DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

Notice of Meeting:

I hereby give notice that an ordinary meeting of the Dunedin City Council will be held on:

Date:	**Wednesday 27 January 2021, Thursday 28 January 2021 and Friday 29 January 2021**
Time:	**9.00 am**
Venue:	**Edinburgh Room, Municipal Chambers, The Octagon, Dunedin**

Sandy Graham
Chief Executive Officer

Council

SUPPLEMENTARY AGENDA 2

MEMBERSHIP

Mayor	Mayor Aaron Hawkins	
Deputy Mayor	Cr Christine Garey	
Members	Cr Sophie Barker	Cr David Benson-Pope
	Cr Rachel Elder	Cr Doug Hall
	Cr Carmen Houlahan	Cr Marie Laufiso
	Cr Mike Lord	Cr Jim O'Malley
	Cr Jules Radich	Cr Chris Staynes
	Cr Lee Vandervis	Cr Steve Walker
	Cr Andrew Whiley	
Senior Officer	Sandy Graham, Chief Executive Officer	
Governance Support Officer	Wendy Collard	

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Governance Support Officer

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Note: *Reports and recommendations contained in this agenda are not to be considered as Council policy until adopted.*

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INFRASTRUCTURE STRATEGY

Department: Transport and 3 Waters

EXECUTIVE SUMMARY

1 An Infrastructure Strategy identifies significant infrastructure issues over a period of at least 30 years, and identifies options for managing those issues, along with the implications of those options.

2 This report seeks Council approval of the draft Infrastructure Strategy for the purpose of public consultation for the 10 year plan 2021-31.

RECOMMENDATIONS

That the Council:

a) **Approves** the draft Infrastructure Strategy, with any amendments, for consultation purposes for the 10 year plan 2021-31.

BACKGROUND

3 Section 101B of the Local Government Act 2002 (LGA) requires all councils to prepare and adopt an Infrastructure Strategy. The purpose of an Infrastructure Strategy is to:

- Identify significant infrastructure issues for the local authority over a period of at least 30 years; and
- Identify the principal options for managing those issues and the implications of those options.

4 The infrastructure strategy must include water supply, wastewater, stormwater and roads and footpaths.

DISCUSSION

5 Council must, as part of its 10 year plan, prepare and adopt an Infrastructure Strategy. The Infrastructure Strategy outlines the most likely scenario for the management of the Council's infrastructure assets over 50 years and shows indicative estimates of the capital and operating expenditure.

6 Section 101B of the LGA provides that an Infrastructure Strategy must outline how the local authority intends to manage its infrastructure assets, taking into account the need to:

- Renew or replace existing assets; and
- Respond to growth or decline in the demand for services reliant on those assets; and
- Allow for planned increases or decreases in the levels of service provided through those assets; and
- Maintain or improve public health and environmental outcomes or mitigate adverse effects on them; and
- Provide for the resilience of infrastructure assets by identifying and managing risks relating to natural hazards and by making appropriate financial provision for those risks.

7 The significant issues that have been identified and addressed in the draft Strategy include the following:

- Regulatory, legislative and 3 waters service delivery changes, including: 3 waters reform, the Governments Essential Freshwater Programme and National Policy Statement for Freshwater Management, the Resource Management Act review, National Policy Statement on Urban Development, and the Government Policy Statement on Land Transport;
- Replacing and renewing Dunedin's ageing infrastructure;
- Responding to changes in demand for infrastructure because of growth;
- Improving public health and environmental outcomes;
- Improving infrastructure resilience to natural hazards; and
- Zero carbon 2030 target.

8 Renewing Dunedin's ageing infrastructure is a key priority of the draft Strategy. Renewal investment will be prioritised in the most need and highest risk areas in years 1 – 3 of the 10 year plan while contractor and DCC delivery capacity is established. Renewals delivery is planned to be increased year on year.

9 Through 3 waters reform, the Government intends to transfer 3 waters service delivery functions from councils to new, public multi-regional water entities. This would have a significant impact on Council operations. The proposed water services entities would commence operation in about 2023. Council agreed to 'opt in' to the first stage of this reform in August 2020. All councils will be asked to make a second decision on participation in late-2021. The decision for Council in late-2021 will be an 'opt out' decision.

10 The Strategy plans to invest in 3 waters and transport infrastructure for a medium-high growth scenario over 2021-28 and a medium growth scenario from 2029 onward. Providing infrastructure for this growth has been provided for in the 10 year plan draft operating and capital budgets.

11 Planned strategic increases in infrastructure levels of service are in the configuration of the transport network to support active and public transport modes. The transport sector is Dunedin's most significant, and fastest growing, source of carbon emissions and increasing investment in these modes is required to support the zero carbon 2030 target.

12 The draft capital expenditure programme represents a significant uplift from the last 10 year plan. The ability to deliver this programme, acknowledging that the proposed spends are higher than previous achievements will require ongoing attention. Delivery risks will be managed through improved forward planning, early contractor engagement, innovative procurement strategies, and strong disciplines around project management and monitoring to ensure progress is on track.

OPTIONS

13 Council is required to have an Infrastructure Strategy for consultation as part of the 10 year plan. Options have not been presented but Council is able to modify the draft Infrastructure Strategy.

NEXT STEPS

14 The draft Infrastructure Strategy, with any amendments will be finalised for public consultation as part of the Supporting Documents for the 10 year plan.

15 Key elements of the Infrastructure Strategy will be incorporated into the Consultation Document.

Signatories

Author:	Jeanine Benson - Group Manager Transport Tom Dyer - Group Manager 3 Waters
Authoriser:	Simon Drew - General Manager Infrastructure Services

Attachments

	Title	Page
⇩A	Draft Infrastructure Strategy	9
⇩B	Appendix 1 - Infrastructure Asset Lives	82

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the social, economic, environmental and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☐	☐	☐
Economic Development Strategy	☐	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☐	☐	☐
3 Waters Strategy	☒	☐	☐
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☐	☐	☐
Other strategic projects/policies/plans	☐	☐	☐

The Infrastructure Strategy contributes specifically to the priorities of the 3 Waters Strategy and Integrated Transport Strategy.

Māori Impact Statement

Mana whenua will be engaged with on projects that are of cultural importance to them.

Sustainability

Major issues and implications for sustainability are discussed in the Infrastructure Strategy.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The Infrastructure Strategy provides for levels of service in 3 Waters and Transport.

Financial considerations

Financial considerations are discussed in the Infrastructure Strategy.

Significance

The Infrastructure Strategy is considered significant in terms of the Council's Significance and Engagement Policy and will be consulted on as part of the 10 year plan process.

Engagement – external

There has been no external engagement in the development of the draft Infrastructure Strategy.

Engagement - internal

Staff and managers from across Council have been involved in the development of the Infrastructure Strategy.

Risks: Legal / Health and Safety etc.

There are no identified risks.

SUMMARY OF CONSIDERATIONS
Conflict of Interest There are no known conflicts of interest.
Community Boards The Infrastructure Strategy will be of interest to Community Boards, as many infrastructural matters are relevant to Community Boards.

INFRASTRUCTURE STRATEGY | HE RAUTAKI HAKA

1. EXECUTIVE SUMMARY

This document sets out the Dunedin City Council's (DCC) strategy for managing drinking water, wastewater and stormwater (3 waters) and transport infrastructure for the next 50 years. The strategy covers infrastructure assets operated by the DCC.

The purpose of this strategy is to:

- identify the significant infrastructure issues facing the DCC for the next 50 years
- identify how the DCC will manage the issues identified and any implications
- set out the most likely scenario for managing the city's network infrastructure to 2071.

Projects identified in the first 10 years of the strategy are funded as part of the DCC's 10-year plan. There is less certainty around the issues and options for the period 2031 to 2071 and projects identified beyond the first 10 years of the plan are currently unbudgeted.

1.1. Strategic priorities for network infrastructure

1.1.1. 3 Waters

The strategic priorities for the 3 waters network are:

- meeting the water needs of the city for the next 50 years from existing water sources
- adapting to a variety of future scenarios for climate change and fluctuations in population
- reducing our reliance on non-renewable energy sources and oil-based products
- improving the quality of our discharges to minimise impacts on the environment
- ensuring that, as a minimum, key service levels are maintained into the future
- limiting cost increases to current affordability where practical
- adopting an integrated approach to management of the 3 waters and embracing the concept of kaitiakitaka.

1.1.2. Transport

The strategic priorities for Dunedin's transport network are:

- improving Dunedin's road safety record
- providing safe, viable transport choices
- strengthening connections to, within and between Dunedin's centres
- supporting safe and efficient freight movement
- ensuring the ongoing resilience of Dunedin's transport system and key infrastructure.

1.2. The current state of Dunedin's network infrastructure

1.2.1. Water supply

Due to significant investment in the city's water supply assets over the past two decades, Dunedin City has high quality drinking water that complies with the Ministry of Health Drinking Water Standards. However, there are capacity issues in some areas of the network and some of the smaller, rural plants need work to improve reliability of treatment standards. In addition, as the infrastructure has been developed over a long period of time, some infrastructure does not meet today's requirements such as required fire flow pressures.

1.2.2. Wastewater

While the majority of the city's wastewater treatment plants are generally in good condition, there are many mechanical and electrical plant items that are reaching, or have reached, the end of their asset life. There are also some areas of the network and that are in poor condition due to the age of the pipes, resulting in stormwater and groundwater infiltrating the network, which can lead to wastewater overflows and 'wash-out' of the treatment plant process, particularly during heavy rainfall events and high tide. The condition and reliability of the rural wastewater systems vary across the five schemes.

1.2.3. Stormwater

The provision of stormwater services across the city includes the DCC, Otago Regional Council (ORC) and private watercourse (both open and piped) infrastructure. During heavy or prolonged rainfall, the drainage network no longer copes with flows in some areas, resulting in damage to property. Flows have increased due to changing climate and rainfall intensities, but also from

development of the surrounding land. Issues can arise when a private watercourse has not been maintained or when private pipes are no longer of a size to safely convey flows.

1.2.4. Transport

There has been limited increases in renewals investment in the Dunedin transport network over the past five years, however, the cost of delivering renewals has increased by approximately 50%. The network has deteriorated as a result. Footpaths are generally in poorer condition than the roads. The city suffers from high crash statistics, particularly between motor vehicles and vulnerable roads users (i.e. cyclists and pedestrians). Resilience in the transport network infrastructure is under increasing pressure as many assets are becoming more at risk from flooding, erosion and king tides. Generally, the network has sufficient capacity with congestion only experienced in short morning and afternoon commuter peaks. Gaps still exist in the cycling network across the city with approximately 50% of the strategic cycleway network currently implemented.

1.3. Significant infrastructure issues and options for Dunedin

1.3.1. Regulatory, legislative and service delivery changes

The New Zealand Government is undertaking a substantial change programme that is expected to impact Dunedin's infrastructure services in the coming years. This includes reform of three waters regulatory and service delivery arrangements, freshwater reforms, review of the resource management system, changes to the way we provide for and manage urban growth, and reform of government and industry procurement systems. In addition, the Government Policy Statement on land transport, which sets out the Government's strategic direction for the land transport system over the next 10 years, is issued every three years.

1.3.1.1. 3 waters regulatory and service delivery reform

The 3 waters industry is entering a period of significant change:

- there is a drive to improve the environmental performance of wastewater and stormwater systems
- drinking water regulation is changing
- a new water services regulator, Taumata Arowai, has been established
- the Government has proposed substantive reform of the 3 waters service delivery model, including the establishment of public, multi-regional water services entities, in response to affordability and capability challenges facing the sector.

More stringent regulation of 3 waters activities means that current levels of service will need to increase. Government funding for accelerating investment in 3 waters assets has already begun in connection with the Government's Three Waters Reform Programme.

1.3.1.2. Essential Freshwater Programme

The Government has also introduced changes to freshwater regulation through the Essential Freshwater Programme, which relate to the environmental regulation of stormwater and wastewater discharges and protection of drinking water sources.

The National Policy Statement for Freshwater Management 2020 (NPS-FM 2020) came into effect in September 2020. Regional councils are required to notify new or amended regional plans that give effect to the NPS-FM 2020 by 31 December 2024. These changes will have significant flow-on effects for 3 waters activities, through anticipated changes to permitted activities and more stringent requirements around discharges. Changes to engagement requirements are also expected which will promote tangata whenua involvement in freshwater management and decision making, and to ensure Māori freshwater values and the principals of Te Mana o te Wai are identified and provided for.

1.3.1.3. Resource management system review

In 2020, an independent panel appointed by the Minister for the Environment completed a comprehensive review of New Zealand's resource management system. The review's scope included looking at the Resource Management Act 1991 and its interfaces with the Local Government Act 2002, the Land Transport Management Act 2003, and the Climate Change Response Act 2002. The review recommended that the current Resource Management Act be replaced with three new pieces

of legislation; a Natural and Built Environments Act, a Strategic Planning Act and a Managed Retreat and Climate Change Adaptation Act. The panel's report is expected to be followed in 2021 by consultation to develop government policy and a framework to link together the key pieces of legislation.

1.3.1.4. Urban Growth Agenda

The Urban Growth Agenda is a Government work programme that aims to remove barriers to the supply of land and infrastructure and make room for cities to grow up and out. It has five interconnected focus areas: infrastructure funding and financing; urban planning; spatial planning; transport pricing; and legislative reform.

The National Policy Statement on Urban Development 2020 (NPS-UD 2020) came into effect on 20 August 2020. The NPS-UD contributes to the Urban Growth Agenda by addressing constraints in New Zealand's planning system to ensure it enables growth and supports well-functioning urban environments. The NPS-UD 2020 categorises Dunedin as a tier 2 urban environment, bringing into effect a range of provisions relating to the amount of development capacity required to be serviceable with infrastructure.

1.3.1.5. Government Policy Statement on land transport

The Government Policy Statement on land transport (GPS) sets the Government's priorities on land transport investment over the next 10-year period.
The strategic priorities for GPS 2021 are:

- Safety – developing a transport system where no-one is killed or seriously injured
- Better Travel Options – providing people with better transport options
- Improving freight connections
- Climate Change – developing a low carbon transport system that supports emission reductions.

Investment in the transport network is typically co-funded by Waka Kotahi New Zealand Transport Agency (Waka Kotahi). Co-funding levels in DCC transport investment are generally linked to the level of alignment with the GPS.

1.3.1.6. The DCC's response

The DCC is managing the regulatory and legislative issues for 3 waters by undertaking strategic planning for network and treatment assets and progressing a proactive and comprehensive transition work programme to prepare for 3 waters reform. These projects include:

- asset management and policy improvements
- asset ownership options
- strengthening regulation
- servicing growth
- contract and capital delivery improvements
- system planning.

1.3.2. Replacing and renewing Dunedin's ageing infrastructure

Some assets of the 3 waters and transport networks require replacement based on their age and the likelihood they will not be able to maintain service levels in the future. Issues include cracked earthenware sewers letting in groundwater and causing overflows, and the transport network becoming unsafe. Without continued spending on renewal of these assets they are likely to deteriorate further. The DCC will increase spending on renewals over time. In some circumstances, 'like-for-like' renewals may no longer be enough to meet the needs and expectations of the community and regulators. This means it is likely the proportion of new capital against renewals funding will increase to allow for upgrades, particularly as the Government's 3 waters regulatory reform programme is implemented over the coming years.

The DCC will manage the renewal and replacement of ageing infrastructure by planning to renew assets as they reach the end of their useful lives or are in poor condition and to increase the level of renewal delivery year on year. There is also the ability to re-allocate funding from later years through the Annual Plan process to accelerate renewals if increased delivery is achieved. Renewals

are targeted in areas with the highest risk and where possible are programmed to enable efficiencies between 3 waters and transport projects.

1.3.3. Responding to changes in demand for infrastructure

The DCC growth projections indicate Dunedin's population will increase from 126,255 (2018 Census) to be 144,249 by 2068. This will have an impact on the city's infrastructure. 3 waters and transport are planning for growth through specific capacity assessments and targeted capital works to meet projected demand.

The DCC is seeing growing diversity of travel choice across Dunedin; public transport, walking and cycling continue to be increasingly attractive options for people to get around the city or to and from work. The DCC will continue to invest in infrastructure to support and enable all transport modes across the city.

The Dunedin City District Plan controls what people can do on their land and how it can be developed. The main goal of the District Plan is to sustainably manage the natural and physical resources of Dunedin to meet the needs of current and future generations and to provide for their social, economic and cultural wellbeing and for their health and safety.

Under the Resource Management Act 1991, the DCC is required to review the District Plan every 10 years. A full review of the first Plan started in 2012. This review produced the Proposed Second-Generation Dunedin City District Plan, known as the 2GP. The 2GP is an entirely new plan, with a new format, new zones, objectives and policies, and many rule changes. The DCC must provide infrastructure to service relevant areas within the 2GP. The DCC initiated variation 2 to the 2GP on 12 February 2019. The purpose of the change was to identify targeted actions to address the shortfall in housing capacity over the next 10 years, in order to meet the DCC's obligations under the National Policy Statement for Urban Development.

The DCC will manage the response to changes in demand for infrastructure by planning and investing for a medium-high growth scenario over 2019-28 and a medium growth scenario from 2029 onwards. The 2021-31 capital programme is funded to deliver new infrastructure required for the 2GP and investigate and design infrastructure needed for Variation 2. The delivery of Variation 2 will be considered within the 2024-34 10 Year Plan.

1.3.4. Public health and environmental outcomes

The 3 waters and transport networks provide important public health benefits to the community and deliver services which can impact on the natural environment. The provision of drinking water, wastewater and stormwater services directly affect public health and environmental outcomes through providing safe drinking water and management of wastewater and stormwater discharges. The provision of a safe and reliable transport network that supports the use of active transport modes directly affects public health through reduced road trauma and connected communities that are fit and healthy.

The DCC will manage the response to public health and environmental outcomes by increasing investment over time through existing renewals programmes and planning for changes to regulation and legislation.

1.3.5. Resilience to natural hazards

Natural hazards pose a lesser risk when infrastructure networks are resilient. Flooding, drought, catchment fire, landslides, rising groundwater and liquefaction in the event of an earthquake pose the most significant risks to Dunedin's infrastructure. The DCC is working to improve it's understanding of natural hazards and to develop options for resilient infrastructure networks into the future, including route resilience.

The DCC will manage this issue by ensuring investment in renewals and new capital specifically considers reducing the risk arising from natural hazards and where possible considers adaptive planning. Renewing aging infrastructure in flood prone and coastal erosion areas will reduce some risks arising from natural hazards. The DCC will continue to fund projects to improve the resilience of the water supply, wastewater, stormwater and transport network. Alpine Fault Quake Resilience and Lifelines resilience projects will also improve help resilience of the 3 waters and transport networks.

1.3.6. Planned increases or decreases in levels of service

The 3 waters industry is entering a period of significant change. The Government's reform programme is likely to require an increased level of service over time. Through strategic planning and improving asset management, the DCC will assess the costs and benefit of projects to meet new levels of service to ensure the best practicable options are implemented.

The transport levels of service for this 10 year plan demonstrate alignment with the GPS on Land Transport. Infrastructure investment to support active transport modes and public transport will continue to be invested in to improve levels of service in these areas. There are also opportunities to make amenity and service improvements in the central city through the Central City Plan projects to make the city more vibrant, support growth and to attract people to Dunedin.

The DCC will manage this issue by focusing on renewing infrastructure to reduce the risk of declining service levels and to increase resilience, while also investing in improving strategic service levels as planning and delivery capacity allows.

1.3.7. Zero Carbon 2030 target

In June 2019, the Council declared a climate emergency. The 'Zero Carbon 2030' target seeks to achieve city-wide net carbon neutrality (excluding biogenic methane) by 2030. The transport sector is Dunedin's most significant, and fastest growing, source of emissions. Emissions from this sector are closely linked to urban form, which in turn is greatly influenced by the provision of transport and 3 waters network infrastructure. Trends suggest that with increasing investment in infrastructure to improve the levels of service for active and public transport modes, there is a slow increase in uptake, and with increasing intensification of urban form, these trends are likely to continue.

Alignment of infrastructure provision with the Zero Carbon 2030 target will focus in the first instance on improving data quality, and amending internal policy and processes to ensure emissions reduction is central to strategic urban planning. In parallel, immediate capital investment in the transport network will be focused on projects that support mode choices.

1.4. The plan to address Dunedin's network infrastructure issues over the next 50 years

Dunedin is planning and investing for a medium-high growth scenario over 2021-28 and a medium growth scenario from 2029 onward. Because of this, significant work is required to enlarge and expand Dunedin's existing infrastructure. Renewals programmes and specific projects are also needed to address risks to health and safety, public health, levels of service and the environment, and to respond to new regulatory requirements.

In the short term, major renewals are needed at water treatment plants to ensure they continue to meet the Ministry of Health Drinking Water Standards and major renewals within the wastewater network and treatment plants are needed to ensure discharges will remain compliant and to provide a safe working environment for operational and maintenance staff. As 3 waters resource consents expire, investigations into the capacity of infrastructure, effects on the environment and working in partnership with Iwi will allow best practicable options for new resource consents to be achieved. The DCC will invest in flood alleviation in South Dunedin and Mosgiel, increase water supply resilience via the Port Chalmers and Water Supply projects and improve wet weather flow management on the wastewater networks.

In the medium term, water treatment plants will be upgraded as budgets allow to meet ongoing anticipated improvements in standards. Major renewals of water supply pipelines will also be undertaken to improve drinking water system resilience.

Large scale 3 waters projects are difficult to anticipate in the longer term due to a number of unknowns on how 3 waters reform and increased regulation will progress. However, within the timeframe of this Infrastructure Strategy, most 3 waters buildings and structures will require replacement or significant upgrades to ensure service levels are maintained. Some specific major projects are identified for post-2031 such as the Deep Creek/Deep Stream pipeline renewal and

servicing the Variation 2 to the 2GP to enable growth. Further changes to the 3 waters networks may also be required depending on demographic changes within the city. Ongoing strategic planning within 3 waters will produce long-term strategic investment plans for the 2024-34 10-year plan.

The level of investment in transport renewals and maintenance across the city aims to maintain existing levels of service but does assume some transport mode shift associated with growth occurs to mitigate traffic congestion. In the short to medium term, improved planning and increased investment is required for assets such as sea walls, retaining walls and drainage assets in light of changing weather patterns. Overall, the mid to long-term, budgets are set with the aim of maintaining assets at their current condition. The nature and extent of capital programmes required over the longer term is more uncertain, however the impacts of climate change are likely to place pressure on the network's capacity to remain resilient in coastal, flood-prone, low-lying areas and will likely require some mitigation.

Long term investment in the Transport network will need to focus on resilience to natural hazards (e.g. St Clair sea-wall), and consider efficiency and movement of freight and people (Mosgiel heavy vehicle bypass and central city bypass) and an increased level of service in public transport for our city's main commuting populations.

To support the Council's Zero Carbon 2030 target, projects will aim to minimise carbon emissions both in the construction and operational phases. In addition, tight integration of land use, infrastructure and transport system planning will be essential, particularly in the implementation of the National Policy Statement – Urban Development and the development of a Future Development Strategy.

The DCC will continue to invest in relationships with professional and local government bodies such as Water New Zealand, Local Government New Zealand, Society of Local Government Managers, Institute of Public Works Engineers Australasia and Central Government to avoid duplication of effort and identify approaches used by other groups that can be applied in a local context.

2. WHY OUR INFRASTRUCTURE IS IMPORTANT

This section covers the purposes of our various infrastructure networks and explains how they work.

2.1. Water supply

2.1.1. Purpose of the water supply network

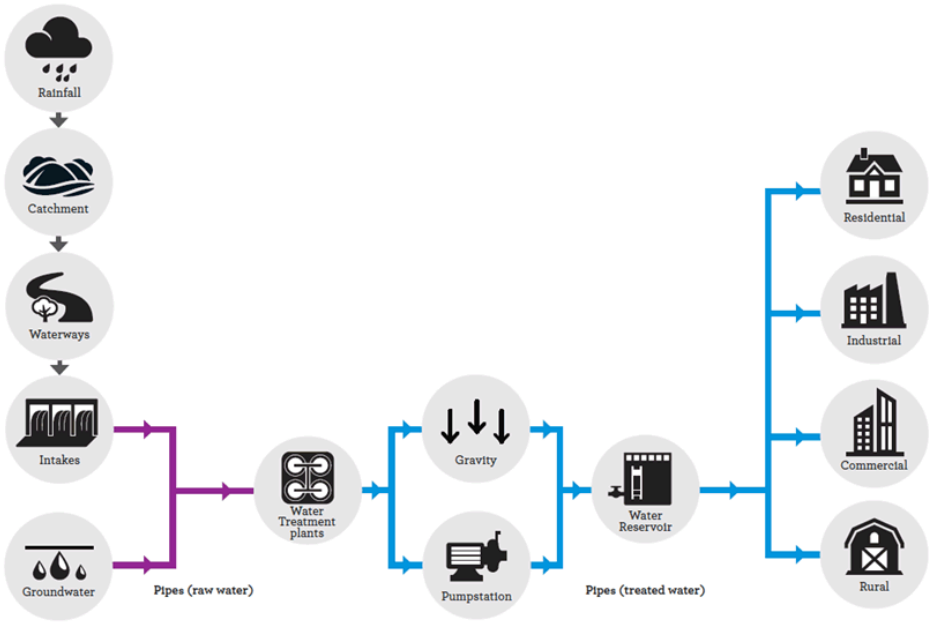
The purpose of the water supply network is to protect public health by delivering adequate quantities of safe water to water users. Clean drinking water is essential for public health and for the safe and productive operation of many businesses. The DCC provides drinking water services to protect the health of its residents and visitors and to support economic activity.

2.1.2. What's involved in supplying water?

The DCC manages the collection, supply, treatment and distribution of water to domestic and commercial residents in Dunedin. The below list covers the main aspects of the water supply system.

- Catchment: an area where water is collected by the natural landscape. The DCC holds 21,000ha of water catchment within its territory, and most of this land is in the protected Deep Stream and Deep Creek catchments.
- Untreated (raw) water: water that is collected from the catchments.
- Water supply: the main supply pipelines that carry raw water from the catchments to the raw water reservoirs or directly to the treatment plants.
- Treatment: raw water is treated at one of Dunedin's six water treatment plants.
- Distribution: the main pipelines between the treatment plants and the treated water reservoirs.
- Reticulation: pipelines that distribute water from the treated water reservoirs to the property boundary.

How our water supply infrastructure works



2.1.3. Water supply level of service measures

The water supply network provides the following levels of service:

- the water is safe to drink
- service calls are responded to promptly
- the water tastes and looks pleasant
- water is supplied at adequate pressure
- the water supply is reliable
- the Council is responsive to customer concerns
- water resources are used efficiently and sustainably.

2.2. Wastewater

2.2.1. Purpose of the wastewater network

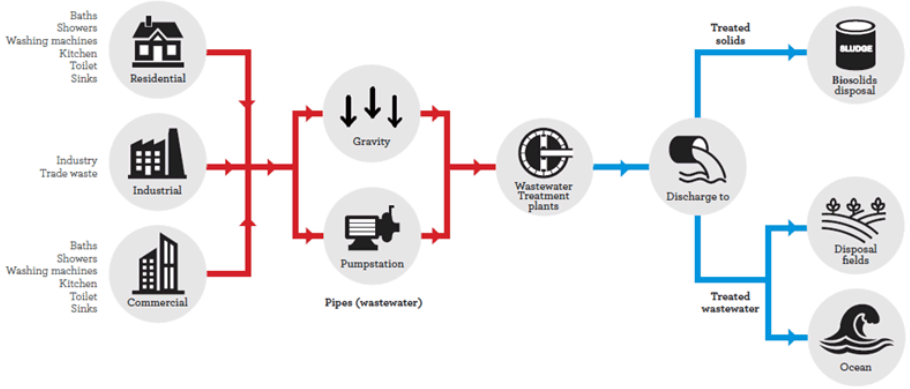
Wastewater is taken from commercial and domestic properties via pipes and pumps to one of seven waste water treatment plants in the district. The wastewater system aims to protect the health of the community by providing cost effective, reticulated wastewater services throughout the urban area, and to treat wastewater to a high standard before it is discharged into the environment.

2.2.2. What's involved in the wastewater network?

The DCC manages the collection, treatment and disposal of wastewater from residential and commercial customers across Dunedin. The below list covers the main aspects of the wastewater system.

- Reticulation: the network collects wastewater from domestic and commercial private lateral connections. The majority of the 918km of publicly owned wastewater reticulation system operates via gravity, with pipe size varying from 150mm to 1800mm in diameter.
- Pump stations: there are 79 wastewater pump stations throughout the reticulated network that pump wastewater from low points back into the gravity network. A critical pump station located at Musselburgh accounts for half of the wastewater pump station asset base (by value).
- Treatment: the DCC owns seven wastewater treatment plants. The population served by each plant varies from fewer than 100 for the smallest plant (Seacliff) to more than 83,000 for the largest plant (Tahuna). Treated wastewater is then returned into the environment.
- Biosolids: (or sludges) are the major by-product of the wastewater treatment process. They are the organic material that remains after sludge is treated. The vast majority of biosolids are generated by 3 waters wastewater treatment processes (with a small amount from the drinking water treatment process). Currently, Dunedin's biosolids are incinerated at the Tahuna wastewater treatment plant or disposed of at Green Island Landfill.

How wastewater infrastructure works



2.2.3. Wastewater level of service measures

The wastewater network provides the following levels of service:

- sewage is managed without adversely affecting the quality of the receiving environment
- service calls are responded to promptly
- the wastewater service is reliable, and the Council is responsive to customer concerns.

2.3. Stormwater

2.3.1. Purpose of the stormwater network

The stormwater network collects rainwater from the roofs of houses and buildings, footpaths and roads and diverts it to the ground, into waterways or the ocean. Effective management of stormwater is essential to prevent flooding of properties and businesses. Controls are necessary to ensure stormwater does not become excessively contaminated leading to pollution of watercourses, the harbour or the ocean. The DCC is not engaged in flood protection and control works except where it relates to stormwater or to protect assets such as roads.

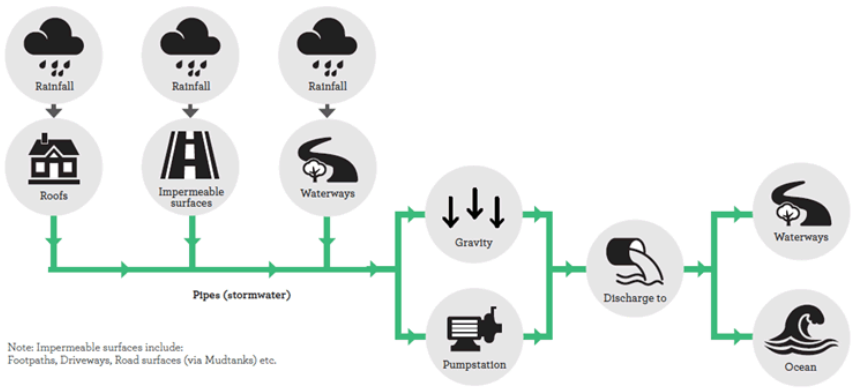
2.3.2. What's involved in the stormwater network?

The DCC provides reticulated stormwater services to the city and to most areas that also receive reticulated wastewater. When an area is developed, stormwater generally increases due to runoff from impermeable surfaces (e.g. roofs, roads, car parks, or compacted soil). It flows naturally from higher to lower ground, and ultimately discharges into natural watercourses such as wetlands, creeks, rivers or the sea. Land development results in the creation of both private and public stormwater systems. These networks exist co-operatively to collect and transfer stormwater to waterways, and in some cases the marine environment, efficiently minimising damage to downstream assets.

The below list covers the main aspects of the stormwater system.

- Reticulation: the reticulated network collects stormwater from domestic and commercial connections, mud tanks and some watercourses, and discharges stormwater into watercourses, streams and the sea. Most of the 378km of publicly owned stormwater reticulation system operates via gravity, with pipe size varying from 100mm to 2700mm in diameter.
- Pump stations: there are 11 stormwater pump stations throughout the reticulated network that pump stormwater from low points back into the gravity network or to discharge points. The most critical pump stations are in South Dunedin and Mosgiel.
- Overland flow paths: structures such as swales direct and convey stormwater overland into the stormwater system.

How stormwater infrastructure works



2.3.3. Stormwater level of service measures

The stormwater network will provide the following major levels of service:

- stormwater services perform adequately and reliably
- stormwater is managed without adversely affecting the quality of the receiving environment
- service calls are responded to promptly.

2.4. Transport

2.4.1. Purpose of the transport network

The role of a transport network is to provide access to move people and goods to destinations such as centres of employment, services, and amenities. Transport assets allow people choice about how they move around the city for either commuter or recreational purposes. Roading infrastructure also connects Dunedin to national and international road, rail, shipping and air transportation networks. Land transport investment promotes keeping people in employment, improves productivity, and supports economic growth and connected communities.

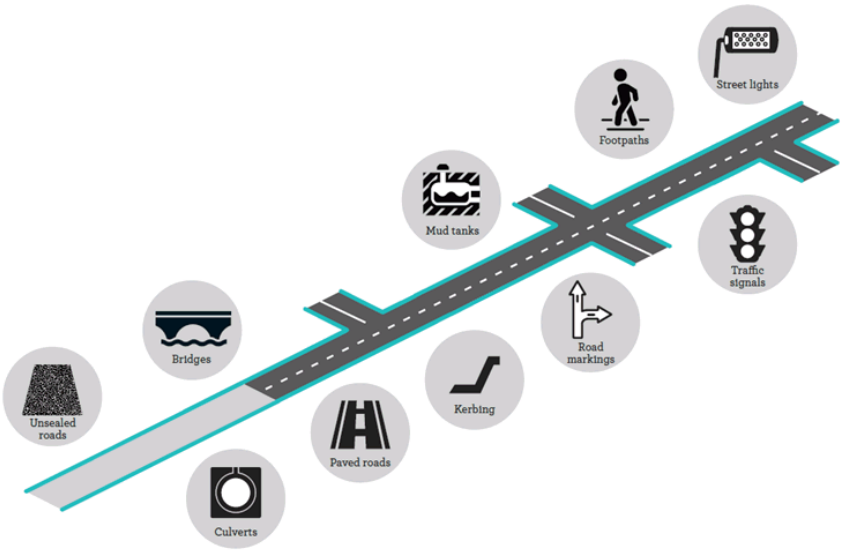
2.4.2. What's involved in the transport network?

The DCC manages a large network of transport infrastructure which includes roads (both sealed and unsealed) footpaths, cycle ways, streetlights, traffic signals, signs and road markings, retaining walls, bridges, culverts and seawalls.

The below list covers the main aspects of the transport network

- 1071km of sealed roads
- 695km of unsealed roads
- 968km of footpaths
- 261 bridges
- 42km of seawall
- 8478 mud tanks
- 5742 culverts.

Our transport network



2.4.3. Transport levels of service

The transport network provides the following levels of service:

- the transport network facilitates safe travel
- the transport network facilitates active travel
- the transport network facilitates comfortable travel
- the transport network facilitates accessibility
- the transport network facilitates efficient travel

- car parking is available and meets the needs of users
- the transport network provides choice in how people move around
- the transport network is maintained in a responsive manner.

3. HOW THE INFRASTRUCTURE STRATEGY CONTRIBUTES TO DUNEDIN'S COMMUNITY OUTCOMES

Investing in Dunedin's water and transport infrastructure will contribute to achieving the city's community outcomes and the vision of making Dunedin one of the world's great small cities.

This table shows how key projects link to Dunedin's community outcomes.

Community outcome	Infrastructure projects contributing to the community outcomes
A supportive city with caring communities and a great quality of life	The central city upgrade will improve safety, support growth, support mode choice and contribute to a more vibrant and thriving central city environment for people to enjoy. The tertiary precinct upgrade will enhance safety and accessibility in this area while supporting growth and mode choice, creating a better quality of life through health benefits. The Dunedin urban cycle ways will improve road safety for cyclists and continue to close the gaps of the cycleway network across the city. Providing active modes of transport is directly linked to health outcomes. The minor safety improvements programme will support safety and accessibility, particularly around schools and known areas where safety and accessibility are known issues. This will lead to better safety outcomes. The series of major centres upgrades will increase amenity in our major town centres across the city outside of the Central Business District (CBD), which will provide support for retail.
A healthy city with reliable and quality water, wastewater and stormwater systems	Upgrades and replacing ageing assets at the water treatment plants will ensure compliance with drinking water standards to supply adequate safe water to the community. The South Dunedin Flood Alleviation and Mosgiel Stormwater Network Improvement projects will reduce the risk of flooding by improving stormwater management in these areas. Port Chalmers water supply improvements will boost year-round reliability of drinking water to residents of Port Chalmers. Targeted renewals of the 3 waters networks will have a range of improvements in the water system such as supply aesthetics, increased fire flows and reduced supply interruptions. Inflow and infiltration to the wastewater network will be reduced. Upgrades and replacing ageing assets at the Metropolitan wastewater treatment plants will improve treatment reliability and wet weather flow management. Interventions to reduce wet weather wastewater overflows in Kaikorai Valley and South Dunedin will prepare the DCC for anticipated new standards for wastewater treatment and discharges. Rural wastewater scheme upgrades will ensure compliance with regulatory standards and reduce flooding risks. Development and implementation of a long-term Biosolids Strategy will provide sustainable, lower carbon solutions for dealing with Dunedin's waste sludges.
A sustainable city with healthy and treasured natural environments	A series of projects are programmed to improve the resilience of Dunedin's metro water supply for now and into the future. Assessing the ability of 3 waters networks and treatment plants to ensure compliance with new environmental standards and developing best practicable options. The Peninsula connection improvements will increase resilience to high tides and weather events. The LED street lighting upgrade will reduce energy needs.

Community outcome	Infrastructure projects contributing to the community outcomes
An active city with quality and accessible recreational spaces and opportunities	The Peninsula connection improvements will provide for walking and cycling along the Peninsula. Further development of Dunedin's urban cycle ways will encourage cycling uptake. The tertiary precinct upgrade will enhance the pedestrian and cycling environment in this area. The city to waterfront connection will improve accessibility and amenity in the waterfront area and contribute to a more vibrant and thriving city environment. The Shaping Future Dunedin Transport suite of works will improve how people move into, out of and around central Dunedin.
A successful city with a diverse, innovative and productive economy	Investing in increased capacity in 3 waters systems to enable growth in the city. Increasing and maintaining the level of asset renewals within 3 waters will support local and regional infrastructure providers. The central city upgrade will contribute to a more vibrant and thriving central city environment attracting more people to live, work, study and visit Dunedin. The central city upgrades aim to create retail prosperity in the CBD. The city to waterfront connection will improve accessibility and amenity in the waterfront area and contribute to a more vibrant and thriving city environment. The series of major centres upgrades will increase amenity and investment in our major town centres outside of the CBD. The tertiary precinct upgrade will improve the amenity and vibrancy of the streets around Dunedin's tertiary institutions and encourage and support active and public transport use.
A creative city with a rich and diverse arts and culture scene	The Art and Creativity in Infrastructure Policy will embed art and creativity into infrastructure projects.
A connected city with a safe, accessible and low-carbon transport system	The Peninsula connection improvements will improve safety, resilience and walking and cycling options. Further development of Dunedin's urban cycle ways will encourage cycling uptake and close the gaps in the Dunedin network for cycling. The city to waterfront connection will improve accessibility and amenity in the waterfront area and contribute to a more vibrant and thriving city environment. Ongoing annual programme of renewals will maintain existing levels of service across the transport network, including pavement reseals, pavement rehabilitations, seawalls, retaining walls, bridges, footpaths and kerb and channels. The minor safety improvements programme will improve safety and accessibility. The series of major centres upgrades will increase the level of service in our major town centres outside of the CBD.

4. WHERE ARE WE NOW? DUNEDIN'S WATER AND TRANSPORT INFRASTRUCTURE

This section covers the current condition and situation of the city's 3 waters and transport infrastructure. The DCC's assumptions on asset lives are attached as Appendix A.

4.1. 3 Waters

As one of the country's earliest metropolitan centres, Dunedin's 3 waters infrastructure pre-dates that of other centres. Some assets are older than 150 years and still operate as essential pieces of the network today. As Dunedin has grown, so have the 3 waters networks, resulting in widely distributed networks with a broad range of pipe materials, diameters and construction methods. As areas were connected to the different networks at different times, there can be wide variation in age, condition and capacity of assets in the same location. As a result of age, many assets need repair and/or replacement.

4.1.1. Water supply

Today, most of the water supply needed for the city comes from the Deep Stream and Deep Creek catchments. This is then treated at Dunedin's two major treatment plants - Mount Grand and Southern - before being distributed for public consumption. In addition, the DCC operates four smaller community water treatment plants: Waikouaiti, Outram, West Taieri and Port Chalmers. The Port Chalmers water treatment plant is only operated during periods of high demand, such as cruise ship season, to supplement the main metropolitan supply.

