without knowing the pavement depth or condition will retain the current reactive approach to customer complaints which is likely to be suboptimal and result in more customer dissatisfaction. Dust has become a significant concern for resident's health, particularly on freight routes, which is driving significant demand for dust suppression and sealing of roads.		$55m	H

District infrastructure issues	Significant land transport issue	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
			3. Adopt the Centre of Excellence (CoE) recommendation to use Paige-Green compliant materials as a wearing course on high and medium demand roads where additional pavement strengthening to provide the required strength and shape is undertaken.	– Maintenance costs are reduced. – With low demand routes dust is reduced, but with high demand routes the use of a dust coat seal may still be required to mitigate excessive dust. – Development of a proactive programme of works.		$48m	M
Sufficient evidence to make sound infrastructure decisions	**Structures** – Asset information on condition of structures including retaining walls and bridges, is limited. FNDC has a large number of aging, poor condition and weight restricted bridges that are unable to carry 50MAX traffic impacting on freight movements.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	1. Do nothing	– Bridges will continue to deteriorate and as their structural integrity is impacted more will be added to the 50MAX register. – Impacts on freight movement and economic growth. – It also has health and safety implications if bridges and retaining walls are not maintained. – Retaining walls will also deteriorate and potentially fail during storm events if inspections are not undertaken.	3	$0	H
			2. Annual inspection programme of critical bridge and coastal structures. will enable maintenance work to be identified in a timely manner and potentially reduce more expensive repairs in the future. A retaining wall forward works plan is being developed for the first time and this is identifying demand for retaining wall renewals and replacement.	– Programmes will enable maintenance work to be identified in a timely manner and potentially reduce more expensive repairs in the future and prevent further bridges being added to the 50MAX register. – Reduce ongoing maintenance costs on bridges and retaining walls.		$15m	H
			3. Continue the annual inspection programme and implement a forward works programme for the replacement and upgrade for bridges and retaining walls.	– The removal of bridges from the 50MAX restriction register will enable more use of these higher productivity vehicles and will reduce freight costs and improve opportunities for investment. – Increased upgrades add resilience to the network enabling better freight routes and a safer network.		$32m	M
Wellbeing of our community for healthy and sustainable outcomes	**Road Safety** – Trends in deaths and serious injury crashes have increased in the Far North District over the last 5 to 10 years.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – well being	1. Maintain the level of safety works.	– D&SI continue increase. – Reputational risk to council.	2	$15m	H
			2. Continue to look for safety benefits and ways to reduce risks to road users.	– Active risk management of the network to keeps D&SI as low as possible. – Works will continue to protect road users. – Education programmes.		$27m	M
			2. Analyse network for vulnerabilities, develop a plan and proactively undertake resilience works.	– Proactively build resilience into network to reduce risk. – Planned network disruption (timing, budgets, designs) rather than unplanned. – Schedule work with other activities where possible. Long term view of network taken. – Work focuses on higher road criticalities first.		$40m	M

6.1.10. Transport expenditure forecasts

The five year expenditure forecast for the transport activity is shown below. Over the next 5 years, it is expected that Council's major capital expenditure items include:

- Unsealed road metalling (at about $9.6 million pa).
- Sealed road rehabilitation (at about $7.9 million pa).
- Thin asphaltic surfacing (at about $2.7 million pa).
- Chip sealing (at $5.6 million pa).
- Footpath renewals (at about $3 million pa).
- Ferry renewal (at $4.2 million in total).
- Bridges and structures (at $6.3 million pa).
- Resilience projects including bridges and pavements pavement and bridge projects (at $23.6 million in total).

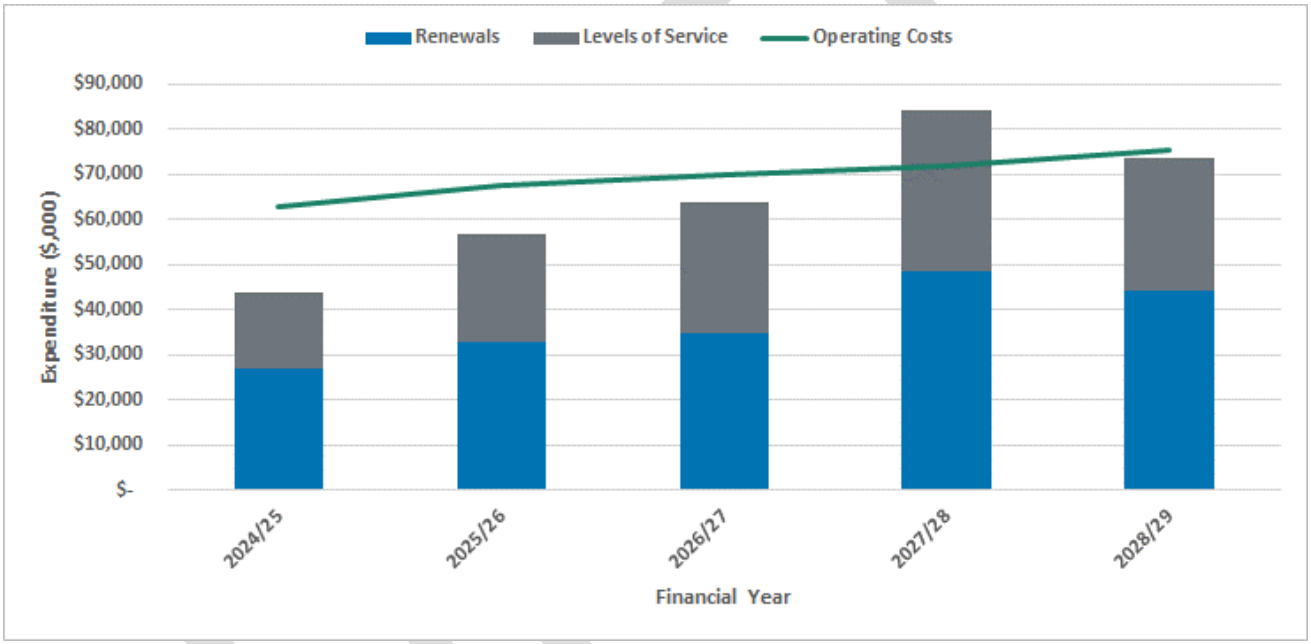


Figure 19 Transport financials (inflated)

Source: FNDC's draft LTP budget (9 February 2024)

6.1.11. Funding depreciation – transport

The annual renewals of $35.5 million ($178 million five year total uninflated) versus annual depreciation of $30 million for the land transport assets is shown in the figure below. This shows that the forecast renewal expenditure for the land transport assets is higher than the depreciation over the 5 year period. This is to make up for the backlog of works and resilience projects needed on the network.

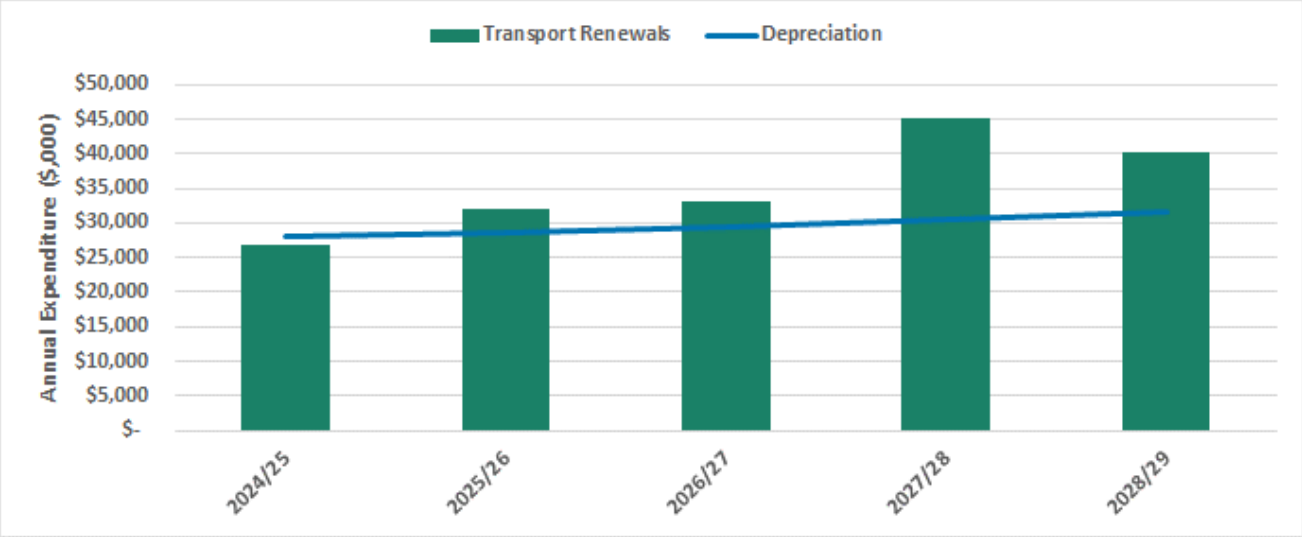


Figure 20 Transport renewals versus depreciation (uninflated)

Source: FNDC's draft LTP budget (23 February 2024)

6.1.12. Funding this activity – transport

We fund our land transport services from a range of sources:

- Waka Kotahi subsidies (FAR).
- Targeted rate based on land value.
- Fees and charges for road corridor access applications.
- Other funding sources.

