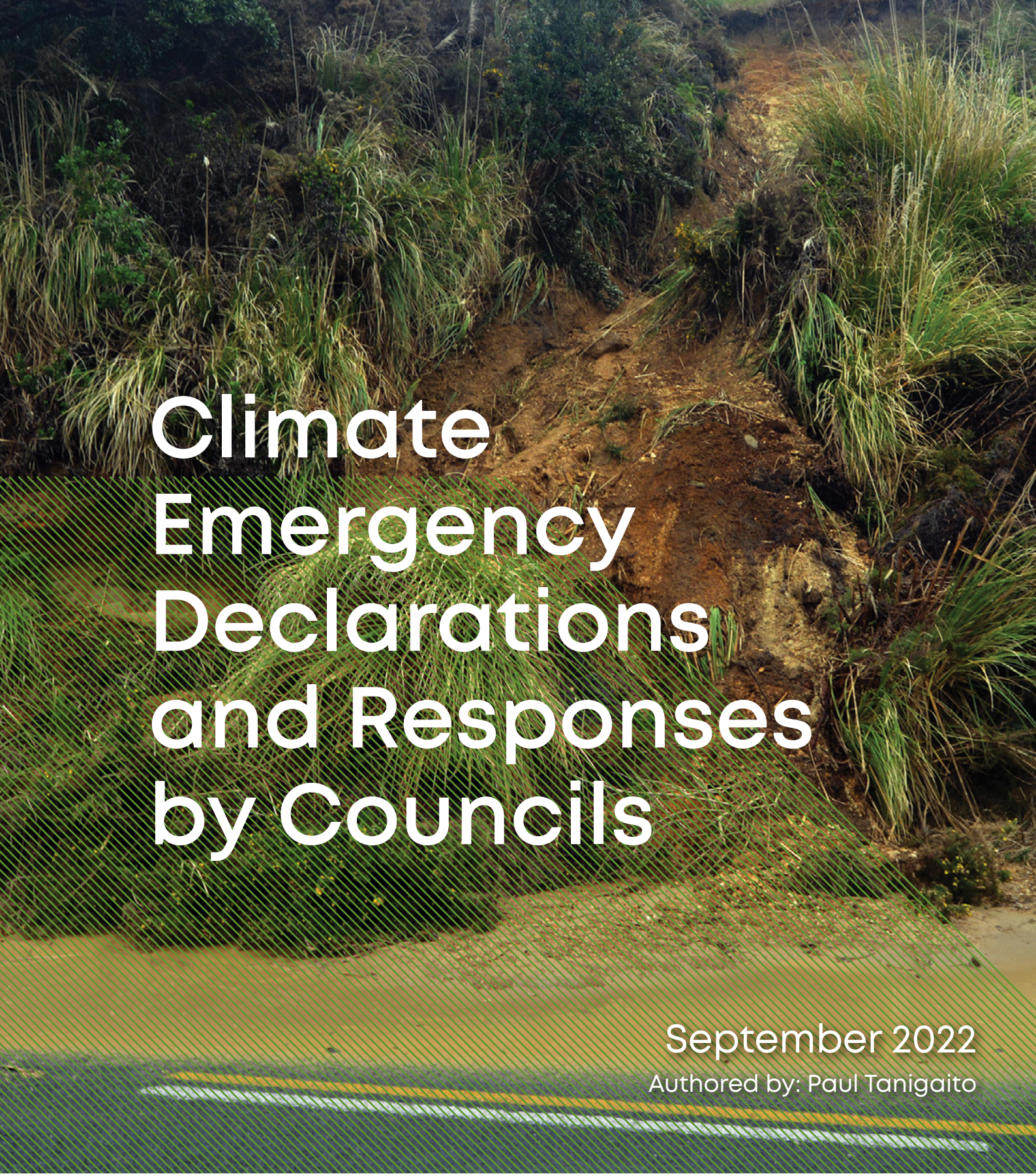

Climate Emergency Declarations and Responses by Councils

September 2022

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LGFA
New Zealand Local Government Funding Agency
Te Pūtea Kāwanatanga ā-rohe

Contents

Executive summary

Sixteen of New Zealand's 78 Councils have declared a Climate Emergency: 11 North Island and 5 South Island Councils, covering 74.6% of New Zealand's population. These declarations were made over a nine-month period between May 2019 and February 2020, no further declarations have been made since the onset of the Covid-19 pandemic. Fifteen of the 16 Councils are coastal Councils with the other being Queenstown Lakes District Council, which already had a focus on sustainability, releasing its Climate Change Action Plan the same day as their Climate Emergency Declaration.

The LGNZ Report – 'Vulnerable: the quantum of local government infrastructure exposed to sea level rise' was released in January 2019. This report highlighted the total replacement value of Council owned infrastructure exposed to 1.0 metre of sea level rise to be over NZ$5 billion. Almost all Councils that declared a Climate Emergency were identified within a priority region in one or more major infrastructure areas: Three Waters, Roading, Building and Facilities. Priority regions are regions with the greatest exposure to sea level rise.

Other reasons and context identified in the research as to why each Council declared a Climate Emergency include international and national commitments, current legislation, climate change projections by The National Institute of Water and Atmospheric Research (NIWA), pressure from residents, and the follow up LGNZ Report – Exposed: Climate change and infrastructure (2019).

There are a range of responses from Councils since declaring a Climate Emergency, from no action plans having been produced, to detailed and costed action plans with follow up documents that report on progress made by the Council. Some Councils have set emissions reductions targets for their district/region over and above the level Central Government have set nationally. Queenstown Lakes District, Wellington City, Hutt City and Auckland Councils had the most comprehensive responses.

Key projects have been identified that may be eligible for Green Social and Sustainable (GSS)Loans for each Council within Appendices 3-17. The first GSS loans were made by LGFA in December 2021, and from these loans a Green, Social and Sustainability Bond Program similar to Auckland Council's might be initiated once a large enough pool of eligible assets has been created.

Scope of report

This report presents the completed research investigating Councils that have declared a Climate Emergency and their response since doing so. Research was focused on the following documents, if produced by Councils:

- Climate Change Strategy/Action Plans (and progress reports)
- Regional/District Carbon Emissions Profiles
- Corporate Emissions Profiles for Councils (Primarily Toitū Envirocare CarbonReduce certifications)
- Long Term Plans, including Infrastructure Strategies

The review also included the following reports:

- LGNZ Report – Vulnerable: the quantum of local government infrastructure exposed to sea level rise (2019)
- LGNZ Report – Exposed: Climate change and infrastructure (2019)

Information was reviewed for each Council that has declared a Climate Emergency on the context and reasons for doing so, and what Climate Strategies or Action Plans have been produced since their declaration. Emissions profiles for each region or district were reviewed if available.

Key projects outlined in Councils' Long-Term Plans to address/mitigate climate change issues were also identified, for potential Green, Social and Sustainability Loans from LGFA. Councils now receive a discounted borrowing margin on these types of projects.

Note: Auckland Council's Long-Term Plan and key projects were not reviewed as they have their own Green Bond Framework and produce a substantial amount of information relating to climate change.

Overview of climate emergency declarations by Councils

As of May 2022, 2,099 jurisdictions in thirty-eight countries have declared a Climate Emergency around the world. Populations covered by jurisdictions that have declared a Climate Emergency amount to over 1 billion citizens. Sixteen of New Zealand's 78 Councils have declared a climate emergency and 74.6% of New Zealand's population live within the jurisdictions of those Councils.

The following 16 Councils have declared a Climate emergency:

- Whangarei District Council
- Auckland Council
- Bay of Plenty Regional Council
- Opotiki District Council
- Hawkes Bay Regional Council
- Whanganui District Council
- Greater Wellington Regional Council
- Wellington City Council
- Porirua City Council
- Hutt City Council
- Kapiti Coast District Council
- Nelson City Council
- Canterbury Regional Council (Environment Canterbury)
- Christchurch City Council
- Queenstown Lakes District Council
- Dunedin City Council

Timing of declarations

The first Council to declare a Climate Emergency was Canterbury Regional Council (Environment Canterbury) on 16 May 2019, and the most recent declaration was made by Whanganui District Council on 11 February 2020. All sixteen declarations were made in a period of nine months, and no further Councils have declared a Climate Emergency since the onset of the Covid-19 pandemic. The New Zealand Parliament declared a Climate Emergency on 1 December 2020.

Geography and demographics of Councils that have declared a climate emergency

Of the 16 Councils that have declared a climate emergency

- Eleven are North Island Councils covering 2,939,010 of New Zealand's population
- Five are South Island Councils covering 884,080 of New Zealand's population
- All except Queenstown Lakes District Council are coastal Councils

When broken down by Council type the following proportions of Councils have declared a Climate Emergency

- 6 of 10 Metro Councils (Including Auckland, a unitary Council)
- 4 of 11 Regional Councils
- 5 of 31 Provincial Councils (Including Nelson, a unitary Council)
- 1 of 26 Rural Councils

Reasons for declaring a climate emergency

The context and reasons behind declaring a climate emergency differ between Councils. Analysis of Long-Term Plans, climate change strategies and climate action plans have found reference to references to the following:

- International and national commitments
- Current legislation
- Climate change projections by NIWA
- LGNZ Report – Vulnerable: the quantum of local government infrastructure exposed to sea level rise (2019)
- LGNZ Report – Exposed: Climate change and infrastructure (2019)
- Priority regions recognised
- Pressure from residents

International and national commitments

International and national commitments Councils reference in their Climate Strategies or Action Plans include:

- United Nations Framework Convention for Climate Change
- Paris Agreement
- Kyoto Protocol
- The Sustainable Development Goals
- C40 Cities
- New Zealand Climate Leaders Coalition

Current legislation

Legislation that Councils reference in their Climate Strategies or Action Plans around Climate Change and its effects on their responsibilities and planning include:

- Climate Change Response Act 2002
- Zero Carbon Amendment Act 2019
- Emissions Trading Reform Bill
- Resource Management Act 1991
- Building Act 2004
- Land Transport Act 1998
- Local Government Act 2002
- Waste Minimisation Act 2008
- Energy Efficiency and Conservation Act 2000
- Emissions Reduction Plan
- Climate Emergency Response Fund

Climate change projections by NIWA:

The projections from NIWA are included in most climate change documents produced. There is some variation between regions, but the projections include the following:

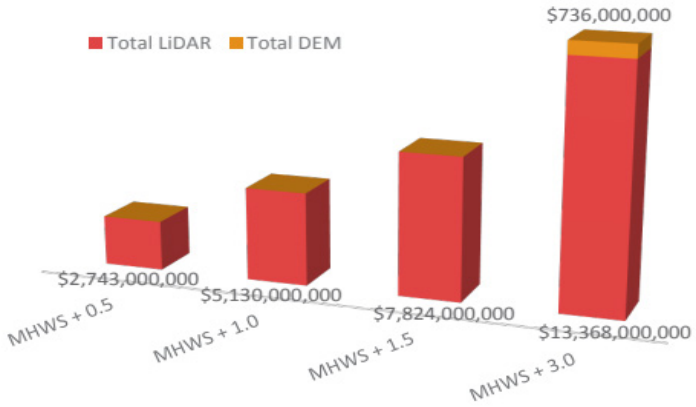
- Increase of average temperature by between 1.5-3.0°C by 2090.
- Higher temperatures, less rainfall and greater water loss through evaporation are likely to cause increasing pressure on water resources.
- Droughts are likely to become more frequent and more extreme.
- Strong winds, combined with high temperatures, low humidity and seasonal drought may result in an increased fire risk in some areas and a longer fire season, along with an increased risk of soil erosion.
- Sea-level rise and coastal erosion will impact significantly on coastal settlements.
- More extreme rainfall events, and more frequent and intense coastal flooding and erosion.
- Increased flooding in low lying areas.
- Increased threat to native species from changed distribution of disease vectors.

LGNZ Report – Vulnerable: the quantum of local government infrastructure exposed to sea level rise (2019)

LGNZ, supported by Tonkin &Taylor, produced a report to research the current quantity and value of infrastructure exposed to sea level rise at four increments; 0.5, 1.0, 1.5 and 3.0 metres, and to quantify the replacement value of the infrastructure. A survey, jointly developed by LGNZ and Tonkin & Taylor, was issued to 62 Councils in February 2018, of which 60 responded, a response rate of 97%. Kaikoura District and Gisborne District (GDC) Councils did not respond but GDC have undertaken other studies into the impact of climate change within their region. The report has a primary focus on sea level rise, noting that it is one of several "general" underpinning factors that impact or cause coastal flooding. Other variables include storm events, high tides, and land subsidence. The report was released in January 2019, four months before the first Climate Emergency Declaration in New Zealand by Environment Canterbury.

The he following graph shows the replacement value of council owned infrastructure at the four increments measured in the report.

Figure 1: Total replacement value of exposed infrastructure



MHWS: Mean High Water Springs

Priority regions identified

Priority regions in the North and South Islands; where there is the greatest exposure to sea level rise, were identified.

Regions that were identified as being a priority region in all three of the major infrastructure areas: Three Waters, Roading, Building and Facilities:

North Island

- Auckland
- Bay of Plenty
- Hawkes Bay

South Island

- Canterbury
- Otago

Other regions that were identified as priority regions in either one or two of the main infrastructure areas:

North Island

- Waikato – Three Waters
- Greater Wellington – Buildings and Facilities

South Island

- Nelson – Three Waters, Building and Facilities
- Tasman – Roading

Of the five regions that were recognized as priority regions in the three major infrastructure areas, only Otago Regional Council did not declare a Climate Emergency. However, Dunedin City Council did declare a Climate Emergency, and within it, has a lot of the region's infrastructure.

LGNZ Report – Exposed: Climate change and infrastructure (2019)

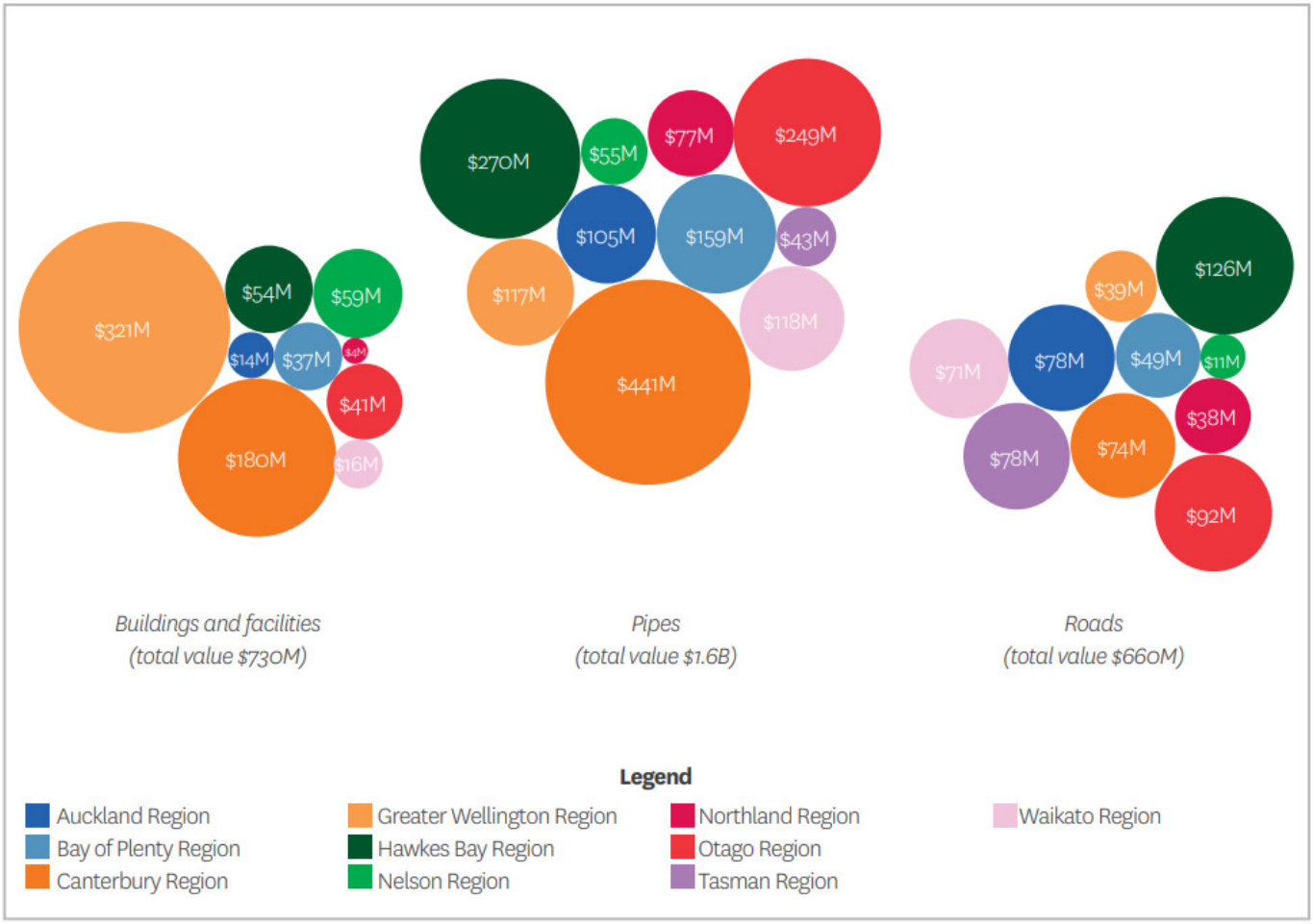
The LGNZ Report – Exposed: Climate change and infrastructure (2019) is a follow up report to the initial report and a guidance document for Councils to assist with:

- Understanding and managing climate risk to the essential infrastructure that they own – particularly in relation to sea level rise, coastal hazards (such as storm inundation and erosion), and inland (pluvial) flooding.
- Addressing the issues that completion of the previous survey, which informed the Vulnerable report, identified.