4.1.2. Wastewater

Dunedin's Main Interceptor Sewer was constructed between 1903 and 1908. This sewer, which has gradually increased in size, is still in use today, running from the Dunedin Railway Station to the Tahuna wastewater treatment plant. It takes wastewater from a large part of the Dunedin metropolitan area, the West Harbour catchment as far as Port Chalmers and the East Harbour as far as Portobello. The second largest wastewater system collates flows from the north-west and west of the city, Brighton and Waldronville and is treated at Green Island wastewater treatment plant. In addition, the DCC operates wastewater networks and treatment plants at Mosgiel, Middlemarch, Warrington, Seacliff and Waikouaiti/Karitane.

As time has progressed, and community expectations around wastewater discharges have changed, treatment plants have been consolidated and upgraded. The most recent major upgrade, completed in 2016, was to the Tahuna wastewater treatment plant, with minor upgrades underway at Seacliff wastewater treatment plant.

4.1.3. Stormwater

Stormwater infrastructure in Dunedin consists of public and privately owned open and piped watercourses, the DCC owned reticulated stormwater networks and Otago Regional Council owned or managed drainage schemes, streams and river systems. As Dunedin has grown, the stormwater network has grown with it.

Increases in the scale and frequency of rainfall events and growing public expectations about the quality of stormwater discharges to the environment are significant challenges to be met by all those who own or manage stormwater infrastructure.

Due to the complex nature of stormwater systems, addressing stormwater issues can be expensive, require specialist skills and a catchment-based approach with the coordination of many individual watercourse owners. The current requirement for private infrastructure owners to maintain their watercourses does not always result in the best overall outcomes for the city and may be better managed by one entity. However, the DCC's drainage rates do not currently make any allowance for maintaining infrastructure identified as privately owned.

4.2. Transport

Dunedin's transport network is relatively complex in comparison to most provincial centres. It is made up of a diverse range of assets and has an equally high mix of urban and rural roads within a varied topography. Footpaths are generally in poorer condition than the roads. Maintaining

transport levels of service is supported by the funding arrangements with Waka Kotahi year on year.

Resilience in the road network is an ongoing issue as many roads across the city are at risk from flooding, erosion and king tides. Heavy vehicle movements continue to put pressure on road pavements and deterioration of roading assets is being observed. This is particularly evident on roads from the south to the Port and the inner harbour. Certain routes across Dunedin are seeing congestion in short commuter peak travel windows.

In addition, the city suffers from the social cost of road trauma with reasonably high crash statistics across the city. Crash statistics are particularly high between motor vehicles and vulnerable road users such as pedestrians. Gaps exist in the strategic cycling network with approximately 50% of the network currently implemented across the city.

5. MANAGING DUNEDIN'S WATER AND TRANSPORT INFRASTRUCTURE

Today, Dunedin's water and transport infrastructure are worth $6.8 billion (gross asset replacement cost).

5.1. 3 Waters

Several factors are considered when managing Dunedin's water infrastructure:

- asset age, condition and performance[1]
- changing weather patterns (such as rainfall intensity and drought frequency)
- changes to population or land use
- changes to legislative and regulatory requirements, such as drinking water standards and national policy statements.

When infrastructure assets are not performing as required, or are unable to meet new standards, capital projects are scoped so deficiencies can be addressed. These projects are prioritised based on the criticality of the assets and the likely impact of any loss of service and programmed into 3 waters budgets. Strategic Planning is currently underway for water and wastewater, and will soon commence for stormwater, in the form of system planning. For wastewater it considers from the source (e.g. residential, commercial and industrial customers) to disposal (e.g. the ocean) and for drinking water it considers from the catchment (e.g. a river) to the customer's tap. Long-term optimal solutions can be developed by looking holistically at factors such as capacity, performance, growth, new standards, overflows, and storage.

Funding for infrastructure is categorised in two ways. Renewals funding is targeted at maintaining existing service levels, whereas new capital funding can both maintain existing service levels (where current assets can no longer achieve required outputs e.g. raw water quality changes require increased treatment to maintain standards) or be targeted at increasing levels of service in order to meet modern standards. These standards include new consent conditions for water take and discharge permits, changes to the drinking water standards, health and safety improvements, increasing capacity to meet additional demand and improvements to operational efficiency.

Both renewals funding and new capital funding are often used together on specific projects. The renewal of an undersized pipe will use renewal funding in the 'like for like' replacement portion of the works, while an incremental change in pipe diameter is considered 'new capital'.

5.2. Transport

Several factors are considered when managing Dunedin's transport infrastructure:

- asset age, condition and performance
- changes to population and land use
- changes to GPS on land transport
- maintenance to repair defects and preserve remaining life.

Most of the transport network's maintenance, renewal and new capital programmes are subsidised by Waka Kotahi at a funding assistance rate of 53% - 51%. Every year a funding bid is submitted to

[1] 3 waters level of service measures are set out in the 10-year plan.

Waka Kotahi for co-funding the transport network programmes. In recent years construction prices have increased significantly, creating financial pressures in delivering renewal and maintenance programmes with limited Waka Kotahi funding and corresponding DCC share.

The Dunedin Integrated Transport Strategy 2013 is an overarching strategy covering the whole of Dunedin's transport system and is designed to enable the DCC to review its investment priorities and ensure they are relevant to the current and future needs of Dunedin. It identifies and outlines areas of focus developed from several transport challenges and issues that Dunedin faces. The Strategy focuses on transport choice whilst maintaining the levels of service for road users. A corresponding asset management plan determines a condition-based asset maintenance and renewal programme that sets the level of investment required to maintain the existing transport infrastructure across Dunedin City.

5.3. Assessing the condition of Dunedin's network infrastructure

How does the DCC assess the condition of water supply assets?

Methods for assessing the condition of the DCC's 3 waters infrastructure vary by asset type but typically involve visual or physical inspection. Water pipes are more difficult to assess due to the continual flow of water through them. Instead, small sections of pipe must be taken out for inspection. The condition of treatment plants is routinely inspected by DCC staff to ensure assets are appropriately maintained. Specialist engineering advice is used as required. The DCC 3 Waters Group is currently undertaking a series of improvements to water treatment asset condition assessments.

5.3.1. Summary of water supply assets

Asset condition

- Significant number of assets in poor condition
- Some assets in poor condition
- No or few assets in poor condition

Asset capacity

- Significant capacity issues currently experienced
- Capacity issues in some areas and/or capacity issues can be expected
- No or minor capacity issues and none are currently expected

Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
Metropolitan Water Systems including the Dunedin City (Mount Grand, Southern and Port Chalmers) and Mosgiel supplies						
Raw Water Supply	Bore pumps and intake structures	Extract raw water from surface sources - from Deep Creek, Deep Stream (supplying Mount Grand Treatment Plant), Silverstream and tributaries (supplying Southern Treatment Plant), Cedar Farm Creek and Brosnahan's Creek (supplying the Port Chalmers Treatment Plant).	18	3,917	Intakes and pumps in active service are maintained in good condition.	Current risks in supply demand within the network are planned for remedial action within the short – medium term, while longer-term risks will be addressed as part of water system planning to inform the 2024-34 10 year plan. The recent refurbishment of the Ross Creek Reservoir is one of several projects aimed at increasing the security of raw water supply to the Dunedin metropolitan area. Existing capacity, while good, is susceptible to drought and the failure of critical assets. The ability to supply water in such events will be improved when the Ross Creek Reservoir is able to supply Mount Grand Water Treatment Plant via
	Raw water pipelines and pump stations	Take untreated water from source to treatment plants. This includes the Taieri River pipe bridge carrying water from Deep Creek and Deep Stream,	162km pipelines one pipe bridge two pump stations	186,214	The majority of the raw water pipelines are in good condition, however sections of the Deep Stream and Deep Creek pipelines upstream of the Taieri River pipe bridge	

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Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
		and the Puddle Alley and Silverstream pump stations, pushing water from the Taieri bores and Silverstream respectively, up to the Southern Reservoir.			are in poor condition, with specific concerns relating to the joints between sections of pipe. Enabling supply from the Ross Creek Reservoir will make these pipelines less critical, enabling the renewal of the pipelines to be pushed out while various long-term options are considered. Repairs to the pipelines are made as required.	the building of a new supply pipeline.
	Raw Water Reservoirs	Raw water storage for supply to treatment plants (dams), including Port Chalmers (Cedar Farm and Rossville), Mount Grand and Southern reservoirs as 'live' supplies, with Ross Creek and Sullivan's Dam not currently live supplies.	Six	19,705	Raw water reservoirs are managed in accordance with the Dam Safety Assurance Programme (DSAP) overseen by the consenting authority. All raw water reservoirs are in good condition, however ongoing work will be planned as required by the DSAP.	

Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
Water Treatment	Treatment Plants	Plant and equipment used to screen, filter, pH adjust, and disinfect water to meet the Drinking Water Standards New Zealand (DWSNZ), and plant and equipment used to monitor and control individual processes.	Three plants (Mt Grand, Southern and Port Chalmers)	76,439	Plant and equipment at the water treatment plants are maintained in good condition to ensure water produced meets drinking water standards. Recent condition assessments have produced a plan of renewals over the period of the plan to ensure the treatment plants can continue to supply drinking water which meets national standards.	Recent process capacity assessments showed most of the water treatment plants can cope with current and future demand. Where future demand risks have been identified, system planning will produce the best practicable option, which may include plant rationalisation. The Port Chalmers Treatment Plant runs seasonally (October to April), when peak demand from cruise ships is unable to be met by the Dunedin city supply alone. This is an expensive water supply arrangement. Rationalisation of this supply is planned on completion of feasibility studies, which is expected to result in water supply from Mount Grand Water Treatment Plant and a new supply pipeline.
Treated Water Distribution	Treated Water Pipelines and Pump Stations	Transport water from treatment plants around the network, with pump stations boosting water to areas of the network unable to be reached by gravity feed alone. Includes the 25km treated water pipeline connecting the northern water schemes of Waitati, Warrington and Seacliff to the Dunedin City water supply.	989 km pipelines 18 pump stations 22,157 minor point assets (valves, hydrants and meters)	339,989	As with some other 3 waters networks, areas of the network are in excellent condition while other areas are in poor or very poor condition, which affects flow and pressure to customers. Ongoing renewals are targeted at areas of very poor condition. Renewals of flow meters have been stepped up since 2010 but many are still outside their expected lives and are likely to be in poor condition for assets of this type.	Capacity in the treated water network is defined as being where the flow rate of water supplied by an individual fire hydrant within the network meets the requirements of the NZ Fire Service Code of Practice for Fire Fighting Water Supplies (Standards NZ reference NZ PAS 4509:2008). For the Dunedin City and Mosgiel water supplies, some of hydrants across the city are non-compliant with the standard. This generally relates to water mains installed before 1960, where the 100mm diameter pipes were appropriately

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Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
	Treated Water Reservoirs	Treated water storage within the network to meet peak demand and ensure supply in the event of network outages.	44	32,498	Regular maintenance means that most city reservoirs are in good condition. Some reservoirs will require replacement within 50 years and have been accounted for as part of the forecast renewals.	sized at the time of installation but are undersized for today's demand. In peak summer demand, some pipelines do not meet sufficient capacity and so these are targeted for replacement. A programme of renewals and new capital works targeting these areas is underway, with targeted pipeline renewals as the next package of works, aimed at improving pressure management and fire flows.
	Service connections	Service lines, tobies, manifolds and backflows preventers connecting private properties to the water network in a safe manner.	44,758	194,432	A significant proportion of service connections in the metropolitan area are older style 'toby' connections. These will be replaced with modern manifold connections when capital works are being undertaken in an area.	

Asset group and type	Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
Rural Water Supplies					
Waikouaiti/ Karitane/Merton	Extract water from Waikouaiti River, treat to drinking water standards and pump or gravity feed to properties in the Waikouaiti urban water supply area, and the Karitane and Merton rural water supply areas.	one plant 96 km pipelines three pump stations 2,638 minor point assets (valves, hydrants and meters)	68,928	The Waikouaiti water treatment plant is in generally good condition though some assets with shorter lifespans (filter membranes) are nearing the end of their useful lives and in correspondingly average to poor condition. There is a scheme which will extend into the early years of the plan which renews these assets. Condition of water mains in Karitane is of concern with a high number of breaks per kilometre being an indicator of poor asset condition. This will be addressed through the current renewal work in this area.	There are identified capacity issues in the Waikouaiti and Karitane treated water networks. Recent capital works have been completed in Waikouaiti to address some of these issues; further works are programmed within the Karitane township and from the Waikouaiti Reservoir to the Waikouaiti township in the near future to improve capacity. There are still known capacity issues in the Edinburgh Street (Waikouaiti) area, which will not be completely alleviated by the recent and planned upgrade works. Further work will be programmed in year 7-10 of the strategy to improve capacity in this area. The Merton supply is a restricted rural scheme with enough capacity for the foreseeable future. Upgrades to the Waikouaiti Water Treatment Plant will improve taste and aesthetics.
Outram	Extract water using a bore pump located adjacent to the Taieri River, treat to meet drinking water standards, and gravity fed to properties within the Outram water supply zone.	One plant 17 km pipelines one pump station 961 minor point assets (valves, hydrants and meters)	20,012	Condition within the Outram network is generally good to excellent. Recent condition assessments of the treatment plant have produced a plan of renewals over the period of the plan to ensure the plant can continue to supply drinking water which meets national standards.	Recent capacity assessments have shown that work is needed to meet future demand within the treatment plant. The strategic investment plan for longer term upgrades are part of the water system planning.

Asset group and type	Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
West Taieri Rural Scheme (Restricted)	Water extracted from the Waipori River, treated to meet drinking water standards, and pumped to Dunedin Airport and privately-owned tanks within the West Taieri water supply zone.	One plant 135 km pipelines five pump stations 392 minor point assets (valves, hydrants and meters)	19,496	The West Taieri water treatment plant is in generally good condition, although some shorter lifespan assets are nearing the end of their useful lives and are in correspondingly average to poor condition. The piped network is also generally in good condition with a relatively small number of breaks per kilometre.	There is sufficient capacity within the West Taieri Rural Scheme to meet demand for the foreseeable future.

5.4. How does the DCC assess the condition of wastewater assets?

Visual inspection methods, such as closed-circuit television (CCTV) filming, are used to assess the condition of wastewater pipes. The results from these CCTV inspections are used to determine if assets need to be repaired or replaced.

DCC staff undertake visual and physical inspections of the condition of treatment plants and pump stations to ensure assets are appropriately maintained. Specialist engineering advice is used as required. Data on material /unit type, age, condition, performance, location, capacity, criticality and remaining life is collected for 3 waters assets. Confidence in the condition information about the DCC's wastewater network and treatment assets ranges varies. The DCC 3 Waters Group is currently undertaking a series of improvements to wastewater treatment asset condition assessments.

5.4.1. Summary of wastewater assets

Asset condition

- Significant number of assets in poor condition
- Some assets in poor condition
- No or few assets in poor condition

Asset capacity

- Significant capacity issues currently experienced
- Capacity issues in some areas and/or capacity issues can be expected
- No or minor capacity issues and none are currently expected

Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
Metropolitan Wastewater Systems	Tahuna catchment					
	Wastewater Network	Transport untreated wastewater from customers' point of discharge to Tahuna wastewater treatment plant.	618 km pipelines (including 4.5 km main interceptor sewer) 39 pump stations 14,176 network access points (manholes, lampholes etc.)	1,006,879	With a high proportion of early 20th century pipework, much of the network feeding the Tahuna WASTEWATER TREATMENT PLANT is in poor condition. A large portion of the network is older earthenware pipe with more joints than modern equivalents. As they deteriorate, these joints allow considerable volumes of water to infiltrate into the network, exceeding network capacity during heavy rainfall events and resulting in wastewater overflows downstream. Pipeline renewals are focussed on areas of high inflow and infiltration.	High intensity rainfall events can lead to inflow and infiltration entering the network with wastewater systems becoming overwhelmed and overflowing, while at the treatment plants wash out can occur which severely disrupts treatment processes. Incapacities upstream in the Tahuna wastewater catchment overflow into stormwater catchments flowing into the South Dunedin area, further exacerbating flooding issues in the area. The performance and possible solutions to wet weather flow management will continue, by

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Asset group and type	Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
					undertaking flow monitoring and incorporating the ground water model information. The best practicable solutions will be assessed for cost and their ability to deal with growth, resilience and carbon impacts.
Wastewater Treatment and discharge to ocean outfall	Treat wastewater to meet discharge consent conditions.	One treatment plant 1.1 km outfall pipe off Middle Beach	178,208	The upgrade of the Tahuna wastewater treatment plant means most of the plant is in good to excellent condition. Some sections or the original building will require some further remedial works in the short to medium term. The condition of the rising mains from the Musselburgh pump station to Tahuna wastewater treatment plant are poor, with investigations into options starting in 2020 to inform remedial action in the short-medium term.	The recent process capacity assessments have shown the Metropolitan treatment plants have capacity to treat to current environmental standards now and in the future, but small-scale renewals are needed to continue capacity as the assets age. As with most city plants, wet weather flows can overwhelm the system and solutions will be developed as part of the wastewater system planning.
Green Island catchment (excluding Mosgiel)					
Wastewater Network	Transport untreated wastewater from customers' point of discharge to Green Island wastewater treatment plants	121 km pipelines 26 pump stations 2,037 network access points (e.g. manholes lampholes.)	209,703	The Green Island network is generally in good condition given its age, with few inflow and infiltration problems in the catchment.	Some treatment capacity is available within the Green Island network, however wet weather flows can overwhelm the system. Solutions will be developed as part of system planning.
Wastewater Treatment and	Treat wastewater to meet	one treatment plant	47,556	The Green Island wastewater treatment plant is in average condition given its age. Smaller scale	The recent process capacity assessments have shown the Metropolitan treatment plants have

Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
	discharge to ocean outfall.	discharge consent conditions.	850m outfall off coast at Waldronville		renewals and process changes are needed to continue to meet levels of service and implement short-term wet weather flow management operational processes.	capacity to treat to current environmental standards now and in the future, but small-scale renewals are needed to continue capacity as the assets age. As with most city plants, wet weather flows can overwhelm the system and solutions will be developed as part of the wastewater system planning project.
	Mosgiel catchment (includes Allanton)					
	Wastewater Network	Transport untreated wastewater from customers' point of discharge to wastewater treatment plants	113km pipelines six pump stations 2,226 network access points (manholes, lampholes etc.)	179,070	Some areas of the Mosgiel wastewater network are in excellent condition, while other areas are in poor or very poor condition. While the overall network is a similar age to the Green Island network, the way in which the Mosgiel network was constructed means that it experiences significantly higher infiltration during rainfall events. During heavy rainfall events groundwater levels become elevated which increases the amount of groundwater infiltrating into the wastewater network.	There are significant incapacities in the network servicing the Mosgiel wastewater treatment plant catchment. High levels of inflow and infiltration result in wastewater overflows to roads, homes and properties during heavy rainfall events. Preliminary investigative work has shown that large-scale pipeline and pump station upgrades are needed to reduce the risk of flooding.
	Wastewater Treatment and transfer to Green Island	Treat wastewater to remove solids and organic matter, transfer to Green Island Wastewater for UV treatment	one treatment plant 20 km transfer line to Green Island	56,130	The Mosgiel wastewater treatment plant has some mechanical, electrical and civil plant items in poor condition resulting in increased operations and maintenance costs. Renewals will be stepped up to improve overall plant condition to maintain service while awaiting long term options from system planning.	While there is sufficient capacity within the Mosgiel wastewater treatment plant for dry weather flows, the pipeline that transfers effluent from the Mosgiel wastewater treatment plant for final treatment at the Green Island wastewater treatment plant is at capacity during heavy rainfall events, resulting in a bottleneck at the treatment plant. Investigative

Asset group and type		Purpose and description	Number/ Length	Value $000	Asset condition	Asset capacity
		prior to discharge.				work is underway to determine the most appropriate solution long term.
Rural Wastewater Schemes	Waikouaiti (including Karitane), Seacliff, Warrington and Middlemarch catchments					
	Wastewater Network	Transport untreated wastewater from customers' point of discharge to wastewater treatment plants	43 km pipelines 10 pump stations	58,180	Rural wastewater network assets vary between 'very good' and 'poor' condition. The Karitane portion of the network is in very good condition having been installed as an entirely new network in 1983. Renewal of older assets is incorporated as part of forecast renewals as assets reach the end of their useful lives.	There is incapacity in the Waikouaiti/Karitane network which show up as minor wastewater overflows at the Karitane No. 1 pump station during heavy rainfall events. There are no known network capacity issues in Seacliff or Warrington. There are known capacity issues in Middlemarch due to inflow and infiltration issues evidenced by minor network overflows in wet weather, work is underway to understand the best 'whole of system' solution for the area.
	Wastewater Treatment and discharge to land	Treat wastewater to meet discharge consent conditions.	four treatment plants and associated disposal areas	4,497	The rural wastewater treatment plants are generally in good condition, with renewals planned over the next 10 years as discharge consents expire. Treatment options will be considered as renewals are planned, with Seacliff being the first of the northern wastewater treatment plants programmed for renewal.	There is enough capacity within the existing wastewater treatment plants for current and forecast flows in the short term. The plants will be upgraded over the next 10 years prior to their discharge consents expiring, with any forecast capacity changes accounted for as the upgrades are planned.

5.5. How does the DCC assess the condition of stormwater assets?

The condition of stormwater pipes is primarily assessed through CCTV filming. The results from CCTV inspections are used to determine whether assets need repair or replacement, and when this needs to happen. The condition of pump station assets is routinely inspected by DCC staff to ensure assets are appropriately maintained. Specialist engineering advice is used as required. Data on material /unit type, age, condition, performance, location, capacity, criticality and remaining life is collected for 3 waters assets. The DCC 3 Waters Group is currently planning to undertake a series of improvements to stormwater asset condition assessments.

5.5.1. Summary of stormwater assets

Asset condition

- Significant number of assets in poor condition
- Some assets in poor condition
- No or few assets in poor condition

Asset capacity

- Significant capacity issues currently experienced
- Capacity issues in some areas and/or capacity issues can be expected
- No or minor capacity issues and none are currently expected

Area	Asset type	Purpose/ description	Number/ Length	Value $000	Asset condition	Asset capacity
South Dunedin (includes the individual stormwater catchments of Orari Street, St Clair, Portsmouth Drive, and South Dunedin)	Pipe network	Transport stormwater water to pump stations or outlets	97km pipelines 2,454 network access points (manholes, lampholes etc.)	307,757	Condition of the pipe network in the wider South Dunedin stormwater catchment area varies widely based on the age, diameter and construction materials of individual pipes. Older large diameter pipes are generally in sound condition, due to the construction methods of the era.	In heavy rainfall events the stormwater network in South Dunedin can become overwhelmed, resulting in flooding of roads, homes and properties. This is exacerbated by areas of high ground water, particularly around high tide. Hydraulic modelling indicates the stormwater network is performing below the expected level of service. The DCC is working with the ORC and GNS Science to develop and incorporate groundwater into the hydraulic model for the area. Significant capital works are proposed to bring these assets up to currently accepted design standards.
	Pump stations	Pump stormwater during times of significant inflow	three pump stations	4,773	The majority of pump stations are in average condition with some requiring attention to wet wells, pipes and pumps.	Pump station capacity is generally good; issues relate to incapacity within the wider network.

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Mosgiel, East Taieri and Outram	Pipes	Transport stormwater water to pump stations or outlets	52km pipelines 1,023 network access points (manholes, lampholes etc.)	132,635		Condition of the pipe network in the Mosgiel, East Taieri and Outram area varies widely based on the diameter and construction materials of individual pipes.		Mosgiel is a very sensitive stormwater catchment; the area is the flood plain for the Taieri River and Silverstream and is underlain by the extensive Taieri Aquifer which is responsive to river levels. The DCC stormwater network discharges into the Taieri River, Silverstream and other tributaries, and when those waterways are high stormwater discharge is impeded. Mosgiel frequently experiences catchment-wide nuisance flooding in small rainfall events. Deep flooding and property flooding are experienced in some areas. Capital works are proposed after modelling improvements have assessed the best practicable option to bring areas of the network with capacity issues up to currently accepted design standards.
	Pump stations	Pump stormwater during times of significant inflow	five pump stations	1,331		Many pump stations are in average condition with some requiring attention to wet wells, pipes and pumps.		Pump station capacity is generally fair; issues have tended to be with incapacity within the wider network. Capital works are planned to enhance pump station performance in conjunction with pipe improvements above.
Centre City (includes the individual catchments of Halsey Street, Mason Street, Kitchener Street and Ravensbourne Road) Outlying areas: Port Chalmers, Brighton/Waldronville, Green Island, Waikouaiti/ Karitane and Warrington.	Pipes	Transport stormwater water to pump stations or outlets	233km 7,406 network access points (manholes, lampholes etc.)	519,432		Condition of the pipe network in the Centre City area varies widely based on the age, diameter and construction materials of individual pipes. Older large diameter pipes are mostly in sound condition, due to the construction methods of the era. Capital works are proposed via the Central City, Tertiary Precinct and general renewals projects.		Capacity issues exist in small discrete areas of the network. These issues will be addressed through focused capital works. The DCC is working with the ORC and GNS Science to develop and incorporate a groundwater model for the central city area. Northern area – there are limited networks installed in the townships of Waikouaiti, Karitane and Warrington. Both – stormwater system planning will be developed in the early years of this 10-year plan and will provide a basis for future investment

	Pump stations	Pump stormwater during times of significant inflow	three pump stations	1,133		Many pump stations are in good condition with some attention required on specific wet wells, pipes and pumps. The pump station renewals projects target these issues.		Pump station capacity is generally good.

5.6. How does the DCC assess the condition of transport assets?

Assessing the condition of above ground infrastructure like roads, cycleways and footpaths is more straightforward than assessing the condition of pipes and other underground infrastructure. The transport team uses a rolling programme of condition assessments to inform its maintenance and renewals decisions which translates into the Asset Management plan which enables co-funding with Waka Kotahi. The level of confidence in the knowledge of the DCC's transport assets is high.

5.6.1. Summary of transport assets

Asset condition

- Significant number of assets in poor condition
- Some assets in poor condition
- No or few assets in poor condition

Asset capacity

- Significant capacity issues currently experienced
- Capacity issues in some areas and/or capacity issues can be expected
- No or minor capacity issues and none are currently expected

Asset group and type	Number/ Length	Value $000	Asset condition	Asset capacity
Paved roads	1,071 km	824,880	Road pavements are in decline. Most of Dunedin's sealed pavements have a theoretical useful life ranging from 60 – 100 years. 57% of pavements are aged 60 years and over. Based on condition assessment road condition is in decline. Smooth travel exposure for urban roads has sat below target for the past 11 years and has slowly declined.	In capacity terms the Dunedin urban network is experiencing congestion at certain parts of the day. With the hospital re-build coming congestion will increase so intervention such as the Harbour Arterial bypass are required. In addition, offering Transport choices will be necessary to avoid congestion in the future.
Unsealed gravel roads	693km	28,284	Gravel roads are maintained in a good condition; however, dust suppression methods have changed meaning potentially gravel roads will see higher volumes of dust.	In capacity terms the Dunedin transport network is fit for purpose and can cope with traffic demands.
Footpaths & Cycleways	976 km	177,700	There are a high percentage of footpaths that have exceeded their life, or are nearing the end of their economic life. Asphalt footpaths, that represent 76% of footpaths, have approximately 23% of the network at the end or nearing the end of their expected economic life. Concrete footpaths, that make up 6% of footpaths, have approximately 48% exceeding their expected economic life. Slurry seals, that represent 9% of footpaths, has 84% exceeding or nearing the end of their expected economic life. In the past 3 years 18% of the network have shown signs of deteriorating with a higher proportion moving to average condition from good to very good.	In capacity terms Dunedin's footpaths are fit for purpose and can cope with pedestrian demands.

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Asset group and type	Number/ Length	Value $000	Asset condition	Asset capacity
Road drainage Kerbing		175,571	Kerb and channel condition are showing signs of decline. In 2019/20 6% of the network was in poor to very poor condition and without sustained investment this is expected to rise as more reach the end of their economic lives.	Good
Signs, road markings and signals	20,403 signs 79 signalled intersections	10,721	Signs, road markings and signals are maintained to a good condition.	Good
Street lights	13,656 streetlights, 5 base stations, 3,313 tele-cells	27,900	LED rollout will be complete by the middle of 2021	Good
Bridges and large culverts	243 bridges 61 large culverts	100,217	Bridges are in largely good condition.	Good
Culverts and mud-tanks	5,734 culverts 8,331 mud-tanks	72,127	Culverts have 5% in poor condition, 35% in average condition, 36% in good condition and 20% in very good condition. 4% are awaiting condition rating. The expected age for mud-tanks is 80 years. 74% are aged between 70-79 years thus nearing the end of their estimated lives, however in terms of their structural condition (which is largely unknown) as long as mud-tanks are adequately maintained it would be expected they would live well beyond their estimated lives.	Given changing weather patterns, emphasis has been placed on ensuring culverts and mud-tanks are maintained to a high standard. Capacity may become an issue in the face of significant adverse conditions.
Seawalls	41 km	35,480	Seawalls have 6% in very poor condition, 13% in poor condition, 23% in average condition, 39% in good condition and 19% in very good condition.	Isolated areas of the network are compromised during significant weather events and will require future investment.
Retaining walls	31 km	27,832	Many of Dunedin's retaining walls were made many years ago and do not meet the current design requirements. Many provide resistance to surface erosion, rain and weathering but are not able to retain saturated retained material. As such many may be at risk of failure during high rainfall events and are routinely inspected and monitored for movement and condition.	Given changing weather patterns and the age of some retaining walls capacity may become an issue.
Minor structures		9,950	Minor structures are maintained regularly and are in good condition.	Good

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6. SIGNIFICANT INFRASTRUCTURE ISSUES AND OPPORTUNITIES FOR DUNEDIN

This section sets out the key infrastructure challenges and opportunities for Dunedin and the main options and implications for managing these over the next 50 years.

6.1. Regulatory, legislative and service delivery changes

The Government is undertaking a substantial change programme that is expected to impact Dunedin's infrastructure services in the coming years. This includes reform of 3 waters regulatory and service delivery arrangements, freshwater reforms, review of the resource management system and changes to the way we provide for and manage urban growth. In addition, the Government Policy Statement on land transport, which sets out the Government's strategic direction for the land transport system over the next 10 years, is issued every three years.

6.1.1. 3 Waters regulatory and service delivery reform

The Government's Inquiry into the Havelock North water supply contamination event of 2016 recommended a suite of changes to improve the safety of drinking water in New Zealand. Three key issues were identified – regulatory weakness, funding and financing challenges, and capability and capacity challenges.

In 2017, the Government established the Three Waters Review. The Review acknowledges multiple challenges facing 3 water services, including funding pressures, ageing infrastructure, rising environmental standards, climate change, seasonal pressure from tourism, and an industry-wide shortage of skilled and qualified people. From the outset, the Government made it clear that it would explore a variety of possible interventions to lift the performance of these services, including changes to both regulatory and service delivery arrangements.

The Government has begun implementing a package of 3 waters regulatory reforms designed to:

- improve national-level leadership, oversight, and support relating to the 3 waters through the creation of Taumata Arowai, the new, dedicated water services regulator
- significantly strengthen compliance monitoring and enforcement relating to drinking water regulation
- manage risks to drinking water safety and ensure sources of drinking water are protected
- improve the environmental performance and transparency of wastewater and stormwater networks.

In July 2020, the Government introduced the Water Services Bill to Parliament. The Bill, if passed, would implement system-wide reforms to the regulation of drinking water and source water, as well as introducing new national-level reporting and monitoring requirements for wastewater and stormwater. Parliament also passed legislation establishing Taumata Arowai as a new Crown entity.

Taumata Arowai is currently being built and will take up its regulatory responsibilities after Parliament passes the Water Services Bill. This is expected to occur in the second half of 2021. From that point, Taumata Arowai will oversee, administer and enforce the regulatory system for drinking water and perform national-level oversight and advisory functions relating to wastewater and stormwater. Regional councils will still regulate wastewater and stormwater discharges to the environment under the Resource Management Act 1991.

Further regulatory reforms may include the introduction of national environmental standards for wastewater discharges and overflows.

In addition to regulatory reforms, the Government has launched a suite of 3 waters service delivery reform proposals. The Government intends to transfer 3 waters service delivery functions from councils to new, public multi-regional water entities. Participation in the service delivery reform programme is voluntary, but the Government has made its preference for full participation by councils clear. In July 2020, the Government provided an indicative timeline for a three stage service delivery reform work programme, with each stage accompanied by a tranche of stimulus funding, and the DCC agreed to 'opt in' to the first stage in August 2020. Councils will be asked to make a second decision on participation in late-2021. All councils will be included in one of the new

proposed water services entities by default but will have the option to decide not to continue to participate. According to an updated reform timeline published in December 2020, the proposed water services entities would commence operation in about 2023.

Through voluntary participation in stage 1, the DCC received Tranche 1 stimulus funding totalling $15.84 million in November 2020 to be spent by 31 March 2022. The purpose of the funding is to support the Government's reform objectives, stimulate economic recovery through job creation and increase and/or accelerate investment in 3 waters infrastructure.

Major decision: participation in Government 3 waters service delivery reform programme

The DCC agreed to 'opt in' to the first stage of the Government's 3 waters service delivery reform programme in August 2020.

In December 2020, the Government decided that participation in the service delivery reform programme would continue to be voluntary, and that councils would be asked to make a second decision on participation in late-2021. All councils will be included in one of the new water services entities by default but will have the option to decide not to continue to participate.

The Government will promote an amendment to the Local Government Act 2002 that, if passed, will enable councils to transfer ownership of 3 waters assets and services to new entities. The proposed amendment will also provide a fit-for-purpose consultation process that sets out how local government will engage with communities and iwi/Māori about the reform proposals and make decisions.

This decision is only for service delivery reform. Council is unable to opt out of the regulatory elements of 3 waters reform.

6.1.2. Essential Freshwater Programme

The Government has also introduced changes to freshwater regulation through the Essential Freshwater Programme. The Essential Freshwater Programme aims to:

- Stop further degradation of New Zealand's freshwater
- Start making immediate improvements so water quality improves within five years
- Reverse past damage to bring New Zealand's waterways and ecosystems to a healthy state within a generation.

There are overlaps between the Essential Freshwater Programme and the Three Waters Review, which relate to the environmental regulation of stormwater and wastewater discharges and protection of drinking water sources.

The National Policy Statement for Freshwater Management 2020 (NPS-FM 2020) came into effect in September 2020. The NPS-FM 2020 requires regional councils to manage freshwater in a way that gives effect to Te Mana o te Wai, a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment and the mauri of the water itself. Regional councils are required to notify new or amended regional plans that give effect to the NPS-FM by 31 December 2024.

The Essential Freshwater Programme has also included introduction of new National Environmental Standards for Freshwater and amendments to existing regulations for the measurement and reporting of water takes. Further regulatory changes proposed include amendments to the NES for Sources of Human Drinking Water, which would strengthen the ability of regional councils and territorial authorities to manage risks to drinking water posed by activities in drinking water catchments.

Overall, the changes made through the Essential Freshwater Programme will have significant flow-on effects for 3 waters activities, through anticipated changes to permitted activities and more

stringent requirements around discharges. Changes to engagement requirements are also expected in order to promote active tangata whenua involvement in freshwater management and decision making, and to ensure Māori freshwater values are identified and provided for.

6.1.3. Resource management system review

In 2020, an independent panel appointed by the Minister for the Environment completed a comprehensive review of New Zealand's resource management system. The review's scope included looking at the Resource Management Act 1991 and its interfaces with the Local Government Act 2002. The review recommended the current Resource Management Act be replaced with three new pieces of legislation: a Natural and Built Environments Act, a Strategic Planning Act and a Managed Retreat and Climate Change Adaptation Act. The panel's report is expected to be followed in 2021 by consultation to develop government policy and a framework to link together the key pieces of legislation.

6.1.4. Urban Growth Agenda

The Urban Growth Agenda is a Government work programme that aims to remove barriers to the supply of land and infrastructure and make room for cities to grow up and out. It has five interconnected focus areas: infrastructure funding and financing; urban planning; spatial planning; transport pricing; and legislative reform.

The National Policy Statement on Urban Development 2020 (NPS-UD 2020) came into effect on 20 August 2020. The NPS-UD contributes to the Urban Growth Agenda by addressing constraints in New Zealand's planning system to ensure it enables growth and supports well-functioning urban environments. The NPS-UD 2020 categorises Dunedin as a tier 2 urban environment, bringing into effect a range of provisions relating to the amount of development capacity required to be serviceable with infrastructure.

6.1.5. Government Policy Statement on Land Transport

The Government Policy Statement on land transport (GPS) sets the Government's priorities on land transport investment over the next 10-year period. It sets out how money is spent on activities such as public transport, state highway improvements, local roads and road safety. The GPS is reviewed and updated every three years. Changes to priorities in the GPS impact on the DCC's renewal and capital programmes.

The strategic priorities for GPS 2021 are:

- Safety – developing a transport system where no-one is killed or seriously injured
- Better Travel Options – providing people with better transport options
- Improving freight connections
- Climate Change – developing a low carbon transport system that supports emission reductions.

The Land Transport (Rail) Legislation Act 2020 (the Rail Act) came into force on 1 July 2020. The Rail Act amends the Land Transport Management Act 2003 (the LTMA) and the Land Transport Act 1998 to implement a new long-term planning and funding system for the heavy rail track network owned by KiwiRail.

The new framework brings the planning and funding of the rail network under the land transport planning and funding regime set by the LTMA. This will allow local authorities to have input into how the rail network influences the movement of freight and people in their areas.

6.1.6. Principal Options and Implications of responding to regulatory, legislative and service delivery changes: 3 waters

While a decision whether to transfer the DCC's 3 waters assets and service delivery functions to a new entity will not be made until late-2021, the DCC 3 Waters Group has initiated a series of projects that will assist with preparation for regulatory, legislative and service delivery changes. These projects focus on organisational impacts, which have potentially large financial implications for the DCC and so all options must be carefully considered. System planning is also key to preparing for reform.

Some projects have already commenced to better understand the capability and capacity of the water, wastewater and stormwater systems to meet current and future anticipated standards. This is complemented by projects to assess the impacts of wastewater and stormwater discharges on the receiving water environments and an assessment of the treatment plants to meet anticipated future treatment standards.

The 2021-31 capital programme does not fund any improvements needed to meet anticipated new regulatory standards in drinking water, wastewater or stormwater as these are not yet confirmed. However the current workplan will assess the ability of the systems to meet a range of new, enhanced standards as well as the baseline investment needed to address more urgent operational risks to maintain current service levels. Longer term strategic investment plans and enhancements needed from system planning will be incorporated into the 10 year plan 2024-34 as the outputs of system planning become available.

6.1.7. Principal options and implications to respond to 3 waters reform

The option that the DCC has decided to take is highlighted in green.

	1-10 years (2031)	10-30 years (2051)	30-50 years (2071)
Continue current 3 Waters Group work programme (status quo)	Passive approach to reform, responses to the Government's reform programme would be reactive and any change in direction would have to be manged within existing budgets and staffing levels.	High likelihood of unplanned investment needs to meet new anticipated standards, which will negatively impact other capital investment projects and could affect service levels.	Unknown as yet.
Proactive, moderate scope transition work programme	Staff are prepared for potential transition into a new water services entity, the DCC has prior understanding of the impacts of reforms and options to manage transition. Projects within the programme aim to reduce risks and ensure a favourable balance sheet position at the time of any potential asset transfer. Timeline targets the 2024-24 10-year plan and some projects may not be complete prior to a potential transition.	Medium–long term investment plans based on improved evidence; any enhancements needed have been programmed via the best practicable solution method. Impacts on rates for various service level provision available.	As previous.
Proactive, comprehensive transition work programme	As above, but with accelerated delivery of key outputs and a wider scope of improvement activities.	As above, but with additional planning and data to produce robust long-term investment plans and a thorough understanding of further planning, policy and delivery improvements needed.	As previous.

Section 6.3 (Responding to changes in demand for infrastructure) includes further detail on how the DCC will respond to changes that arise out of the Government's Urban Growth Agenda.

Section 6.4 (Public health and environmental outcomes) includes further detail on how the DCC will respond to changes arising from 3 waters regulatory reforms and the Essential Freshwater Programme.

6.2. Replacing and renewing ageing infrastructure

Dunedin has $6.8 billion in water supply, wastewater, stormwater and transport assets. The DCC's planning is increasingly focused on sound asset condition and risk assessment, planning and delivery opportunities, and long-term asset solutions that provide lasting value for residents, businesses and the environment. Asset management planning is most efficient and effective when all options, including renewals and upgrades, are considered holistically. This can identify opportunities to make more systemic improvements. Systematic improvements can extend network life while maintaining levels of service or in some cases improve levels of service where that would be of value to the community and the environment.