6.2. Water Supply

6.2.1. Activity overview

Water supply is a core Council service. The water supply networks provide an essential service to the communities we serve, and they need to be reliable and sustainable. The networks we manage are capital-intensive and have long lives. Ours is a stewardship role that relies on effective and efficient long-term asset planning and investment.

Safe drinking water is essential to the health and wellbeing of our communities. Council is responsible for the treatment and distribution of water through our reticulated water schemes. We also install and read water meters to make sure you are billed for the correct usage. A vital function is ensuring firefighting performance standards are met in urban water supply areas. We also provide new water connections within areas of benefit and supply commercial water operators who deliver to private water tanks.

6.2.2. Asset summary

Water Supply 	• 376km of pipes • 1,902 valves • 1,249 hydrants • 10,226 meters • 23 treatment water storage • 11 treatment plants • 17 pump stations • 11 water sources • 3 dams

6.2.3. Asset condition and performance

There have been limited condition surveys completed of the water supply assets to assess the current asset state. Break analysis to identify watermains failing that likely need to be replaced is currently undertaken. The water structures are assessed on regular basis including dams and reservoirs to understand their seismic performance. Undertaking planned condition surveys of the above ground water supply assets particularly treatment plants is a high priority for FNDC as this will inform future renewals.

Asset performance of Council's water supply network is assessed in terms of water leakage and water quality as follows:

- Water leakage – Council assessed its water losses are measure against the mandatory performance measure and reported in the Annual Report. Water loss can happen for a range of reasons, including leaks and breaks in the network and this results in Council treating more water than is needed.

  Our water loss results for the last three financial years has exceeded our target (<26%). Universal metering has been established which helps with identifying leaks on the private systems. There is a water leak detection team and new technology which has resulted in an increase in effective identification of leaks. However, there is currently only reactive renewals due to lack of data being supplied by the operator in a manner that enables planned renewals.

- Water quality – Council has a suite of plans and processes to provide assurance that it is providing safe drinking water. These include the Water Safety Plans, Water Source Risk Management Plans, operating procedures, and operations and maintenance manuals for the treatment plants.

  Council's water quality is measured monthly against the mandatory performance measures and reported in the Annual Report. Only the Kerikeri Water Supply Treatment Plant was compliant in 2022/23 due to the changes in drinking water requirements (refer to Section 4.2 Levels of Service for description on rule changes).

6.2.4. Resource consents – three waters

There are 31 resource consents in total for the three water activities. All resource consents are current, monitored for compliance and reported on in accordance with the consent conditions. The decade bands that the resource consents are due to expire within the next 30 years are shown in the table below. Five of the six 5 wastewater consents and 15 of 22 drinking water consents expire in the next ten years.

Table 23 Summary of resource consents expiring by decades

Activity - number of consents expiring	Decade 1 (2024 to 2033)	Decade 2 (2034-2043)	Decade 3 (2044-2054)	Total
Water supply	15	3	4	22
Wastewater	5	0	1	6
Stormwater	3			3
TOTAL	**23**	**3**	**5**	**31**

6.2.5. Key challenges – water supply

The key challenges for the water supply activity are summarised in the table below.

Table 24 Water supply key challenges

District infrastructure issues	Key challenges	Discussion / management response
Lack of integrated planning particularly for growth planning.	**Major water treatment plant upgrades required** – Four major plant upgrades required to meet new standards for providing safe drinking water, security of supply (with changes in water sources), meet current demand and to cater for increasing population. Existing plant equipment does not always meet new standards.	Major investment is required for plant upgrades serving the Kerikeri, Kaitāia, Paihia and Kawakawa townships. This is costly for the Far North communities. Investment needs to be staged so impact on ratepayers is minimised. Public communication needs to be managed and transparent.
	Hydraulic models – Models have been developed for the urban three water systems. However, they are based on dated asset data (2007) and therefore not functional for decision making purposes.	The hydraulic models need to be updated with the latest asset data and calibrated so fit for purpose. Operational budget has been allocated for the model updates.
Wellbeing of our community for healthy and sustainable outcomes.	**Increasing new compliance requirements** – Taumata Arowai is well established as the new water regulator and implementing new regulations nationally. There are multiple regulatory and compliance requirements to meet including the new Drinking Water Assurance Rules and duty to supply sufficient quantity of drinking water as defined in the Water Services Act.	Council continues to update its Water Safety Plans and Source Water Risk Management Plans and prepare Annual Compliance Reports in accordance with Taumata Arowai's requirements. The Ministry of Health are requiring FNDC to fluoride the public water supplies at Kerikeri and Kaitāia.
	Funding and resourcing constraints – There has been historic under investment in three waters assets and resourcing. Like many councils, attracting and retaining capable three water staff at all levels is a challenge. (This issue is common for 3 waters so not repeated).	This 2024 Strategy will identify the key infrastructure issues and investment required to close the gap. Consequences of budget constraints will be disclosed so it is transparent for decision makers.

District infrastructure issues	Key challenges	Discussion / management response
Climate change impacts on the district and resilience of critical infrastructure.	**Lack of security of supply** – We have struggled to supply enough water in some locations due to extremely dry weather, particularly for surface water sources. We also have constraints across the treatment system including plant processing, raw and treated water storage constraints. The resilience of our water sources is important.	Council developed a bore site at Sweetwater near Kaitāia to permanently supplement supplies from the Awanui River. Securing a permanent supplementary water source for Kaitāia and improving its drought resilience has been a Council priority. The project opened in June 2022 but it is still in commissioning phase. We have other communities that do not have security of supply that need to be addressed (refer to the following significant issues table). Many only have single supply source. This includes Paihia Water Treatment Plant which is exacerbated being an old plant coupled with high seasonal demand. It is industry good practice to have 3 days storage for resilience. Currently no FNDC treated water reservoirs achieve this standard.
	Demand management – It is important that the water supply network is managed sustainably so that wastage is minimised. This is exacerbated with extreme dry weather. Leakage has been managed reactively and we know we need to be more proactive.	Our water loss result for 2022/23 exceeded our target (28.6% actual versus <26% target). We also have universal metering established which helps with identifying leaks on the private systems. We now have a water leak detection team and new technology. This has resulted in an increase in effective identification of leaks.
Sufficient evidence to make sound infrastructure decisions.	**Watermain renewals –** Watermain renewals is generally undertaken reactively due to lack of evidence. Asset performance data is held in spreadsheets so there no single source of the truth.	There is good data on pipe materials, but asset performance data is not currently consolidated (refer to system challenge below). This makes renewal planning difficult.
	Aging water assets – Like many councils our water supply assets are aging.	There has been limited condition surveys completed recently to assess our current asset state. We assess our water structures on regular basis including dams and reservoirs to understand their seismic performance. We do undertake break analysis to identify watermains failing that likely need to be replaced. This will ensure service continuity to our communities and customers. However, funding is only provided for reactive renewals due to limitations of asset condition to support planned renewals.
	Limited data management – There is limited asset data to inform asset management planning and it is not always proactively managed. (This issue is common for 3 waters so not repeated. This also applies to the system issue below).	It was expected that the new Water Services Entity would take over the data management function. FNDC now needs to set up sound data management practices and embed these so they are enduring.
	No formal system – There is currently no asset management system for managing three water assets. Asset data changes are currently entered into a FNDC spreadsheet.	A single national asset management system was to be rolled out with the setup of the Water Services Entities, similar to above. A preferred system will need to be agreed corporately, potentially with other activities such as built and open spaces.

6.2.6. Significant issues and options

Significant issues and options for the water supply activity and alignment with the alignment with Te Pae o Uta - te Ao Māori Framework are summarised in the table below.

