SOUTH WAIRARAPA DISTRICT COUNCIL
Kia Reretahi Tātau

PLANNING AND REGULATORY COMMITTEE

Agenda

NOTICE OF MEETING

An ordinary meeting will be held in the Supper Room, Waihinga Centre, Texas Street, Martinborough, on Wednesday 12 May 2021 at 12:30pm. The meeting will be held in public (except for any items specifically noted in the agenda as being for public exclusion).

MEMBERSHIP OF THE COMMITTEE

Councillors Ross Vickery (Chair), Pam Colenso, Rebecca Fox, Leigh Hay, Alistair Plimmer, Brenda West and Mayor Alex Beijen.

Open Section

A1.	Apologies	
A2.	Conflicts of interest	
A3.	Public participation *As per standing order 14.17 no debate or decisions will be made at the meeting on issues raised during the forum unless related to items already on the agenda.*	
A4.	Actions from public participation	
A5.	Extraordinary business	
A6.	Minutes for Confirmation: Planning and Regulatory Committee Minutes of 17 March 2021 ***Proposed Resolution**: That the minutes of the Planning and Regulatory Committee meeting held on 17 March 2021 are a true and correct record.*	Pages 1-3

B. Decision Reports

B1.	Climate Change Report	Pages 4-132

C. Information and Verbal Reports from Chief Executive and Staff

C1.	Planning and Environment Group Report	Pages 133- 145
C2.	Action Items Report	Pages 146-148

SOUTH WAIRARAPA DISTRICT COUNCIL
Kia Reretahi Tātau

PLANNING AND REGULATORY COMMITTEE
Minutes from 17 March 2021

Present:	Councillors Ross Vickery (Chair), Pam Colenso, Rebecca Fox, Leigh Hay, Alistair Plimmer, Brenda West, and Mayor Alex Beijen.
In Attendance:	Russell O'Leary (Group Manager Planning and Environment), Harry Wilson (Chief Executive Officer), Karen Yates (Policy and Planning Manager), Melanie Barthe (Climate Change Advisor), Rick Mead (Environmental Services Manager) and Suzanne Clark (Committee Advisor).
Conduct of Business:	The meeting was held in the Supper Room, Waihinga Centre, Texas Street, Martinborough and was conducted in public between 11:30am and 1:00pm.

Open Section

A1. Apologies

There were no apologies.

A2. Conflicts of Interest

There were no conflicts of interest.

A3. Public Participation

There was no public participation.

A4. Actions from Public Participation

There were no actions from public participation.

A5. Extraordinary Business

There was no extraordinary business.

A6. Minutes for Confirmation

PLANNING AND REGULATORY COMMITTEE RESOLVED (P&R2021/02) that the minutes of the Planning and Regulatory Committee meeting held on 16 December 2020 are a true and correct record.

(Moved Cr West/Seconded Mayor Beijen) Carried

B. Decision Reports

B1. Dog Control Fees 2021/22

Mr Mead answered members questions on the proposed dog fee increases, the new fees, the new microchipping service and dog registration.

Consideration for classification of pig dogs as working dogs in the next Control of Dogs Bylaw review and review of the funding makeup as part of the rating review was discussed.

PLANNING AND REGULATORY RESOLVED (P&R2021/03):

1. To receive the Dog Control Report 2021/22.

   (Moved Cr Fox/Seconded Cr Hay) Carried

2. To recommend to Council to adopt the proposed Dog Control Fees for 2021/22 and authorise Council officers to give public notice of fees.

   (Moved Cr Plimmer/Seconded Cr Fox) Carried

B2. Climate Change Commission Draft Advice

Ms Barthe noted that the submission expressed concerns of a rural district. Due to deadlines the submission would be adopted by Council in retrospect of lodging with the Climate Change Commission.

PLANNING AND REGULATORY RESOLVED (P&R2021/04):

1. To receive the Wellington Region Climate Change Working Group Report.

   (Moved Cr West/Seconded Mayor Beijen) Carried

2. To endorse the submission to the He Pou a Rangi Climate Change Commission.

3. To recommend to Council that the submission be approved.

   (Moved Mayor Beijen/Seconded Cr Fox) Carried

C. Information Reports

C1. Planning and Environment Group Report

Members discussed progress on the District Plan review and a mechanism to ensure councillor input, the dog pound tender, progress on planning projects, and key performance indicator measures.

PLANNING AND REGULATORY RESOLVED (P&R2021/05):

1. To receive the Planning and Environment Report.

   (Moved Cr Hay/Seconded Cr Colenso) Carried

2. Action 66: Present a solution that will bring a resolution to the dog pound situation at the earliest opportunity; R O'Leary
3. Action 67: Provide a regular report to Council meetings on the Wairarapa Combined District Plan development; Cr Plimmer/Cr Jephson

C2. Action Items Report

PLANNING AND REGULATORY RESOLVED (P&R2021/06) to receive the Action Items Report.

(Moved Cr West/Seconded Cr Fox) Carried

C3. Alcohol Control Bylaw Review Report

PLANNING AND REGULATORY RESOLVED (P&R2021/07):

1. To receive the Alcohol Control Bylaw Review Report.

   (Moved Cr Plimmer/Seconded Cr Hay) Carried

2. To note that officers will commence a review of the Featherston Liquor Control Bylaw 2010 and the South Wairarapa Liquor Control bylaw 2011 and will report back to the Committee on the outcome of the review and any recommendations regarding a replacement alcohol control bylaw.

   (Moved Cr Colenso/Seconded Cr Plimmer) Carried

Confirmed as a true and correct record

……..(Chair)

……..(Date)

PLANNING AND REGULATORY COMMITTEE

12 MAY 2021

AGENDA ITEM B1

CLIMATE CHANGE

Purpose of Report

To inform the Committee of the revised version of the Ruamāhanga Strategy and Implementation Plan and the 2020 Greenhouse Gas Inventory Report for SWDC.

Recommendations

Officers recommend that the Committee:

1. *Receives the revised version of the Ruamāhanga (Climate Change) Strategy and Implementation Plan.*
2. *Receives the 2020 Greenhouse Gas Inventory Report for SWDC.*
3. *Recommends to Council to adopt the revised version of the Ruamāhanga Strategy and Implementation Plan.*

1. Executive Summary

The Ruamāhanga (Climate Change) Strategy was due for its first review. The Strategy has been revised and is now presented to the Committee for consideration and recommendation to Council to adopt.

The 2020 Greenhouse Gas Inventory Report for SWDC (Corporate emissions) has been finalised and is presented to the Committee for information.

2. Background

The first version of the Ruamāhanga Strategy was adopted by the Council in 2020.

Every year, SWDC releases a greenhouse gas inventory of its corporate emissions. The 2020 report presents the results of this inventory.

3. Discussion

3.1 Ruamāhanga (Climate Change) Strategy

The Ruamāhanga (Climate Change) Strategy (the Strategy) has been developed in order to reduce the carbon footprint of South Wairarapa District Council and Carterton District Council.

The Strategy has been reviewed and the following changes are proposed:

- There are now two volumes: the Strategy and the Implementation Plan. This simplifies the reading of the documents.
- The socioeconomic context has been updated with the latest data available.
- The climate change projections have been updated with data provided by Greater Wellington Regional Council. These projections are consistent across all councils in the Wellington region and across SWDC.
- The likely impacts of climate change for the Wairarapa have been updated.
- A new section has been added which explains the Council's achievements since the adoption of the Strategy.
- The Implementation Plan has been updated.

3.2 2020 Greenhouse Gas Inventory Report for SWDC

The report for the SWDC's Greenhouse Gas Inventory – 2020 has been finalised in accordance with the requirements of the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and ISO 14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals.

In 2020, SWDC emitted 243.17 tCO2e (-68.17% compare to 2018):

Emissions by business units

	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Changes
Corporate Services	34.55	43.20	30.85	-10.70%
Community Services	20.98	25.60	25.79	+22.90%
Operations	55.19	44.99	35.82	-35.10%
Water Services	93.16	81.43	97.99	+5.18%
Parks and reserves	31.40	30.85	39.15	+24.68%
Regulatory	12.91	12.72	13.56	+5.04%
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	-2.03%

Emissions by scope

	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Changes
Scope 1	60.97	67.08	50.66	-16.94%
Scope 2	82.35	77.16	85.15	+3.42%
Scope 3	104.88	94.56	107.35	+2.37%
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	-2.03%

Emissions by sources

	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Changes
Electricity	89.41	83.77	92.46	+3.42%
Transport	62.90	70.86	50.66	-19.48%
Wastewater	47.12	35.39	45.95	-2.49%
Water supply	46.04	46.05	52.04	+13.04%
Waste	2.73	2.73	2.07	-24.16%
Refrigerant	0.00	0.00	0.00	0%
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	-2.03%

Biogenic methane emissions

	t CH_4 - 2018	t CH_4 - 2019	t CH_4 - 2020	Changes
Waste	2.07	2.07	2.07	0%
Wastewater	23.56	17.69	22.97	-2.49%
TOTAL	**25.63**	**19.77**	**25.05**	-2.29%

In 2020, 38% of SWDC's emissions come from electricity use, followed by water supply and transport (21% for both) and wastewater treatment (19%). The waste production and refrigerant leakage account for a very small part of the emissions.