In the next 10 years, DCC has identified opportunities to address some infrastructure issues by investing in a combination of renewals and new capital. Projects such as the Central City Plan and Tertiary Precinct upgrades will replace ageing 3 waters and transport infrastructure and deliver public realm improvements to support a thriving tertiary and retail sector.

6.2.1. 3 Waters

The DCC 3 waters assets have a value of $5.1 billion, with assets depreciating by approximately $31.9 million annually. The renewals spend profile within this plan is a significant increase from previous plans due to the ageing asset base and the risk of not meeting stated levels of service. Budget increases year on year will enable a higher rate of renewals as the plan progresses. Annual budgets may be brought forward through the annual plan process if an increased rate of delivery is successful (as described in section 9). In order to deliver an increased programme, 3 waters has set up new delivery models and longer-term programme contracts. The stimulus funding grant received as part of the Government Three Waters Reform Programme has accelerated network renewals in year 1 of the plan. Proposed future grants are an opportunity to uplift the renewals programme further.

Assets do not always need replacing as they reach their theoretical life. Performance or condition can indicate that the asset can continue to run beyond the asset life within acceptable levels of risk (e.g. non-critical assets such as tobies) or alternative approaches to asset management may be adopted. For example, the largest and oldest of Dunedin's sewer pipes are actively monitored by CCTV to assess when renewal or replacement is needed. This allows 3 waters capital expenditure to be focussed on the renewal of assets not performing as required or unable to meet new standards, based on the criticality of those assets and the likely impact of any loss of service.

6.2.2. Transport

Dunedin's transport network is made up of a diverse range of assets. They are revalued annually and in 2020 had a total replacement value of $1.7 billion. Assets depreciate by approximately $23.4 million annually. Careful management of these assets is paramount to ensure investment is prioritised where most needed. Emphasis is therefore placed on regular inspections and ongoing condition assessments. This information helps guide renewal investment to the right place at the right time.

Many of the city's transport assets are ageing with a number nearing or having exceeded the end of their useful economic lives. When an asset reaches about 75% of its service life, deterioration will accelerate. For example, if a road pavement is left beyond this point without maintenance, the cost to renew the asset could be 4-5 times higher. Maintenance and renewal interventions are interlinked. Timely repairs can extend the time until a reseal is required on a road, resealing at the right time will extend the life of the pavement structure beneath. Routine maintenance deals with defects such as cracks and potholes before more serious problems develop.

In addition, certain renewals are considered as part of the Major Projects Programme, namely the Central City upgrade and the Tertiary Precinct. Both projects require significant transport and 3 water renewals so delivering them together creates efficiency and minimises disruption. Where

opportunities exist to combine these types of renewals activities and they are large enough in dollar value, they are delivered through the Major Projects Programme.

6.2.3. Principal options and implications of replacing and renewing ageing infrastructure

The option that the DCC has decided to take is highlighted in green.

	1-10 years (2031)	10-30 years (2051)	30-50 years (2071)
Renewals delivery continues at current rates, with no plans to increase internal or external delivery capacity	Transport and 3 waters renewals continue to be prioritised in accordance with known asset condition and performance within existing budgets, however ageing assets mean risk to service levels increase. Gravel road re-metaling, pavement rehabilitation, pavement renewals, traffic service renewals and structures have a static spend in the 10 year plan to meet asset management requirements.	The value of renewals required versus those undertaken is expected to increase until at least 2048 based on the increasing age of assets and inflation. The programme will be regularly reviewed to determine whether strategic upgrades would be preferable.	The value of renewals undertaken is expected to flat line in the long-term. The design and delivery of renewals will become more effective in maintaining service levels over the longer term, as internal and external capacity to deliver is increased.
Renewals delivery is increased over time as internal and external capacity to deliver is increased.	As above, however renewals delivery will be gradually increased year by year as internal and external delivery capacity allows. For 3 waters in particular, this will allow the renewals backlog to be partly reduced and allow strategic upgrades to be undertaken at the same time as renewals as well as planning for anticipated new standards. The bulk of asset renewals for 2021-2023 target the highest risk issues at treatment plants that impact on health and safety and levels of service. For transport, footpath renewals increase over the 10 Year Plan to improve the condition of the asset to help facilitate active modes of transport. Drainage spend over the 10 Year Plan gradually increases to reflect that the city will be under increasing pressure with increased weather events and sea level rise.	The renewals programme will be more effective in reducing maintenance and operating expenditure and reducing the risk of deteriorating service levels. Non-critical issues, or those that affect a limited number of customers, can be addressed more quickly than they otherwise would.	As above, however infrastructure risk profiles will be reduced as delivery of the renewals programme begins to outpace the rate at which asset age and condition deteriorates. Operations and maintenance costs can be reduced, and issues will become less prevalent.
Renewals delivery is accelerated in the early years of the plan, increased overall	As above, but with significant budget moved to years 1-6 to address priority renewals. Increased overall budget to allow deferred or removed projects to be completed, to reduce further reduce risks to	The renewals programme will be most effective in reducing maintenance and operating expenditure and has the lowest risk of	The value of renewals undertaken is expected to flat line at a much faster rate than in other options.

	1-10 years (2031)	10-30 years (2051)	30-50 years (2071)
renewals budgets.	service levels and health and safety. There is a high likelihood this option is not deliverable.	deteriorating service levels. Budgets in these years are not affected by any deferrals in the previous 10 years.	

6.3. Responding to changes in demand for infrastructure

Factors such as population growth, the rate and type of economic growth, the rate of growth in dwellings and where future housing developments occur will have an impact on the demand for infrastructure. An important part of good asset management is enabling sustainable growth by undertaking investments that address both service levels and future capacity at the same time, while taking opportunities to rationalise the complexity of networks that have grown over many decades. This can also reduce future repair and maintenance costs.

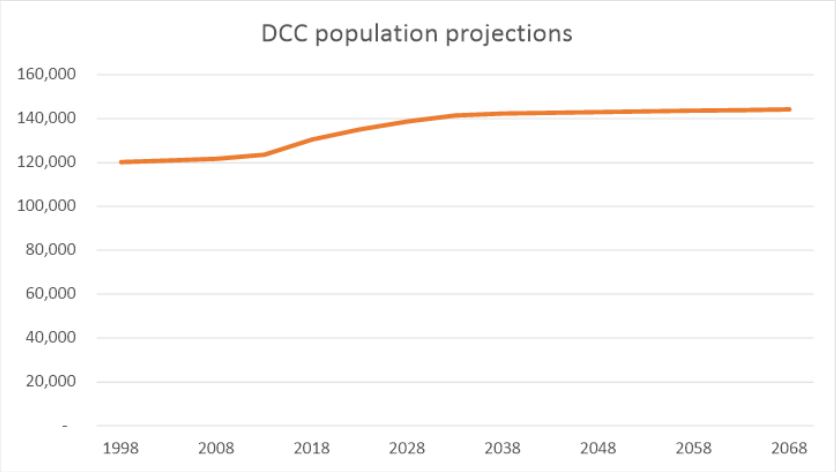
6.3.1. Population and dwelling growth

The COVID-19 pandemic has created uncertainty around Dunedin's future growth. Dunedin's population is projected to be relatively resilient in the near term, despite the impact of COVID-19. Current projections indicate the population will continue to grow sharply until 2033, reaching 141,417. From 2034 onwards, the population rate will begin to taper off returning to a medium growth scenario. By 2038, the 65 years and over demographic will be Dunedin's second largest age group (behind 25 and under).

Dunedin's dwelling numbers will experience similar trends to the Dunedin population, experiencing a sharp rate of expansion until 2038 reaching a total of 60,511 dwellings. Projections then indicate that dwelling expansion will slow. This is likely to be a result of an ageing population and the changing make up of families and households.

Variations to the 2GP will define where forecast growth might occur across Dunedin.

DCC population projections



6.3.2. Planning for growth in housing and business development

Under the National Policy Statement for Urban Development 2020, Dunedin is categorised as a tier 2 urban environment (the requirements of which are in the table below). This brings into effect a range of provisions relating to the amount of development capacity that is required to be

serviceable with infrastructure. 2GP Variation 2 comprises a number of discrete changes that will add additional housing capacity into the 2GP.

National Policy Statement on Urban Development 2020[2]

Term	Infrastructure requirements
Short-term (within the next three years)	Development capacity must have adequate existing development infrastructure to support the development of the land.
Medium-term (3 - 10 years)	Development capacity must have either: adequate existing development infrastructure to support the development of the land, or funding for adequate infrastructure to support development of the land identified in a long-term plan.
Long-term (10 - 30 years)	Development capacity must have either: adequate existing development infrastructure to support the development of the land, or funding for adequate infrastructure to support development of the land identified in a long-term plan, or development infrastructure identified in an infrastructure strategy.

6.3.3. Visitor growth

Dunedin's successful tourism marketing, which attracted large cruise ships and major stadium events, resulted in Dunedin's 'peak day' visitor numbers growing steadily from 2013 to 2018. However, with the impact of COVID-19 on tourism, 'peak day' visitor numbers are expected to drop sharply in the short term, with a recovery period between 2023-2028 as tourism markets re-establish. Pre COVID-19 levels of growth are projected by 2031, with peak day visitor numbers reaching 27,886 by 2033.

6.3.4. Economic growth

The COVID-19 pandemic has created uncertainty around Dunedin's future growth and economic performance. As detailed above, the impact on visitor numbers will have an impact on Dunedin's tourism economy.

The changing make up and rate of growth in the economy may impact on demand for network infrastructure. For example, Port Otago at Port Chalmers is New Zealand's 5th largest port (by value) and a key link in New Zealand's international supply chain as a regional hub for the export of high value products including meat, dairy, timber, fish, horticulture and other agriculturally based products. Reduced international demand for export products will reduce heavy vehicle movements accessing the port, which will put less pressure on road pavements and network congestion.

[2] https://www.mfe.govt.nz/about-national-policy-statement-urban-development

6.3.5. Principal Options and implications for responding to changes in demand for infrastructure

StatsNZ guidance issued in June 2019 recommended the use of the medium-high projections scenario for Dunedin until 2028, and the medium growth scenario from 2028 until 2043. While a pre-COVID single set of projections was developed, reflecting the most probable growth scenario, there is significant uncertainty in any projections. There is a particularly high level of uncertainty for projections over the longer term (e.g. 2028-68).

The option that the DCC has decided to take is highlighted in green.

	10-years (2031)	10-30 years (2051)	30-50 years (2071)
Plan and invest for a medium-high growth scenario over 2019-28 and a medium growth scenario from 2029 onward (target 2GP only in 2021-31)	Existing network infrastructure capacity will be adequate in currently serviced areas, with augmentation required in localised areas. 3 waters and transport budgets allow for network growth required under the 2GP. If actual growth is higher than the medium scenario, infrastructure will more quickly reach capacity and there is a risk of insufficient infrastructure in areas where assets are at or near capacity. Decisions on where and how to augment infrastructure in localised areas in response to growth will occur once Variation 2 to the 2GP has been adopted.	Existing network infrastructure capacity will need to be augmented in localised areas in both current and newly serviced areas, provide capacity for Variation 2. 3 waters and transport budgets will focus on changes needed under Variation 2. If actual growth is higher than the medium scenario, infrastructure capacity will be exceeded in localised areas and require additions to the capacity of some major assets.	The majority of the 3 waters and transport renewal programme will be complete, resulting in a lower average age for assets and increased network capacity. Major assets will be due for replacement or modernisation at this time. A decline in population may have funding consequences. Technological change may improve asset efficiency.
Plan and invest for a medium-high growth scenario over 2019-28 and a medium growth scenario from 2029 onward (target 2GP and Variation 2 in 2021-31)	As above, however budgets allow for infrastructure growth required under the 2GP and Variation 2, with adequate budgets to accommodate investment. If actual growth is higher than the medium scenario, servicing of Variation 2 will require an accelerated response. There is a high likelihood this option is not deliverable as investigation work is still underway and ability to undertake work is constrained by budgets, internal resource, contractor and material availability.	Planned growth has been serviced and so infrastructure capacity is not a limiting factor to development. Lower growth investment is needed in this period. If actual growth is higher than the medium scenario, infrastructure capacity will be exceeded in localised areas and require additions to the capacity of some major assets.	As above.

6.4. Public health and environmental outcomes

The 3 waters and transport networks provide important public health and safety benefits to the community and deliver services which can impact on the natural environment.

6.4.1. 3 Waters

With 3 waters reform, it is likely capital improvements will be required to meet enhanced protection of drinking water sources, water management practices and new standards for drinking water, wastewater and stormwater services. In anticipation of the reforms and the potential transition into a new entity (if the DCC does not opt out of the Government's service delivery reform programme), the DCC is undertaking a programme of work to strengthen regulation policies and improve asset ownership, asset management and delivery processes. The DCC is also underway with a project to update drinking water safety plans to better align with the new regulatory system. The DCC will continue with water system planning processes to guide capital investment strategies which will support the continued provision of safe drinking water to serviced communities.

Under the Local Government Act 2002 (LGA), the DCC is required to undertake a Water and Sanitary Services Assessment (WSSA) from time to time. The purpose of the assessment is to assess, from a public health perspective, the adequacy of water and other sanitary services available to communities in terms of five specified factors. The DCC is considering the best way to carry out the next reviews, and it may be most efficient to undertake it as part of system planning.

The Health Act 1956 requires the DCC to comply with the criteria set out in the Drinking Water Standards for New Zealand. The standards set maximum amounts for substances, organisms, contaminants or residues that may be present in drinking water, requires monitoring, and prescribes remedial actions in the event of non-compliance. Drinking water suppliers must also have approved Water Safety Plans for large supplies to identify and manage risk - from the raw water catchment to the treatment plant and within the distribution network - and operate in accordance with those plans.

Resource consents to discharge treated effluent to the environment are held for each of Dunedin's seven wastewater treatment plants, except for Mosgiel where effluent is transferred to Green Island for ultraviolet disinfection treatment before discharge. Three of the resource consents are due to expire within the next 10 years and so projects are planned to investigate best practicable options for new consents and the impact of anticipated new standards. System planning will address future consent changes and investment plans to address improvements needed.

The DCC currently has six constructed wastewater overflows consented by the ORC. These overflows are designed to manage the public health risk in heavy rainfall events by allowing discharge of diluted wastewater at specific points of the network, rather than in an uncontrolled manner at low points in the network (including into private property). The consented overflows are signposted to alert the public to the potential risk of exposure to diluted wastewater in the event of heavy rainfall. As wastewater assets are renewed and upgraded, these overflows will activate less often with smaller discharges. Under water reform, it is anticipated the quantity and quality of wastewater discharges will also have to meet new standards.

The DCC holds resource consents to discharge stormwater to the coastal marine area. Those consents expire in 2048. Key stormwater discharges are part of the environmental monitoring programme and work is underway to improve the stormwater hydraulic models for key areas. The 3 Waters Group plans to undertake stormwater system planning for all areas in the early years of the plan, starting with a review and improvement of the hydraulic models. Under the current rules of the Regional Plan: Water, most of Dunedin's stormwater discharges are permitted, subject to certain provisions. The wider implications of water reform mean tighter regulation on quality and quantity of stormwater discharges is likely.

The DCC's long-held approach has been to enable property owners to build and maintain their own pipes or open watercourse infrastructure. Roughly half the city is serviced by private pipes and streams, many of which are 100+ years old and in poor condition, with confusion over ownership and responsibility. Developing solutions to the complex stormwater problems is often beyond the means of most landowners. Failure of these assets can lead to flooding, sinkholes and landslips. A new approach to dealing with hazards from privately-owned stormwater assets was approved in

2019 (known as the watercourse programme), which aims to reduce these risks on the highest priority sites. Through the programme of work to prepare for reform, 3 waters will review the policy on watercourse asset ownership and the financial impacts of this on the DCC.

6.4.2. Transport

Waka Kotahi's Road to Zero aims to have a 40% reduction in deaths and serious injuries from 2018 – 2030 and sets out a series of initiatives to address road safety. The city's accident statistics show limited improvement in Dunedin with the death and serious injury numbers static over recent years. Safety initiatives are developed around our transport infrastructure for both motorists and vulnerable users such as pedestrians and cyclists.

An analysis of crash statistics indicates factors which contribute to Dunedin's safety record are: intersections; young drivers; older drivers; and distractions. Dunedin also has a diverse network ranging from busy urban roads through to quiet rural roads. In some cases, the transition between urban and rural is very abrupt. The central city is also compact and needs to cater for a wide range of user groups, such as cyclists, pedestrians, cars and heavy freight vehicles. State Highway 1 runs through the University of Otago, Otago Polytechnic and the CBD. Improving network safety is a key issue to be addressed through specific safety improvement programmes, major capital projects and in considering safety improvements when undertaking renewal works.

Safety interventions undertaken by the Transport group include:

- upgrading pedestrian facilities
- upgrading major arterials with priority bus routes
- implementing road safety education campaigns to raise awareness of road safety, public transport safety and pedestrian safety
- using fixed safety cameras at intersections and other high-risk areas
- implementing a prioritised programme of safety engineering projects
- providing separated cycling infrastructure.

The ability to be able to move around easily across a variety of modes is linked to health, social and economic benefits. Providing transport choices will have health benefits as more active modes of transport are taken up. A goal of the Integrated Transport Strategy is to increase the percentage of people who walk, cycle, and take public transport to work from 16 percent to 40 percent by 2024. Committing to the goal of increasing active/sustainable transport will also contribute to the city's environmental commitments of carbon zero 2030, reduce congestion and improve the health of those incorporating physical activity into their daily commute. Investment in providing safe and attractive infrastructure for active modes is expected to increase the desirability of active transport modes.

6.4.3. Principal Options and implications for responding to public health and environmental concerns

The option that the DCC has decided to take is highlighted in green.

	10-years (2031)	10-30 years (2051)	30-50 years (2071)
Existing public health and environmental impacts are not prioritised	Compliance with DWSNZ is not prioritised and water and wastewater treatment plants are not upgraded in a timely manner to keep pace with changing standards. Incidence and volume of wastewater overflows to the environment will likely increase as will incidences of habitable floor flooding. For Transport, limited network safety improvement packages are implemented, resulting in no decreases to the	Water treatment plants are not upgraded to meet DWSNZ changes and treatment processes fall short of increased standards. Wastewater discharges to the environment and the volume of discharges continue to increase. Consents required to continue to discharge to environment would be unlikely to be	Water treatment plants are not upgraded to meet DWSNZ changes and treatment plant processes become so outdated that compliance would not be able to be achieved without significant widespread large scale capital works. Wastewater discharges to environment likely to become the norm with the associated

	10-years (2031)	10-30 years (2051)	30-50 years (2071)
	numbers of serious injury or death statistics on the Dunedin transport network.	renewed resulting in prosecution and fines. Incidence of habitable floor flooding will increase. No specific investment to decrease the number of serious injuries or deaths on the Dunedin transport network.	degradation of receiving waters. Discharges likely to have no consents and incur fines in each instance where a discharge occurs. No specific investment to decrease the number of serious injuries or deaths on the Dunedin transport network.
Improve public health & environmental outcomes by investing in public transport, road safety and 3 waters upgrades and renewals programmes. Investment is increased over time.	Water treatment plants meet DWSNZ standards and prepare for new standards and regulation by the newly established Taumata Arowai. Wastewater discharges reduce as renewals remove inflow and infiltration from wastewater networks. A long-term investment plan to address wet weather flows is developed. Stormwater discharge impacts are understood, best practicable solutions to flooding are implemented and system planning provides a long-term investment plan. Transport investments are focussed on reducing deaths and serious injury in high risk transport corridors. Public Health outcomes are also achieved by continued investment in active transport modes such as walking and cycling.	Water treatment plants continue to meet DWSNZ measures and are updated as required to meet any changes in standards. Best practicable option for all wastewater overflows implemented. New sustainable solutions to stormwater management are implemented. Continued investment in road safety and active transport modes results in decreased road trauma on the transport network and a healthy connected community.	Water treatment plants continue to meet DWSNZ measures and are updated as required to meet any changes in standards. New sustainable solutions to stormwater management are implemented. Continued investment in road safety and active transport modes results in decreased road trauma on the transport network and a healthy connected community.
Prioritise public health and environmental concerns over other considerations. Investment is prioritised in the earlier years of the plan.	As above, however budgets moved to years 1-6. Improvements to drinking water resilience, wastewater discharges and stormwater overflows can be addressed more quickly however lost opportunities to benefit from the synergies obtained through aligning cross-network renewals. Reducing the number of deaths and serious injury is achieved by additional investment in road safety.	As above.	As above.

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	10-years (2031)	10-30 years (2051)	30-50 years (2071)
	The strategic cycleway network is delivered earlier and expanded. There is a likelihood this option is not deliverable and may result in increased disruption to residents due to construction projects not being well aligned across 3 waters and transport assets and other asset providers.		

6.5. Resilience to natural hazards

Flooding, landslides, drought, catchment fire, rising groundwater and the risk of liquefaction in the event of an earthquake pose the most significant risks to Dunedin's infrastructure. It is anticipated these risks will increase over time as a result of climate change.

6.5.1. Climate change

Climate change impacts include more extreme rainfall events, causing increased frequency and severity of flood events, while experiencing less rainfall overall can impact on water supply. Dry periods increase the risk of drought and catchment fire (which impacts on drinking water quality). Rising groundwater as a result of sea level rise in low-lying areas is the one of the most significant risks facing Dunedin from climate change. High groundwater can cause problems such as increased frequency of flooding, boggy ground and surface ponding, damage to infrastructure and buildings, and a risk of liquefaction in earthquakes along with associated social wellbeing issues.

Dunedin has significant low-lying areas that are within 0.5m of the current spring high tide mark (estimated at 2,684 Dunedin homes, 116 business and 35km of roads)[3]. Older people and vulnerable populations find it more challenging to manage the impacts of natural hazards. South Dunedin has an increasingly aged population and one of the lowest decile demographics in the country.

6.5.2. Earthquakes

Seismic activity can cause widespread damage to network infrastructure. Destruction of critical built infrastructure and displacement of piped infrastructure can render 3 waters systems inoperable and unable to deliver clean drinking water or to transport and treat wastewater safely. Liquefaction can cause more damage to underground pipes than ground movement and is a significant contributor to pipe failure in earthquakes. Dunedin has several areas with moderate to high likelihood of liquefaction in an earthquake.

Seismic activity could also cause isolation across the transport network if certain areas are cut off due to rubble, slips, liquefaction or land displacement. Dunedin is vulnerable to isolation given the limited number of routes in or out of the city. Dunedin is predominately serviced by a motorway in from the north and a motorway in from the south with the alternative route from the north on Mt Cargill road. Dunedin's Akatore fault has potential to disrupt the network to the south of the City.

6.5.3. Flooding and landslides

Some parts of Dunedin are susceptible to flooding and landslides during heavy rainfall events. Flooding and landslides can damage homes, business and infrastructure. Flood risks are due to several factors including:

- Rainfall events exceeding design tolerances.
- Limited capacity in parts of the wastewater network as a result of rainwater and groundwater infiltration to the wastewater network from ageing and cracked pipes and inflow to the wastewater network from direct stormwater connections
- Low-lying areas where the groundwater is close to the surface so rainwater cannot drain away.

[3] Parliamentary Commissioner for the Environment (2015) Rising Seas

- Sea level rise, more extreme rainfall events and storm surges increasing the frequency of flood events in the future.
- Mud-tanks can become blocked and creating a flooding hazard
- The low elevation of some roading infrastructure can cause roads to become flooded and cut off.

Manhole surcharging can create a safety hazard in flood events on the Transport corridor when manholes covers become dislodged. Communities in low-lying coastal areas serviced by septic tanks (rather than a reticulated wastewater system) may be at higher risk of groundwater contamination during flood events. More extreme rainfall events and storm surges may lead to larger and more frequent slips and damage to 3 waters and transport infrastructure including sea walls, bridges and culverts.

As weather events become more frequent and severe, the infrastructure networks and community's ability to recover will continue to be put under increasing pressure.

6.5.4. Drought, higher mean temperatures and catchment fires

Prolonged periods of drought pose a risk to Dunedin's water supply. Furthermore, drier water catchments yield less water and are more prone to large scale fires. Catchment fires can result in highly turbid water that that is more expensive to treat or is unable to be treated by existing treatment processes. Higher mean temperatures increase the risk of algal blooms within raw water reservoirs, which may require expensive treatment. In addition, odour issues at wastewater treatment sites and within the network are more likely at higher temperatures.

From a transport perspective, higher temperatures can cause degradation in the roading infrastructure. Droughts can also present a fire risk for roadside vegetation.

6.5.5. Building resilience to natural hazards

The DCC has improved its understanding of natural hazards to assist in developing options for a resilient infrastructure network into the future. The DCC are working in partnership with other agencies such as GNS Science and ORC to further enhance our understanding of groundwater and impacts of sea level rise, particularly in South Dunedin.

The Peninsula Connection project is an example of building a more resilient asset by raising the road to allow for predicted sea level rise while widening the transport corridor (for safety purposes) and creating a shared path (for mode choice purposes).

System planning for 3 waters is focussed on an adaptive approach to investment, planning for natural hazards and ensuring resilient solutions are implemented. Long-term investment plans will be ready for the 2024-34 10 year plan, however early work to increase resilience to some water supplies and targeted metro wastewater treatment plant wet weather flow management are budgeted within the 2021-31 capital programme.

Planning is also underway to look at the resilience of the Transport network in the case of a seismic event, specifically around the supply chain and getting goods to and from Dunedin. Planning is also underway for any Alpine Fault activity. In a seismic event involving the Alpine Fault, Dunedin would likely be the least affected so may have to become a recovery hub for the lower South Island.

6.5.6. Principal options and implications for building resilience to natural hazards

The option that the DCC has decided to take is highlighted in green.

	10-years (2031)	10-30 years (2051)	30-50 years (2071)
Planned renewals and projects will reduce some risks arising from natural hazards	Renewing pipes and other infrastructure in flood prone areas will reduce some risks arising from natural hazards. Continue to fund projects to improve the resilience of the water supply network. AF8 (Alpine fault quake resilience)[4] and Lifelines resilience projects will improve resilience of 3 waters network. Existing transport infrastructure is renewed like for like. Significant weather events will remain a problem for isolated areas of the network; largely in coastal, slip prone and low-lying areas.	Renewing pipes and other infrastructure in flood prone areas will reduce some risks arising from natural hazards. Existing transport infrastructure renewed like for like. Significant weather events will remain a problem for isolated areas of the network; largely in coastal, slip prone and low-lying areas.	Natural hazard risks fully considered when renewals are planned. Updated design tolerances incorporated into asset renewals. Existing transport infrastructure renewed like for like. Significant weather events will remain a problem for isolated areas of the network; largely in coastal, slip prone and low-lying areas.
Invest in new capital to specifically reduce the risk arising from natural hazards	As above, however investment is made in specific new projects to minimise the risks from natural hazards. Undertake adaptive planning pathways – events are uncertain and so infrastructure planning will need to be agile and adapt to various scenarios.	New capital incorporated into renewals where a known hazard requires mitigation.	New capital incorporated into renewals where a known hazard requires mitigation.

6.6. Planned increases or decreases in levels of service

The DCC upgrades assets in response to growth or higher service demands. These include improving taste and odour of drinking water and making improvements to roads to improve transport choice and safety.

6.6.1. 3 Waters

The highest priority service levels for 3 waters are: water quality and supply reliability, the adequate performance of networks and the impacts of 3 waters discharges and overflows on the environment, plus internal service measures such as health & safety.

The upcoming 3 waters reform will require further improvements to drinking water supplies; such as quality, quantity and management, and require improvements in wastewater and stormwater management. No funding allowance has been made in the 2021 – 31 10 year plan for enhanced standards in water, wastewater or stormwater as at the time of writing these are unknown.

A large part of the work programme within 3 waters in the shorter term is to prepare for anticipated new standards associated with reform. This will include: increased monitoring of assets, assessing internal capability and capacity to undertake the projects proposed in the capital expenditure programme (including the tranche 1 stimulus funding) and improving asset and compliance management practices.

[4] DCC is an active participant in the Alpine fault quake resilience (AF8) programme. This is a scenario-based planning project, managed by the Ministry of Civil Defence and Emergency Management, with the intention of preparing plans in response to a major earthquake on the Alpine Fault.

6.6.1.1. Water

Some capital projects to upgrade water treatment capability have been initiated to improve drinking water aesthetics and taste and provide enhanced monitoring. At the water treatment plants, a programme of work to improve wet weather flow management has begun and additional monitoring has been installed to assist in understanding what investment will be needed to meet any national standards introduced through 3 waters reform.

6.6.1.2. Wastewater

Ageing pipes and sewers are creating 'nuisance' level problems for some residents. The larger issues are caused by inflow and infiltration into the wastewater systems which can lead to surcharge, flooding and hydraulic pressures at the wastewater treatment plants. Renewal programmes on the network are focussed on reducing inflow and infiltration to reduce wet weather overflows and treatment plant wash-out. At pump stations the aim is to increase reliability to maintain network performance and at the treatment plants assets are to be renewed to maintain compliance with resource consents and reduce health and safety risks.

6.6.1.3. Stormwater

Sea level rise leading to rising groundwater in low-lying parts of Dunedin will make it more difficult to meet current stormwater levels of service. As groundwater rises, additional investment will be required in wastewater and stormwater infrastructure to maintain existing service levels. To support this, the DCC will remain focused on the renewal of assets with new projects to address areas where levels of service issues currently exist. Following previous floods, investment in an expanded stormwater network, in addition to focused improvements in the most heavily affected areas (South Dunedin, Mosgiel), is anticipated.

6.6.2. Transport

The priority service levels for the transport network are:

- Safety – all users of the transport network are catered for in a safe network.
- Resilience – The availability and restoration of the network function when there is a weather or emergency event
- Accessibility – The ease with which people can reach key destinations and the transport networks available to them.
- Travel time reliability – The reliability of travel time on key routes during peak use
- Cost efficiency - The relative costs and efficiency of the network compared with other networks.

There are a number of projects in the 2021 – 31 capital programme, including the Shaping Dunedin Future Transport (SFDT) programme, that aim to respond to levels of service across the city in light of the hospital rebuild and growth in the city, some of which are detailed below.

- Harbour arterial improvements: The harbour arterial route would run along Wharf St and Thomas Burns St to provide an alternative route bypassing the city centre, avoiding the new hospital during and after construction.
- Park and Ride facilities at Mosgiel and Burnside: Parking areas, where people can leave their car and catch a city-bound express bus service.
- Central city parking management: Implementation of a plan to improve the parking experience, wayfinding of parking and a review of the pricing structure of parking.
- Strategic cycleway network: To fill the gaps and expand the existing cycling network across the city to provide a safe and connected cycle network.
- Central City bike hubs: Hubs where cyclists can lock their bikes in sheltered lockers and other facilities, such as repair and charging services, in North Dunedin, Central City and South Dunedin/Oval.
- Bus priority measures and safety improvements: Providing infrastructure to prioritise buses and safety improvements for pedestrians in and around the CBD.

ORC are investing in additional bus hubs and improved public transport and Waka Kotahi is investing in enhancing the state highway, intersections and other cycleways as part of the SDFT programme.

6.6.3. Principal options and implications for increasing or decreasing levels of service

The option that the DCC has decided to take is highlighted in green.

Option	10-years (2031)	10-30 years (2051)	30-50 years (2071)
Plan and invest to maintain service levels	Focus on renewing network infrastructure to reduce the risk of declining service levels. Do not plan or invest for changes to service levels.	Maintain capacity to manage current risk, however no increases in service levels may undermine growth in future. Does not plan for regulatory and legislative changes, which will see an increase in required levels of service for 3 waters, of which the impact upon rates is currently unknown.	Demographically driven decline in population may mean costs directly linked to service level delivery are borne by fewer residents if growth does not occur.
Plan and invest to maintain and increase some strategic service levels	Renew infrastructure to reduce the risk of declining service levels and to increase resilience, while also investing in improving strategic service levels. Planning for 3 waters regulatory and service delivery reforms continue. Increase investment in active and public transport modes to contribute to carbon zero 2030 goals.	Balance our ability to manage future demands, with strategic investments aimed at encouraging sustainable growth through improved service levels. Planning and implementation to deal with the longer-term impacts of regulatory and legislative changes such as the anticipated wastewater and stormwater service level enhancements.	If investing in infrastructure to attract more people to live and study in Dunedin results in higher than projected growth, this may improve ongoing affordability of service level increases. A long-term investment programme is built up from enhanced monitoring and investment can be phased to deliver maximum benefits and efficiencies.
Plan and invest to increase some strategic service levels through enhanced projects	Renew infrastructure to reduce the risk of declining service levels and to increase resilience, while investing strongly in significantly improving strategic service levels through new and enhanced projects. High likelihood this option is not deliverable.	If strong growth does not occur, a higher cost will be borne by existing residents. This may limit the ability to maintain and operate changes to service levels. The impact on rates of any changes in strategic service levels are currently not understood, and so best practicable options cannot be chosen. There is the risk that abortive work will be undertaken and additional spend needed to meet new standards.	If investing in infrastructure to attract more people to live and study in Dunedin results in higher than projected growth, this may improve ongoing affordability of service level increases.

6.7. Zero Carbon 2030 target

In June 2019, Council declared a climate emergency and brought forward the city's emissions reduction target by 20 years. The 'Zero Carbon 2030' target seeks to achieve city-wide net carbon neutrality (excluding biogenic methane) by 2030. For biogenic methane, the target aligns with central Government, aiming to achieve a 24% to 47% reduction below 2017 levels by 2050, including 10% reduction below 2017 levels by 2030.

6.7.1. Current impact of 3 waters infrastructure on city-wide emissions

3 waters infrastructure impacts on city-wide emissions in a number of ways.

- Biological processes from wastewater treatment were assessed as being responsible for approx. 0.2% of the city's emissions in 2018/19.
- Some sludge generated in wastewater treatment processes is currently sent to landfill, contributing to solid waste emissions.
- Diesel, LPG and electricity used in distribution, treatment and disposal processes associated with 3 waters networks all contribute to stationary energy sector emissions.
- The availability of servicing in various parts of the city shapes urban form, which in turn impacts on transport sector emissions.
- Construction and maintenance processes associated with the 3 waters network also contribute to the city's emissions profile.

Historically, carbon emissions have not been a key consideration in the design of 3 waters plant and network infrastructure. As a result, neither existing plant nor network configuration is optimised to minimise emissions. In addition, the current need to prioritise reactive operational expenditure, to address process challenges and compliance risks, hinders significant immediate investment in aligning these facilities and assets with Zero Carbon ambitions. Another key consideration is service delivery reform and increasing treatment standards for water and wastewater - these are very likely to result in more intensive treatment processes, which in turn are likely to drive increases in energy demand. The extent to which these requirements may undermine emissions reduction efforts is currently unknown, but may be significant.

In terms of 3 waters' impact on urban form, urban intensification (particularly around the CBD, centres and along public transport routes) is preferable to urban expansion, because it is more likely to support and promote low emission transport systems. The DCC's overall urban form objective of a 'compact city with resilient townships' is intended to be achieved through urban consolidation and prioritising use of existing capacity within existing urban areas. Rules in the 2GP currently restrict development in some new medium density areas due to constraints in the 3 waters network, and the degree to which additional intensification is achievable is similarly limited in some locations by 3 waters network capacity.

6.7.2. Current impact of transport infrastructure on city-wide emissions

The transport sector is Dunedin's most significant, and fastest growing, source of emissions. In 2018/19, transport was assessed as contributing 39% of Dunedin's total gross emissions, with the largest proportion of this (27% of gross emissions) stemming from land transport. The configuration of the local road network, and the relative levels of service for different modes, shape residents' travel choices and therefore the city's emissions profile.

Dunedin has a reliance on cars, which has constrained the uptake of alternative modes of travel. According to the 2018 census data, 68.5% of the community within Otago used private or company vehicles as the means of travelling to work. Global and national trends suggest, however, that with increasing investment in infrastructure to improve the levels of service for alternative modes, there is a slow increase in uptake of these modes. This is reflected in cyclist numbers on monitored routes, and in bus patronage data in Dunedin.

In March 2019, a central city bus hub was established and in 2020 the ORC implemented a cheaper and simpler fare and card system for public transport. Both initiatives appear to have encouraged further uptake of public transport with patronage steadily increasing.

6.7.3. Aligning infrastructure work programmes with the Zero Carbon 2030 target

For both transport and 3 waters, improvements in data quality has been identified as a key step in supporting efforts to reduce emissions.

- In the transport network, investigations into the end use of fuel purchased within Dunedin, and residents' travel choices, will help the Transport team prioritise and tailor emissions-reducing interventions.
- For the 3 waters network, an emissions baseline for existing plant and network operations needs to be established, to help identify and prioritise opportunities for emissions reduction.

Development of policies, processes and guidance to support the integration of the Zero Carbon 2030 target into infrastructure teams' planning and day-to-day operations, is underway. This includes revision of the DCC's existing Carbon Management Policy (2017) for the organisation (which will assist to align all infrastructure projects, including renewals, with emissions reduction ambitions). Clearly defining the outcomes sought to give effect to the Zero Carbon 2030 target will ensure these can be embedded in strategic planning, including 3 waters system planning. It is considered that this will, in turn, clearly align transport and 3 waters expenditure with Zero Carbon ambitions from 2024 onwards.

Looking forward, there is also provision in the 10 year plan to embed Zero Carbon-related considerations in the DCC's performance management framework, asset management and procurement processes, and reporting.

For transport, the speed and depth of changes required to achieve the Zero Carbon 2030 target represent a very significant departure from business-as-usual. Provision for these alternative modes, and residents' use of them, will need to increase substantially over the decade to 2030. This will rely not only on DCC investment, but also on the degree to which partner agencies focus their investment on facilitating a rapid transition to a low emission transport system – and the extent to which this is supported by the community. The development of a Zero Carbon Plan for the city, scheduled for 2021, is anticipated to assist with this process.

For both transport and 3 waters, the need to cater for population growth, discussed in section 6.3, is both a challenge and an opportunity in achieving alignment with the Zero Carbon 2030 target. City Development, in consultation with transport and 3 waters, is developing an approach to provide for Dunedin's growth. Variation 2 is considering additional changes to address the shortfall in medium-term housing capacity.

7. MAJOR PROJECTS AND DECISIONS

This section shows the major infrastructure projects and key infrastructure decisions over the next 50 years. Significant future decisions are subject to the DCC's Policy on Significance and Engagement, and significance will be determined by the DCC in the context of decisions about the 10 year plan.