Table 25 Water supply option

District infrastructure issues	Significant water supply issues	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
Lack of integrated planning particularly for growth planning.	**Major water treatment plant upgrades** - Required to meet new standards for providing safe drinking water, security of supply, current demand and to cater for increasing population.	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – process	1. Utilise an ad hoc planning approach for water provision in growth areas and to meet new standards.	– Funds for any significant capital expenditure may not be available due to Council borrowing limits. – Treatment plant capacity is not planned to meet current or future demand or sequenced. – Some townships may not fully meet Taumata Arowai's requirements for providing safe drinking water.	2	Capital budgets known ($143m inflated 5 year total)	H
			2. Use the Spatial Plan and Proposed District Plan to guide long term planning and to address current and future demand for enabling sustainable development and to meet new standards.	– Treatment plant upgrades are planned adequately and financial provision made in the ten year budgets. – Funds for any significant capital expenditure may not be available due to Council borrowing limits. – Based on realistic forecast of development, where it will likely occur and when. – Provides assurance to Taumata Arowai that FNDC is committed to providing safe drinking water.		Growth driven projects currently not categorised	M
Wellbeing of our community for healthy and sustainable outcomes.	**Increasing new compliance requirements -** There are multiple regulatory and compliance requirements to meet including the new Drinking Water Assurance Rules.	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – people	1.Continue with current compliance approach by responding to new requirements reactively.	– Additional cost of establishment and the increased ongoing operational costs for meeting new rules. – Council's internal resources may be inadequate and reactive responses may take priority over planned activities. – Gaps in operational resourcing coverage if key staff leave.	2	New works budgets known ($70.8m inflated 5 year total)	H

District infrastructure issues	Significant water supply issues	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
			2.Review current operational resourcing numbers to meet increasing new compliance requirements.	– Able to respond proactively to new requirements and set up suitable systems and processes to support this. – Unable to fill operational staff positions despite structure set up to cater for meeting compliance requirements. – Explore regional arrangements to share operational resources to fill staffing gaps.		Operational budgets known includes staff costs ($87.6m inflated 5 year total)	M
Climate change impacts on the district and resilience of critical infrastructure.	**Lack of security of supply**. Strengthening our infrastructural resilience is important.	Whainga (Goal) 1 - Increased Participation In council structures and decision-making processes – relationships – decision making	1.Continue with strengthening the resilience of our water supply schemes progressively as infrastructure issues are identified.	– Capital investment takes time to gain FNDC budget approval and to implement physical works. – Significant water restrictions may occur from time to time. – Some townships may run out of water in extreme dry events.	2	New works budgets known ($70.8m inflated 5 year total)	M
			2. Investigate increasing water sources that are not dependent on surface water including the ability to draw from dams. Strengthen the resilience of treatment plant system including storage.	– Need for water restrictions may be reduced. – Security of supply is improved and meets industry good practice. – The water companies that will manage the schemes (including the dams) are shareholder owned so complex governance arrangements.		Budget impacts expected to be significant	H

6.2.7. Water supply expenditure forecasts

The five year expenditure forecast for the water supply activity is shown below. Over the next 5 years it is expected that our major capital expenditure items include:

- Renewals increases from an average of $3.5 million pa in the first two years to an average of $21.2 million in the last three years. This is to support moving from a reactive to proactive renewal approach and ensure service continuity for our customers.
- Levels of service projects also increases to meet the new drinking water requirements from about $11.2 million pa to $23.3 million.
- Kerikeri Water Network Upgrade, to Heritage Bypass (at $12.1m in total over two years).
- Waipapa Water Treatment Plant development (at $10.9m in total over two years).
- Kaikohe water network reticulation renewals(as $10.7m in total over 3 years).
- Kawakawa water network planned renewals (at $15.0m in total over 3 years).
- Pahia Water Treatment Plant relocation (at $18.7m in total over 4 years).

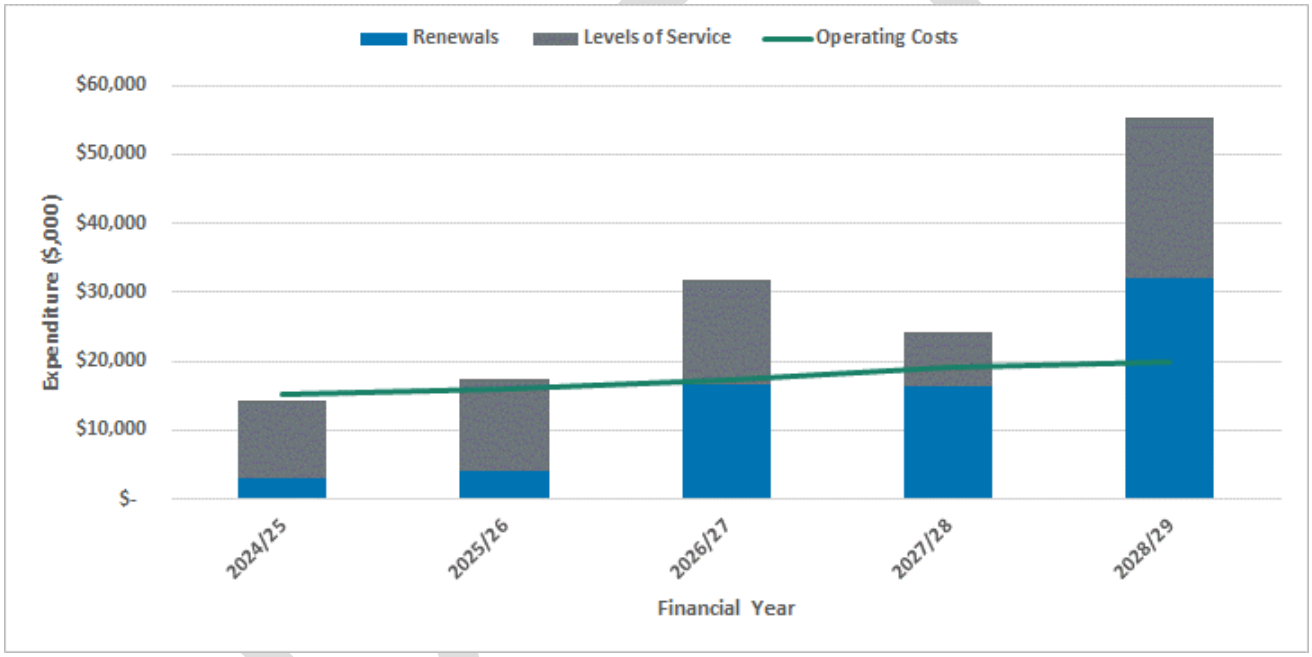


Figure 21 Water supply financials (inflated)

Source: FNDC's draft LTP budget (22 February 2024)

Note that growth projects have not been identified as they are currently not classified where they are growth driven due to legacy financial system and processes. Typically, growth projects are reported as *improved LOS*. It is recognised that this is important and needs to be amended Council wide and across all infrastructure activities. This should be addressed prior to the 2027 LTP so capital projects can be correctly categorised.

6.2.8. Funding depreciation – water supply

The annual renewals of $13.5 million ($67 million 5 year total uninflated) versus annual depreciation of $4.7 million for the water supply assets is shown in the figure below. This shows that the forecast renewal expenditure picks up from year 3 onwards to address the backlog in planned renewals.

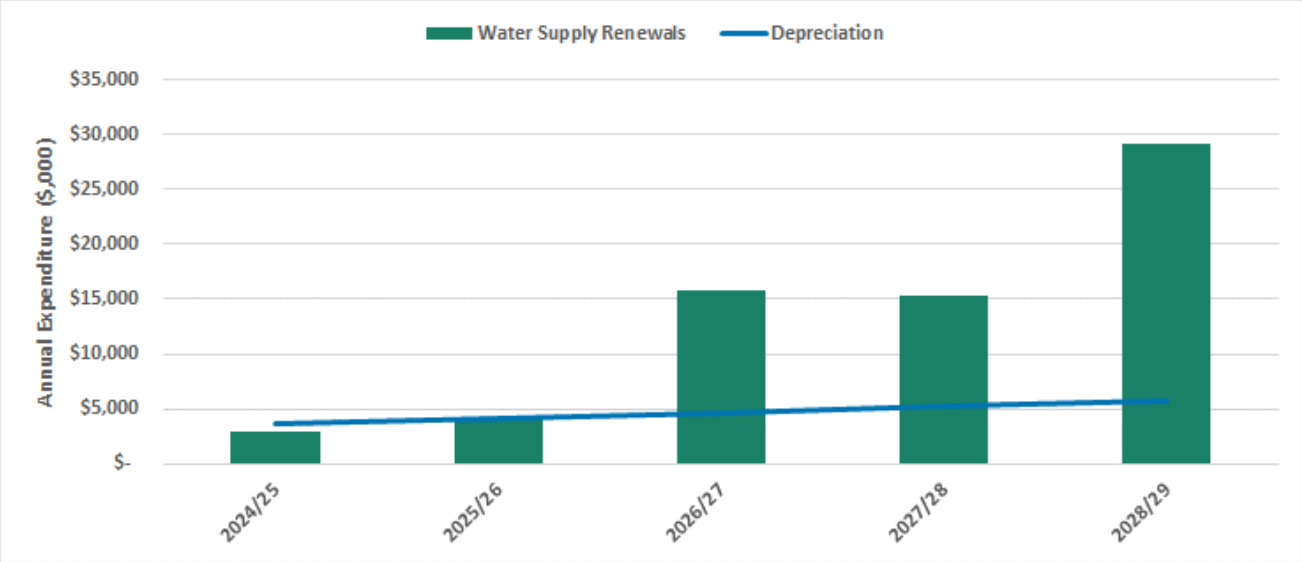


Figure 22 Water supply renewals versus depreciation (uninflated)

Source: FNDC's draft LTP budget (23 February 2024)

6.2.9. Funding this activity – water supply

Council funds its water supply activity through:

- Targeted rates and fees and charges for the operational programme. This includes volume charge for metered properties based on the actual volume of water consumed.
- Loans for the capital programme.