Note #1: The emissions factors provided by the Ministry for the Environment were updated in 2020. Therefore, emissions for 2018 and 2019 were updated and are now based on the latest emissions factors available.

Note #2: The district was in lock down level 3 and 4 between the 23rd of March 2020 and 14th May 2020 due to Covid-19 pandemic.

4. Conclusion

It is recommended that the Planning and Regulatory Committee receives the revised Ruamāhanga (Climate Change) Strategy and Implementation Plan and recommends the Council adopts the revised Strategy.

It is recommended that the Planning and Regulatory Committee receives the 2020 Greenhouse Gas Inventory Report for SWDC.

5. Appendices

Appendix 1 – Revised Ruamāhanga (Climate Change) Strategy

Appendix 2 – 2020 Greenhouse Gas Inventory Report for SWDC

Contact Officer: Melanie Barthe, Climate Change Advisor
Reviewed By: Karen Yates, Policy and Governance Manager

Appendix 1 – Revised Ruamāhanga (Climate Change) Strategy and Implementation Plan

MAY 21

RUAMĀHANGA STRATEGY

VOLUME 1: CLIMATE CHANGE STRATEGY

TE KAUNIHERA-Ā-ROHE O TARATAHI
CARTERTON
DISTRICT COUNCIL

SOUTH WAIRARAPA
DISTRICT COUNCIL
Kia Reretahi Tātau

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Authors

	Established by	Verified by	
Name	Mélanie BARTHE	Glenda Seville	Karen Yates
Title	Climate Change Advisor	Community Service Manager	Policy and Governance Manager
Date	04/05/2021		
Signature			

Document review

Version	Date	Review details
2020	29/05/2020	Final version #1
2021_A	04/05/2021	Draft reviewed strategy

Disclaimer

The information in this strategy is true and complete to the best of our knowledge. All recommendations are made without guarantee on the part of the author or South Wairarapa District Council and Carterton District Council. The author and publisher disclaim any liability in connection with the use of this information.

1 Glossary

Definitions

Anthropogenic greenhouse gases: Greenhouse gases that are emitted from human activities

Biogenic Methane: Methane produced from biological (plant and animal) sources.

Carbon reservoirs: they are features that stores carbon (such as a tree).

Carbon sequestration: it is the process of removing carbon from the atmosphere and storing it. Trees are a great way to sequestered carbon.

CO_2e: Carbon Dioxide Equivalent – all greenhouse gases have a different GWP (Global Warming Potential). Therefore, all the greenhouse gases emitted can be summarised by using CO_2e. For example, methane has a GWP of 25, meaning that 1 tonne of methane will cause the same amount of warming as 25 tonnes of carbon dioxide: 1t CH4 = 25 tCO_2e.

Evapotranspiration: This is the sum of the plants' transpiration and the ground's evaporation.

Greenhouse effect: It is a process that occurs when gases (greenhouse gases) in Earth's atmosphere trap the Sun's heat, and increase radiative forcing. This process makes Earth much warmer than it would be without an atmosphere. The greenhouse effect is one of the things that makes Earth a comfortable place to live.

Greenhouse gases: they are the gases that increase the greenhouse effect. More than forty gases are greenhouse gases, but the most important ones are Water vapour (H_2O) Carbon Dioxide (CO_2), Methane (CH_4), Ozon (O_3), Nitrous Oxide (N_2O) and fluorinated gases (HFC, PFC, SF_6).

Radiative forcing: It is the difference between the solar energy received by the planet and the energy reflected back to space. A positive radiative forcing means that Earth receives more energy than what is reflected. Therefore, the planet warms. The higher the radiative forcing is, the warmer the planet becomes. A negative radiative forcing means that Earth reflects more energy than what is received. Therefore, the planet cools down.

Sustainability: It is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs (environmental protection, social and economic development) - Brundtland Report, 1987

Acronyms

CDC: Carterton District Council

CD: Carton District

CO_2: Carbon dioxide

EV: Electric Vehicles

GDP: Gross Domestic Product

GHG: greenhouse Gas

GPC: Global Protocol for Community Scale Greenhouse Gas Emissions Inventory

GWP: Global Warming Potential

GWRC: Greater Wellington Regional Council

ICE: Internal Combustion Engine

IPCC: Intergovernmental Panel on Climate Change

IPPU: Industrial Processes and Product Use

NIWA: National Institute of Water and Atmospheric research

RCP: Representative Concentration Pathways

UNFCCC: United Nation Framework Convention on Climate Change

SWDC: South Wairarapa District Council

SWD: South Wairarapa District

TA: Territorials Authorities

WIP: Work In Progress

WRCCF: Wellington Region Climate Change Forum

WRCCWG: Wellington Region Climate Change Working Group

WREVWP: Wellington Region Electric Vehicle Working Party

Te Reo

Hawaiki: Ancient homeland - the places from which Māori migrated to Aotearoa/New Zealand.

Iwi: Extended kinship group, tribe, nation, people, nationality, race - often refers to a large group of people descended from a common ancestor and associated with a distinct territory. Ngāti Kahungunu ki Wairarapa and Rangitāne o Wairarapa are the two iwis in Wairarapa.

Kai moana: Seafood

Kaitiaki: Guardians and protectors of places

Kaitiakitanga: the responsibility to care for the physical, ecological and spiritual well-being of a place or resource to ensure harmony within the environment and protection against elements that cause permanent imbalances.

Kokopu: Whitebait

Ngā atua: Deity

Pākehā: Person from another country.

Piharau: Lamprey

Tangata whenua:

Taniwha: Guardians and protectors of places. Rākai Uru is the taniwha who is the caretaker of the lake Wairarapa. He takes the form of a large tōtara log.

Taonga: Treasure

Tapu: Sacred

Tuna: Eels

Whaitua: Designated space or catchment.

2 Introduction

Climate Change is the biggest environmental challenge we are facing.

As Wairarapa is already experiencing the effect of Climate Change, especially temperature increase, droughts, sea level rise and erosion, Carterton District Council (CDC) and South Wairarapa District Council (SWDC) are committed to doing their part in mitigating Climate Change (reducing the greenhouse gas emissions).

In 2015, the Mayors signed the New Zealand Local Government Leaders' Climate Change Declaration and committed to:

- Develop and implement ambitious action plans that reduce greenhouse gas emissions and support resilience within our own councils and for our local communities. These plans will:
    - promote walking, cycling, public transport and other low carbon transport options;
    - work to improve the resource efficiency and health of homes, businesses and infrastructure in our district;
    - support the use of renewable energy and uptake of electric vehicles;
- Work with our communities to understand, prepare for and respond to the physical impacts of climate change;
- Work with central government to deliver on national emission reduction targets and support resilience in our communities.

The Ruamāhanga Strategy has been developed to reduce the carbon footprint of Carterton District Council and South Wairarapa District Council. This strategy was adopted in February 2020 for CDC and March 2020 for SWDC.

This strategy has two volumes. The first volume:

- presents the districts (socio-economic, environmental and cultural contexts);
- explains what Climate Change is and what may be the impact for Wairarapa;
- presents the greenhouse gas inventory for the Wellington Region (lead by Greater Wellington);
- presents the inventories of greenhouse gas emissions from Wairarapa and from council's activities for each Councils;
- sets up targets.

The second volume presents:

- our achievements since the strategy was adopted in 2020;
- An updated action plan for the coming years (2020-2023 and 2023-2033).

Adoption	CDC: February 2020 SWDC: March 2020
1st review	March 2021
Next review due	2024

3 Executive summary

Climate Change is the biggest environmental challenge we are facing.

As Wairarapa is already experiencing the effect of Climate Change, especially sea level rise and erosion, Carterton District Council (CDC) and South Wairarapa District Council (SWDC) are committed to doing their part in mitigating Climate Change (reducing the greenhouse gas emissions).