Major projects and key decisions	Issues in response to	Description	Options	Type	Cost	Expected timing	Carbon Neutrality
3 Waters Reform							
Decision on participation in Three Waters Reform Programme+ (+service delivery reforms –proposed transfer of local government 3 waters assets and service delivery functions to new water services entities)	Regulatory, legislative and service delivery changes	The DCC will decide whether to continue participating or 'opt out' of the Government's 3 waters service delivery reform programme in late 2021. The Government will promote an amendment to the Local Government Act 2002 that, if passed, would enable councils to transfer ownership of 3 waters assets and services to new entities. The proposed amendment will also provide a fit-for-purpose consultation process that sets out how local government will engage with communities and iwi/Māori about the reform proposals and make decisions. This decision is only for service delivery reform. Council is unable to opt out of the regulatory	**Option 1**: agree to continue DCC participation in the Three Waters Reform Programme. This is expected to lead to the transfer of DCC 3 waters assets and service delivery functions to a new water services entity in about 2023. **Option 2**: 'opt out' of the Three Waters Reform Programme. Retain 3 waters assets and service delivery functions within the DCC.	Council decision.	Costs relating to making this decision, including costs related to running a public consultation process, are yet to be determined.	Late-2021	Likely no effect on emissions

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		elements of 3 waters reform.					
Projects to prepare for regulatory, legislative and service delivery changes	Regulatory, legislative and service delivery changes Planned increase in levels of service	Prepare the 3 Waters Group, the wider DCC and Dunedin for implementation of changes to 3 waters regulatory systems, and the potential transition to a new entity for 3 waters service delivery. The purpose of these projects is to establish certainty on the impact of reform and reduce associated risks. Other benefits include enabling a co-operative exit, leveraging value for Dunedin and setting up a new water services entity for success. The focus areas are contract and capital delivery, asset ownership, system planning, asset management, strengthening regulation and servicing growth.	Options to be developed via the various projects currently in planning stages.	To be determined	Costs will be determined based on strategic need and deliverability.	2021 - 2023	Likely no effect on emissions
System Planning	Regulatory and Legislative Changes Planned increase in levels of service, Response to growth in demand,	3 Waters 'whole of system' strategic planning to develop baseline and long-term investment plans. Identify current and future issues, develop objectives and levels of service and create long and short list options for the systems. In the short	Options to be developed via the various projects currently in planning stages. A decision will be made on long term	Majority of planning is OPEX, produces CAPEX plans, amount to be determined.	Costs will be determined based on strategic need, affordability and deliverability.	2021 - 2051	Unknown

	Public health and environmental outcomes Renewing and replacing assets Resilience to natural hazards	term, the baseline stage of this work informs the Metro WWTP Resilience Project. Long-term, strategic capital investment plans are produced. These will inform the 2024-34 10-year plan.	investment plans in the 2024-34 10 year plan.				
Network infrastructure							
The need for new capital expenditure will be reassessed following decisions on areas for new development in the 2GP and then Variation 2	Response to growth in demand Public health and environmental outcomes	Using a medium growth scenario, demand is estimated at 4,000 new dwellings between 2021 and 2031 and 7,000 new dwellings by 2071. Growth funding has been allocated to allow for substantial planning and design within the first 12-18 months, followed by a steady programme of capital delivery over the remaining term of the 10 year plan. Detailed planning is in progress, with the initial planning focussed on high priority areas that have been identified in consultation with developers. As the planning and design develops, the phasing of capital works may change through the annual plan process to meet	Options for responding to increase in demand will be developed once the 2GP and Variation 2 appeals process is completed. The costs included in the 10 year plan are an estimate of the 3 waters and transport network infrastructure requirements to meet the growth needs of 2GP and Variation 2.	To be determined	$104 million to be funded by development contributions and debt financing where appropriate.	2021 - 2036	Likely increase in emissions

		development requirements.					
Water and Sanitary Services assessment	Public health and environmental outcomes	The Water and Sanitary Services Assessment is a district-wide assessment of the provision of water and sanitary services (such as wastewater, stormwater, public toilets and cemeteries). The assessment reviews the adequacy of existing systems in serviced communities and any health risks arising from the absence of systems in un-serviced communities. The most recent assessment was completed in 2007.	Options will be considered in the Water and Sanitary Services assessment.	To be determined	Costs will be determined based on the outcomes and associated Council decisions from the Water and Sanitary Services Assessments.	2021-23	Possible increase in emissions
Other Network Renewals	Renewing and replacing assets Public Health and environmental outcomes	These are ongoing pipeline renewals projects (not already identified below) across all 3 waters network assets. These renewals will be focused on: areas of high inflow and infiltration rates, aged assets, high break rates and customer complaints. This will address risks in water supply reliability and pressure, water quality, wastewater overflows, flooding and pipeline collapse.	The preferred option is a steady spend over the 10-year period.	Renewals	$57 million (note the remainder of the renewals budget is allocated to specific network renewals identified elsewhere in the table).	2021-2031	Likely no effect on emissions

Minor Network Renewals	Renewing and replacing assets Public Health and environmental outcomes	Reactive, smaller scale network renewals and repairs across all 3 waters, mostly undertaken by the network contractor.	Reactive work is undertaken as required.	Renewals	$50 million	2021-2031	Likely no effect on emissions
Water supply							
Water supply resilience	Response to growth in demand Public health and environmental outcomes Renewing and replacing assets Resilience to natural hazards	Projects intended to improve the ability of the water supply network to provide adequate safe potable water regardless of forecast changes in climate and population, and in the event of a natural disaster. Activities include the Ross Creek to Mount Grand transfer line, water treatment plant renewals and upgrades and pump station renewals and upgrades. Some minor renewals and monitoring work have commenced as part of the 3 waters reform tranche 1 funding.	Further work is needed on detailed design and deliverability, plus risks may materialise which would change the timing of some projects. Options are in development.	New Capital and Renewals	$84.9 million	2021-2031	Likely no effect on emissions
Dam Safety Action Plan	Renewing and replacing assets Resilience to natural hazards	Physical works required in order to continue to comply with Dam Safety requirements. Some work has commenced as part of the 3 waters reform tranche 1 funding.	Physical works are undertaken as required in order to meet dam safety requirements.	Renewals	$4.4 million	2021-31	Likely no effect on emissions

Water take reporting	Regulatory and Legislative Changes Public health and environmental outcomes	Recent amendments to the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 make real-time collecting and transmitting of water use to regional councils mandatory. Implementation is required by 2022 for takes ≥20 litres/second (20 of the DCC's 29 takes). For takes ≥10 but <20 litres/second (eight of the DCC's 29 takes) real-time monitoring is required by 2024. For takes ≥5 but <10 litres/second (one of the DCC's 29 takes), implementation is required by 2026. The DCC currently downloads and supplies water take data to the regional council on a monthly basis. Work is underway to investigate adjustments and/or upgrades needed to meet the new real-time reporting requirements.	Work is underway to respond to regulatory changes.	New Capital	$750,000	2020-2026	Likely no effect on emissions
Smart Metering	Renewing and replacing assets	Replacement of existing manual read meters on commercial premises with 'smart' meters capable of being read remotely and connection to the Internet of Things allowing the DCC	Work is underway with completion expected in 2026.	New Capital	$1.4 million	202-2031	Likely no effect on emissions

		and customers to view consumption in real time.					
Port Chalmers Water Supply	Renewing and replacing assets Response to growth in demand	Investigate options to rationalise water supply to Port Chalmers year-round from the metropolitan supply. Funding is based on this being feasible, however, if not, it will be redirected towards renewal/upgrade of Port Chalmers water supply infrastructure to meet demand. This will reduce water quality risks, improve supply reliability and reduce operational costs Renewals are needed at the treatment plant if it is not to be decommissioned in the near future as part of the Water Supply Resilience project.	This project is currently programmed for 2027 but if delivery capacity can be increased this project can be brought forward.	New capital	$14.4 million	2027-2031	Likely decrease in emissions
Deep Stream and Deep Creek raw water pipeline renewals	Renewing and replacing assets Resilience to natural hazards	Renew Deep Creek and Deep Stream pipelines to Mt Grand Water Treatment plant (which provide majority of Dunedin's water) to increase resilience and renew ageing pipes. Investigation of options and design will commence in the final year of the 2021-31 plan with construction to commence after 2031. Seismic and	Timing of project will be confirmed by a formal condition assessment within the next 5 years. The renewal date will be brought forward if the pipe condition warrants it.	Option dependent	$80 million	2030-2036	Likely no effect on emissions

		geotechnical assessments undertaken and construction with seismically resilient materials where necessary.					
Water network renewals – Waikouaiti/Karitane	Renewing and replacing assets Public Health and environmental outcomes.	Renewal of water assets to mitigate increasing asset failure rates. This work was accelerated as part of the 3 waters reform tranche 1 funding.	Design underway with construction to commence once design completed.	Renewals	$6.5 million	2020 – 2022	Likely no effect on emissions
Network renewals Kaikorai Valley / North East Valley	Renewing and replacing assets Response to growth in demand	Renew water network assets to improve water supply fire flows. Renewals for all three networks in these areas will be undertaken as part of the new pipeline renewals contract.	This is an ongoing project. Renewals will be focused on areas with aged assets, high break rates and customer complaints.	Renewals	$17 million (over water supply and wastewater renewals)	2019 - 2023	Likely no effect on emissions
Network renewals Careys Bay	Renewing and replacing assets Public Health and environmental outcomes.	Renewal of water assets to mitigate increasing asset failure rates. Renewal of wastewater assets to reduce wet weather flows to the downstream network. Construction of stormwater network where required.	Construction underway.	Renewals and new capital.	$5.4 million across all three networks.	2021-24	Possible increase in emissions
Network renewals Sawyers Bay	Renewing and replacing assets	Renewal of assets across all 3 waters networks to decrease wet weather overflows in the	Design underway with construction to commence	Renewals and new capital	$5.9 million across all three networks	2020-23	Likely no effect on emissions

	Public Health and environmental outcomes.	wastewater network, improve the ability of the stormwater network to deal with forecast future flows and aged water infrastructure. This work was accelerated as part of the 3 waters reform tranche 1 funding.	once design completed.				
Central City renewals	Renewing and replacing assets Public Health and environmental outcomes.	Renewal, rationalisation and upgrade of 3 waters infrastructure in the area covered by the central city plan (George Street, Stuart Street, Bath Street, Princes Street, Rattray Street and associated streets).	Options are still being considered for 3 waters approach in these areas but range from full replacement of all assets in certain areas to replacement of aged, failing or under capacity assets only. The scale of investment needed from 3 waters is a significant portion of the overall budget in years 2-3 and so benefit compared to other risks needs to be considered in the options.	Renewals	$37.9 million across all three networks	2021-27	Likely no effect on emissions

Tertiary Precinct renewals	Renewing and replacing assets Public Health and environmental outcomes	Renewal and upgrade of 3 waters infrastructure in the area covered by the Tertiary Precinct Project (Harbour Terrace, Union Street East, Clyde Street and Albany Street).	Options are still being considered for 3 waters approach in these areas but range from full replacement of all assets in certain areas to replacement of aged, failing or under capacity assets only.	Renewals	$11.2 million across all three networks.	2031-2035	Likely no effect on emissions
Wastewater							
Metro WWTP resilience	Response to growth in demand Public health and environmental outcomes Renewing and replacing assets Resilience to natural hazards	Renewals and new capital at the metropolitan wastewater treatment plants and Musselburgh pumping station to: maintain levels of service, ensure ongoing compliance with, and renewals of, resource consents, and biosolids treatment, removal and disposal. Most urgent elements are prioritised for years 1-3 Some minor renewals and monitoring work have commenced as part of the 3 waters reform tranche 1 funding. This work targets risks to H&S, plant reliability, sludge treatment reliability and compliance issues from inadequate	Further work is needed on detailed design and deliverability, plus risks may materialise which would change the timing of some projects. Options are in development.	New capital and renewals	$114 Million	2021-33	Likely no effect on emissions

		wet weather flow management.					
Rural wastewater schemes	Public Health and environmental outcomes Renewing or replacing assets Planned increase in levels of service Resilience to natural hazards	Network and WWTP investigation to inform upgrades to the rural networks prior to the discharge consents expiring to ensure they can meet current and anticipated enhanced effluent quality targets and minimise the effect the effluent has on the environment. These projects also assess the capability and capacity of the wastewater systems to meet current and future demands and levels of service.	Design for Seacliff and planning for Middlemarch WWTPs renewals is underway. Options for Warrington and Waikouaiti will be developed as plant consents become due in 2024 and 2027 respectively.	New capital and renewals	$10.7 million	2021-27	Likely no effect on emissions
Pump station renewals	Renewing or replacing assets	A programme of risk-based renewal and upgrades to wastewater pumping stations to maintain levels of service and replace ageing assets.	This project is to address pump stations that have been identified as requiring urgent attention.	Renewals	$2 million	2021-25	Likely no effect on emissions
Stormwater							
Stormwater Hydraulic Models	Public Health and environmental outcomes Planned increase in levels of service	This project is part of the baseline stage for stormwater system planning. Capital work is associated with the creation, calibration and/or updating of stormwater network models which will allow	The level of model development will be assessed as part of the gap analysis stage. Development of a stormwater	Renewals and/or New Capital	$1 million	2021-24	Likely no effect on, or a decrease in emissions

	Resilience to natural hazards	investment options to be tested and compared.	system plan will provide the 3 Waters Group with the tools necessary to ensure the greatest return on future investment.				
South Dunedin Flood Alleviation	Public health and environmental outcomes Planned increases in levels of service Renewing or replacing assets Response to growth in demand Resilience to natural hazards	Capital works to mitigate flooding in South Dunedin. Informed through the work on existing hydraulic models, flow monitoring and incorporation of groundwater models. Includes work on Forbury and Portobello Road areas.	Hydraulic model enhancements and calibrations are underway, which will inform the capital investment options and enable decisions on the best way forward. These models will be supported by information on environmental effects, ensuring that constructed infrastructure meets community expectations. It is possible further funding changes will be	New capital and renewals	$34.7 million	2021-31	Likely no effect on emissions

			needed as options progress to minimise the flooding risk.				
Mosgiel stormwater network improvements	Public health and environmental outcomes Renewing or replacing assets Planned increases in levels of service Resilience to natural hazards	Improvement of hydraulic models to enable optimal options. Improvements to Reid Avenue swale to reduce flooding. Identify and undertake where needed, optimal infrastructure investment to reduce flooding.	Updating of hydraulic models allowing for targeted renewals and replacement.	Renewals	$21.4 million	2021-28	Likely no effect on emissions
Watercourse Programme (New Capital)	Renewing or replacing assets Public health and environmental outcomes Resilience to natural hazards Planned increases in levels of service	New approach to watercourse related flood and landslip problems, resolving priority issues caused by watercourse asset failure under private ownership within current budgets. This results in minor extension of DCC's network with localised benefits in management of stormwater and meeting stated levels of service. Reduces other hazard risks such as sinkholes and landslips.	Projects are prioritised based on a standard multi-criteria tool and managed via a set delivery framework. Budget requests to be made each year as part of the annual plan process. The asset ownership policy for watercourses is planned for	New Capital	$3.5 million annually	2021-22	Likely no effect on emissions

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			review, along with assessing financial impacts to the DCC, to enable to longer-term strategy for managing these assets.				
Transport							
Central City upgrade	Public health and environmental outcomes Renewing or replacing assets Planned increases in levels of service	Renewal, rationalisation and upgrade of transport infrastructure to improve safety, accessibility and amenity in the area covered by the central city plan (George Street, Stuart Street, Bath Street, Princes Street, Rattray Street and associated streets).	Options will be considered through indicative and detailed business cases. The George St upgrade detailed business case will commence in early 2021.	New capital and renewals	$60 million	2020 – 31	Likely decrease in emissions
Dunedin urban cycle ways	Public health and environmental outcomes Planned increase in levels of service	Arterials Cycleway: Close the gaps in the existing cycleway network.	Options are being considered through a detailed business case expected to be completed in 2021.	New capital	$9 million	2021 – 23	Likely decrease in emissions
		North East Valley Cycleway: Provide a cycleway to connect North East Valley with the city	Work on a business case will be started in 2021.		$11 million	2023-2036	
		Tunnels Trail Cycleway: Provide a cycleway connecting Dunedin and	Preferred alignment options and a		$27 million	2023-2041	

		Mosgiel through chain hills area and the Caversham tunnel.	single stage business case are in development.				
Tertiary precinct improvement	Public health and environmental outcomes Renewing or replacing assets Planned increase in levels of service	Renewal, rationalisation and upgrade of transport infrastructure to improve safety, accessibility and amenity in the area covered by the Tertiary Precinct Project (Harbour Terrace, Union Street East, Clyde Street and Albany Street).	Options are being considered through an indicative business case that is currently underway.	New capital and renewals	$20 million	2031-36	Likely decrease in emissions
City to waterfront cycling / pedestrian connection	Public health and environmental outcomes Planned increase in levels of service	New cycling and pedestrian bridge connecting the city centre and waterfront. Existing connections (i.e. level crossing at St Andrews Street, heritage pedestrian over bridge behind Railway Station and route across Castle and Wharf Street) have a number of issues including accessibility for cyclists and mobility impaired users, directness of route and safety issues.	Concept options have been considered through an indicative business case. The project was put on hold following the COVID-19 pandemic. Detailed design options will be explored through the detailed business case phase.	New capital	$20 million	2024 - 28	Likely decrease in emissions
Major centres upgrade	Public health and environmental outcomes	Improve the safety and accessibility of main streets within Dunedin's	Design and phasing options are still to be determined	New capital and renewals	$9.4 million	2024 -31	Likely no effect on emissions

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	Renewing or replacing assets	commercial shopping centres.					
St Clair Seawall	Renewing or replacing assets Resilience to natural hazards Public Health and environmental outcomes	Renew and upgrade the existing coastal defences at St Clair Beach to build resilience and to benefit public safety, access and environmental outcomes at the coast.	Design options are still to be determined. The project is likely to include replacement of the existing sea wall and/ or supplementary protection with sand retention structure(s) or similar.	New capital	100.3 million	2032-2036	Likely no effect on emissions
Mosgiel heavy Vehicle by-pass	Public health and environmental outcomes Planned increase in levels of service	Re-routing heavy vehicles along another route rather than through Mosgiel town centre.	Route and design options are still to be determined.	New capital	15 million	2042-2051	Likely increase in emissions
Dunedin central city bypass	Public health and environmental outcomes Planned increase in levels of service.	Re-routing state highway traffic away from the central city.	Route and design options are still to be determined.	New capital	35 million	2032-2041	Likely increase in emissions
Harbour Arterial corridor	Planned increases in levels of service.	Improvements to the Harbour Arterial corridor to improve safety and efficiency to provide an alternative to accessing the CBD from the south.	Single stage business case to be started in early 2021.	New capital	$16.3 million	2021 - 2027	Likely increase in emissions

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	Response to growth in demand.	The route will utilise the following roads (south to north): Caversham Motorway (SH1)/Andersons Bay Road intersection – Andersons Bay Road – Strathallan Street – Wharf Street - Thomas Burns Street - Ward Street – Ward Street overbridge - Frederick Street/Anzac Avenue intersection.					
Parking Management	Planned increases in levels of service Response to growth in demand.	Technology for wayfinding of parking, replacing parking meters with more efficient technology, consolidation of off-street parking, installation of technology to assist more reliable parking and a review of the parking costs across the city.	A parking management policy is in development. A single stage business case assessing options to improve the parking experience will begin in 2021.	New capital	$10.9 million	2021 - 2026	Likely decrease in emissions
Mosgiel and Burnside Park & Ride	Planned increases in levels of service Response to growth in demand.	Installation of a park and ride at Mosgiel and Burnside to enable people to take the bus into the CBD.	A single stage business case will need to be developed.	New capital	$10.2 million	2023 - 2029	Likely decrease in emissions
Corridor Safety Improvements and bus priority measures	Public health and environmental outcomes	Safety improvements for pedestrians in the CBD and bus priority measures especially around Princess Street.	A single stage business case will need to be developed.	New capital	$6.4 million	2021 - 2024	Likely decrease in emissions

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	Planned increases in levels of service Response to growth in demand.						
Central cycle and pedestrian safety	Public health and environmental outcomes Planned increases in levels of service Response to growth in demand.	Safety improvements and provision for pedestrians and cyclists on St Andrew Street from Anzac Avenue to Great King street, George Street to Cumberland Street, Anzac Avenue to the Harbour Circuit via Minerva Street.	A single stage business case will need to be developed.	New capital	$4.8 million	2021 - 2026	Likely decrease in emissions
Bike Hubs	Public Health and environmental outcomes. Planned increase in levels of service.	Creation of bike hubs where people are cycling particularly to work.	A single stage business case will need to be developed.	New capital	$2.45 million	2022 - 2027	Likely decrease in emissions
Capital renewal programme	Renewing or replacing assets.	Planned renewals to pavements, seawalls, retaining walls, footpaths and kerb and channel to maintain existing levels of service in the transport network.	Range of design options will be considered subject to alignment with NZTA's One Network Road Classification system.	Renewals	$245.8 million	2021-2031	Likely no effect on emissions

8. APPROACH TO DELIVERING THE NEW CAPITAL AND RENEWALS PROGRAMME

The Infrastructure Strategy is closely linked to the Financial Strategy. The Financial Strategy considers affordability for ratepayers and the DCC as a whole. The DCC has attempted to balance the competing tensions of affordability, maintaining assets and investing for the future, while addressing the financial challenges of increasing costs, delivering large capital projects and increasing network renewals. The Financial Strategy provides strategic financial limits for rates and debt and discusses other funding sources. The budgets increase rates and debt requirements, but do not exceed the limits over the next ten years.

8.1.1. Ability to deliver on the planned capital programme

Our planned capital expenditure programme represents a significant uplift from the last 10 year plan, with renewals a key area of focus. The challenge for the DCC will be the ability to deliver this programme, acknowledging that the annual targets are higher than previous achievements, and the lead time for delivery is always longer than anticipated. These risks will be managed through improved forward planning, early contractor engagement, innovative procurement strategies, and strong disciplines around project management and monitoring to ensure progress is on track.

8.1.2. Debt

The use of debt allows the financial burden of new capital expenditure to be spread across a number of financial years, recognising that the expenditure is on intergenerational assets, i.e., the assets have a long life and generate benefits both now and to future generations.

Debt is also used to fund the portion of capital renewals that is not covered by funded depreciation.

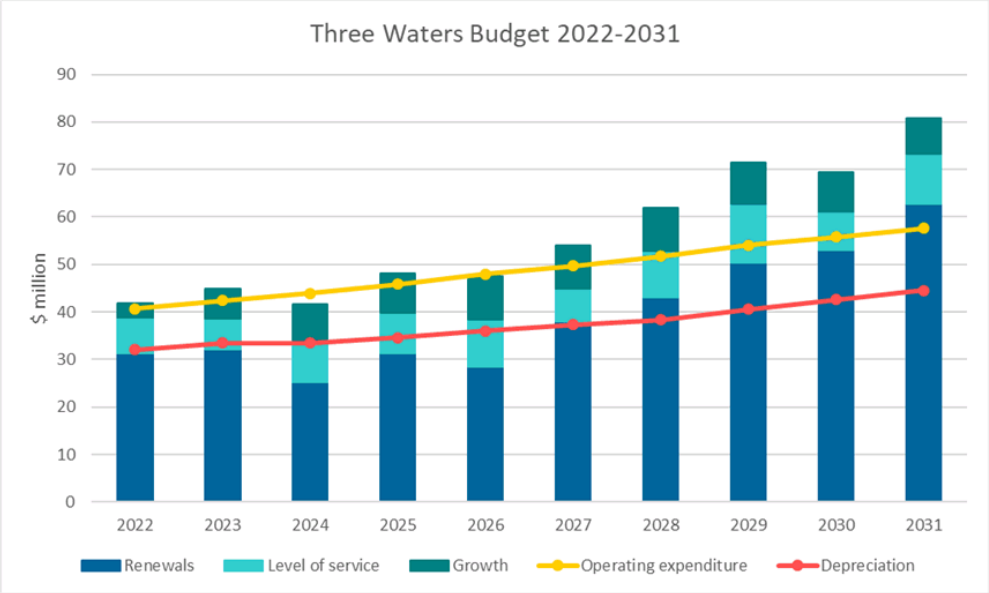
In our last 10 year plan, the debt limit was fixed at $350 million. This limit is not sufficient to fund planned investment in capital projects and does not recognise the impact of changing costs and/or activity.

The gross debt limit for this 10 year plan is set as 250% of revenue. This means that our debt level will be responsive to change and will move in line with the level of our activities. This revised debt limit will allow flexibility to deliver the planned capital expenditure programme, while also having capacity to fund potential unplanned events.

This debt limit is considered financially prudent, as it sits within the lending limits set by the Local Government Funding Authority (LGFA). The LGFA equivalent metric is based on net debt, where net debt is defined as gross debt less liquid financial assets and investments.

This section shows the planned capital, operating expenditure and depreciation for the first ten years.

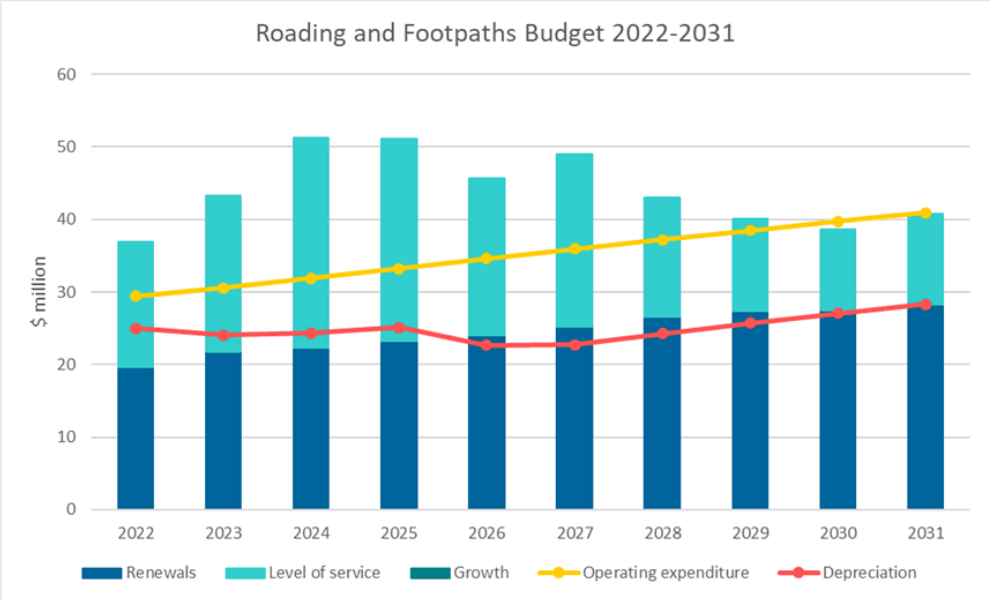
8.2. Three waters budget



3 Waters capital and operating expenditure budget

$ million	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Operating expenditure	40.7	42.4	43.9	45.8	48.0	49.8	51.8	54.1	55.8	57.7	489.9
Depreciation	32.1	33.5	33.5	34.6	36.1	37.4	38.3	40.6	42.7	44.6	373.2
Total operating expenditure	**72.8**	**75.9**	**77.4**	**80.5**	**84.0**	**87.1**	**90.1**	**94.7**	**98.4**	**102.2**	**863.2**
Renewals	31.3	32.2	25.3	31.3	28.5	38.1	43.1	50.3	53.0	62.8	395.9
Level of service	7.5	6.4	8.4	8.5	9.9	6.8	9.8	12.5	8.2	10.5	88.4
Growth	3.0	6.3	7.9	8.2	9.1	9.1	9.1	8.7	8.3	7.6	77.4
Total capital expenditure	**38.8**	**38.5**	**33.8**	**39.8**	**38.4**	**44.9**	**52.9**	**62.8**	**61.2**	**73.2**	**484.3**

8.3. Transport Budget



Roading and footpaths capital and operating expenditure budget

$ Million	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Operating expenditure	29.4	30.5	31.9	33.2	34.6	35.9	37.2	38.5	39.7	40.9	351.9
Depreciation	25.0	24.0	24.3	25.1	22.7	22.7	24.3	25.7	27.0	28.3	249.1
Total operating expenditure	**54.4**	**54.6**	**56.2**	**58.3**	**57.3**	**58.6**	**61.5**	**64.2**	**66.7**	**69.2**	**601.0**
Renewals	19.6	21.7	22.3	23.3	24.0	25.2	26.5	27.3	27.5	28.3	245.8
Level of service	17.3	21.6	28.9	27.8	21.8	23.8	16.4	12.8	11.1	12.4	193.8
Growth	-	-	-	-	-	-	-	-	-	-	-
Total capital expenditure	**36.9**	**43.3**	**51.2**	**51.1**	**45.7**	**49.0**	**43.0**	**40.1**	**38.6**	**40.7**	**439.6**

9. THE 50 YEAR PLAN FOR NETWORK INFRASTRUCTURE

The DCC has identified work to address the highest priority risks and activities in most need of investment in years 1 to 5 of this 10 Year Plan. However, affordability pressures, market capacity and DCC project delivery capacity and capability mean investment trade-offs have been made. Renewals investment will be prioritised in the most need and highest risk areas while market and the DCC delivery capacity is established. The aim is to increase project delivery year on year and if an improved rate is achieved, there is the option to re-allocate funds from later in the plan to earlier years through the Annual Plan process.

Large scale projects are difficult to anticipate in the longer term due to an increasing number of unknowns However, within the timeframe of this 50 Year Plan, most 3 waters buildings and structures will require replacement or significant upgrades to ensure service levels are maintained. Further changes to the 3 waters and transport networks may also be required depending on demographic changes within the city. The impacts of climate change are likely to place pressure on the transport network's capacity to remain resilient in coastal, flood-prone, low-lying areas and will likely require some mitigation.

3 Waters investment in the short - medium term is to continue pipework renewals and large-scale plant renewals and focus on wet weather capacity upgrades at the WWTPs. More clarity on regulatory changes and the outputs of the system plans will be available for the 2024-34 10 Year Plan and so it is expected that the medium to long term capital projects will evolve for the larger treatment plants.

Longer term, the replacement of the Deep Creek and Deep Stream raw water pipelines (including replacing the Taieri River pipe bridge) are planned, with design starting in the medium term. The replacement of these two pipelines is particularly significant as both carry significant risk in terms of the DCC's ability to supply water. Failure to address these assets in this timeframe would expose the assets to increasing risk of failure denying the city of its two primary water sources.

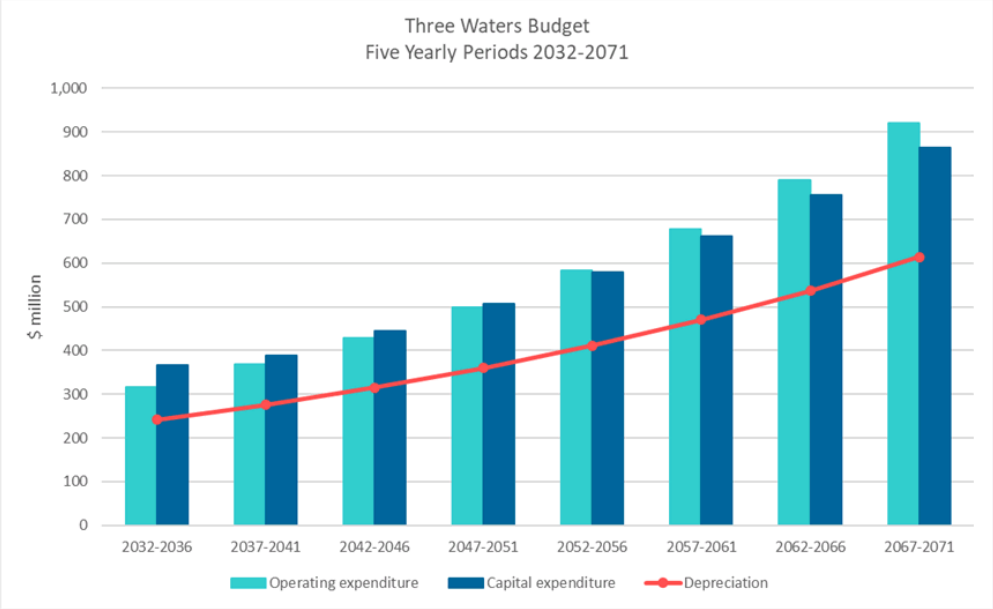
Significant 3 waters investment is required to service growth within the city, mainly within the networks. Most of the treatment plants have capacity to deal with forecast population changes, however some of the smaller water treatment plants will need upsizing. The solutions to the water treatment plants will be considered as part of the water system plan which may result in rationalising of plants to ensure they are able to comply with any new, more stringent water quality standards introduced through 3 Water's reform.

Transport renewals in the short – medium term will remain focused on maintaining the road network to appropriate levels of service. Investment decisions will be backed by condition assessments and prioritised according to the function of the road. Improved planning and increased investment will be required for assets such as sea walls, retaining walls and drainage assets in light of changing weather patterns. Larger projects look to address safety issues, improve the networks capacity and to provide transport choice for different modes that will facilitate a decrease in transport carbon emissions and a healthy connected city.

The DCC will continue to invest in relationships with professional and local government bodies such as Water New Zealand, Local Government New Zealand, Society of Local Government Managers, Institute of Public Works Engineers Australasia and Central Government to avoid duplication of effort and identify approaches used by other groups that can be applied in a local context.

9.1. 3 Waters 50 year budget

Projected 3 waters capital and operating expenditure in 5 year bands for the 11 to 50 year period.

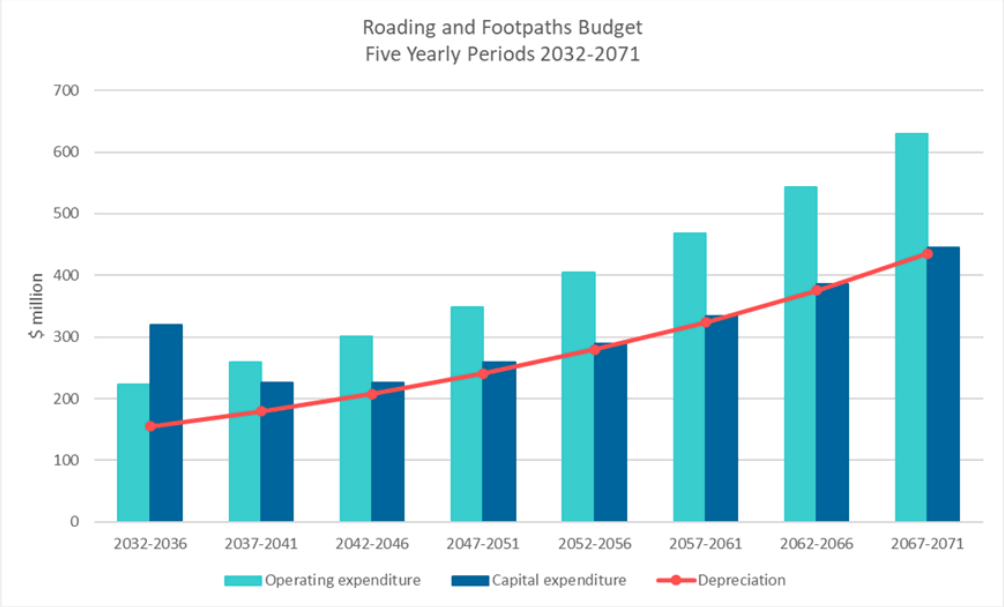


3 Waters capital and operating expenditure budget, five year bands for the 11 to 50 year period

$ million	2032-2036	2037-2041	2042-2046	2047-2051	2052-2056	2057-2061	2062-2066	2067-2071	Total
Depreciation	241.5	275.9	315.2	360.1	411.4	470.1	537.0	613.6	3,224.8
Operating Expenditure	316.3	368.4	429.2	500.0	582.4	678.5	790.4	920.7	4,585.9
Capital Expenditure	367.2	388.7	444.1	507.4	579.7	662.3	756.6	864.4	4,570.3

9.2. Transport 50 year budget

Projected transport capital and operating expenditure in 5 year bands for the 11 to 50 year period.



Transport capital and operating expenditure budget, five year bands for the 11 to 50 year period

$ million	2032-2036	2037-2041	2042-2046	2047-2051	2052-2056	2057-2061	2062-2066	2067-2071	Total
Depreciation	154.7	179.4	207.9	241.1	279.5	324.0	375.6	435.4	2,197.6
Operating Expenditure	223.8	259.5	300.8	348.7	404.3	468.6	543.3	629.8	3,178.8
Capital Expenditure	319.7	225.8	225.4	258.5	289.4	333.9	385.4	445.2	2,483.3

Appendix 1:

Infrastructure Asset Lives – 3 Waters

Table 1: Water Network Assets

Asset Group	Average Expected Life
Pipe Material: Asbestos Cement	60-120
Pipe Material: Cast Iron	85-130
Pipe Material: Polyvinyl Chloride	60-80
Pipe Material: Steel	60-120
Pipe Material: Copper	60
Pipe Material: Galvanised Iron	50
Pipe Material: Polyethylene	50-100
Pipe Material: Ductile Iron	120
Pipe Material: Concrete	80
Pipe Material: Unknown Material	80

Table 2: Wastewater & Stormwater

Asset Group	Average Expected Life
Pipe Material: Asbestos Cement	60-120
Pipe Material: Cast Iron	85-130
Pipe Material: Polyvinyl Chloride	40-100
Pipe Material: Steel	60-120
Pipe Material: Polyethylene	30-100
Pipe Material: Concrete	80
Pipe Material: all other material	100

Table 3: Water, Wastewater & Stormwater - other network assets

Asset Group	Average Expected Life
Hydrant	72
Meter	10
Reticulation Flow Meter	10
Combo Meter	10
Manifold	60
Toby Box	72
Backflow Preventer	70
Valves	70
Break Pressure Tank	80
Correlation Point	100
Strainer	10
Water Vent	80

Table 4: Water Plant Assets

Asset Group	Average Expected Life	Asset Group	Average Expected Life
Building - Environs	50 - 91	Meter - Magnetic Flow	15 - 61
Building - External Fabric	50 - 91	Meter - Multi	15 - 15
Building - Internal Finishing	50 - 91	Mixer	22 - 40
Building - Services	50 - 91	Mixer - Static	30 - 30
Building - Structure	35 - 156	Orifice Plate	30 - 30
Bridge / Footbridge	50 - 71	Pipe	50 - 50
Channel	75 - 156	Piezometer	15 - 15
Embankment	150 - 156	Programmable Logic Controller	15 - 15
Fencing	25 - 70	Pump	30 - 66
Road Ford	75 - 75	Pump - Dosing	30 - 30
Gate	25 - 61	Pump - Submersible	25 - 50
Road Access, Pavements & Concrete Areas	25 - 47	Pump - Sump	25 - 61
Spillway	75 - 156	Solar Panel	26 - 26
Structure	35 - 175	Particle Counter - Liquid	15 - 15
Tank	71 - 71	Scada Radio	15 - 26
Tank - Contact	65 - 65	Racks - Membrane	30 - 30
Tank - Fuel	35 - 35	UV Reactor	25 - 30
Tank - Miscellaneous	30 - 91	Air Receiver	25 - 27
Tank - Membrane	65 - 65	Roof	40 - 91
Tank - Raw Water	71 - 71	Rotameter	20 - 21
Tank - Treated Water	65 - 72	Mixing Rotors	20 - 27
Aeration Tower	50 - 50	Scada RTU (Remote Terminal Unit)	15 - 26
Screen Tower	90 - 151	Scales	20 - 32
Weir	150 - 155	Bore Screen	32 - 67
Wall	50 - 50	Step Screen	25 - 25
Actuator - Electric	25 - 50	Feeder Screw	20 - 20
Actuator - Hydraulic	25 - 31	Soft Starter	15 - 15
Actuator - Pneumatic	18 - 27	Safety Shower	25 - 25
Aftercooler - Air	44 - 44	Chemical Sensor	15 - 15
Blower - Air	15 - 51	Level Sensor	15 - 61
Boat	20 - 20	Pressure Sensor (Transducer)	15 - 61
Bore Capping	55 - 67	UV Sensor	16 - 16
Bore Casing	50 - 67	Stairs / Steps	50 - 50
Cabinet	20 - 50	Switchboard	30 - 71
Valve Chamber / Pit	60 - 146	Flow Switch	15 - 15
Cleaning Unit - UV	17 - 17	Level Switch	15 - 51
Grit Classifier	25 - 25	Pressure Switch	15 - 54
Air Compressor	30 - 67	System - Earthquake Detection	15 - 15
Controller	15 - 15	System - Fire	20 - 20
Chemical Controller	15 - 154	System - Pipes/Valves/Fittings	30 - 100
Pump Controller	15 - 18	System - Security	20 - 22
Asset Group	Average Expected Life	Asset Group	Average Expected Life

Conveyor	30 - 30	Tank - Miscellaneous	25 - 25
Flexible Coupling	30 - 44	Tank - Slurrier	50 - 50
Cover	50 - 50	Trailer	20 - 24
Defibrillator	15 - 15	Turbine	40 - 40
Diffuser	30 - 30	UPS	20 - 23
Dehumidifier	5-61	Variable Frequency Drive	15 - 30
Pulse Dampener	25 - 25	Valve	40 - 86
DP Cell	22 - 44	Valve - Air	40 - 71
Air Drier	30 - 44	Valve - Air Relief	40 - 40
Engine	20 - 24	Valve - Backflow Preventor	40 - 40
Fire Extinguisher	20 - 34	Valve - Ball	40 - 61
Fan	20 - 65	Valve - Butterfly	40 - 85
Feeder	30 - 30	Valve - Check	40 - 91
Filter	21 - 21	Valve - Gate	40 - 86
Filter - Air	21 - 21	Valve - Modulating	40 - 40
Filter - Membrane	10-11	Valve - Needle	40 - 40
Filter - Screen	20 - 51	Valve - Non Return	40 - 144
Pressure Gauge / Indicator	30 - 54	Valve - Pilot Control Relief	40 - 40
Rain Gauge	15 - 15	Valve - Plunger	40 - 40
Heater	25 - 51	Valve - Pinch	40 - 40
Inclinometer	15 - 15	Valve - Pressure Reducing	40 - 90
Chemical Injector	30 - 154	Valve - Pressure Relief	40 - 54
Lab Gear	15 - 39	Valve - Pressure Sustaining	40 - 41
Lightning Counter	15 - 15	Valve - Sluice	40 - 90
UV Lighting Assembly	30 - 30	Valve - Sliding Gate	40 - 40
Lifting Gear	15 - 67	Valve - Solenoid	40 - 40
Landscaping	75 - 75	Ventilation	53 - 53
Liner	50 - 50	Pressure Vessel	25 - 144
Lathe	50 - 50	Saturator Vessel	25 - 25
Miscellaneous - Items not defined yet	15 - 175	Water Hydrant	40 - 51
Monitor - Chlorine	15 - 39	Walkway - Steel	40 - 61
Monitor - Colour	15 - 21	Winch	15 - 15
Monitor - Conductivity	15 - 15	Weather Station	22 - 22
Monitor - Fluoride	15 - 15	Wet Well - Pump	40 - 50
Monitor - Flow Mechanical	17 - 41		
Monitor - Gas	15 - 15		
Monitor - pH	15 - 154		
Monitor - Temperature	15 - 15		
Monitor - Turbidity	15		
Monitor - UV Transmitter	15 - 17		
Motor	20 -50		

