Infrastructure Strategy 2021 – 51

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7. Introduction

The Council is required to prepare an Infrastructure Strategy for a period of at least 30 years to inform its 10 Year Plan. The Infrastructure Strategy has been directly informed by the city's vision and goals, supporting strategies and asset management plans, and sits alongside the Financial Strategy. The Strategy covers transport, stormwater, wastewater, water, property and recreational assets.

One of the primary and significant purposes of local government is to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future. Council infrastructure plays a significant role in achieving this.

Renewing and maintaining existing infrastructure and developing new infrastructure is expensive. Infrastructure represents a significant proportion of Council expenditure and is also an important enabler of economic growth. The way that Council invests in infrastructure has a significant influence on the extent to which it will deliver on its Vision and Goals for Palmerston North. For these reasons, it is important that the Infrastructure Strategy aligns with the Council's broader strategic direction, including the Financial Strategy.

8. Purpose

The purpose of the Infrastructure Strategy is to:

- (a) identify significant infrastructure issues for Palmerston North City over the period 2021–51
- (b) identify the principal options for managing those issues and the implications of those options.

9. Background –

9.1 Strategic direction

The Vision for Palmerston North is **small city benefits, big city ambition**. This Vision is supported by five goals and strategies. Key extracts from the strategies are detailed in sections 3.2 to 3.6 of this Infrastructure Strategy.

Goal 1: An innovative and growing city

A city that is clever about the way it uses its natural advantages to encourage and support innovation, entrepreneurship and new industries, and positions itself to take advantage of change to fuel sustainable growth, prosperity and wellbeing.

Goal 2: A creative and exciting city

A city that draws inspiration from the diversity within its culture and creates a vibrant urban environment that attracts creative and clever people, and nurtures creative talent.

Goal 3: Connected and safe communities

A city that includes, supports, connects and uses the talents and advantages of the whole community in the pursuit of prosperity and wellbeing. A city with an international reputation as a safe city in which to live, study, work and play. A city that embraces its iwi heritage and partnership, and where people connect with the city's past, celebrating its history and heritage.

Goal 4: An eco city

The Council wants a future-focused city that plans for and cares about the future, enhancing its natural and built environment. Our city will realise the benefits to society from creating clean energy, lowering carbon emissions, and reducing our ecological footprint.

Goal 5: A driven and enabling Council

A Council and organisation that works as one team with its communities and is a catalyst and enabler for change in the city.

3.2 Innovating and Growing City Strategy

Palmerston North is the major economic hub for the Manawatū–Whanganui region for education, research health services, retailing, business services such as banking and finance, insurance, and professional services, government administration, agribusiness and logistics. The city's growing economic influence within the region is demonstrated by the number of people commuting to work in Palmerston North from surrounding local authority areas, and the expansion of the city's labour market region over the past 25 years. With 36% of the regional population, Palmerston North has 49% of jobs and 49% of earnings for the region. Projected growth in the economy will lead to more industrial, commercial and residential development, all of which requires additional infrastructural capacity.

Palmerston North is expanding, and Council wants to accelerate the city's growth and prosperity. Having a ready supply of land with infrastructure to support the city's growth will ensure Council can harness new development opportunities and increase Palmerston North's competitiveness. Council will provide infrastructure in a timely way while managing the financial risks of providing too much infrastructure in multiple locations. Integrating land use planning and infrastructure can be a powerful economic development tool. The Government has provided strong direction about this, particularly for housing, in its National Policy Statement for Urban Development (2020).

The Council has adopted the medium growth household and population projections from Infometrics plus the additional margins required by the National Policy Statement for Urban Development. Despite taking a medium growth approach, the projections exceed the high growth assumptions made in the previous Long Term Plan.

The following population projections are assumed:

- 10-year projection 2021–31, 1089 people per annum at 1.1%
- 20 year projection 2021–41, 1039 people per annum at 1.0%
- 30 year projection 2021–51, 1002 people per annum at 1.0%.

The following household projections are assumed:

- 10-year projection 2021–31, 504 households per annum at 1.4%
- 20 year projection 2021–41, 459 households per annum at 1.2%
- 30 year projections 2021–51, 432 households per annum at 1.1%.

Housing

Council's main role is to make sure land and infrastructure are available to accommodate growth and provide market choice, while responding to changing demographics. Housing choices now allowed under the District Plan include multi-unit developments and minor dwellings. The planning framework also enables apartments in or near the city centre, including as part of a mixed-use development. The demand for infill housing is expected to continue and extend to areas west of the city. Lifestyle blocks are directed away from productive land and need to have their own infrastructure. Strong housing growth has occurred in the past three years. A significant feature of housing growth has been as a result of infill and multi-unit development. The traditional housing preference for greenfield development has been overtaken by intensification. This has likely been influenced by large value uplifts in land value, which has made intensification attractive for landowners. Greenfield capacity has also been consumed quickly, which is driving the need to bring forward long-term growth options to satisfy short and medium term demand. Significant capacity is proposed to be rezoned and serviced over the first three years of this long term plan to meet greenfield housing demand over the next 30 years. Changes will also be made to the District Plan to further encourage and enable more intensification, to place less reliance on growing the city outward. Additional growth in the outlying villages (Ashhurst, Longburn, Bunnythorpe and Linton) will also need to be explored to provide greater locational and price point choices for the market.

Council wants land for new sections for housing within the various greenfield sites within the Whakarongo growth area brought to the market quickly. The Council will work closely with landowners and develop its Council-owned site within Whakarongo, under a subdivision named Tamakuku Terrace. To release pressure and meet updated growth projections, significant capacity at Kākātangiata (formerly called City West), between Palmerston North and Longburn, identified for medium- to long-term greenfield housing sites will need to be released earlier than previously anticipated. The first stage of Kākātangiata has recently been rezoned. This area is referred to as Kikiwhenua, and is the area bound by the Mangaone Stream, Te Wanaka Road and Pioneer Highway (the Racecourse land).

Limited greenfield housing capacity remains at Aokautere, but additional land is being planned to be rezoned and serviced to enable significant housing capacity. As well as the Hokowhitu Residential Area, Council will work with landowners at Napier Road and Flygers Line, where small greenfields additions can be made without the need for substantial new infrastructure. Affordable and first homes are in high demand in all locations throughout the city. An area within Ashhurst is also being sought to be provided by rezoning and servicing land for over 300 additional homes. Council will also work with landowners at Roxburgh Crescent to enable a transition from Industrial to Residential and to encourage medium density housing to be built.

Rezoning and servicing the wider Kākātangiata growth area, Aokautere and Ashhurst will ensure there is adequate supply of greenfield housing for more than 30 years, based on medium growth projections.

Office and retailing

The formal planning framework for future growth in office and retailing is well settled. The District Plan expects new stand-alone office or retail activities to be established in one of the four central business zones, where significant capacity is available. New office and retailing should leverage off planned public investment in the city centre.

Council will look at ways to help fill vacancies in larger office blocks in the city centre, including looking at long-term leases for public parking. Office activities are expanding in business areas on the city centre fringes, where intimate purpose-built offices with onsite parking are meeting market preferences.

Vacant land at Rangitikei Street is zoned for large-format retailing. Further work is needed to determine whether the land should be made available for other uses, such as housing or mixed-use development.

Industrial

The formal planning framework for future industrial development is well settled. Industrial land has been made available to the north-east of the city and at Longburn. The north-east is earmarked for large-format freight, distribution and logistics activities, while Longburn is best suited to wet or processing industries. Both locations are well placed for the new regional ring road. Industrial capacity also exists within the historical industrial spine adjacent to the rail corridor at Tremaine Avenue and at the airport. The Longburn site has significant legacy issues with private wastewater and water services which will require significant investment in upgrading of services. A potential shortfall in small and medium scale industrial activities from 2024 onwards was identified in the Housing and Business Needs Assessment that Council published in May 2019. Therefore, more industrial land will need to be identified, rezoned and serviced to ensure adequate supply is available to the market from 2024 onwards.

The regional freight ring road is important to service projected industrial growth. Council will undertake a collaborative planning exercise to direct future investment in rail in the north-east and at Longburn. Integrating rail to form a significant intermodal freight and distribution hub is a major strategic issue. Rail access at Longburn is limited to sidings only and rail is unavailable at the north-east. Traffic flows compromise the industrial land adjacent to the rail corridor at Tremaine Avenue.

KiwiRail have lodged a notice of requirement with the Council, seeking to designate land in the North East Industrial Area as a rail hub. The rail hub is expected to be developed over a 10 year period but will not be at full capacity for 30 years. The rail hub is not expected to draw significant demand on water or wastewater infrastructure; however, the transport

network between Bunnythorpe and Palmerston North will need to change to accommodate the development. There are also likely to be stormwater management issues that will need to be resolved through the designation process. The rail hub development will place greater emphasis on the need for a regional freight ring road.

Council needs to work with infrastructure owners at Longburn to make future development possible. Much of the existing infrastructure is privately owned, not up to modern standards or does not allow for future growth. Council intends to invest in infrastructure in this location and recoup the cost through Development Contributions. Specific planning has been done to support the future growth of Fonterra's industrial activities at Longburn.

Rural

The formal planning framework for rural subdivision and development is well settled. The District Plan discourages lifestyle blocks and further fragmentation of productive farmland. Substantial capacity for lifestyle blocks is provided on the foothills of the Tararua Ranges, to ensure they remain a legitimate housing choice for the city.

The District Plan discourages the provision of urban services, particularly reticulated services, in rural areas because it is an inefficient form of infrastructure investment. It also blurs the lines between rural and urban development and leads to confusion about future development opportunities. Many landowners see the provision of urban services as legitimising intensification, while others believe it undermines the rural amenity they sought out.

Spatial Plan

The Innovative and Growing City Strategy, together with other catalyst projects, is summarised in the following Spatial Plan:



Mapping the Future

Sustainable Growth (Industrial)

- 1. Nature Calls: Wastewater Treatment Plant Upgrade
- Central NZ Distribution Hub: Regional Freight Ring Road, Regional Freight Hub, Airport, North East Industrial Zone Longburn

Sustainable Growth (Residential)

 Whakarongo, Aokautere, Kakatangiata, Ashhurst and Urban Intensification (minor dwellings, infill, multi-unit and apartments)

City Centre Transformation

- 1. Streets for People: City Centre Streetscape Plan
- 2. Civic & Cultural Predinct Masterplan (Te Manawa & Library)
- 3. Central Energy Trust Arena
- 4. Heritage Protection Package*
- 5. City Centre Business Improvemnet District (BID)*

Manawatú River Network

- 1. Central Energy Trust Wildbase Recovery Centre
- 2. Victoria Esplanade Masterplan & Projects
- 3. He Ara Kotahi Bridge & Shared Pathway
- Manawatů River Shared Pathway (Ashhurst to City)
- 5. Te Apiti Biodiversity & Recreation
- 6. Ahimate Park (Waitoetoe Park)
- 7. Te Motu o Poutoa (Anzac Park)

City-wide Partners:

Rangitáne, Central Economic Development Agency (CEDA), Central & Local Government, Massey University, Research & Food HQ, NZ Defence, Mid Central DHB, PN Airport



3.4 Creative and Liveable Strategy

To help Palmerston North compete for people, talent and investment, as well as improving how the city is perceived by locals, visitors, potential new citizens and investors, creative city-making needs to inform the way that Council invests in infrastructure.

Charles Landry, an international authority on cities and creativity, visited Palmerston North in 2013 to find out how local people view the city and assess the city against his Creative City Index. In his report, Landry said place-making now plays an important role: "Most cities historically were built in a very functional way, encapsulated in the cliché 'roads, rates and rubbish' (a hardware focus). In the last two decades, however, there has been a major shift related in large part to global competition between cities and the need to attract the best talents. Urban development is now concerned with combining hardware and software and so focus on what places look and feel and how emotionally satisfactory they are as well as how they attract activity. In this approach there is a stronger focus on walkability and the need to downgrade the power of the car. Place-making is now an aim and requires a completely different skill set, spread throughout a local authority and its external stakeholders. This new approach is concerned with building communities and places, not only infrastructure." This approach needs to be applied to the way Council invests in infrastructure in Palmerston North.

3.5 Connected Communities Strategy

Palmerston North has a uniquely diverse community, with a prominent defence workforce, large numbers of young and transient tertiary students, and a strong connection to the wider Manawatū. The city is relatively young; by 2043 the average age is projected to be 37 – five years younger than for New Zealand overall. However, the fastest-growing age group in Palmerston North is people aged over 65. In future, the city will be home to a large older population, as well as growing numbers of children and young people.

The ethnic mix of Palmerston North also continues to become more diverse, and it is arguably the most ethnically diverse provincial city in New Zealand. Pasifika and Asian people are projected to make up a growing proportion of the population, behind only NZ European (73%) and Māori (22%) by 2028. Since 2004, Palmerston North has become home to small groups of former refugees from the Republic of Congo, Burma, Bhutan and Syria.

Along with the city's changing age and ethnic profile comes a change in household composition. More than 60% of the 30,000 households are made up of only one family, and a quarter of all households have only one member.

Infrastructure investment needs to recognise the changing nature of the Palmerston North community.

3.6 Eco City Strategy

The Ministry for the Environment advises that "climate change is the biggest environmental challenge of our time. Each one of us needs to work on ways to cut our emissions, adapt to the effects of climate change, and become more resilient to the changes that are coming. Climate change is already affecting our climate. It is likely to impact our agriculture and other climate-sensitive industries, our native ecosystems, infrastructure, health and biosecurity, as well as having broader social and economic impacts".

The Manawatū River is the heart of the city and region, and the mauri of the river is a direct reflection of the city's values. The city is increasingly looking to the waterways it once turned its back on, only to find that those waterways are not in the same state as they were before. Council is a signatory to the Manawatū River Leaders Accord along with other councils, iwi, businesses and community groups. In the Accord, Council has made a series of commitments towards improving the mauri of the Manawatū River.

Adapting to the effects of climate change, playing a part to slow climate change and managing the city's impact on the Manawatū River are critical drivers within the Eco City Strategy that will inform Council's approach to infrastructure investment.

10.City infrastructure

4.1 Description and value

Transport, stormwater, wastewater, water, property, parks and reserves assets provide core infrastructure services that underpin the economic and social activity of the city.

The transport network consists of 556 km of road, 106 bridges, 569km of footpaths, 8,600 streetlights, 33 sets of traffic signals, more than 2,700 central city car parking spaces, 105km of on and off-road cycle lanes / paths and more than 13,900 street trees.

The stormwater drainage network consists of 290 km of piped drain, 8 km of culverts, 5,511 manholes, connections to more than 17,500 properties, 89 floodgates, and other structures.

The wastewater network consists of 422 km of pipelines, 5,794 manholes, 37 wastewater pumping stations, and connections to about 30,000 properties. In addition, the Totara Road wastewater treatment plant treats all of the city's wastewater before discharge to the Manawatū River.

The water supply assets provide for water collection, treatment and distribution. The infrastructure for water collection consists of two dams at Turitea Reserve, and 21water supply bores and pump stations. The Turitea Water Treatment Plant treats water collected in the dams. The distribution network consists of 548km of main pipelines, 196km of service lines, 4,650 valves, 3,128 hydrants, 2,097 meters, 448 backflow preventers and 28,162 tobies connecting to properties.

The property assets consist of thirty three operational properties, eight cultural properties (including libraries), 407 social housing units, eight community centres, three swimming pools, 3 cemeteries and the Central Energy Trust Arena multi-use events complex.

The parks and reserves assets comprise of seven city reserves (including walkways), 106 local reserves (including suburb reserves, neighbourhood / small neighbourhood reserves, esplanade reserves, ecological and special character reserves), three aquatic facilities, and 24 sports fields.