The Ruamāhanga Strategy has been developed to reduce the carbon footprint of Carterton District Council and South Wairarapa District Council.

Socio-economic context

With a population of 19,773 in 2018, South Wairarapa and Carterton Districts are attractive, and the population had a +23.6% growth between 2006 and 2018 (around +1.8% per year). South Wairarapa and Carterton Districts are rural districts with a density of 5.4 pers/km^2.

In 2018, 37.1% of the households in the districts own one or less motor vehicles. 18.1% of the households in the district own 3 or more motor vehicles.

In 2018, the main fuel type for the district's households was wood (74.7%), followed by electricity (59.9%). Bottled gas and coal respectively had a 43.6% and 73.2% decrease between 2013 and 2018.

In 2018, unemployment in South Wairarapa and Carterton Districts was lower than in New Zealand (3.0% compared to 4.0%). The main industries are 'agriculture, forestry and fishing' (15.6% of the workforce) followed by 'professional, scientific and technical services' (9.2% of the workforce).

In 2018, 75.3% of the residents from South Wairarapa and Carterton Districts worked within the districts. 61.7% of the residents drove a car, truck or van to travel to work. Public transport (trains and buses) are used by 9.2% of the residents to go to work and 5.3% of the residents walked, jogged or biked.

Over 96% of the residents of South Wairarapa and Carterton Districts live and work within the districts.

Environmental context

Carterton and South Wairarapa Districts have dry and warm summers and wet and mild winters.

The main features in the landscape are the Tararua range in the North-West, the Aorangi range in the South, the Ruamāhanga plains and the rugged East coast.

The districts are mainly covered by farmlands (55.7%, including 6.7% of planted forests), closely followed by natural areas (43.8%, including 35.7% of natural forests). The farmlands and the four settlements of Featherston, Greytown, Martinborough and Carterton are mainly located in the Wairarapa plains and the Eastern Wairarapa. The Tararua Range and the Aorangi Range are the main natural areas of the districts.

Carterton and South Wairarapa Districts have a 142-kilometre shoreline. The coast has the settlements of Ngawi, Tora and Flat Point, but is mainly composed of rural and natural areas.

Historical and cultural context

The Wairarapa has a strong mana whenua history with many important Māori heritage sites. The cultural landscape includes those places associated with ngā atua (deities), taniwha and kaitiaki (guardians and protectors of places), as well as places discovered, visited and or named by ancestors and explorers.

What is Climate Change and its impact for Wairarapa

According to the UNFCCC (United Nation Framework Convention on Climate Change), Climate Change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

The IPCC (Intergovernmental Panel on Climate Change) set up different scenarios depending on the greenhouse gas emissions. RCP2.6 is a low emissions scenario, RCP4.5 is a low to moderate emissions scenario, RCP6.0 is a moderate emission scenario and RCP8.5 is a high emissions scenario.

Globally, surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent. The ocean will continue to warm and acidify, and global mean sea level to rise.

Greater Wellington Regional Council provides climate change assumptions based on the RCP4.5 and RCP8.5. These assumptions were used to understand the likely impacts of climate change in Wairarapa.

The expected direct impacts of climate change (such as increased temperature, increased flood intensity and sea level rise) impact the communities living in Carterton and South Wairarapa District. The key impacts on the communities are:

- Impact on the environmental well-being (biodiversity losses, increased pests and rodents, increased coastal inundation…);
- Impact on the social well-being (increased risk on the human health and human life, increased pressure on drinking water quality and availability…);
- Impact on the economic well-being (reduced productivity, increased damage to properties, increased pressure on insurances and mortgages…);
- Impact on the cultural well-being (loss of cultural identity, loss of important cultural activities, loss of taonga species…).

Wairarapa Combined District greenhouse gas inventory

In 2018/19 reporting year, the Wairarapa Combined District emitted gross 1,734,320 tCO_2e and net 353,460 tCO_2e.

The biggest sector is agriculture (77.8%), followed by transport (15.7%). Stationary energy (3.4%), Waste (2.3%) and Industry (0.8%) are minor sources of emissions in the Wairarapa.

Total gross emissions fell by 7%, from 1,871,095 tCO_2e in 2001 to 1,734,320 tCO_2e in 2019. Reductions in emissions from stationary energy, waste and agriculture are responsible for the fall in total gross emissions. As the area's population has risen (by 22%, from 39,090 to 47,590), per capita gross emissions have reduced by 24% from 47.9 tCO_2e in 2001 to 36.4 tCO_2e in 2019.

Net forestry sequestration reduced by 30% between 2001 and 2019 causing net emissions to increase from net-negative total emissions (-91,460 tCO_2e in 2001) to net-positive emissions (353,460 tCO_2e in 2019).

Carterton District Council greenhouse gas inventories

Carterton District Council had a gross emission of 372.91 tCO_2e in 2018 (base year) and 275.99 tCO_2e in 2020 (-26%). The biggest source is transport (50%) followed by electricity (21%, wastewater treatment (19%) and water supply (9%). Waste and refrigerant are minor sources of greenhouse gas.

Carterton District Council had a net emission of -6,864.48 tCO_2e in 2018 (base year) and -6,961.40 tCO_2e in 2020 (+1.41%).

Biogenic methane emissions increased by 2.73% between 2018 and 2020.

South Wairarapa District Council greenhouse gas inventories

South Wairarapa District Council had a gross emission of 248.20 tCO_2e in 2018 (base year) and 243.17 tCO_2e in 2020 (-2%). The biggest source is the electricity (38%) followed by water supply (21%), transport (21%) and wastewater treatment (19%). Waste and refrigerant are minor sources of greenhouse gas.

South Wairarapa District Council had a net emission of 2,687.68 tCO_2e in 2018 (base year) and 665.70 tCO_2e in 2020 (-795%).

Biogenic methane emissions decreased by 2.29% between 2018 and 2020.

Targets

Carbon targets have been set up. They are ambitious but also, achievable and realistic. Being small councils, we must be aware of our limits.

During the period 2020 – 2030, Carterton and South Wairarapa District Councils aim to:

- Reduce their gross greenhouse gas emissions;
- Increase the reservoirs, therefore the amount of greenhouse gas sequestered every year;
- Reduce biogenic methane by 10% below 2017 levels.

4 Socioeconomic context

With a population of 19,773 in 2018, South Wairarapa and Carterton Districts are attractive, and the population had a +23.6% growth between 2006 and 2018 (around +1.8% per year). South Wairarapa and Carterton Districts are rural districts with a density of 5.4 pers/km^2.

In 2018, 37.1% of the households in the districts own one or less motor vehicles. 18.1% of the households in the district own 3 or more motor vehicles.

In 2018, the main fuel type for the district's households was wood (74.7%), followed by electricity (59.9%). Bottled gas and coal respectively had a 43.6% and 73.2% decrease between 2013 and 2018.

In 2018, unemployment in South Wairarapa and Carterton Districts was lower than in New Zealand (3.0% compared to 4.0%). The main industries are 'agriculture, forestry and fishing' (15.6% of the workforce) followed by 'professional, scientific and technical services' (9.2% of the workforce).

In 2018, 75.3% of the residents from South Wairarapa and Carterton Districts worked within the districts. 61.7% of the residents drove a car, truck or van to travel to work. Public transport (trains and buses) are used by 9.2% of the residents to go to work and 5.3% of the residents walked, jogged or biked.

Over 96% of the residents of South Wairarapa and Carterton Districts live and work within the districts.

4.1 Carterton District (CD)

4.1.1 Population

	2006	2013	2018	Change between 2006 - 2018	2050 (forecast)	Change between 2018 - 2050
Population	7,101	8,235	9,198	+29.5%	13,068	+42.1%

Source: Infometrics, 2021

Table 1: CD's population

	Population 2018	Land area	Density (pers/km^2)
Population	9,198	1,180 km^2	7.79

Source: Infometrics, 2021

Table 2: CD's population density in 2018

Between 2006 and 2018 Carterton District's population increased quickly (average: 2.2% per year) and passed from 7,101 in 2006 to 9,198 in 2018. The forecast shows that the population will keep increasing even though it is slower (average: 1.1% per year). The population in 2050 is estimated to be 13,068.

CD's density is low (7.79 persons per km^2).