Table 5: Wastewater Plant Assets

Asset Group	Average Expected Life	Asset Group	Average Expected Life
Building	50 - 75	Motor	20 - 46
Building - Environs	50 - 65	Meter - Conductivity	15 - 15
Building - External Fabric	50 - 65	Meter - Dissolved Oxygen	15 - 21
Building - Internal Finishing	50 - 65	Meter - Magnetic Flow	15 - 32
Building - Services	50 - 65	Meter - Gas	15 - 15
Building - Structure	50 - 65	Meter - Height Velocity	15 - 15
Tank Bridge	50 - 50	Meter - Multi	15 - 15
Valve Chamber / Pit	60 - 60	Meter - pH	15 - 31
Cover	40 - 40	Meter - Suspended Solids	15 - 21
Tank Covers	40 - 40	Mixer	22 - 36
Diffuser	30 - 30	Odour Control Unit	25 - 25
Door	30 - 64	Pipe	50 - 50
Fencing	25 - 56	Pressure Indicator Transmitter	15 - 40
Foundation	75 - 75	Programmable Logic Controller	15 - 27
Gate	25 - 56	Pump	30 - 46
Orifice Plate	30 - 30	Pump - Heat	15 - 15
Planting	50 - 50	Pump - Submersible	20 - 121
Pond - Oxidation	175 - 175	Pump - Submersible Domestic	25 - 25
Road Access, Pavements & Concrete Areas	25 - 41	Belt Press	27 - 33
Roof	40 - 40	Scada Radio	15 - 37
Skip (Sludge)	20 - 20	Reactor	13 - 26
Stairs / Steps	50 - 50	Air Receiver	25 - 25
Structure	35 - 175	Scada RTU (Remote Terminal Unit)	15 - 37
Tank	25 - 80	Chemical Scrubber	30 - 30
Walkway - Internal	40 - 40	Step Screen	25 - 25
Wall	50 - 50	Soft Starter	15 - 29
Wet Well - Pump	40 - 80	Water Sampling Pump	15 - 15
Actuator - Electric	25 - 40	Level Sensor	15 - 21
Actuator - Pneumatic	18 - 37	Pressure Sensor (Transducer)	15 - 18
Boiler - Gas	30 - 46	Suspended Solids Indicator Transmitter	15 - 15
Boiler - Oil	30 - 46	Stairs / Steps	40 - 40
Blower - Air	15 - 40	Switchboard	30 - 46
Centrifuge	25 - 25	Flow Switch	15 - 15
Steam Cleaner	15 - 15	Level Switch	15 - 30
Air Compressor	30 - 30	Torque Switch	30 - 30
Level Controller (Multirode)	15 - 37	System - Fire	15 - 15
Conveyor	20 - 40	System - Pipes/Valves/Fittings	20 - 80
Crane - Overhead	50 - 64	System - Polymer Make Up	30 - 40
Cover	40 - 40	System - Security	20 - 26
Domestic Control Panel	15 - 15	Temperature Indicator Transmitter	15 - 15
Defibrillator	15 - 15	Tank	40 - 40

Asset Group	Average Expected Life	Asset Group	Average Expected Life
Digester	50 - 50	High Voltage Transformer	50 - 50
Engine	20 - 20	UPS	20 - 21
Heat Exchanger	30 - 46	UV Intensity Indicator Transmitter	15 - 15
Fan	20 - 31	Unit - Actuated Valve	18 - 18
Flow Indicator Transmitter	15 - 15	UV Transmittance Indicator Transmitter	15 - 15
Filter - Bio	20 - 46	Variable Frequency Drive	10-26
Filter - Screen	20 - 46	Valve	40 - 64
Gearbox	30 - 30	Valve - Air Relief	40 - 40
Pressure Gauge / Indicator	15 - 15	Valve - Backflow Preventor	40 - 40
Generator	40 - 40	Valve - Gate	40 - 40
Gas Holder / Gasometer	15 - 15	Valve - Non Return	40 - 40
Lab Gear	15 - 21	Valve - Penstock	40 - 40
UV Lighting Assembly	21 - 21	Valve - Pressure Relief	40 - 40
Lifting Beam	50 - 50	Ventilation	25 - 50
Lifting Gear	25 - 37	Winch	15 - 15
Level Indicator Transmitter	15 - 15	Washpactor	25 - 27
Liner	50 - 50	Water Blaster	15 - 15
Lathe	50 - 50	Wet Well - Domestic Pump	25 - 25
Monitor - Gas	15 - 21		

Table 6: Stormwater Plant Assets

Asset Group	Average Expected Life
Building	50 - 91
Building - Environs	58 - 58
Building - External Fabric	58 - 58
Building - Internal Finishing	58 - 58
Building - Services	58 - 58
Building - Structure	58 - 58
Valve Chamber / Pit	60 - 60
Door	30 - 30
Wet Well - Pump	40 - 91
Actuator - Electric	57 - 57
Air Compressor	36 - 36
Level Controller (Multirode)	15 - 29
Crane - Overhead	57 - 57
Generator	40 - 40
Level Indicator Transmitter	15 - 15
Motor	20 - 91
Computer	21 - 21
Programmable Logic Controller	15 - 15
Pump	20 - 91
Pump - Submersible	25 - 31
Scada Radio	15 - 29
Scada RTU (Remote Terminal Unit)	15 - 15
Soft Starter	15 - 28
Water Sampling Pump	15 - 15
Level Sensor	15 - 15
Switchboard	30 - 57
System - Pipes/Valves/Fittings	50 - 91
System - Security	29 - 29
Variable Frequency Drive	15 - 15
Valve - Gate	40 - 40
Valve - Non Return	40 - 40

Infrastructure Asset Lives – Transport

Table 7: Transport Pavement Surfacing

Asset Group	Average Expected Life
Armaseal	10
Asphaltic Concrete <= 30mm	15-20
Asphaltic Concrete >30mm	20-26
Cape Seal	7-16
Combi / Sandwich Seal	8-14
Concrete	50-60
Interlocking Concrete Blocks	20-40
Racked in Seal	7-21
Single Coat Seal	4-22
Slurry Seal Type 2	7-13
Slurry Seal Type 3	7-13
THSRA Asphaltic Concrete	20-21
Two Coat Sea;	8-22
Ultra-Thin Asphaltic Concrete	13-16
Basecourse	40-140

Table 8: Transport Footpaths

Asset Group	Average Expected Life
AB with IB Boarders	20
Asphalt (AB/AR)	23
Asphaltic Concrete Recycle	12
Concrete	60
Concrete Exposed	60
Metal	20
Paving Blocks	15
Sealed	10
Slurry (SL)	10
Stone Tread	150
Timber	30

Table 9: Transport Bridges and Walls

Asset Group	Average Expected Life
Concrete Bridge	100
Ford	80
Historic Bridges	150
Steel/Concrete Bridges	100
Timber Bridges	70
Anchored Sea Wall	80
Cantilevered Sea Wall	80
Dumped Sea Wall	20
Gabion Sea Wall	80
Hand Placed Rock Sea Wall	60
Machine Placed Roak Sea Wall	20
Rip Rap Sea Wall	30
Stacked Stone Sea Wall	60
Retaining Walls	80
Rip Rap (Retaining)	30

Table 10: Transport Street Lighting

Asset Group	Average Expected Life
Pole	40
Bracket	30
Light	18
Basestation	10
Telecell	20

Table 11: Transport Drainage

Asset Group	Average Expected Life
Mud Tanks	80
Culverts	80
Other Drainage	80
Surface Water Channels	12-100

Table 12: Transport Traffic Control

Asset Group	Average Expected Life
General (paint) Markings)	N/A
Raised Reflective (RRPM) Markings	4
Thermoplastic Markings	4
Other Markings	7
Cusions	15
Intersection Platforms	20
Raised Platforms	20
Watts (hump)	15
Pedestrian Raised Platform	20
Camera (CCTV)	10
Electronic Sign	15
Chevron	12
Edge Marker Posts	12
Information Sign	12

Table 13: Transport Minor Structures

Asset Group	Average Expected Life
Barrier Rail Pedestrian	30
Bollards	15
Handrail	30
Safety Rail (vehicular)	30
Timber Fences	30
Mesh Fence	30
0.6m Chain Fence	15
Architectural Fence	30
Bike Stand	20-30
Bus Shelter	40
Garden Box	50
Seat	20
Litter Bin	10
Cattle Stop	40
Pedestrian Bridge	80

SHAPING FUTURE DUNEDIN TRANSPORT PROGRAMME

Department: Transport

EXECUTIVE SUMMARY

1 Council resolved to include six Shaping Future Dunedin Transport (SFDT) projects in the draft 10 Year Plan capital budgets. Additional information was requested and this report provides that information.

RECOMMENDATIONS

That the Council:

a) **Notes** the budget timings of Shaping Future Dunedin Transport projects are in Transport Capital budgets.

BACKGROUND

2 On 14th December 2020 Council considered a report on projects within the SFDT Programme to be included in the 10 Year Plan 2021-31 and resolved the following:

"Moved (Cr Jim O'Malley/Cr David Benson-Pope):

That the Council:

a) ***Supports*** *the six DCC projects of the Shaping Future Dunedin Transport Programme be included in the Draft Ten Year Plan 2021-31.*

i) Harbour Arterial Efficiency Improvements
ii) Central City Parking Management
iii) Princes Street Bus Priority and Corridor Safety Plan
iv) Central Cycle and Pedestrian Improvements
v) Park and Ride Facilities – Mosgiel and Burnside
vi) Central City Bike Hubs – Parking and Facilities.

b) ***Notes*** *that the timing of those projects to be included will be considered alongside the total capital budget and presented to the January 2021 meeting for approval."*

3 At the meeting, staff also advised that additional detail would be provided on each of the projects as part of the January 2021 10 Year Plan meetings. This report provides that additional information. The 14th December report on the SFDT programme can be found in attachment A.

DISCUSSION

4 Scope documents for each of the projects are included as Attachments B - G and contain further detail including cost estimates and the proposed timing for each project.

i) Attachment B – Harbour Arterial Efficiency Improvements

ii) Attachment C – Central City Parking Management

iii) Attachment D – Princes Street Bus Priority and Corridor Safety Plan

iv) Attachment E – Central Cycle and Pedestrian Safety

v) Attachment F – Park and Ride Facilities – Mosgiel and Burnside

vi) Attachment G – Central City Bike Hubs – Parking and Facilities.

5 It is expected that Waka Kotahi NZ Transport Agency will co-invest in the projects via its normal Funding Assistance Rate subsidy. Five of the six projects will attract approximately 50% subsidy.

OPTIONS

6 There are no options to be considered in this report.

NEXT STEPS

7 The six projects will form part of the 10 Year Plan Consultation Document.

Signatories

Author:	Jeanine Benson - Group Manager Transport
Authoriser:	Simon Drew - General Manager Infrastructure Services

Attachments

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the social, economic, environmental and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☒	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☐	☐	☒
3 Waters Strategy	☐	☐	☒
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☐	☐	☒
Other strategic projects/policies/plans	☐	☐	☒

Shaping Future Dunedin Transport Programme delivers on multiple strategic objectives with a particular focus on safety, travel choice, improved freight connections and climate change.

Māori Impact Statement

Mana whenua will be involved during project planning and design stages.

Sustainability

Improving public transport, walking and cycling infrastructure contributes towards a sustainable city.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The programme is not included within the current 10 year plan. It has been put forward for the Regional Land Transport Plan currently under development and will be considered for the National Land Transport Programme.

Financial considerations

Financial considerations are discussed in the 14th December 2020 Council report.

Significance

This decision is considered medium to high in terms of the Council's Significance and Engagement Policy. This will be consulted on as part of the 10 year plan special consultative process.

Engagement – external

There has been engagement throughout the programme development. This included three stakeholder workshops, a 5 week public engagement exercise and a public survey.

Engagement - internal

The Transport Group have led this project. Input has been sought from City Planning, with representatives attending workshops.

SUMMARY OF CONSIDERATIONS
Risks: Legal / Health and Safety etc. There are no known risks.
Conflict of Interest There are no known conflicts of interest.
Community Boards The majority of the proposed DCC projects are not within Community Board areas. Where a project is in a Community Board area, appropriate consultation will be undertaken. Boards also have the opportunity to participate in the consultation process for the 10 Year Plan.

SHAPING FUTURE DUNEDIN TRANSPORT PROGRAMME

Department: Transport

EXECUTIVE SUMMARY

1 The purpose of this report is to present the Dunedin City Council (DCC) projects, within the wider Shaping Future Dunedin Transport Programme, to be considered for inclusion in the 10 year plan 2021-31.

2 The Shaping Future Dunedin Transport Programme is a set of integrated and complementary capital projects that have been developed by the Connecting Dunedin Partnership. The projects have been collaboratively developed to ensure that transport disruption is minimised during and after the construction of the new Dunedin Hospital. The component projects are expected to be delivered by each partnership agency.

3 The Connecting Dunedin Partnership comprises DCC, Otago Regional Council (ORC), and Waka Kotahi NZ Transport Agency (Waka Kotahi). The total value of the proposed interconnected package of projects delivered across all partnership agencies is $104 million. Each partnership agency is considering funding for their projects within their respective decision-making and budget planning processes.

4 There are six proposed DCC projects which have been costed at a total of $53.17 million, phased over years 1-8 of the 10 year plan 2021-31. The projects are not included in the current 10 year plan. It is expected that Waka Kotahi will contribute approximately 50% of the cost of these projects via their Funding Assistance Rate subsidy.

5 The six proposed DCC projects aim to provide more transport choice through broadening both route and mode options. This includes enhancing the Harbour Arterial, improving parking management in the central city, and improving public transport, walking and cycling networks.

RECOMMENDATIONS

That Council:

a) **Decides** which, if any, of the DCC's six projects of the Shaping Future Dunedin Transport Programme should be included in the 10 year plan 2021-31.

b) **Notes** that the timing of those projects to be included will be considered alongside the total capital budget and presented to the January 2021 meeting for approval.

BACKGROUND

6 Construction on the new Dunedin hospital is expected to start in 2022.

7 Planning work has been undertaken since 2018 to identify an interconnected package of changes to the Dunedin transport network that can support the location of the new Dunedin Hospital.

8 The proposed implementation of the Shaping Future Dunedin Transport Programme aims to minimise disruption during the hospital construction and ensure city facilities remain accessible during and after this period. Improving public transport, creating more efficient alternative routes and providing clear communications are viewed as integral to maintaining an accessible city during and after the hospital construction period.

9 The six proposed DCC projects are aligned with DCC's strategic aspirations, as articulated within the DCC Strategic Framework, including the city's Zero Carbon 2030 goal. The vision in the DCC's Spatial Plan is for a liveable city, with a strong network of accessible and connected communities that promote psychological and physical wellbeing. The Shaping Future Dunedin Transport Programme, comprising all partner projects, provides an integrated and connected network.

Connecting Dunedin

10 Connecting Dunedin is a partnership between DCC, ORC and Waka Kotahi. The purpose of the partnership, as articulated in the Terms of Reference is *"…to ensure the transport programme of activities that affect the Dunedin urban area and the strategic transport network are well connected, deliver a multi-modal and customer focused transport system that is integrated with strategic land use planning. The aim is to provide easy, safe and reliable travel choices for different trips to meet the future needs of Dunedin."*

11 The Connecting Dunedin Governance Group oversees the partnership and includes elected representatives from both the DCC and ORC. This group does not have decision-making delegation; decision-making remains within each organisation.

12 The Connecting Dunedin Advisory Group comprises senior officers from each of the partner agencies that provides advice to the Governance Group.

13 Connecting Dunedin provides collaborative transport leadership for the city. This includes strategic oversight of the Shaping Future Dunedin Transport projects.

DISCUSSION

14 Within the Shaping Future Dunedin Transport Programme, six proposed projects fall under the DCC's remit. The other projects fall under the remit of Waka Kotahi and the ORC. The programme is interconnected, with the individual parts needing to progress to minimise disruption during hospital construction, enable the hospital to be easily accessible, address central city safety issues and improve transport option choice. Partner projects are shown in Attachment A.

15 The six proposed DCC projects are:

a) Harbour Arterial Efficiency Improvements

b) Central City Parking Management

c) Princes Street Bus Priority and Corridor Safety Plan

d) Central Cycle and Pedestrian Improvements

e) Park and Ride Facilities – Mosgiel and Burnside

f) Central City Bike Hubs – Parking and Facilities

16 The total estimated cost for these six proposed projects is $53.17 million. It is expected that Waka Kotahi will co-invest via its normal Funding Assistance Rate subsidy. Five of the six projects will attract approximately 50% subsidy.

17 Partner agencies are progressing their Shaping Future Dunedin Transport projects within their respective decision-making and budget planning processes. Discussions related to the SH1 one - way system are continuing at the governance and operational level of the Connecting Dunedin partnership. Decisions relating to SH1 are not expected to impact on the six proposed DCC projects. The multi-criteria analysis to assess options for the one-way system is being worked through and will be reported back to the Council in March 2021.

Programme

18 The six proposed DCC projects within the wider programme have been scoped to deliver the following benefits:

a) Improved transport choice for access to the city, including public transport, walking, cycling and park and ride facilities.

b) Improved safety outcomes, particularly for vulnerable users in the central city, by addressing areas of high risk.

c) Improved freight connections from the south to/from the Port resulting in greater efficiency on the harbour arterial.

d) Improved transport route options, by enhancing the harbour arterial partial bypass of the central city area, in time to minimise traffic disruption during construction of the new Dunedin Hospital.

e) Provision and facilitation of low carbon transport mode options that support positive wellbeing outcomes.

f) Improved efficiency and offering of parking choice in the city.

19 In the Shaping Future Dunedin Transport engagement feedback (published September 2020), there was strong support for improved parking facilities near the new Dunedin Hospital and City Centre. The programme's focus is to optimise existing facilities, rather than invest in new ones. Improving transport mode choice will also affect demand for parking. Optimising the existing parking asset will include investing in parking technologies to monitor, charge, enforce and provide guidance to users about location of available parking. Once this has been implemented, the need for additional parking facilities could be considered further.

20 The table below shows the cost breakdown and recommended priority of the six proposed DCC projects.

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

COUNCIL
14 December 2020

Project	Priority	Explanation	TOTAL
Harbour Arterial Efficiency Improvements	1	Eases congestion by improving alternative route	**$16.61m**
Central City Parking Management	2	Improves access through efficient parking management	**$9.5m**
Princes Street Bus Priority and Corridor Safety Plan	3	Improves safety on this high risk route	**$6.61m**
Central Cycle and Pedestrian Improvements	4	Improves safety and provides travel choices	**$7.75m**
Park and Ride Facilities – Mosgiel and Burnside	5	Manages parking demand and improves travel choices	**$10.25m**
Central City Bike Hubs – Parking and Facilities	6	Improves travel choice	**$2.45m**
TOTAL			**$53.17m**

21 The tables below describe the six proposed DCC projects in recommended priority order, including the purpose, scope and costs.

Project	**Harbour Arterial Efficiency Improvements**
Purpose	An alternative transport route to the SH1 carriageways would help mitigate travel disruption related to the new Dunedin Hospital construction.
Scope	A package of improvements, including real time signage showing the quickest routes throughout the day, designed to allow the Harbour Arterial to operate more efficiently and allow for a planned alternative route to/from the port and as a central city bypass for general traffic. The following areas would be included: • Strathallan Street • Wharf Street • Ward Street and • Intersections with side streets
Estimated cost	**TOTAL: $16.61m** Financial Assistance Rate (FAR): 51%

Project	**Central City Parking Management**
Purpose	To maintain affordable and efficient access to the city centre, in a way that meets community needs and supports visitors to the city. Public consultation has shown that people are concerned about parking provision in the city centre and around the new Dunedin Hospital. Implementing a plan that considers the price, location, availability and provides guidance to parking areas would benefit the wider transport network. Utilising new technologies will ensure the parking system is user friendly and managed efficiently.
Scope	Implement a plan to improve the efficiency, the supply and management of parking to ensure it meets community needs, including: • Parking technology for monitoring, payment and enforcement systems throughout the city • Provide parking guidance system (electronic signboards for available parking, fixed signage for parking locations) • Extend central city paid parking area, new meters
Estimated cost	**TOTAL: $9.5m** Financial Assistance Rate (FAR): 0%

Project	**Princes Street Bus Priority and Corridor Safety Plan**
Purpose	Princes Street currently supports a high number of journeys into the city (65% of which originate from the south) and has a high road safety risk. The purpose of this project is to develop a bus priority corridor to remove inefficiencies and delays and provide a more efficient public transport corridor.
Scope	From South Road to Manse Street, and then to Moray Place. Facilitating bus movements at key intersections along Princes Street intersections e.g. Andersons Bay Road, Jervois Street, Manse Street/ Jetty Street. Pedestrian crossing facilities along Princes Street connecting each side of the road and providing good access to bus stops. Improving junctions with side roads to support pedestrians when walking into the city from the south.
Estimated cost	**TOTAL: $6.61m** Financial Assistance Rate (FAR): 51%

Project	**Central Cycle and Pedestrian Improvements**

Purpose	1 To provide cycle and pedestrian improvements to connect the cycle network and address city safety issues. 2 There are currently gaps in the central city cycle network and additional routes will provide a safe, connected cycle network.
Scope	Provision of safe cycling and walking facilities in the following areas: • St Andrew Street (high collective (crash density) risk) • Bank/George Street (medium-high collective risk) and • Albany Street (low-medium risk). Providing a direct connection from the Harbour Circuit to the city centre via the University. Provision of additional Barnes Dance crossings in the city centre to improve access to the new Dunedin Hospital sites.
Estimated cost	**TOTAL: $7.75m** Financial Assistance Rate (FAR): 51%

Project	**Park and Ride Facilities – Mosgiel and Burnside**
Purpose	The majority of trips into the city (65%) are made by people coming from the south/west. Currently, limited travel options are available for residents in Green Island, Mosgiel, Brighton and the Taieri. The purpose of this project is to provide alternatives which will also reduce traffic demand in the central city during and after the new Dunedin Hospital construction.
Scope	Park and Ride facilities that can provide an alternative to driving into the city centre, including a direct connection to express city-bound buses.
Estimated cost	**TOTAL: $10.25m** Financial Assistance Rate (FAR): 51%

Project	**Central City Bike Hubs – Parking and Facilities**
Purpose	There is currently limited secure and sheltered bicycle parking in the central city. The purpose of this project is to provide more widely available and enhanced bicycle parking options and infrastructure.
Scope	The creation of Bike Hubs to support residents who choose to cycle into the city, by providing sheltered bike lockers and other facilities such as repair and charging services in the following areas: • North Dunedin/ Tertiary • Central City • South Dunedin/ Oval

Project	**Central City Bike Hubs – Parking and Facilities**
Estimated cost	**TOTAL: $2.45m** Financial Assistance Rate (FAR): 51%

OPTIONS

22 The options in this report are to decide which component projects, if any, should be included in the 10 year plan 2021-31, or decide not to proceed with any of the DCC projects in the programme.

Option One – Decide which, if any, of the Dunedin City Council six proposed projects of the Shaping Future Dunedin Transport Programme should be included in the 10 year plan 2021-31

23 This option allows for the continuation of planning and implementation of a selected number, or all, of the proposed DCC projects within the Shaping Future Dunedin Transport Programme.

24 The Shaping Future Dunedin Transport Programme has been developed as a set of integrated and complementary capital projects that have been developed by the Connecting Dunedin Partnership. If Council decides to progress with limited projects, staff would need to continue discussions with the Connecting Dunedin Partnership to revise the programme and assess the impacts.

Advantages

- Reduced disruption during construction of the new Dunedin Hospital, which is expected to affect traffic on SH1 in the central city.
- Improved safety and accessibility for all road users, including vulnerable road users.
- Contributes to Council's Carbon Zero 2030 goal by enabling low carbon transport options.
- Contributes to central government priorities of providing safe, accessible and low carbon transport options, and therefore is eligible for financial support.
- Would represent commitment to the Connecting Dunedin partnership and working collaboratively on an integrated transport system for Dunedin.
- Ceasing further development of some of the proposed projects will reduce the capital investment required and does not preclude the DCC from progressing these projects in the future.

Disadvantages

- Due to the timing of the construction of the new Dunedin hospital, these projects represent a new capital investment in the early years of the 10 year plan, which will overlap a number of other priority Council projects.
- Ongoing costs to operate and maintain the new infrastructure.

Impact assessment – Option 1

Debt

- The debt funding requirement will be determined by which, if any, projects are approved.
- The debt requirements for each project are estimated to be as follows:

Project	Debt requirement
Harbour Arterial	$7.7 million
Central City Parking	$9.5 million
Princes Street	$3.2 million
Central Cycle and Pedestrian	$3.8 million
Park and Ride – Mosgiel, Burnside	$5 million
Central City Bike Hubs	$1.2 million

Rates

- Operating expenditure will include operating costs, interest and depreciation. The impact on rates will be determined by which, if any, projects are approved. All figures provided are dependent on the timing of the works being completed. An initial assessment of the impact on rates at the completion of the projects, provides the following estimates:
- **Princes Street** – $1.2 million per annum, or 0.7% on general rates.
- **Harbour Arterial** – $2.9 million per annum, or 1.8%.
- **Central City Parking** – $1.5 million per annum, or 0.9%.
- **Park and Ride** – $1.2 million per annum, or 0.7%.
- **Central City Bike Hub** – $0.3 million per annum, or 0.2%.
- **Central Cycle and Pedestrian** - $1.4 million per annum, or 0.9%

Level of service

- The level of service impact will be determined by which, if any, projects are approved.

Climate change

- The climate change impacts for the six projects have not been explored. The impacts of the designs on resilience and adaptation will be addressed through detailed design phases.

Zero carbon

- Enabling the six DCC projects has been preliminarily assessed as resulting in a minor increase in DCC emissions, but an overall decrease in city-wide emissions.
- The most significant sources of emissions are likely to be construction and maintenance associated with the assets. The most significant reductions in emissions come from the new network assets and/or network changes supporting a reduction in vehicle kilometres travelled, enabling greater use of low carbon modes of transport, and improving the efficiency of vehicle use (the latter with a focus on public transport). Transport is recommended as the DCC's primary focus area for emissions reduction interventions, being the city's largest source (39%), and fastest growing source, of emissions.

Option Two – Do not proceed with Programme

25 This option proposes to cease progress on the Council's projects in the Shaping Future Dunedin Transport Programme. The Council will continue to collaborate through the Connecting Dunedin partnership on existing projects that are underway.

Advantages

- Ceasing further development of the projects will reduce capital investment and associated debt in the immediate term and does not preclude the Council from continuing the work in future, should additional funding become available.

Disadvantages

- Does not improve safety or accessibility for all road users including vulnerable road users – those walking and cycling.
- There will likely be traffic disruption and loss of accessibility to the central city during construction of the new hospital, resulting in congestion, delays and frustration.
- Does not contribute to the Carbon Zero 2030 goal, or the 40% active transport mode share goal from the Integrated Transport Strategy.
- Does not contribute to government priorities outlined in the Government Policy Statement on land transport – Better Travel Options, Safety, Improving Freight Connections and enabling low carbon transport options.
- Does not demonstrate commitment to the Connecting Dunedin partnership and an integrated transport system.

Impact assessment – Option 2

Debt

- No debt funding is required for this option.

Rates

- There are no impacts on rates.

Level of service

- There would be no change to the level of service provided to the community.

Climate change

- This proposal would not promote climate change resilience or adaptation.

Zero carbon

- This option is preliminarily assessed as resulting in no immediate change in DCC or city-wide emissions. In the longer term, emissions from transport are likely to continue to grow without a network-based approach to public and active transport, ensuring car parking management is aligned with low emissions transport outcomes, and strong land use/transport integration.

NEXT STEPS

26 The selected option will be included in the 10 year plan.

Signatories

Author:	Stacey Hitchcock - Transport Planner Nick Sargent - Transport Strategy Manager
Authoriser:	Jeanine Benson - Group Manager Transport Simon Drew - General Manager Infrastructure Services

Attachments

	Title	Page
⇩A	Shaping Future Dunedin Transport – Integrated Partner Projects	86

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the social, economic, environmental and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☒	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☐	☐	☒
3 Waters Strategy	☐	☐	☒
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☐	☐	☒
Other strategic projects/policies/plans	☐	☐	☒

Shaping Future Dunedin Transport Programme delivers on multiple strategic objectives with a particular focus on safety, travel choice, improved freight connections and climate change.

Māori Impact Statement

Mana whenua will be involved during project planning and design stages.

Sustainability

Improving public transport, walking and cycling infrastructure contributes towards a sustainable city.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The programme is not included within the current 10 year plan. It has been put forward for the Regional Land Transport Plan currently under development, and will be considered for the National Land Transport Programme.

Financial considerations

Financial considerations are discussed in the report.

Significance

This decision is considered low in terms of the Council's Significance and Engagement Policy. This will be consulted on as part of the 10 year plan special consultative process.

Engagement – external

There has been engagement throughout the programme development. This included three stakeholder workshops, a 5 week public engagement exercise and a public survey.

Engagement - internal

The Transport Group have led this project. Input has been sought from City Planning, with representatives attending workshops.

SUMMARY OF CONSIDERATIONS
Risks: Legal / Health and Safety etc. There are no known risks.
Conflict of Interest There are no known conflicts of interest.
Community Boards The proposed DCC projects are not within Community Board areas.

Shaping Future Dunedin Transport – Integrated Partner Projects

Partner	Project	Purpose	Scope	TOTAL
ORC	**Upgrade Bus Hub and Superstops**	Improve mode choice	Improved infrastructure at bus hub and five superstops, including real time passenger information.	**$7m**
	Bus Fare and Frequency Review and Improvements	Improve mode choice	Simple, attractive fares, incentives and ongoing improvements including increase in frequency on key routes.	**$17m**
NZTA	**St Andrew and Frederick Street Improvements**	Improve access to New Dunedin Hospital	Relocation of SH88 from St Andrew Street to Frederick Street. St Andrew Street will be downgraded and will have a pedestrian focus. Frederick Street will meet state highway requirements.	**$4m**
	State Highway Upgrade	Improve access and amenity	Improve SH1 through the central city to provide an improved journey experience through urban amenity upgrades, improved pedestrian/cycle facilities, and slower speeds.	**$14m**
	Queens Garden to Oval Cycleway	Improve mode choice	Review with DCC the primary north-south cycleway and improve southern connections.	**$4.5m**
	Pine Hill Intersection Improvements	Improve safety	Safety improvements to address the ongoing risk at the Great King Street/Pine Hill Road intersection.	**$3m**

Harbour Arterial Efficiency Improvements

Project Cost	$16,610,000

1. Scope

This project will provide improved safety and efficiency for general traffic, and for freight accessing the Port on the Harbour Arterial corridor.

The Harbour Arterial route will utilise the following roads (south to north): Caversham Motorway (SH1)/Andersons Bay Road intersection – Andersons Bay Road – Strathallan Street – Wharf Street - Thomas Burns Street - Ward Street – Ward Street overbridge - Frederick Street/Anzac Avenue intersection.

The scope will include:

- Direction signage and real time information regarding congestion/delays on SH1 and the Harbour Arterial
- Major and minor intersection upgrades to address known safety and efficiency issues
- Corridor improvements
- Upgrade to the Ward Street overbridge
- Minor improvements for pedestrians and cyclists

Further detail to be developed during the preliminary and detailed design phases include:

Item	Description
Signage	Real Time Information Signs displaying travel times
Intersection changes	Andersons Bay Road/Strathallan Street/Kensington Road
	Strathallan Street/Portsmouth Drive
	Kitchener Street/Wharf Street
	Roberts Street/Wharf Street (turn restrictions)
	Birch Street/Wharf Street (turn restrictions)
	Fryatt Street/Wharf Street (turn restrictions)
	Willis Street/Thomas Burns Street (turn restrictions)
	Creswell Street/Thomas Burns Street (turn restrictions)
	Bombay Street/Thomas Burns Street (turn restrictions)
Harbourside Industrial area improvements	Network improvements within the harbourside industrial area to improve access
Pedestrians	Remove pedestrian signals and extend footbridge (adjacent Railway Station)
Intersection upgrade	Thomas Burns/Ward Street/Mason Street upgrade
Corridor improvements	Ward Street safety improvements, widening and right turn bays
Bridge improvements	Ward Street bridge deck widening and ramp changes
Intersection upgrade	Ward Street/Frederick Street/Anzac Avenue

Parking Management	
Project Cost	$10,900,000

1. Scope

A Parking Management Policy will be developed which will guide the supply and management of parking to ensure it meets community needs, aligns with the city's strategic objectives including net carbon zero, and supports businesses and visitors to the city. A plan that considers the price, location, availability and guidance to parking will ensure that the parking managed by the Council provides desired benefits. The proposed budget will fund the implementation of the policy and associated parking management plan.

The scope will include:

- An improved approach for the management of on and off street parking assets, including prioritising centrally located parking for shoppers/hospital, and parking further out for commuters/long stay.
- Introduction of a Parking Wayfinding System to direct drivers to selected off street parking locations. The system will include static directional signage as well as live availability information. Availability information will require car counting technologies to be introduced in some car parks. Wayfinding signage will be located on the edge of the city centre on major access points, then at points along the access route to each off street parking site. Council will aim to work with Meridian Mall and Wilsons Parking to include their main sites.
- Replacement of parking meters with more efficient parking technologies for payment and enforcement, such as licence plate recognition with camera enforcement. These technologies will create operational efficiencies.
- Installation of sensors for data collection and easy analysis of information.
- Longer term – consolidate existing off street car parking and explore potential new parking areas e.g. adjacent to arterial routes and near to Hospital.

The area will include the central city bounded by Town Belt, Harbour, Botanic Gardens and Oval.

Further detail to be developed during preliminary and detailed design phases include:

Item	Description
Parking Wayfinding System	Parking directional signage to inform drivers of the most direct route into off-street parking sites. Signage can include "live parking availability" information for greater customer convenience and decongestion benefits. Car counting technology installed and "spaces available" signs outside the main car parking buildings.
Parking System for Payment and Enforcement	Parking meter upgrades to pay by plate, and additional meters for expansion of paid parking area. License plate recognition mobile enforcement kit (including camera and electric vehicles).
City Centre Parking Plan and Monitoring	Review on-street parking restrictions, area, time limits and prices. Implement plan. Parking sensors for data collection and parking dashboard for improved management.
Off Street Parking Supply	Consolidate off-street parking sites, upgrade, improve pedestrian access routes, contribute to potential new parking areas.

Princes Street Bus Priority and Corridor Safety Plan

Project Cost	$6,620,000

1. Scope

This project will provide an integrated transport corridor for Princes Street, focussed on ensuring an efficient bus service and improving safety. The project would also improve walking and cycling accessibility and support regeneration of the area.

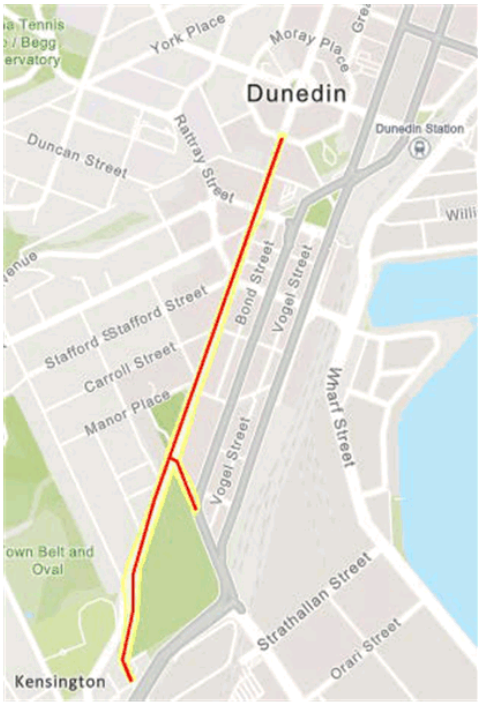
The geographic scope is Princes Street (The Kensington to Moray Place) and Andersons Bay Road (Caversham Motorway to Princes Street).

a. Bus Priority Measures

There are currently 11 bus services that use Princes Street. The project aim to provide a more efficient bus service for those travelling to and from the south of the city. The project will provide bus priority measures for high frequency routes from the Caversham Motorway along Andersons Bay Road to the intersection with Princes Street, and along Princes Street to the intersection with Moray Place. Bus priority measures include bus lanes, clearways on the approach to intersections and pinch points, and bus GPS to trigger signals at intersections.

b. Safety Improvements

The project will improve safety for all modes along the route. There are a number of co-existing safety issues which include: inadequate pedestrian crossing facilities, parking and crossing demands for the Oval sports activities, confusing layout at South Road/Princes Street intersection, poor provision for right turning traffic at Andersons Bay Road/Princes Street intersection as well as at minor intersections such as Carroll and Hope Street, no cycling facilities, wide carriageway on Princes Street and side streets, and higher than desirable traffic speeds.



c. Land Use

The Creative Quarter extends along Princes Street as far as Market Reserve, and the 2GP recognises the area as the 'South Princes Heritage Precinct'. Princes Street is one of the southern entrances to the city. Some new businesses have moved into the area in recent years, but regeneration is slow. The project will consider opportunities to enhance the area while improving the transport corridor.

Further detail to be developed during preliminary and detailed design phases include:

Item	Description
Bus Priority Route (excluding signals/ intersections)	Works to provide bus lane/clearway, including paint and signage.
Intersection Improvements	South Road/Princes Street
	Andersons Bay Road/Princes Street
	Princes/Jetty/Stafford/Manse Street
	Signalised intersections: Princes Street intersections with Moray Place, Dowling Street, Rattray Street, Jetty Street – to provide bus priority, signal changes, signs and markings for bus route
	Minor changes at other intersections: Princes Street intersections with Carroll/Police, Hope, Manor Place, Jervois, Melville, Jones, Lees, Water, Liverpool Streets, to provide turning restrictions and pedestrian refuges.
Pedestrian Crossing Improvements	Refuges or solid median – on Princes Street
Cycle improvements	Cycle facilities that provide a connection to South Road (Southern Cycle Route/Tunnels Trail), wider South Dunedin area and Central City. Bicycle parking, signs and markings
Bus shelter changes	Consolidation/relocation of stops

Central Cycle and Pedestrian Safety

Project Cost	$4,950,000

1. Scope

This project will provide improved safety for pedestrians and cyclists on the following central city streets:

- St Andrew Street from Anzac Avenue to Great King street
- Albany Street and Anzac Avenue (from Albany Street) to Minerva St connecting to the Harbour Cycleway.

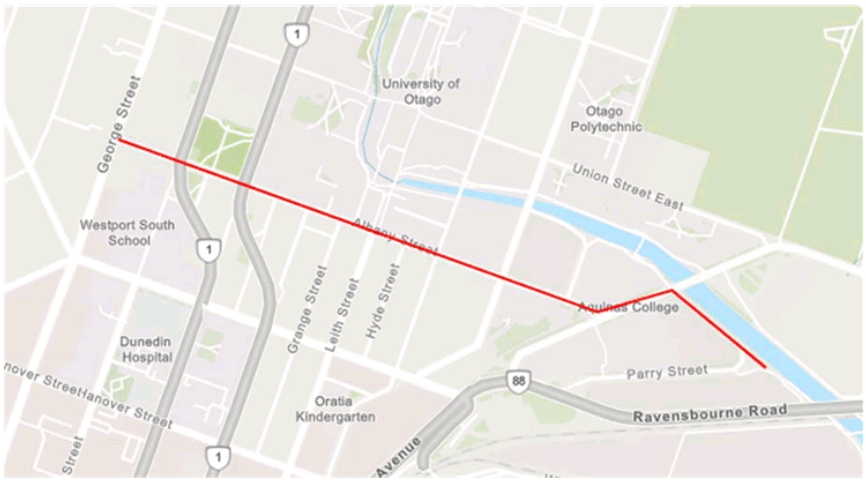
The project will also investigate extension of the existing 30km/hr slower speed zone in the central city.

a. St Andrew Street

This project will provide a safe local road on St Andrew Street. Currently St Andrew Street (from Anzac Avenue to Crawford Street) is owned and managed by Waka Kotahi, and forms part of SH88. The project moves the SH88 function to Frederick Street as part of the hospital redevelopment, as the function and required form is in conflict with the new land use. It is anticipated that St Andrew Street will become a local road once the works are complete, to be managed by the Council rather than Waka Kotahi.
The project will include a safe route for cyclists from the Anzac Avenue and Thomas Burns shared path to the hospital and the central city.

b. Albany Street

This project will provide a walking and cycling connection from the Harbour Walk/Cycleway to the central city and tertiary area as shown on the image below.