This infrastructure has been developed largely over the past 150 years as the city has grown. The total replacement cost of this infrastructure is approximately \$2 billion. The replacement cost for each of the asset areas is as shown in the following diagram:



4.2 Condition and performance

Most of the infrastructure is assumed to be in good condition, with much of it in the early to midpoint phase of its life cycle. On average, approximately \$14.0 million per annum has been spent on renewing the infrastructure over the past three years.

Renewal expenditure over the past 3 years						
Activity	2017/18	2018/19	2019/20			
	\$M	\$M	\$M			
Transport	5.29	5.86	5.79			
Stormwater	0.26	0.58	0.67			
Wastewater	3.45	3.46	2.63			
Water	3.27	3.61	3.79			
Property	4.69	5.12	6.55			
Parks and Reserves	2.28	2.08	4.06			

Total	19.24	20.71	23.49	
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Expectations for **transport** have changed to include greater emphasis on the movement of people and goods, rather than vehicles. This means delivering the regional freight ring road, providing for pedestrians, cyclists and those catching the bus and treating streets as public spaces that work for all users to achieve multiple outcomes. More work is required in all of these areas and should be the strategic focus of the transport activity. The way that Council assesses the performance of the transport activity should also be changed to reflect this new strategic focus. The conditions of road pavement assets are showing signs of decline. Especially on our busiest roads. Renewals and maintenance activities need to be focussed to maintain levels of service on these roads.

The life of road pavement surface varies from 12 to 30 years, depending on the type of surface and level of traffic. The overall condition of footpaths has improved over the last few years, with a targeted renewals programme ensuring the majority of footpaths are in the top half of the condition rating scale. Approximately 75% of bridges are greater than 50 years old, with significant renewal requirements expected between 2030 and 2050.

Like transport, the expectations for **stormwater** infrastructure have changed. There is a need to improve the performance, amenity and quality of our open drains and urban streams. This is to both to mitigate the flooding risk associated with more frequent high intensity rainfall but also to acknowledge their cultural significance as tributaries of the Manawatū River. Development has increased the amount and speed of rainwater going into urban waterways, increasing peak flow rates, and the levels of soil sediment and other contaminants going directly into the river system. Water-sensitive design approaches to development and the adoption of a wider use of tools such as water tanks, green roofs, swales, rain gardens and detention ponds will all help. Climate change is expected to bring higher-intensity rainfall events that will increase the frequency of nuisance flooding on both roads and properties as well as increase the level of property damage and loss due to flood events.

Stormwater drainage infrastructure generally only operates during major rainfall events and as a result, pipeline and culvert assets have a very long life (more than 150 years). Most of these assets are only in the early stage of their life cycles and are assessed as being in very good condition. Exceptions to this are those sections of the network damaged by tree root intrusion, high vehicle loads and the ingress of sediment and debris. Most of the older stormwater pump stations have recently been renewed and the condition rating for stormwater pump stations is also very good. The key deficiencies are associated with the condition of the electrical and control systems and the lack of standby pumps should the existing pump fail. Performance of the stormwater drainage system is also rated as good, although there is some street ponding for short periods at times of major storm events and this is recognised in the level of service provided.

The overall condition of **wastewater** pipelines and pumping stations is assumed to be good, with more than 60% of the system installed since 1960. The average life of pipes is about 90 years. The key deficiencies are associated with inadequate information about the condition of critical trunk sewers, the presence of abandoned sewers which have not been decommissioned and unreliable pump station electrical and control equipment which needs renewal. Blockages of the network can occur as a result of tree root intrusion and uneven grades caused by ground settlement, although these are minimised through a targeted maintenance regime. Stormwater inflow and infiltration, although on par with wastewater networks worldwide, will continue to increase without investment in targeted fault remediation.

While the wastewater treatment plant performs as designed Council has agreed, following a review by Horizons Regional Council, to consent conditions requiring identification of a Best Practicable Option by June 2021 and lodgement of new consents associated with upgrading the plant by June 2022. The Council is currently working through the options assessment and selection process to confirm and detail the best practicable option for the upgrade.

In the **water** network, about 59% of pipelines are less than 30 years old and expected to have a life of more than 100 years. Problems experienced with discoloured water as a result of iron and manganese build-up in cast-iron pipes have largely been overcome in Palmerston North. Most of our old cast iron mains, which were the ones causing these issues, have been replaced. There are still 29km of cast iron mains on our networks. These are planned for replacement in the next few years. Our renewal programme will also concentrate on replacing some of our asbestos cement (AC) network. This material was used extensively in the 1970s and 1980s, but around the country people are finding that a lot of these mains are failing decades before expected. Renewing our cast iron and AC mains will give us a more resilient network with reduced leakage and improved water quality. Issues with discoloured water in Ashhurst will be addressed with additional treatment of the bore water and are not caused by the water mains themselves.

Maintenance and renewal regimes for **building** assets have kept them in overall good condition, although this is having been primarily with a reactive focus as opposed to a focus on preventative and planned maintenance. As a result, a higher level of both maintenance and renewals is now due across the building portfolio. This includes social housing units, many of Council's operational facilities and the City Library. Although there has been considerable renewal investment in recent years in some areas of the portfolio such as sports field changing room facilities and public toilets, more is needed in these areas and overall. The Central Energy Trust Arena is generally in good condition, with areas in need of upgrading to be addressed through the Arena Masterplan development.

The Seismic strengthening of our earthquake-prone buildings will occur incrementally and will require significant investment over the next 15 years. Council has identified 9 earthquake-prone buildings or facilities within its building portfolio which will need to be strengthened to meet new legislative requirements. The affordability of this work is a challenge for us, as we try to strengthen our buildings to meet the required National Building Standards (NBS) while ensuring we spend in a financially sustainable way. The change in building standards means there is a chance that there may be more earthquake-prone buildings identified in the future.

Council takes a city-wide approach to the management of parks and reserves assets and assesses the condition of all assets annually. Resources are targeted to the poorest performing assets within the network, to minimise the whole of life cost of ownership, whilst delivering the agreed level of service. A proactive approach is taken to asset maintenance. As a result, most parks and reserves assets are currently in very good to excellent condition. The long-term renewal programme is based on forecast future condition and the changing needs of the City.

There are no significant disposal issues for assets coming to the end of their useful life in the period of this strategy.

- **4.3 Critical assets** Critical assets, based on their failure affecting a large number of people or having a high cost, are:
- transport: Fitzherbert Ave and Saddle Road bridges
- stormwater drainage: large-diameter pipelines and major pump stations
- wastewater: wastewater treatment plant, major pump stations and large-diameter pipelines
- water supply: Turitea dams, water treatment plant, water reservoirs and large-diameter pipelines

- property: Civic Administration Building and Central Energy Trust Arena.
- Parks and reserves: cemeteries and crematoriums and swimming pools

11.Significant infrastructure issues and principal options -

5.1 Introduction

Council's significant infrastructure issues over the next 30 years involving high expenditure, high risk, strategic priorities and/or high public interest are identified as:

- Three Waters Reform
- Wastewater treatment and upgrading
- Provision of a regional freight ring road including a second river crossing
- Developing new infrastructure for growth
- Renewal and maintenance of infrastructure
- Stormwater quality and capacity
- Applying urban design
- Facilities to encourage alternative transport modes
- Security of water supply
- Increasing the resilience of infrastructure
- The impact of climate change
- Modernising Central Energy Trust Arena
- Using Council land for housing
- Earthquake strengthening
- Construction Industry Capacity
- Asset performance and condition

5.2 Three Waters Reform

Currently, Council is responsible for managing "the three waters" comprising water supply, wastewater and stormwater.

New Zealand's three waters system is facing significant challenges. Central Government is undertaking a three-year programme to reform local government three waters service delivery arrangements.

Local government in New Zealand is facing urgent challenges in the provision of these services including: funding infrastructure deficits, complying with increased safety standards and environmental expectations, building resilience to natural hazards and climate change into three waters networks, and supporting growth.

The Government is looking at reforming how these waters are managed. Its current thinking is drinking water and wastewater should be managed by a small number of multi-region entities. These entities would be publicly owned, with mechanisms to stop the privatisation of water supplies. The size, shape and design of these entities is still being worked through.

The main reason for the reforms is the huge cost of meeting public health and environmental standards for water and wastewater. Central Government has estimated a \$30-40 billion deficit in waters funding across the country. Total spending by local government each year is \$1.5b, so the problem is significant - fixing water and wastewater problems is unaffordable for most Councils. It's a significant problem for us (see the previous section on Nature Calls).

Residents connected to the water or wastewater networks will still have to fund the networks, but the new entities will have economies of scale. They will have stronger balance sheets, more access to capital, and alternative ways of funding their work.

These reforms are still just a Central Government proposal, and there is a lot of detail to work through. We've agreed to participate in the exploration of these reform options and, as a result, we received \$9.4m in Central Government grant funding to bring forward some critical renewals and advance key water and wastewater resilience projects.

While the government is developing detailed proposals, we're preparing this 10 Year Plan on the assumption we'll continue to manage and fund the three waters. If the reforms go ahead we'll need to develop a new 10 Year Plan to reassess our priorities.

5.3 Wastewater treatment and upgrading

The resource consent for the discharge from Council's main wastewater treatment plant to the Manawatū River is due to expire in 2028. Following a review in 2013 of the impact of the current discharge on the Manawatu River, Council agreed to new conditions of consent which require a best practicable option review for its wastewater treatment and disposal to be completed by June 2021 and a new consent application to be lodged by June 2022. The BPO review currently underway is looking to identify ways to mitigate the impact of the city's wastewater discharge on the river, particularly when the river level is low. Council is actively engaging with the community through this process to help identify the preferred treatment and discharge option. Financial provision of at least \$1 million has been made for each year until 2023/24 to undertake detailed investigations and secure the resource consents for this project.

The range of potential operating and capital costs have been estimated as ranging from \$200 to \$700m, however they are approximate only and will not be known with any confidence until the best practicable option investigation review is completed and the consent is granted.

Council does not wish to prejudge which **option** might be chosen (or which consents will be granted through the regulatory process) but is required to make adequate financial provision for the final outcome. A number of factors will influence the final outcome, and it is likely that national and regional policies for water quality will change before a final decision is made. Whatever option is chosen, it will have a significant impact on Council's debt levels and rates requirements. For the purpose of the 10 Year Plan, it has been assumed that a solution will be provided with a capital outlay of \$350 million (\$391.7m including inflation) and that the expenditure will be incurred between 2023 and 2027. The final option could cost more or less.

The 10 Year Plan assumption has been chosen as a way to ensure that the Council's longer-term plans demonstrate it can cope with a project of this size and scale, and to transparently show the public the possible implications for debt and rates. It has also been assumed there will be additional operating costs of \$6.5 million per annum from 2026 on top of the debt servicing and repayment costs.

When designing and selecting the preferred wastewater treatment and discharge option, it is important for Council to have a good understanding of trade waste production, including the intentions of current industry in the city, the likelihood of new industry being attracted to the city, and the preferred locations for that industry. Oversizing the treatment plant would be inefficient, while undersizing could mean the city misses development opportunities. The infrastructure costs associated with servicing industries with significant trade waste discharges may be more cost effectively accommodated in other locations in New Zealand particularly where wastewater need only be partially treated before discharge via an ocean outfall.

Council has been conscious of the potential scale and financial impact of this project, including when it has programmed its other likely commitments. If the final option chosen costs more than has been assumed, the Council may need to review its priorities in later years of the Plan to be able to operate within its prudential borrowing limits.

5.4 Provision of a regional freight ring road including a second river crossing

Council has been collaborating with Waka Kotahi NZ Transport Agency, Horizons Regional Council and neighbouring local councils on the proposed regional freight ring road for more than a decade. Waka Kotahi have developed the Palmerston North Integrated Transport Initiative (PNITI) to guide investment in strategic transport in the city. PNITI is a package of interventions to support the freight and distribution potential of the region, assist in building the region's resilience and provide a safer, more effective connection between some of the region's key industrial areas whilst improving access and safety for Palmerston North residents. The key opportunities identified in the PNITI for strategic transport investment are:

- (a) Economic growth, development and investment;
- (b) Grow Palmerston North as a distribution and transport hub;
- (c) Reduce freight on residential and place-based streets;
- (d) Reduce the travel time between key destinations;
- (e) Improvement in levels of service at key intersections;
- (f) Reduce the number of deaths and serious injuries on the transport network;
- (g) Reduce carbon emissions from land transport;

PNITI considers a programme of investment to deliver on the investment objectives. This includes delivering the regional freight ring road, a future second Manawatu River crossing, improvements around Bunnythorpe, connections to the North East Industrial Zone, accessibility and safety improvements throughout the city. We will be taking the lead on many of the elements of the PNITI programme with Waka Kotahi leading others.

Our initial focus is on activating the regional freight ring road. This includes improvements to key intersections and bridges that are currently inaccessible to heavy vehicles. In the medium to long-term, our focus will be on improving other parts of the regional ring road and the strategic transport network around Bunnythorpe. Waka Kotahi is expected to take the lead on improvements on existing state highways, parts of the regional ring road and the second Manawatu River crossing. Delivering the PNITI and the provision of a further river crossing will only be viable for Council with financial assistance from Waka Kotahi.

Council's engagement with Waka Kotahi over these issues relate to advocacy in delivery of the regional freight ring road in particular timing, ownership and funding. This strategy details a default position with Council as the sole roading authority in regard to delayed timing and restricted funding. The Council will continue to advocate to Waka Kotahi on progressing the regional freight ring road as early as possible to address the transportation issues identified above.

We have maintained a future proposed budget for a further river crossing at 2040-2043. The intention is that this would complete the regional ring road in association with other improvements prior to this time. There remains uncertainty around the necessary location and timing of such an additional crossing. This will be influenced by the previous investment at this point and pace of development in the city.

5.5 Development of new infrastructure for growth

The location of new greenfields urban development is well settled. This is useful, as it means there is a high level of certainty about the location of new infrastructure to service greenfields growth. District Plan changes to rezone land for Kākātangiata (formerly referred to as City West), Aokautere and Ashhurst will be progressed throughout 2021 to supply significant urban growth capacity. A Future Development Strategy will be prepared in 2022 to help shape the next long term plan and will be informed by a Housing Needs Assessment which will be completed in June 2021.

While rezoning land makes it available for development, greenfields development cannot proceed until network infrastructure is provided. Development goes in cycles, and demand can vary according to a range of factors, many of which are out of Council's control. One factor Council can control is the timing of new infrastructure. Having 'shovel-ready' land can be a strong incentive for new development because it means that land is zoned and network infrastructure is available. This process requires the Council to put infrastructure in place in advance of development, and this comes at a cost. While that cost is ultimately recovered at a later date, there is a risk that the Council provides the infrastructure too early and faces increased holding costs, or the Council provides the infrastructure too late and discourages new development.

Matching the capacity of new infrastructure with the likely activities that will occur in greenfields areas, particularly for new industrial development, can also be challenging. Unlike housing development, which has a reasonably uniform demand for infrastructure, the capacity required to service different types of industry can vary significantly. For example, food processing or pharmaceutical activities place a heavy demand on water and wastewater, while freight and distribution activities place a heavy demand on roads. It is important that Council has a good understanding of the industry that is likely to occur, the industry it would like to attract, and the preferred locations for different types of industry so that it can appropriately match infrastructure with land use. Oversizing infrastructure is inefficient, while undersizing means the city could miss development opportunities.

The Council has signalled a desire for more brownfield development, and the District Plan now makes an increased range of housing types possible. However, predicting the location, demand and type of brownfield development that will occur, and the impact on infrastructure capacity, can be difficult. The assumption is that 38% of all new houses will be infill or brownfield developments in the existing urban area, with the balance being 50% greenfields and 12% rural. There is a risk that infrastructure planning focuses on greenfields development because it involves new infrastructure. It is important that infrastructure capacity is provided to accommodate the projected increased housing density and that housing preferences are monitored to ensure that any changes inform future planning.