6.3. Wastewater

6.3.1. Activity overview

Wastewater is a core Council service. Our wastewater networks provide an essential service to the communities we serve, and they need to be reliable and sustainable. The networks we manage are capital-intensive and have long lives. Ours is a stewardship role that relies on effective and efficient long-term asset planning and investment.

The appropriate collection, treatment and disposal of wastewater is vital for the health and wellbeing of our communities and environment. Council manages and maintains reticulated sewerage schemes and services for the treatment and disposal of waste from septic tanks in our district. We also provide new schemes and sewer connections where and when required.

6.3.2. Asset summary

Wastewater 	• 290 km gravity mains • 155 km pressure pipes • 13,406 service connections • 788 domestic pump stations • 16 treatment plants • 153 pump stations • 16 treatment plants • 12 wetlands • 1 borefield • 73 septic tanks

6.3.3. Asset condition and performance

There have been limited condition surveys completed of the wastewater assets to assess the current asset state. The wastewater network was previously surveyed but the data was never analysed. Undertaking planned condition surveys of the above and below ground wastewater assets is a high priority for FNDC as this will inform future renewals.

Asset performance of Council's wastewater network is assessed in terms of overflows and inflow and infiltration as follows:

- Dry weather overflows. A dry weather overflow is an uncontrolled wastewater discharge that is not associated with a rain event. Dry weather overflows are reported on as a mandatory performance measure and to the Northland Regional Council. Blockage incidents occur from time to time but our asset performance for dry weather overflow events meet the industry accepted benchmarks.
- Inflow and infiltration. We know operationally that some of our catchments are leaky. This is the term used to describe groundwater and stormwater entering into dedicated wastewater system resulting in the system becoming overloaded and overflows occurring. As part of improving the network resilience, we intend to assess inflow and infiltration across the catchments to prioritise our efforts and develop a cost effective and targeted programme. An inflow and infiltration programme has not been developed as it was expected that FNDC's 3 water assets were being transferred to the new Water Services Entity.

6.3.4. Key challenges- wastewater

Table 26 Wastewater challenges

District infrastructure issues	Key challenges	Discussion / management response
Sufficient evidence to make sound infrastructure decisions.	**Limited improvement in wastewater practices** – There has been limited improvement since 2021 particularly for the wastewater activity. It was expected that FNDC's 3 water assets were being transferred to the new Water Services Entity.	• We need to understand the current state of the wastewater assets. • We will also need to rebuild sound practices including capable people, data, processes, and systems so the wastewater activity is managed wisely going forward. • We also need to identify the expenditure requirements to bring the wastewater assets up to a sustainable condition. • We also need to seek external funding where possible to reduce the debt impact on our customers.
Wellbeing of our community for healthy and sustainable outcomes.	**Poor capital delivery** – The delivery of the wastewater capital programme has been poor due to major wet weather events, resourcing and supply chain issues, and cost escalation. Community engagement about the wastewater upgrade projects has also been poor.	There is a focus on increasing internal resourcing to deliver the planned works. We are also improving community engagement for wastewater capital projects. We know that wastewater overflows into waterways is not acceptable to iwi and our communities. We will work alongside hapu and communities to understand the existing wastewater issues and design culturally useful solutions.
Wellbeing of our community for healthy and sustainable outcomes.	**Poor environmental compliance** – FNDC has been issued with various abatement and infringement notices for wastewater treatment plant performance and discharges.	The Ahipara Wastewater Treatment Plant is the subject of two current abatement notices and an infringement notice due to faecal coliforms. Most of the wastewater schemes have ongoing compliance issues.
	Respecting cultural values – Discharging treated wastewater to waterways is unacceptable to iwi. It can take considerable time and cost to ensure our capital projects are culturally appropriate and supported by our community.	In some cases, we need to explore alternative wastewater options and stage culturally appropriate solutions overtime. The objective is to investigate the practicality / viability to discharge the treated wastewater to land. Some soil types are not suitable for receiving treated wastewater. We have limited data on land suitability for receiving treated wastewater at district wide level. We need this data to make decisions on future treatment plant locations (new and upgrades). Te Mana o te Wai draws on a te ao Māori perspective to recognise the whole-of-system approach to wai, from maunga to moana, or ki uta ki tai. FNDC is to give effect to Te Mana o te Wai while performing functions or duties. There is not always adequate resourcing for running the community liaison groups.
	Resource consents expiring – Many of the resource consents for the wastewater assets are expiring in the short to medium term.	It is expected that future consent requirements will require higher level of investment and will be more restrictive. Expectations from stakeholders and iwi will be higher. The plants will require upgrades in the 30 years as consents expire. There is budget allocated to support consenting work two years prior to the expiry date.
	Leachate impact on plants – Leachate from FNDC's closed landfills discharge to the wastewater treatment plants.	The leachate is classified as trade waste and the composition may adversely impact the plant's treatment processes. There are four closed landfills that FNDC are actively managing.

District infrastructure issues	Key challenges	Discussion / management response
Sufficient evidence to make sound infrastructure decisions.	**Aging wastewater assets** – Like many councils our wastewater assets are aging.	There has been limited condition surveys completed recently to assess our current asset state. We have previously surveyed our underground wastewater network but the data is yet to be analysed.

6.3.5. Significant issues and options

Significant issues and options for the wastewater activity and alignment with the alignment with Te Pae o Uta - te Ao Māori Framework are summarised in the table below.

Table 27 Wastewater option

District infrastructure issues	Significant wastewater issues	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
Wellbeing of our community for healthy and sustainable outcomes.	**Poor environmental compliance** – FNDC has been issued with various abatement and infringement notices for long-standing issues at wastewater treatment plant performance and discharges.	Whainga (Goal) 1 - Increased Participation In council structures and decision-making processes – relationships – decision making	1.Continue with operating existing plants and be at risk of receiving more abatement and infringement notices.	– Will not always meet current minimum resource consent requirements. – The regulator will get frustrated at FNDC's lack of commitment and action to address the long-standing wastewater issues. – FNDC will receive abatement and infringement notices and potentially be prosecuted. – May result in substantial degraded environment over time.	2	Operational budgets known ($144.6m inflated 5 year total)	H
			2.Develop and implement a long term investment plan to guide decisions on addressing the long-standing wastewater issues. Interrelated issues to consider include growth, freshwater management and a higher degree of treatment required for resource consents to meet iwi's concerns.	– Will take time to develop robust long term investment plan for wastewater. – Improves the freshwater quality of the receiving environment. – Seek external funding to help with the major upgrade capital costs to lessen the burden on ratepayers. – Better alignment with Māori values and community aspirations. – Some communities may not be able to afford the required upgrades.		Budget impacts expected to be significant	H

District infrastructure issues	Significant wastewater issues	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
	Respecting cultural values – Discharging treated wastewater to waterways is unacceptable to iwi. It can take considerable time and cost to ensure our capital projects are culturally appropriate and supported by our community.	Whainga (Goal) 3 - Kōkiri Tahi – Empowered communities, working collaboratively – engagement	1.Continue operating plants that discharge treated wastewater to waterways.	– The current approach to water quality of the waterways will not contribute to te Mana o te Wai. – The environment may degrade overtime. – The capital and operational costs for managing the wastewater treatment plants are known.	2	Operational budgets known ($144.6m inflated 5 year total)	H
			2.Continue to work with iwi on finding acceptable solutions with a focus on the poor performing treatment plants.	– It will take time to work in partnership with iwi to find acceptable and culturally acceptable solutions. – The soil type is not always suitable for receiving treated wastewater so not a practical solution in some cases. – Costs are mostly unknown and may be greater than operating the existing plants i.e. pumping costs to land rather than gravity discharge pipe. – Delivers on long term and positive outcome for the environment.		Covered by existing operational budgets	H
Sufficient evidence to make sound infrastructure decisions.	**Aging wastewater assets** - Like many councils our wastewater assets are aging. This is exacerbated with a reactive maintenance approach resulting in service failures such as blockages.	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – process	1.Continue with managing the wastewater assets reactively with minor renewals.	– Service failures will increase and result in more overflows (uncontrolled wet weather and dry weather). – Maintenance costs increase and exceed approved budgets. – Reactive renewals are unbudgeted so impacts the targeted rate calculation. – Hard to set the targeted rates as have limited asset data to base it on.	2	Renewal budget known ($51m inflated 5 year total)	H
			2. Develop and implement operational programme to proactively manage the wastewater networks.	– The asset performance of the wastewater network is understood with operational evidence stored in an asset management system and actively managed. – The balance between reactive and proactive maintenance is optimised, and costs are controlled.		Budget impacts expected to be moderate	M

6.3.6. Wastewater expenditure forecasts

The five year expenditure forecast for the wastewater activity is shown below. Over the next 5 years it is expected that our major capital expenditure items include:

- Renewals increases from about $4.3 million in 2024/25 to $19.7 million in 2028/29. This is to support moving from a reactive to proactive renewal approach and ensure service continuity for our customers and environmental protection.
- Levels of service projects also increases to meet the environmental standards from $17.8 million in 2024/25 to a peak of $63.3 million in 2027/28.
- Kaikohe Wastewater Treatment Plant upgrades (at $32.8m in total over 4 years).
- Kaitaia Wastewater Treatment Plant development (at $8.7m in total over 3 years).
- Kerikeri Wastewater Treatment and network scheme expansion Stages 2 and 3 (at $68m in total over 2 years).
- Kaikohe wastewater network scheduled renewals (at $9.2m in total over 3 years).
- Kaitaia wastewater network renewals (at $9.5m in total over 3 years).