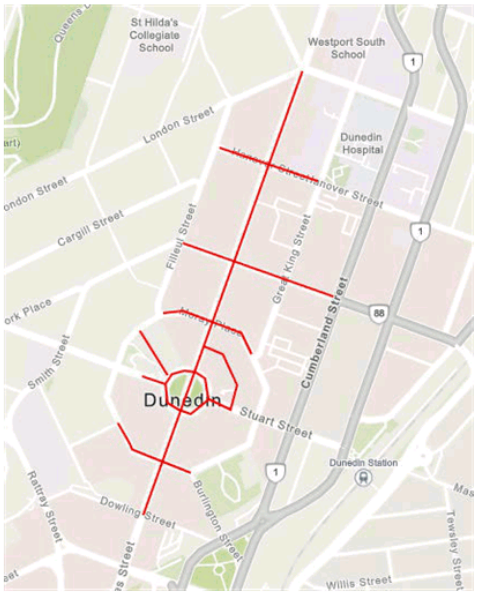


c. Slow Speed Zone

This project will investigate extending the current slow speed zone (30km) and providing additional Barnes Dances at traffic signals in the City Centre to improve safety and accessibility for people moving around the city centre, and to and from the new hospital.

The extent of a slow speed zone is to be confirmed, along with any interventions required to achieve the slower speeds, through a business case process. Areas to be considered include: Albany Street to Queens Gardens, joining the slow speed zone on George Street and extending east as far as SH1 southbound.

The current slow speed city centre zone is illustrated in the image below.



Further detail to be developed during preliminary and detailed design phases include:

Item	Description
Slow speed zone	Measures to reduce speed and improve pedestrian crossings through Barnes Dances, signs and markings.
Albany Street	Anzac Avenue and Minerva Street to include a shared path and quiet street solution.
St Andrew Street [Council share]	Create a safe local road with improved pedestrian access between the new Hospital buildings as well as a safe cycle route from the Harbour Circuit to the central city.

Park and Ride – Mosgiel and Burnside	
Project Cost	$10,000,000

1. Scope

This project will provide Park & Ride sites at Mosgiel and Burnside to provide an alternative option to driving to the city.

a. Mosgiel

A Park and Ride site in Mosgiel would serve the Mosgiel and rural area around Mosgiel, including Outram.

b. Burnside

A Park and Ride site near SH1 in the vicinity of Burnside would serve city-bound traffic from further south.

Further detail to be developed during preliminary and detailed design phases include:

Item	Description
Mosgiel	Site development – 180 space car park with landscaping, lighting, CCTV, fencing, drainage, surfacing and markings, a small bus interchange with shelters and driver facilities, and 1 signalised intersection to the arterial road network.
Burnside	Site development – 180 space car park with landscaping, lighting, CCTV, fencing, drainage, surfacing and markings, a small bus interchange with shelters and driver facilities, and 1 signalised intersection to the arterial road network.

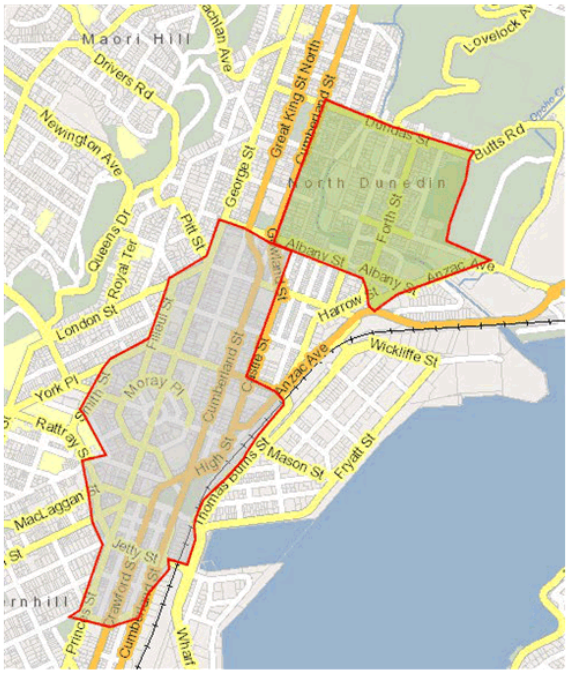
Bike Hubs

Project Cost	$2,450,000

1. Scope

This project will provide bike hub facilities to cater for current and future demand. The project will also consider and provide for emerging micro-mobility and other active electric vehicle modes (e.g.ebikes). The scope includes ensuring safe access to the hubs from the cycle network.

The study area includes the central business district and the Tertiary Precinct, as illustrated in the image below.

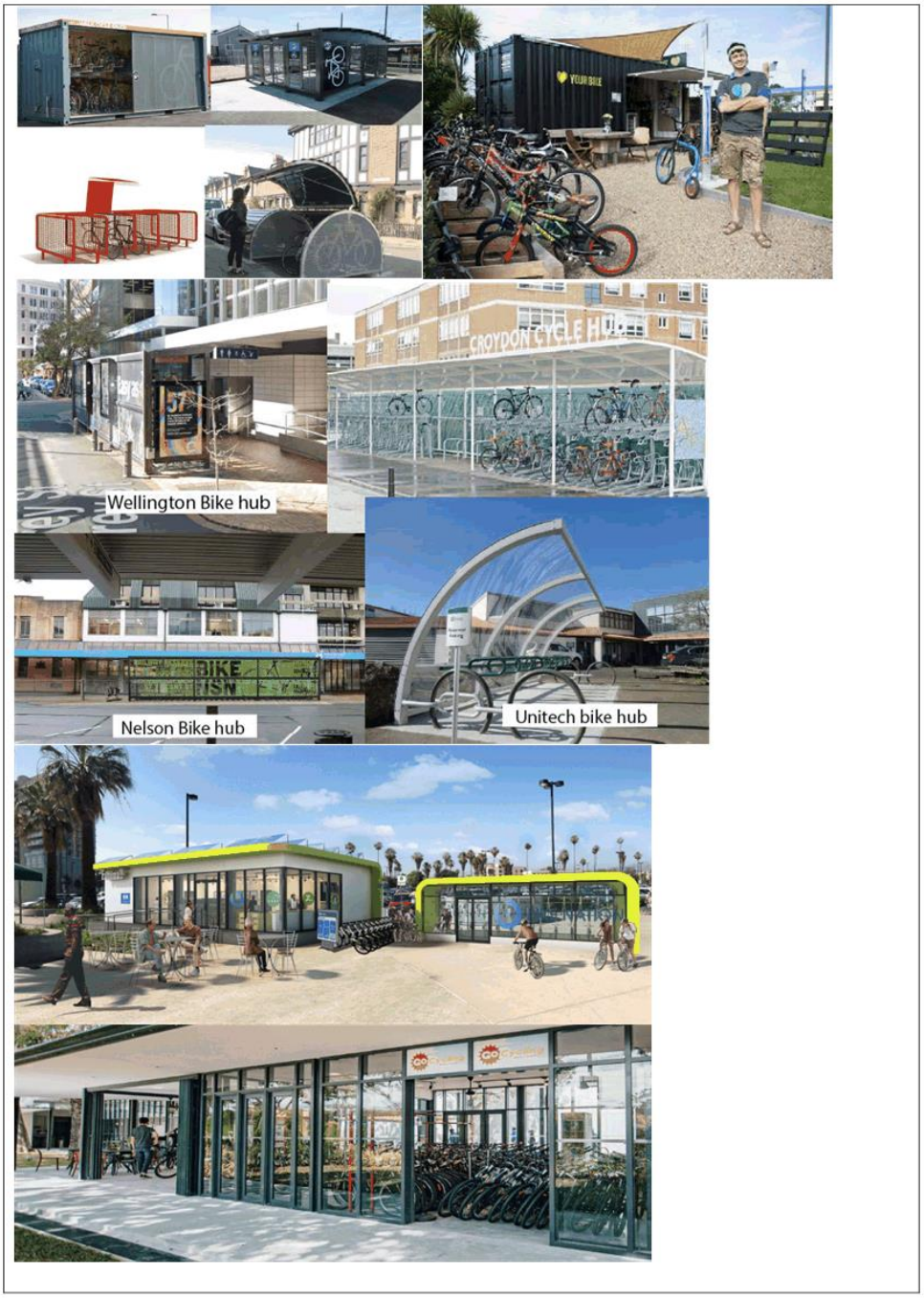


The location of the hubs will connect to the existing cycle network. The project will provide three bike hubs – located in the north, central and south of the central city.

The bike hubs are likely to include:

- Wayfinding signage to direct cyclists to the bike hubs.
- Sheltered secure cycle storage.
- Facilities such as repair/maintenance services, toilets/showers, café, lockers.
- Cycle hire.
- Information e.g. cycle maps, route planning, active travel and road safety promotion, bike maintenance education.

Some examples of Bike Hubs developed elsewhere in NZ and internationally include:


Wellington Bike hub
Nelson Bike hub
Unitech bike hub

KERBSIDE COLLECTION FUNDING OPTIONS

Department: Waste and Environmental Solutions

EXECUTIVE SUMMARY

1 The purpose of this report is to provide a range of funding options for kerbside collection services for Council consideration.

2 On 8 December 2020 Council approved as part of the draft 10 year plan 2021-2031, community consultation on two options for delivering changes to kerbside collection services.

3 The options approved for community consultation were prepared on the basis of retaining the current targeted rate kerbside collection funding system.

4 This report outlines alternative funding options for Council consideration, including using general rates and fees and charges.

5 Community consultation will take place from 24 March 2021 until 30 April 2021 and will include Council's preferred option and an alternative option for kerbside collection services.

RECOMMENDATIONS

That the Council:

a) **Decides** on a preferred funding source to be used for each kerbside collection bin in both options for delivering kerbside collection services to be consulted on within the draft 10 year plan 2021-31:

i) Food scraps 23 litre bin

ii) Glass 45 litre crate

iii) Refuse 140 litre wheelie bin

iv) Recycling 240 litre wheelie bin

v) Garden waste 240 litre wheelie bin.

BACKGROUND

6 On 8 December 2020 Council considered a report on kerbside collection services and options for consultation in the draft 10 year plan 2021-31 and resolved the following:

"Moved (Cr Jim O'Malley/Cr Marie Laufiso):

That the Council:

a) **Approves** *the "Four Bins plus one – separate food and green waste collection" option to be included in the Ten year plan 2021–31 consultation document as the preferred option.*

b) **Approves** *the three bins enhanced status quo option to be included in the Ten year plan 2021–31 consultation document as the alternative option.*

c) ***Requests*** *a report for the January council meeting on alternative funding options including by way of the general rate.*

d) ***Notes*** *that the options presented would not be suitable for all properties in the Central Activity Area.*

e) ***Notes*** *that the options presented would not be suitable for all properties in the Rural collections area.*

Division

The Council voted by division:

For: Crs Sophie Barker, David Benson-Pope, Rachel Elder, Christine Garey, Doug Hall, Carmen Houlahan, Marie Laufiso, Mike Lord, Jim O'Malley, Jules Radich, Chris Staynes, Steve Walker, Andrew Whiley and Mayor Aaron Hawkins (14).

Against: Cr Lee Vandervis (1).

Abstained: Nil

The division was declared CARRIED by 14 votes to 1

Motion carried (CNL/2020/105)*"*

DISCUSSION

Funding options

7 The funding sources are available to pay for Council's activities include general rates, targeted rates, fees and charges, grants and subsidies.

8 In accordance with Section 102 of the Local Government Act 2002, a local authority must adopt funding and financial policies (Refer separate Revenue and Financing Policy Council report). These policies determine who pays for what, and the funding source to be used. As part of these assessments, consideration is given to the community outcomes being supported by the activity as well as the distribution of benefits from the activity between the community as a whole, any identifiable part of the community, and individuals.

9 The benefit consideration is often referred to as the public/private good split or the user pays principle. An activity may generate public benefits, private benefits, or a mixture of both. Public benefits are those that benefit the whole community. Private benefits are those that benefit identifiable parts of a community and / or individuals. Examples of funding sources for the types of benefits are shown in the table below:

Types of benefit	Examples of Funding Sources
Public benefit	General Rates Grants
Private benefit	Targeted rates Fees and Charges Development Contributions

Targeted and general rates

10 General rates are used when it is not possible to clearly identify customers or users. The general rate is also used to fund activities where, for reasons of fairness and equity, consideration of the wider community good indicate that this is the most appropriate way to fund an activity.

11 Targeted rates are used where an activity benefits an easily identifiable group of ratepayers and where it is appropriate that only this group be targeted to pay for some or all of a particular service.

Fees and charges

12 User charges are direct charges to identifiable users or groups of users who use certain Council services. In these instances, an identifiable benefit exists to clearly identifiable people and they are required to pay all or part of the cost of that service.

Current kerbside collection system funding

13 As defined in the Revenue and Financing Policy, refuse and recycling collections are currently provided to support the following community outcomes:

a) A sustainable city with healthy and treasured natural environments.

b) A supportive city with caring communities and a great quality of life.

14 The users who benefit from the activity have been defined as follows:

a) Domestic and commercial users of collections services.

b) The whole community receives public health benefits through the minimisation of waste going to Landfill, and ensuring streets are kept clean with the provision of public street litter bins and clean up days.

15 The current refuse and recycling collections are funded through a combination of rates as well as fees and charges. Kerbside recycling is currently funded through a targeted rate, as this service is available in defined collection areas and is therefore viewed as an activity that benefits an easily identifiable group of ratepayers. Similarly, there is a user charge to purchase DCC black bags for refuse collection, which is a service currently used by approximately 25% of households.

'Pay As You Throw'

16 A DCC operated 'Pay As You Throw' (PAYT) system may be an alternative charging option that could be applied to the general waste or proposed green waste bin. This option would allow residents to only pay for bin collection when needed.

17 PAYT can be a method to incentivise reducing household waste in alignment with the Waste Minimisation and Management Plan 2020.

18 Automated PAYT technology has not been proven at scale in New Zealand and could be difficult to implement at this point in time. As such, a PAYT system is likely to involve a prepaid tag or similar prepaid system to cover the cost of collection and disposal. This could be transitioned to an automated PAYT in the future when technology makes this possible.

19 Until automated PAYT systems are more widely established, a PAYT funded system will be more expensive to operate per collection compared to a targeted or general rate funded system. The cost of the PAYT system would depend on the uptake of the service and the type of PAYT system implemented.

20 If a new PAYT system does not adequately balance waste minimisation efforts with affordability and practicality concerns, this may result in inequitable access to refuse collection causing recycling contamination and/or the private sector offering a simpler and lower cost alternative service.

21 Because of the uncertainty over the cost and practicality of a PAYT system, Council would need to consider underwriting the costs associated with these risks.

Funding options for kerbside collection

22 The preferred option to be included in the 10 year plan consultation is the "Four Bins plus one – separate food and green waste collection" consisting of:

i) Food scraps 23 litre bin – collected weekly

ii) Glass 45 litre crate – collected fortnightly

iii) Refuse (red lid) 140 litre wheelie bin – collected fortnightly

iv) Recycling (yellow lid) 240 litre wheelie bin – collected fortnightly

v) Households can also choose to have an additional 240 litre garden waste collection bin, collected fortnightly

23 Staff have proposed four combinations of funding options for Council consideration, outlined in the table below:

	Option One	Option Two	Option Three	Option Four
Refuse 140 litre (red lid)	Targeted Rate	'Pay as you throw'	General Rate	'Pay as you throw'
Recycling 240 litre (yellow lid)	Targeted Rate	Targeted Rate	General Rate	Targeted Rate
Glass 45 litre (blue crate)	Targeted Rate	Targeted Rate	General Rate	Targeted Rate
Food scraps 23 litre (green bin)	Targeted Rate	Targeted Rate	General Rate	Targeted Rate
Garden waste 240 litre (opt in bin)	Fixed user charge	Targeted Rate	General Rate	'Pay as you throw'

24 The alternative option to be included in the 10 year plan consultation is the "Three bins enhanced status quo" consisting of:

i) Refuse (red lid) 140 litre wheelie bin – collected weekly

ii) Glass 45 litre crate – collected fortnightly

iii) Recycling (yellow lid) 240 litre wheelie bin – collected fortnightly

25 Under this option the four combinations of funding options proposed by staff for Council consideration is reduced to three combinations, outlined in the table below:

	Option One	Option Two	Option Three
Refuse 140 litre (red lid)	Targeted Rate	'Pay as you throw'	General Rate
Recycling 240 litre (yellow lid)	Targeted Rate	Targeted Rate	General Rate
Glass 45 litre (blue crate)	Targeted Rate	Targeted Rate	General Rate

Existing recycling collection

26 The existing recycling collection, 240 litre bin (yellow lid – fortnightly collection) and the glass 45 litre crate (blue crate – fortnightly collection) are currently funded via targeted rates.

27 The proposed four options include consideration of funding existing recycling collections via targeted rate or general rate.

28 Staff recommend that the existing recycling collection remains funded via targeted rates, however Council consideration should include the principles from the revenue and financing policy outlined in points 7-15 above.

Refuse 140 litre bin (red lid – weekly or fortnightly collection)

29 The proposed four options include consideration of funding a refuse bin collection via targeted rate, general rate, or via a 'pay as you throw' user charge.

Targeted rates

30 The advantages of targeted rate funding for this bin include:

a) Administratively simple system for both DCC staff and residents.

b) Ensures access to a waste collection service in an equitable manner across the group of residents who are eligible for the service, in order to help protect residents and the environment from the harmful effects of waste.

c) Alignment with the revenue and financing policy and kerbside recycling funding model, where the group of ratepayers who are eligible for the service are the group of ratepayers paying for the service.

31 The disadvantages of targeted rate funding for this bin include:

a) Does not incentivise waste minimisation.

General rates

32 The advantages of general rate funding for this bin include:

a) Administratively simple system for both DCC staff and residents.

33 The disadvantages of general rate funding for this bin include:

a) Does not incentivise waste minimisation.

b) Ratepayers outside of the collection area would be paying for a service that they do not receive. This may not be considered fair or equitable.

User charge

34 The advantages of a user charge for this bin include:

a) It may promote waste minimisation.

35 The disadvantages of a user charge for this bin include:

a) It may not meet the convenience/other needs of residents who already utilise an existing private waste collection service.

b) It is likely to be more expensive per collection and require underwriting costs, which are difficult to estimate until service uptake is known.

Proposed 23 litre food scraps bin (green bin – weekly collection)

36 The proposed four options include consideration of funding a food scraps bin collection via targeted rate or general rate.

37 On average, the current black plastic refuse collection service contains 40% food and green waste; therefore, staff have not considered 'pay as you throw' for this collection as it would disincentivise beneficial reuse via composting (or similar process), reducing waste to landfill, and reducing greenhouse gas emissions from waste.

Targeted rates

38 The advantages of targeted rate funding for this bin include:

a) Administratively simple system for both DCC staff and residents.

b) Ensures access to a collection service in an equitable manner across the group of residents who are eligible for the service, in order to help protect residents and the environment from the harmful effects of waste.

c) Alignment with the revenue and financing policy and kerbside recycling funding model, where the group of ratepayers who are eligible for the service are the group of ratepayers paying for the service.

39 The disadvantages of targeted rate funding for this bin include:

a) Does not allow eligible residents or businesses who may prefer to compost at their own premises to opt out.

General rates

40 The advantages of general rate funding for this bin include:

a) Administratively simple system for both DCC staff and residents.

41 The disadvantages of general rate funding for this bin include:

a) Ratepayers outside of the collection area would be paying for a service that they do not receive. This may not be considered fair or equitable.

b) Does not allow rate ratepayers who may prefer to compost at their own premises to opt out.

Proposed 240 litre garden waste bin (opt in bin – fortnightly collection)

42 The proposed four options include consideration of funding an opt in garden waste bin collection via targeted rate, general rate, fixed user charge, or via a 'pay as you throw' user charge.

Targeted rates

43 No advantages have been identified for using targeted rate funding for this bin.

44 The disadvantages of targeted rate funding for this bin include:

a) Administratively is not simple, as the targeted rate could only to be charged those who have opted into the service.

General rates

45 The advantages of general rate funding for this bin include:

a) Administratively simple system for both DCC staff and residents.

46 The disadvantages of general rate funding for this bin include:

a) Ratepayers outside of the collection area, and those who have not opted in for this bin would be paying for a service that they do not receive. This may not be considered fair or equitable.

User charge

47 The advantages of a user charge (fixed user charge or 'pay as you throw') for this bin include:

a) Alignment with the revenue and financing policy and kerbside recycling funding model, where the group of ratepayers who are eligible and opt in for the service are the group of ratepayers paying for the service.

48 The disadvantages of a user charge (fixed user charge or 'pay as you throw') for this bin include:

a) It may not meet the convenience/other needs of residents who already utilise an existing private waste collection service.

b) It is likely to be more expensive per collection and require underwriting costs, which are difficult to estimate until service uptake is known.

OPTIONS

Option One – Targeted rates funding for kerbside collection bins plus opt-in garden waste bin funded via fees and charges (Recommended Option).49 Advantages and disadvantages in relation to funding options for each bin have been outlined in points 26 - 48 above.

	10YP consultation preferred option: Four Bins plus one – separate food and green waste collection	**10YP consultation alternative option: Three bins enhanced status quo**
Refuse 140 litre (red lid)	Targeted Rate	Targeted Rate
Recycling 240 litre (yellow lid)	Targeted Rate	Targeted Rate
Glass 45 litre (blue crate)	Targeted Rate	Targeted Rate
Food scraps 23 litre (green bin)	Targeted Rate	N/A
Garden waste 240 litre (opt in bin)	Fixed user charge	N/A

Option Two – Targeted rates funding for recycling, glass, and food bins plus PAYT for general waste and opt-in garden waste funded via targeted rate.50 Advantages and disadvantages in relation to funding options for each bin have been outlined in points 26 - 48 above.

	10YP consultation preferred option: Four Bins plus one – separate food and green waste collection	**10YP consultation alternative option: Three bins enhanced status quo**
Refuse 140 litre (red lid)	'Pay as you throw'	'Pay as you throw'
Recycling 240 litre (yellow lid)	Targeted Rate	Targeted Rate
Glass 45 litre (blue crate)	Targeted Rate	Targeted Rate
Food scraps 23 litre (green bin)	Targeted Rate	N/A
Garden waste 240 litre (opt in bin)	Targeted Rate	N/A

Option Three – General rates funding for all kerbside collection services.

51 Advantages and disadvantages in relation to funding options for each bin have been outlined in points 26 - 48 above.

	10YP consultation preferred option: Four Bins plus one – separate food and green waste collection	**10YP consultation alternative option: Three bins enhanced status quo**
Refuse 140 litre	General Rate	General Rate

(red lid)		
Recycling 240 litre (yellow lid)	General Rate	General Rate
Glass 45 litre (blue crate)	General Rate	General Rate
Food scraps 23 litre (green bin)	General Rate	N/A
Garden waste 240 litre (opt in bin)	General Rate	N/A

Option Four – PAYT for general waste bin and opt-in garden waste bin, targeted rates funding for all other bins.

52 Advantages and disadvantages in relation to funding options for each bin have been outlined in points 26 - 48 above.

	10YP consultation preferred option: Four Bins plus one – separate food and green waste collection	**10YP consultation alternative option: Three bins enhanced status quo**
Refuse 140 litre (red lid)	'Pay as you throw'	'Pay as you throw'
Recycling 240 litre (yellow lid)	Targeted Rate	Targeted Rate
Glass 45 litre (blue crate)	Targeted Rate	Targeted Rate
Food scraps 23 litre (green bin)	Targeted Rate	N/A
Garden waste 240 litre (opt in bin)	'Pay as you throw'	N/A

Option Five – Council to choose an alternative combination of funding options for components of the kerbside collection service

NEXT STEPS

53 Staff will investigate direct supplier billing arrangements if fees and charges are indicated as the preferred option for funding any component of the proposed new kerbside collection services.

54 Staff will incorporate funding information into the options for community consultation as part of the draft 10 year plan 2021-2031.

Signatories

Author:	Chris Henderson - Group Manager Waste and Environmental Solutions

Authoriser:	Simon Drew - General Manager Infrastructure Services

Attachments

There are no attachments for this report.

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the environmental well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☒	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☐	☐	☒
3 Waters Strategy	☐	☐	☒
Spatial Plan	☐	☐	☒
Integrated Transport Strategy	☐	☐	☒
Parks and Recreation Strategy	☐	☐	☒
Other strategic projects/policies/plans	☒	☐	☐

The Waste Futures Project contributes to the Environment Strategy by enabling a robust evaluation of potential options for Dunedin City Council to continue to ensure effective reduction and management of solid waste to achieve the goals set out in its Waste Management and Minimisation Plan, with appropriate regard given to the goals of the Emissions Management and Reduction Plan.

Māori Impact Statement

Iwi have been identified as a stakeholder and have been engaged during the Better Business Case options development phase, including the proposed changes to Council kerbside collections.

Sustainability

The Waste and Environmental Solutions activity contributes positively to the environmental interests of the community through refuse and recycling collection at the kerbside and public places, educating and promoting environmentally sustainable behaviour and managing landfill and transfer station facilities.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The capital expenditure requirements for resource recovery and waste diversion facilities to support the Council's Waste Minimisation and Management Plan, and also the proposed kerbside collection options, have been included in the draft capital budgets for the 10 year plan 2021–31.

Financial considerations

Staff will incorporate funding information into the options for community consultation as part of the draft 10 year plan 2021-2031.

Significance

The decision is considered high in terms of the Council's Significance and Engagement Policy. The decision will be part of the 10 year plan special consultative process.

Engagement – external

No external engagement has been carried out in regards to the contents of this report.

SUMMARY OF CONSIDERATIONS
Engagement - internal No internal engagement has been carried out in regards to the contents of this report.
Risks: Legal / Health and Safety etc. Legal advice has been undertaken on the various components of the Waste Futures Project to ensure statutory compliance and minimisation of litigation risk.
Conflict of Interest There are no known conflicts of interest.
Community Boards Kerbside collections are of interest to the whole community and are of particular interest to Community Boards in the rural collection areas. Community Boards will have an opportunity to provide feedback as part of the 10 year plan consultation process.

NEW ZEALAND SPORTS HALL OF FAME: OPTIONS FOR INTEGRATION INTO THE ARA TOI GROUP

Department: Ara Toi

EXECUTIVE SUMMARY

1 This report provides options and costs to integrate the New Zealand Sports Hall of Fame (NZSHF) into the Ara Toi group of cultural facilities.

2 NZSHF has occupied the Dunedin Railway Station building since 1999, providing an exhibition of its collection of sporting memorabilia and artefacts. By 2019 NZSHF was operating a financial deficit. It has significant needs for reinvestment in its exhibition and additional marketing spend to increase its annual visitor figures (currently approximately 8,700 per annum).

3 Sports New Zealand commissioned an options report on future development for the NZSHF. It is provided as an attachment (Attachment A). The options provided in this report to Council derive from the NZSHF options appraisal.

4 In addition to the status quo, the options that have been developed are integrating NZSHF into the Ara Toi group as a new visitor facility; providing operational funding support for NZSHF as an independent institution; or delaying a decision until further options are explored.

RECOMMENDATIONS

That the Council:

a) **Considers** the options for future support for the New Zealand Sports Hall of Fame.

BACKGROUND

5 NZSHF was established in 1990, with the twin purposes of providing induction ceremonies and of collecting and presenting artefacts related to the sporting history of New Zealand. The induction ceremonies take place at venues throughout New Zealand. Since 1999 the NZSHF and artefact collection has been located at Dunedin Railway Station.

6 Council has supported this tenancy since 1999 through the provision of grants. The Property Arrangement Grant is currently $46,800 per annum. In addition, the Hall of Fame's rental is set at $30,590 per annum, which is 50% of market rates. The total Council support comprises the Property Arrangement Grant and the subsidised rental equating to $77,390 per annum.

7 The other recurrent funder is Sports New Zealand who provided an annual grant of $100,000. However, this funding ceased on 30 December 2020.

8 The NZSHF's lease expired in January 2019 and is now holding over on a month to month basis.

9 In November 2019, Sports New Zealand commissioned an options analysis for the NZSHF, undertaken by Manuireva Consulting (Attachment A). The report was finalised in January 2020.

10 The report identified a number of issues that need to be addressed including governance, financial viability, the care of its collections, the need for capital investment in its venue and operational investment in its marketing and public engagement activities and development of a paid workforce. These issues are compounded by declining visitor figures (8,741 in 2019).

11 In February 2020 representatives of the NZSHF board approached Council requesting that Council consider whether it would take over the management of NZSHF. Since then there have been ongoing discussions and a submission from NZSHF to the 20/21 Annual Plan. There has been no change to the existing funding.

12 On 14 December 2020, Council passed a resolution requesting staff report on options and costs to integrate the NZSHF into the Ara Toi Group:

Moved (Cr Sophie Barker/Cr Marie Laufiso):

That the Council:

a) ***Request*** *a staff report on options and costs to integrate the NZ Sports Hall of Fame into the Dunedin City Council's Museum, Art Galleries and Attractions department for the 10 Year Plan Council meeting of 27 January 2021.*

Division

That the Council voted by division:

For: *Crs Sophie Barker, David Benson-Pope, Rachel Elder, Christine Garey, Doug Hall, Carmen Houlahan, Marie Laufiso, Mike Lord, Jim O'Malley, Jules Radich, Chris Staynes, Lee Vandervis, Steve Walker, Andrew Whiley and Aaron Hawkins (15).*

Against: *Nil*

Abstained: *Nil*

The division was declared CARRIED by 15 votes to 0

Motion carried (CNL/2020/125)

Moved (Cr Sophie Barker/Cr Marie Laufiso):

That the Council:

b) ***Authorise*** *$50,000 over expenditure from the Ara Toi budget subject to staff confirming that the money would be used to keep the facility open until June 2021.*

Division

The Council voted by division:

For: *Crs Sophie Barker, David Benson-Pope, Rachel Elder, Doug Hall, Carmen Houlahan, Marie Laufiso, Mike Lord, Jim O'Malley, Jules Radich, Chris Staynes, Lee Vandervis, Steve Walker, Andrew Whiley and Mayor Aaron Hawkins (14).*

Against: *Cr Christine Garey (1).*

Abstained: *Nil*

The division was declared CARRIED by 14 votes to 1

Motion carried (CNL/2020/126)

Moved (Cr Sophie Barker/Cr Marie Laufiso):

That the Council:

c) ***Request*** *a staff report on the potential of a single integrated museums and visitor attraction structure for Council by December 2021.*

Division

The Council voted by division:

For: *Crs Sophie Barker, Rachel Elder, Doug Hall, Jules Radich, Lee Vandervis and Andrew Whiley (6).*

Against: *Crs David Benson-Pope, Christine Garey, Carmen Houlahan, Marie Laufiso, Mike Lord, Jim O'Malley, Chris Staynes, Steve Walker and Mayor Aaron Hawkins (9).*

Abstained: *Nil*

The division was declared LOST by 9 votes to 6.

13 This report is the response to parts (a) and (b) of that resolution.

14 It is noted that Sports New Zealand has commissioned a further report to validate the Manuireva Consulting report and review options for the location of NZSHF. This report is being undertaken by Recreation, Sport and Leisure Consultancy (RSL) and is due for completion by the end of March 2021.

15 Council is making up to $50,000 available to support the continued operation of NZSHF until 30 June 2021.

DISCUSSION

16 Sports New Zealand has indicated it supports the findings of the Manuireva Consulting report options analysis report. Four options for the visitor attraction were outlined by Manuireva:

a) Remaining as a standalone facility (not necessarily in Dunedin).

b) Co-located or integrated within another organisation.

c) Primarily digital provision.

d) Develop a touring exhibition.

17 The Manuireva Consulting report recognised the commitment and effort of those involved in creating and maintaining the NZSHF over 30 years, especially Dr Ron Palenski and the board members. However, the Manuireva report identified that the status quo of remaining as a standalone facility provides the greatest risk to the organisation. This because the NZSHF has neither the capacity, nor the levels of funding required to assure a sustainable future. A professional staff would be required to undertake the operation of the facility, manage its collection effectively, develop the attraction to the level expected by contemporary audiences and invest in effective marketing.

18 This report presents options on how DCC could support the NZSHF including integrating the facility as part of the Ara Toi group or by providing an increased operating grant.

19 Co-location within an existing DCC cultural facility was also considered. The only available space identified for a potential new permanent exhibition was the 'Bullnose' in Toitū Otago Settlers Museum (TOSM) (the space in the museum building closest to Lan Yuan). This has a floor area of 130 m^2 and is currently used for small events and temporary displays.

20 However, the current footprint occupied by the NZSHF is 523 m^2, which would mean reducing the exhibition by over 75%. In addition, the national objectives of NSZHF are not aligned with the current collection policies or objectives of TOSM. Therefore, this option was not considered further.

21 An informal discussion with Dunedin Venue Management Limited (DVML) identified that sufficient space is available to accommodate NZSHF at the Stadium, and the management team would be willing to consider co-location as long as sufficient funding were made available to support continued operation and to manage any commercial risk. If Council considers this as an option to be developed further, staff will enter into more specific discussion with DVML.

Integrate NZSHF as a new visitor facility within the Ara Toi Group

22 Estimated capital and operational budgets have been developed based on the needs identified in the Manuireva Consulting report to ensure the NZSHF becomes a sustainable visitor attraction. These have been benchmarked against other Ara Toi cultural facilities.

Capital costs

23 The Manuireva Consulting report identified the need for a complete refresh of NZSHF's permanent exhibition. The NZSHF currently occupies 523 m^2; exhibition development costs are currently in the range of $1,000 – $1,500 per square metre. A rough order of costs for the redevelopment of the exhibition would be in the order of $650,000 for a basic refresh.

Operational costs

24 An estimated operational budget is included below:

Expenditure	Budget	Notes
Manager (1 FTE) Administrator (0.5 FTE) Curator (1 FTE) Visitor Hosts (2 FTE)	$90,000 $30,000 $80,000 $110,000	
Marketing	$60,000	The Manuireva Consulting report proposed a marketing budget of $15,000. However, this was considered unrealistic and has been increased to $60,000. This is in line with other Ara Toi facilities.
Property costs	$80,000	Estimate based on rental
Other expenses	$100,000	IT, insurance, security, cleaning etc
Annual investment in fixed asset	$50,000	Ongoing exhibition content development
Collection care	$65,000	Conservation treatments, object cleaning, storage, materials, transportation.
Public programming	$12,000	Fortnightly programming
Induction Ceremony	$5,000	
TOTAL	**$682,000**	
Income		
Admission	$45,000	Based on 50% visitation increase
Membership	$4,500	Based on 50% increase
Retail	$4,500	Based on 50% increase
TOTAL	**$54,000**	
Subsidy	**$628,000**	Rates subsidy required

25 The Manuireva Consulting report identified additional income sources totalling $175,000 per annum from project and charitable grants (page 48 of Attachment A). It is unlikely these would be available to NZSHF if it became a local government-run facility. Until the end of 2020 Sports New Zealand provided $100,000 per annum grant funding; it has no plans to make further financial commitments to NZSHF until the RSL report is completed.

Provide funding for a stand-alone facility

26 The estimated cost for this option is based on the Manuireva Consulting report 'revised proposed budget' (page 48 of Attachment A) i.e. DCC would provide an annual operating grant of $427,000 but not manage the facility directly. NZSHF would need to apply for additional grants and develop a fundraising strategy to refresh its permanent exhibit.

Other options

27 A status quo option is also presented i.e. continue to provide a property arrangement grant $46,800 per annum and rent subsidy of $30,590 per annum.

28 Sports New Zealand has commissioned a further report to validate the Manuireva Consulting report and review options for the future location of NZSHF. This report is being undertaken by

RSL and is due for completion by March 2021. Therefore, a further option would be to delay a decision until this report is complete.

OPTIONS

29 Due to limited timeframes climate change implications have not been explored.

30 For all options, DCC and city-wide emissions have been preliminarily assessed as resulting in no impact in emissions.

Option One – Integrate NZSHF as a new visitor facility within the Ara Toi Group

31 This option involves developing NZSHF as a new visitor facility similar in structure to other DCC cultural facilities. The NZSHF would benefit from the full range of support services including IT, Human Resources, Finance, Marketing and Communications.

Advantages

- NZSHF would remain in Dunedin as a visitor attraction.
- NZSHF would remain as a tenant in the Railway Station building.

Disadvantages

- Annual operational subsidy of $628,000.
- An initial capital cost of $650,000 to refresh the permanent exhibition.
- Council would need to employ an additional 5.5 FTE.
- Council would assume long term responsibility for collection care and management.
- Considerable uncertainty about the viability of NZSHF as an ongoing visitor attraction.

Option Two – Provide funding for a stand-alone facility

32 This option would involve DCC providing core grant funding to NZSHF, enabling it to continue to operate independently of Council. NZSHF would need to apply for additional grants and develop a fundraising strategy to refresh its permanent exhibit.

Advantages

- NZSHF will remain in Dunedin as a visitor attraction.
- NZSHF remains as a tenant in the Railway Station building.
- No requirement for DCC to borrow to fund the refresh of the exhibitions.

Disadvantages

- Annual operational budget (grant) of approximately $427,000.
- NZSHF will be required to find additional revenue for operating and capital projects in a challenging financial environment.

- Considerable uncertainty about the viability of NZSHF as an ongoing visitor attraction.

Option Three – Status Quo

33 This option involves continuing to provide the current level of support to NZSHF, a 50% rent rebate and a Property Arrangement Grant of $46,800 per annum.

Advantages

- No additional budget required.
- Sports New Zealand will support NZSHF to implement one of the alternative options in the Manuireva Consulting and RSL reports.

Disadvantages

- The report by Manuireva Consulting has indicated the current arrangements generate a high level of risk for the organisation.
- NZSHF is not sustainable in its current location without a major level of public investment.
- Recent developments in the post-COVID tourist economy will make a recovery strategy for NZSHF more challenging.

Option Four – Delay a decision until the RSL report has been completed

34 Sports New Zealand has commissioned a further to validate the Manuireva Consulting report and review options for the location of the NZSHF. This report is being undertaken by RSL and is due for completion by March 2021. This report may provide further options for Council to consider during 10 Year Plan deliberations.

Advantages

- More viable options may be identified.

Disadvantages

- No identified disadvantages.

NEXT STEPS

35 Officers will enter discussions with NZSHF regarding implementation of Council's decision.

Signatories

Author:	Nick Dixon - Group Manager Ara Toi
Authoriser:	Simon Pickford - General Manager Community Services

Attachments

	Title	Page
⇩A	New Zealand Hall of Fame Options Analysis Report	139

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☐	☐	☒
Economic Development Strategy	☒	☐	☐
Environment Strategy	☐	☐	☒
Arts and Culture Strategy	☒	☐	☐
3 Waters Strategy	☐	☐	☒
Spatial Plan	☐	☐	☒
Integrated Transport Strategy	☐	☐	☒
Parks and Recreation Strategy	☐	☐	☒
Other strategic projects/policies/plans	☐	☐	☒

Māori Impact Statement

There are no known impacts for tangata whenua

Sustainability

The report discussed the economic sustainability for the NZSHF.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

At present there is a provisional budget for the NZSHF Property Arrangement Grant of $46,800.

Financial considerations

The capital and operational costs are covered in the report. Options 1 and 2 are currently unbudgeted.

Significance

This decision is considered to be low in terms of the Significance and Engagement Policy.

Engagement – external

Discussions have been held with the NZSHF and Sports New Zealand.

Engagement - internal

Discussions have been held with members of the Ara Toi Group, Enterprise Dunedin and Property Services Group

Risks: Legal / Health and Safety etc.

The Manuireva report highlights the greatest risk to NZSHF is remaining as a standalone attraction.

Conflict of Interest

There is no conflict of interest identified.

Community Boards

There are no implications for Community Boards

The New Zealand Sports Hall of Fame

An option analysis

Report

(UPDATED 30 JANUARY 2020)

CONTENT

List of figures and appendices provided on next page

Review undertaken and report prepared by Sally Manuireva Consulting, November 2019, in partnership with Brent Thawley, Sport New Zealand.

FIGURES

APPENDICES

1. Introduction

The purpose of this exercise (project objective) was to undertake a scoping and options exercise for the New Zealand Sports Hall of Fame (NZSHF) and provide recommendations on the feasibility of options.

The process included consultation with the most critical stakeholders and benchmarking against national and international organisations.[1] The insights arising from consultation and benchmarking are woven through the report.

The project objective gave rise to three questions that framed the process:

- What does a sustainable and engaging NZSHF look like?
- What are the options for achieving this vision and what are the relative strengths and challenges of each option?
- Which is the most feasible option and why and what are the next steps?

In order to answer these questions, it was necessary to confirm the issues facing the NZSHF. Four options were considered for the NZSHF: remaining stand-alone; being co-located with or integrated within another organisation; being primarily digital; and, touring.