The reality is that other than good planning, the Council has limited options to address issues affecting the development of new infrastructure for growth. Council has strong aspirations for growth and it is important to have a clear strategic framework that directs where growth will occur and to align infrastructure with this direction. Council should also be as agile as possible in planning and infrastructure provision. Being clear about the type of industry and inward investment the city is seeking is also important. The infrastructure costs associated with servicing certain types of wet industry may be more easily accommodated in other locations that can address wastewater via an ocean outfall. Secure funding sources are also important. Council will continue to recover the costs of growth via development contributions, but should also advocate to government for funding support for infrastructure to service growth and alternative funding sources.

5.6 Renewal of infrastructure

In order to provide service to the community Council's infrastructure needs to be maintained and then later renewed. This is a national issue: Councils across New Zealand are facing major challenges with their infrastructure as part of a national conversation, with high-profile examples of infrastructure issues in some other cities. We need to get ahead of this which means we must ensure infrastructure enables our city.

Generally, as assets age they require a higher level of maintenance to provide the required level of service which means there can be a point at which it is more cost effective to renew an asset than to go on maintaining it, or sometimes a higher level of maintenance can delay a costly renewal. It depends on the kind of asset as to which is the best approach. Council endeavours through its asset management processes to choose the most cost-effective option in the long term. However, where the asset is a critical asset and failure could affect many people it takes a conservative approach to renewing the asset to reduce the risk of failure.

Adequate condition and performance data is required to accurately assess the quantum of expenditure required over the next 30 years to renew assets in the most cost-effective way. As stated below the asset management maturity assessment found that there are significant gaps in this data. This means that the financial requirements for renewals have been based on available data (such as age) and the relevant industry best practice for factors such as expected life.

This available data would suggest that there is potentially a significant amount of deferred renewals for most asset groups, but this cannot be confirmed until additional condition and performance data is collected. The exception to this is Park assets where condition and performance information shows that there is not a backlog of renewals. Apart from the Parks and reserves assets the historic assumption was that there were little in the way of deferred renewals. However, trends in the condition data that could be obtained (including failures) and more intensive analysis of the available data over the past three years has caused this assumption to be revised. This analysis shows that a greater level of investment than previously assessed is required in the next 30 years for the backlog not to increase any further. The Council has limited options for renewal of infrastructure. It has a statutory responsibility to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future. Infrastructure is a key enabler to provide for these wellbeing's. Council seeks to provide infrastructure that is efficient, effective and appropriate to present and anticipated future circumstances. Council must look after the infrastructure it already has, which means it must be renewed when it reaches the end of its useful life. Council could choose to defer renewals, but this would place an increased financial burden on future generations and is unlikely to meet the purpose of local government.

As the city grows and ages, it has an increasing amount of infrastructure to renew. The current generation must pay for the renewal of all previously established infrastructure. Future generations will be required to pay for the renewal of all previously established infrastructure and any new infrastructure yet to be established. While population growth spreads future renewal costs across a greater number of people, keeping up with renewals is expensive. The way Council develops new infrastructure to support the growth of the city can affect the amount of renewals Council will face in the future. For example, brownfield redevelopment and making use of existing infrastructure can be more efficient than new greenfield infrastructure.

A total of about \$731 million (present-day cost) over the next 30 years is estimated to be required to ensure the transport, stormwater, water, water, property and parks assets infrastructure is kept in good condition so that it can provide the same level of service to the community. This is equivalent to expenditure of about \$24.4 million (present day cost) per annum. This is an increase over the average of \$21 million per annum that has been spent over the past three years.

Activity	Average annual renewal expenditure (Present-day costs \$M)
Transport	\$8.9
Stormwater	\$0.7
Wastewater	\$5.7
Water	\$3.3
Property	\$2.8
Parks and Reserves	\$3.0
Total	\$24.4

Given the size of the expenditure, the renewals programme represents an opportunity to make a significant contribution to Council's strategic direction. More attention is required to examine which renewals present an opportunity to provide infrastructure in a different way to deliver outcomes consistent with Council direction. For example, all renewals on streets identified within the cycle network plan represent an opportunity to contribute toward improving cycling infrastructure.

5.7 Application of urban design

The Council has tried to include urban design principles in public and private development since 2010. Good progress has been made influencing private development via the Sectional District Plan Review, which has incorporated urban design principles into a number of zones. A variety of design-led planning documents, such as the City Centre Streetscape Plan

(Streets for People), Manawatū River Framework and Central Energy Trust Arena Master Plan, have been prepared to inform significant Council investment in infrastructure. The development of all of these planning documents considered a range of options which were assessed by Council and subject to specific public engagement. Significant budgets have been included in the 2021 Long Term Plan to deliver on these planning documents, which will demonstrate the social and economic benefits of good urban design. A total of \$29.3 million (\$32.1m with inflation) is included to deliver the City Centre Streetscape Plan, including the new urban bus terminal, over the 10 years. The priorities and scheduling of works are as follows:

- City Centre Streetscape Plan Square East (Plaza to ANZ)
- City Centre Streetscape Plan Main Street East (bus terminal and canopies)
- City Centre Streetscape Plan Broadway
- City Centre Streetscape Plan Rangitikei Street
- City Centre Streetscape Plan Square West
- City Centre Streetscape Plan Church Street
- City Centre Streetscape Plan Square North
- City Centre Streetscape Plan Inner Square

Urban design is important because, since the 1950s, most authorities have broken their city into individual infrastructural parts that are managed by separate disciplines. The need for urban design has grown out of this siloed approach to city and infrastructure development. Urban design is not just about making infrastructure look pretty. It is fundamental to the way people engage, use and perceive a city. Creativity is essential, and urban design can make a significant contribution to the big-city ambition component of the city vision. It is critical to attracting and retaining young talent.

Council investment in day-to-day infrastructure represents a significant opportunity to make integrated city-making a fundamental driver for all new infrastructure, particularly for transportation, property, recreational assets and stormwater. There are fewer opportunities to influence urban design outcomes via water and wastewater infrastructure. Further change, new processes and support are required to ensure a multi-disciplinary approach to the planning and delivery of Council projects. The use of design expertise is essential.

The **options** for improving the application of urban design to infrastructure relate to improving internal processes, education, advocacy and working in a multi-disciplinary way. Some cities have made radical changes, such as transferring major capital budgets to an urban design team or requiring formal sign-off on major capital projects. While some progress has been made, further work on internal processes is required to truly deliver on this issue.

5.8 Facilities to encourage walking, cycling and public transport

Palmerston North has an excellent track record of facilitating daily car journeys. While Council has provided additional capacity for cars via wider roads, more lanes, traffic lights, roundabouts, car parking and slip-lanes, it has been less successful in providing modern facilities for walking, cycling and public transport. While the car will continue to be an important mode of transport, walking, cycling and public transport are the areas where the biggest changes are needed. In many cases, this will mean reallocating existing street space, such as on-street parking and traffic lanes, for another purpose.

The Council has made good progress with off-road walking and cycling facilities, and generally have good footpath coverage. However, Council needs to consider how it treats and prioritises space for pedestrians and cyclists at pinch-points, intersections and crossings within existing transport corridors, particularly as existing urban areas are intensified. Street design, way-finding and planning need to allow for the space and safety needs of cyclists and pedestrians.

Like walking and cycling, public transport has many benefits. It reduces congestion and carbon emissions and can increase mobility for people who are unable or unwilling to drive a car, walk or ride a bike. Strong public transport networks make a significant contribution to city liveability scores. The current urban terminal at Main Street is near capacity and the design is problematic. This strategy includes funding for a new urban terminal at the current location, which would improve both functionality and the streetscape.

The broad **options** available to Council are to continue with catalyst projects such as the pedestrian and cycle bridge and extensions to the shared path network, or combine the catalyst projects with incremental change as part of delivering the day-to-day transportation infrastructure. This strategy, together with a number of other strategic planning documents adopted by the Council, promotes the second option.

Council adopted an Urban Cycle Network Masterplan in 2019. It's purpose is to map out an investment programme for the urban cycle network and to create an environment and culture that encourages more people in Palmerston North to choose cycling more often. The Urban Cycle Network Masterplan commits council to:

- Reduce traffic speeds around schools and shops
- Expand the network of cycle lanes, including physically separated cycleways
- Support school and workplace travel planning, education about sharing roads and paths courteously, events like street festivals, recreation tours and competitions.

The implementation of the Urban Cycle Network Masterplan requires significant investment to achieve its ambitions. New programmes are included in the Long Term Plan to deliver on the masterplan.

Waka Kotahi are preparing to launch a One Network Framework (ONF) to help provide more detail on the function of transport corridors and differentiate areas of on-street activity. The ONF will require changes to transport networks to ensure integration between land-use and transport and to ensure a consistent design and use for different street and road typologies. This new classification system will also identify future state intentions for transport, which will assist Council's in planning for new state highways, or devolution of state highways to local roads. The ONF is likely to have significant relevance for the next Long Term Plan, when it will be fully implemented.

5.9 Security of water supply

An adequate supply of drinking water is a fundamental requirement for the health and general wellbeing of the community. An adequate water supply also underpins economic activity in the city. Council must comply with the New Zealand Drinking Water Standards and any resource consents issued, both now and in the future, by Horizons Regional Council under the One Plan. A government inquiry revealed that a number of water supplies around New Zealand are not complying with current standards. As a result, there is likely to be greater scrutiny of the quality of Council's water supply and the quality assurance and risk management processes in place to prevent a contamination event from causing illness.

Central government has established a new water regulator (Taumata Arowai) who will take over responsibility for drinking water regulation from District Health Boards. From July 2021, new more stringent water quality standards will require investment by us in the near future in more advanced treatment, more stringent monitoring and quality assurance. Key investments will include investment in UV disinfection or other protozoa water removal for all the City's water sources including the Turitea Water Treatment Plant and the bores.

Council will also need to increase capacity to deal with potential seismic eventsor mechanical faults. Seismic strengthening of key assets, such as reservoirs, is needed to reduce the risk of a major asset failure and service disruption in a significant event as well as reduce the duration of any loss of service. Resilience will also be increased by providing a second crossing of the Manawatū River and reinforcing the trunk main network across the city.

Over the period of this strategy, significant investment is required to ensure the water supply remains secure and safe for the community. Three aspects are addressed in this strategy and include refurbishment of the city's bores, plus extra treatment barriers at the plant to meet anticipated changes to the New Zealand Drinking Water Standards.

Several of the city's bores have declining yields and issues with sand ingress, and they need to be redeveloped or replaced over the next 10 years to ensure security of water supply.

The Turitea Water Treatment Plant supplies more than half of the city's water and is linked to the Ngahere Park reservoirs by a single large pipeline. This pipeline is nearing the end of its life and will need to be renewed within the next five years. It also passes along the treatment plant access road, which is subject to slips. As a result, there is a relatively high risk of damage to this supply line and loss of supply from this source for several weeks. A duplicate pipeline is currently in construction and will be completed later in 2021 and will allow renewal of the existing pipeline to occur and reduce the risk of losing the supply of water to the city from the water treatment plant.

Water supplied to the community meets the New Zealand Drinking Water Standards. These standards are reviewed regularly and with the establishment of the new regulator, revised drinking water standards are planned to be released in early 2021 for adoption in July 2021. To respond to those changes the city is likely to require an additional level of treatment protection (barrier) at its Turitea water treatment plant and bore sites to maintain compliance with the standards. It may also be necessary to add storage to each of the bore sites to provide additional contact time for chlorine disinfection so that water delivered to the network meets the free available chlorine guidance levels. This will enhance the safety of the water supply. Some provision is made in this strategy for these additional treatment processes, but detailed planning for the implementation of any improvements will be required once the new drinking water standards are released.

The Eco-City strategy notes the following:

- (a) The costs and benefits of reducing water pressure need to be weighed up. Reducing water pressure could prevent significant wastage of water and reduce maintenance costs for water infrastructure. However, the community may not accept lower water pressure and there may be implications for commercial fire system compliance.
- (b) The Council will investigate domestic water saving and storage solutions to identify potential water demand savings and wastewater flow reduction. District-wide resilience will be improved by connecting Palmerston North's water supplies to its satellite communities.

5.10 Increasing resilience of infrastructure

One of the outcomes of the Christchurch earthquakes is an increasing focus on understanding and improving the resilience of local authority infrastructure, particularly those assets that are critical to delivering core services.

In recent years, substantial work has been undertaken to assess the seismic strength and impact of maximum probable floods on key infrastructure such as the Council's major bridges (Manawatū River Bridge, Milson Line Bridge and Saddle Road Bridge) and the Turitea water supply dams.

These have been assessed as having sufficient strength (apart from the Milson Line Bridge) to withstand the required seismic design loadings. The bridges have also been assessed as being capable of withstanding major flood events. The Milson Line bridge does carry some higher risk in a major seismic event but is scheduled for improvements in 2032.

Other key infrastructure that is critical to the continuation of services, such as the water and wastewater treatment plant civil structures, the crematorium, large pumping stations and large diameter pipelines, have also been assessed and work is currently underway on the detailed design and strengthening of these structures to meet the required code levels for withstanding seismic shock. Programmes for completing the strengthening of critical wastewater and water structures are included in this Strategy.

Generally, the transport network, with its grid network, has a high level of resilience to seismic activity, with particular lifeline risks for wider connection being the bridges identified above and those under Waka Kotahi jurisdiction, namely SH3 Ashhurst Bridge and SH56 Opiki Bridge. Delivery of a regional freight ring road including a second road bridge over the Manawatu River will improve transport resiliency.

A key part of increasing the resilience of the city's infrastructure is to require new infrastructure to be built to a standard that will better withstand the effects of seismic events such as liquefaction. The ongoing review of the District Plan will address this matter, particularly for new greenfields development. The Council's engineering standards for land development were revised in 2016, incorporating requirements for increased resilience with engineering works. A further review planned for 2021 is likely to incorporate further requirements to strengthen the resilience of the pipe infrastructure as these practices are developed nationally.

Increased resiliency of infrastructure is also addressed in the impact of climate change issue. The specific **options** for improving resiliency are best addressed as part of individual infrastructural projects, rather than a more general assessment of options.

5.11 Impact of climate change

The Ministry for the Environment advises that climate change is the biggest environmental challenge of our time. The way Council invests in infrastructure can influence how much the city mitigates climate change by reducing emissions and adapting to the effects of a changing climate.

The Council target is a 30% reduction in CO₂e in Palmerston North by 2031. The task of lowering the carbon footprint forces Council to identify its inefficiencies and improve the way it delivers infrastructure to improve energy efficiency, make better use of trees and natural systems, and take advantage of the opportunities offered by new technologies like LED lighting. To achieve this target, Council needs to provide infrastructure that enables the rest of the city to make low-carbon choices, particularly for transport space, and support the provision of fast-charging stations for electric vehicles.

The Ministry of the Environment predicts that over the longer term, the Manawatū-Wanganui region will become warmer and be subject to more extreme weather events, with the region experiencing more frequent heavy rainfall events as well as more frequent droughts. Horizons Regional Council has increased its standard for defining areas prone to flooding from 1% AEP (1-in-100-year) flood event to a 0.5% (1-in-200-year) flood event and completed significant upgrades to the Lower Manawatū Flood Protection scheme to take account of this change.

This has significant implications for infrastructure, with many assets having life cycles of more than a hundred years, and in some cases much more. Council needs to take account of expected long-term changes when building new infrastructure. The largest impact is on stormwater infrastructure. New infrastructure associated with development for growth will be designed with the aim of achieving hydraulic neutrality for the development as a whole where possible (i.e. not increasing the peak flows from the development area) and will take into account the expected stormwater loadings.