4.1.2 Dwellings

4.1.2.1 Dwellings

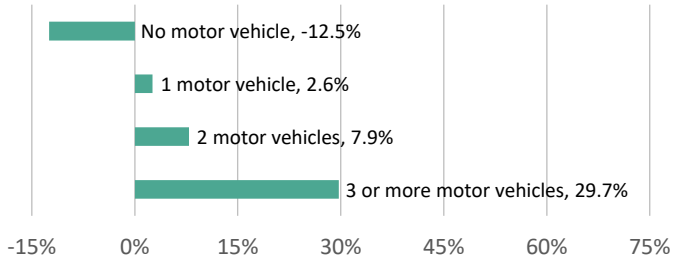
	2006	2013	2018	Change between 2013 – 2018
Dwellings	2,784	3,321	3,657	+10.1%

Source: Infometrics, 2021

Table 3: CD's dwellings

CD had a 10.1% increase in dwellings between 2013 and 2018.

4.1.2.2 Car ownership

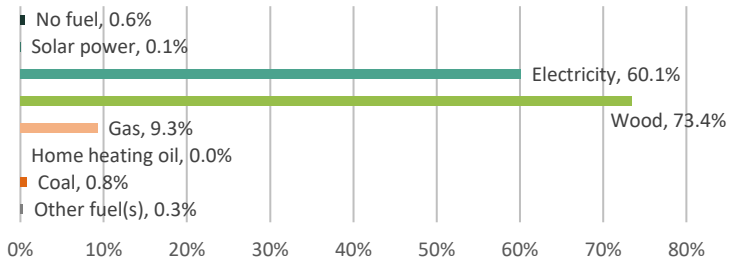


Source: Infometrics, 2021

Figure 1: CD's households car ownership change between 2013 and 2018

Households without motor vehicles decreased by 12.5% between 2013 and 2018 while households with at least one motor vehicle increased. The biggest increase is for the households with 3 or more vehicle (+29.7%). Because CD is a rural district and due to limited public transport, people rely on their own vehicles.

4.1.2.3 Household fuel type



Source: Infometrics, 2021

Figure 2: CD's households fuel type in 2018

Wood (73.4% of the households) and electricity (60.1% of the households) are the two main fuels for the households in CD in 2018.

4.1.3 Employment

4.1.3.1 Employment status

	2006		2013		2018		Change between 2013 – 2018
	Number	%	Number	%	Number	%	
Employed full-time	2,733	48.8%	3,015	74.2%	3,492	46.8%	+15.8%
Employed part-time	885	15.8%	1,047	25.8%	1,242	16.7%	+18.6%
Unemployed	129	2.3%	243	6.0%	240	3.2%	-1.2%
Not in labour force	1,731	30.9%	2,070	51.0%	2,484	33.3%	+20.0%
Unidentified	129	2.3%	222	5.5%	0	0.0%	-100.0%
	5,604		**4,062**		**7,458**		

Source: Infometrics, 2021

Table 4: CD's residents employment status

The unemployment rate in 2018 for CD was below the national rate of 4.0%.

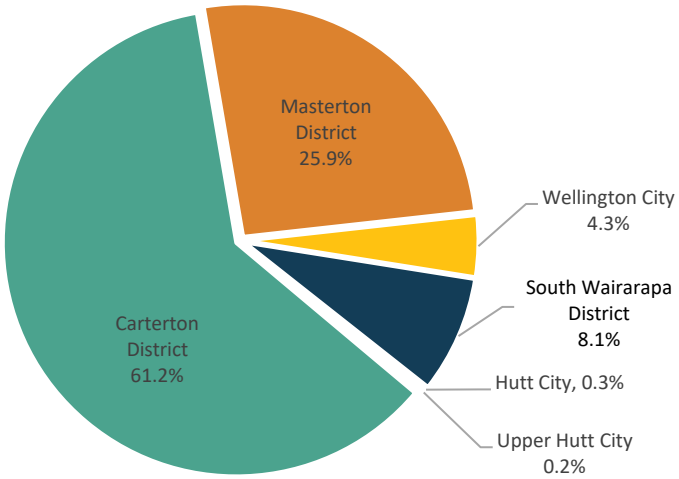
4.1.3.2 Workforce profiles

Source: NZ Stat, 2021

Figure 3: CD's workforce industry sector of employment in 2018

Agriculture, forestry and fishing is the biggest sector and represents almost 14% of the workforce profile. Manufacturing is the second biggest sector with over 10% of the workforce.

4.1.3.3 Carterton's residents place of work

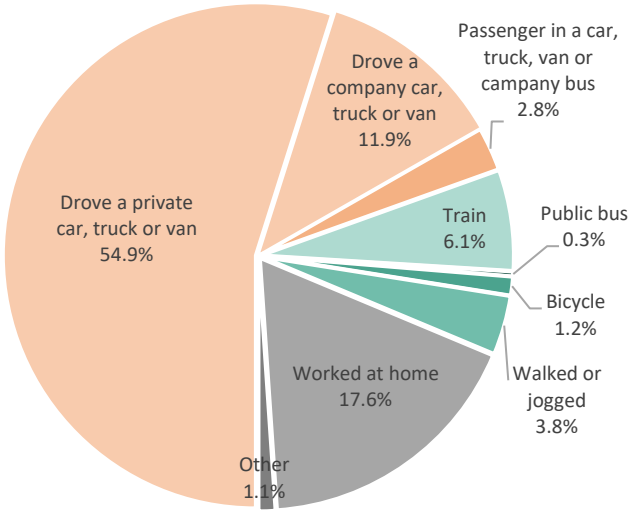


Source: Commuter Waka App, 2021

Figure 4: CD's residents place of work in 2018

Over 95% of the CD's residents works in Wairarapa (61.2% in CD, 25.9% in Masterton District and 8.1% in South Wairarapa District). 4.3% of the CD residents work in Wellington City. A small number of residents works in Hutt City and Upper Hutt City.

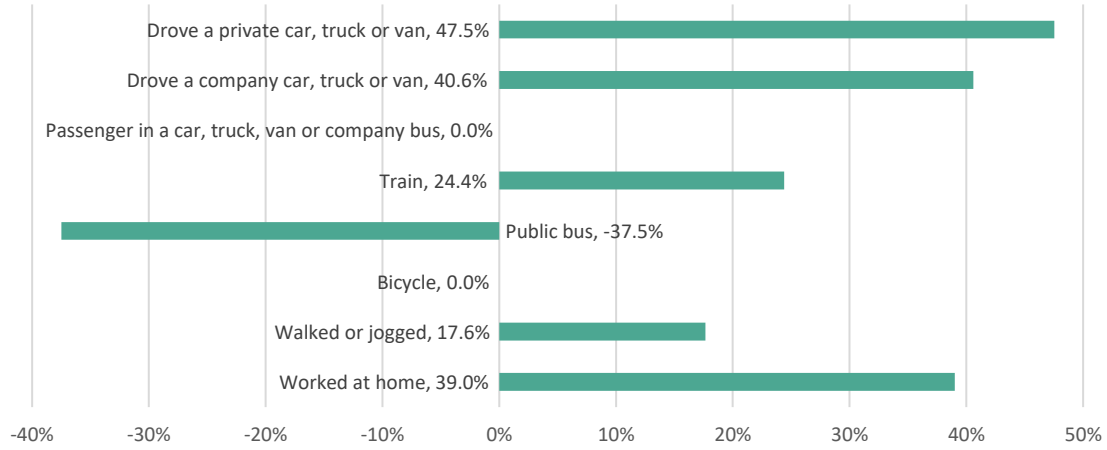
4.1.3.4 Method of travel to work



Source: Infometrics, 2021

Figure 5: CD's residents' method of travel to work in 2018

Almost 70% of the CD's residents use a high carbon emission way of transport to work (drive a car, truck or van or be a passenger). 11.8% of residents use a low carbon way of transport to go to work (train, walk or jogged, bicycle, public bus).