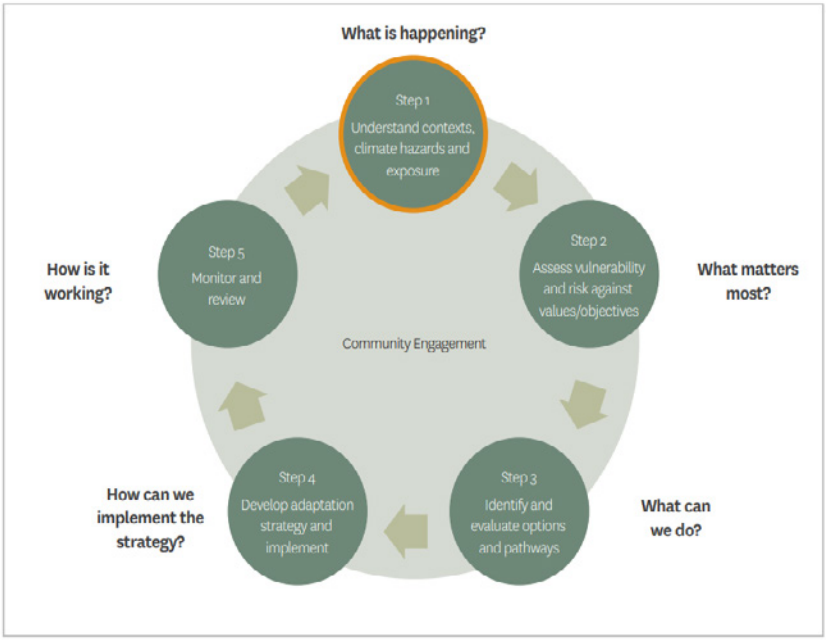
The report is also intended to help community leaders prime and test Council staff, constituents and stakeholders to engage in the most effective long-term planning for infrastructure investment, and make sensible investment decisions now, which do not preclude future options for infrastructure provision.

The document outlines and compares the replacement value of infrastructure by region and infrastructure type at 1.0m above Mean High Water Springs:

Figure 2.1: The replacement value of infrastructure by region (at 1.0m above MHWS). Source: LGNZ (2019).



The report also outlines the 5-step process Councils should follow to plan for climate adaptation. This is based on the Ministry for the Environment's Coastal Hazards and Climate Change – Guidance for Local Government (2017). The guidance document focuses on Step 1 of the process (refer below), and assessing the exposure of local government owned infrastructure to sea level rise as well as coastal and inland flooding.



The report also includes a maturity index for Councils to identify their level of progress with their approach to managing climate risk and planning for adaptation:

Figure 7.1: Example maturity index for climate adaptation

Level	Networks and cooperation	Leadership and governance	Risk assessment and adaptation planning
1. Starting out	• No meetings with other councils or stakeholders regarding Climate Change. • No working group within council. • No public engagement.	• Climate change not on the radar.	• There is no or limited understanding of infrastructure exposed to climate change. • No understanding of risks to communities or to councils finances or reputation etc.
2. Making progress	• Some ad-hoc meetings and cooperation beginning to take shape.	• Commitment to understand climate exposure and risks.	• Risk and vulnerability assessment framework developed and commenced.
3. Developed	• Regular cooperation, working groups established.	• Climate risks identified and communicated internally and with the public. • Adaptation plan developed and signed off.	• Risk and vulnerability assessments undertaken, high risks prioritised and options/pathways developed.
4. Leading	• Regular cooperation, working groups established across disciplines and stakeholders. • Linking to central government direction. • Strong integration with civil defence, land use planning, asset planning etc.	• Adaptation plan implemented, monitoring and review regularly undertaken. • Climate change is a strategic priority that influences all plans and decisions.	• Defend/accommodate/retreat options (could be part of a DAPP approach) are developed and implemented via appropriate channels/mechanisms. • Risks reviewed and updated regularly. • Community are aware and engaged in decision-making - within a robust and transparent process.

Progress

The report has been an influence on a council's decision to declare a Climate Emergency with some referencing one or both reports in their strategies. When looking at the priority regions identified above, fourteen of the 16 Councils that declared a climate emergency are within a region that was identified as a priority region for at least one of the three major infrastructure areas.

Pressure from residents

Porirua District Council agreed to invest an additional NZ$6m across years 2022/23 (NZ$3m) and 2023/24 (NZ$3m) to reduce greenhouse gas emissions from Council facilities, reduce organic waste going to the landfill and accelerate the transition of PDC's fleet to electric vehicles. This was in response to public submissions and is an example of the pressure some Councils face from their residents to respond to the Climate Emergency.

Responses from Councils that have declared a Climate Emergency

The responses from Councils since declaring a Climate Emergency have a wide range. It is clear that some Councils have already been working on their climate change response, for example Queenstown Lakes District Council declared a Climate Emergency the same day it released their Climate Action Plan. Some Councils have also appointed a Head of Sustainability. These Councils have done the most work on their climate change response. There are some Councils who have not undertaken much work on climate change response although it is noted that there are limitations to the actions that can be taken by smaller Councils due to budgetary constraints.

Documents that Councils have produced relating to the Climate Emergency include:

- Emissions profile/Carbon Emissions inventory for the Region
- Emissions profile for the Council itself (through Toitū Envirocare)
- Emissions reductions targets over and above that of Central Government
- Climate Change Strategy or Climate Action Plan (some Councils have already produced follow up documents to action plans, tracking progress)
- Coastal Plan

Emissions profile/Carbon Emissions inventory for the Region

The nationwide emissions profile breaks down the national emissions into emissions at regional level but does not go beyond this. Emissions profiles have been commissioned in collaboration amongst Regional and District Councils to get a more detailed and accurate picture of the contributors of emissions from each district within a region. Some Councils also commissioned their own emissions profile for their city or district, e.g. Dunedin. There are some inconsistencies between measurements, with different time periods between councils, and also different assumptions made by the different companies commissioned to complete the reports.

Emissions profile for the Council itself (Through Toitū Envirocare)

Five of the 16 Councils that have declared a Climate Emergency are also members of Toitū Envirocare, with a range a range of membership term from two to 12 years. Toitū partners with the Council to measure its corporate carbon footprint and to identify strategies and actions to reduce their corporate emissions. Kapiti Coast District Council has been working with Toitū Envirocare since 2010 and has managed to achieve a 62% reduction in their corporate carbon footprint. Some Councils have also had their corporate emissions measured by other organizations (Auckland, Hawkes Bay Regional, Wellington City and Porirua and Councils).

Emissions reductions targets over and above that of Central Government

The National Emissions reductions targets set by Central Government have been set as follows

- Net zero emissions of all GHG other than biogenic methane by 2050
- 24 to 47 per cent reduction below 2017 biogenic methane emissions by 2050, including 10 per cent reduction below 2017 biogenic methane emissions by 2030.

All councils align with these targets, however some have set interim targets, and others have set earlier targets to have net zero emissions in their region or district. The most ambitious target being set by Dunedin City Council with Net zero emissions of all GHG other than biogenic methane by 2030.

Climate Change Strategy or Climate Action Plan

Some Councils have produced short, 1-2 page, documents outlining strategic priorities for climate change, and others have produced more comprehensive Climate Change Strategies or Action Plans (also outlined in the appendices).

Queenstown Lakes District, Wellington City, Hutt City and Auckland Councils have all produced a Climate Action Plan and have since released an update/progress report to the plan.

Coastal Plan

Hawkes Bay Regional and Dunedin City Councils have produced Coastal Plans, with Dynamic Adaptive Policy Pathways (DAPP). These plans are outlined in the Council Appendices.

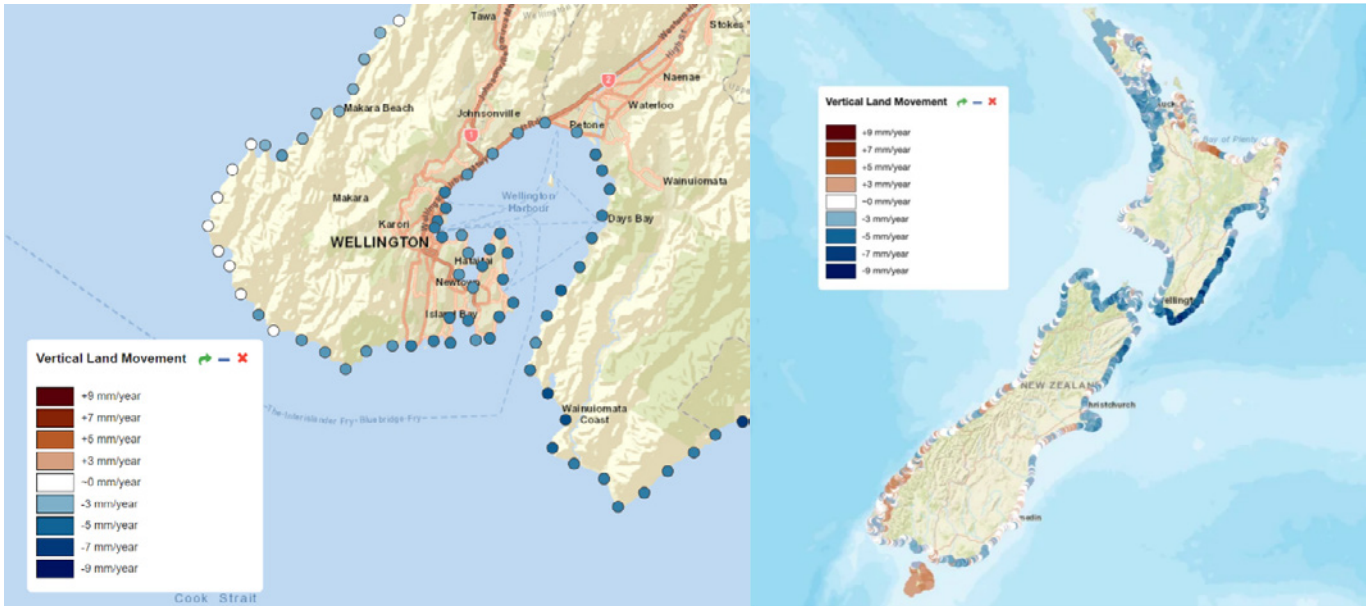
New information – Vertical land movement – NZ SeaRise Programme

The NZ SeaRise[1] project is a $7.1 million, five-year (2018-2023) research programme funded by the Ministry of Business, Innovation and Employment. It is hosted at Victoria University of Wellington and led by Associate Professor Richard Levy and Professor Tim Naish.

In May 2022, they released an interactive map on their website that shows the rate of land subsidence in New Zealand.

The map shows which parts of New Zealand's coastline are gradually moving up (uplift), which are moving down (subsidence), and which are static. Their scientists have calculated the likely rate and direction of vertical land movement for every 2 km of the coast. The variation ranges from 5 mm of uplift a year to more than 8 mm of subsidence a year. It does not account for rapid land movement that might happen during a large earthquake.

The first map shows the entire country, with the second map focusing on the Wellington Region:



The SeaRise information will help inform Councils with their Coastal Strategy Plans, and with their plans for infrastructure adaptation or resilience measures around the coast. This may change priorities for councils as different rates of land subsidence or uplift will exacerbate or mitigate the effects of sea level rise due to climate change. The map will allow Councils to identify infrastructure at risk in a more accurate way and initiate projects accordingly in a more efficient manner.

Opportunities for LGFA – Green Bonds

Green Bond issuance has increased rapidly worldwide according to Climate Bonds Market Intelligence[2]. At the end of 2015, cumulative green debt reached a total volume of USD104bn, whereas by 2020, USD297bn was issued in a single year. This was overtaken in 2021 with an overall upswing of more than 60% with USD517.4bn of Green Bonds issued.

LGFA launched Green, Social and Sustainability (GSS) Loans to councils in December 2021. Councils borrowing under a GSS loan receive a discounted borrowing margin on their loan as an incentive for progressing climate change mitigation/adaptation projects.

LGFA will consider whether to issue bonds under a GSS frameworks, similar to Auckland Council's, once an eligible asset pool has been established from the provision of GSS Loans.

Auckland Council's eligible asset schedule includes:

- Electric trains, buses
- Public cycling and walking Infrastructure
- Bus Interchanges

1 https://www.searise.nz/

2 https://www.climatebonds.net/2022/01/certified-green-issuance-reaches-200bn-expansion-climate-bonds-standard-2022

- LED streetlighting upgrades
- Efficient/Green buildings
- Watermain infrastructure providing sustainable water management
- Rehabilitation of green spaces
- Renewable energy projects e.g. solar projects

Auckland Council's Green Bonds and Loans Eligible Asset Schedule outlines the ICMA Green Bond Principles (explain ICMA) and Climate Bonds Initiative alignment, the framework eligible sector, and the UN Sustainable Development Goals alignment, and has been included as Appendix 1.

LGFA will work with councils and encourage them to apply for GSS loans for applicable Capital Expenditure

Key projects that may be eligible for LGFA's GSS Loans have been highlighted within the Appendices of the 15 Councils covered that have declared a Climate Emergency.

Appendix 1 – Auckland Council Green Bonds Asset Schedule

AUCKLAND COUNCIL
GREEN BONDS AND LOANS ELIGIBLE ASSETS SCHEDULE – JUNE 2021

All asset values are as at 30 June 2021

No.	Eligible asset	Eligible asset details (including year)	Framework eligible sector	CBI criteria/GBP alignment	UN SDG alignment	Asset value (book value) NZ$m	Asset value (project cost) NZ$m	Future spend (project cost) NZ$m*
1.	Electric multiple units	Original rolling stock of electric trains (commenced operations in 2014)	Low carbon transportation	GBP: Clean transportation CBI: Transport, public passenger transport, trains - rolling stock and vehicles for electrified public transport, such as electrified rail, trams, trolleybuses and cable cars		$386.6	N/A	None
2.	Electric multiple units	Retrofitting of existing electric trains (commenced in 2019)	Low carbon transportation	GBP: Clean transportation CBI: Transport, public passenger transport, trains - rolling stock and vehicles for electrified public transport, such as electrified rail, trams, trolleybuses and cable cars		$17.7	N/A	None
3.	Electric multiple units	New rolling stock of electric trains (commenced in 2017)	Low carbon transportation	GBP: Clean transportation CBI: Transport, public passenger transport, trains - rolling stock and vehicles for electrified public transport, such as electrified rail, trams, trolleybuses and cable cars		$137.8	N/A	$265.0
4.	Public cycleway assets	Public cycle and walking infrastructure (commenced construction in 2012)	Low carbon transportation	GBP: Clean transportation CBI: Transport, public passenger transport, infrastructure - public walking and cycling infrastructure and cycling schemes		N/A	$145.9	None
5.	City Rail Link	New rail tunnel and station to enhance network and enable higher electric train use (commenced construction in 2016)	Low carbon transportation	GBP: Clean transportation CBI: Transport, public passenger transport, infrastructure – dedicated infrastructure for electrified public transport		N/A	$1,069.3	$1,181.0
6.	Wiri Electric Train Depot	Maintenance depot for electric trains to improve reliability of network and enable higher electric train use (commenced construction in 2012)	Low carbon transportation	GBP: Clean transportation CBI: Transport, public passenger transport, infrastructure - dedicated infrastructure for electrified public transport		$81.0	N/A	$138.0
7.	Manukau Bus Interchange	Transfer station connecting bus users to the rail network and other buses (commenced construction in 2016)	Low carbon transportation	GBP: Clean transportation		$27.4	N/A	None
8.	Street lighting LED upgrade	LED upgrade to reduce energy consumption (stage 1 completed 2018, stage 2 delivery began 2019)	Energy efficiency	GBP: Energy efficiency		$22.4	N/A	$17.0

9.	Bledisloe House Customer Service Centre	24 Wellesley Street West, Auckland (4-star NABERSNZ rated refurbishment completed in 2014)	Efficient buildings	GBP: Green buildings		$44.6	N/A	None
10.	Auckland Council head Office	135 Albert Street, Auckland (4-star NABERSNZ rated upgrade completed in 2015)	Efficient buildings	GBP: Green buildings		$223.0	N/A	None
11.	Manukau Civic Building	31 Manukau Station Road, Auckland (4-star NABERNZ rated refurbishment completed in 2009)	Efficient buildings	GBP: Green buildings		$35.7	N/A	None
12.	Fred Thomas Drive	Wastewater storage and pumping station (commenced construction in 2016)	Sustainable water management	GBP: Sustainable water and wastewater management		$26.2	N/A	None
13.	Hunua water main pipeline	New watermain infrastructure providing uninterrupted, high-quality water supply to the growing Auckland region (commenced construction in 2012)	Sustainable water management	GBP: Sustainable water and wastewater management		$349.2	N/A	None
14.	Rehabilitation of Puketutu Island	Rehabilitation of Puketutu Island using treated biosolids from Mangere wastewater treatment plant (commenced in 2013)	Sustainable land use	GBP: Environmentally sustainable management of living natural resources and land use		$132.4	N/A	None
15	Rosedale floating solar array	2,700 solar panels floating on the Rosedale Wastewater Treatment Plan in Albany, generating a quarter of the energy needed by the plant (operating from 2020)	Renewable energy	GBP: Renewable energy		$2.2	N/A	None
Total CBI sector eligible criteria assets (asset numbers 1-6)						**623.1**	**1,215.2**	1,584.0
Total Green bond eligible assets (book value, project cost and future spend) (asset numbers 1-15)						**1,486.1**	**1,215.2**	$1,601.0
Total green bond eligible assets (sum of book value and project cost)							**2,701.3**	

CBI – Climate Bonds Initiative
GBP – Green Bond Principles
UN SDG – United Nations Sustainable Development Goals
*Future spend values have not been audited.