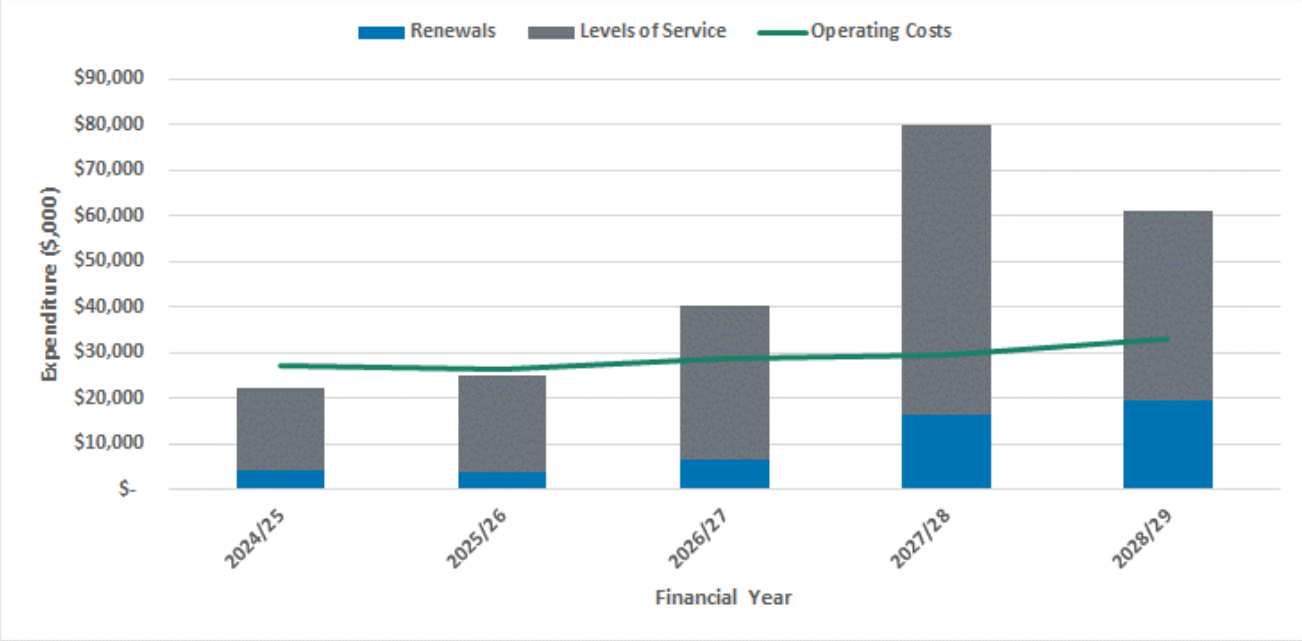


Figure 23 Wastewater financials (inflated)

Source: FNDC's draft LTP budget (22 February 2024)

6.3.7. Funding depreciation – wastewater

The annual renewals of $9.6 million ($47.8 million five year total uninflated) versus annual depreciation of $8 million for the wastewater supply assets is shown in the figure below. This shows that the forecast renewal expenditure significantly increases in years 4 and 5 to address the backlog in planned renewals.

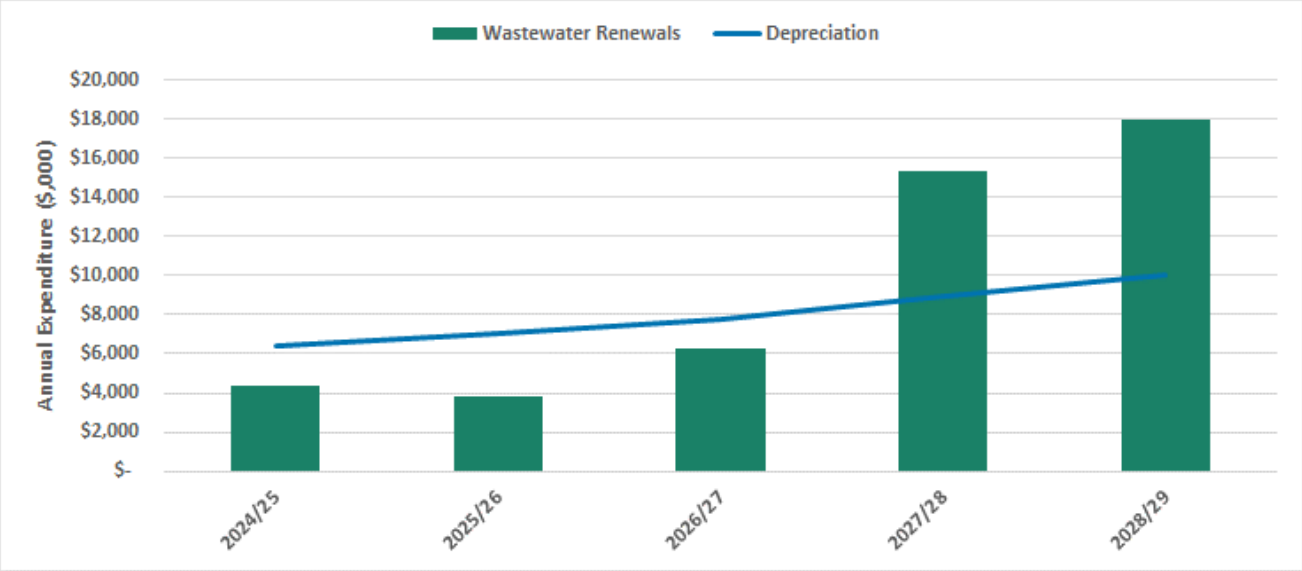


Figure 24 Wastewater renewals versus depreciation (uninflated)

Source: FNDC's draft LTP budget (23 February 2024)

6.3.8. Funding this activity – wastewater

Council funds its wastewater activity through:

- Targeted rate for sewerage disposal based on a per pan charge in urban serviced areas.
- Fees and charges.
- Loans for the capital programme.

6.4. Stormwater

6.4.1. Activity overview

Stormwater is a core Council service. Our stormwater networks provide an essential service to the communities we serve, and they need to be reliable and sustainable. The networks we manage are capital-intensive and have long lives. Ours is a stewardship role that relies on effective and efficient long-term asset planning and investment.

Our stormwater system drains water away from public and private property to reduce potential harm to property, the environment and our communities. This is especially important in urban areas, particularly following heavy rain.

6.4.2. Asset summary

Stormwater 	• 181 km of line assets (culverts, channels, pipes) • 5,077 point assets (catchpits, manholes, soak holes) • 30 other assets (spillways, grills, inlets/outlet structures) • 69 floodgates • 1 pump station • 31 ponds

6.4.3. Asset condition and performance

Asset condition has not been formally assessed for the stormwater network to date. The stormwater network has generally been surveyed in response to an operational incident. We intend to move to a programme of planned condition surveys to help us better understand the state of our stormwater assets.

Asset performance of our stormwater network is assessed in terms of capacity constraints (flood protection) and stormwater quality. There were no habitable floors flooded reported in 2022/23 as a mandatory performance measure.

6.4.4. Key challenges- stormwater

Table 28 Stormwater challenges

District infrastructure issues	Key challenges	Discussion / management response
Lack of integrated planning particularly for growth planning.	**Lack of integrated planning for stormwater management** – Lack of integrated planning framework for stormwater management results in disjointed decision making. This may impact land developments with some unable to proceed due to stormwater management constraints.	Stormwater management is land use based compared with water supply and wastewater activities. Integrated planning is essential as it intersects with open spaces and land transport activities. FNDC is currently developing an Open Space Strategy which will consider stormwater management.
	Lack of Trade Waste Bylaw – There is currently no Trade Waste Bylaw to enforce preventing containments being discharged into the public stormwater system.	Contaminants entering the public stormwater system may breach FNDC's resource consent conditions. FNDC has limited planning tools including the Proposed District Plan to manage the quality and quantity of the discharges into the public stormwater system.
Sufficient evidence to make sound infrastructure decisions	**Private stormwater issues** – Many of the stormwater complaints reported to Council (about 60%) are private rather than public issues.	It takes time to investigate the stormwater issues reported to Council to identify the asset owner. Many are related to private stormwater assets including overland flow paths. These can cause erosion issues impacting other properties.