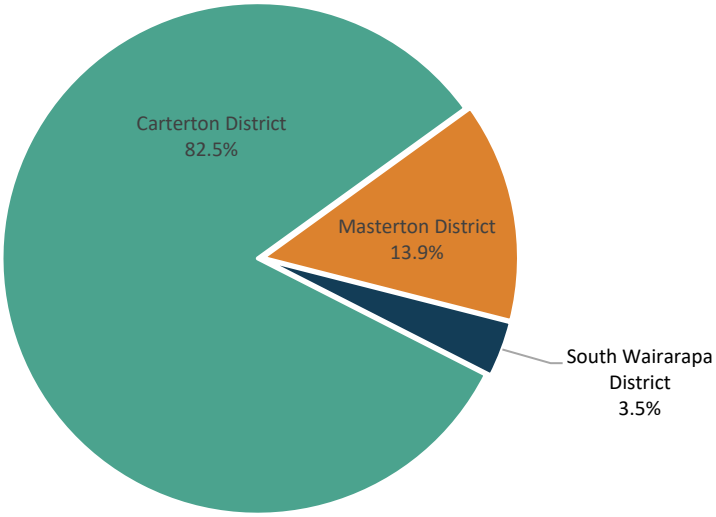


Source: Infometrics, 2021

Figure 6: CD's residents' method of travel to work change between 2013 and 2018

The low carbon way of travel (train (+24.4%) and walked or jogged (+17.6%)) increased between 2013 and 2018. However, the bicycle users stayed stable and the public bus users decreased (-37.5%). Moreover, the high carbon emission way of travel increased (+47.5% for the private car, truck or van users and +40.6% for the company car, truck or van users).

4.1.3.5 Carterton's workers place of residence



Source: Commuter Waka App, 2021

Figure 7: CD's workers place of residence in 2018

Carterton's workers live for almost 83% in Carterton District, almost 14% in Masterton District and 3.5% in South Wairarapa District.

4.2 South Wairarapa District (SWD)

4.2.1 Population

	2006	2013	2018	Change between 2006 - 2018	2050 (forecast)	Change between 2018 - 2050
Population	8,892	9,528	10,575	+18.9%	14,098	+33.3%
Featherston	*2,343*	*2,250*	*2,487*	*+6.1%*	*3,469*	*+39.5%*
Greytown	*2,103*	*2,238*	*2,466*	*+17.3%*	*3,642*	*+47.7%*
Martinborough	*1,329*	*1,473*	*1,767*	*+33.0%*	*2,493*	*+41.1%*
Rural areas	*3,114*	*3,570*	*3,852*	*+23.7%*	*4.494*	*+16.7%*

Source: Infometrics, 2021

Table 5: SWD's population

	Population 2018	Land area	Density (pers/km^2)
Population	10,575	2,457 km^2	4.3

Source: Infometrics, 2021

Table 6: SWD's population density in 2018

Between 2006 and 2018 South Wairarapa District's population increased quickly (average: 1.5% per year) and went from 8,892 in 2006 to 10,575 in 2018. The forecast shows that the population will keep increasing even though it is slower (average: 1% per year). The population in 2050 is estimated to be 14,098.

SWD's density is very low (4.3 persons per km^2).

4.2.2 Dwellings

4.2.2.1 Dwellings

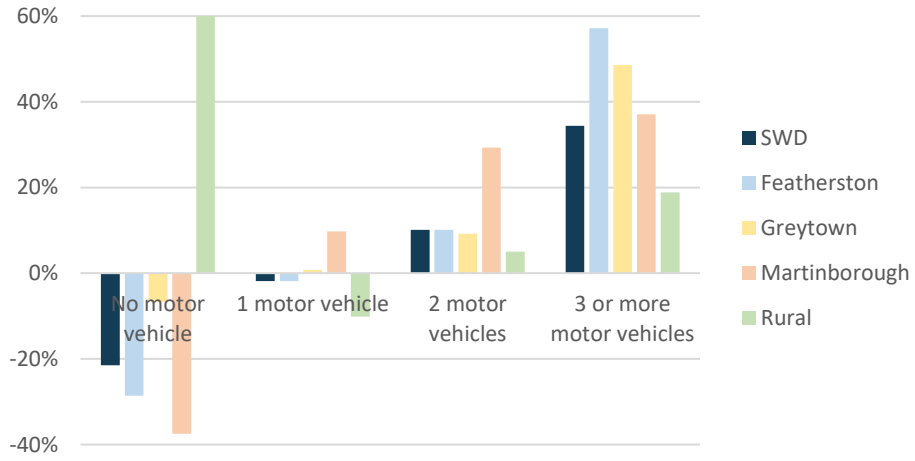
	2006	2013	2018	Change between 2013 – 2018
SWD	3,678	3,984	4,395	+10.3%
Featherston	969	996	1,035	+3.9%
Greytown	879	942	1,059	+12.4%
Martinborough	585	639	759	+18.8%
Rural areas	1,242	1,407	1,545	+9.8%

Source: Infometrics, 2021

Table 7: SWD's dwellings

SWD had an 10.3% increase in dwellings between 2013 and 2018. The biggest increase happened in Martinborough (+18.8%), followed by Greytown (+12.4%).

4.2.2.2 Car ownership

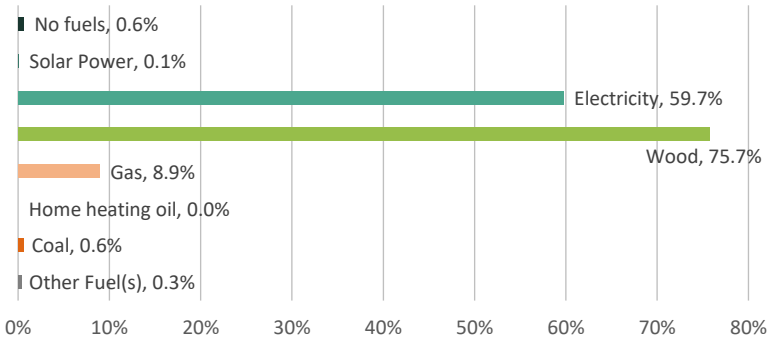


Source: NZ Stat, 2021

Figure 8: Car ownership change between 2013 and 2018

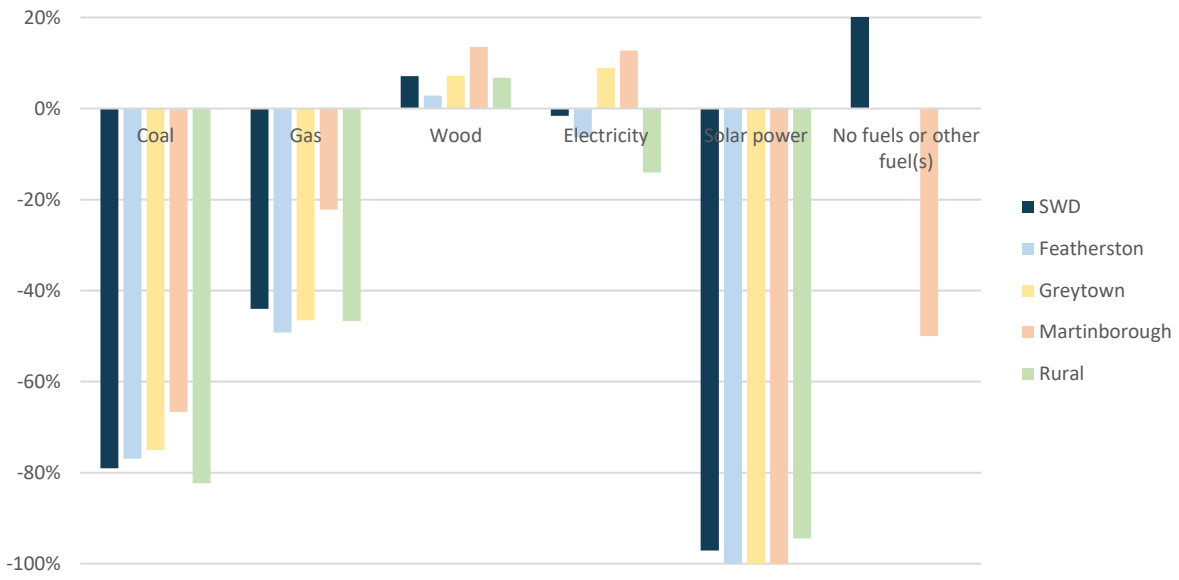
The percentage of households with 3 or more motor vehicles increased by 34.4% between 2013 and 2018 and the number of households without a motor vehicle decreased by 21.5%. This increase of households with 3 or more motor vehicles can be explained by the fact that SWD is a rural district and people living there rely on their vehicles.

4.2.2.3 *Household fuel type*



Source: Infometrics, 2021

Figure 9: SWD's households fuel type in 2018



Source: Infometrics, 2021

Figure 10: Households fuel type change between 2013 and 2018

The fuel type which are high greenhouse gas emitters such as coal and gas are decreasing. The use of wood increased everywhere in the district.