Appendix 2 – Auckland Council Summary

Climate Emergency Declared: 11/06/2019

North Island/South Island: North

Council Type: City/Unitary

Coastal/Non-Coastal: Coastal

Population (June 2021P): 1,715,600

Member Type: Shareholder

Joined LGFA: 2011/12

LGFA Loans (NZ$m): 3,303.92

District Emissions (tCO_2e Gross): 11,201,000

Corporate Emissions (tCO_2e Gross): 32,902 (Source: 2020/21 Climate Risk Report, page 23)

Climate Change Documents Produced: Te Tāruke-ā-Tāwhiri – Auckland's Climate Plan 2020, Climate Plan Progress Report 2021

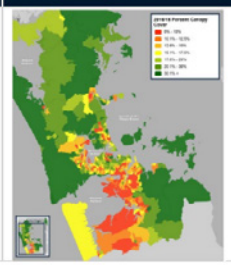
Below is from Auckland Council's **Climate Plan Progress Report 2021** which looks at the action areas devloped in their Climate Plan, which is a detailed document that has a total of fifty-eight action areas, and 179 actions.

Auckland Council has different levels of responsibility and control of each action, reflecting the regional focus of the plan:

- Auckland Council has direct control – 111 actions
- Auckland Council has partial control – 30 actions
- Auckland Council has an influencing role (includes advocacy) – 32 actions
- Māori led – 6 actions

The Climate Plan included seventy-one progress indicators against the eight priorities. On an annual basis, the following headline indicators (by priority) will be reported against in the progress report and all indicators will be reported against every three years (where data is available). There are no specific progress indicators for Te Puāwaitanga ō te Tātai as it is a principles-based priority that is interwoven throughout other priorities.

The following Baselines have been established in the Climate Plan Progress Report 2021:

Priority | Natural Environment	
Air quality (Baseline 2020)	Tree canopy (Baseline 2018)
Concentration of air pollutants ($NO_2 \mu g/m^3$) • Glen Eden (4) • Henderson (7.4) • Patumahoe – 2.3 • Penrose – 15.2 • Queen Street – 36.8 • Takapuna – 12.4	 Average percentage canopy cover of urban ngahere (3m+ height)

Priority | Built environment	
Access to public transport (Baseline 2020)	Sustainable buildings (to be established)
26% of annual dwellings consented within 1km of a train or busway station (rapid transit network stations)	Percentage of new buildings built to a sustainable design standard per annum

Priority | Transport	
Use of public transport (Baseline 2020)	Use of cars, light and heavy vehicles (Baseline 2020)
64 million public transport boardings per annum	874.5m litres of petrol sales and 615.9m litres of diesel sales

Priority | Economy	
Transition to low carbon economy (to be established)	Waste to landfill (Baseline 2020)
Percentage change in tCO2e per million $NZ GDP	• 885kg of total solid waste per capita per year • 147kg of domestic waste per capita per year

Priority | Food	
Percentage of domestic food waste as a proportion of total domestic waste collected at kerbside	Tonnes of domestic food scraps diverted from landfill by the Auckland Council kerbside collection service *does not include private volumes of domestic and commercial food waste
45%	1,144 tonnes

Priority | Communities and coast	
Low carbon lifestyles (Baseline 2020)	Education (Baseline 2020)
48,816 Aucklanders engaged in living low carbon lifestyles	60% of Auckland's schools engaged in sustainability education

Priority | Energy and industry	
Percentage change in emissions from electricity consumption (Scope 2 emissions between 2016-2018)	Percentage change in emissions from stationary fuel combustion (e.g. process heat) (Scope 1 emissions between 2016-2018)
13.7% (increase)	-5.3% (decrease)

Appendix 3 – Whangarei District Council Summary

Climate Emergency Declared: 25/07/2019

North Island/South Island: North

Council Type: Provincial

Coastal/Non-Coastal: Coastal

Population (June 2021): 99,400

Member Type: Shareholder

Joined LGFA: 2011/12

LGFA Loans (NZ$m): 172.29

District Emissions (tCO_2e Gross): 32,902

Corporate Emissions (tCO_2e Gross): No Data found at this level

Climate Change Documents Produced: Sustainability Strategy, Draft Climate Action Plan

Summary of actions from Sustainability Strategy:

	Planning			Outcome				
Action Summary	Short 2018-21	Medium 2021-24	Long 2024-27	Awareness	Decision making	Leadership & Engagement	Capacity	Efficiency
Employ a Corporate Sustainability Officer	■			■	■	■	■	■
Establish sustainability champions within Council	■			■	■	■	■	■
Develop emissions inventory	■			■	■	■	■	■
Undertake an audit of energy and water use	■			■	■	■	■	
Undertake an audit of our internal waste including hazardous waste and recycling	■			■	■	■	■	
Develop an energy and water use management programme	■			■	■	■	■	■
Introduce energy and water saving devices where identified through audits and management programmes		■		■	■	■	■	■
Include sustainable design and energy and water saving measures in upgrades to or new Council buildings		■		■	■	■	■	■
Develop a waste management programme to avoid creating waste and reduce waste to landfill	■			■	■	■	■	■
Zero waste events	■			■	■	■	■	■
Promote sustainable travel options through a Green Travel Plan		■		■	■	■	■	■
Develop a remote working policy		■		■	■	■	■	■
Introduce sustainable procurement practices	■			■	■	■	■	■
Introduce sustainable and ethically sourced materials, reduced emissions and waste outcomes in contractor management	■			■	■	■	■	■
Direct Council's superannuation provider and any other investment portfolios to reduce funds exposure to fossil fuel reserves and carbon emissions.			■		■	■		
Reduce food miles and energy that goes into food production		■		■	■	■	■	■
Reuse of material from demolition work for new builds / rebuilds.		■		■	■	■	■	■
Proactive communication	■			■	■	■	■	■
Promote sustainability through Council activities	■			■	■	■	■	■
Participate and show leadership in climate change / sustainability networks and programmes	■					■	■	

Below are the Priority Actions from the Draft Climate Action Plan

Action area	Action	Outcomes it achieves.
Te Tiriti o Waitangi Partnership	Develop a framework based on Te Ao Māori for decision making, monitoring and evaluating. This framework could be adopted by Council to improve partnership with hapū and Council processes including care for the environment.	
Decision-making	Embed low emission outcomes and climate change adaptation into the following: a) WDC strategies and policies b) Decision making reporting c) Processes such as business cases, procurement tender evaluations and project scoping d) Change management philosophy and processes that align with the organisational tikanga	
Monitoring, Reporting and Evaluation	Build relationships with industry representatives with the intention of developing a District wide emissions profile.	
Monitoring, Reporting and Evaluation	Ensure that risks from climate change mitigation and adaptation are embedded into Whangārei District Council's risk management framework and Long Term Plan	
Smart City	Investigate options for the use of new technology across Whangārei and moving to a 'Smart City'.	

Action area	Action	Outcomes it achieves.
Transport	Partner with Northland Regional Council to identify options for net-zero emissions public transport. Opportunities to trial innovative ideas will be explored with a view to wider implementation.	
Public Transport	Prioritise the delivery of our existing Walking & Cycling Strategy actions through additional funding, NZTA subsidies, and working in partnership with our communities	
Buildings and Infrastructure	Develop an implementation plan and partnership agreements for the Blue Green Network Strategy that includes a programme of work prioritising projects that align with: a) The Walking and Cycling Strategy b) The City Core Master Plan c) Planned infrastructure upgrades d) Low impact stormwater design e) Planting plans	
Education and Training	Develop training packages to ensure staff are appropriately trained as to how climate action affects their roles and could be delivered in their roles and to ensure that suitable skillsets are within the organisation.	
Te Tiriti o Waitangi Partnership	Support for Northland Mātauranga Māori and Geographic Information System (GIS) project/s. This will build/contribute to the existing work undertaken in GIS by hapū.	

Key LTP 2022/31 Projects which may be eligible for GSS Loans

Community facilities and Service (Total NZ$158m)

Parks and Garden asset renewals (2022-31, NZ$10.4m)

Blue/Green Network programme (2022-31, NZ$14.1m)

Water (Total NZ$104m)

Porotī Water Treatment Plant upgrade (2023-25, NZ$26.9m)

Transportation (Total NZ$489m)

Riverside Drive/Onerahi Road (Onerahi bypass) (2025-29, NZ$29.3m)

Cycleways/shared paths (2022-31, NZ$37.2m)

Raumanga urban shared paths (2022-23, NZ$5.2m)

Waterfront to City Centre connection – James St (2023-26, NZ$4.1m)

LCLR lighting improvements, LCLR Resilience projects and LCLR public transport infrastructure may also be eligible for GSS loans depending on scope of the projects.

Appendix 4 – Bay of Plenty Regional Council Summary

Climate Emergency Declared: 27/06/2019

North Island/South Island: North

Council Type: Regional

Coastal/Non-Coastal: Coastal

Population (June 2021): 347,070

Member Type: Shareholder

Joined LGFA: 2011/12

LGFA Loans (NZ$m): 181.42

District Emissions (tCO_2e Gross): 3,455,000 (2018/19)

Corporate Emissions (tCO_2e Gross): 1,067 (Source: Toitū Envirocare2019/20, 8% reduction from 2018/19 Base year)

Climate Change Documents Produced: Climate Change Action Plan 2021-23

Outline of Projects from Climate Change Action Plan 2021-23

No	Project	Description	Mitigation/ Adaptation	Goal	Timeframe
1	Staff travel plan	Develop a travel plan for staff that encourages environmentally sustainable transport choices, with health and wellbeing benefits, through support for sustainable travel options for commuting to and from work, and for work-based travel.	Mitigation	1 & 2	2021-22
2	Wetland carbon sequestration study	Scoping study on the potential for coastal wetland rehabilitation to contribute to sequestration and blue carbon storage in the region.	Mitigation	2	2021-22
3	BayTrust Nature Carbon Programme	Support the establishment of the BayTrust Nature Carbon Programme, in partnership with Ekos.	Mitigation	2	2021-22
4	Electric vehicle (EV) charging infrastructure analysis	An analysis of the EV charging infrastructure in the region: including gaps, market failure, emerging trends, and opportunities for investment.	Mitigation	2	2021-22
5	Bus decarbonisation feasibility study	The study will examine the options for introducing decarbonised (i.e. zero emission) buses and make recommendations for further technical studies which will enable future local bus contracts to procure these vehicles. A key aspect of the feasibility study is the need to consider additional power supply requirements, charging infrastructure and well-located depot facilities.	Mitigation	2	2021-22
6	BOP regional carbon footprint	Update BOP Regional Carbon footprint with breakdown by district and greater detail around transport emissions.	Mitigation	2 & 4	2021-22
7	Primary industry greenhouse gas (GHG) emissions analaysis	An analysis of primary industry GHG emissions in the region and methods to reduce emissions, including potential Council roles and next steps.	Mitigation	2 & 4	2021-22
8	Carless Wednesday Challenge	This initiative aims to facilitate a step change reduction in car dependency in Tauranga / Western Bay with a target to achieve 20% mode share, one day a week, within a year. This is a third-party project, with BOPRC share of funding dependent on funding being secured from other parties.	Mitigation	2 & 4	2021-22
9	Sustainable Homes Scheme	Support for homeowners to install solar panels, insulation and/or efficient heating through a combination of low interest loans, no interest loans, and partial grants (for low income households).	Mitigation	2 & 4	2021-23
10	Regional business support	Partner with Sustainable Business Network and Economic Development Agencies on sub-regional workshops to support the new 'Climate Action Toolbox'.	Mitigation	2 & 4	2021-22
11	FutureFit carbon footprint tool	Host the FutureFit carbon footprint tool on our website and partner with our local authorities in supporting its use in households across the region.	Mitigation	2 & 4	2021-23
12	Tourism BOP Low Carbon Economy Programme	Tourism BOP project to develop a low carbon circular economy programme for the coastal Bay of Plenty to support a vision for a regenerative tourism model.	Mitigation	2 & 4	2021-23
13	Climate change region wide adaptation	Development of a regional risk assessment for climate change, leading to the development of a regional adaptation plan, working with stakeholders across the region.	Adaptation	3 & 4	2021-23
14	Climate change community and iwi-led adaptation	Support community and iwi-led adaptation planning, to understand of the risks being faced by specific communities/iwi and explore options for reducing vulnerability, through funding and advice.	Adaptation	3 & 4	2021-23
15	Lifelines utilities climate change risk assessment	A risk assessment to understand the threats that utilities networks face from climate change and its associated hazards, covering energy, transportation, three waters and telecommunications networks within the boundary of the Bay of Plenty Civil Defence Emergency Management Group.	Adaptation	3 & 4	2021-23
16	Climate Change Resilience Whakatāne Tauranga Rivers Catchment Project	Process to develop a Whakatāne Tauranga Rivers Climate Change Adaptive Plan which identifies the community's preferred pathways for flood resilience.	Adaptation	3 & 4	2021-23
17	Climate change narrative and story maps	Create story maps outlining the key climate change impacts for the region identified in the NIWA report.	Adaptation	3 & 4	2021-22
18	Coast Care Life's a Beach climate change module	Update the Coast Care "Life's a beach" education resource to include a climate change and adaptation module.	Adaptation	3 & 4	2021-22
19	Priority One business support	Priority One project to understand awareness, needs and readiness of businesses with regard to the impacts of climate change.	Both	4	2021-22

Key Projects which may be eligible for GSS Loans

Noteworthy items from the above projects outlined, which may develop into eligible expenditure include:

2) Wetland carbon sequestration study

4) Electric vehicle (EV) charging infrastructure analysis

5) Bus decarbonisation feasibility study

Other core areas of work have links to climate change, notable items are:

Bay of connections – Regional Cycle Network, Low Carbon Construction

Corporate – Electrification of car fleet

Integrated Catchment Management – Coastcare dune restoration, Sediment reduction initiatives

Public Transport – 10-year investment strategy for investment in more frequent and reliable low carbon bus services

Rivers and Drainage – River Scheme Sustainability Programme

Between 2021- 51, BoPRC expect to spend $104.7 million on new or replacement structures in their river schemes (capital expenditure).

The timing of the capacity reviews is as follows:

- Upper Kaituna Catchment Control Scheme – 2021/22 (year one)
- Lower Kaituna Catchment Control Scheme – 2023/24 (year three)
- Whakatāne-Tauranga Rivers Scheme – 2025/2026 (year five)
- Rangitāiki-Tarawera Rivers Scheme – 2027/28 (year seven)
- Waioeka-Otara Rivers Scheme – 2028/2029 (year eight)

Appendix 5 – Opotiki District Council Summary

Climate Emergency Declared: 5/09/2019

North Island/South Island: North

Council Type: Rural

Coastal/Non-Coastal: Coastal

Population (June 2021): 10,300

Member Type: Borrower

Joined LGFA: 2014/15

LGFA Loans (NZ$m): 8.60

District Emissions (tCO_2e Gross): 255,038 (Source AECOM Bay of Plenty Community Carbon Footprint 2015/16)

Corporate Emissions (tCO_2e Gross): N/A

Climate Change Documents Produced: None

Emissions (Source: BOP Community Carbon Footprint 2015/16 prepared by AECOM, 2017)

In 2015/16, the Ōpōtiki District generated estimated **gross emissions of 255,762 tCO_2e and net emissions of 2,053,762 tCO_2e** (including forestry – Harvest Emissions were 2,379,571). The district population in 2015/16 was approximately 8,820 people, resulting in per capita gross emissions of 28.9tCO_2e/person and per capita net emissions of 232.9 tCO_2e/person. Below is a summary of the gross emissions by source for the Opotiki District.