District infrastructure issues	Key challenges	Discussion / management response
Climate change impacts on the district and resilience of critical infrastructure	**Severe weather events impacts** – Severe weather events impact on the public stormwater infrastructure ability to cope with capacity.	Habitable floors may flood in the future with projected climatic variations. Council has major capital projects underway to increase stormwater network capacity, particularly in the Kaitaia area.
	Stormwater treatment – There is increased pressure to treat stormwater from Council's stormwater public networks.	Northland Regional Council is reviewing their Regional Freshwater Management Plans and the Northland Regional Policy Statement to give effect to the National Policy Statement for Freshwater Management (NPS-FM) 2020. This will direct the territorial authorities including FNDC through Plan Changes. This will require Council to be more proactive in stormwater quality management than our current practices, particularly for existing stormwater networks.

6.4.5. Significant issues and options

Significant issues and options for the stormwater activity and alignment with the alignment with Te Pae o Uta – te Ao Māori Framework are summarised in the table below.

Table 29 Stormwater options

District infrastructure issues	Significant stormwater issues	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
Lack of integrated planning particularly for growth planning	**Lack of integrated planning for stormwater management** – Lack of integrated planning framework for stormwater management results in disjointed decision making.	Whainga (Goal) 2 – Create enablers across staff to respond more effectively to Māori – process	1.Status quo – Continue with utilising current planning approach for stormwater provision.	– Opportunities are identified progressively as assets fail or upgraded. – Funds for any significant capital expenditure may not be available due to Council borrowing limits. – Development occurs progressively and some may not be able to proceed due to stormwater constraints not identified earlier.	2	Renewal budgets known ($13m inflated 5 year total)	H
			2.Develop and implement formal strategic documents to guide long term planning and the capital works programme to address current and future demand for enabling sustainable development, and to allow for climate change adaptation.	– An Open Space Strategy will consider stormwater management. – Stormwater infrastructure is planned holistically. – Funds for any significant capital expenditure may not be available due to Council borrowing limits. – Based on realistic forecast of development, where it will likely occur and when. – Allowance made for climate change adaptation.		Budget impacts expected to be significant (as current level of investment for new works is low)	M
Climate change impacts on the district and resilience of critical infrastructure	**Severe weather events impacts** – Severe weather events impact on the public stormwater infrastructure ability to cope with capacity.	Whainga (Goal) 1 – Increased Participation In council structures and decision-making processes – relationships – decision making	1.Continue to allow for increase in rainfall intensity when we design new or upgrade stormwater infrastructure.	– Pipes will be increased in capacity to cope with projected climatic variations as they are replaced or new infrastructure is installed. – Existing stormwater networks may not cope in severe weather events resulting in habitable floor flooding until upgrades undertaken. – Upgrades are undertaken progressively.	1	New works budget known ($26m inflated 5 year total)	M

District infrastructure issues	Significant stormwater issues	Alignment with Te Pae o Uta – Te Ao Māori framework	Options	Implications of the options	Preferred option	Years 1 to 5	Risk (L/M/H)
			2.Develop and implement Catchment Management Plans to help better understand predicted habitable floor flooding.	– Identify likely habitable floors that may flood in future and how Council will mitigate this (may not necessarily be large pipe solution). – Budget will need to be allocated for Catchment Management Plan development. – Requires internal capability and capacity to manage the Catchment Management Plan programme which FNDC does not currently have. This should be considered as a medium term goal.		Budget impacts expected to be significant (as current level of investment for new works is low)	H

6.4.1. Stormwater expenditure forecasts

The five year expenditure forecast for the stormwater activity is shown below. Over the next 5 years it is expected that our major capital expenditure items include:

- Renewals increases from $647k in 2024/25 to a peak of $4.8 million in 2027/28. This is to support moving from a reactive to proactive renewal approach and ensure the stormwater network is in good condition and resilient.
- Levels of service projects are about $5 million pa (average) to address capacity issues and improve stormwater quality.
- Kaikohe stormwater network improvements, Station Road (at $5.4m in total over 3 years).
- Kaitaia stormwater network Lake Rd pipe renewal (at $5.3m in total over two years)
- Moerewa stormwater improvements (at $3.4m in total over 1 year)
- District wide stormwater network renewals (at $5.4m in total over, over 2 years)

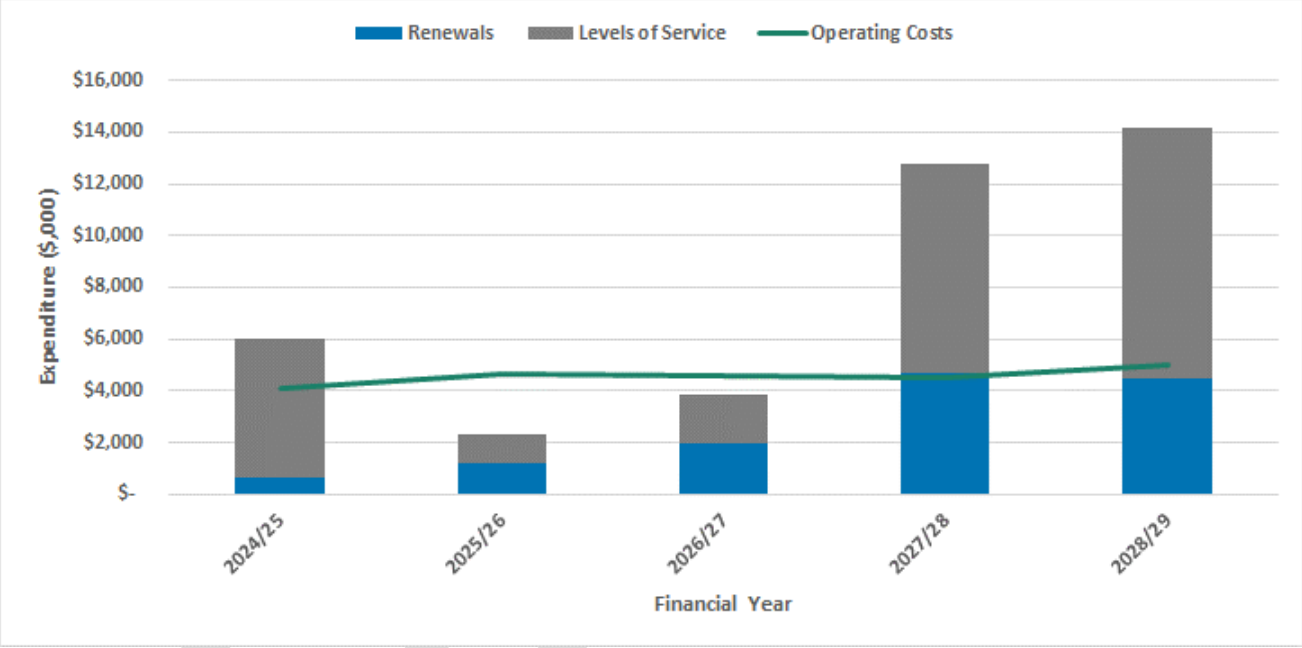


Figure 25 Stormwater financials (inflated)

Source: FNDC's draft LTP budget (22 February 2024)

6.4.2. Funding depreciation – stormwater

The annual renewals of $2.4 million ($12.1 million five-year total uninflated) versus annual depreciation of $2.5 million for the stormwater supply assets is shown in the figure below. This shows that the forecast renewal expenditure is overall on par with asset depreciation.

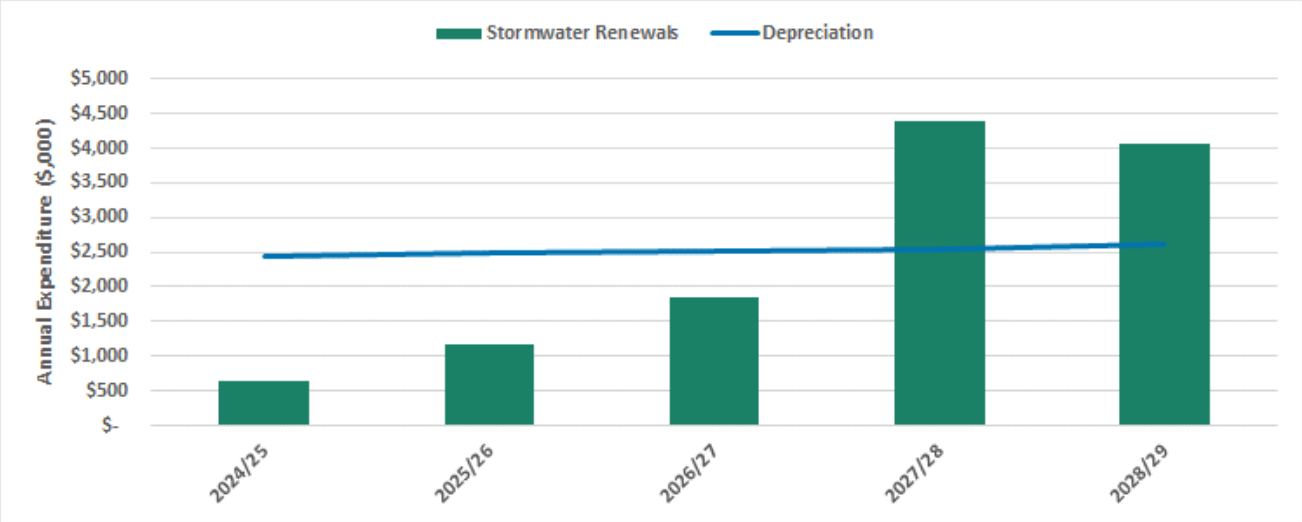


Figure 26 Stormwater renewals versus depreciation (uninflated)

Source: FNDC's draft LTP budget (23 February 2024)

6.4.3. Funding this activity

We fund our stormwater services through:

- General rates (as a uniform annual general charge) and targeted rates for operational programme.
- Loans for the capital programme.