4.2.3 Employment

4.2.3.1 Employment status

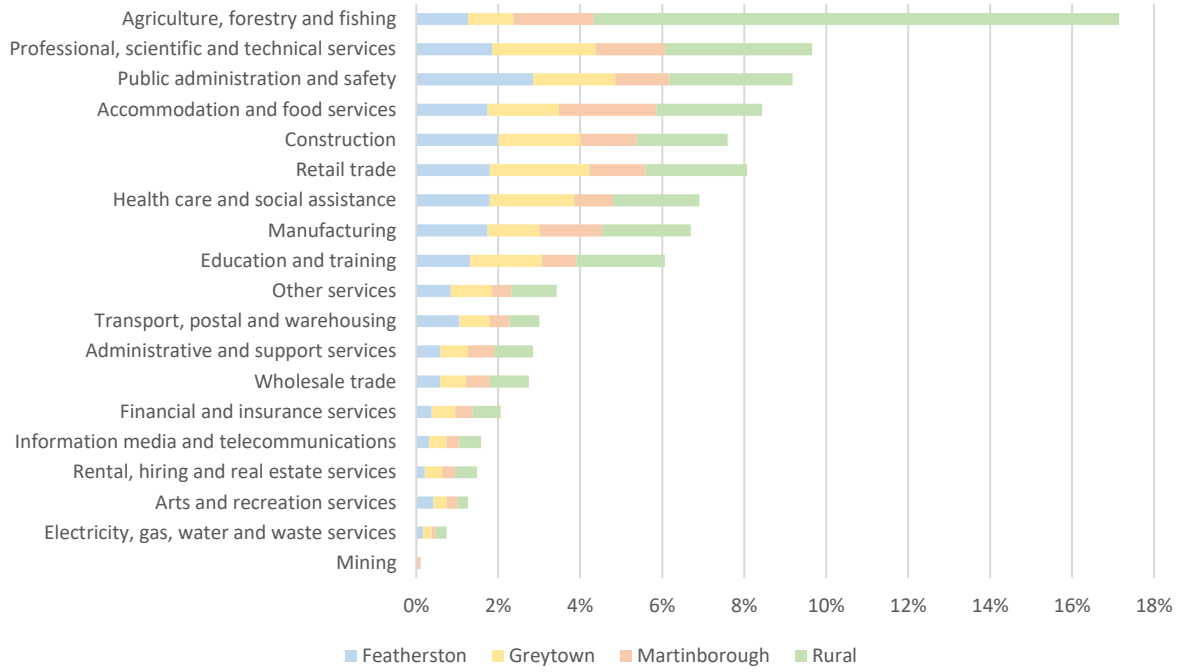
	2006		2013		2018		Change between 2013 – 2018
	Number	%	Number	%	Number	%	
SWD							
Employed full-time	3,483	49.5%	3,225	42.0%	4,239	49.0%	+31.4%
Employed part-time	1,062	15.1%	1,260	16.4%	1,446	16.7%	+14.8%
Unemployed	141	2.0%	261	3.4%	237	2.7%	-9.2%
Not in labour force	2,109	30.0%	2,343	30.5%	2,736	31.6%	+16.8%
Unidentified	246	3.5%	285	3.7%	0	0.0%	-100.0%
	7,041		7,674		8,658		
Featherston							
Employed full-time	813	45.0%	765	41.9%	924	45.8%	+20.8%
Employed part-time	225	12.5%	237	13.0%	267	13.2%	+12.7%
Unemployed	63	3.5%	117	6.4%	108	5.3%	-7.7%
Not in labour force	624	34.6%	651	35.6%	720	35.7%	+10.6%
Unidentified	75	4.2%	60	3.3%	0	0.0%	-100.0%
	1,806		1,827		2,019		
Greytown							
Employed full-time	747	43.7%	741	40.6%	921	45.0%	+24.3%
Employed part-time	279	16.3%	303	16.6%	330	16.1%	+8.9%
Unemployed	30	1.8%	54	3.0%	42	2.1%	-22.2%
Not in labour force	630	36.8%	684	37.5%	747	36.5%	+9.2%
Unidentified	27	1.6%	51	2.8%	0	0.0%	-100.0%
	1,710		1,824		2,046		
Martinborough							
Employed full-time	525	47.7%	555	45.8%	723	49.0%	+30.3%
Employed part-time	153	13.9%	204	16.8%	246	16.7%	+20.6%
Unemployed	18	1.6%	33	2.7%	30	2.0%	-9.1%
Not in labour force	354	32.2%	381	31.4%	480	32.5%	+26.0%
Unidentified	45	4.1%	39	3.2%	0	0.0%	-100.0%
	1,101		1,212		1,476		
Rural areas							
Employed full-time	1,401	57.6%	1,470	52.4%	1,671	53.6%	+13.7%
Employed part-time	402	16.5%	516	18.4%	603	19.3%	+16.9%
Unemployed	27	1.1%	57	2.0%	57	1.8%	0.0%
Not in labour force	495	20.3%	627	22.4%	789	25.3%	+25.8%
Unidentified	99	4.1%	135	4.8%	0	0.0%	-100.0%
	2,433		2,805		3,120		

Source: Infometrics, 2021

Table 8: SWD's resident employment status

The unemployment rate in SWD is below the national rate (4.0% in 2018). However, Featherston is above the national rate (5.3% unemployment) but this rate has decreased since 2013. The district's employment increased a lot since 2013 (+31.4% for full-time employment and +14.8% for part-time employment), especially in Martinborough.

4.2.3.2 Workforce profiles

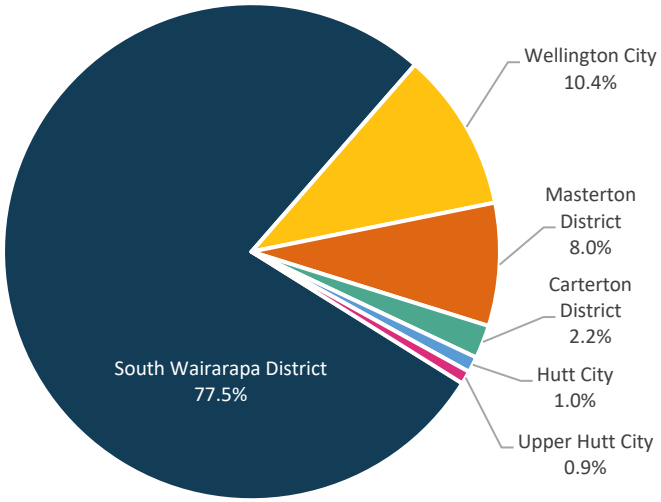


Source: NZ Stat, 2021

Figure 11: SWD's workforce industry sector of employment in 2018

Agriculture, forestry and fishing is the biggest sector and represents 17.2% of the workforce profile.

4.2.3.3 South Wairarapa's residents place of work

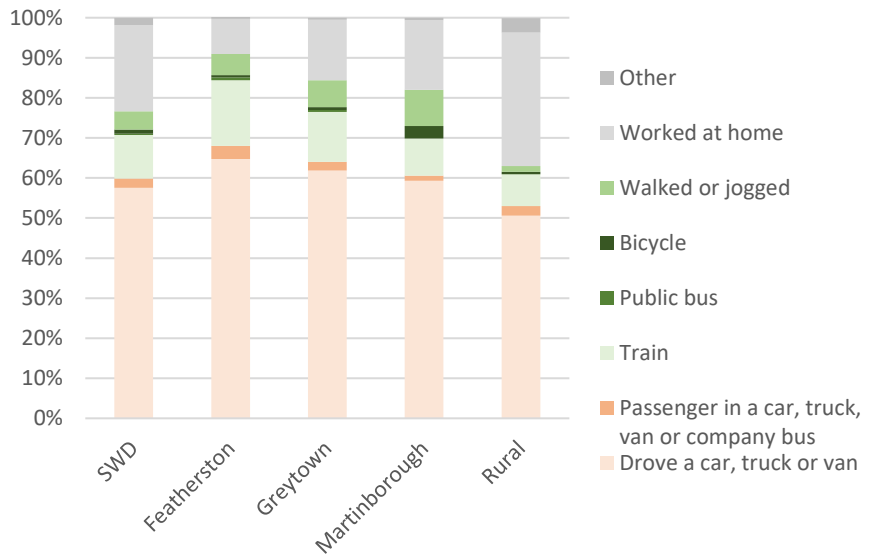


Source: Commuter Waka App, 2021

Figure 12: SWD's residents place of work in 2018

Almost 90% of the SWD's residents works in Wairarapa (77.5% in SWD, 8% in Masterton District and 2.2% in Carterton District). 10.4% of the residents works in Wellington City. A small number of residents works in Hutt City and Upper Hutt City.