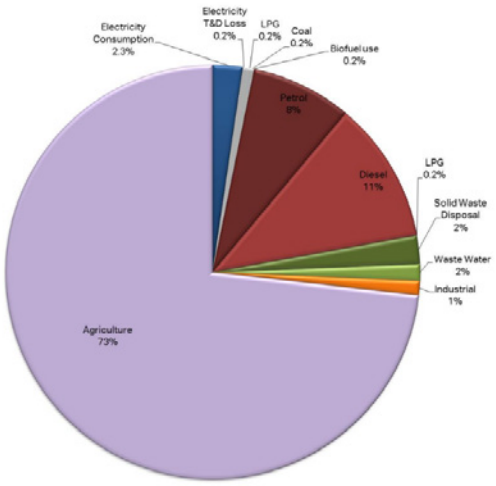


Figure 26 Summary of Gross Emission by Source 2015/16 - Ōpōtiki District

Key Projects which may be eligible for GSS Loans

The only projects that have been identified with potential for GSS loans are the Cycleway extension (Opotiki to Whakatane) (NZ$4.6m 2022-24) and cycleway renewals (NZ$340,000 2022-31).

Appendix 6 – Hawke's Bay Regional Council Summary

Climate Emergency Declared: 26/06/2019

North Island/South Island: North

Council Type: Regional

Coastal/Non-Coastal: Coastal

Population (June 2021): 181,440

Member Type: Borrower/Guarantor

Joined LGFA: 2018/19

LGFA Loans (NZ$m): 18.87

District Emissions (tCO_2e Gross): 3,268,000

Corporate Emissions (tCO_2e Gross): 884.2 (Source, HBRC website, refers to EKOS report, unable to locate original report)

Climate Change Documents Produced: Clifton to Tangoio Coastal Hazard Strategy 2120

Coastal Hazard Strategy 2120

This is a short, four-page document outlining the Dynamic Adaptive Pathways Planning (DAPP) approach taken by NCC, HDC, and HBRC and tāngata whenua partners. See below for a summary of the coastal strategy which is included in the infrastructure strategy

4.9.4 Coastal Hazard Strategy 2120

The Coastal Hazard Strategy 2120 (Clifton to Tangoio) was completed to stage 3 by NCC, HDC and HBRC and tāngata whenua partners (Maungaharuru-Tangitū Trust, He Toa Takitini, and Mana Ahuriri Trust) between 2014-17.

There are still decisions to be made on public/private benefit and therefore who will be funding the required works. A decision is yet to be made on whether these funds will be managed at the regional or city/district council level. Until these decisions are made, the required works are unfunded, and the Strategy implementation is on hold. It remains a substantial area of potential infrastructure investment when the governance and funding regime is resolved.

The Strategy assesses coastal hazards risks and identifies options for the management of those risks for the next 100 years. The intent of the Strategy is to develop an understanding of the risks along the entire stretch of coastline and to respond to community concern about the effects of coastal hazards in a more coordinated and forward-looking way. An outline of the initial three stages of the Strategy are shown in Figure 34 and Table 35.

Figure 34: Coastal Strategy location map

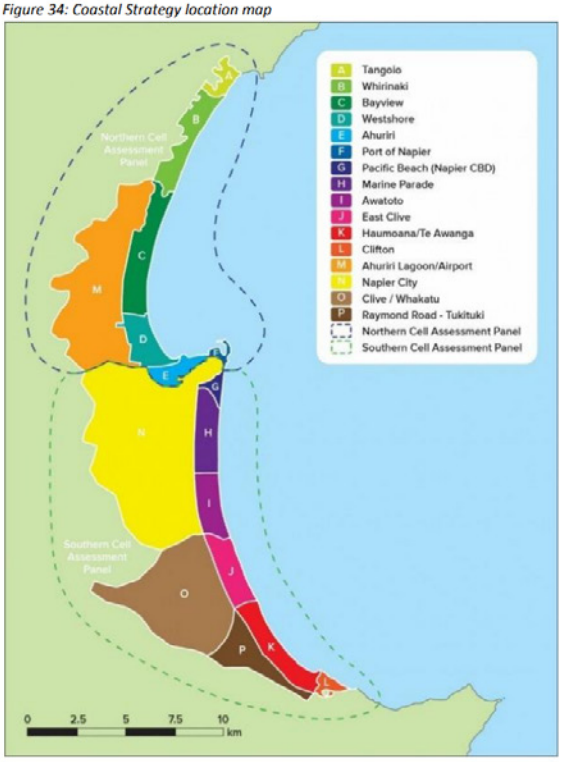


Table 35: Coastal Strategy recommendations and timing

Area	Short term (0-20 yrs)	>	Medium term (20-50 yrs)	>	Long term (50-100 yrs)
Clifton (L)	Sea wall	>	Sea wall	>	Managed retreat
Te Awanga (K2)	Renourishment & control structures	>	Renourishment & control structures	>	Renourishment & control structures
Haumoana (K1)	Renourishment & control structures	>	Renourishment & control structures	>	Managed retreat
Clive (J)	Status quo	>	Renourishment & control structures	>	Retreat the line/managed retreat
Ahuriri (E1)	Status quo	>	Sea wall	>	Sea wall
Pandora (E2)	Inundation Protection	>	Inundation Protection	>	Inundation Protection
Westshore (D)	Renourishment	>	Renourishment & control structures	>	Renourishment & control structures
Bayview (C)	Status quo / Renourishment	>	Renourishment & control structures	>	Renourishment & control structures
Whirinaki (B)	Status quo/ Renourishment	>	Renourishment & control structures	>	Sea wall

The Strategy requires substantial capital investment to support a cross-council approach to identify and respond to these hazards in the future. Governance and asset ownership approach will be assessed, and capital funding required to implement specific initiatives. The Strategy status is summarised in the Case study: Challenges with implementing the Clifton to Tangoio Coastal Hazards Strategy 2120.[7] HBRC is participating in the Coastal Hazards Strategy with the aim of working through a solution, including its funding, as a region.

Key Projects which may be eligible for GSS Loans

Heretaunga Plains Scheme – increase the level of service provided by the river control and flood mitigation works, from a 1% AEP to a 0.2% AEP (or from a 1 in 100 year to 1 in 500-year standard).

Cost: $19.5 million, $12.48 million IRG funding, $7.02 million HBRC, over two years (years 1 and 2)

Right Tree Right Place (Development and pilot)
Cost: $2.14 million (operating) funded by reserves and $2.62 million (capital) funded by the recipients.

Future water use
Cost: HBRC to put aside $1.08 million over three years (years 2, 3 and 4) from reserves to work with water users to drive more efficient and effective use to complement water storage.

Upper Tukituki gravel
Cost: $2.54 million in years 1 and 2 to remove the gravel build-up from the Upper Tukituki River and unlock a $4.51 million grant from Government. Costs will be loan-funded and repaid by ratepayers

On-demand public transport (pilot)
Cost: $6.8 million (100% targeted to Hastings and Napier urban ratepayers) over 10 years assuming the success of the pilot

Ahuriri Regional Park
Cost: HBRC will loan-fund $1.2 million in 2023-24 and $9 million over the course of years 4-10. **NCC has agreed similar funding for a total funding pool of $20 million+ over 10 years**

Appendix 7 – Whanganui District Council Summary

Climate Emergency Declared: 11/02/2020

North Island/South Island: North

Council Type: Provincial

Coastal/Non-Coastal: Coastal

Population (June 2021): 48,400

Member Type: Shareholder

Joined LGFA: 2012/13

LGFA Loans (NZ$m): 101.80

District Emissions (tCO_2e Gross): 905,613 (Source: AECOM Whanganui Community Carbon Footprint 2019)

Corporate Emissions (tCO_2e Gross): N/A

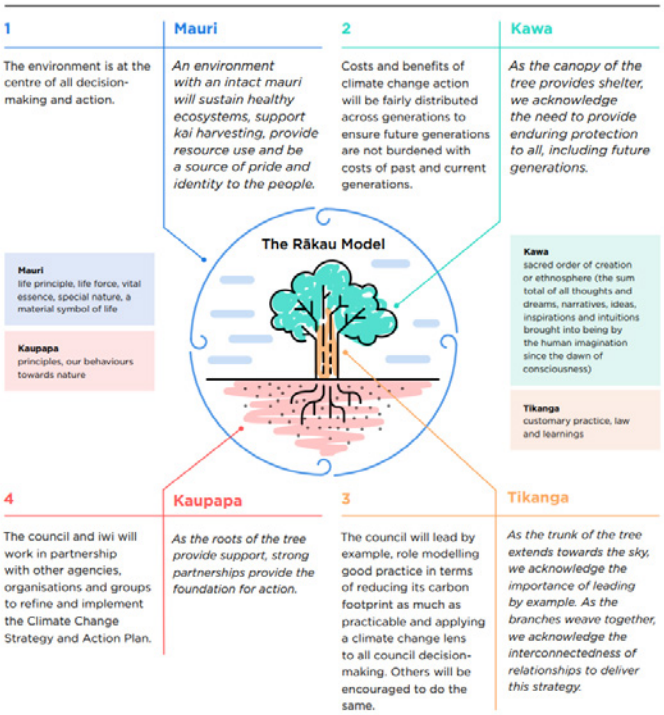
Climate Change Documents Produced: Climate Change Strategy 2021

Climate Change Strategy

WDC's Climate change strategy outlines the vision, mission, values and principles of their strategy, and the context; internationally, nationally, regionally, and locally. A district emissions profile summary is included, likely impacts of climate change and mitigation targets are also presented. Finally, strategic priorities and goals are discussed.

Principles

Right: shows the four guiding principles of WDC's Climate change strategy



Development and implementation of a coastal plan

See below for information and estimated expenditure (Source: Long Term Plan 2021-31)

	Description	timing	estimated cost
Coastal Management Strategy Development and implementation of a coastal plan is identified as a specific action in the Leading Edge Strategy. This work also has some alignment with the 'draft' climate change strategy actions to implement opportunities to increase carbon sinks and build community resilience.	Option 1: Develop and implement Coastal Plan (Preferred option) Option 2: No additional coastal funding Following consultation, Council decided to proceed with the development and implementation of a coastal plan	Develop the plan in 2021/22 and then implement it between 2022/23 and 2024/25, and between 2028/29 and 2030/31.	$2.45M

Key Projects which may be eligible for GSS Loans

Under Community and operational property, solar initiatives were found as a line of capital expenditure, unable to find

Capital expenditure to improve level of service ($000)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Solar initiatives	80	1,029	1,055	1,081	-	-	-	1,198	1,230	1,262

Stormwater drainage 2021-31 (Total NZ$31m)

WDC will spend $25M over 30 years to upgrade the stormwater network in the priority areas first. The first three priority areas are: Central City area (Halswell St, London St, Harrison St); Springvale, College Estate and Cemetery area; and Aramoho-West (Brunswick Rd, Kaikokopu Stream, Tangingongoro Stream) area.

Provision of roads and footpaths 2021-31 (Total NZ$161m)

Expenditure with potential for GSS loans are highlighted below. Further information on these projects was not found except for the Drainage Climate Change Resilience Programme. This will clear significant deferred drainage maintenance items in order to give the network greater ability to absorb inclement weather and result in less financial impact to storms.

Capital expenditure to improve level of service ($000)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Guyton/Wicksteed St intersection traffic calming	100	-	-	-	-	-	-	-	-	-
Somme Parade cycle lane markings upgrade	-	-	169	-	-	-	-	-	-	-
Safety improvements around schools	50	51	53	-	-	-	-	-	-	-
Whanganui City Bridge - pedestrian walkway	-	-	1,318	-	-	-	-	-	-	-
Bridge scour resilience - Portal St half bridge	150	-	105	-	-	-	-	-	-	-
Drainage climate change resilience programme	150	-	105	-	-	-	-	-	-	-
Mosston Road footpath extension (school safety)	154	-	-	-	-	-	-	-	-	-
Total capital expenditure to improve level of service	**1,936**	**406**	**3,451**	**2,162**	**2,218**	**2,274**	**2,333**	**2,396**	**2,461**	**2,525**

Capital expenditure to replace existing assets ($000)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Vehicle replacements	-	-	-	32	-	-	-	-	37	-
Victoria Ave/Guyton St signals upgrade	200	-	-	-	-	-	-	-	-	-
Erni's Bridge renewal, Kauarapoua	530	-	-	-	-	-	-	-	-	-
Aramoho rail bridge - pedestrian walkway	-	1,266	-	-	-	-	-	-	-	-
Dublin Street bridge replacement	100	103	105	-	-	-	-	-	24,607	25,246
Environmental maintenance	385	396	406	425	445	465	486	509	534	558
Unsealed road metalling	520	535	548	624	640	656	727	746	766	808
Sealed road resurfacing	2,100	2,161	2,215	2,314	2,374	2,433	2,543	2,612	2,682	2,802
Forestry affected roads (internal)	300	309	316	346	355	364	397	407	418	454
Forestry affected roads (external)	60	62	63	65	67	68	70	72	74	76
Drainage renewals	960	988	1,013	1,115	1,156	1,197	1,240	1,286	1,334	1,382
Pavement rehabilitation	1,200	1,235	1,266	1,405	1,442	1,478	1,633	1,677	1,722	1,893
Structures components replacements	345	334	343	413	424	434	481	494	507	545
Traffic services renewals	482	502	517	532	547	562	577	594	611	629
Total capital expenditure to replace existing assets	**7,182**	**7,890**	**6,792**	**7,271**	**7,448**	**7,657**	**8,154**	**8,398**	**33,293**	**34,395**

Appendix 8 – Greater Wellington Regional Council Summary

Climate Emergency Declared: 21/08/2019

North Island/South Island: North

Council Type: Regional

Coastal/Non-Coastal: Coastal

Population (June 2021): 547,100

Member Type: Shareholder

Joined LGFA: 2011/12

LGFA Loans (NZ$m): 450.95

District Emissions (tCO_2e Gross): 3,499,000

Corporate Emissions (tCO_2e Gross): 43,525 (Source Toitu, 0.8% increase from 2018/19 base year)

Climate Change Documents Produced: Corporate Carbon Neutrality Action Plan (1 page), Regional Climate Emergency Action Plan (1 page)

An initial desktop risk assessment of Greater Wellington's built assets exposure to predicted impacts of climate change and natural hazard events has been undertaken. The results of the risk assessment are summarised in Table 5 below. The assessment will be used in the respective AMPs to progress and inform resilience and adaptation responses.

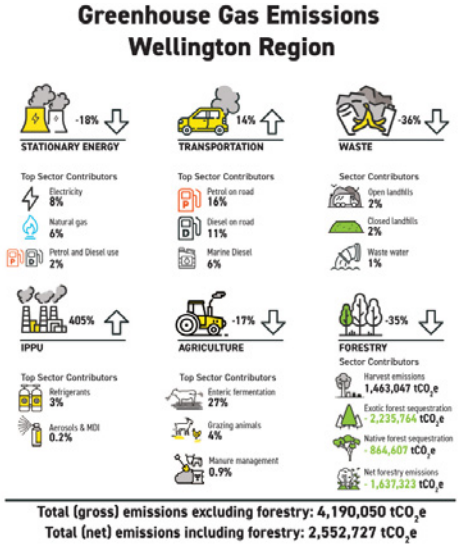
Table 5

Hazard, threat	Water	Public Transport	Flood Protection	Parks	Environmental Science	Harbours
Surface flooding	Moderate 6	High15	V High 25	Moderate 10	Low 4	Moderate 9
Landslips	Moderate 6	High15	V High 20	Moderate 9	Low 4	Moderate 10
Rainfall	Low3	High15	High15	Moderate 6	Low 4	Low 1
Coastal flooding	Moderate 6	Moderate12	V High 20	Moderate 9	Low 2	Moderate 9
Coastal erosion	Moderate 6	High15	V High 20	Moderate 9	Low 2	Moderate 10
High winds	Low 1	High15	V High 20	High15	Low 1	Moderate 6
Extreme temperatures	Low 1	High15	Moderate 10	Moderate 9	Low 1	Low 2
Fog & humidity	Moderate 6	Low 2	Low 2	Low3	Low 1	Moderate 10
Drought	Moderate5	Moderate 6	Moderate 8	Moderate 9	Low 1	Low 2
Wildfire	Moderate6	Moderate 6	Low 2	Moderate 9	Moderate 9	Low 1
Earthquake	Moderate 4	High 12	V High 25	Moderate 9	Moderate 9	Moderate 6
Liquefaction	Moderate 5	High 12	V High 20	Moderate 9	Low 2	Low 1
Tsunami	Moderate 5	High 12	High 12	Moderate 9	Moderate 6	Moderate 9
Volcano	Low 1	Low 2	Low 1	Low 2	Low 2	Low 1

Table 6: Greater Wellington's risk assessment matrix. Risk is the result of consequence and the likelihood of an occurrence, and the key for the table above.

Likelihood						
	Almost Certain > 90%	Low 5	Moderate 10	High 15	Very High 20	Very High 25
	Likely 75 - 90%	Low 4	Moderate 8	Moderate 12	High 16	Very High 20
	Unlikely 50 - 75%	Low3	Moderate 6	Moderate 9	High 12	High 15
	Highly Unlikely 25 - 50%	Low 2	Low 4	Moderate 6	Moderate 8	Moderate 10
	Rare < 25%	Low 1	Low 2	Low 3	Moderate 4	Moderate 5
		Minor 1	Moderate 2	Significant 3	Major 4	Extreme 5
	Level 1-5	Concequence				

Right shows change in emissions for the Wellington region by sector from 2001-2019 and top contributors to each sector. Image from AE-COM Wellington Region Greenhouse Gas Inventory (2020)



Key Projects which may be eligible for GSS Loans

ENVIRONMENT AND FLOOD PROTECTION (Total NZ$239.4m)

The One Billion Trees programme is mentioned (2021-24) however, no costing has been identified. **Queen Elizabeth Park coastal retreat** implementation, asset relocation, removal and new facility works (NZ$2.3m, 2021-24). **RiverLink –** A joint project between GW and NZTA. Capital work to widen rivers and replace bridges and roads for urban development (NZ$76.5m, 2021-33 – Flood protection only). **Climate Resilience Projects** (funded through the Provincial Development Unit COVID-19 Recovery fund. Hutt River (2021) Ruamāhanga River (2022). **Belmont (Waitangirua) recreational facilities** (NZ$830,000, 2022-24) (Low Carbon Accelerator Fund).