7. Financial Summary

7.1. Key decisions we expect to make

We will need to make key decisions over the duration of our strategy. Some of these decisions will be significant to the district and some will not. Key decisions and actions that will need to be made by elected members over the next 5 years include:

Table 30 Summary of key decisions

Activity	Key decisions
All	Continuing to gather evidence, particularly the condition of the critical three water assets, in the next three to ten years to help develop robust and risk-based renewal programmes.
	Council must make a decision on the most appropriate mechanism to fund growth related infrastructure, and gather the evidence required to support any future development or financial contributions policy. This may include implementing development contributions, financial contributions through the district plan, or some combination of both.
Land transport	Prioritisation of resilience, funding for resurfacing and rehabilitation works. Strengthening / replacement of aging structures.
	Replacement of the Hokianga Ferry within 5 years.
Three waters	Moving from reactive to proactive renewals for three water assets to ensure these assets are managed sustainably long term.
	Rebuilding sound practices for managing the three water assets including capable people, data, processes, and systems so these assets are managed wisely going forward.

7.2. Funding depreciation

Over the 5 years, the combined renewals equate to a five year total $305 million versus a total of $225 million in depreciation (uninflated). With an average of $61 million of renewals forecast each year, this keeps above the average annual depreciation of $45 million. However, most of the renewals occur in year 3 onwards for the three water activities.

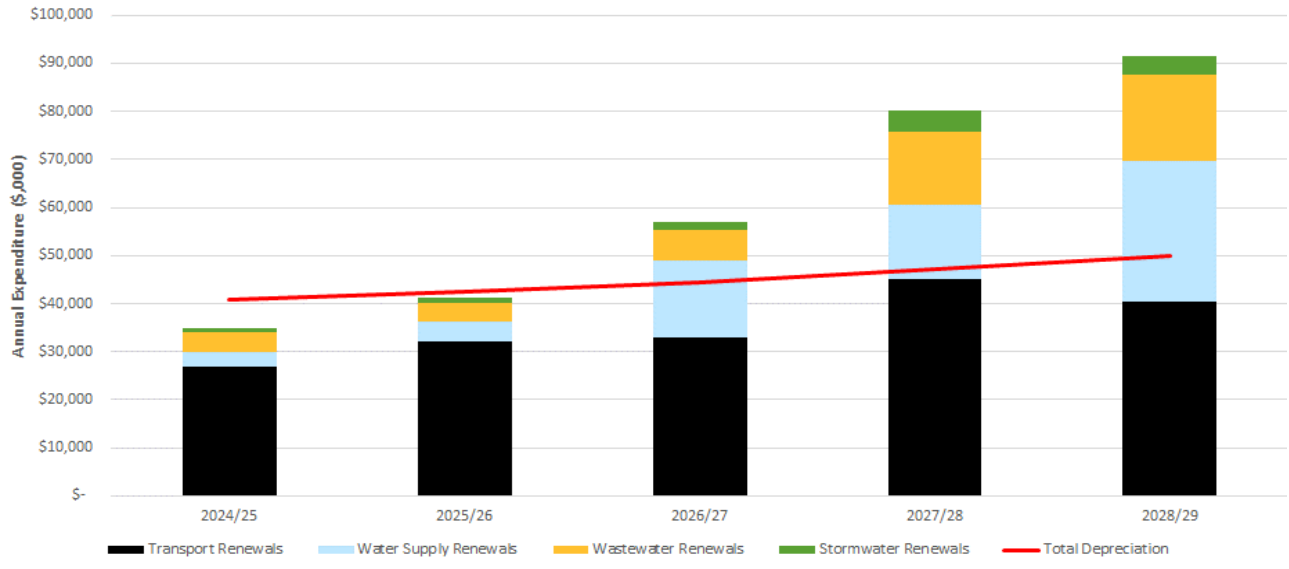


Figure 27 Total renewals versus depreciation (uninflated)

Source: FNDC's draft LTP budget (23 February 2024)

7.3. Financial forecasts

The total expected capital and operational expenditure for each infrastructure activity over the 5-year period is shown in the table and figure below. A combined capital expenditure of $732 million over the 5 year period is made up of 44% renewals and 56% levels of service.

Table 31 Combined expenditure summary (inflated)

Activity	Capital Expenditure ($,000)		Operational Expenditure ($,000)	Total ($,000)
	Renewals	Levels of Service		
Transport	$186,870	$135,460	$347,368	$668,609
Water Supply	$72,043	$70,810	$87,620	$230,473
Stormwater	$12,941	$26,146	$22,883	$61,969
Wastewater	$50,945	$117,288	$144,625	$370,705
Sub Total 1	**$322,709**	**$409,705**	**$602,497**	**$1,334,910**
Sub Total 2	**$732,413**		**$602,497**	
Total	**$1,334,910**			

Source: FNDC's draft LTP budget (22 February 2024)

Note that growth projects have not been identified as they are currently not classified where they are growth driven due to legacy financial system and processes.

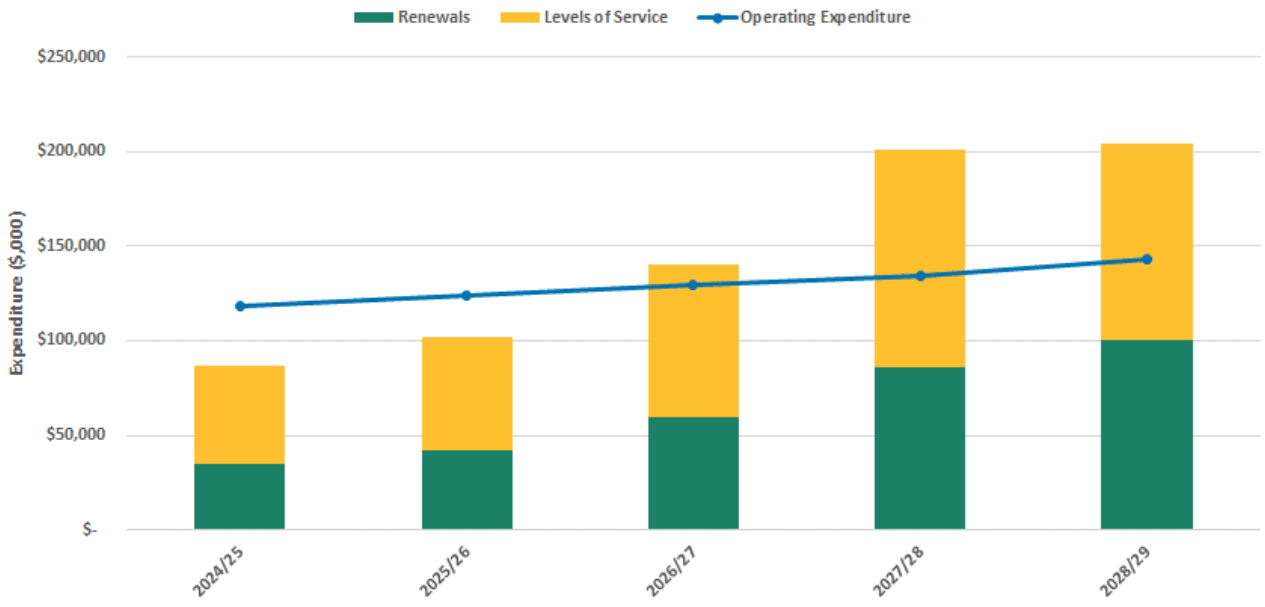


Figure 28 Total capital versus operating expenditure (inflated)

Source: FNDC's draft LTP budget (22 February 2024)

7.4. Funding implications

There are funding implications from significant capital expenditure to:

- Ensure our land transport network is preserved.
- Upgrade water supply treatment plants to meet new drinking water requirements.
- Upgrade wastewater treatment plants to meet higher environmental standards.
- Investment in stormwater capacity to address flooding issues.
- Ensure our networks are resilient.
- Move from reactive to planned renewals for three water assets to ensure service continuity.

This is discussed in more detail in our Financial Strategy.

8. Financial Assumptions and Uncertainty

8.1. Significant planning assumptions

This strategy is based on the following planning assumptions.