There are also likely to be additional peak stormwater flows in the existing network as a result of infill development. Modelling has been carried out to assess the impact of additional stormwater loading on the network, and provision has been made for stormwater network improvements over the period of this Strategy to enable some mitigation of the worst of the flooding issues to be addressed. Water-sensitive design and green infrastructure approaches to development and a wider use of tools such as water tanks, green roofs, swales, rain gardens and detention ponds will all help and will be encouraged if not required. Council has recently tried to take a more naturalised approach to managing stormwater. This is apparent in Norton Park, where a trial wetland has been established, as well as the nearby Edwards Pit Park, where Council has created and planted a series of wetlands to reduce pollution, illegal dumping and damage to critical assets and habitats. Council is actively renovating the open streams and drains within the city both to improve their drainage capacity and to transform them into green corridors to provide improved biodiversity and more sustainable stormwater management.

Changes to rainfall patterns will lead to issues to for our sportsfields and walkways, because there will be more heavy downpours, leading to flooded surfaces and slips. In addition to more intense rainfall it is likely long dry periods, or drought events, will also occur more frequently. This will put a strain on park trees and plants, restricting their growth or even causing them to die. If new parks and reserves infrastructure is not designed to cope with intense extremes of weather, then the contribution our green assets make to our city will diminish and biodiversity will be lost.

From time to time, water restriction measures need to be put into place for consumers during dry periods when water levels in the dams become low. Without changes in consumer behaviour this may occur on a more frequent basis given a reduction in the sustainable yield available from the Turitea dams. Council are trialling the implementation of a Summer Watering Period when regardless of the weather, consumers are encouraged to adopt water conservation measures as standard practice during summer. Even with such measures, additional bore supply capacity will be required to compensate for the lower sustainable yield from the dams.

In terms of **options**, the Resource Management Act and Local Government Act require the Council to adapt to the effects of climate change. While there is no explicit statutory obligation to mitigate climate change by reducing Council and city emissions, there is a growing international commitment from states, cities and the private sector to reduce carbon emissions. Agreements such as the 2015 Paris Accords and the Compact of Mayors, of which Palmerston North is a signatory, provide formal mechanisms to report on emissions and share practical knowledge.

The Climate Change Response (Zero Carbon) Amendment Act 2019 introduced a new framework to assist the move to a low emissions and climate resilient society. This includes new requirements for local authorities to set emissions reduction target and mitigation policies and provide reports on progress.

5.12 Modernisation of Central Energy Trust Arena

Central Energy Trust Arena is the regional hub for sports in the lower North Island and the city's central hub for sport. It caters for some 36 different sporting codes in eight indoor and several outdoor facilities. In addition, Central Energy Trust Arena accommodates a range of community activities, trade shows, exhibitions, conferences, concerts and a host of other leisure and recreational functions.

National and international speedway events (some 23 meets per year) are held at Arena 1 and during those events occupy a substantial proportion of Central Energy Trust Arena overall, with extensive parking and pit requirements. The 'open pits' arrangement is one of the few available (internationally), allowing the public to come into close contact with the stock cars and teams.

While some of the Arenas and facilities are fit for purpose, others such as Arena 5 and aspects of the Pascal Street frontages to Arenas 2, 3 and 4 need to be improved. An all-weather artificial turf has been developed for the rear Fields (Arena 6), which used to suffer from flooding. This has dramatically enhanced the usability of this space. Improved capacity of Arena 1 is also needed along the southern and western embankments and re-use of modular seating no longer needed within Arena 2 is to be utilised.

Council adopted the Central Energy Trust Arena Master Plan in December 2017 to inform future investment and address the issues detailed above. Four alternative development options were considered during the development of the Central Energy Trust Arena Master Plan, and these have been detailed in the Master Plan itself.

The preferred option proposes considerable change to the southern end of Central Energy Trust Arena, with a focus on addressing the speedway pits and their location, the entrance into the Arena complex as well as future-proofing the southern embankment.

The preferred masterplan includes:

- Relocation and improvement of the speedway pits;
- Construction of Sports House building and ticketing booth;
- Redevelop the Arena 5 building into multi-sport and community facility;
- New Cuba Street main entrance and plaza;
- Upgrade of the western concourse and southern embankment;
- Construction of a new South Grandstand;
- Improved rear fields (Nos. 2, 3, 4, 5) including new artificial turfs reconfigured with new Oakley Street access;
- Service sheds relocated; and
- Pascal Street frontage to Arenas 2 and 3 upgraded, new services and drop-off.

The redevelopment of the speedway pits, western concourse, south embankment, and the new entrance plaza and Cuba Street access have been completed in 2020/21 and has significantly transformed the Arena complex and made a considerable movement towards meeting the goals of the masterplan.

The sense of arrival at Central Energy Trust Arena was poor, with ill-defined entries and entrance spaces onto Cuba Street and an unremarkable quality of design for the street interface, fencing, planting, gates and building frontages. Acquisition of the south-east corner properties (Waldegrave/Cuba Streets) has enabled construction to begin on redeveloping this frontage and give effect to the Arena Masterplan. Council has also expressed the view that the quality of the Central Energy Trust Arena has a significant impact on the perception of Palmerston North by locals and visitors.

The Master Plan also details specific priorities and costing for projects which were included in the 2018-28 10 Year Plan and projects beyond that timeframe. These projects have been updated and included in this Strategy.

5.13 Use of Council land for housing and development

While Palmerston North housing is more affordable than many other growing metropolitan cities in New Zealand, house prices have been increasing and as the city grows it is susceptible to the sharp increases experienced in other cities. While this risk is being addressed via strategic land-use planning, changes to the District Plan and the provision of growth infrastructure, the Council can also use its own land for housing and development to provide increased choice, competition, and revenue. This is an activity the Council has undertaken in the past, although there has been no activity in recent years.

The Council owns a significant portion of the Whakarongo Residential Area and has included specific infrastructural programmes to develop this land for housing. This is in addition to the growth infrastructure programmes required to service the broader Whakarongo Residential Area. Council has opted to develop this land itself and sell to new owners to build their own homes. Council will oversee the development of each home through the administration of a design guide and covenants. To minimise cost and risk, Council has opted not to build houses itself. The 10 Year Plan also includes a series of investigations of other Council owned land to decide whether they are appropriate for development.

If the Council-led development at Whakarongo is successful and the investigation of other Council-owned land identifies opportunities for further development, this is an activity the Council has signalled that it would like to increase its involvement in. Longer term it is likely there are further opportunities for using Council land for housing and development over and above those sites specifically identified for investigation in the 10 Year Plan.

Huia Reserve is one of these sites. In 2020, Council released a proposal to change the use of the site to enable the sale or development of the reserve for housing. Following public consultation, Council agreed to progress the change. This requires Government changing the reserve status through a legislative change and then a District Plan change to rezone the site to Residential. This will be progressed throughout 2021.

The Terrace End Bowling Club (Summerhouse) is another site that Council has agreed to investigate repurposing for housing. This bowling club is intended to be amalgamated with another club in North Street, which will leave the site available for alternative use. Half of the site is already zoned residential and the other half is zoned Recreation. A District Plan change will need to be carried out to rezone the entire site to Residential. Once rezoned, the Council can develop the site and sell on. Another opportunity is relocating the Council deport from the current site on the corner of Ferguson and Albert Streets and redeveloping this land for housing. The depot site is already zoned residential and is ideally suited for medium to high-density development.

5.14 Seismic Strengthening of Council Buildings & Civic and Cultural Precinct Masterplan

The Seismic strengthening of our earthquake-prone buildings will occur incrementally and will require significant investment over the next 15 years. Strengthening our earthquakeprone buildings is all about ensuring people can safely get out of a building in the event of a moderate-large earthquake. If the buildings are not seismically strengthened, they will continue to pose a risk to people's safety, should they not be able to evacuate.

As at May 2019, the following buildings and facilities have been identified as Earthquake-Prone Buildings (EPBs):

- Civic Administration Building (CAB)
- Square Edge
- Central Library
- Kelvin Grove Crematorium
- Wastewater Treatment Plant
- Regent Theatre
- Keith Street Power Station
- Te Manawa Museum of Art, Science and History

The redevelopment of the Central Library and Te Manawa Complex were included in the 2018 10 Year Plan. However, Council deferred both redevelopment projects due to:

- Seismic issues with the Central Library building were subsequently discovered
- A further needs assessment was required to inform the proposed Civic and Cultural Precinct Masterplan (CCPMP)

A Draft CCPMP was prepared in 2019 to inform future investment in Te Manawa, the Civic Administration Building and the Conference and Function Centre. The Draft CCPMP was placed on-hold when it was discovered the Central Library was an earthquake prone building. Council has allocated funds to complete the CCPMP to assist with the broader revitalisation of the city centre and to provide direction to future investment to the Council's core Civic and Cultural facilities, including the Central Library. This work will build on the work completed on the Draft CCPMP in 2019 and explore alternative funding and delivery options. It will also investigate options to deliver mixed-use and housing developments within the Civic and Cultural Precinct. The outcomes and delivery options recommended by the updated CCPMP may impact on the priorities and delivery options of programme 902 in future 10 Year Plan processes.

Council has created work programme 902 – Seismic Strengthening of Council Properties. Using Council's Earthquake Prone Building Policy, the programme allows for both the planning, design, consenting and construction. The programme targets seismic strengthening work to be completed incrementally over the next 15 years. We will be investing around \$150 million over the next 15 years. Council has developed the following priority order for seismic strengthening of all our EPBs after considering several different factors.

Table 1 Priority Order for Seismic Strengthening and Costs over the next 15 years

Order of Priority	Year	Approx.
	Strengthening	Cost
	Commences	(Millions)
1. Kelvin Grove Crematorium	2021	\$1.5M
2. Wastewater Treatment Plant	2021	\$2.5M
3. CAB	2023	\$10M
4. Square Edge	2025	\$10M
5. Regent Theatre	2027	\$15M
6. Central Library	2029	\$60M
7. Te Manawa Museum of Art, Science and History	2031	\$50M
8. Caccia Birch House	2033	\$0.5M
9. Keith Street Power Station	2035	\$0.5M

The affordability of this work is a challenge for us, as we try to strengthen our buildings to meet the required National Building Standards (NBS.) We also need to ensure that we spend in a financially sustainable way.

As seismic strengthening progresses this may also coincide with asbestos remediation and fire upgrade work that may need to be completed within our older buildings. The Building Act 2004 requires all territorial authorities in high seismic areas to report annually to MBIE on their progress in identifying potential EPBs. For this reason there is potential for more EPBs to be identified.

5.15 Construction Industry Capacity

The City is projected to grow significantly over the next 10 years. Major infrastructure projects and private development including Te Ahu a Turanga: Manawatū Tararua Highway, KiwiRail Regional Freight Hub, Mercury Energy Turitea Wind Farm, Regional Freight Ring Road, FoodHQ, Defence regeneration at Linton and Ohakea, Countdown Distribution Centre and a variety of Council infrastructure projects will continue to drive this growth across the Region and the city. With this significant pipeline of central government, residential and commercial infrastructure investment the capacity of the existing construction market to respond to this sustained period of infrastructure investment is becoming stretched.

Over the next 10 years there is a risk that Council's access to a constrained construction market will lead to an upward pressure on contracting prices and extend delivery timeframes for infrastructure delivery. This is likely to impact on Council's ability to deliver on its own infrastructure programme over the life of the 10 Year Plan. While it is positive for the local economy to have sustained investment over the next 10 years it will be a challenge for Council to compete in a crowded market to access the limited construction market resource in the Region. This is particularly so when competing with Central Government infrastructure investment given the scale of projects like Te Ahu a Turanga: Manawatū Tararua Highway and the Defence regeneration at Linton and Ohakea.

Given the construction industry constraint over the 10 Year Plan period Council have considered its programme of work and taken the opportunity to push out non-critical programmes. The Council will have to respond to this challenge and may have to consider options such as:

- Aggregating projects into larger packages and/or multi-year contracts to provide greater certainty to contractors and support investment in resources and capacity building e.g. recent roading maintenance, renewal and capital new contract includes significant value of "capital new" projects
- Starting procurement earlier and allowing longer lead times so that contract delivery obligations can be accommodated within a contractor's forward work commitments. This will require more provision for funding of multi-year programmes of work.
- Engaging proactively with the contracting market including providing a clear indication of Council's forward pipeline of work

5.16 Asset Performance and Condition

An independent review of the maturity of Council's asset management (AM) approach was undertaken in 2019. The assessment found we have significant gaps across our asset areas in terms of condition and performance data. There is a particular need to prioritise the collection of condition information on our critical assets. Although some work has been done in the past to assess asset criticality and condition, we are not using the information well. For example, our wastewater pipes have good CCTV data, but it's not always reliably loaded into our asset data base. Staff and contractors working on maintenance and renewal of our assets need to be collecting good quality condition data. This needs to feed into our asset data bases and used to better inform and optimise our investment in the maintenance and renewal of our assets.

Our Asset Management Improvement Plan will prioritise a review of our policy governing our asset condition and performance assessment. We will need to complete condition surveys on all our critical assets, and schedule regular inspections with the frequency based on asset criticality. While unexpected failure of our water assets in the past has prompted a programme to increase the collection of condition data through physical surveys, we will need to develop a comprehensive condition assessment programme across all our assets. We will need to work towards developing processes for contractors and in-house staff to collect condition information using real time mobile data applications to increase efficiency

in this area. Subject to 10 Year Plan funding decisions, proposed condition assessment programmes have been developed to address the issue of lack of condition data for our wastewater plant (programme 1716), wastewater pipelines (programme 1717), water supply (programme 1813), citywide stormwater (programme 1709) and property (programme 1726).

12. How council intends to manage its infrastructure assets

6.1 Renewals

As noted in section 5.6, Council has limited options for renewing infrastructure. It has a statutory responsibility to meet the current and future needs of communities for good-quality local infrastructure in a way that is most cost-effective for households and businesses. 'Good-quality' in this context means infrastructure that is efficient, effective, and appropriate to present and anticipated future circumstances. This means Council must look after the infrastructure it already has. This is usually done by renewing assets when they reach the end of their useful life. Council could choose to defer renewals, but this would place an increased financial burden on future generations and is unlikely to meet the primary purpose of local government with respect to good quality infrastructure.

More specific renewal details for each asset group are provided in section 7.

6.2 Growth or decline in demand for services

As noted in section 3.3, Palmerston North is expanding, and the Council wants to accelerate the city's growth and prosperity. Having a ready supply of land with infrastructure to support the city's growth will ensure Council can harness new development opportunities and increase Palmerston North's competitiveness. The Council has adopted a hybrid growth scenario based on a specific Palmerston North high growth projection for years 1 - 10 and a Statistics New Zealand (December 2016) medium growth projection for years 11 - 30, which also accommodates the additional margins required by the National Policy Statement for Urban Development Capacity for the household projections, but not the population projections. The specific population and household projections are detailed in section 3.3.

Commercial office and retail development is expected to utilise existing infrastructure capacity within the city centre. Industrial development is projected at the NEIZ and Longburn, with significant new infrastructure investment required at the NEIZ. The infrastructure servicing the industrial land at Longburn is currently privately owned and is in poor condition and requires upgrading both to meet the needs of current users and satisfy demand from undeveloped land.