METLINK PUBLIC TRANSPORT (Total NZ$457.5m)

Bus Layover decarbonisation could have potential for a GSS loan (NZ$4.3m, 2023/24 – 2025/26). **Decarbonisation of buses –** All core bus services are electric by 2030 (including increasing the number of electric buses by approximately 111 by the end of 22/23). Metlink bus new capex is noted at (NZ$28m, 2021-50). **Let's Get Wellington Moving (LGWM)** Implementing ongoing programme of works (services, routes) resulting from LGWM decisions (no costing found, Expenditure from 2024/25).

REGIONAL STRATEGY AND PARTNERSHIPS (Total NZ$3m)

Let's Get Wellington Moving (LGWM) LGWM is in a planning phase for the first three years of this LTP and is budgeted for out of the Regional Strategy and Partnerships. In year four LGWM moves into an implementation phase and funding then comes from the Metlink Public Transport Activity Group.

Climate Emergency Response Programme – The five-year programme (running through until 30 June 2024) was established in response to declaration of a climate emergency. The programme will be reviewed, and new actions identified for future years. (Opex funded).

Appendix 9 – Wellington City Council Summary

Climate Emergency Declared: 20/06/2019

North Island/South Island: North

Council Type: Metro

Coastal/Non-Coastal: Coastal

Population (June 2021): 217,000

Member Type: Shareholder

Joined LGFA: 2011/12

LGFA Loans (NZ$m): 792.51

District Emissions (tCO$_2$e Gross): 1,061,383 (Source: AECOM Wellington City Greenhouse Gas Inventory 2019/20)

Corporate Emissions (tCO$_2$e Gross): 110,320 (Source: Website, 2019/20)

Climate Change Documents Produced: Zero Carbon Implementation Plan 2020–2030, First to Zero 2021 Update

Zero Carbon Implementation Plan

The document has four action areas and identifies specific actions under each group. The update looks at the progress made under each area what else is planned in each area. Below left are summary tables for each group from the Zero Carbon Implementation Plan. On the right of the tables are the Key indicators of change from the 2021 update.

Transportation

Key - refer to Appendix One for more details

GHG Reduction potential at 2030	Investment 2020-2030		Co-benefits		Ease of implementing	
Major GHG reduction potential	$$$$	>$10 million	+++	Major potential benefit	C	Complex
Moderate GHG reduction potential	$$$	$10 million - $5 million	++	Moderate potential benefit	M	Moderate
Minor GHG reduction potential	$$	$5 million - $1 million	+	Minor potential benefit	E	Easy
Enabling GHG reduction	$	<$1 million				

Table Five: City-wide transport actions assessment against measurement framework criteria

Action	Project	Key success indicators	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits: Equity & wellbeing	Co-benefits: Resilience	Co-benefits: Economy	Co-benefits: Environment	Ease of implementing	Status
Investing in rapid transit and improving public and active transport	LGWM Indicative package	1-7		WCC, GWRC, NZTA, Central government	$$$$	$$$$	+++	++	+++	++	C	Underway
	Travel behaviour change	1, 2, 4, 6		WCC	$$	$$	++	++	+	++	E	Underway
Shared mobility	Car Sharing	1, 2, 3, 8		Business sector	$$	Not assessed	++	+	+	+	E	Underway
	e- scooter sharing	1, 2, 3			$	Not assessed	+	+	+	+	E	Underway
Supporting the Electrification of the fleet	Public Places EV charger rollout	1, 9, 10		WCC	$$	$	+	+		+	M	Business case awaiting approval
	Clifton park charging hub	1, 9, 10		WCC	$	$		+		+	E	Business case awaiting approval
	Other actions eg Congestion charging or 'fossil fuel free' streets	TBC		WCC, GWRC, NZTA, Central government	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Further R&D required
Incentivising City-wide flexible working	TBD	1, 2, 11		WCC	Not assessed	Not assessed	++	++	+	++	Not assessed	Further R&D required

Key indicators of change

Indicators	2020 (as at 30 June)	2021 (as at 30 June)
Car Sharing - total members	7,512	12,955
Electric vehicles - total charge points	34	34
Residential	28	28
Fast Charges	6	6
Walking - number of pedestrians entering the CBD during peak times	9,157	10,375
Cycling - number of cyclists entering the CBD during peak times	2,475	2,462
Private vehicles - number of private vehicles entering the CBD during peak times	21,787	26,281
Bus passengers - number of bus passengers entering the CBD during peak times	11,285	11,392
Train passengers - number of train passengers from the North entering the CBD during peak times	14,504	14,254
Cycling - daily average of cyclist across the city based on cycling meters	6,372	7,765
Cycling - Kms of cycleways	37	38
Vehicle registrations - % of EVs in the city fleet	1%	1.4%

Advocacy

Project	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits: Equity & wellbeing	Co-benefits: Resilience	Co-benefits: Economy & jobs	Co-benefits: Environment	Ease of implementing	Status
Accelerating opportunities to support carbon farming		WCC + others	Not assessed	Not assessed	+++	+++	++	+++	M - C	More R& D required
Wellington Climate lab		TBD	$	Not assessed	++	++	++	++	E	Business case awaiting approval
Zero Carbon Challenge & Climathon		TBD	$	Not assessed	++	++	++	++	E	Business case awaiting approval
Climate and sustainability fund trial		WCC	$$	Not assessed	+	++	++	++	E	Business case awaiting approval
Future Living Skills programme		WCC	$	Not assessed	++	++	++	++	E	Business case awaiting approval
Sustainable Food Plan		WCC	$	Not assessed	++	++	++	++	M	Draft plan under development

Building energy and urban form

Action	Project	Key indicators of success	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits: Equity & wellbeing	Co-benefits: Resilience	Co-benefits: Economy & jobs	Co-benefits: Environment	Ease of implementing	Status
Planning for Growth	Spatial Plan	8-15		WCC	$$$$	Not assessed	+++	+++	+++	+++	C	Underway
	Special character areas											
	District Plan review											
	Green Network Plan & Water Sensitive Urban Design											
	City Laneways & Golden Mile project plans											
Supporting home energy efficiency	Home Energy Saver Expansion	1, 2, 4		WCC - delivered by Sustainability Trust	$$$	$$$	+++	+	+++	++	E	Underway business case for expansion awaiting approval
	Warmer Kiwi Homes	1, 3		EECA	$	$$	+++	+	+++	+	E	Underway
Increasing neighbourhood resilience	Neighbourhood grids	1, 4, 7		Contact Energy	$	$	+	+++	+	+	E	Trial underway
Supporting business energy efficiency	Business Energy Saver pilot	1, 5		WCC with delivery partner	$$	Not assessed	+	+	++	+	M	Business case awaiting approval
Incentive programmes to promote energy efficiency upgrades	50% reduction off development contributions	1, 6		WCC	$$	Not assessed	+	+	+	+	E	Underway
	Other incentives	TBD	TBD	WCC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Further R&D required
Utilisation of regulatory levers to encourage energy efficiency uptake	Support building sustainability improvements	TBD		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Further R&D required
	Building Performance Certificates for residential and commercial buildings	1, 4, 5		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Further R&D required

Key success indicators

Indicators	2020 (as at 30 June)	2021 (as at 30 June)
Home energy saver - % of Wellington homes audited	5%	12,955
Warmer kiwi homes - total homes insulated since 2011	9,065	9,197

Key success indicators

Indicators	2020 (as at 30 June)	2021 (as at 30 June)
tCO$_2$e sequestered annually in Council owned forestry (measured in carbon credits granted)	975	932

The Council itself

Action	Project	Key success indicators	GHG reduction	Lead	WCC investment	Investment by others	Co-benefits				Ease of implementing	Status
							Equity & wellbeing	Resilience	Economy & jobs	Environment		
Carbon measurement & management	CEMARS Global Covenant of Mayors FMA	-		Sustainability Team	$$					+	Easy	Ongoing - business case for ongoing funding awaiting approval
Waste	Sewage sludge processing solution	1	TBC	Wellington Water	TBC	TBC	TBC	TBC	TBC	TBC	Complex	Solution expected in September 2020
	Reducing waste sent to landfill	2		Resilience - Waste Operations	$$$$	$$$	+++	+++	+++	+++	Complex	Underway - restricted by sewage sludge
Building energy	Energy Management Strategy and Action Plan	3		Energy manager	$	$ Potential for EECA funding	+	+	+	+	Moderate	Underway
	NABERSNZ for WCC Buildings (Energy Ratings	6		Sustainability Team	$		+	+	+	+	Easy	Business case for approval
	Green Star & Home Star for WCC Buildings	5		Sustainability Team	TBD		+	+	+	+	Moderate	Business case for approval
	Displacing natural gas as a fuel source	4		Energy manager	TBD			+		+	Complex	Project scope completed
	Solar community facilities			Energy manager	$$			+	+	+	Moderate	Scoping work underway
Transport	EV first fleet	7, 8		Sustainability Team	$$$$	Not assessed		+		+	Easy	Business case for approval
Forestry	Carbon farming	9		Parks & recreation	$$$$		+++	+++	++	+++	Moderate	Underway
	Flexible working	-		HR Organisational development	Not assessed	Not assessed	+	+	+	+	Easy	Interim guidelines in place
	Water meters	-		GWRC & Wellington Water	TBC	TBC	+	+++	+++	+++	Moderate	Regional business case underway
	Procurement	10		Contracts & Procurement	TBC	TBC	+	+	+	+	Moderate	Further R&D required
	Improve Governance	11		Sustainability Team	TBC	TBC		+		+	Moderate	Further R&D required
	Staff engagement	12		Sustainability Team	TBC	TBC	+	+	+	+	Moderate	Further R&D required

Key success indicators

Indicators	2020 (as at 30 June)	2021 (as at 30 June)
Waste - annual landfilled rubbish	97,745	89,287
Waste - diverted from landfill	17,900	18,174
Green waste	5,210	5,482
Commercial Food waste (Kai to Compost)	1,392	1,521
Recycling	10,679	10,568
Tip Shop removal	19	19
Scrap metal	571	557
Hazardous	29	27
Transport - % of Council fleet converted to EVs	5%	6%

Key Projects which may be eligible for GSS Loans

Transport (Total NZ$1,051m)

Wall, bridge and tunnel renewals (NZ$55m) are in response to climate change, creating resilience for the more frequent severe weather events. Cycling network renewals (NZ$231.5m), Bus priority planning (NZ$3.2m), Footpath upgrades (NZ$50.7m) and renewals (NZ$44m) are a part of transport mode shifting. Let's Get Wellington Moving LGWM – City streets (NZ$147m, 2022-27) and LGWM – early delivery (NZ$51m, 2022-25) are key projects in this area. LED streetlight transition (NZ$5.9m) also has GHG emissions reductions effects.

Governance (Total NZ$9.2m)

EV fleet transformation (NZ$5.2m), Public EV chargers (NZ$3.5m, 2022-26) and Car sharing enhancement (NZ$262,000, 2022-26)

Environment (Total NZ$844m)

Gardens, beaches and green open spaces purchases and renewals, including costal renewals (NZ$5.0 m). Waste reduction and energy conservation (NZ$75m) including southern landfill improvement and Carbon unit purchases. Network upgrades to the three waters are also included but specific projects are not identified.

Cultural Wellbeing (Total NZ$99m)

Bond store upgrade (NZ$16m), and WCEC Convention and Exhibition Centre (NZ$98.6m) are of note.

Social and recreation (Total NZ$620m)

Many upgrades and renewals, including housing upgrades (healthy homes – NZ$16.5m) and renewals (NZ429m). Other Councils are increasing efficiency in aquatic facilities upgrades and renewals, so may be worth investigating.

The appendix below from the 2021 update summarises WCC's current actions to reduce GHG emissions. Some actions are still in the scoping phase but may have potential for loans in the future.

Appendix 1: Status of current actions

Action	Focus area	Lead	GHG Reduction	Status
Let's Get Wellington Moving	Transport and urban form	WCC, GWRC, NZTA, Central Govt	Major	Underway
Creating Streets for People - starting with cycling	Transport and urban form	WCC, GWRC, NZTA, Central Govt	Major	Underway
Planning for Growth	Transport and urban form	WCC	Major	Underway
Travel behaviour change	Transport and urban form	WCC	Enabling	Ongoing
Car sharing	Transport and urban form	Business sector	Moderate	Ongoing
E-scooter sharing	Transport and urban form	Business sector	Minor	Underway
Charged up Capital - Public EV chargers	Transport and urban form	WCC	Moderate	Underway
Clifton Park charging hub	Transport and urban form	WCC	Minor	Absorbed into Charged Up Capital
Fossil fuel free streets	Transport and urban form	WCC, GWRC, NZTA, Central Govt	Enabling	Scoping
Incentivising city-wide flexible working	Transport and urban form	WCC, GWRC, NZTA, Central Govt	Major	More R&D required
Identify aviation and marine opportunities	Transport and urban form	Business sector	Unclear	More R&D required
Warmer Kiwi Homes	Building energy	EECA (10-20% top up by WCC)	Minor	Ongoing
Home Energy Saver	Building energy	Sustainability Trust	Minor	Ongoing
Neighbourhood grids	Building energy	Contact energy	Minor	Completed
Business Energy Saver Pilot	Building energy	WCC with delivery partner	Moderate	Scoping
Development contributions	Building energy	WCC	Minor	Scoping
Supporting building sustainability improvements	Building energy	WCC	Enabling	More R&D required
Te Akatura action investigation	City-wide	WCC	Enabling	Scoping
Wellington Climate Lab	City-wide	WCC, business sector, community sector, academia	Enabling	Scoping

Action	Focus area	Lead	GHG Reduction	Status
Zero Carbon Challenge and Climathon	City-wide	WCC, business sector, community sector, academia	Enabling	Absorbed into Climate Lab
Climate and sustainability fund	City-wide	Community Services	Enabling	Underway
Climate action campaign	City-wide	WCC	Enabling	Scoping
Future living skills programme	City-wide	Community Services	Enabling	Underway
Sustainable Food Programme	City-wide	WCC	Enabling	Underway
Accelerate opportunities to support carbon farming	City-wide	WCC	Enabling	Underway
Carbon measurement and management	Council	WCC	Enabling	Underway
Emissions Reduction Plan	Council	WCC	Enabling	Scoping
Sewage Sludge Solution	Council	Wellington Water	Major	Awaiting funding
Organics Collection Trial	Council	WCC	Minor	Underway
Waste Strategy Review	Council	WCC	Major	Scoping
EV First Fleet	Council	WCC	Minor	Underway
Energy Management Strategy and Plan	Council	WCC	Enabling	Scoping
Displacing natural gas	Council	WCC	Minor	More R&D required
Solar community facilities	Council	WCC	Minor	Scoping
Climate Smart Buildings policy	Council	WCC	Enabling	Underway
Flexible working	Council	WCC	Minor	Underway
Procurement	Council	WCC	Enabling	Underway
Improve Governance	Council	WCC	Enabling	Underway
Staff engagement	Council	WCC	Enabling	Underway

Appendix 10 – Porirua City Council Summary

Climate Emergency Declared: 26/06/2019

North Island/South Island: North

Council Type: Metro

Coastal/Non-Coastal: Coastal

Population (June 2021): 61,900

Member Type: Borrower/Guarantor

Joined LGFA: 2014/15

LGFA Loans (NZ$m): 141.79

District Emissions (tCO_2e Gross): 304,431 (Source AECOM GHG Inventory 2018/19)

Corporate Emissions (tCO_2e Gross): 44,909 (Source: EPA 2021)

Climate Change Documents Produced: Proposed Climate Change Strategy 2021–2024

Below is a summary of the three work programmes included in the **Proposed Climate Change Strategy 2021–2024:**