Assumptions:

- A reasonable level of knowledge about the NZSHF, as it is not the purpose of this document to describe in detail the background to the NZSHF
- The options may not be the same for the two elements of the NZSHF (the Hall of Fame including inductions and the artefacts)
- Build on work undertaken previously including a NZSHF Board workshop.[2]

Definitions
Sustainable / able to be maintained and continued in a way that meets present needs and doesn't compromise future needs ***Engaging /*** relevant and appealing to audiences and stakeholders and creating impact ***Vision /*** in this context, meaning the 'view of the future' ***Stakeholder /*** a person, group or organisation that has interest or concern in an organisation, noting that not all stakeholders are equal importance. [3]

[1] Appendix 1 – Methodology. For the benchmarking, it is acknowledged that many of the examples have more resources than the NZSHF.
[2] Appendix 2 – Table 2
[3] Source: www.businessdictionary.com/definition/stakeholder.html

2. Summary of findings

Much has been achieved since the NZSHF was established in 1990. People contributing to this process acknowledge the commitment and effort of those involved in NZSHF from its inception, especially Dr Ron Palenski and board members over time. This option analysis builds on the strength of the NZSHF in order to position it for its next phase of existence. There is consensus that the way forward should respect the legacy that has been created and honour all inductees. There is also agreement on the importance of the continued involvement of Dr Ron Palenski in an appropriate way. The NZSHF board's participation in this option analysis is a positive indication of their desire to move forward.

The issues facing the NZSHF are considerable and long-standing, particularly in the areas of governance, organisation viability (people and finances), public engagement and artefacts. The need for active partnerships is a thread through all these areas. The greatest challenges for the organisation relate to operating a visitor attraction and managing and displaying the artefacts. It is evident that the organisation cannot operate effectively on current resources and the ability to act to address this is extremely constrained. Decisive action is now essential.

Indeed, the picture that has emerged from this process of **a sustainable and engaging NZSHF** is dynamic, bold and quite different to the current state. Its features are:

- Inductions that have broader appeal, contemporary relevance and increased profile
- Part of a bigger story about sport's place in New Zealand's culture, history and future
- Co-located or integrated within a museum or a destination arena or stadium, with high footfall, a sporting connection and a strong digital presence
- Collaboration with a wider range of organisations, including in the areas of greatest challenge, especially collecting, managing and displaying the artefacts.

The options and recommendations are set out in Figure 1 and detailed in Section 6. They are based on these assumptions:

- Status quo is not an option
- Being in Dunedin is not essential
- The continued involvement of Dr Ron Palenski in the next phase
- The same organisation does not need to manage the inductions and the artefacts, although they must be connected.

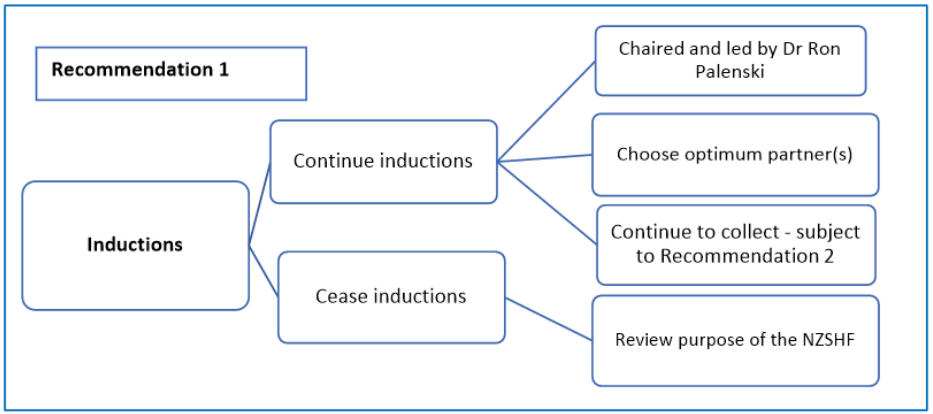
The input of stakeholders has been valuable and thanks are extended to all those who participated. The Chief Executive and Chairman of the NZSHF have been particularly helpful, and their contribution is gratefully acknowledged.

Figure 1: Options and recommendations

For each recommendation, the points to consider in decision-making and next steps are set out below in the diagrams below.

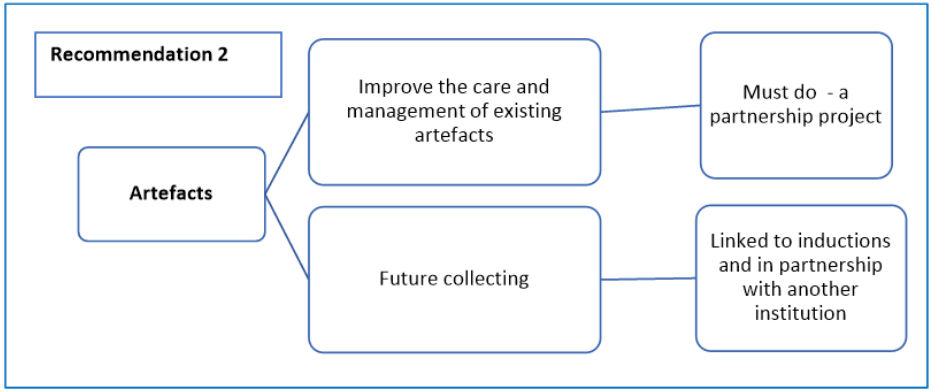
- Recommendation 1, Continue inductions and extend in ways that broaden their appeal and increase the profile of the inductions.
- Recommendation 2, Address the care and management of the artefacts in partnership with an appropriate organisation and adopt a revised approach to any future collecting.
- Recommendation 3, Eliminate the option of remaining a stand-alone entity, whether in current or other location.
- Recommendation 4, Explore a co-location / integrated option for the NZSHF with other partners as part of the national sporting story. This appears to be the most viable in the longer term.
- Recommendation 5, Close the NZSHF in its current location to create capacity to move to the next phase. This would be a constructive step towards a more sustainable and engaging NZSHF.

Following the due consideration of the findings of this option analysis, a forward plan should be developed, with an emphasis on transition to the future state. Several people consulted in this process indicated their willingness to contribute to developing a vivid view of the future. The governance structure and the role of the legal entity will flow from the option selected. If the NZSHF chooses to continue in its present state, renewal of the board is essential.



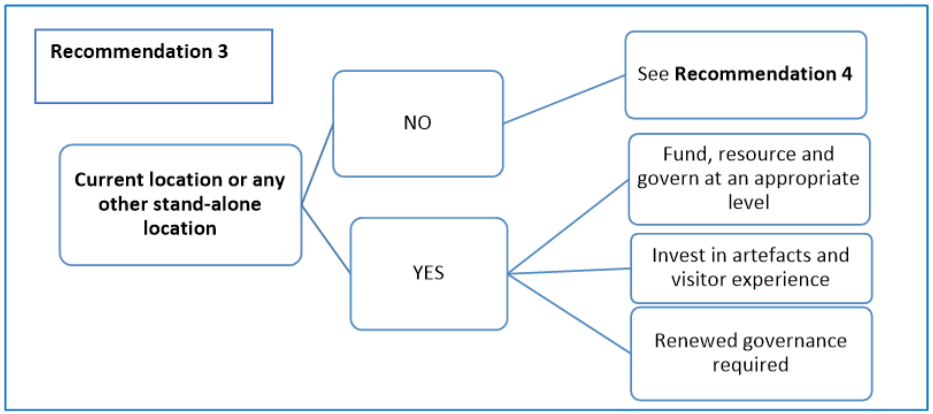
Continue inductions and extend in ways that broaden their appeal and increase the profile of the inductions. **RECOMMENDED**

Next steps: Consider the options on partner for the inductions and awards. Halberg Foundation remains an option. A more strategic partner might be Sport New Zealand and still with a connection to the Halberg Foundation, who have indicated that they are open to a discussion about the partnership.



Address the care and management of the artefacts in partnership with an appropriate organisation and adopt a revised approach to any future collecting.
RECOMMENDED

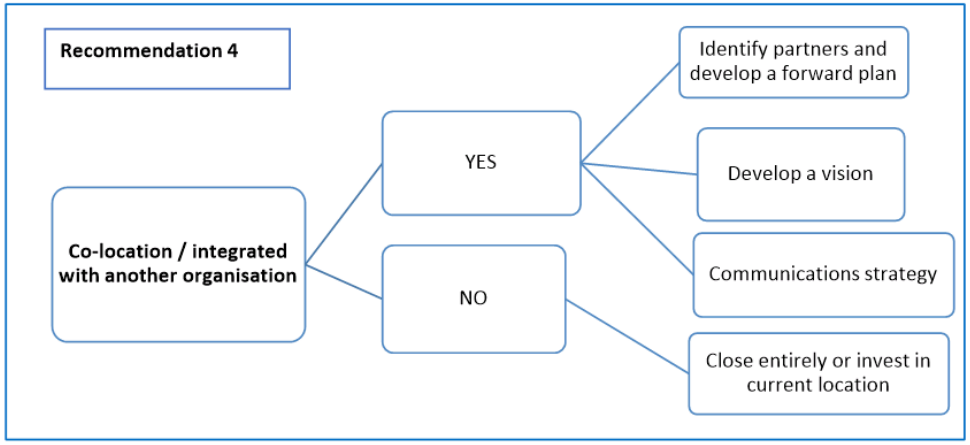
Next steps: Starting with a conversation with Te Papa, identify a partner with capability in managing museum collections and secure the resources for a project to fully document and assess the state of the artefacts. Ensure resources and policy in place to support future collecting.



Eliminate the option of remaining a stand-alone entity, whether in current or other location.
RECOMMENDED

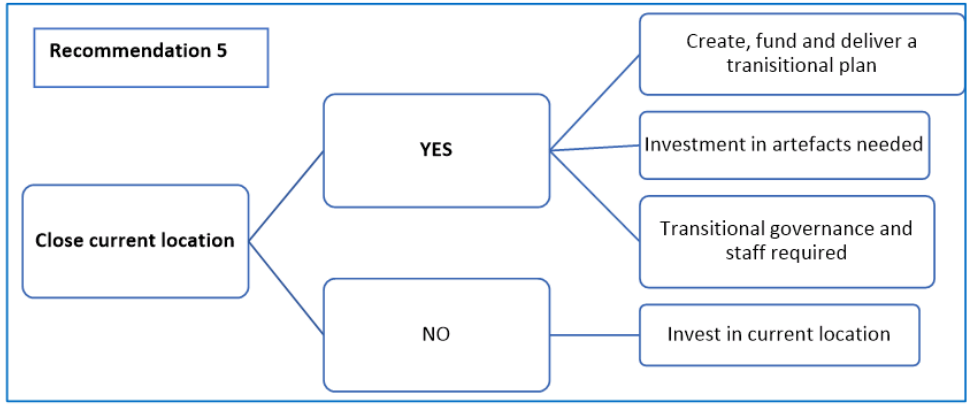
Next steps:

See Recommendation 4



Explore a co-location / integrated option for the NZSHF with other partners as part of the national sporting story.
RECOMMENDED

Next steps: Identify partners and develop, a forward plan with a strong vision. The governance structure and the role of the legal entity can then be determined. A transition board may be appropriate and closure (see Recommendation 5) would be a step towards a new state. Work on the artefacts is still needed.



Close the NZSHF in its current location to create capacity to move to the next phase.
RECOMMENDED

Next steps:

Create, fund and deliver transition plan including communications strategy. Negotiate to stay in venue during transition. Investment in artefacts needed. Transitional costs to be determined.

3. Current state

This section /

- Provides a brief description of the NZSHF
- Studies the strengths of the NZSHF and external forces informing the recommendations
- Details the issues that have been confirmed in this process

3.1 Overview of the NZSHF

The NZSHF was established in 1990 as part of the celebrations to mark New Zealand's 150 years of organised settlement. It commemorates New Zealand's greatest sporting triumphs. It has two connected elements, the Hall of Fame (including inductions) and the artefacts and visitor destination. Since 1999, the NZSHF has been located in Dunedin's Railway Station[4], where it displays mementos of New Zealand's sporting achievements. Its core business is to acknowledge and record the achievements of people who have been inducted. It also reflects the historic and continuing significance of sport to New Zealand. In the first year of operation, 75 of New Zealand's greatest sports achievers were inducted - one for every two years of nationhood. Inductions now take place annually at the ISPS Halberg Awards.[5] NZSHF's administration consists of Dr Ron Palenski, Chief Executive, administration staff, a board of governors and a management committee. Sport New Zealand is the key funder.

Figure 2 – New Zealand Sports Hall of Fame at a glance

At the inception of the NZSHF, a wide range of grants were received from a variety of sources. It warrants mention[6] that this included annual funding of $50,000 from the Ministry of Culture and Heritage (MCH). By 2005/06, responsibility for the NZSHF was transferred to Sport New Zealand (then SPARC), along with an annual appropriation of $50,000 to Vote Sport and Recreation. Sport New Zealand added a further $50,000 to this amount. The NZSHF is an incorporated society and the constitution sets out the objects.[7] The constitution is explicit in stating that activities may include[8]: recognition through elections to the hall of fame; exhibitions and displays; promotion and education of the public; contact, collaboration and dialogue with sports people, other organisations; and, information exchange with other associations. It is not overtly stated in the constitution that the NZSHF will collect. However, the general powers allow for (amongst other things) purchase, lease or other acquisition of property that supports its objects.[9] Dr Ron Palenski has noted the need to update the constitution.

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[4] Occupies a floor area of approximately 627m² with some exclusions
[5] www.halbergawards.co.nz
[6] Because a question about the role of MCH and Te Papa Tongarewa (Te Papa) emerges in this report.
[7] As at February 28 2012
[8] The constitution of the NZSHF incorporated society, 'promotion of objects', 3.2
[9] The constitution of the NZSHF incorporated society, 17c

Figure 2: New Zealand Sports Hall of Fame at a glance

Mission
To honour, to preserve, to educate, to inspire

Statement of organisational purpose[10]
We celebrate and remember New Zealand's sporting heroes. Our purpose is to honour, educate and inspire all New Zealanders through past sporting achievements for the benefit of the future.

Mandate[11]
An independent foundation to recognise those persons who, through that sporting achievements or their services to sport, have brought credit to themselves, their sport and to the broader community by their performance, personal character, leadership and contribution.
Record the achievements of those for posterity as part of the heritage of New Zealand

Core values
Integrity and excellence / National commitment / Promotion of the significance of sport to New Zealand / The irreducible value of sporting heritage

<table>
<tr><td>Visitors annually
2016–2017: 10254
2017–2018: 9224
2018–2019: 8741</td><td rowspan="2">Audiences
% of admission 2018-2019
Adults – 65%
Senior Citizens – 21%
Students – 5%
Children - 2%
Groups – 1.6%
Family groups – 5.4%
96 members (Annual Report)</td><td>Financials – year ended 30.06.18
Income: $208,293
Expenditure: $232,887</td></tr>
<tr><td>Website users
2016 - 2017: 11453
2017-2018: 8912
2018-2019: 9824</td><td>Staff – three persons, not fulltime, employee related costs for year ended 30.06.18 noted as $48,500 in statement of financial performance</td></tr>
<tr><td colspan="3">Key partners
Sport New Zealand, Dunedin City Council, Pub Charity, Bendigo Valley Foundation, The Southern Trust[12], Halberg Foundation and Awards</td></tr>
</table>

[10] From a board workshop Nov 2018, this statement of purpose is not confirmed
[11] Source: Objects of the New Zealand Sports Hall of Fame Incorporated
[12] From 2018 Annual Report and Website

Figure 3: Selection of images of the NZSHF

<table>
<tr>
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<tr>
<td>  </td>
<td>Images:

Entrance to the NZSHF, level 1, Dunedin Railway Station

View into the NZSHF from information desk

First display area

Second display area

Display case relating to Elsie Wilkie, world champion, bowls</td>
</tr>
</table>

3.2 Strengths of the NZSHF and external forces

There are many strengths on which to build, the greatest one being the inductions / hall of fame record itself (Figure 4). Along with the repository of some of New Zealand's historic sporting items, this is a strong legacy that Dr Ron Palenski and the board have created. All consulted agree that this is to be celebrated and is a source of pride. **The induction process** has been rigorous and whilst there are ways that it can be developed to increase profile and relevance, it is fundamentally strong. For future development of the inductions, it may be that Sport New Zealand is best placed to provide the support to the NZSHF on inductions. The Halberg Foundation has indicated they are open to a conversation about how best to support the NZSHF going forward.

Figure 4: Strengths on which to build

Authentic and expert content, which has been developed over many years under the stewardship of Dr Ron Palenski

Nationally important objects and stories and an archive containing **unique material**

Breadth of sports covered

Strong **support** from inductees, their families and other sporting halls of fame

Trusted by many as the place to deposit treasured objects and stories, a **legacy** for future generations

The option analysis also considers external forces and opportunities:

- Museums / visitor attractions are expected to be interactive, relevant and rich with content and experience
- Competition for customers, funding, visibility, talent is strong and many organisations in a similar space to the NZSHF are grappling with resource constraints
- Volunteers add significant skills and resources to such organisations, but they cannot be a solution to a structural resource gap such as exists for NZSHF
- Children and young people are a crucial market and are at the heart of Sport New Zealand (and others) strategy. Related to this is the learning / education landscape, which is changing in New Zealand.

3.3 Current issues

There are significant issues facing the NZSHF, which are not new, and which have prompted this option analysis. The scale of the issues is such that doing nothing is not an option as the organisation is not in a viable or sustainable position. The question of the sustainability of the NZSHF has a reasonably long tail.[13] The issues were discussed and confirmed with the NZSHF team as part of this process (Figure 5).[14] Furthermore, an assessment of current state against each of the key activities of the NZSHF was completed (Figure 6).

This process has confirmed the areas of most pressing issues as being: governance, organisation viability (particularly in the area of people and finances), public engagement and artefacts and content. These are explored further below. Stakeholder engagement and the need for active partnerships is a thread through all these areas.

It is evident that the organisation cannot operate effectively on current resources and the ability to act to address this is extremely constrained, a fact which underpins the comments in this report.

Figure 5: Overview of issues

[13] Details in Appendix 2 – Table 2
[14] Figure 5 provides an overview and each heading, for example, 'governance' contains more than one issue. This detail is provided in Appendix 2, Table 1.

Fit for purpose governance

Many have contributed to the NZSHF over the years, including successive boards, and the work of previous board members in getting to this point is acknowledged. As this report highlights, there are external forces and audience and stakeholder expectations buffering the NZSHF, meaning a new model of governance is required. The specifics of that governance structure will flow from the vision that is developed and the chosen option.

The board meets (usually) twice a year and receives regular updates from the Chief Executive. The Chair identified board renewal as a critical matter, along with succession planning for the Chief Executive. If there are board changes arising from this process, there is a desire to ensure that any retiring board members are honoured, and their involvement retained in an appropriate manner. Depending on the option selected, new skills and connections will be required, and a transition board may be appropriate.

A key responsibility of a board is to ensure that partner organisations are engaged. The evidence is that this is an area for attention. The Chief Executive has very limited capacity (Dr Ron Palenski is not fulltime) and therefore standard tools for managing and leveraging such relationships (such as a memorandum of understanding) are not in place.

Figure 6: Assessment of position for the key activities

Key activity	Current state
Act as a repository for some of New Zealand's historic sporting items	Concerning
Induction into the sport hall of fame	Good
Display and interpret those historic sporting items	Concerning
Operate a visitor attraction in the Dunedin railway station	Very concerning

Act as a repository for some of New Zealand's historic sporting items

Most artefacts are on display and are online, and it is evident that there are items of significance to New Zealand's sporting culture and heritage.

Although a detailed assessment of the artefacts was not in the scope of this work, it is confirmed that a project focused on the artefacts is necessary. Dr Ron Palenski's involvement in this is vital, given his level of knowledge and expertise in this area.

The points to note include:

- Dr Ron Palenski has been consistent in his advocacy for the care and documentation of the artefacts, but the organisation lacks the resources to undertake this work.

- There isn't a comprehensive database of the artefacts; the closest is a record created during a valuation exercise in 2018/19.[15] This indicates that a high proportion of the artefacts are on loan (anecdotally, lenders would be amenable to converting to a gift) and most of the remainder are owned by the NZSHF.
- NZSHF does not have a board approved collections policy or an adequate budget for collection care and development. Nor is the constitution explicit on forming and maintaining a collection.
- The standards expected of a museum in terms of care of the artefacts are not being met, as set out in Museum Standards scheme (participation is voluntary).[16]

Assistance with the artefacts is available through, in the first instance, Te Papa National Services. Te Papa's approach would typically be to identify the needs of the organisation and then partner with a more local organisation on a solution. Te Papa National Services has indicated a willingness to discuss this further.[17] It is a practical way to progress dialogue with Te Papa and others about the future of the NZSHF. It warrants mention that, if invited to care for the artefacts, Te Papa would typically seek to confirm the significance of items in relation to the New Zealand story and only acquire those of relevance. This is standard practice.

The option analysis prioritises the importance of and capacity for the organisation to achieve an appropriate level of care for the artefacts, which is extremely constrained at present. Realistically, this can only be achieved through a partnership with another organisation.

The collection of the New Zealand Rugby Museum provides a comparison.[18] The legal entity is the Rugby Museum Society of New Zealand Inc. The committee of the society governs the running of the museum. The collections committee (a subcommittee) decides on what to collect. Given the size of the collection (in excess of 40,000 items according to the website), the museum now only accepts donations. In the past, objects were accepted on loan, and occasionally objects are purchased. The constitution of the Society has a section about the collection. As an example, a family with objects on loan to the museum recently decided to donate them but only on the proviso that the objects should never be sold to a private person or institution.

[15] Appendix 2
[16] www.tepapa.govt.nz/learn/for-museums-and-galleries/help-and-support-for-museums-and-galleries/new-zealand-museums
[17] There have been previous discussions between the two organisations
[18] The museum kindly provided this information

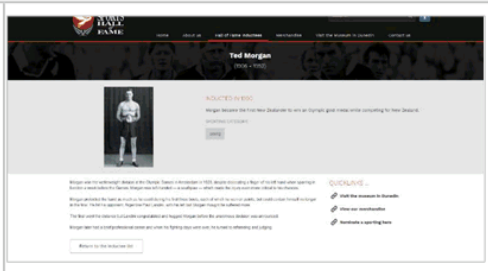
Display and interpret those historic sporting items

The displays, digital space[19] and overall visitor experience are now dated and static and require investment. This is purely a function of their longevity and no reflection on those involved. A focus on the documentation and care of the artefacts then forms the basis for content development and visitor experience.

Content development (linked with inductions into the hall of fame) is an area of enormous potential. Dr Ron Palenski's knowledge and expertise, when combined with that of others, means that creating an engaging and relevant experience is an area of great possibility. An online repository for New Zealand's sporting heritage that is content and experience rich and which inspires the learning and participation of children and young people, may prove appealing to philanthropic supporters. This would need to be tested and is a project that is much greater than the NZSHF.

Figure 7 shows the potential of aggregating content from many sources, in relation to one inductee, Ted Morgan, chosen because the Hall of Fame cares for his Olympic Gold Medal.

Figure 7: Example of object and online record



Ted Morgan's Olympic gold medal (left) and (above) online entry

Online content (an initial search) reveals entries and content on Ted Morgan: NZ History, Olympic NZ, Wikipedia, Te Ara, New Zealand Herald (video), BoxRecord Digital NZ, Penguin. Includes images, video, writing.

[19] Website statistics are provided in Appendix 5

Operate a visitor attraction in the Dunedin railway station

Operating a visitor attraction for any organisation is not an easy task and there is strong evidence that it is a significant challenge for the NZSHF. This is not a reflection on any individuals but rather a factor of the organisation not having the resources or capability to operate and maintain a visitor attraction.

In terms of the current state, Dunedin Railway Station is the premium building in the city, attracting tourists to view the building and to ride on the excursion train. The conversion rate of visitors to the railway station to the NZSHF is not known.[20] The current location is not optimal (being on the first floor) and there is no expansion space. Security of tenure within the building is not guaranteed.[21] There are two significant visitor attractions in the immediate vicinity - Toitū Otago Settlers Museum (free entry) and Lan Yuan, Chinese Garden (charges entry).[22] Other attractions are within walking distance, including Dunedin Public Art Gallery and Otago Museum (both free with some charged programmes).

The NZSHF does not presently have an option of another location in Dunedin and remaining in Dunedin is not viewed as essential either by the NZSHF team or certain stakeholders. Dunedin City Council, whilst supportive, have described multiple pressures on resources for culture and heritage. They report that they are not presently able to increase support to the NZSHF. Equally, the contribution of the NZSHF to Dunedin's Arts and Culture Strategy, Ara Toi, is not evident.[23] Nor is the NZSHF connected with the other museums or to the University of Otago, all of which seem like natural partners.

Visitation in 2016/17 (Figure 2) was the highest level on record. Records state that numbers in the opening year of 1999/2000 was 9838 and that the lowest year on record was 2010/11 with 7016 visitors. Adult visitors are the largest group. Anecdotal evidence from the NZSHF team indicates that New Zealand and overseas visitors comprise about half each, with Australians representing about 60% of overseas visitors. The South Island provides about as twice as many visitors as the North.

This suggests that a high proportion of the visitors are making a trip to Dunedin (there is no evidence that this is to visit the NZSHF specifically) and that, conversely, local visitation is not as high. Future positioning would need to consider whether the NZSHF is for New Zealanders in the first instance, or international visitors. It can be both, but it is advised to prioritise one and New Zealanders would seem to be the most important target audience. Overall, more information and insight about audiences is required. On balance, the structural gap between the current resources of the organisation and those that are required is so great that sustaining the existing visitor attraction appears unfeasible.

[20] Actual data about visitation to the railway station is not available. Dunedin City Council have said that a project is planned (no date provided) to determine the most strategic use of the railway station.
[21] The NZSHF is currently in a month to month lease arrangement with Dunedin City Council
[22] Appendix 5
[23] www.dunedin.govt.nz/council/strategic-framework/ara-toi,-the-arts-and-culture-strategy

3.4 Financials

The NZSHF team have identified the need for adequate multi-year operating budget (which is not subject to annual confirmation as is currently the case).[24]

A question has been asked in this process about the real cost of operating the NZSHF in its current state, knowing that the current income level is insufficient to operate.

An estimate of an appropriate operating budget in the current location has been made (Figure 8, detail in Appendix 5). It uses a proposed budget from 2016-17 as a baseline.

The assumptions underpinning the proposed budget now (November 2019) includes a greater investment in people and the experience, in order to address the most pressing issues and to drive increased visitation. However, it is noted that capital investment in the current attraction (physical and digital) is advisable in order to achieve a step change in public engagement and visitation. Capital investment is not included in Figure 8.

Figure 8: Operating cost assessment

	Current financials	Proposed budget 2016-17	Proposed budget November 2019
Income	$ 208,293	$ 436,000	$ 656,000
Expenditure	$ 232,887	$ 434,350	$ 711,950
Surplus (deficit)	-$ 24,594	$ 1,650	-$ 55,950

The proposed budget (November 2019) resources the visitor attraction to a level at which it can compete for visitors, partner with others and ensure the care of artefacts. It does show a greater operating deficit than would be acceptable, but it is purely indicative at this stage. There are adjustments that could be made to the proposed budget on both income and expenditure at the next stage of planning, if remaining in the current venue is considered a serious option. For example, operating hours could be reduced and higher targets for revenue could be established.

[24] Appendix 2, Table 2, as noted in a proposal to Minister for Sport and Recreation, 2016

4. A sustainable and engaging NZSHF

This section /

- Offers a view on a sustainable and engaging NZSHF based on having a physical presence
- Identifies the link to New Zealand's wider sporting heritage and partners' strategies
- Consider the current and future value proposition for the NZSHF

4.1 The views of those consulted

Those consulted said that the NZSHF should:

- Be about celebrating and learning from New Zealand sports people, past present and future
- Seek to be more relevant and contemporary, perhaps through widening those who are acknowledged
- Generate pride about those who have achieved as well as inspiring achievement and participation in others, especially children and young people
- Use multiple channels to connect, including social media, and be in a location that attracts greater footfall and therefore visitation
- Leverage the inductions more comprehensively, especially for public profile
- Explore new branding because brand association is a value sought by organisations partnering with the NZSHF.

A sustainable and engaging NZSHF begins with addressing the key issues (Figure 9). The solution to these issues depends on a partnership model. Identifying priority audiences, their interests and propensity to engage with the NZSHF is necessary.

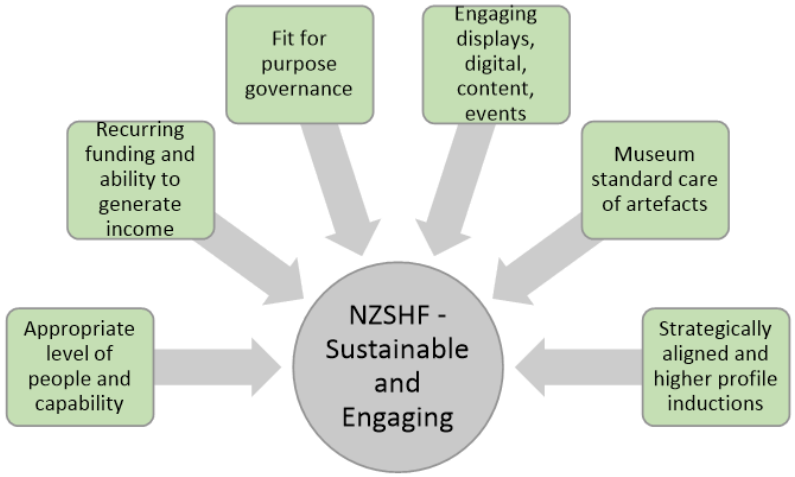


Figure 9: A sustainable and engaging NZSHF

In terms of positioning, a future value proposition has been considered (Figure 10). This reflects the views of many consulted.[25] The NZSHF board has expressed a long-term ambition towards being a national sport museum. The work in this project has highlighted the significant gap between present position and that aspiration. Furthermore, there are other organisations that may not support this aspiration or indeed may challenge for this space. For this reason, it is not explored in this analysis as an option for the NZSHF. It would only be feasible as part of a consortium of organisations, with a body other than the NZSHF leading the project.

The aspirational position to be the best sports hall of fame possible seems to be the most logical and authentic stretch. It builds on the NZSHF's current point of difference. There is scope for expansion of this activity, especially by incorporating contemporary stories, and those of people who achieved but not to the level of hall of fame (for many reasons).

Figure 10: Value positioning statements
Present positioning The New Zealand Sports Hall of Fame is the only place that remembers and honours our greatest achievers across all sports. You'll be inspired by the stories and treasured possessions of New Zealand's champions. You will learn about sporting deeds that helped shape our nation. **Vision** Inspiring and educating by honouring and celebrating New Zealand's sporting achievers
Aspirational positioning / natural stretch New Zealand Sports Hall of Fame Celebrating and learning from New Zealand sports people, past present and future **Vision** Inspiring achievement

4.2 New Zealand's national sporting heritage

The evidence from this project points to a sustainable and engaging NZSHF being integrated and embedded within New Zealand's national sporting story, with a partnership of organisations.

National sport museums in other countries appear in the benchmarking. New Zealand does not have the equivalent of such an institution. As an example, the State of Victoria hosts the National Sport Museum Australia (located in the Melbourne Cricket Ground and currently

[25] The vision statement for present positioning is based on the NZSHF documents and is not a confirmed organisational statement.

being refurbished) and the Sport Australia Hall of Fame. Culture Victoria is a gateway to Victoria's cultural collections and organisations and has a focus on 'Sporting Life' in its online portal.

The National Museum of Scotland currently hosts the Scottish Sports Hall of Fame. The renewal of the galleries relating to Scotland is being scoped and, anecdotally, they are considering how sports can be woven through the stories of Scotland more comprehensively.

There is a history of discussions with representatives of Te Papa and MCH about the NZSHF and, more widely, preserving and celebrating New Zealand's sporting heritage. This option analysis has highlighted the possibility of wider conversations about New Zealand's sporting heritage including:

- Development of the New Zealand Cricket Museum and the New Zealand Rugby Museum having a presence at the Rugby World Cup
- The New Zealand Olympic Museum collection, now in storage
- The enthusiasm at a code level for halls of fame to recognise achievement and commitment within their sport and the opportunity to connect these more formally with the NZSHF
- A movement to establish a national sport museum in Christchurch
- The potential for a shared digital resource focusing on New Zealand's sporting heritage
- The opportunity to feature national sporting stories in the national museum.

It is also noted that there is a project to create a multi-functional arena in Christchurch.[26] The feasibility of a sports-based visitor attraction in the arena warrants consideration.[27]

There are significant opportunities on the horizon that present opportunities to celebrate New Zealand's sport past, present and future including (but not limited to): the Olympic Games 2020, Women's Rugby World Cup 2021 and America's Cup 2021.

4.3 Strategically aligned with key organisations

The evidence from this project points to a sustainable and engaging NZSHF being strategically linked to a wider view of play, active recreation and sport, as well as to high performance sport.

In particular, Sport New Zealand's strategy, 'Every Body Active' provides very useful context for the option analysis of NZSHF. This includes (but is not limited to):

- The breadth of 'play, active recreation and sport' as a concept

[26] https://ccc.govt.nz/the-council/future-projects/major-facilities/canterbury-arena
[27] Based on very high-level discussions with ChristchurchNZ. No commitment made but a willingness to explore further.

- The diversity of activity that makes up play, active recreation and sport these days
- Linking outcomes to cultural vitality and wellbeing
- The focus on tamariki and rangatahi, whānau and community
- The importance of inclusion, participation and partnerships.

Greater alignment can also be found with national government policy on living standards and wellbeing. NZSHF should be positioned as an organisation that (directly and indirectly) supports positive wellbeing, inclusion, and equality and participation. This would be more aligned with Sport New Zealand strategy. There may also be stronger links for learning to the NZ curriculum. All this is best explored and achieved as part of a consortium of organisations.

5. Options for achieving a sustainable and engaging NZSHF

This section /

- Describes and assesses the feasibility of four main options using certain criteria
- Builds on previous points in assessing the options for achieving a sustainable and engaging NZSHF

5.1 Options considered

A range of options were identified and considered for this exercise (Figure 11). The underpinning assumptions are:

- The NZSHF is presently a stand-alone entity and the evidence indicates that this is not sustainable or engaging
- The options for the hall of fame and the artefact care may not be the same
- Partnerships with other organisations are essential to being sustainable and engaging
- Being in Dunedin is not essential
- Doing nothing is not an option as current state is not sustainable
- Investment in artefacts is essential in all options.

Stakeholder expectations have been considered and the co-location model resonated as the most strategic choice. Having said that, not all stakeholders were consulted in this phase. Other parties, such as inductees and their families, may need to be consulted (depending on next steps with the project) and structured communications is advised in the future.

5.2 Closure of the current attraction

Given the significant issues facing the NZSHF, the scenario of closing the visitor attraction (but not ceasing inductions) must be highlighted as a real possibility. It is hard to see how

the board and its partners could comfortably attest to the NZSHF being a viable, going concern in its current state.

In raising this possibility, one is also opening the door on an opportunity, in so far as this could be a step towards a new state. A period of planned closure would allow resources to be directed towards activities that prepare for the next phase of the NZSHF. The organisation would ideally remain in the current location with the support of Dunedin City Council whilst work on collections is undertaken. This means that special visits can still be accommodated. Closure of the venue does not mean dispersal of the collection and neither is that recommended. If a decision were taken to disperse the collection, this is a project requiring specialist expertise and resource.

Figure 11: Options considered

Option	Description	Benchmarking (Appendix 4)
Remaining stand-alone	This is the current situation in Dunedin Railway Station. Remaining stand alone in another location is also considered.	Museum of the Royal New Zealand Navy
Co-located or integrated within another organisation	Could be in Dunedin or another place. Ideally co-located with a major sport destination or a museum, because they will have greater footfall. A museum also provides the capability to manage the collection. Requires a very strong partnership with shared purpose and a digital presence.	New Zealand Cricket Museum
Primarily digital with 'pop up' experiences	In this option, the organisation is typically 'born digital'. If there is a collection it must be stored and accessible. Temporary experiences are possible, and an agile culture is essential. This option allows the organisation to experiment and respond to audiences.	New Zealand Fashion Museum – 'a museum with no fixed abode'
Touring	Designed purposefully for touring around various locations (assumed in New Zealand). Venues that can accommodate a museum type experience are preferable. The planning and resource demands are significant. Collection and exhibition storage is needed whilst it is on tour, as well as logistical support. It also needs a digital presence.	'Balls, Bullets and Boots, from rugby to battlefield, World War One' NZ Rugby Museum

The four options were assessed for feasibility using defined criteria.[28] The insights from this analysis are summarised below.

5.3 Stand-alone

- Additional resources, capability and partnerships are necessary to make remaining as a stand-alone entity, either in the current location or another, feasible.
- NZSHF does not have to be stand alone to achieve its stated purpose; indeed, it may better achieve its purpose through models involving other organisations.
- The benchmarking reveals that the organisations that are considered stand-alone operate with a range of supporters, revenue sources and, in some cases, shared services. In other words, stand-alone does not mean 'isolated' or entirely independent.
- The risks are generally greater in a stand-alone model.

5.4 Co-location or integrated with another organisation

- There is interest amongst those consulted in a solution that encompasses a partnership with a collecting institution, which has the capability to manage artefacts and to exhibit them occasionally. When this is combined with 'telling the national story of sport', those consulted tend towards Te Papa as the most aligned partner.
- As far as potential visitation is concerned in a co-location model, a comparison with the New Zealand Rugby Museum and Te Manawa Museum (Appendix 5) indicates that, if co-located with Toitū Otago Settlers Museum, the visitation could reach 25,000 annually.[29] Another benchmark is the New Zealand Cricket Museum, which is forecasting visitation of 20,000 on reopening (with shorter opening hours than NZSHF currently).

5.5 Primarily digital

- The NZSHF is not a 'born digital' organisation and so being primarily digital can be ruled out. There is consensus on this point. However, a digital presence is essential, and it could be a first step towards an ultimate model. Creating more digital content is an aligned activity with a collections care and document project.

5.6 Touring

- The touring option is not feasible. For it to be a feasible option, an arrangement with an organisation bringing capability in that area would be essential. It also demands significant resource to design, fabricate, manage, promote and deliver (especially logistics). Furthermore, the market demand for a touring product would need to be validated. Host venues must be identified and their capacity and resources for hosting it would need to be tested.

[28] Appendix 3: detailed options analysis
[29] It should be noted that this is a rudimentary comparison and co-location with Toitū has not been explored.

6. The most feasible option and recommendations

The way forward assumes Dr Ron Palenski's continued involvement in some form.

Continuing inductions is important. These can be adapted to contribute to an engaging and sustainable future state (for example, by collecting other material). It is recommended that the induction approach is broadened to increase appeal. It is also a possibility to pair the inductions with programmes such as mentoring. The NZSHF inductions can be leveraged more to increase profile. Dr Ron Palenski could chair and lead this activity.

Dealing with the artefacts is essential in all options, including closure. A project to fully document and assess the state of the artefacts and plan any collection care work arising from that assessment is recommended and this should include Dr Ron Palenski. Identifying a partner organisation to manage the artefacts in the longer term is advised.

Remaining in the current location as a visitor attraction requires an appropriate level of funding, resourcing and governance. An indication of operating budget is provided in the report, although this does need further validation. Capital investment is also advised. However, the viability of the current location and, by extension, any stand-alone solution is questioned. It is not evident how the existing visitor attraction can continue without additional operational resources and capital investment. Nor is the case proven that remaining in the existing location is the optimum solution. The structural gap is such that moving to another as a stand-alone attraction is unfeasible. Overall, the risks are greatest in the stand-alone scenario.

Most feasible in the longer-term seems to be a co-location option with or integrated within another organisation and not necessarily in Dunedin. Partner organisations are required in this option. Also essential is a stronger digital presence including providing content for partners' channels. Depending on the venue, the display of the artefacts can be either temporary or permanent. The venue must be one of high footfall. Strategic alignment with any partners in the future is essential.

Conceptually, the most feasible option is one where the NZSHF becomes part of a bigger story about sport's place in New Zealand's culture, history and future. This would have both a physical and digital presence. A vision for the future with a strong value proposition and audience focus is to be developed. It is suggested that other key parties (including Te Papa, other sport related collecting organisation, MCH and Sport New Zealand, as the main existing supporter) can be engaged in a dialogue about the NZSHF becoming part of a bigger story about sport's place in New Zealand's culture, history and future. This would contribute to a vision for the NZSHF. Audience focus and insights are also needed.

If sustaining the existing visitor attraction in the current location is not an option in the near term, then the option of closing the NZSHF in its current location should be considered. An advantage of closing is that it creates capacity to move to the next phase of

NZSHF (assuming Sport New Zealand and other support goes towards that transition). Any closure would have to be undertaken in a planned and managed way, with external communications and stakeholder management.