6.3 Increases or decreases in levels of service

Taking into account Council's broader strategic framework, the anticipated increases in levels of service relate to the following infrastructure and assets:

- City centre streetscapes (see programme 1686)
- Urban bus terminal (see programme 243)

- Central Energy Trust Arena (see programmes 990 and 1194)
- Seismic strengthening (see programme 902)
- Victoria Esplanade (see programmes 1847, 1838, 1890 and 2012)
- Manawatū River Park. See programme (programme 1435, 1844, 1894, 1892 and 1895)
- Council housing Papaioea Place (see programmes 1743 and 1459)
- LED street lighting (see programme 1806)
- Water-sensitive design and green infrastructure (see programme 1930)
- Design infrastructure to accommodate the effects of climate change and natural hazards (see programme: 1708)
- Regional shared path network improvements (see programme 1677 and 1678)
- PNITI programmes. (see programmes 1688, 1690, and 2013)
- Road to Zero transport safety improvements (see programmes 1691 and 159)
- Village streetscape improvements (see programme 1803)
- Innovating streets for people / tactical urbanism (see programme 2021)
 For specific levels of service see the activity pages of the 10 Year Plan. This is background information that will be provided alongside the Infrastructure Strategy.

6.4 Public health and environmental outcomes

Wastewater

The Council is required to lodge applications for new resource consents for its current wastewater discharge to the Manawatū River by June 2022. The Best Practicable Option (BPO) review, which is well advanced is required to identify a preferred option for treatment and discharge of the city's wastewater by June 2021. Council is actively engaging with the community to help identify the preferred option. For the 10 Year Plan, it has been assumed that a solution will be provided with a capital outlay of \$350 million (plus inflation) between 2023 and 2027.

Climate change

The Council target is a 30% reduction in CO₂e in Palmerston North by 2031. The task of lowering our carbon footprint forces Council to identify its inefficiencies and improve the way it delivers infrastructure to improve energy efficiency, make better use of trees and natural systems, and take advantage of the opportunities offered by new technologies like LED lighting. To achieve this target, the Council needs to provide infrastructure that enables the rest of the city to make low-carbon choices, particularly for transport space, and support the provision of fast-charging stations for electric vehicles.

Stormwater

There will be additional peak stormwater flows in the existing network as a result of climate change and increasing infill development. Water-sensitive design and green infrastructure approaches to development and a wider use of tools such as water tanks, green roofs, swales, rain gardens and detention ponds will all help and be encouraged. Council has recently tried to take a more naturalised approach to managing stormwater. This is apparent in Norton Park, where a trial wetland has been established, as well as the nearby Edwards Pit Park, where Council has created and planted a series of wetlands to reduce pollution, illegal dumping and damage to critical assets and habitats. Council is renovating open drain corridors and urban waterways, to improve stormwater conveyance capacity, biodiversity and more sustainably manage stormwater.

6.5 Service Delivery

Service delivery is provided by a mixture of using in house resources and externally contracted resources. Operation and maintenance of the stormwater, wastewater and water assets (3 waters), property and parks and reserves assets are largely provided by in house resources apart from swimming pools for which a long term facilities management contract is in place. Some property maintenance is also contracted externally.

Roading maintenance is provided through a long-term externally tendered maintenance contract, which includes pavement renewals and road resealing. While currently Council has a number of separate external roading contracts for specialist areas such as road marking, lighting, traffic signals and footpath renewals, a new Road Maintenance, Renewals and Minor Capital Works contract has been tendered. This contract, which is due to be awarded in March 2021, will have a duration of 9 years and provide for the delivery of up to \$14m of maintenance, renewal and capital works in the roading space. The bringing together of nearly all of the maintenance, renewal and minor capital work in a single contract is designed to support the development of a collaborative delivery model which contributes to improved quality, timeliness and optimisation of Council's budget as well as addressing the current contractor capacity constraint.

Renewal of assets and construction of new assets is undertaken through a combination of external contractors and internal resources. The majority of three waters pipe network asset renewal and construction of new assets, along with a range of concrete construction totalling around \$6m per annum is undertaken by the Council's Civil Construction Team. The balance of specialist projects and larger capital projects, particularly in water and wastewater treatment and property and recreation areas, is delivered using a diverse mix of small and medium sized external contractors. Council is working to rationalise the number of external contractor relationships and to achieve improved value and service as well as reduce risk. It is doing this by aggregating delivery of common services across Council in large multi-year contracts procured through competitive tender processes. For example mowing and vegetation management, mechanical and electrical maintenance and renewals as well as pest management.

6.6 Data Reliability

Renewal and maintenance forecasts are based on that data available about Council's assets, their performance and their condition. Data about the assets is kept on Council's asset management systems. Most asset registers are over 85 +/-5% complete in terms of physical attributes, construction date and asset location, and have a high level of accuracy in this regard.

However, as stated previously there are significant gaps in condition and performance data. The exception is parks and reserves assets, with condition and performance of assets is assessed at least annually. The condition rating of the assets of the remaining asset groups comes from periodic survey of the assets, but there are currently insufficient condition

assessments being carried out, particularly on critical assets. Performance ratings are rarely recorded. Programmes are being developed to develop a current condition and performance baseline, with processes to keep this data maintained.

Processes for new assets to be entered into the system are currently being improved. Data collection and verification is ongoing with Council's knowledge of its assets improving all the time.

13.Infrastructure assets: The most likely scenario

The Council prepared 30-year Asset Management Plans (AMPs) during 2020. These AMPs set out the programmes that are assessed as optimal for the maintenance, renewal and development of the assets. The programmes from these plans have informed the 10 Year Plan process, although there has been some adjustment during this process to the scope and timing of some programmes to fit better with Council priorities and community affordability.

The most likely 30-year scenario for the management of Council assets comprises the infrastructure programmes that form part of the 10 Year Plan in years 1–10 and the AMP programmes for years 11–30.

The following sections outline the major programmes in each of the asset areas (that also cover the significant infrastructure issues identified in Section 5) together with indicative present day costs, when a decision by council can be expected, and what options can be expected to be considered.

Section 7.6 shows inflation adjusted 30 year financial forecasts for each year for the first 10 years and then the 5 year average for the remainder of the 30 years for operational, renewal and capital development programmes. The capital development programme also shows the overall split between expenditure for growth and for increased level of service.

Council's AMPs give further information about the management of the assets and programmes that are part of the most likely scenario.

13.1Transport

Renewal

Renewal of transport infrastructure covers assets comprising roads, footpaths, parking, street facilities, street lighting and traffic services and requires around \$8.9 million (presentday cost) on average to be spent annually over 30 years to maintain these assets in good condition. Generally, the lifecycle of the transport assets, apart from bridges, is shorter than those in the pipe networks.

The major expense is incurred in rehabilitation of the sealed pavements and resurfacing of sealed roads with about 2km of pavement rehabilitation and 25–30km of resurfacing being undertaken each year. Footpath renewals have also been accelerated. The largest single renewal is the renewal or replacement of the Milson Line overbridge scheduled for 2029–31.

Capital development (growth and LOS)

Major transport programmes include the following:

- growth programmes to service Whakarongo, Kākātangiata (formerly City West) and North East Industrial Zone
- Streets for People streetscape upgrade
- new urban bus terminal
- extensions to the shared path and on-road cycle path network
- transport safety improvements
- regional freight ring road and further bridge crossing.

Besides the major expenditure items listed in the table below, there are a variety of other capital programmes over 30 years to improve safety for all road users, including pedestrians, particularly at intersections, road widening and road realignment in places to accommodate increasing traffic demands and maintain the level of service.

Major programmes	When	\$m present- day costs	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Renewals					
Sealed pavement renewals	2021-51	82.1	124.7	Appropriate level of renewal decided through each 10 Year Plan process	 Renewals of pavements to maintain the current LOS and minimise long term maintenance costs Only renew sealed pavements when LOS is no longer met.
Sealed road resurfacing	2021-51	95.6	145.2	Appropriate level of renewal decided through each 10 Year Plan process	 Replacement of a sealed road surface layer to ensure the agreed level of service is maintained Only reseal roads when LOS is no longer met.
Footpath renewals	2021-51	45.5	70.9	Appropriate level of renewal decided through each 10 Year Plan process	 Renew footpaths at a greater rate than existing to improve overall condition of the stock Cease to renew footpaths and only carry out maintenance when failure occurs Renew footpaths at the current rate

Transport programmes, principal options and timing of decisions

Major programmes	When	\$m present- day costs	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Infrastructure to support Whakarongo residential development	2021-33	8.8	10.2	The schedule and timing of roading infrastructure established through the 2021-31 10 Year Plan process	 Provision of infrastructure in line with PNCC engineering standards and the Whakarongo Structure Plan No allocation provided for new infrastructure, leave provision to the developer
Infrastructure to support NEIZ industrial development	2021-26	11.6	12.0	Through the 2021-31 10 Year Plan process.	 Continuation of programme established in 2015-25 10 Year Plan to service the NEIZ Extension. Timing of programmes subject to demand and alignment with other private and public investment interests. Do nothing. Development may not occur.
Infrastructure to support Kākātangiata (formerly City West) residential development	2021-42	48.8	66.3	The development of this area will be subject to further investigation and planning process under the RMA over the next few years.	 Provision of infrastructure in line with PNCC engineering standards and the Kākātangiata Structure Plan (in development). No allocation provided for new infrastructure, leave provision to the developer.
Streets for People - Urban design streetscape	2021-29	22.6	24.7	The overall scope of the project was endorsed by Council in 2016. The decision around timing for the different stages is part of the 2021-31 10 Year Plan process following earlier consultation. Later stages may be modified in future 10 Year Plan processes.	 Deliver the full scope of the Streets for People programme Keep the pre-existing urban city layout and stop progressing improvements to CBD amenity and city image.
Bus terminal	2021-25	11.6	12.4	The broad programme has been considered as part of the City Centre Streetscape programme. There will be a further Council decision on the best option before implementing a programme over the period 2020-24.	 Complete the urban bus terminal development Minor upgrade of infrastructure, lighting, landscaping and roading only Let the bus terminal remain as it is
Shared pathways	2021-31	24.0	27.8	This is a programme of developing shared pathways around the city. The broad on-going programme has been decided through the 2021-31 10 Year Plan process. It may be modified in subsequent 10 Year Plans.	 Create new shared paths that link regional centres - Bunnythorpe, Feilding, Ashhurst and Aokautere Deliver some or part of the network Incomplete shared path network meaning Council strategic direction not met.

Major programmes	When	\$m present- day costs	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Manawatū River Bridge	2037-43	112.0	189.3	From around 2040 onwards noting that demand on the Fitzherbert corridor is under constant monitoring. Decisions around the strategic transport route are connected with the PNITI investment and may change this timeframe	 Construct a new bridge to link Te Matai Road and Staces Road Test downstream bridge alternatives in the business case process Defer from research, design, and delivery of a new bridge
Urban cycle network improvements	2021-31	21.4	24.4	A decision on investment priority was made in 2019. Appropriate level of investment decided through each 10 Year Plan process.	 Deliver the full scope of the Urban Cycle Network Masterplan with additional cycle lane and signal phasing works Remain at current state.
PNITI	2021-30	108.8	126.6	Through 2021-31 10 Year Plan process.	 Ring road transport improvements Intersection and bridge improvements Strategic transport corridor improvements.
Road to zero	2021-30	24.3	27.7	Appropriate level of investment decided through each 10 Year Plan process.	 Improve network safety through speed management, intersection upgrades, corridor improvements, and access control management Address the vertical realignment and widening of five dips on Kelvin Grove Road to improve sightlines and adjoining properties
Ashhurst growth	2021-25	5.6	5.8	The schedule and timing of roading infrastructure established through the 2021-31 10 Year Plan process	 Provision of infrastructure in line with PNCC engineering standards and the future structure plan(s) (in development) No allocation provided for new infrastructure, leave provision to the developer.
Rural road safety and accessibility	2024-34	15.5	19.2	Appropriate level of investment decided through each 10 Year Plan process.	 Deliver all the road safety and accessibility projects Deliver some of the projects as they are discrete No allocation provided for any new infrastructure, leave provision to the developer.

13.2Stormwater Renewal

While there is an ongoing programme of minor renewals of stormwater assets, there are few major renewal programmes of work required during this period. The exception are some significant stormwater mains where the pipes have collapsed due to poor material quality, excessive external loads or aggressive root intrusion. Most stormwater assets are in reasonable condition as they operate in a less aggressive environment compared to the wastewater network and consequently have longer asset lives. Generally, the stormwater system is still in the early stages of its life cycle.

Capital development (growth & LOS)

There are major programmes during this period for extending the stormwater system to the Whakarongo and Kākātangiata Residential areas and the North East Industrial Zone to provide for predicted residential and industrial growth. However, it is also expected that developers will make provision either individually or collectively to manage stormwater within their own properties in accordance with the principles of achieving hydraulic neutrality prior to discharge to the receiving drainage channels. Council is involved in facilitating the consenting, provision and construction of detention storage and wetland treatment systems. In addition, there is an ongoing programme of stormwater improvement works to mitigate flooding and inundation issues as well as improve stormwater discharge quality. Further modelling work has been undertaken to inform this programme and take into account the likely changes in frequency and intensity of storm events that is likely to occur as a result of climate change and increasing density of infill housing over this period. Large scale mitigation works including major new drainage and detention infrastructure is planned to effectively mitigate the increased flooding likely to result from climate change.

Stormwater Principal Options and Timing of Decisions

Major programmes	When	\$m present-day cost	\$m cost with inflation	When council decision likely	Expected principal options to be considered
Renewals					
Citywide renewal works	Ongoing 2021-51	17.5	26.3	Appropriate level of renewal decided through each 10 Year Plan process	 Full replacement of stormwater pipes and manholes due to structural or service problems Renewal of pipes and manholes only when the network is significantly underperforming and on reactive basis Defer renewal of the network.
Citywide pump renewals	Ongoing 2021-51	2.4	3.0	Appropriate level of renewal decided through each 10 Year Plan process	 <i>Renew pump stations at greater level than current</i> Renewal will be as required or necessary only

		\$m	\$m		
Major programmes	When	present-day cost	cost with inflation	When council decision likely	Expected principal options to be considered
					Defer the renewal of stormwater pump stations.
Development					
Provision of stormwater systems for Whakarongo residential development	2021-24	4.1	4.1	The schedule and timing of stormwater infrastructure established through the 2021-31 10 Year Plan process. A council decision has already been made.	 Provision of infrastructure in line with the Whakarongo Structure Plan, PNCC engineering standards and low- impact design principles. No further progression of the proposed attenuation pond construction and leave to developers to construct
Stormwater systems for NEIZ Extension	2021-23	2.4	2.4	NEIZ Extension rezoned 2016. Timing of stormwater infrastructure established through 2021-31 10 Year Plan process.	 Design and construct stormwater systems in line with NIEZ Structure Plan, PNCC engineering standards and low-impact design principles to service an expanded NEIZ A localised, conventional infrastructure approach, though the Council's sustainability goals would not be met No allocation provided for any new infrastructure, leave provision to the developer
Stormwater systems for Kākātangiata residential growth area	2021-30	2.9	3.3	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Current infrastructure to remain and unable to support development Upgrade the relevant infrastructure to enable development
Stormwater Improvement works, including new pump stations	2021-51	15.5	20.7	Ongoing decision making through 10 Year Plan and Annual Plan processes to meet specific issues in the stormwater system.	 Address the issues identified in the citywide flood model Significant electrical and mechanical improvements at the pump station Ensure only the current capacity and requirements are met No allocation provided for any new infrastructure.
Citywide stormwater flood mitigation	2021-28	7.2	8.3	Through the 2021-31 10 Year Plan process	 Undertake large capital projects to reduce catchment- wide risk flooding No allocation for capital works to mitigate citywide flooding.
Stormwater management improvements for Aokautere urban growth area	2021-29	1.1	1.2	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development as development progresses.	 Carry out mitigation works in all the severely affected gullies to allow further development Leave the gullies to self-stabilise

Major programmes	When	\$m present-day cost	\$m cost with inflation	When council decision likely	Expected principal options to be considered
Stormwater improvements for Ashhurst urban growth area	2021-25	0.6	0.7	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development as development progresses.	 Design and construct stormwater systems in line with PNCC engineering standards and low-impact design principles. No allocation provided for any new infrastructure, leave provision to the developer.
Stormwater improvements for Napier Rd Urban Growth Area	2021-25	0.2	0.2	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development as development progresses.	 Design and construct stormwater systems in line with PNCC engineering standards and low-impact design principles. No allocation provided for any new infrastructure, leave provision to the developer.