Mitigation Work Programme

Objective	Action	Impact	21/22	22/23	23/24
Monitor and report on emissions	Implement GHG emissions monitoring and reporting framework for Porirua City	Monitoring and reporting on GHG emissions will be essential in order to track progress towards carbon zero and carbon negative targets. Monitoring will enable the council to accurately identify where efforts on mitigation should be made, in order to deliver the greatest reduction.	✓	✓	✓
Set emissions targets for the Council	Define timeline to meet zero and negative emissions targets	Setting a target will provide the Council with a clear objective to achieve and a baseline from which reductions must be made	✓		
Reduce emissions from waste	Investigate alternative options to manage organic waste	Spicer landfill currently emits approximately 1,500–2,000 tonnes of methane every year, as a result of anoxic breakdown of organic materials. Porirua City currently pays approximately $1m/yr for landfill emissions under the ETS. This figure could increase by as much as 8 times over the next 30 years.	✓		
	Investigate alternative means of disposing of sludge from the waste water treatment plant	As above	✓		
Reduce emissions from use of fossil fuels	All **new** Porirua City Council vehicle purchases or leases to be low-emissions (hybrid or electric) vehicles where possible	Switching to low or zero emissions will reduce our overall GHG emissions	✓	✓	✓
	Investigate options to accelerate vehicle replacement programme in 2021-51 LTP	Accelerating the transition to a low-emissions vehicle fleet will help us to meet zero emissions targets sooner	✓		
Reduce emissions from property and buildings	Align and raise the profile of the existing monitoring and reporting of council's energy-use with GHG emissions monitoring and reporting	Energy use is reported in specific climate change update	✓	✓	✓
Offset Porirua City emissions through carbon capture	Pay to offset emissions for work-related air and vehicle travel by staff and Councillors	Offset residual emissions from council activities to achieve net-zero target	✓	✓	✓
	Investigate opportunities for carbon-capture on council-owned land	Cost saving initiative for offsets. Additional benefits for local biodiversity, recreational opportunities may be achieved	✓		

Adaptation Work Programme

Objective	Action	Impact	21/22	22/23	23/24
Understand the risks and opportunities of a changing climate	Complete risk assessment to identify and prioritise risks to physical assets due to climate change	Quantify what the risks are and identify where to start	✓		
	Develop framework for risk disclosure reporting. Monitor and report on the financial costs of extreme weather events	Capturing and reporting on the costs of responding to extreme weather events will provide an evidence base for adapting to the impacts of extreme weather events. Allows better planning for "re-active/unbudgeted" works	✓		
Coastal communities are prepared for sea level rise	Engage with coastal communities to plan and prepare for sea level rise	Coastal communities are prepared for sea level rise and coastal change. Council assets are resilient to sea level rise.		✓	✓
We are resilient to extreme weather	Engage with communities at risk from flooding to plan and prepare for extreme weather impacts	Communities are prepared for extreme weather impacts. Council assets are resilient to extreme weather impacts		✓	✓

Transition Work Programme

Objective	Action	Impact	21/22	22/23	23/24
Porirua residents participate in developing our climate change response	Work with local educators to implement the Ministry of Education climate change curriculum and increase awareness and understanding of climate change	Our young people will inherit many of the problems arising from climate change. It is important that they are armed with the knowledge necessary to address these issues	✓		
	Convene a local climate change forum that includes representatives from local communities and businesses to discuss climate issues and provide recommendations and feedback on our climate change response	Community input and support for climate change actions is critical. Broad perspectives and input on climate change are expected to result in actions that are accepted by the community	✓		
Climate-friendly businesses and industries are based in Porirua	Work with local businesses and industries to support climate friendly initiatives	Greening our business community will result in reduced greenhouse gas emissions, and make Porirua City a more attractive city for climate conscious people	✓		
	Develop Climate Change Policy that supports the Strategy	Financial and legal risks will emerge, based on Council decisions. Being informed of risks will enable the Council to avoid or mitigate risk, and make better long-term decisions.		✓	
Understand and plan for the long-term implications of climate change	Work with Pasifika Community to identify and plan for future climate migration	Climate migration presents both risks and opportunities for Porirua City. Planning for future immigration will allow us to minimise risk, and maximise opportunity			✓
	Incorporate climate change impacts into financial planning processes	If it gets funded, it gets done		✓	
	Identify funding opportunities for climate change actions	Funding is always tight. Funding for climate actions from central government, or other agencies, will help us to implement the actions listed in this Strategy sooner		✓	

Key Projects which may be eligible for GSS Loans

PCC agreed to invest an additional NZ$6m across years 2022/23 (NZ$3m) and 2023/24 (NZ$3m) to reduce greenhouse gas emissions from Council facilities, reduce organic waste going to the landfill and accelerate the transition of PCC's fleet to electric vehicles. This was in response to public submissions.

Stormwater (Total NZ$92m) 2022-31

- **Elsdon Wetlands.** This project will increase the level of flood protection to the CBD, Porirua School and Ngāti Toa St. **($4.4m 2021/22)**
- **Stormwater flooding hot spots.** Catchment studies (Plimmerton, Takapūwāhia, Titahi Bay and Eastern Porirua) that will inform future flood mitigation investments. **($20m 2022/23 to 2023/24).**
- **Takapūwāhia stormwater project.** Addresses demand for an improved level of service, to address health and safety and property damage risk. **($3m 2023/24 to 2025/26).**

Drinking water (Total NZ$139.6m) 2022-31

- **Managing more efficient water consumption through installation of water meters.** To improve management of water consumption. **($14m from 2025-29)**
- **Parks & reserves (Total NZ$35.5m) 2022-31**
- **Aotea Lagoon renewals** (including stormwater pond restoration). Aotea Park and lagoon has deteriorated assets and the duck pond is in poor health. **(Total $3m: $2.1m 2021-25, $0.4m, 2039-41, $0.4m 2049-51)**
- **Green Asset Restoration. Harbour to hills stream enhancement.** To address stream water quality deterioration, erosion, and sedimentation across a number of catchments in the city. **($4.9m 2021-51)**
- **Beach dune restoration** (Ngāti Toa Domain, Plimmerton South and Titahi Bay) to improve resilience to storms and weather events (climate change). **($1m 2025-41)**

Transport (Total NZ$148.6m) 2022-31

- **Drainage renewals and resilience improvements.** Focus on renewing and upgrading rural drainage to reduce pavement risk and address storm related risks due to climate change. **($48.1m 2021-51)**
- **Walking and cycling renewals.** To support increasing demand for walking and cycling and supporting mode shift. **($9.0m 2021-51)**
- **Access Kenepuru.** A package of local road, walking and cycling improvements, including Kenepuru Dr/Titahi Bay Rd intersection. **($19.3m 2021-26).**
- **Porirua CBD to Titahi Bay Shared Path (Wi Neera to Onepoto).** Construction of a shared cycling and pedestrian pathway and associated coastal resilience improvements along Titahi Bay Road. **($10.1m 2021/22 to 2023/24).**
- **Walking and cycling improvements.** Ongoing programme of walking and cycling improvements. **($10.6m 2021-51)**
- **City Centre Revitalisation Transport Improvements.** Improvements to key routes and intersections within the city centre. **($0.2m 2021/22, $8.3m 2024-32).**

Appendix 11 – Hutt City Council Summary

Climate Emergency Declared: 27/06/2019

North Island/South Island: North

Council Type: Metro

Coastal/Non-Coastal: Coastal

Population (June 2021): 112,800

Member Type: Shareholder

Joined LGFA: 2012/13

LGFA Loans (NZ$m): 201.23

District Emissions (tCO_2e Gross): 532,339 (Source, AECOM Hutt City GHG Inventory May 2020)

Corporate Emissions (tCO_2e Gross): 7,750

Climate Change Documents Produced: Interim Carbon Reduction and Climate Resilience Plan 2021-31, Lower Hutt Climate Action Pathway, March 2022 (Not reviewed, released after Hutt City Council was reviewed)

HCC Interim Carbon Reduction and Climate Resilience Plan 2021-31. This plan is aligned with HCC's LTP and states three goals and six priority areas:

Key Projects which may be eligible for GSS Loans

HCC has identified twenty-one concrete and measurable actions within each of the six priority areas in order to achieve the three goals. Below are the key projects which have costs outlined by HCC.

Action 4. Incorporating Sustainability into the rebuild of Naenae Pool Total rebuild cost is not known, but Energy and heating systems have been estimated at NZ$6.5m.

Action 11. Developing Lower Hutt's walking and cycling network. Approximately **NZ$120m**

- Beltway Cycleway – **NZ$7m shared** between HCC and Waka Kotahi
- Cycling and Micromobilty Programme – NZ$58m (including potential NZ$30m in subsidies from Waka Kotahi **NZ$28m** remaining)
- Eastern Bays Shared Path – NZ$30m total cost shared between Central Government's COVID-19 NZ$15m, Waka Kotahi NZ$7.5m and **HCC NZ$7.5m**
- Riverlink – In partnership with Waka Kotahi and GWRC. New pedestrian and cycling bridge and walking and cycling improvements **NZ$30m**
- Te Ara Tupua – Partnership between Waka Kotahi, WCC, GWRC and HCC for walking and cycling route between Melling and Wellington CBD.

Action 13. Phasing out natural gas at Council facilities. NZ$7m has been allocated and a timeline of when each asset will have natural gas replaced is provided.

Action 15. Establishing a new resource recovery park. NZ$2.5m has been allocated. It is noted NZ$10m+ would be needed to establish a resource recovery park in line with best practice and that they are looking to partner with a commercial waste service provider.

Action 17. Accelerating reforestation of Belmont Regional Park. This will have large emissions reductions. Estimate for total emissions reduction by 2050 is approximately 86,000t CO_2e for 400ha of native forest having been planted by 2025. Estimated cost is NZ$12.4m-NZ$26.4m (400ha at a cost per hectare of $31,000-$66,000).

Council's leadership

1. Co-designing Lower Hutt's climate action roadmap
2. Measuring procurement-related carbon reductions
3. Embedding carbon reductions through procurement
4. Incorporating sustainability into the rebuild of Naenae Pool
5. Incorporating sustainability into the RiverLink flood protection project
6. Optimising refrigerant use
7. Optimising office space
8. Educating staff on climate change

Transport

9. Changing to 100 percent electric vehicles
10. Decarbonising other travel options
11. Developing Lower Hutt's walking and cycling network
12. Rolling out electric vehicle charging stations

Energy

13. Phasing out natural gas at council facilities
14. Upgrading to 100 percent LED street lighting

Waste

15. Establishing a new resource recovery park
16. Investigating methane destruction via flare burn-off for the closed landfill in Wainuiomata.

Land

17. Accelerating reforestation of Belmont Regional Park
18. Improving the quality of forests on other reserve land
19. Setting up a carbon reduction acceleration fund

Climate resilience

20. Upgrading the Three Waters infrastructure
21. Building RiverLink flood protection

Action 20. Upgrading the three waters infrastructure. NZ$16m has been identified to improve network performance, stormwater management and management of flood risk for major waterways.

Action 21. Riverlink. HCC Waka Kotahi and GWRC are partnering for the Riverlink project. This will improve flood protection and develop integrated sustainable transport solutions. Cost to HCC is NZD$138m.

Appendix 12 – Kapiti Coast District Council Summary

Climate Emergency Declared: 23/05/2019

North Island/South Island: North

Council Type: Provincial

Coastal/Non-Coastal: Coastal

Population (June 2021): 58,000

Member Type: Shareholder

Joined LGFA: 2012/13

LGFA Loans (NZ$m): 230.37

District Emissions (tCO_2e Gross): 351,339 (Source AECOM Kapiti Coast District GHG Inventory, 2020)

Corporate Emissions (tCO_2e Gross): 4,736 (Source: Toitu, 2020-21 – 62% reduction from 2009-10 base year)

Climate Change Documents Produced: Climate Emergency Action Framework (2-page document)

Kapiti Coast District Council Emissions

Kapiti Coast District Council have been Measuring their emissions since the 2009/10 year with CEMARS/Toitū Carbonreduce and has won awards for their leadership in environmental sustainability. KCDC won the 'Local and Central Government Stepping Up' category of the 2011 Ministry for the Environment Green Ribbon Awards for its work on environmental sustainability, including climate change mitigation and energy management. Council was highly commended in the 'public sector' category of the 2012 EECA awards for its energy management work. At the 2014 EECA Awards the Council Won the Public Sector and Community categories and was highly commended in the Energy Management category. The Council also won the 'Reducing Our Greenhouse Gas Emissions' category at the 2014 Green Ribbon Awards.

KCDC has the goal of being carbon neutral by 2025.

The 2021 Toitū Envirocare Emissions summary provides the following information.

KCDC's emissions for 2020/21 were **4,736.17 tCO_2e**. An **absolute reduction** in Scope 1 and 2 emissions **of 8,078.73 tCO_2e** has been achieved against base year (2009/10).

To reduce its emissions, Kāpiti Coast District Council has developed a GHG emissions management plan and reduction targets. Some of these plans include:

- Solar PV array at Ōtaki WWTP
- Reduce vehicle fleet emissions
- Rebuild of Community Centre
- Install heat recovery units at Ōtaki Pool
- Upgrade Ōtaki Pool building envelope
- Reduce emissions from municipal waste

Key Projects which may be eligible for GSS Loans

Access and Transport (Total NZ$408.7m – 20-year period)
Cycleways, walkways and bridleways (costed as NZ$16.0m), and streetlighting upgrade (NZ$992,000) are key projects, however there may be other opportunities.

Coastal management (Total NZ$53.8m – 20-year period)
Projects in 2016 and 2021 to assess the condition of coastal defense structures in Kapiti Coast revealed that the majority of the hard defense structures built on public land are in poor condition and have limited life left. KCDC is also looking to expand coastal assets to service currently unprotected areas. Major projects in this area include Rebuilding Paekākāriki seawall NZ$17m (2020-27), Replacing Whareamauku block wall NZ$4m (2021-25), and Renewing Raumati seawall NZ$17m (2021-32).

Stormwater (Total NZ$178m – 20-year period)
Of KCDC's 18 pump stations, nearly 50% lack capacity for stormwater flows in a 1-in-10-year event. The timing of individual projects is not clear, but total cost of upgrading Kapiti Coast's stormwater management to deal with the increased severe weather that comes with climate change is significant.

Sustainability and resilience (Total NZ$3.3m- 20-year period)
Renewals – Otaihanga resource recovery facility (NZ$2.0m), and Ōtaki resource recovery centre (NZ$458,000), to meet the target to reduce overall waste to landfill by 30% by 2026 are key projects.

Parks and Open Spaces (Total NZ$181m – 20-year period)
Adaptation planning (including asset relocation) for coastal inundation, groundwater rise and increased rainfall is mentioned as a response to climate change by KCDC. No key projects identified. Districtwide land development (NZ$44.8m) and districtwide trees and planting (NZ$1.1m) and Irrigation/drainage (NZ$1.1m) may warrant further investigation. Dune management is mentioned in this section, Otaki beach development (NZ$872,000) may be referring to this.

Recreation and Leisure (Total NZ$27.6m – 20-year period)
A key project mentioned by KCDC in this section is "Stage 2 of our improvements at Ōtaki Pool including upgrading the changing rooms (NZ$2.7m, 2023/24), increasing heat efficiency and reducing the facility's carbon footprint. "Ōtaki Pool stage 2: Change heating source from gas to heat pump or biomass boiler to reduce emissions by a further 70% to 80%" is also mentioned, further investigation as to which specific projects for Otaki Pool would be eligible for GSS loans is required. Coastlands Aquatic Centre building renewals may have potential due to KCDC's commitment to emissions reductions but is not specifically mentioned in the LTP.

Appendix 13 – Nelson City Council Summary

Climate Emergency Declared: 16/05/2019

North Island/South Island: South

Council Type: Provincial/Unitary

Coastal/Non-Coastal: Coastal

Population (June 2021): 54,700

Member Type: Borrower/Guarantor

Joined LGFA: 2012/13

LGFA Loans (NZ$m): 90.15

District Emissions (tCO_2e Gross): 356,000 (Source: NZStats)

Corporate Emissions (tCO_2e Gross): 15,014 (Source: Toitū Envirocare2019-20, 26% reduction from 2017-18 base year)

Climate Change Documents Produced: Climate Action Plan 2021

The mitigation actions and planned actions for the Council and the community from the **Climate Action Plan 2021** are shown below:

Highlighted are projects which may be more suitable for GSS loans.

Mitigation Actions to Reduce Council's Carbon Footprint

Actions underway

- Energy audits in key Council buildings will have recommendations for lower carbon operations, such as:
  - Energy efficiency initiatives
  - Fossil fuel switching for a low carbon emission alternative
  - Renewable energy
  - Replacing existing refrigerants with low global warming potential (GWP) refrigerants

  (Budget: $81,970 across 3 years starting from FY 21/22) Budgets for implementation of recommendations identified in the energy audits will be allocated once the energy audits are completed.
- The Civic House Refurbishment will consider waste minimisation and will include initiatives that will contribute to running a more efficient building in terms of energy consumption for heating, ventilation, and lighting. These initiatives will be implemented in stages within a period of 7 years. (Budget: a portion of the total of $20,509,270 Civic House refurbishment, Civic House renewal plant & equipment and Civic House roof renewal). To be decided by Council in FY 21/22.
- Energy audits and implementation of recommendations will occur in water, wastewater and stormwater assets, including a GHG emissions study to improve accuracy of measurement data (Budget: $148,000 across six years starting from FY 20/21).
- Identify potential users for the energy (heat) mapped in the wastewater network that is potentially available to be recovered and reused in various parts of the city. (Budget: $30,000 approx., FY 21/22)
- Council has adopted an electric first policy when replacing/adding cars to its fleet (Budget: A portion of $100,000 for FY 21/22 will be allocated to electric vehicle purchase)
- Conventional lighting will be switched to more efficient lighting technology in buildings and sportsgrounds (Budget: $452,804 for Trafalgar Park and $860,000 for sports ground for the next 10 years)
- Council is working to ensure that waste minimisation is built into the operation of its facilities and events, both in its own operations, and the conditions of use by the public. This includes a focus on reduce and reuse over recycle, composting of food scraps and integration of recycling where appropriate. The Rethink Waste programme is being used to upskill event organisers and improve resources for waste minimisation in tandem with this process.
- Behavioural change programmes (eg, active transport, waste minimisation).
- Council's revised Procurement Policy, which is now guided by the underlying principle of minimising GHG emissions, will be implemented.
- All Council reports will consider the potential impacts and risks that climate change presents so that this is included in decision-making processes.