A forward plan is to be developed, depending on the option selected. Leadership, governance and management for the transition and shaping of future state is important. This includes securing partners and funding for a transition project. Several people consulted in this process indicated their willingness to contribute to developing a vivid view of the future.

A phased approach is advised towards the longer term. At an early stage of this project, a phased approach to a way forward was developed, based on a growth strategy and beginning with urgent de-risking the situation.[30] This offers a framework for a forward plan although the details of the plan would be amended based on decisions about the way forward.

The **governance structure** and the role of the **legal entity** will follow the vision that is developed, the option selected and the proposed way forward. If the NZSHF chooses to continue, even for the short term, renewal of the board is essential. If they continue for the long term, the board is advised to clarify its position as an organisation with responsibility for a collection. As already noted, it is timely to update the constitution.

On this basis, the **recommendation arising from this option analysis** are:

Recommendation 1, Continue inductions and extend in ways that broaden their appeal and increase the profile of the inductions.

Recommendation 2, Address the care and management of the artefacts in partnership with an appropriate organisation and adopt a revised approach to any future collecting.

Recommendation 3, Eliminate the option of remaining a stand-alone entity, whether in current or other location.

Recommendation 4, Explore a co-location / integrated option for the NZSHF with other partners as part of the national sporting story. This appears to be the most viable in the longer term.

Recommendation 5, Close the NZSHF in its current location to create capacity to move to the next phase. This would be a constructive step towards a more sustainable and engaging NZSHF.

[30] Appendix 6

Appendix 1 – Methodology

Review objective	To undertake a scoping and options exercise for the New Zealand Sports Hall of Fame (NZSHF) and provide recommendations on the feasibility of options
Key questions	• What does a sustainable and engaging NZSHF look like? • What are the options for achieving this vision and what are the relative strengths and challenges of each option? • Which is the most feasible option and why and what are the next steps?
Process	• Information gathering and review of key documents • Consultation with staff, chair and representatives of key organisations • Benchmarking (appendix 4) • Analysis and insights
Out of scope	Detailed assessment of the collection

Key documents

New Zealand Sports Hall of Fame

- Constitution (amended 2012)
- Annual returns to Charities commission, sourced from Charities Register
- New Zealand Sports Hall of Fame, Business Plan for presentation to the Minister of Sport and Recreation, the Hon Dr Jonathan Coleman, not dated, but the appended response from the office of Minister is dated 11 May 2016.
- Annual Report 2018
- NZSHF Report to board August 2019
- Report on strategic review meeting, Held 8 November 2018, Dunedin

Sport New Zealand:

- Sport New Zealand Group-Strategic-Plan-2015-2020
- Women and girls in sport and recreation, Government Strategy, October 2018

AERU, The Economic value of sport and outdoor recreation to New Zealand: updated data, Sep 2015

New Zealand Olympic Committee, Strategy, 2017-2020

Consultation with staff, chair and representatives of key organisations

There was qualitative **consultation** with representatives of organisations. Their views are incorporated throughout the document. A contact list for all consulted has been provided to the client and all have been thanked.

Organisation	Individual(s)
New Zealand Sports Hall of Fame	Dr Ron Palenski, Chief Executive Stuart McLauchlan Chair
Sport New Zealand	Shelley Empson, Commercial Manager Jennah Wootten, General Manager, Partnerships and Communications Geoff Barry, General Manager, Community Sport Peter Miskimmin, Chief Executive
Dunedin Council	Nick Dixon, Group Manager Ara Toi Rory Hibbs, Property Manager
Ministry of Culture and Heritage	Louise Lennard, Manager Sector Performance
Te Papa Tongarewa, National Services	Victoria Esson Head of Sector Development, Pouwhakahaere
Halberg Foundation	Shelley McMeeken, Chief Executive
The Eden Park Trust	Nick Sautner, Chief Executive Officer
New Zealand Rugby Museum, Palmerston North	Stephen Berg, Director New Zealand Rugby Museum
National Sports Museum Trust New Zealand	Bruce Ullrich, President
New Zealand Cricket Museum	Ian Rogers, Commercial Manager
ChristchurchNZ	Jemma Clarke, Bidding and Prospects Manager
Otago Museum	Ian Griffin, Director
All Blacks Experience, Sky City	Ed Burak, General Manager Experience Design / Kaitaki Whakanikoniko

Appendix 2 - Current issues

Table 1 - Current issues and priority level		
Governance	Current governance not fit for purpose, board renewal necessary	Very high
	Organisation viability in question, forward plan with special measures package to be developed	Very high
People	Unable to manage the organisation on current resources and succession plan for current staff needed	Very high
	Organisation does not have the expertise to operate effectively in certain areas	Very high
Financial	Revenue is insufficient to cover true costs and funds not available to address urgent actions	Very high
	Avenues for additional operating funding are not identified and no financial reserves exist	Very high
Collections and content	Collection care and management is not of a museum standard due to lack of expertise and resources	High
	Collection and content development essential for most options but not able to resource	Medium
Public engagement	Low levels of awareness and external profile, requiring an advocacy and communications plan	High
	Visitation levels (physical and digital) do not support a case for investment	High
	Visitor experience not in step with contemporary expectations, requiring capital investment for renewal	High
Stakeholders	Existing and new partnerships need to be activated in order to move forward	High
	New supporter and alliances to be formed to move forward along with stakeholder management	Medium

Appendix 2 – Table 2: notes on identification and reporting of issues
The chief executive's section of the 2018 Annual Report details the issues Including the need for qualified archival assistance for the documentation and care of the collection. This is reiterated by Dr Ron Palenski in the Chief Executive's report to executive meeting, August 29 2019.
A collection valuation exercise was undertaken in 2018/19 by an individual with experience in sporting memorabilia, providing a schedule of 382 items at a valuation of NZ$692,298. The valuer notes that 20% of the artefacts account for 75% of the value and lists 7 items/ groups of items of particular importance and rarity.
At a workshop in November 2018[31], the operating environment, current state and future potential of the NZSHF was discussed and assessed by the NZSHF Board and management. The board considered four options (growth, merger with another entity, status quo and close) and concluded that their preference was for a 'growth strategy', meaning: • A 20-year vision to become a national sports museum and hall of fame • Remaining independent, very high profile throughout New Zealand and continuing to utilise and engage honoured members. The record of the workshop states: "The board was unanimous in their desire for the growth option to be pursued, while at the same time keeping an open mind and evaluating other locations and collaborative options"[32]. A range of recommendations were made which broadly align with those arising from this work. The question of immediate viability of the NZSHF was not covered in that workshop.
In 2016, a presentation to the Minister of Sport and Recreation outlined both the challenges and opportunities facing the NZSHF[33]. It highlighted the strength of the NZSHF in terms of retaining the heritage and memory of great sporting achievement and made a link to national wellness. It noted that the annual income of the NZSHF had never been inflation adjusted despite costs increasing. It also highlighted the risks arising from the funding not being multi-year (it is subject to annual confirmation). The proposal outlined a target budget of $436,000 income and $434,350 expenditure to operate the NZSHF. This has been used as a basis for assessing the financial dimensions of the NZSHF.

[31] New Zealand Sports Hall of Fame, Report on strategic review meeting, Held 8 November 2018, Dunedin
[32] New Zealand Sports Hall of Fame, Report on strategic review meeting, Held 8 November 2018, Dunedin, 6.3
[33] New Zealand Sports Hall of Fame, Business Plan for presentation to the Minister of Sport and Recreation, May 2016.

Appendix 3 – Detailed analysis of the options

- Table 1, Criteria for assessment of the options
- Table 2, Stand-alone
- Table 3, Co-located or integrated within another organisation
- Table 4, Primarily digital
- Table 5, Touring

This analysis is used as a basis for the assessment of feasibility in the main body of the report, taking into account achievability and risk.

Table 1, Criteria for assessment of the options	
Strategic	Advancement of purpose and objectives; Alignment with strategies of key partners; Stakeholder expectations
Public engagement	Meeting needs of existing audiences and stakeholders; Potential to increase visitation; Level of public engagement with and awareness of (measured by various means including visitation numbers, online statistics, visitor feedback, media coverage)
Artefacts	Care, access to and development of artefacts
Organisation viability	People and capability; Financials; Operating costs; Revenue generation; Philanthropic support; Level of capital investment required (in aspects such as exhibition and building, collections and digital)
Governance	Board; Legal structure

Table 2, Stand-alone option	
Strategic	The NZSHF does not have to be stand-alone to achieve the stated purpose. The current constitution does refer to independence, but it is noted that the constitution is ready to be updated. Alignment with strategies of key partners is necessary in all scenarios. None of the stakeholders consulted have expressed an expectation that NZSHF remains as a stand-alone operation. As for meeting the needs of stakeholders, consultation and communications should continue with stakeholders. It is important to say that anyone who has loaned or donated items to the NZSHF should be communicated with and provided access to their items whilst they remain in the care of the organisation (or indeed, any other organisation). This access can and should be facilitated in a range of ways.
Public engagement	It is assumed that the exhibits and digital presence will benefit from investment in all options in order to ensure the public are engaged / a high quality visitor experience. This is vital to ensure that the needs of audiences are met. Being a stand-alone facility puts the onus on the operator to attract visitors. In the current situation, it could be argued that the NZSHF is not stand alone, as it is located within the Dunedin Railway Station, which is a visitor destination. However, visitors to the railway station are not necessarily intending to or motivated to visit the NZSHF. If the NZSHF is to remain in the current location, the nature of the partnership with DCC should be considered and investment is advised in the visitor experience. In the stand-alone model, the level of public engagement is directly related to the nature of the experience offered, the relevance and dynamism of the content created and the marketing capacity of the organisation and its partners. Continual investment and expertise in both (marketing and visitor experience) is essential to sustain the public engagement.
Artefacts	It is noted that investment in the care and documentation of the artefacts is needed in all options. Investment in the visitor experience (exhibits and digital) is underpinned by investment in the artefacts and content (existing and new acquisitions). Therefore care, access to and development of artefacts and content is vital. This is true in all the options to varying degrees.
Organisation viability	In terms of people and capability, the stand-alone option needs dedicated resource in all areas. Volunteers can be used quite extensively, if the organisation has capacity to recruit, develop and manage and reward volunteers. Operating costs are higher for a stand-alone facility. In reference to one of the benchmarks, the National Museum of the Royal New Zealand Navy, the operating

	model is in fact one of shared resources and services with the New Zealand Navy. In this sense, the museum has a major partner. So although it is a stand-alone destination, which requires marketing and so forth, it is part of the Navy family. In terms of revenue generation, if the NZSHF were in another venue (more accessible) and had capital investment in the visitor experience, a higher entry charge could be considered. The New Zealand Rugby Museum offers a benchmark in this regard (Appendix 5). Philanthropic supporters are typically sought towards capital and the chair of the NZSHF is positive about raising philanthropic support. It isn't proven that a standalone option is more likely to receive philanthropic support than the other options. In all cases, a compelling case for support is essential.
Governance	The governance and legal structure must be fit for purpose in all scenarios. Shared services are a feature of some of the other options. In a stand-alone option, it is likely that the operating model includes a higher proportion of dedicated people and resources (rather than shared with partner organisations). The risks appear to be the greatest in the stand-alone model.

Table 3, Co-located or integrated within another organisation option	
Strategic	In thinking about the co-location option, the importance of choosing the optimum location and partner has been highlighted (see benchmarking, the All Blacks Experience at Sky City). The right choice of partner can enhance the achievement of the mission of the organisation. The 'right choice' means aligned on purpose and desired outcomes, values and ideally with complimentary capability and resources. It appears from the benchmarking that there is likely to be greatest strategic alignment with partners that are either operating a sporting / recreation venue (as in the example of the New Zealand Cricket Museum) or are a museum (as in New Zealand Rugby Museum). In terms of stakeholder expectation, the co-location model certainly resonated as the most strategic choice.

Public engagement	As there is not a great deal of information about current audiences (beyond that contained in this report), it is hard to comment on their preferences. It is assumed that a co-location option for the NZSHF means a move to another location / venue and will entail capital investment in the exhibits and the digital presence. As this would be a new experience, it would be essential to ensure it is a high quality, interactive and engaging visitor experience. It may not be a permanent presence; it may be co-location within a museum with a temporary exhibition programme. Nevertheless, the point about the engaging nature of the exhibits still pertains. Being located near or within another facility / visitor destination offers greater potential to increase visitation including online if there are shared digital channels. An advantage of a co-located facility (assuming the right choice for co-location) is the greater footfall it attracts. It is reasonable to assume that greater visitation could be achieved in a co-location model, including digital visitation. In some cases this is easier to measure (with a separate entrance, sometimes ticketed, such the New Zealand Rugby Museum). In others, it may not be as easy to distinguish visitation (such as the Scottish Sports Hall of Fame, which is within displays at the National Museum of Scotland). In some co-location scenarios, it may be harder to distinguish visitor feedback and media coverage, because the experience is embedded within a larger experience. However, this can be addressed through targeted means and, for media coverage, the advance of being part of a larger marketing operation is likely to outweigh any disadvantage.
Artefacts	The care, access to and development of collections should be a prime consideration in the operating model. For co-location, the ideal may indeed be with a partner that brings expertise in this area. Certainly the facility will need to meet standards that are expected for museum display; for some venues, this may be more challenging to achieve.
Organisation viability	People and capability can be shared in a co-location model, as can some of the operating costs. Indeed, a shared services approach is an advantage of the co-location option. It may be that the operating costs are not significantly lower, but there are economies of scale (such as shared ticketing). In terms of revenue generation from ticketing and retail, it depends on the policy at the venue and whether they charge entry and offer retail or not. If the venue is free entry (such as Te Papa) and the content is integrated within it, then it is reasonable to assume that no charge could be levied for any NZSHF content. In the case of the New Zealand Rugby Museum, there is shared services but separate experiences.

Governance	The governance approach depends on the degree of integration with the venue and, in some cases, it may still necessitate a separate board (and their duties will be determined by the nature of the arrangement). It may be more of an advisory function that is appropriate.

Table 4, Primarily digital option	
Strategic	This option does not alone serve the purpose of the NZSHF nor does it appear to align with the strategies of key partners in the longer term. It would have to be paired with an event to celebrate the inductions and ideally pop up features for public engagement (such as temporary display of material relating to the NZSHF). The benchmarking has not revealed a purely 'digital only' model that would apply in this instance (the NZ Fashion Museum includes pop up experiences). No stakeholders expressed a preference for a digital first option but there is consensus that the way forward should include a stronger digital presence, with interest in the content that could be generated.
Public engagement	Thinking about audiences in the digital first option, the learning sector seems to offer potential, through the provision of resources and interactive content. The Olympic Museum has some nice examples of this and there is good content available online pertaining to NZ sport (Appendix 4). This option has a focus on digital visitation and is linked strongly to online public engagement, which can be measured more readily using online tools. The potential to link digitally to other collections of sporting memorabilia as well as to feature items held in personal collections is high. This points to a partnership approach of aggregated content. Investment in the online visitor experience would need to be at a high level, with specialist expertise (such as a national online sports repository).
Artefacts	Investment in the artefacts is vital for the digital first option and the ways that artefacts and associated intellectual property is digitised, involves expert input and thorough planning.

Organisation viability	For people and capability, technical and content skills are essential. It also depends on a 'born digital' organisation culture and approach. The level of investment required is likely to be high, in systems, content creation and then expertise. The digital first option has lower operating costs, and this is sometimes a reason for organisations choosing to the digital first. Their aim may still be ultimately to have a physical presence. The example of this is the New Zealand Music Hall of Fame (Appendix 4), which is embedded in its industry, using various channels to reach audiences, including the New Zealand Music Awards. The inductees are sometimes still performing. A special exhibition, entitled "Volume: making music in Aotearoa' was a pilot for an aspirational music museum, and they have continued collecting memorabilia since that point and champion the preservation of the heritage of the music industry. Digital first can mean that the mission and public awareness is best achieved through a faster, a nimbler digital model (such as the Museum of Homelessness, Appendix 4). Revenue generation from such online content is less likely, unless it is packaged in such way as to generate revenue (such as being designed as a game that can retail). However, a content and experience rich online repository for New Zealand's sporting heritage, which inspires and supports the learning of children and young people, may prove appealing to philanthropic supporters. This would need to be tested and is a project that is much greater than the NZSHF.
Governance	The expertise around the board table would need to reflect the digital nature of the organisation and have people with an entrepreneurial and collaborative mindset.

Table 5, Touring option	
Strategic	A touring option is a legitimate means of reaching an audience and, in that regard, is certainly a vehicle for honouring, preserving, educating and inspiring (the purpose of NZSHF). But stakeholders expressed their reservations about this option, on the basis that it would take a lot of work and resources, and because the NZSHF has no mandate to embark on a touring model.

Public engagement	There is no evidence at present to say that there is a demand for a touring version of the NZSHF – but that could be investigated. Host venues would need to be museums (or equivalent security and environmental conditions – such as Eden Park Stadium for the Nelson Mandela show – Appendix 4). Local content could be added to increase relevance to the audience (most likely from museums and sporting associations). The touring option can reach a larger audience, but the challenge is maintaining that engagement once the tour is completed (which may not be the objective of the touring body). The product must be designed to tour, with appropriate infrastructure and flexibility to adapt to different venues. The quality of the product is essential for effective public engagement. This is not a market to enter lightly.
Artefacts	The selection, preparation, and care of artefacts is very specific in the touring model. More fragile items are more difficult to tour and security is a vital consideration. If there were interest in this option, it would demand deeper consideration.
Organisation viability	The benchmarking (New Zealand Rugby Museum and others) highlights the specialist skills and resources necessary for a touring model. Operating costs are in part covered by the host venue (when it is on show), with the greater cost being in development, movement and storage (when not on show) of the exhibition. Revenue generation may be possible, depending on the host venue's policy. Some touring models are based on hire fee only, others are a hire fee and percentage of revenue share. There is a demand for touring exhibition products in New Zealand, but the propensity of venues to pay a hire fee and to cover costs such as logistics, installation and so forth, is low. This screenshot of the touring exhibition, 'Balls, Bullets and Boots', demonstrates perfectly the range of partnerships to make a touring exhibition happen. It also shows the potential for financial and in-kind support, but that does take resources to secure.

	
Governance	In terms of governance, the touring option does not necessarily require any different skills or approaches than the co-location model, as most of the emphasis is on the operational / management team and their capability. The risks are different, however, so they would need to be identified and managed appropriately.

Appendix 4 – Benchmarking

This included:

- Olympic Museum, Switzerland - www.olympic.org/museum
- Canadian Sports Hall of Fame - www.sportshall.ca/?lang=EN#
- World Rugby Museum, Twickenham, UK - www.worldrugbymuseum.com
- Scottish Sports Hall of Fame, Edinburgh - www.sshf.co.uk
- National Sports Museum Australia, Melbourne – www.nsm.org.au
- Sport Australia Hall of Fame - www.sahof.org.au/museum/
- Stand-alone, National Museum of the Royal New Zealand Navy - www.navymuseum.co.nz/
- Co-location, stadium, Eden Park, Auckland - www.edenpark.co.nz
- Co-location, New Zealand Cricket Museum, Wellington– www.nzcricketmuseum.co.nz,
- Digital first / New Zealand Fashion Museum - www.nzfashionmuseum.org.nz/
- Touring / New Zealand Rugby Museum (including in Tokyo) - www.rugbymuseum.co.nz
- All Blacks Experience, Sky City - www.experienceallblacks.com/
- Museum of Homelessness - www.museumofhomelessness.org/
- New Zealand Olympic Museum
- Te Whare Taonga Puoro O Aotearoa, New Zealand Music Hall of Fame - www.musichall.co.nz/
- Online content

Framing comment: It is noted that many have these have much greater resource than the NZSHF

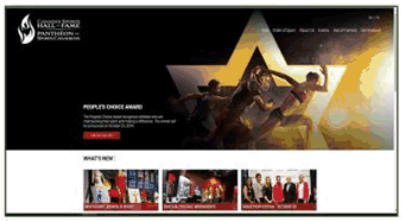
Insights / drama, storytelling and quality

Olympic Museum, Switzerland

Top three insights /

High quality and engaging exhibition / Great blog (contemporary voice) / Educational kit on fair play

Insights / Canadian Sports Hall of Fame

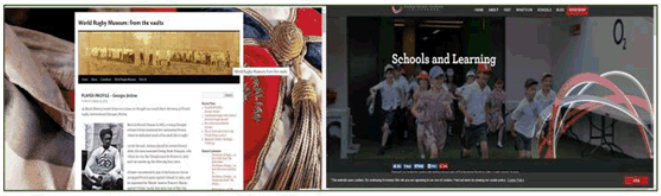


Our mission: Give all Canadians a way to embrace the country's physically competitive spirit as their own.
Our vision: Build Canada through Sport by aligning sports influences with broader social purpose.

Key take outs /

- In 2018, 81 volunteers donating 3,000 hours
- 2019 new *Women in Sport Gallery* features how the role of women in sport has changed over generations in Canada and showcases the amazing contributions of 50 of Canada's elite female athletes and sport builders who have been inducted into Canada's Sports Hall of Fame
- Beyond the Win: Hall of Famers on Tour, an assembly-style, curriculum-aligned education presentation, reached 3,300 students in a month

Insights / World Rugby Museum



Mission /

To celebrate and share the unique history, culture and tradition of rugby union in all its forms, wherever and by whomsoever it is played.

World Rugby Museum

Top three insights /

Twickenham being a destination in its own right

Coverage of 'world' rugby at heart of value proposition

Educational focus strong, great content generally

Insights / Scottish Sports Hall of Fame

Key take outs /

Located in National Museum of Scotland, Scottish galleries

- Museum no longer involved in the selection of inductees
- Other individual sports also celebrate their achievers
- When Scottish displays are updated, the complexity of Scottish identity – and sports place in that – will be acknowledged.

Insights / National Sports Museum Australia

The new NSM will push storytelling to the fore and ask 'What makes Australia a sporting nation?'

Collection policy /

The **National Sport Museum** collects objects …

- relating to contemporary champions, past champions and significant events in Australian sporting history
- that are specific and focused examples of 'grass roots' participation in various sports across all eras
- that demonstrate the underpinning social importance of sport to Australians of all ages across all eras.

Insights / Sport Australia Hall of Fame

Vision: To preserve and celebrate the history of Australian Sport and to inspire all Australians to achieve their potential both in sport and life.

Three take outs /

Three membership levels:

- Athlete
- General
- Legend of Australian Sport

A range of awards

Scholarship and mentoring programme for young sports people

National Sports Museum Australia

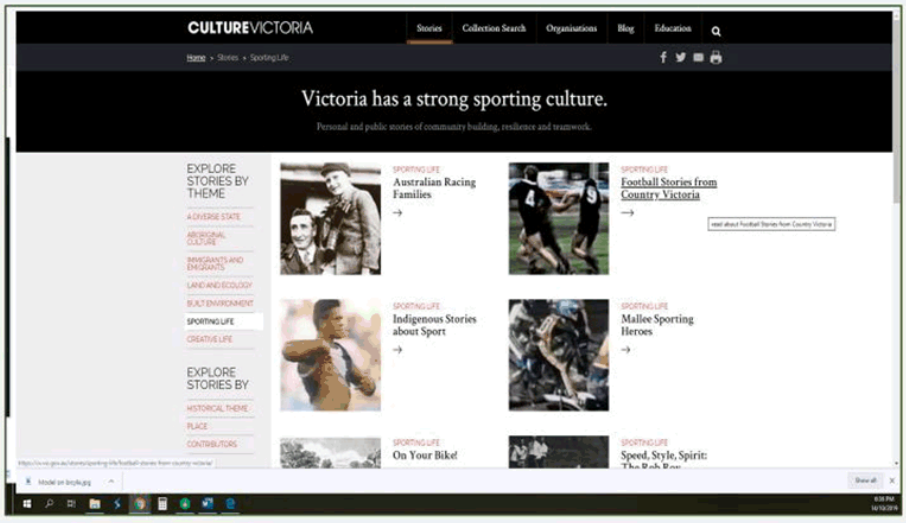
Located in Melbourne, Victoria, at the Melbourne Cricket Ground. Currently closed for refurbishment. Scheduled to reopen in late February 2020.

www.nsm.org.au

Hosts the **Sport Australia Hall of Fame.** Has an interesting range of inductions and support programmes, such as scholarships.
www.sahof.org.au/museum/

Culture Victoria is a gateway to Victoria's cultural collections and organisations, has a focus on 'Sporting Life.

cv.vic.gov.au/stories/sporting-life/



Stand alone / National Museum of the RNZ

Our Vision: To be a 21st Century Museum that is resilient, responsive and authoritative and excels in all that it does.

Our Mission: To gather, protect and share the Navy's memory and stories past, present and future, to inform, and to inspire our sailors, our naval community and all New Zealanders

Key take outs /

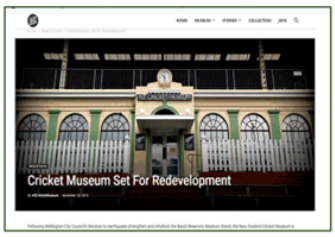
- The benefits of co-location with the Navy Base, Devonport, and of being in Auckland (market size)
- The power of telling stories of the past to inspire young people today
- The challenges of a small staff team – collection care, education and fundraising
- Increasingly aiming to connect with the local community
- A key activity is contributing to the training and education of Navy personnel

Co-location / Stadium

Three take outs /

- Stadium are commercial entities, building their brands, competing for customers, and finding multiple uses for the asset
- Eden Park has a focus on connecting with community. Nelson Mandela exhibition was a very high quality experience, visitation was reportedly c.20,000 people, and tickets were $27.50 adult and $22.50 child.
- Multi-functional arena in development in Christchurch.

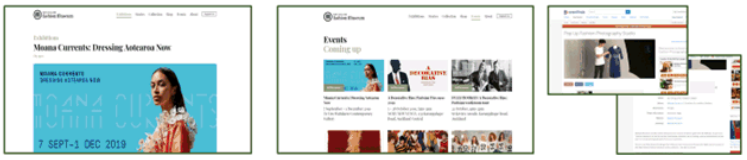
Co-location / New Zealand Cricket Museum



Facts and take outs /

- Currently closed and planning refurbishment. The collection is on loan to Invercargill.
- Supported by Wellington City Council, on the basis that free admission is maintained. The Trust has reserves, which have been used to support capital investment.
- 25,000 items in the collection and 4000 books.
- Creating a New Zealand Cricket Hall of Fame display as part of the refurbishment.
- Using oral histories in the redisplay.
- Visitor projection in the region of 20,000 annually, with seasonal variation allowed for and short opening hours (summer 11am – 6pm and winter 12pm – 4pm).

Digital first / NZ Fashion Museum



The New Zealand Fashion Museum is for anyone with a love of fashion, heritage, innovation and creativity. With no fixed abode other than this online address, it is a museum dedicated to the curation of New Zealand's rich fashion past, making it relevant for the present and future.

Key take outs /

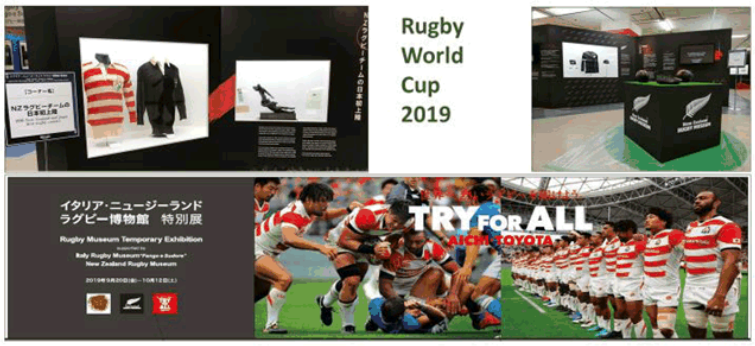
- Requires specific expertise and an 'agile', digital first organisation
- Works well for certain topics; another example is www.museumofhomelessness.org
- Objects must be relatively easy to transport, display and so forth

Touring exhibition / "Balls, Bullets and Boots"

Take outs /

- Not an easy option, specific capability and resources required including project funding (such as NZ Lottery)
- Many funders will not cover core operational costs
- There is a market for exhibitions but NZ museums may not be able to pay for them, and some consideration of the variations in locality is required
- Delivers strongly on public engagement, building profile and visitation, requires an 'at the end of the tour' plan

New Zealand Rugby Museum in Tokyo



All Blacks Experience, Sky City

Take outs /

- Selection of partner(s) is vital
- Focus on unique, guided experience, not many objects
- Discover as much as you can about what visitors are expecting

An example of contemporary visitor experience, focus on putting visitors in the place of a rugby player, judicious use of proven technology, all Ngāi Taihu experiences are guided, that's the point of difference. Tickets are $50 adult, $30 child.

Museum of Homelessness

"Founded in 2015, Museum of Homelessness (MoH) is a community driven social justice museum, created and run by people with direct experience of homelessness. MoH tackles homelessness and housing inequality by amplifying the voices of its community through research, events, workshops, campaigns and exhibitions. MoH also provides direct support – bursaries, mentoring, training and practical support – to its community members. Together we collect and share the art, history and culture of homelessness & housing inequality to change society for the better. Together we find hope in deeply divided and difficult times". Source: www.museumofhomelessness.org/

New Zealand Olympic Museum

From website – closed in Jan 2013: "A new and flexible Olympic Museum will share our proud sporting history with more Kiwis following the New Zealand Olympic Committee's move to Auckland later this year. As part of the developing heritage and legacy strategy, a new format will see the Olympic Museum share exhibitions throughout the country in partnership with regional Museums, sporting trusts and public facilities. The New Zealand Olympic Committee new headquarters will also house a number of exhibitions. The Alexander Turnbull Library will now safeguard the organisations valuable archives and a growing on-line strategy will see memorabilia, photos and video displayed in a compelling digital format. Memorabilia pending display will continue to be housed in existing Museum-quality secure storage in Upper Hutt. The current Olympic Museum premises will close this week." www.olympic.org.nz/news/new-model-for-olympic-museum/

Te Whare Taonga Puoro O Aotearoa, New Zealand Music Hall of Fame. www.musichall.co.nz/

There is an interesting comparison to the New Zealand music industry, which has a hall of fame and is championing the preservation of the heritage of the music industry.

High profile award ceremony: Annually, the Vodafone New Zealand Music Awards occur: www.nzmusicawards.co.nz/. The awards take place in Auckland, which has the recognition of being a UNESCO City of Music.

Inductees: Career must have started at least 20 years earlier but may still be performing e.g. Bic Runga in 2016. Inductions in 2019: Ruru Karaitiana, Pixie Williams and Jim Carter are three of Aotearoa's most formative musical figures. Together, they created 'Blue Smoke' NZ'S first homegrown pop song. Plus Th' Dudes because of their significant legacy. The band set a standard in original songwriting, in stage and album production

Public engagement: Engaging and dynamic content online, including links to music and video providers. Special temporary exhibition at Auckland War Memorial Museum, entitled: 'Volume: making music in Aotearoa' www.musichall.co.nz/home/exhibition/. Since the exhibition, they have continued to collect some memorabilia and continue to make the case for a more permanent home for the story of NZ Music.

Online content

A scan of online content relating to New Zealand sport revealed a range of material. For example:

An **e-book** for the "Balls, Bullets and Boots, from rugby field to battlefield" exhibition - www.ww1rugby.nz/ebook

'Courage and class: 50 women who shaped New Zealand sport'. To mark the 125th anniversary of women's suffrage, the NZ Herald sports team picks an extended dream team of those who made a difference. www.nzherald.co.nz/indepth/sport/women-who-changed-new-zealand-sport/

Scratched: An original web series that finds and celebrates the lost sporting legends of Aotearoa.

"There are many sportspeople whose names are uttered regularly by New Zealanders, and whose stories have been told over and over again. But what about the athletes whose lives and careers have faded from the national memory? New Zealand has produced more athletic legends than we realise and for some, acknowledgement of their achievements is long overdue." www.thespinoff.co.nz/atea/09-04-2019/scratched-aotearoas-lost-sporting-legends/

New Zealand History, Nga korero a ipurangi o Aotearoa. Content relating to sport under several headings www.nzhistory.govt.nz/keyword/sport

Appendix 5 – Data and budget

Comparative data on visitation and entry charges

Destination / venue	Location	Annual visitor numbers	Adult $	Child $	Student $	Senior $	Family $	Income from admissions	Note
New Zealand Sports Hall of Fame	Dunedin, railway station, level 2	9224	$ 6.00	$ 2.00	$ 4.00	$ 4.00	No	$ 36,674.00	Income and visitor numbers for YE 30 June 2018
Lan Yuan, Chinese Garden	Dunedin	51,194	$ 9.50	Free	$ 6.50	No	No	Not known	Visitor numbers for 2017-18, source: Otago Daily Times
Toitū Otago Settlers Museum	Dunedin	320,000	Free	Free	Free	Free	Free	N/A	Visitor numbers for 2017-18, source: Otago Daily Times
New Zealand Rugby Museum	Palmerston North, in Te Manawa	10,000	$ 12.50	$ 5.00	No	No	$ 30.00	$ 100,000.00	From website and t/c, based on average income admission pp of $10
Te Manawa Museum	Palmerston North	126,000	Free	Free	Free	Free	Free	N/A	For 2018/19
Estimate of potential visitation for NZSHF if co-located using NZ Rugby museum as benchmark									
NZ Rugby Museum visitiation as a percentage of Te Manawa visitation		8%							
NZSHF potential visitation if co-located with Toitū (using 8%)		**25,397**							

Website analytics – www.nzhalloffame.co.nz

Financial year	Number of users	New users	Returning visitors	Bounce rate	New Zealand users
2016 - 2017	11453	11413 / 99.7%	40 (not significant)	71%	Not available
2017-2018	8912	8866 / 92.3%	744 / 7.7%	67%	54%
2018-2019	9824	9797 (93.5%)	683 (6.5%)	65%	56%

Google analytics for the period 1st January - 12th December 2019 showed the following:

- A total of 11,150 users for this period
- On average, a 1000 users per month. Usage peaked in October at 1300 users
- 92% of users are new; 59% of users are from New Zealand, followed by USA, Australia and United Kingdom
- 89% of users are English language users
- High majority of users (69%) are finding the website organically (via Google) with 22% going directly to the website
- The bounce rate (Google: "The percentage of single-page sessions in which there was no interaction with the page. A bounced session has a duration of 0 seconds") is 66%. This indicates that users are not engaging with the content that is available.

Budget comparison (detail on next page)

Current financials	Proposed budget 2016-17	Proposed budget November 2019
$ 208,293	$ 436,000	$ 656,000
$ 232,887	$ 434,350	$ 711,950
-$ 24,594	$ 1,650	-$ 55,950

- Current financials, Source: Statement of financial performance YE 30 June 2018
- Proposed budget 2016-17, Source: Presentation to Minister of Sport and Recreation 2016
- Proposed budget November 2019, Source: adjusted from proposed budget 2016-17
- Capital investment in the visitor destination is not included in the proposed budget.

Current financials		Proposed budget 2016-17		Revised proposed budget November 2019		
Income		**Income**		**Income**		
						Comment
SNZ (operating grant annual)	$100,000	Government (operating grant annual)	$300,000	Government (operating grant annual)	$427,000	#8
DCC	$ 42,900	Project grants	$ 50,000	Project grants	$100,000	#9
Charitable grants	$ 21,445	Charitable grants	$ 50,000	Charitable grants	$ 75,000	#9
Admission	$ 36,674	Admission	$ 30,000	Admission	$ 45,000	#10
Membership	$ 2,104	Membership	$ 3,000	Membership	$ 4,500	#11
Retail	$ 3,378	Retail	$ 3,000	Retail	$ 4,500	#11
Other (donations and interest)	$ 1,792					
TOTAL	**$208,293**	**TOTAL**	**$436,000**	**TOTAL**	**$656,000**	
Expenditure		**Expenditure**		**Expenditure**		
Employee related costs	$115,899	Employee related costs	$150,250	Administration	$416,850	#1 #4
Costs related to providing goods & services	$ 69,546	Costs related to providing goods & services	$ 95,600	Costs related to providing goods & services	$113,600	#3 #6
Other expenses	$ 47,442	Other expenses	$ 58,500	Other expenses	$131,500	#2 #5
		Other costs / exhibition and update assets	$130,000	Other costs / exhibition and update assets	$ 50,000	#7
TOTAL	**$232,887**	**TOTAL**	**$434,350**	**TOTAL**	**$711,950**	
Surplus (deficit)	**-$ 24,594**	**Surplus (deficit)**	**$ 1,650**	**Surplus (deficit)**	**-$ 55,950**	
				NOTE: capital investment required in the visitor destination, not included here		
Source: Statement of financial performance YE 30 June 2018		Source: Presentation to Minister of Sport and Recreation 2016		Source: adjusted from proposed budget 2016-17		

#1	Staff budget increased from $150K to $250K to provide resources for site management, marketing / public engagement, artefact /content creation, grant making. Not all fulltime.
#2	IT budget increased from $8K to $16K, does not include content development
#3	Marketing and comms (M&C) budget increased from $8K to $16K, noting that induction ceremony has separate budget of $18K
#4	Training and development budget of $12.5K added for staff (5% of $250K budget)
#5	Budget of $65K for care of artefacts added at 10% of valuation to include contract staff
#6	Budget of $10K added for public programme events to attract visitors and raise awareness
#7	Budget for annual investment in fixed asset; project funding / capital investment also needed
#8	Government support set at 60% of expenditure (a benchmark from other work), rounded down to nearest $1000
#9	Target for project grants increased because staff for grant making included although not fulltime
#10	Admissions increased by 50% on basis that visitation increased by 50%. More than that requires capital investment in experience
#11	50% increase assumed but with work, both offer potential for increased revenue, which could close the gap in this budget

Appendix 6 – A pathway forward

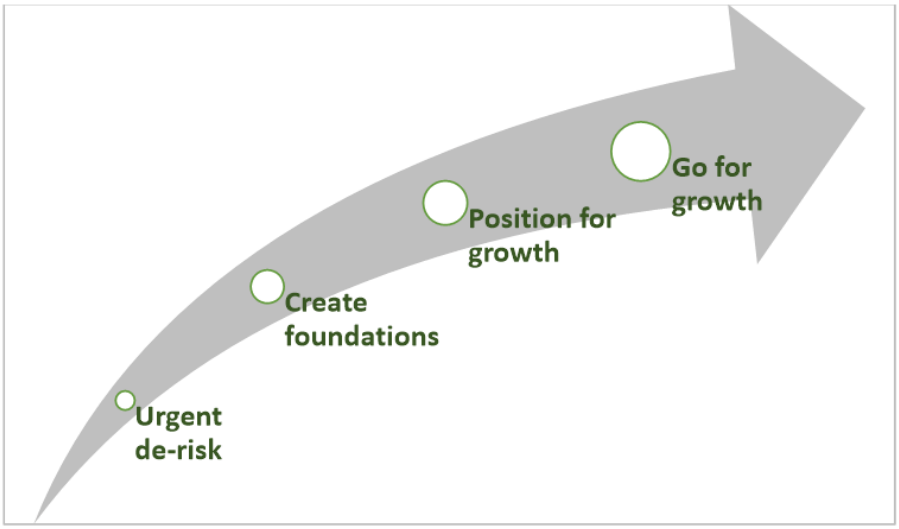
A phased pathway forward was developed at an early stage of this process. This offers a framework for a forward plan although the details of the plan would be amended based on decisions about the way forward. Each phase would not be of equal duration and phases two and three would overlap somewhat ('foundations' is relatively managerial and 'position for growth' is led by the board).

Direction / a growth strategy to be engaging and sustainable

Approach / A phased approach, beginning with urgent 'de-risking' the organisation

Goals for the period 2020 – 2022 /

- To achieve minimum sustainability level (board, staff, financial and partners)
- To make a step change in engagement and relevance (collections, content, communications, experience)
- To position for growth (detailing the preferred option and building the requisite partnerships and capability)



Key moves by phase – indicative only

Phase	Key actions
Urgent de-risk **Very high priority 2020**	Renew governance / board renewal plan Create strategy / • with compelling vision, clear purpose and viable forward plan • identify potential funding sources and make the case for investment • alignment with partners' strategies and value to them of NZSHF Succession plan for current staff in place Financial plan, step 1, enough operating funding to get out of the 'urgent zone'
Create foundations **High priority 2021**	Implement staff succession plan Clarify for current partners how they can assist Advocacy and communications plan including refreshed identity (Sport NZ may be able to assist) Financial plan, step 2, funding for / • organisational development (notably, detailed planning of preferred option) • marketing and communications • collection care and management (Te Papa and other museum partners) • content and collection development
Position for growth **By 2022**	Detailed plans for selected option Seek out new partners and alliances to deliver strategic plan Capital investment campaign for preferred option
Go for growth **From 2022 onwards**	Selected option underway