13.3Water

Renewal

Most of the pipe network is in very good physical condition. However, there are some major items for renewal and refurbishment during this period, as discussed below. Over the period 2010–14, pipeline renewal was focused on replacing cast iron pipes to address the discoloured water issue. Subsequently, the focus has been on replacing asbestos cement (A/C) pipelines. The life of these pipelines is proving to be less than originally expected resulting in a higher number of pipe breaks and increased maintenance costs. An enhanced A/C replacement programme is now programmed through to 2030 to maintain the serviceability of the network. There is also a need to renew the supply main from the Lower Turitea Dam through to Ngahere Park reservoir. This will be done following the completion of the duplication of the pipeline from the Water Treatment Plant to the Ngahere Park Reservoirs which is currently underway so as to also increase the resilience and security of this supply. The rising main from the Ashhurst bore to the reservoirs has been identified for some time as in need of replacement. The lower half of the rising main has been renewed and the remainder of the alignment will be renewed by the end of 2022-23. The other area of major renewal investment required in this period is the replacement or redevelopment of several of the bores feeding the city's water supply. Bores programmed over the next few years include Ashhurst, Takaro and Roberts Line with other bores programmed for redevelopment over the following 25 years. Significant investment in renewal of critical components of the water supply network are also programmed including significantly enhanced investment in renewal of tobies (as part of installed new meter ready manifolds with backflow prevention), meters and critical shut-off or sluice valves. These are critical as they contribute to the risk of contaminants entering the network and the level of disruption required to repair a break in the network.

Capital development (growth & LOS)

There are major programmes during this period for extending the water system to the Whakarongo and Kākātangiata Residential areas and North East Industrial Zone to provide for projected residential and industrial growth. Some seismic strengthening of water structures is scheduled to increase the resilience of our water supplies. There are also proposals to build new reservoirs to increase available storage and improve treatment

Other major programmes that provide for ensuring a secure and safe water supply for the city include providing additional treatment barriers at the Turitea water treatment plant to meet the expected more stringent NZ drinking water standards proposed for adoption in July 2021. It is expected that UV treatment of all water sources will be required (surface water and bore water treatment plants) as well as provision of storage to provide adequate contact time for chlorine disinfection to achieve current free available chlorine guideline levels at all bores. As indicated above, there is already some provision in this Strategy for implementing UV treatment at the Turitea water treatment plant over the period 2021–24. There is also provision for adding storage to some bores so that the required contact time to meet a FAC standard can be met. However, once new standards are released it will be necessary to review both the timing and financial provision required in order to meet them.

There are other programmes over the 30 year period covering access road improvements, upgrading communication technology, pressure management and various new water pipeline linkages to increase the resilience and reliability of the water supply system.

Major programmes	When programmed	\$m present- day cost	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Renewals					
Rehabilitation of pipeline from Lower Dam to Ngahere Park reservoirs	2023-26	2.2	2.4	Appropriate level of renewal decided through each 10 Year Plan process	 Rehabilitate the existing main to prolong serviceable life Replace existing main, resulting in two new falling mains Continue using the existing main, without rehabilitation, until it is unserviceable.
Network pipeline renewal	Ongoing 2021-51	56.2	81.2	Appropriate level of renewal decided through each 10 Year Plan process	 Rolling renewals. Renew when the mains approach the end of their useful life Proactive replacement of all Asbestos Cement (AC) and Cast- Iron mains, even if they are not at the end of their useful life No proactive renewals. Mains only renewed reactively on failure

Water principal options and timing of decisions

	JA/h a ra	\$m	\$m cost		
Major programmes	wnen .	present-	with	When Council decision likely	Expected principal options to be considered
	programmed	day cost	inflation		
Water bore headworks and station renewals	Ongoing 2021-51	10.5	16.6	Appropriate level of renewal decided through each 10 Year Plan process	 Enhanced renewals including replacement of electrical controls and mechanical fittings Renew components when they approach the end of their useful life No proactive renewals. Components only renewed reactively on failure.
Equipment and facility renewals at the Turitea Water Treatment Plant	Ongoing 2021-51	11.0	16.6	Appropriate level of renewal decided through each 10 Year Plan process	 Rolling renewals of the components as they tend toward the end of their useful life Replace all components, as soon as possible, with modern equivalents Components are only renewed reactively on failure.
Water Toby and Manifold Renewals	2021-31	18.2	20.4	Appropriate level of renewal decided through each 10 Year Plan process	 Replace all over the first four years of the LTP, as planned Replace all tobies with manifolds in Year 1 of the LTP No proactive renewals. Wait until tobies reach the end of their useful life then replace with manifolds
Development					
Development of water supply network for Whakarongo residential growth	2021-26	2.8	3.0	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Fund infrastructure, lead and enable development Don't fund infrastructure, instead either constrain development or ask developer to construct all assets and vest them in Council
Development of water supply for NEIZ industrial growth area	2021-28	4.5	5.1	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Find an appropriate site, drill a bore, and bring into full production Refrain from sinking another bore, instead relying on current facilities. Further investigation work to be done to identify options
Development of water supply for Kākātangiata residential growth	2021-33	7.3	8.6	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Fund, lead and enable development to provide water infrastructure for Kākātangiata Leave the area as is, resulting in halted residential growth
Bunnythorpe water supply extension	2024-26	1.6	1.7	The Palmerston North water supply will be extended to join with Bunnythorpe following completion of the KiwiRail hub	Eventual extension of water supply for Palmerston North to include Bunnythorpe

	When	\$m	\$m cost		
Major programmes	programmed	present- day cost	with inflation	When Council decision likely	Expected principal options to be considered
				and provision of water supply to their freight partners.	 Extension of the water supply from the North-East Industrial Zone to the KiwiRail freight hub, and not the further distance to Bunnythorpe
Improvements to water supply at Longburn Industrial Park	2024-27	5.5	6.2	The Palmerston North water supply will be extended to join with Longburn in future years after the supply has been extended to service Kākātangiata development.	 Reticulation improvements addressing the shortfalls in the Longburn supply enabling further development Leave the reticulation in its current condition, restricting the development in Longburn to its current level
Development of water supply in Ashhurst	2022-27	0.8	0.8	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Invest to address shortfalls and enable development in Ashhurst Restrict Ashhurst development to its current levels
Development and growth of water supply for Aokautere	2024-26	1.7	1.9	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Cater for growth of Aokautere by supporting the development of their water supply Delay the funding allocation constraining the development of this area
Seismic strengthening of water structures to meet building code	2024-27	0.8	0.8	Through the 2021-31 10 Year Plan process	 Strengthen facilities where there are known weaknesses, ensuring a resilient water supply Complete the above, but within one year of the Long-Term Plan Let the facilities continue on as is, even though they are vulnerable to a seismic event
Upgrades to respond to review of NZ Drinking Water Standards (network and Water Treatment Plant)	2021-25	6.9	7.1	Indicative timing has been given as part of 2021-31 10 Year Plan process. Delivery will be dependent on timing and requirements of updated Drinking Water Standards.	 Installation of UV disinfection equipment Investigate options and select an option other than UV disinfection Complete identified upgrade work in the first two years of the Long-Term Plan, as planned Complete the above, but within one year of the Long-Term Plan With the impending arrival of regional or multi-regional entities, Council could choose to defer upgrades and have the incoming
New water supply reservoirs to increase resilience	2021-26	5.6	6.0	Through 2021-31 10 Year Plan and subsequent 10 Year Plan processes.	• Construct new reservoirs at the bore sites at the timing indicated to allow for greater security of supply

Major programmes	When programmed	\$m present- day cost	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
					 Construct the reservoirs at an enhanced rate to obtain security of supply sooner Let the current water storage network remain and risk security of supply

7.4 Wastewater Renewal

The Totara Road Wastewater Treatment Plant (WWTP) was opened in 1969. Significant parts of the treatment plant components are now reaching the end of their asset lives or have reached the limit of their capacity such that renewal or refurbishment and upgrade is urgently required. Council is currently implementing detailed design and construction work to replace and upsize capacity for the inlet screens, screening solids handling facilities, lift pumps, grit removal systems and sedimentation tank solids handling and removal equipment totalling nearly \$4m. In addition, work has started on the detailed design and implementation of seismic strengthening work with modifications to the sedimentation tanks. Further renewal and refurbishment work is also planned for the next few years covering aerators, sludge pumps, water supply pipelines, high voltage power supply capacity in the site, electrical power controls and substation capacity, back-up generator capacity and bio-gas piping and storage equipment. A portion of this work has been facilitated by the Central Government Three Waters Grant.

Some major capital investment such as the duplication of the primary sedimentation system has been deferred pending the outcome of the Best Practicable Options (BPO) review underway as this could result in the selection of a preferred treatment and discharge option which requires a different configuration of the treatment process. Within the network there is an ongoing pipe renewal programme throughout the period of the Strategy replacing around 2.5km of pipes per year to maintain the serviceability of the network. The programme has been augmented by specific programmes to renew critical trunk sewers and decommission abandoned sewers running under roads and private properties. These programmes are integrated with investment in a stormwater infiltration and control programme to try to manage and reduce the very high wet weather peak flows in the network. There are also 36 pump stations for which replacement of pumps and electrical equipment is provided for.

Capital development (growth & LOS)

There are major programmes during this period for extending the wastewater system to the Whakarongo, and Kākātangiata Residential areas and North East Industrial Zone to provide for residential and industrial growth. Some seismic strengthening of the civil structures at the WWTP is scheduled to bring these up to building code standards.

New investment is proposed to address wet weather capacity constraints in the network and achieve a consistent wet weather overflow standard through a combination of expanded wet weather storage and upsized pipework. However, the most significant expenditure during this period will be the implementation of a new wastewater treatment and discharge solution following on from the BPO review. This review is to identify the best practicable solution for the city's wastewater disposal and treatment so as to meet the higher environmental standards required by Horizon's One Plan. New resource consents need to be applied for before June 2022. The process for Council investigating all practicable options for treatment and disposal of the city's wastewater is well advanced with a preferred option to be identified by June 2021. A provision of \$350 million (plus inflation) for capital expenditure has been included in the 2021-31 10 Year Plan to cover the cost of this project, but this sum will be subject to review as investigations and the consenting process provide greater certainty as to the specific option and costs associated with implementation.

Major programmes	When	\$m present-day cost	\$m cost with inflation	When council decision likely	Expected principal options to be considered
Renewals					
Treatment plant renewals	2021-51	7.0	10.0	Appropriate level of renewal decided through each 10 Year Plan process	 Renew minor mechanical and electrical equipment at the current level of funding Renew at greater rate than the existing Cease to renew any minor electrical and mechanical equipment.
Pipeline renewals	Ongoing 2021-51	90.1	135.8	Appropriate level of renewal decided through each 10 Year Plan process	 Renew wastewater pipes at a greater rate than existing schedule indicates Renew wastewater network at current rate Cease to renew any parts of the wastewater network.
Wastewater trunk mains Renewal	2021-51	13.7	19.6	Appropriate level of renewal decided through each 10 Year Plan process	 Trunk mains to be renewed at a greater level than currently Trunk mains will be renewed within the current renewal program Remain with trunk mains on a repair and maintenance only basis.
Development					
Extension of network to service Whakarongo residential development	2021-24 and 2031-32	1.0	1.0	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Install gravity sewer network and connect to existing trunk mains to maintain LOS Leave the trunk wastewater network as it is and don't extend

		\$m	\$m		
Major programmes	When	present-day	cost with	When council decision likely	Expected principal options to be considered
		cost	inflation		
Extension and upgrading of network to service North East Industrial Zone (NEIZ)	2021-26	2.3	2.4	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Install a gravity network using gravity pipes, a pump station, and rising main Install a pressure sewer system to service the individual lots
Extension of network to service Kākātangiata residential development	2021-22 and 2024-26	0.7	0.7	A decision on the low-pressure pipe system is set to be in 2021/22. The rest of the network will be decided on as development progresses.	 Install a Vacuum sewer system in the NEIZ area. Install a pressure system with on-site pump stations for individual lots Install gravity sewer network that links in with the Maxwells line pump station Install vacuum sewer system for the Kākātangiata development.
Upgrade the sewer mains in Ashhurst	2024-25	0.3	0.3	The budget has been approved to initiate the design phase of this programme. Construction is planned for 2024/25 in the 10 Year Plan	 Upgrade capacity in the network from a 150mm pipe to a 225mm pipe Keep network as is and only upgrade when asset is due for replacement
Development of wastewater system at the Longburn Industrial Park	2021-23	0.7	0.7	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Pressure sewer system to service individual lots Install a conventional gravity network to service area Let the private owner repair assets as and when required
Upgrade the required sections of network in Aokautere and Pacific Drive.	2022-25	0.8	0.8	Indicative timing given as part of 2021-31 10 Year Plan process. Infrastructure will be delivered in time to facilitate development, as development progresses.	 Upgrade existing gravity network Keep the existing network unchanged, risking sewer surcharge
Seismic strengthening of wastewater structures to meet building code requirements	2021-24	3.0	3.1	The budget has been confirmed for phase one of the programme. Awaiting confirmation for the next three phases of the programme, where a decision is likely to be made on these in the next financial year.	 Plan strengthening program based on report from consultants to upgrade structures to correct standards Postpone seismic strengthening until business process outsourcing (BPO) options are confirmed.
Treatment plant consent renewal upgrade	2023-27	350.0	391.7	Investigation into finding the Best Practicable Option for the future treatment and disposal of the city's wastewater has begun. Council is required to have made the final decision	 Acquire land Partially utilise the river Partially utilise the ocean A hybrid of any of the above locations

Major programmes	When	\$m present-day cost	\$m cost with inflation	When council decision likely	Expected principal options to be considered
				on the BPO for the wastewater scheme by June 2021. The consent will be lodged before June 2022.	And design a new treatment plant process to comply with discharge requirements.
Wastewater wet weather overflow mitigation	2021-41	14.2	19.3	Indicative timing given as part of 2021-31 10 Year Plan process.	 Upgrade dedicated parts of the network to create storage and build offline storage where more capacity is required, and the catchment is bigger Leave network at its current capacity.