Table 32 Summary of key planning assumptions

Significant planning assumptions	Level of uncertainty	Impacts	Mitigation
District population – The district population is projected to continue to grow. It will also become more diverse and aging.	Medium	Population growth is significantly higher than forecast in a localised area, putting pressure on infrastructure.	Council will continue to monitor population change in the district. We will undertake spatial planning to provide for growth and changes in the district. We will communicate and plan for non-growth communities / declining areas, particularly Māori.
Service levels - Levels of service are defined in the Activity Management Plans for each activity, to meet legislative requirements and agreed to or accepted by the community. Service levels remain unchanged although these may be tested with budget constraints.	Medium	Some asset classes or in different locations or in smaller townships may deteriorate / service failure due to reduced budgets.	Council regularly monitors existing service provision within its operation on a day-to-day basis. These have been formally established for through the Activity Management Plans. Monitor levels of service for some asset classes where higher risk level been adopted due to trade off with budget reductions.
Climate change - Climate change will affect our District over the medium to long term in line with projections provided by the Ministry for the Environment.	High	The effects of climate change arise more quickly than expected, resulting in additional costs to mitigate impacts and increasing damage to Council infrastructure, particularly the roading network.	FNDC's response to climate change is focused on lifting its management practices in including the creation of policies, plans and tools. This will require community consultation and involvement. Council will also require working alongside Māori to involve them on making resilient communities.
Tourism – Tourism levels of expenditure will continue to increase post COVID-19.	Medium	That projected tourism rates are significantly higher than expected including cruise ship arrivals to the Bay of Islands. This may result in greater number of tourists in popular areas. This may increase demand on FNDC's infrastructure including public toilets, waste collection and road congestion.	Council will continue to monitor tourism growth and economic indicators provided by external agencies such as Infometrics. Council will work with other agencies to determine proactive engagement with key stakeholders to mitigate negative economic impacts and to diversify tourist offerings. This may include alternative tourist attractions in other areas using immersive visitor experience centres with leading edge technology.

Significant planning assumptions	Level of uncertainty	Impacts	Mitigation
Regional collaboration – Council will continue to collaborate with neighbouring councils on specific programmes.	Medium	Programmes will not be successful without all Northland councils participating. Council will not meet its legislative requirements working by itself.	This relies on effective relationships at senior management level and by elected members.
Asset data - There are various levels of reliability of information across the infrastructure activities. Gaps have been identified as part of this strategy and Asset Management Plan development.	Medium	Difficult to make renewals decisions with gaps in information. Some assets may need to be closed for use if assessed as unsafe due to deterioration.	Strengthening the process related gaps to improve asset data reliability for the non-core assets has been identified as strategy improvement.
Asset lives – Council will maximise the useful and economic lives of its assets.	Medium	This will impact on the timing of replacements and the amount of rates collected for funding depreciation.	Continue to analyse the useful lives of the major asset classes as new information becomes available, with focus on the critical assets.

8.2. Significant financial assumptions

In developing this Strategy, financial areas of uncertainty have been identified specific to infrastructure assets. The full areas of uncertainty that are financial related are detailed in the Financial Strategy including inflation factors. The identified areas of uncertainty are in the table below.

Table 33 Financials areas of uncertainty

Significant financial assumptions	Level of uncertainty	Impacts	Mitigation
Funding sources - Funding sources (including external funding sources) do not materially change over the life of this Infrastructure Strategy. Council will continue to seek external Government funding and other sources as it becomes available.	Medium	Funding from third parties (including grants and NZTA contributions) is not available resulting in the need to defer or cancel significant projects or seek additional funding from ratepayers.	Funding for projects and assets is considered before the commencement of each project or asset. A significant impact from changes in funding or funding sources may result in revised capital works programme with less projects undertaken. FNDC will need to closely monitor the asset state to ensure that
Three water assets - Three water assets have been included with the draft strategy to align with the Government's new direction for water services. Supporting legislative amendments are being implemented in staged approach as the Government implements its Local Water Done Well policies.	High	The future management structure of the three waters is uncertain with the new Government. Retention of the three waters activity will impact Council's ability to borrow, and future rates affordability.	The 5 year financial requirements to manage the three water assets sustainably will now need to be included as part of FNDC's 2024 Long Term Plan.

Significant financial assumptions	Level of uncertainty	Impacts	Mitigation
Waka Kotahi funding - Waka Kotahi will continue to provide subsidised funding to the Council for the road network over the next 30 years at the current level.	Medium	There is risk that sufficient funds will not be available to pay for planned capital projects. The community cannot afford to fund the unsubsidised work programmes not approved by Waka Kotahi as facing significant general rate rise.	Continue to negotiate with Waka Kotahi to increase the approved work programmes.
Construction costs - Capital expenditure estimated costs are based on Council's best estimates and known planned expenditure. Materials and labour costs have increased significantly higher than consumers price index.	High	Capital expenditure varies from approved project budget resulting less projects delivered and increased borrowing costs.	Council will review its budget annually through the Long-Term Plan and Annual Planning process and adjust work programmes and budgets where necessary. Bundle the capital works programmes into work packages to provide certainty for contractors. Council has identified that delivery of the capital programmes needs to improve
Operational costs – Costs with operational contracts have increased significantly higher than consumers price index due to higher fuel, material and labour costs.	Medium	Annual costs with operational and maintenance contracts increased greater than original contract award amount. Planned maintenance programmes may need to be reduced and focus on reactive maintenance.	Council will assess the variation and impact of service provision to customers and meeting legislative requirements. Budgets may need to be adjusted through the Long-Term Plan / Annual Planning process.
Weather related costs – Significant operational costs to remediate weather damaged assets, particularly roads.	High	Planned budgets will not cover major asset failures due to weather events, particularly land transport.	Apply to Waka Kotahi for emergency funding with flood damaged roads. For other activities, budgets may need to be adjusted through the Long-Term Plan and Annual Planning process to prioritise damaged asset replacement ahead of programmed works.

9. Strategy Improvement

The key improvement tasks identified through the development of Council's 2024 Infrastructure Strategy are summarised in the table below. This is part of continuous improvement process and will ensure that Council is best prepared for the 2027 Infrastructure Strategy. These actions should be read in conjunction with the technical improvement tasks provided in the Asset Management Plans.

Table 34 Strategy improvement actions

Strategy element	Improvement actions	Activity	Timeframe	Priority
Policy	Develop an Asset Management Policy to ensure consistency across the diverse range of infrastructure assets managed by various custodial arrangements.	All	2024/25 to 2025/26	H
Asset Management Plans	Develop technical Asset Management Plans for the three water activities as a high priority.	Three waters	2024/25 to 2025/26	H
Regional collaboration	Work towards greater regional collaboration with solid waste assets and services to achieve operational efficiencies and long term waste minimisation goals.	Solid waste	2024/25 to 2033/34	M
Integrated planning	Formally review the effectiveness of the integrated planning framework with NTA and Far North Waters Alliance every three years.	Land transport, three waters	2027/28	M
Growth planning	Develop and implement the prioritised work programme for lifting growth planning practices.	All	2024/25 to 2025/26	H
	Start to use the Te Ao Māori framework in growth planning decision making internally.	All	2024/25 to 2025/26	H
	Identify and implement an appropriate mechanism for funding investment in the infrastructure that is required to support growth in our district. Ensure that the appropriate data is held to support the implementation of this.	All	2024/25 to 2030/31	M
Growth planning / cultural values	Collect and consolidate data on land suitability for receiving treated wastewater at district wide level. This data will help make decisions on future treatment plant locations (new and upgrades).	Wastewater	2025/26 to 2026/27	M
Adaptation planning for climate change	Roll out the Climate Action Implementation Plan to put the Climate Action Policy into action.	All	2024/25 to 2026/27	H
	Develop the scheduled Community Adaptation Plans each year. Work alongside the hapu and within the communities to understand the issues and design culturally appropriate solutions.	All	2024/25 to 2033/34	H
Financial Planning	Categorise the capital projects by the correct driver including growth. Set up the processes and systems to implement Council wide and across all infrastructure activities.	All	2025/26 to 2026/27	H
Asset data	Improve the data quality for the non-core assets to enable better renewal planning and decision making.	Built spaces, open spaces, maritime assets, and solid waste	2024/25 to 2033/34	M

Strategy element	Improvement actions	Activity	Timeframe	Priority
	Improve land drainage data and information to develop an activity management plan to inform the 2027 strategy.	Land drainage	2024/25 to 2033/34	H
	Improve the completeness of three water data including age and material type so basic asset management analysis can be undertaken.	Three waters	2024/25 to 2033/34	H
Asset condition	Undertake planned condition surveys of the above ground water supply assets to understand current asset state and inform future renewals.	Water supply	2024/25 to 2026/27	H
	Undertake planned condition surveys of the above and below ground wastewater assets to understand current asset state and inform future renewals.	Wastewater	2024/25 to 2026/27	H
	Undertake planned condition surveys of the below ground stormwater assets to understand current asset state and inform future renewals.	Stormwater	2026/27 to 2030/31	M