4.2.3.4 Method of travel to work

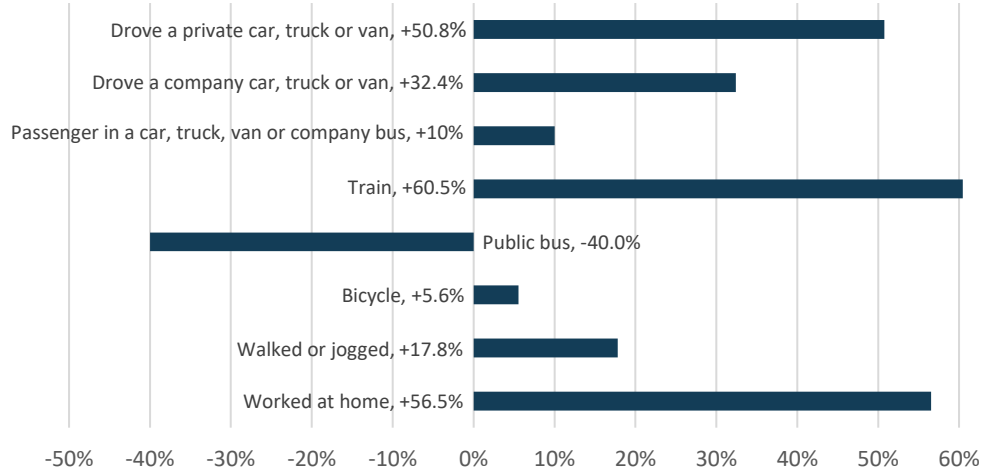


Source: Infometrics, 2021

Figure 13: Residents' method of travel to work in 2018

Almost 60% of the SWD's residents use a high carbon emission way of transport to work (drive a car, truck or van or be a passenger). 16.7% of the residents use a low carbon way of transport to go to work (train, walk or jogged, bicycle, public bus).

These trends are about the same for the three towns. However, we note a higher use of the train in Featherston (due to the proximity of the train station) and of the bicycle in Martinborough. The rural areas' residents mainly use motor vehicles to go to work or work from home.

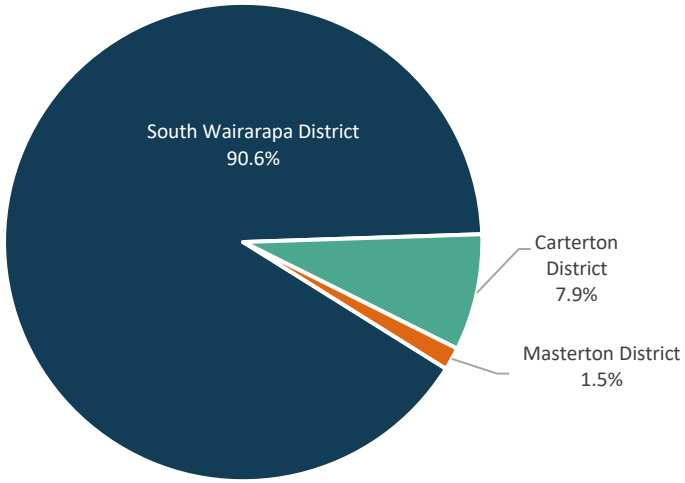


Source: Infometrics, 2021

Figure 14: SWD's residents' method of travel to work evolution between 2013 and 2018

The train users (+60.5%) increased quicker than the car, truck or van users (+50.8% for private vehicles and +32.4 for company vehicles) between 2013 and 2018 and the walkers/joggers increased by 17.8%. However, the public bus users decreased by 40.0%.

4.2.3.5 South Wairarapa's workers place of residence



Source: Infometrics, 2021

Figure 15: SWD's workers place of residence in 2019

Over 90% of the SWD's workers live in the SWD, 8% in Carterton District and 1.5% in Masterton District.

5 Environmental context

5.1 Climate

Carterton and South Wairarapa Districts have dry and warm summers and wet and mild winters.

The following data is provided by the NIWA[1]. They have been recorded between 1981 and 2010 in Masterton.

Temperature

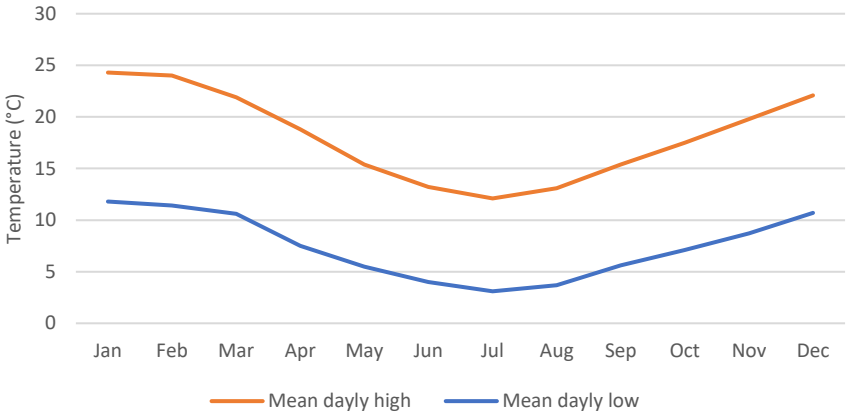
See Figure 21, page 28.

Wairarapa enjoys warm summers and mild winters even though frost may happen.

In summer maximum air temperatures range from 20°C to 28°C, but temperatures above 30°C have been recorded. High temperature may be accompanied by a strong dry foehn wind from the northwest.

Winter is mild in the north of the region and cooler in the south. Typical winter daytime maximum air temperatures range from 10°C to 16°C.

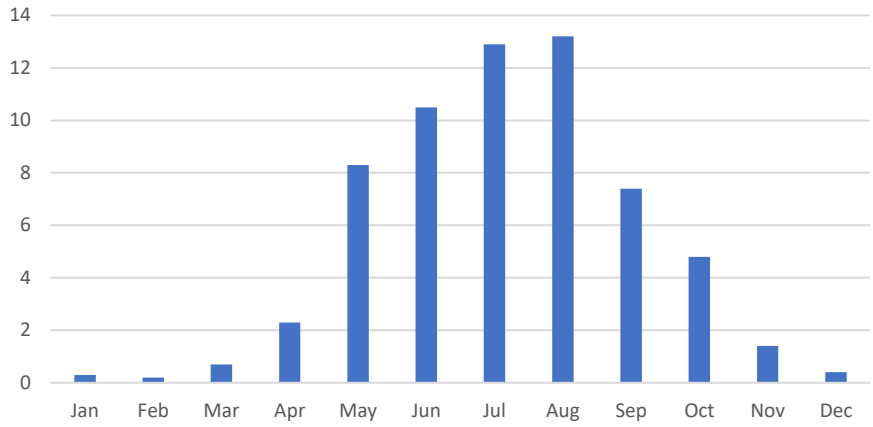
Frost occurs mainly in winter even though frosts can happen occasionally all year around. July and August are the months with the most frosts recorded (12.9 and 13.2 days respectively).



Source: NIWA 2012

Figure 16: Mean temperature in Masterton for 1981 – 2010

[1] National Institute of Water and Atmospheric Research



Source: NIWA 2012

Figure 17: Mean monthly value in Masterton for 1981 – 2010, Numbers of days of ground frost

Pluviometry

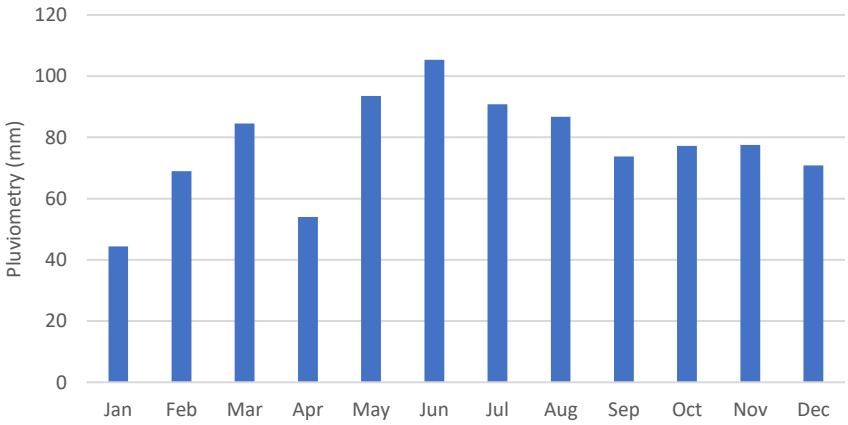
See Figure 22, page 29.