13.4Property Assets

13.5Property assets

Renewal

The major renewal programmes throughout the 30-year period include:

- Social Housing refurbishments
- Cultural facilities refurbishments
- CAB refurbishments
- Further redevelopment the Central Energy Trust Arena

Capital development (growth & LOS)

Major property programmes include the following:

- The development of a new social housing complex
- Construction of a new Animal Shelter
- Further redevelopment of the Central Energy Trust Arena
- Seismic strengthening of Council-owned earthquake-prone buildings
- Redevelopment of both the Central Library Building and Te Manawa as part of the seismic strengthening outcomes

Property, principal options and timing of decisions

Major programmes	When	\$m present-day cost	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Renewals					·
Social housing renewals	Ongoing 2021-51	12.8	17.3	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Provide enhanced housing quality Only address issues as assets fail.
Cultural facilities renewal	Ongoing 2021-51	10.8	15.3	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Enhance to be industry leading facilities Tend to the assets when they fail.
Civic Administration Building refurbishments	2021-26	2.8	3.0	Appropriate level of renewal decided through each 10 Year Plan process	 Proactive refurbishment of CAB workspaces Refurbish the CAB over the whole 10-year period, not in first few years Leave the CAB workspaces as their current state, only refurbishing when failure occurs.
Central Energy Trust Arena Manawatū asset refurbishment	Ongoing 2021-51	27.9	37.6	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Address the assets only when failure occurs.
Hard surfaces renewals	2022-51	5.4	7.2	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Address the assets only when failure occurs.
Community centre renewals	2021-51	6.4	9.1	Appropriate level of renewal decided through each 10 Year Plan process	 Maintains the current level of service Considerable renovations potentially required, and some rebuild options considered Only address issues as assets fail
Depot building and structures renewals	2021-51	3.4	5.0	Appropriate level of renewal decided through each 10 Year Plan process	• Focus on functionality, compliance and provide the ability to upgrade inadequate staff facilities so it is fit for purpose

		\$m	\$m		
Major programmes	When	present-day cost	cost with inflation	When Council decision likely	Expected principal options to be considered
					 Maintain current standard of facility Only address issues as assets fail
Public toilet renewals	2021-51	4.7	6.6	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Only address issues as assets fail.
Conference and function centre renewals	2021-51	4.0	5.0	Appropriate level of renewal decided through each 10 Year Plan process	 Maintains the facility to ensure it is safe, fit for purpose and functional Enhance to be industry leading facilities Only address issues as assets fail.
Recreational building renewals – sports pavilion and changing rooms	2021-31 and 2036-46	4.0	5.4	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Enhanced facilities Only address issues as assets fail.
Development					
Development of additional social housing units	2023-26	6.5	7.0	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes. The location and scope of the programme are yet to be determined.	 Redevelop an existing housing complex Build new units on a greenfield site Let the social housing capacity remain at its current level.
Development of a new animal shelter	2021-23	4.2	4.2	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes. A decision is likely to be made within years one and two of the next 10 year plan.	 Build a new Animal Shelter facility Attempt to retro-fit the existing facility to meet Code requirements
Central Energy Trust Arena – includes masterplan items, property purchase, and southern grandstand development	2021-34	45.9	57.4	The Arena Masterplan was adopted in 2018 to inform the 2018- 28 10 Year Plan which includes programmes to deliver on the Masterplan. Future 10 Year Plans will determine investment priorities beyond 2021.	 Proceed with all projects in the masterplan Reduce the scope and only proceed with some of the masterplan options Defer from completing the remaining masterplan items Purchase both properties (78 and 80 Waldegrave Street) Do not purchase the properties – impacting the masterplan Construct a roof over new seating and existing embankment seating Leave the southern embankment as it is

Major programmes	When	\$m present-day cost	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Seismic strengthening of Council-owned buildings	2021-35	150.1	182.8	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes	 Strengthen properties to an optimum outcome between highest NBS vs. cost – as per council policy Sell buildings rather than strengthening Strengthen buildings to the maximum NBS rating Demolish and rebuild buildings Strengthen to 34% only so no longer earthquake prone
Citywide new public toilets	2021-30	1.3	1.4	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes	 Build new toilets in the places of most need Only create new public toilets within existing buildings in our parks and reserves Defer from building any new public toilets
Kākātangiata Community Centre	Various 2022-23 and 2028-30	2.8	3.3	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes	 Build a community centre that meets the needs of the community Build a community hub like proposed for Kelvin Grove, incorporating a community centre and library Defer from building a new community centre.
Papaioea Place refurbishment stage 3	2021-23	5.0	5.1	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes. A decision is likely to be made within year one of the next 10 year plan.	 Build six units and a tenant lounge Build twelve new units and no tenant lounged Build a tenant lounge and gardens Retain the area as a green space.
CAB workplace transformation	2021-26	2.8	3.0	Through the 2021-31 10 Year Plan process and subsequent 10 Year Plan processes	 Proactive refurbishment of CAB workspaces Spread works over longer period No proactive refurbishment - run to fail

13.6Parks and reserves assets

Renewal

Major renewal programmes throughout the 30-year period include city and local reserves, sportsfields, swimming pools and cemetery assets.

Capital development (growth & LOS)

Major parks and reserves programmes include the following:

- Victoria Esplanade Master Plan
- Manawatu River Framework
- local reserves at Whakarongo and Kākātangiata.
- Kelvin Grove Cemetery extension

Besides the major expenditure items listed in the table below, there are a variety of other capital programmes over 30 years related to meeting demands and maintaining the level of service for reserves, sports fields, walkways, swimming pools and cemeteries.

Parks and reserves assets, principal options and timing of decisions

Major programmes	When	\$m present-day cost	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Renewals					
Cemetery renewals	2021-51	3.7	5.1	Appropriate level of renewal decided through each 10 Year Plan process	 Provide renewal of the assets associated with cemeteries Renew only when asset failure occurs or fail and don't renew
Citywide reserve renewals	Ongoing 2021-51	7.9	10.4	Appropriate level of renewal decided through each 10 Year Plan process	• Renewals at Ashhurst Domain, Linklater Reserve, Memorial Park, The Square, and Victoria Esplanade to maintain the service potential of the assets.
Local reserve renewals	Ongoing 2021-51	18.7	26.2	Appropriate level of renewal decided through each 10 Year Plan process	 Renewals of the following; plant, furniture surfaces, ecological (planting and gardens) structures (gazebos, shade sails, fencing, etc), and playgrounds at smaller, local reserves.
Sports field and pavilion renewals	2021-51	9.6	13.0	Appropriate level of renewal decided through each 10 Year Plan process	 Provide facilities that are safe, fit for purpose, and support the activity Increase the LOS within the facilities to lift them to be more than just fit for purpose Only address issues as assets fail.

		\$m	\$m		
Major programmes	When	present-day cost	cost with inflation	When Council decision likely	Expected principal options to be considered
Swimming Pools - community pool asset renewals	Ongoing 2021-51	20.1	28.4	Appropriate level of renewal decided through each 10 Year Plan process	• Renewals of plant structures at The Lido, Freyberg, and Splashhurst community swimming pools, with structures including; buildings, plant and interior fitout.
Development					
Implementation of the Manawatū River Framework Plan	2021-32	5.1	5.4	Through the 2021-31 10 Year Plan process	 Consolidate all existing river lighting budgets but do not increase any budgets Partially consolidate budgets for Fitzherbert Bridge only Achieve the desired lighting impact by bundling programmes and additional funding River lighting budgets for lighting the loop from bridge-to-bridge made up of three slightly underfunded programmes.
Te Motu o Poutoa	2021-23	1.7	1.9	Through the 2021-31 10 Year Plan process	 Construct pathways and an associated car parking area linking to the Anzac Cliffs pathway, interpretive signage, street furniture, and art works.
Development of Memorial Park	2021-26	0.9	0.9	Through the 2021-31 10 Year Plan process	 Park development including; a splash pad, playground upgrade, new entranceway, and other development. Deliver only some of the proposed new developments Leave Memorial Park in its current state
Development of Victoria Esplanade	2021-40	5.2	6.3	Through the 2021-31 10 Year Plan process	 Create eight new exotic aviaries and a new support building Install six aviaries, some with reduced the size in comparison to the above option. No new support/quarantine building Build three smaller aviaries and convert the bulk of the exiting aviary area to gardens Leave Victoria Esplanade in its current state.

Major programmes	When	\$m present-day cost	\$m cost with inflation	When Council decision likely	Expected principal options to be considered
Sports field – artificial football field	2022-24	1.7	1.8	A decision can be made once the results of 2021/22 sportsfield feasibility programme (1906) is complete.	 Based on demonstrated need: Contribution to the construction of a second artificial sportsfield in the city. Council fully fund a second artificial sportsfield
Reserves land purchase and development for Ashhurst, Hokowhitu, Kākātangiata, and Whakarongo residential growth	2021-51	19.5	26.5	Through the 2021-31 10 Year Plan process	 Purchase and build new residential developments in the Ashhurst, Kākātangiata, and Whakarongo areas. Purchase and develop two cultural reserves and a river entranceway in the Hokowhitu area Purchase and build new residential developments in the Ashhurst, Kākātangiata, and Whakarongo areas, but do not with the Hokowhitu area developments.

13.7Financial expenditure – operating and capital (inflation indexed)

The following graphs show the projected capital and operating expenditure that is associated with the management and development of the assets. Annual expenditure is shown for the first 10 years and corresponds to the 10 Year Plan. Years 11–30 of the Strategy are shown as an annual average for five-yearly bands. The detail of this expenditure is covered in the relevant AMPs. These projections are adjusted for inflation using the relevant BERL indices. (Note: The previous figures in this Strategy are shown as present-day costs unless specifically identified as including inflation.)

Operational

Operational costs through this period are projected to rise steadily during the 30 years, in keeping with the increased asset base. The largest increase during the period is in wastewater, where a substantial increase in operating costs will be required in about 2027 for a further treatment facility likely to be required to obtain new discharge consents.



Renewal

The overall level of renewals expenditure is expected to be fairly constant throughout the first 20 years, with differences from year to year reflecting significant projects undertaken in a given year and some adjustment of timing to align better with other programmes. From years 20 onwards, significant increases in renewals are required for wastewater and then transport, reflecting the age of infrastructure requiring replacement. Further information about renewals and sustainability of asset performance is given in each of the AMPs.



Capital development

The first graph shows the capital development requirements for each activity area. The transport activity has the largest overall requirement for new asset investment, with the further river crossing showing through at the end of the 30-year period. Wastewater also has a significant requirement for asset development over the period 2023–27, particularly for additional treatment facilities required to meet new consent conditions.



The second capital development graph shows the breakdown between expenditure for growth and what is required to maintain or improve the level of service. A significant proportion of the expenditure for growth is for providing infrastructure for the Whakarongo and Kākātangiata residential growth areas and the NEIZ growth area. The level of service increase between 2024 and 2027 is related to the wastewater treatment plant upgrade.



14.Significant decisions

The significant decisions are the Council response to the significant infrastructure issues identified above. The significant decisions are:

Wastewater treatment and upgrading: It has been assumed that a solution will be provided with a capital outlay of \$350 million (plus inflation) and that the expenditure will be incurred between 2023 and 2027.

Provision of a further river crossing and regional freight ring road: Delivery of the regional freight ring road and provision of a further river crossing will only be viable for the Council with financial assistance from NZTA. The decision on the Manawatū Gorge replacement will affect the way in which the regional freight ring road is delivered.

Development of new infrastructure for growth: Council will provide new infrastructure for growth in a manner that:

- a) is appropriately timed to service growth in greenfields areas
- b) aligns the capacity of new infrastructure the likely activities that will occur in greenfields areas, particularly new industrial development
- c) accounts for projected brownfield development and the resulting impact on infrastructure capacity.

Renewal of infrastructure: Council has a statutory responsibility to meet the current and future needs of communities for good-quality local infrastructure in a way that is most costeffective for households and businesses. A total of about \$731 million (present-day cost) over the next 30 years is estimated to be required to ensure that infrastructure is kept in good condition so that it can go on providing the same level of service to the community.

Application of urban design: Significant budgets have been included to deliver on the City Centre Streetscape Plan, Manawatū River Framework and Central Energy Trust Arena Master Plan. New processes and support is required to ensure that a multi-disciplinary approach is applied to the planning and delivery of Council projects.

Facilities to encourage alternative transport modes: The Council will continue with catalyst projects such as the pedestrian and cycle bridge and extensions to the shared path network, and combine these with incremental change as part of the delivery of day-to-day transportation infrastructure.

Security of water supply: Water is generally readily available and capacity is adequate to service our current and foreseeable demands. However, summertime droughts have led to a need to conserve water for months at a time. In order to conserve water the Council will need to assess the costs and benefits of reducing water pressure and investigate domestic water saving and storage solutions.

Increasing resilience of infrastructure: A key part of increasing the resilience of the city's infrastructure is to require new infrastructure to be built to a standard that will better withstand the effects of seismic events such as liquefaction. The review of the District Plan and Council's Engineering Standards for Land Development will need to address these matters.

Impact of climate change: A changing climate has significant implications for infrastructure with many assets having life-cycles of over a hundred years. The Council target is a 30% reduction in CO₂e in Palmerston North by 2031. The task of lowering our carbon footprint forces us to identify our inefficiencies, and improve the way Council delivers infrastructure.

Modernisation of Central Energy Trust Arena: Delivery of the Central Energy Trust Arena Master Plan relative to other investment priorities and ensuring the principles of the Master Plan are not lost during implementation over 10 plus years.

Use of Council land for housing: Budgets have been included to develop sections at the Council owned land at Whakarongo and investigate opportunities to develop other Council owned land at Huia Street Reserve and Summerhays Reserve.

Te Manawa and Library of the Future: The scale of the funding commitment to support significant upgrades to important social and cultural assets.

15.Assumptions

The key assumptions relate to asset life cycle, growth or decline in the demand for services, and increases or decreases in levels of service.

9.1 Asset life cycle

The following asset life cycles for the main components have been used to inform the valuation of the assets and, together with condition and performance information, the renewal programme:

Activity	Asset type	Description	Assumed life
TRANSPORT	Road pavements	Formation and base course	100
		Asphaltic concrete	25
		Chip seal	12
	Footpaths	Asphaltic concrete	40
	rootputits	Concrete	80
	Drainage	Channels and sumps	80
	Brainage	Culverts	55-80
	Bridges	Reinforced concrete and steel beams	110
	Street lighting	Steel nole	45
	Street ingitting	Luminaire	25
	Bus shelters	Shelter	15-20
	Busshellers	Main terminal	50
	Cycleways	Limestone	1-5
	0,0.010,0	Asphaltic concrete	40
STORMWATER	Pipes and channels	Pipes	80-250
		Culverts	150-400
		Manholes and structures	120-150
		Mains and sump connections	110
		Kerb connections	80
		Concrete retaining and flood walls	120
		Concrete channel lining	70
	Pump Stations	Civil structure	100
		Mechanical plant (pumps)	10-35
		Electrical equipment	10-25
		Earthen stop banks, channels and storage basins	indefinite
WASTEWATER	Pipe network	Pipes	60-120
		Manholes	120
	Pump stations	Civil structure	100
		Mechanical plant (pumps)	15-30
		Electrical equipment	10-25
			80,100
	Treatment plant	Building and civil	80-100
	Treatment plant	Electrical	10-25

		Pipework	100-120
WATER	Headworks	Bores	30-70
		Pipework	50-120
		Valves	50-80
		Pumps	15-30
		Electrical	10-30
		Telemetry	15
		Building	75-100
	Treatment facilities	Structures	75-100
		Pipework	50-120
		Mechanical	15-50
		Electrical	10-30
	Reservoirs	Structures	80-100
	distribution	Pipes (ductile iron, steel, PVC, Polyethylene, ABS)	60-120
	network		
		AC pipes	60-90
		Hydrants and valves	75
PROPERTY	Buildings	Structural	40-55
		Walls cladding	60-90
		Roofing	8-150
	Services	Electrical	10-90
		Heating and ventilation	15-30
		Lifts	20-60
		Mechanical	5-60
PARKS & RESERVES	Grounds	Fences and gates	5-100
		Carparks	40-60
		Hardcourts	25-40
		Driveways and access	40-60
		Signs	8-60
	Park furniture	Play equipment	4-40
		Seats	15-25
		Bins	10-20
	Swimming Pools	Pools	40-60
		Plant	12-20