To be implemented

- An Energy Management Programme, based on ISO 50001, will be implemented.
- A framework to include climate change consideration in all business cases will be developed.
- There will be continuous monitoring of data from buildings management systems (energy meters, utility bills and other sources) so these can be regularly analysed to identify further energy savings.
- Behavioural change programmes (eg building energy usage).

KEY: How we will live and work · How we will reduce consumption and waste · How we will move · How we will protect nature

Mitigation Actions to Reduce the Community's Carbon Footprint

- **Carbon sequestration – development of new carbon sinks**
  - Afforestation/reforestation and implementation of ecological restoration plans on Council-owned land will increase carbon capture (Budget: $804,408/year includes: replacement planting, new planting, revegetation, street garden development, street tree development). Budget for retired forestry: over $800,000 across the next 10 years)
  - Implementation of an Urban Greening Plan to expand our urban canopy, will bring more CO2 absorbing plants and trees into our City Centre while reducing air and noise pollution and supporting biodiversity and food resiliency (Budget: $20,000 allocated).
  - Support for afforestation/reforestation and implementation of ecological restoration plans on privately-owned land will increase carbon capture (Budget: Grants totalling $336,000 were awarded in 2020/21 year from Council's Nelson Nature, Healthy Streams and Sustainable Land Management programmes, and a similar amount is budgeted in 2021/22)
  - Seagrass and saltmarsh research, mapping, monitoring and enhancement will support marine carbon sequestration. (Budget: a portion of the $53,373 budget for Tasman Bay monitoring and research being spent in 2021/22)
  - Council will seek new grant funding for projects to increase terrestrial carbon sequestration, such as Jobs for Nature funding. These projects will be delivered through Council work programmes and partnerships, including with the Kotahitanga mō te Taiao Alliance and the Tasman Environment Trust.
  - Project Mahitahi is a Kotahitanga mō te Taiao Jobs for Nature project focused on terrestrial ecosystem protection, enhancement and resilience in the Maitai River catchment. The project includes the planting of $125,000 trees over 5 years (Budget: $1,411,359 in 21/22 funded by Ministry for the Environment and Department of Conservation).
- **Carbon sequestration - protecting existing carbon sinks to reduce carbon loss**
  - Reducing soil loss through addressing erosion. Council's Sustainable Land Management programme will support soil retention and health through reducing hill country erosion and supporting sustainable land use (Budget: in FY 21/22 is $330,000 funded by Ministry for Primary Industries and $67,353 funded through rates).
  - A portion of the Nelson Nature budget ($434,912 in FY21/22) will support ecological resilience (adaptation) of terrestrial habitats and species by undertaking pest plant and animal control to protect ecosystems and allow continuing carbon sequestration by those ecosystems. Nelson Nature is Council's terrestrial biodiversity programme, and along with improving indigenous biodiversity it has climate change co-benefits including increased carbon sequestration and adaptation/ resilience of ecosystems to changing climate.
  - The Jobs for Nature Wakapuaka and Whangamoa Project beginning in 2021/22 will protect existing carbon capture by Significant Natural Area ecosystems on private land in the Wakapuaka and Whangamoa catchments, by addressing the impacts of pest plants and browsing animals such as goats on growing and mature trees (Budget: $990,638 over 3 years).
  - Understanding the extent of our estuarine carbon sinks through Council's coastal and marine programme, and working with partners such as Taman District Council, Te Tauihu iwi,

KEY: How we will live and work · How we will reduce consumption and waste · How we will move · How we will protect nature

Kotahitanga mō te Taiao and Tasman Environmental Trust, will help to protect these carbon sinks by informing decision making and reducing the likelihood of disturbance (Budget: allocated to Tasman Environment Trust through the LTP: $10,000 per year for three years).

- **Emissions mitigation advice, information and education provided to the community:**
  - Free advice to residents from Council's Eco Design Adviser will help reduce energy usage and improve house performance, which supports reduction in energy consumption (Budget: A portion of the Resilience and Sustainability budget which is $39,839 in 2021/22)
  - Council's contribution to the Warmer Healthier Homes Nelson-Tasman-Marlborough project will support reductions in energy use (Budget: $52,800per year for the next 10 years).
  - Council will promote external funding for renewable energy or energy efficiency (e.g. through interest-free bank home loan top-ups, Energy Efficiency and Conservation Authority grants or other government schemes)
  - Investment in behaviour change programmes will continue to support a shift away from single occupancy use of private vehicles towards public transport and active transport
  - Information will be provided to the community on how to avoid or reduce waste through the Rethink Waste|Whakaarohia programme.
  - The Enviroschools programme supports educating our tamariki and rangatahi to make better choices about using resources and reducing waste; reduction in energy consumption; habitat restoration/ protection and active transport (Budget: $112,112 for FY 21/22).
  - As well as financial support and implementation of projects, Council's environmental programmes including Nelson Nature, Healthy Streams, Sustainable Land Management, Air Quality, Coastal and Marine, and Biosecurity provide advice, education and information to support the community to care for our natural spaces (Budget: The education component is an integral part of these programmes).
- **Council collaboration with community initiatives for climate action**
  - Participating in the Nelson Tasman Climate Forum and supporting it to deliver actions outlined in its Climate Action Book. (Budget: $100,000 per year for three years).
  - Supporting initiatives such as Businesses for Climate Action (Budget: $175,000 over three years, $38,000 of that funding is the remaining funds from the Climate Change Reserve and $137,000 is ratepayer funded)
  - Investigating the potential for a Nelson Climatorium (centre of innovation for tackling climate change)
  - Supporting Community Compost's initiative to grow its organic collection operation (Budget: through a grant of $32,000 from the Climate Change Reserve in FY 20/21).
- **Waste minimisation initiatives are funded from the waste levy to the solid waste closed account. The objective of Council's waste minimisation programme is to avoid or reduce the creation of waste. The initiatives implemented in the coming financial year(s) include:**
  - **Rethink Waste programme: Programmes and activities that enable people in Nelson to avoid or reduce waste**
    - Waste minimisation grants to enable community-led projects, to avoid or reduce waste and support the development of a circular economy Reducing single-use initiatives including the refillery programme and cup bond subsidies
    - Development of activities to support a culture of repair and reuse
    - Secondhand Sunday
    - Support for diversion of e-waste including subsidies
    - Focus on textile waste, including Op Shop map
    - Event waste minimisation
    - Community workshops
  - **Construction & Demolition Waste reduction programme**
    - Support for building waste diversion
    - Deconstruction case study (deconstruction allows building components to be recycled and reused when the building reaches end of life)
    - Building sector engagement
  - **Organic waste reduction**
    - Kitchen waste composting trial. If this project progresses to a full kerbside service it will contribute to our commitment to reduce overall waste to landfill by 10% per capita by 2030.
    - Home composting workshops and subsidies
    - Support for Love Food Hate Waste programme
    - Support for the Nelson Marlborough Health leadership of the Good Food City initiative
    - Waste minimisation at Council events
- **Infrastructure**
  - Investigation of EV Charger installation for our community in public spaces will support uptake of electric vehicles (FY 21/22)
  - Improvements to cycling, walking (shared walk/cycle paths) infrastructure will promote modal shift (Budget: $32M over 10 years - approximately 51% will be subsidised by Waka Kotahi NZ).
  - Improvements to public transport options will help to reduce traffic (Budget: $65M over 10 years classified as paid by fare revenue - approximately 51-65% will be subsidised by NZTA).
  - Council's Future Development Strategy will manage urban growth in Nelson over the next 30 years
  - The project to develop the new city library will include sustainability and climate change objectives
  - Installation of new wells to increase methane captured in landfill. This action will be implemented by the Nelson Tasman Regional Landfill Business Unit (Budget: $2M for York Valley). The identification of new users of methane captured in landfill is directly linked with the previous action of increasing methane captured.
  - Council's Wastewater activity will develop projects to implement outcomes from the emissions reduction investigative work (currently underway) from FY 22/23 till 30/31. (Budget: $1,425,000 through LTP)
- **Influencing transport emissions/travel demand management**
  - Travel demand management initiatives (Budget: $1.5M over 10 years). Options to reduce vehicle km travelled will be investigated e.g. car sharing scheme development
  - Installation of solar powered compacting bins in public places will reduce servicing requirements and therefore transport emissions (Budget: $160,000 per year for the next 10 years, sourced from the waste account)
  - At the point of contract renewal Council will look to achieve a low emission option for public transport. Included in the budget of $65M over 10 years classified as paid by fare revenue (approximately 51-65% will be subsidised by NZTA).
  - Council will facilitate higher density housing in areas which are close to where people work and shop, to reduce travel.
  - Council will encourage more inner city living and intensification to reduce traffic and congestion.
  - Council is developing a Parking Strategy which can encourage more use of public transport and walking/cycling. (Budget estimated: $120,000 from FY 20/21)
- **Investigating the adoption of new technologies, where safe and effective**
  - Council is investigating low carbon emissions fuel options (hydrogen, biofuel, etc) as fuel for vehicles

Future Actions

- A road map towards low-emission public transport will be developed

  (Budget: Climate Change mitigation $1.239 M over the next 10 years)

KEY: How we will live and work · How we will reduce consumption and waste · How we will move · How we will protect nature

Risk Identification

Sea level rise, heavy rainfall, flooding events, storm, drought, bush fires and extreme temperatures.

- Mapping areas of coastal inundation and identification of coastal structures (sea level rise, tidal and storm inundation)
- Mapping flooding areas (river tidal)
- Mapping coastal erosion
- High level identification and assessment of climate change risks from coastal inundation, erosion and flooding on the lower Maitai river across five domains (human environment, natural environment, economy environment, built environment and governance) for short and long term climate change impacts. These will be monitored and reviewed over a series of LTP processes as a result of the iterative process
- Identification of vulnerable species and habitats at risk from climate change impacts, including threatened coastal habitats and species at risk from sea level rise
- Marine, freshwater and terrestrial biosecurity field monitoring to identify any new biosecurity risks resulting from changing climate and water temperatures
- State of the Environment monitoring programme which gathers long-term environmental data. Key parameters may be useful to inform decision making as the environment changes in response to climate change (groundwater salinity, groundwater level, sea level, tidal, water temperature, rain changes, river flows, drought resistance plants etc.). Budget is a portion of the roughly $900k Monitoring the Environment activity (in FY 21/22).
- Collection of data and monitor shoreline changes through CoastSnap
- Identification of vulnerable people and communities and transition to a more resilient environment.
- Identification and assessment of risks and opportunities from all other relevant climate change effects such as heavy rainfall, flooding events, storms, drought, bush fires and extreme temperatures for short and long-term climate change impacts across the five domains (see above), considering the New Zealand's most significant climate change risks described in the National Climate Change Risk Assessment (MfE, 2020).
- Detailed and specific cultural heritage impacts assessment if required
- Identification of impacts on key infrastructure (roads, state highway, bridges, landfill, water supply, wastewater, and stormwater assets)
- Liaision with key organisations (Port, Airport, Waka Kotahi) to complement and find synergies with the climate change risk identification and assessment done by each organisation

KEY: How we will live and work · How we will reduce consumption and waste · How we will move · How we will protect nature

Adaptation Actions

Current Actions

- To reduce flooding and coastal inundation the following projects will be undertaken: Stormwater and flood prevention projects: Saxton Creek Upgrade, Orphanage Stream Upgrade, Little Go Stream Upgrade (Rutherford Stages 1 and 2), York Stream Upgrade, Maitai Flood Mitigation Project, Jenkins Creek Upgrade, Poorman Valley Stream Upgrade (Budget: $52M over 10 years)
- Preparation of land use plan/s to support adaptation (Budget: Whakamahere Whakatu Nelson Plan $2.12 for FY 21/22
- Natural hazards will be assessed, starting with coastal inundation (flooding from sea water) and erosion hazards. Ongoing
- Public engagement will be undertaken on coastal hazards as part of the DAPP (Dynamic Adaptive Pathways Planning) process
- The resilience of our natural environment and biodiversity is being monitored, protected and built through Council's Nelson Nature, Healthy Streams, Sustainable Land Management, Coastal/Marine, Freshwater monitoring and Biosecurity programmes. This is related to how the natural environment is adapting to climate change, and how resilient habitats and species are responding to changes. Activities include freshwater, coastal and marine monitoring and research into vulnerable habitats and species. Potential adaptations are being explored such as coastal habitat retreats and understanding the drought resistance profile of native plants (Budget: a portion of the roughly $900k Monitoring the Environment activity, plus a portion of the $434,912 Nelson Nature budget in 2021/22)
- A biosecurity programme is in place to manage existing marine, freshwater and terrestrial biosecurity risks, and identify and respond to new risks (Budget: $333,108 including $40,000 specifically for emerging pests and $56,832 for invasive marine species monitoring in the 2021/22 year)
- Council is working with landowners to support climate change resilience in the rural sector through the Sustainable Land Management programme (Budget: $67,353 in 2021/22)
- An inventory of biodiversity and natural features at risk from sea level rise (Biodiversity Strategy - Outcome 5 "Biodiversity is resilient in the face of climate change") has been completed and areas will be prioritised for protection and ecological restoration
- Drought response advice and information for rural landowners, includingadvice on water conservation measures Water demand management for households on reticulated water supply (Budget: Staff time only).

Appendix 14 – Canterbury Regional Council (Environment Canterbury) Summary

Climate Emergency Declared: 16/05/2019

North Island/South Island: South

Council Type: Regional

Coastal/Non-Coastal: Coastal

Population (June 2021): 647,780

Member Type: Borrower/Guarantor

Joined LGFA: 2015/16

LGFA Loans (NZ$m): 63.14

Emissions (District): 11,641,000

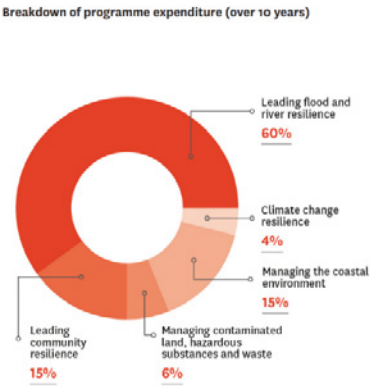
Emissions (Corporate): No Data found at this level

Climate Change Documents Produced: None

Below shows performance measures regarding community awareness and involvement with regards to adapting to Climate Change. Development of a **Climate Change Action Plan** is included (23.3), with implementation expected in 2024.

LoS 23: Raise awareness of how the community can be part of adapting to climate change					
Performance measures		Targets			
		Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Year 4-10 2024+
23.1	Provide information, advice, tools and resources through climate change communication projects	Undertake at least one campaign	Undertake at least one campaign	Undertake at least one campaign	Undertake at least one campaign
23.2	Increase the number of people who engage with our campaign about what climate change means in Canterbury	Establish a baseline for engagement through using campaign analytics	Increase engagement by ≥ 5% on the previous year	Increase engagement by ≥ 5% on the previous year	Increase engagement by ≥ 5% on the previous year
23.3	Develop a Climate Change Action Plan in collaboration with the	Assess the implications of the National Adaptation Plan and the Emissions Reduction	Initiate development of the Climate Change Action Plan	Complete development of the Climate Change Action Plan	Implement the Council-approved Climate Change Action Plan
	community to build resilience to climate change risks in Canterbury	Plan on Environment Canterbury and the Canterbury region			

Right: a breakdown of expenditure for the Climate Change and Community Resilience portfolio (Total CAPEX – NZ$37m). Leading flood and river resilience and managing the coastal environment count for 75% of expenditure for the 10-year period.



Key Projects which may be eligible for GSS Loans

Below: shows a breakdown of EC's Transport Expenditure 2021-31 from the Canterbury Regional Land Transport Plan 2021-31, there may be potential within this expenditure.

Environment Canterbury					
BAU	Public Transport Services	Low cost / low risk improvements 2021-24	$4,447,766	2021/22	2023/24
BAU	Public Transport Services	Public Transport Services Continuous Programme	$1,056,433,898	2021/22	2030/31
BAU	Public Transport Infrastructure	Public Transport Services Continuous Programme	$82,250,334	2021/22	2030/31
BAU	Investment Management	Project Next (national ticketing system)	$6,054,907	2021/22	2030/31
BAU	Investment Management	RLTP Development and RTC Work Programme	$11,434,231	2021/22	2030/31

Flood protection Expenditure

Waimakariri-Eyre-Cust: Continue improvements to primary stopbanks ($2.0M, 2021/22 – 2022/23)

Waimakariri Flood Protection Project: Rock scour protection – Kaiapoi (COVID-19 recovery project) ($397,000, 2021/22)

Rangitata resilience improvements and river enhancements ($5.8M 2021/22 – 2022/23)

Below is taken from the infrastructure strategy regarding climate change and a change in level of service.