9.2 Demand for services and levels of service

Assumptions	Uncertainties and implications
 Population and household growth The following population projections are assumed: 10-year projection 2021–31, 1089 people per annum at 1.1% 20 year projection 2021–41, 1039 people per annum at 1.0% 30 year projection 2021–51, 1002 people per annum at 1.0%. The following household projections are assumed: 10-year projection 2021–31, 504 households per annum at 1.4% 20 year projection 2021–41, 459 households per annum at 1.2% 30 year projections 2021–51, 432 households per annum at 1.1%. 	If the rate of growth is different from what has been predicted, changes will need to be made to the timing of the growth programmes. The three-year review of AMPs and the 10 Year Plan minimises the risk of expenditure not matching growth requirements.
City growth – greenfields residential Development will continue at Kelvin Grove and Aokautere. Whakarongo will start development in year 1, followed by an initial small stage of City West starting development in year 2. A significant extension of Aokautere will be rezoned and ready for development in year 3. An even larger block at Kākātangiata (formerly City West) will start developing around years 5 and 6 and continuing until year 30. A small amount of new greenfields development is also anticipated at Flygers Line and Ashhurst.	The Whakarongo Residential Area is zoned and available for development. Council-led development at Whakarongo will ensure this land is brought to the market. Other landowners are showing interest in development following the upgrade of James Line. Development at Aokautere is suffering from the lack of an overall Structure Plan to ensure a coordinated outcome. Work is underway on the development of a Structure Plan that will also assess the potential for providing additional development capacity. Kākātangiata is a large area that will provide significant growth capacity for the city for the next 30 years High Class soils, flooding and liquefaction risks will need to be weighed up against housing demand needs, and the requirement for COuncil to ensure there is sufficient capacity to meet projected demand. This may necessitate Council providing higher intensity development opportunities to ensure efficient use of land is maximised, while avoiding or mitigating natural hazard and productive land constraints.
City growth – brownfield residential Housing choices now allowed under the District Plan include multi-unit developments and minor dwellings. Multi-unit developments are encouraged close to the city and suburban centres, where there is ready pedestrian access to services and facilities. Minor dwellings are aimed at meeting the demand for small, good quality and affordable rental accommodation. The planning framework enables apartments in or near the city centre, including as part of a mixed-use development. Council will actively identify opportunities and reduce barriers to city centre living and brownfield development, including transitioning Roxburgh Crescent from industrial to residential and the Hokowhitu campus from institutional to residential.	It is difficult to predict how the market will respond to new housing choices and whether traditional infill is reaching a natural saturation point.
City growth – greenfields industrial	This depends on the uptake by industry. The timing of upgrades will be altered to meet the establishment of industry in the area as far as possible. However, there is a risk that substantial investment is made for initial businesses but the

Assumptions	Uncertainties and implications
Development will continue at the North East Industrial Zone and start in the North East Industrial Zone Extension Area during years 1–5. Industrial development will continue at Longburn. Owners of private infrastructure at Longburn are assessing options to upgrade it to meet Council Engineering Standards, to enable it to be vested with Council. This may involve the Council undertaking some works itself to enable development and seek to recoup the costs through development contributions or some other means. This will also have wider benefits for the broader Longburn community. The Braeburn Industrial Area at Longburn is a site-specific zone that enables the expansion of the Fonterra Dairy Plant via the provision of private services.	overall uptake is slower than expected. Developer agreements made under the Development Contributions Policy may be required at the North East Industrial Zone to help with the timely provision of infrastructure. . An expansion of the Fonterra Dairy Plant at Longburn may result in pressure to connect to the city's wastewater treatment plant.
Development type The types of residential development are assumed to remain constant throughout the next 30 years, based on a preference for greenfields development of 50%, infill development of 38% and rural residential development of 12%. These percentages exclude the construction of apartments and housing units in retirement villages.	These are based on an assessment of future population and recent trends which includes increased demand for small dwellings and infill development. If preferences changed over the period of this Strategy, this could be accommodated by accelerating or decelerating the appropriate growth programmes. It is unclear how the market will respond to the new housing choices provided in the District Plan.
Natural disasters No major natural disasters such as storms, floods, earthquakes and volcanic eruptions that damage city infrastructure.	Given that the Strategy covers a period of 30 years, there is a high likelihood of one or more significant events occurring during this period. Council has assessed its critical assets, lifelines and emergency response plan to be prepared for such events. Specific recovery plans would be drawn up at the time. Reprioritisation of budgets may be necessary. Financial and insurance aspects are covered in the Financial Strategy.
Climate change In the longer term, increased frequency and intensity of storm events and, possibly, longer drought periods.	Provision is being made to adapt infrastructure for climate change, based on NIWA predictions for 2090, given the long life cycle of assets. If the changes are different from what is predicted, this will be assessed as they become evident.
LGA 2002 Section 17A – Delivery of services review This review was carried out during 2017 and will occur at no more than six- yearly intervals. It is assumed it will not lead to major changes to the governance, funding and delivery of infrastructure or services.	After each review, Council may wish to make changes that could impact on the future delivery of infrastructure-based services. Community views would be sought, in compliance with Council's Significance and Engagement Policy.

Assumptions	Uncertainties and implications
Legislation and policy Three Waters Reform may eventuate. This could see three waters infrastructure removed from Council and placed into a regionalised water authority. The National Policy Statement Fresh Water 2020 (NPSFW) places greater requirements on Councils to ensure that degraded water bodies are improved and to maintain or improve all others based on defined environmental bottom lines. The National Policy Statement for Urban Development (NPSUD) requires council to provide sufficient development capacity to meet projected demand The NPSUD also requires an additional 20% of capacity to be supplied to provide market choice and allow for responsiveness to market demand where demand exceeds what was projected.	Amalgamation of authorities and/or new structures to manage particular classes of assets (such as a water CCO) would impact on the way the assets are managed, particularly the synergies between the current infrastructure activities although the fundamental service delivered by the asset is likely to remain the same. The NPSFW will have implications for stormwater management in particular, especially in areas where rare and threatened habitats are identified by the Regional Council. There are also likely to be implications for direct discharges of Council's stormwater network into waterways. The Regional Council is required to update its regional policy statement to give effect to the NPSFW. This will provide greater guidance to Council regarding what locations are considered degraded, and therefore, what treatment requirements may apply to Council and private developers. Council is also required to update its District Plan to include objectives, policies and methods to promote positive effects, and avoid, remedy or mitigate adverse effects of urban development on the health of water bodies, freshwater ecosystems, and receiving environments. The NPSUD places obligations to service land to meet projected demand. The additional 20% buffer is a significant cost to incur. This capacity must be available at a network wide level, given that Council's water, wastewater and roading network is considered integrated. If anticipated growth is lower than projected, Council is left with holding costs that may take much longer to recoup through development contributions. The probability of growth being less than anticipated is considered low, given that demand is currently exceeding what is projected, despite Covid-19.
	Legislative changes generally have transition periods for Councils to respond as necessary. In the case of the NPSFW, changes to Council's District plan are required to be made as soon as reasonably practicable. The principles of the NPSFW are being incorporated into urban development plan changes as they arise. A comprehensive update to the District Plan will likely be undertaken once the Regional Council has set in place the broader regulatory framework for water management. This will allow Palmerston North to have a freshwater management response that is consistent with higher order requirements.
Construction costs No major changes to the current cost structure, apart from what has been incorporated into the BERL inflation factor applied.	The price of some components may change relative to others due to changes in commodity prices and labour/plant/ materials ratios, as a result of technology and work practices changes. Some change is likely over 30 years. As a result, some programmes may become more or less viable. This will be addressed at the time.
Transport	
Financial assistance	Should the rate of financial assistance change, this could impact on the viability of some city projects, particularly the regional freight ring road and further bridge crossing.

Assumptions	Uncertainties and implications
A NZTA financial assistance rate of 51% will apply to all qualifying expenditure for the first three years of the 10 Year Plan. Ko subsidies have been assumed at this rate for the term of the 30 years of the Infrastructure Strategy.	
Demand for services Demand for services will grow in line with a growing city, but with particular increased demands on freight routes, with the city acting as a centre for North Island freight distribution and key arterial routes. Increased demand for pedestrian, cycling and public transport services.	Any substantial change to demand will lead to reassessment of timing and scope of programmes to meet these demands through the three-yearly 10 Year Plan process. There is low risk of infrastructure development getting out of line with demand.
Levels of service Generally, the overall levels of service remain at the same level apart from an increase in the areas of freight / heavy traffic movements, safety, cycling and passenger transport.	The Council is only the provider of the passenger transport infrastructure and not the services themselves. Waka Kotahi support is required to deliver the regional freight ring road.
Asset life cycles Shown in section 8.1	Life cycles are generally in line with accepted industry standards, with some modification for local conditions. With the generally shorter life cycles (15–30 years) for most transport assets there is a high level of certainty for adopted life cycles.
Stormwater	
Demand for services Demand for stormwater drainage services increases in line with household and industrial growth. Greater emphasis on hydraulic neutrality for new subdivisions will limit the need for enlarging the existing pipe stormwater network.	The sections of the stormwater system that need attention as a result of greater infill housing will depend on the locations of infill development. This is expected to happen gradually and will be addressed if needed through the three-yearly 10 Year Plan process.
Water-sensitive design and green infrastructure approaches to development and a wider use of tools such as water tanks, green roofs, swales, rain gardens and detention ponds will help address other issues such as climate change, water quality and biodiversity.	

Assumptions	Uncertainties and implications
Level of service provided The level of service provided remains at a similar level to that currently provided.	Climate change may alter this level of service for some properties and areas of the city. Provision is made in this Strategy for meeting expected changes.
Asset life cycles Shown in section 8.1	Life cycles are generally in line with accepted industry standards, with some modification for local conditions. Any variance will only become apparent over a long period of time, with gradual adjustment of programmes as required.
Wastewater	
Wastewater treatment and disposal The resource consent for the discharge from the Council's main wastewater treatment plant to the Manawatū River is due to expire in 2028. A condition of the resource consent is that Council will complete a best-practicable option review for its wastewater treatment and disposal by June 2021 and lodge a complete consent application by June 2022. The review will need to identify ways to improve the city's wastewater treatment, particularly when the river level is low.	There is significant uncertainty about the best-practicable option review for wastewater treatment and disposal. The range of potential operating and capital costs is unknown at this stage and will not be known until completion of the review and the granting of the consent. Council does not wish to prejudge which option might be chosen (or imposed through the regulatory process) but is required to make adequate financial provision for the final outcome. A number of factors will influence the final outcome and it is likely that national and regional policies for water quality will change before a final decision is made. Whatever option is chosen, it will have a significant impact on Council's debt levels and rates requirements.
Demand for services Demand will increase in line with household and industrial growth. The industrial demand will depend on the industry types established in the city.	This is based on monitoring and long-term usage trends and is linked to use of water. There is low risk of infrastructure development getting out of line with demand, with demand and programmes reassessed through the three-yearly 10 Year Plan process.
Levels of service The level of service provided for collection will remain at a similar level to what is currently provided. Council expects improvements to the quality of wastewater treatment following the upcoming review of the treatment plant.	The level of service is largely established by the infrastructure already in place. Severe earthquake could interrupt this service and would be addressed at the time.
Asset life cycles Shown in section 8.1	Life cycles are generally in line with accepted industry standards, with some modification for local conditions. Any variance will only become apparent over a long period of time, with gradual adjustment of programmes as required.

Assumptions	Uncertainties and implications
Water	
Resource consents New resource consents will be obtained when they become due, allowing the facilities to be operated as at present.	Several consents fall due for renewal during this period, including abstracting groundwater from the water bores and operating the Turitea dams. No major issues are expected to arise around renewal of these consents.
Demand for services Overall demand will increase in line with household and industrial growth, but demand per capita remains at or below current demand.	This is based on monitoring and long-term trends and will be adjusted with the three-yearly review of AMPs and 10 Year Plan if necessary. There is low risk of infrastructure development getting out of line with demand.
Levels of service The level of service provided will remain at a similar level to that currently provided, adjusted by any requirements of the New Zealand Drinking Water standards.	The level of service is largely established by the infrastructure already in place. Severe earthquake could interrupt this service and would be addressed at the time.
Asset Life cycles Shown in section 8.1	Life cycles are generally in line with accepted industry standards, with some modification for local conditions. The lower A/C life cycle to what was predicted when laid has been accounted for in this Strategy.
Parks and Reserves	
Demand for Services At present some sports are well catered for, whilst others must compete with the general public, particularly for winter sports training grounds, swimming pools and indoor courts. Where demand for new assets exists, we will explore partnerships with others to provide community access to their existing assets. The regional sports facilities investment framework will be used to ensure that needs are proven, and that a new facility is financially viable in the long-term, before we commit to funding a new facility, either by ourselves, or in conjunction with others.	As new sports emerge and our community grows, demand at key times of the day and week will continue to increase. It is impractical and unaffordable to provide new sports facilities, when we know they will only be used for a small proportion of the week.
Levels of Service The level of service provided will remain at a similar level to that currently	We will work closely with landowners and our city planners to ensure new growth areas of the city make adequate provision for parks and other recreation facilities that will meet the needs of the local neighbourhood, and support the park and walkway needs of the surrounding suburb. The cost to buy and develop these parks in line with our

Assumptions	Uncertainties and implications
	provision standards needs to be fairly shared between ratepayers and owners of the new properties. There needs to be adequate funding provision in the long-term plan to maintain these parks to the agreed standard well into the future.

16.Relationship to Financial Strategy

As a component of the Council's long-term planning framework, the Council also prepares a Financial Strategy. The Strategy only covers a 10-year period, although it also takes into account longer-term impacts on Council's long-term financial sustainability.

The Strategy not only incorporates information from the Infrastructure Strategy for the groups of activities it covers, but also includes the long-term planning and budgeting information for all other Council activities. The Strategy contains the debt and rates parameters Council uses to judge that its long-term plans are financially sustainable.

Key elements of the Strategy are:

- to ensure the Council's long-term financial position is sustainable
- to recognise inter-generational funding requirements
- to manage debt within defined levels
- to maintain the infrastructure provided for the City by previous generations, for the use by current and future generations
- to ensure financial capacity for future generations so they are able to fund high-priority programmes
- timely provision of new infrastructure that builds capacity and enables the City to harness new development opportunities while avoiding the financial risks associated with over-provision.

The Strategy envisages an approach that, among other things:

- encourages staff to find innovative and efficient ways of delivering services
- commits to funding capital renewals at levels required to maintain assets

- challenges expenditure proposals to ensure they are aligned to key Council strategies, that the proposed timing is realistic and that they are capable of being delivered
- peer-reviews capital expenditure budgets to ensure they are adequate in the current challenging contracting market
- make sure the expenditure required for growth is committed soon enough to enable the City to harness development opportunities, but not too far ahead of when the infrastructure will be required.

The Strategy recognises a number of challenges to the development of a financially sustainable 10 Year Plan including:

- recognition of underinvestment in costs of maintaining services and assets
- uncertainty about the level of funding required for the Nature Calls (wastewater treatment and disposal upgrade) project
- the nature and timing of proposed water reforms
- the impact of Covid-19
- climate change
- earthquake-prone buildings
- sustainable city growth

Based on the significant forecasting assumptions made within the Strategy, the forecast costs of maintaining services, providing for growth, providing for the new facilities considered necessary to meet the Council's Vision and Goals and, in particular, funding the upgrade to the wastewater treatment and disposal system requires significant increases in rates and the levels of Council debt during the 10 years of the Strategy.

It concludes that the funding requirements mean that the Council would need to borrow to levels that would result in a number of its prudent debt ratios being significantly exceeded and that this was not sustainable in the longer term under present governance structures and funding arrangements.

Given the uncertainty of the forecast sums (especially in relation to Nature Calls), and the future structure for the management of the three waters Council has determined that for the time being the forecast programme of capital development and consequential borrowing requirements are appropriate. Once these two key uncertainties are determined the Council will be in a better position to consider planning for the longer term. An updated 10 Year Plan will be prepared at that time, possibly in advance of the next scheduled update in 2024.