Infrastructure required 11-30 years	**Cost**
Reviews and climate change:	
Items identified in Scheme Reviews — not yet known	
Change in level of service due to anticipated climate change impacts on rainfall and sea level.	
Expressed here in 2020 dollar terms, for the purposes of the infrastructure strategy, these costs are assumed to be spread over years eight-30, but would be undertaken scheme by scheme according to its own timetable and acceptable level of risk:	
Kaikōura rivers	$3.3M
Ashley River	$7.6M
Waimakariri-Eyre-Cust	$10.6M
Selwyn River	$6.5M
Ashburton River	$16.5M
Hinds River	$4.1M
Orari-Waihi-Temuka	$13.6M
Opihi	$9.3M
Seadown drainage	$1.4M
Pareora River	$2.7M
Waihao-Wainono	$11.6M
Other	$3.0M
Total	**$94.3M**

Appendix 15 – Christchurch City Council Summary

Climate Emergency Declared: 23/05/2019

North Island/South Island: South

Council Type: Metro

Coastal/Non-Coastal: Coastal

Population (June 2021): 392,100

Member Type: Shareholder

Joined LGFA: 2011/12

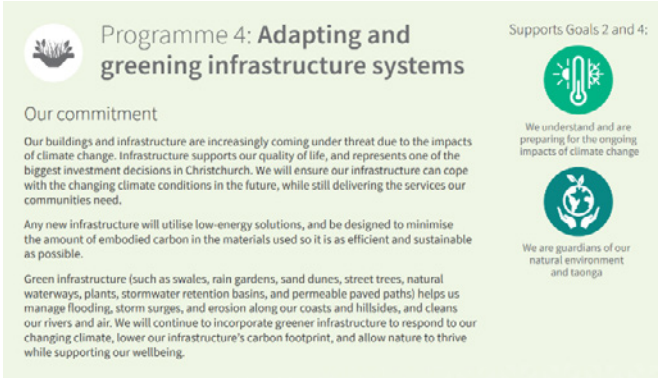
LGFA Loans (NZ$m): 1,965.55

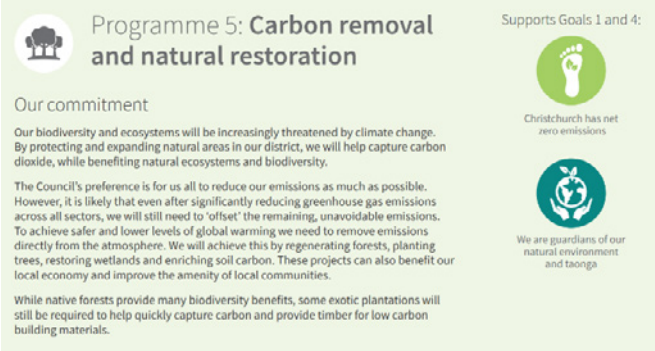
District Emissions (tCO_2e Gross): 2,723,016

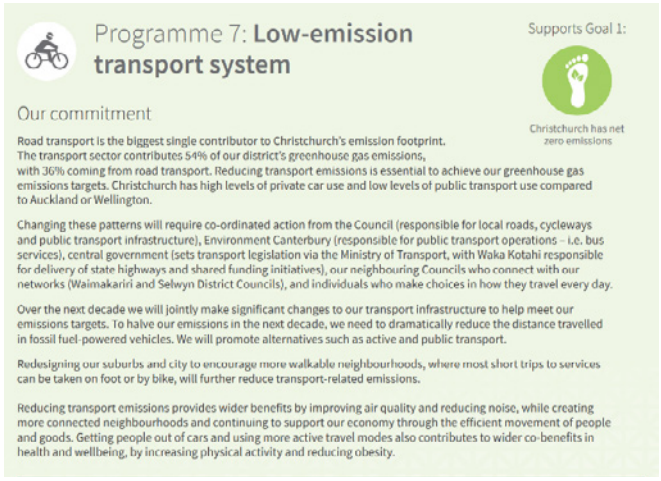
Corporate Emissions (tCO_2e Gross): 21,862 (Climate Resilience Strategy)

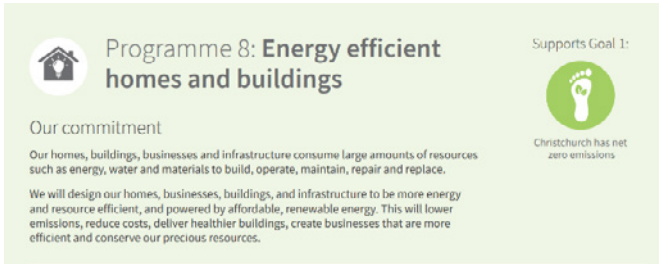
Climate Change Documents Produced: Ōtautahi Christchurch Climate Resilience Strategy (2021)

Below shows the programs of the **Climate Resilience Strategy**









Key Projects which may be eligible for GSS Loans

Communities and Citizens (Total NZ$367m)

The new Metro sport facility will have a wastewater heat recovery system

Recreation, Sports, Comm Arts & Events												
Asset Renewal												
			1017	Parakiore Recreation and Sports Centre (Metro Sport Facility)	21,064							21,064

Parks, Heritage and Coastal Environment (Total NZ$645m)

Group of Activities	Activity	Driver	ID	Project Name	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	Total
			61724	Coastal Land Protection Revegetation & Amenity Planting	35	36	37	38	39	40	41	42	43	44	395
			58672	Ōtākaro-Avon River Corridor (OARC)	8,916	3,954	3,983	5,074	5,101	5,000	4,995	4,902	4,644		46,569

Transport (Total NZ$1,448m)

Heavy investment in public transport and cycleways, too many projects to list – 25 Major cycleways planned over next 10 years (Largest project – NZ$38m, 2021-18)

Corporate Activities (Total NZ$849m)

Group of Activities	Activity	Driver	ID	Project Name	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	Total
		Level of Service Improvement													
			60462	Programme - Carbon Neutral by 2031 Fleet & Plant Asset Purchases	1,233	1,957	2,130	2,868	4,477	4,757	4,837	6,561	6,725	7,068	42,613

Appendix 16 – Queenstown Lakes District Council Summary

Climate Emergency Declared: 27/06/2019

North Island/South Island: South

Council Type: Provincial

Coastal/Non-Coastal: Non-Coastal

Population (June 2021): 48,300

Member Type: Borrower/Guarantor

Joined LGFA: 2012/13

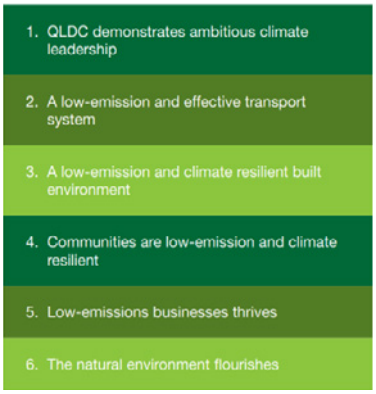
LGFA Loans (NZ$m): 155.36

District Emissions (tCO$_2$e Gross): 600,895 (Source: EY Otago Region Greenhouse Gas Profile 2018/19)

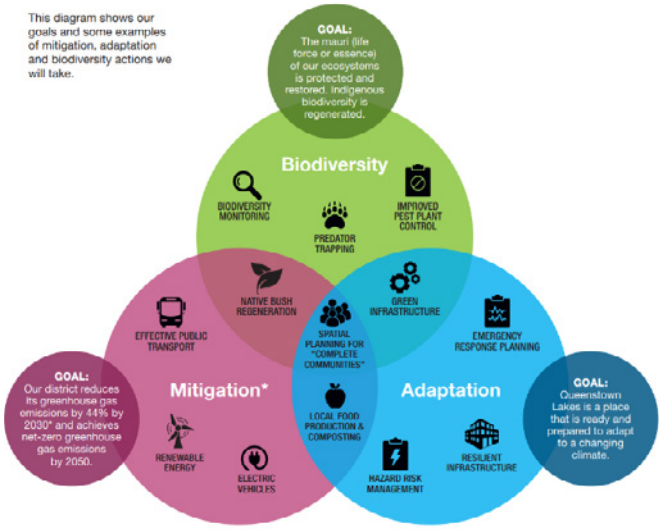
Corporate Emissions (tCO$_2$e Gross): N/A

Climate Change Documents Produced: Climate action Plan 2019-22, Climate and Biodiversity Plan 2022-25

The **Climate and Biodiversity Plan 2022-25** is a follow up to the Climate Action Plan 2019-2022, is has included Biodiversity and the goals are also more ambitious than the previous plan.



The diagram right shows the three overarching goals, along with examples of actions. Note that biodiversity is included as a climate **and ecological** emergency was declared. The CaBP notes that nature is vitally important to the wellbeing of humans. Healthy ecosystems which support a rich biodiversity, protect people from the impacts of climate change and capture carbon from the atmosphere. However, biodiversity and ecosystems are also vulnerable to the effects of climate change.



Within the document, a 60-point action plan is produced according to the 6 goals mentioned above. Most action points are strategic, investigative, looking for collaborators or influencing business and public as opposed to concrete projects.

Below is an example of how the action plan is presented.

$ <$20k $$ $20-100k $$$ >$100k Adaption Mitigation Biodiversity and sequestration

#	ACTION	QLDC RESPONSIBLE TEAM(S)	PARTNERSHIP	YEAR OF DELIVERY			ESTIMATED COST (OVER 3 YEAR PERIOD)	GOAL
				2022-23	2023-24	2024-25		
We have our own house in order								
1.17	Convert the water heating at Alpine Aqualand, Wānaka Recreation Centre and Arrowtown Pools from LPG to cleaner energy sources.	Sport & Recreation					$$$	

Key Projects which may be eligible for GSS Loans

Community services and facilities (Total NZ$273m)

Wānaka Lakefront Development The objective is to provide continuous pedestrian access along the Lakefront – making strong connections with the town centre, reducing vehicle use in the town centre, hosting a range of activities and enhancing the ecology throughout, while enhancing the visibility of Kāi Tahu through lakefront design, reflecting the importance of the lake to mana whenua, the Wānaka community and to visitors.

- **Wānaka Lakefront Development Stage 5** | Yacht Club – (Year 1 2021-22)
- **Continuation of Te Ara Wānaka –** a shared pathway for pedestrians and cyclists, improving the narrow path linking to Eely Point Reserve – a popular picnic and swimming location, with a boat launching site and large parking area. An informal track continues around the point to Bremner Bay.
- **Wānaka Lakefront Development Stage 4** | Tapatapa Village Green + Town Plaza – (Year 4 & 5 2024-25) Town centre and Bullock creek, continuation of Te Ara Wānaka

Open spaces/Plaza ($6.4M years 4-8) The sites public realm network is prioritised as a quality pedestrian focused network of streets, lanes, atria and public spaces connected to the town centre.

Regenerate Coronet Forest as an exemplar of native biodiversity and a recreational hub. (2021-31 NZ$7.6m)

Transport (Total NZ$491m)

Wānaka Primary Cycle Network – The Integrated Transport Programme Business Case proposes improved walking and cycling provision and connectivity across the wider Wānaka area.

Wakatipu Active Travel Network – The Wakatipu Active Travel Single Stage Business Case proposes a network of walking and cycling paths across the Wakatipu area. The focus is on providing key connections between the urban areas across the basin including Fernhill, Arthurs Point, Frankton, Shotover Country, Lake Hayes Estate and Jacks Point. These areas will proceed to design stage whilst Waka Kotahi funded elements will proceed to construction

Investment in active transport networks for Wanaka has been accelerated, with the design and construction of the **'Wanaka Pool to School Active Travel'** route now scheduled for Year 2 ($2M) and Year 3 ($3M). This will be delivered on a non-subsidised (by Waka Kotahi NZTA) basis

QLDC is moving away from a purely land transport system and exploring and investing in alternative modes like water-based transport such as ferries, these water based public transport solutions will be in conjunction with Waka Kotahi and ORC.

Appendix 17 – Dunedin City Council Summary

Climate Emergency Declared: 25/06/2019

North Island/South Island: South

Council Type: Metro

Coastal/Non-Coastal: Coastal

Population (June 2021): 133,300

Member Type: N/A

Joined LGFA: N/A

LGFA Loans (NZ$m): N/A

District Emissions (tCO_2e Gross): 1,250,047 (Source – Otago Region Greenhouse Gas Profile, 2021, EY)

Corporate Emissions (tCO_2e Gross): 34,321 (Source – Toitu, 11.8% reduction achieved since 2013/14 base year)

Climate Change Documents Produced: St Clair-St Kilda Coastal Plan 2021

Below outlines the key decisions for the three beaches involved in the **St Clair-St Kilda Coastal Plan 2021.**

KEY DECISIONS FOR ST CLAIR TO ST KILDA

There are three key decisions to be made in the management of the St Clair to St Kilda coast. These relate to when the current management approaches for St Clair, Middle Beach and St Kilda need to change. At each trigger point shown by the circles in the figure below, there are a number of pathways or options that can be taken. The figure below shows the three key decisions for the coast.

We currently expect to make these decisions in the following order:

1

Middle Beach
Management/ removal of historic contamination

This order prioritises addressing the landfill at Kettle Park. This order could change, but is an honest reflection of a risk-based approach to prioritising action at this stage.

2

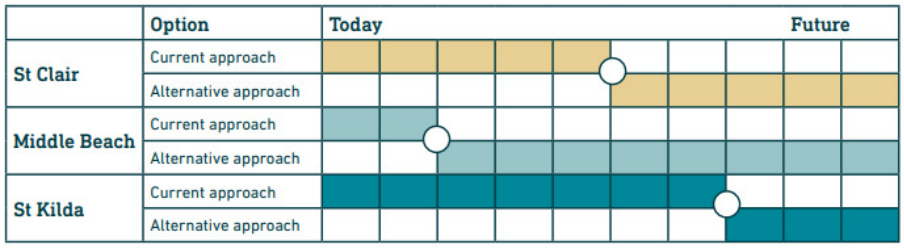
St Clair
Replacement/ alternative to existing seawall

In advance of these major changes, we will still look to do things at St Clair and St Kilda, such as access improvements, structural repairs and dune management – these actions are described in the Site-Specific Plans section of this plan. The priority area in terms of large-scale change is likely to be Middle Beach due to the current and growing risk that the landfill poses.

3

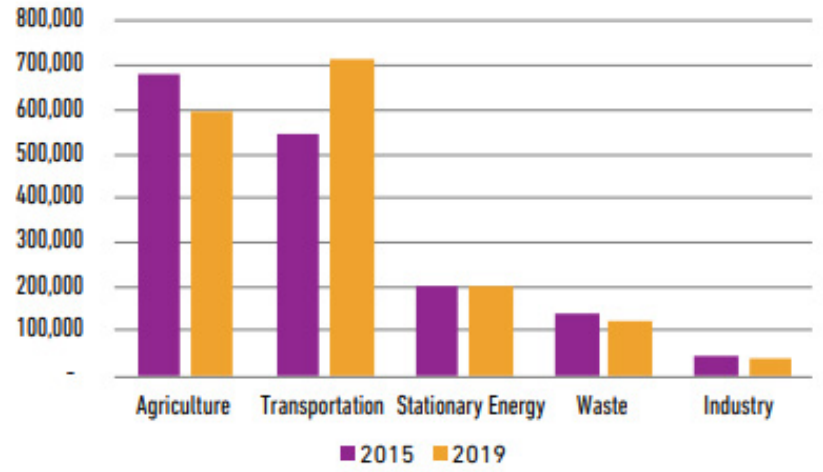
St Clair – St Kilda
Restoration of dunes and changes to John Wilson Ocean Drive

Work is planned to support in better understanding this risk and evaluating the options for management.



Below shows the change in emissions for Dunedin from 2015-2019 taken from the Long-Term Plan. Note the increase in transport emissions over the period.

Dunedin's emissions change 2015 to 2019



Source: DCC Aecom Covenant of Mayor reports 2015 and 2019

Key Projects which may be eligible for GSS Loans

Roading and Footpaths (NZ$439m)
Expenditure combines renewals, improved levels of service projects as well as those to meet additional demand (growth). There appears to be several projects that might qualify for the LGFA GSS Loan funding. These include Central City Upgrade (NZ$60m 2021-2031), City to Waterfront Connection (NZ$20m 2024-2028), Dunedin Urban Cycleways (NZ$22m 2021-2031). A number of **Shaping future Dunedin** projects may also be eligible (Princes St Bus Priority, Central City Parking Management, Mosgiel and Burnside Park and Ride, Central City Bike Hubs and Central City Cycle and Pedestrian improvements), these total NZ$35m between 2021 and 2028.

Water Supply (NZ$219m) Wastewater (NZ$202m) Stormwater (NZ$139m)
South Dunedin Flood Alleviation (2021-31 NZ$34m) and Port Chalmers Water Supply (2027-31 NZ$14m) are the most noteworthy projects within the Three Waters Capital Expenditure Programme.

Reserves and Recreational Facilities (NZ$113m)
Greenspace renewals (2021-31 NZ$6m) and St Clair – St Kilda Costal Plan (2021-2027 NZ$4m) may have potential for GSS Loans.