Rainfall is influenced to a large extend by the Tararua Range that lie across the west to east movement of the weather systems.

The ranges are wetter than the plains. Eastern Wairarapa is also slightly wetter than the plains:

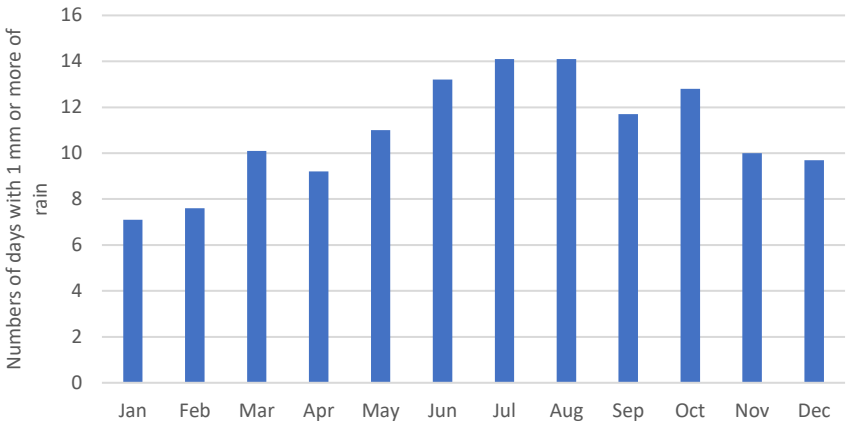
- over 2,000 mm for the Tararua range and 1,800 mm of the Aorangi range;
- under 800 mm for Martinborough and the plains around;
- between 1,000 and 1,400 mm for the Eastern Wairarapa.

Masterton receives 927.6 mm of rain every year. January (44.4 mm and 7.1 wet days) and April (54 mm and 9.2 wet days) are the driest months. May (93.6 mm and 11 wet days), June (105.3 mm and 13.2 wet days) and July (90.9 mm and 14.1 wet days) are the wettest.



Source: NIWA 2012

Figure 18: Mean monthly pluviometry in Masterton for 1981 – 2010



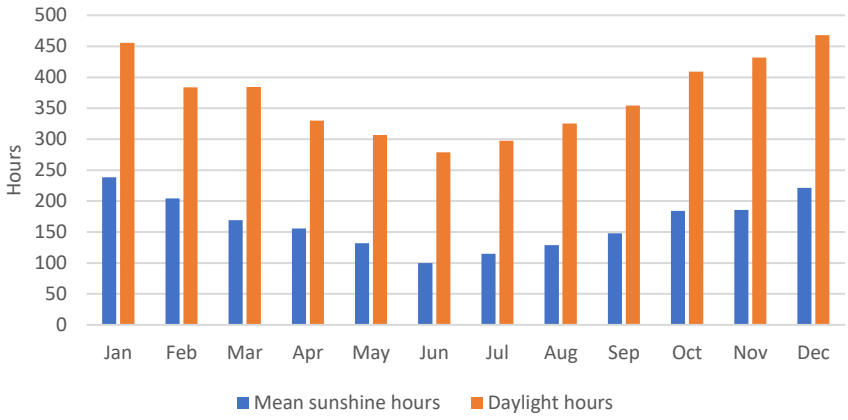
Source: NIWA 2012

Figure 19: Mean monthly value in Masterton for 1981 – 2010, Numbers of days with 1 mm or more of rain

Sunshine

See Figure 23, page 30.

Summer is the sunniest time of the year (238.6 hours of sunshine in January and 221.3 hours of sunshine in December) when winter is the least sunny time of the year (99.9 hours of sunshine in June, 114.9 hours of sunshine in July).



Source: NIWA 2012

Figure 20: Mean monthly hours of sunshine in Masterton for 1981 – 2010

Masterton receives 1,982.1 hours of sunshine every year. The Tararua range is the least sunny part of the region (under 1,750 hours of sunshine yearly) when the coast is the sunniest part of the region (2,100 hours of sunshine every year).

Wind

See Figure 24, page 31.

The strongest winds happen at the summit of the ranges (mean annual average between 8 and 9 m/s). The wind in the Wairarapa plains range between 2 and 3 m/s. The wind gets stronger and stronger as we move east and ranges from 5 m/s (west of Eastern Wairarapa) to 7 m/s (east of Eastern Wairarapa).

In summer the winds are mainly dry north-westerlies and in winter, they are moist south and south-easterlies.

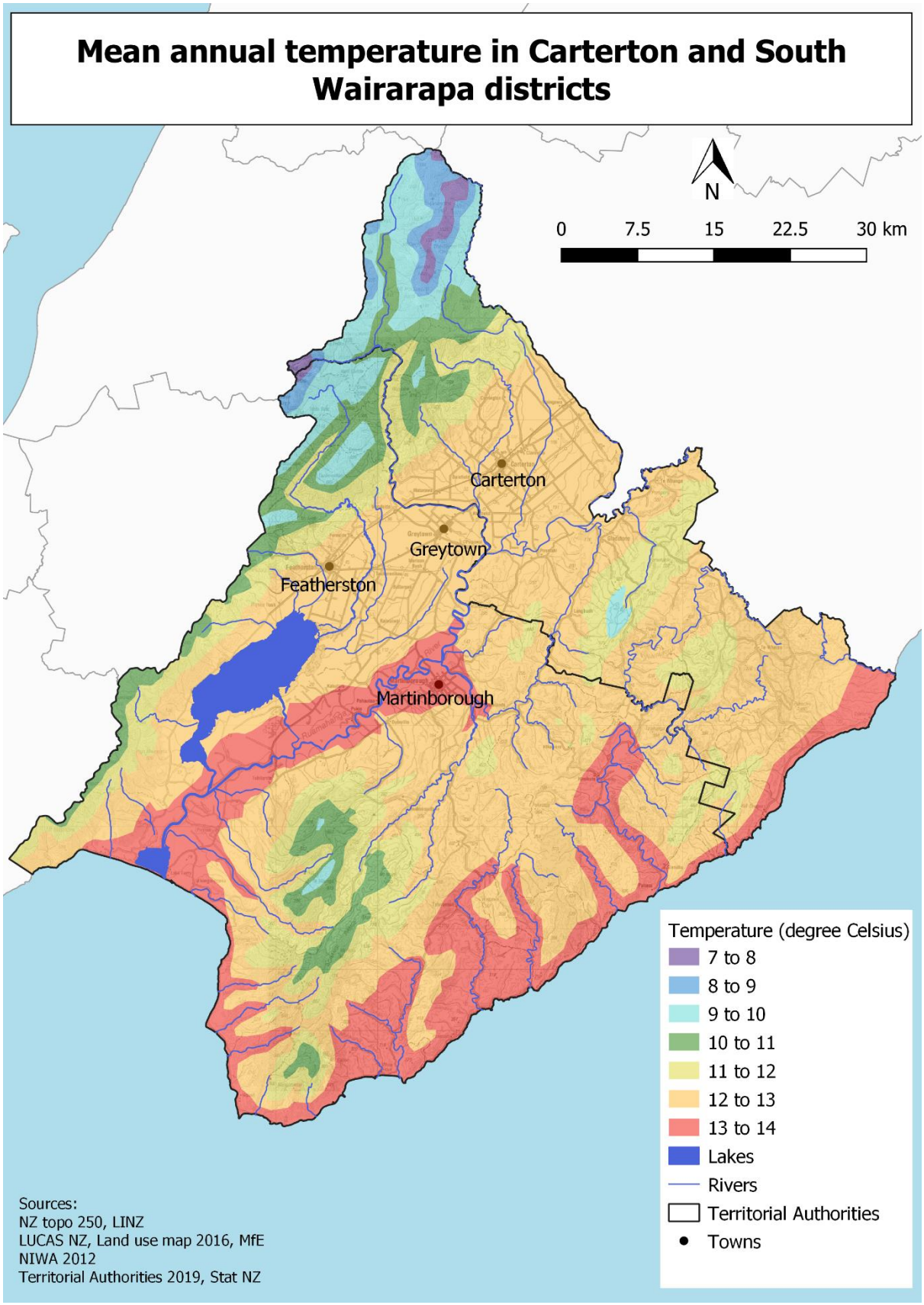


Figure 21: Mean annual average temperature for CD and SWD

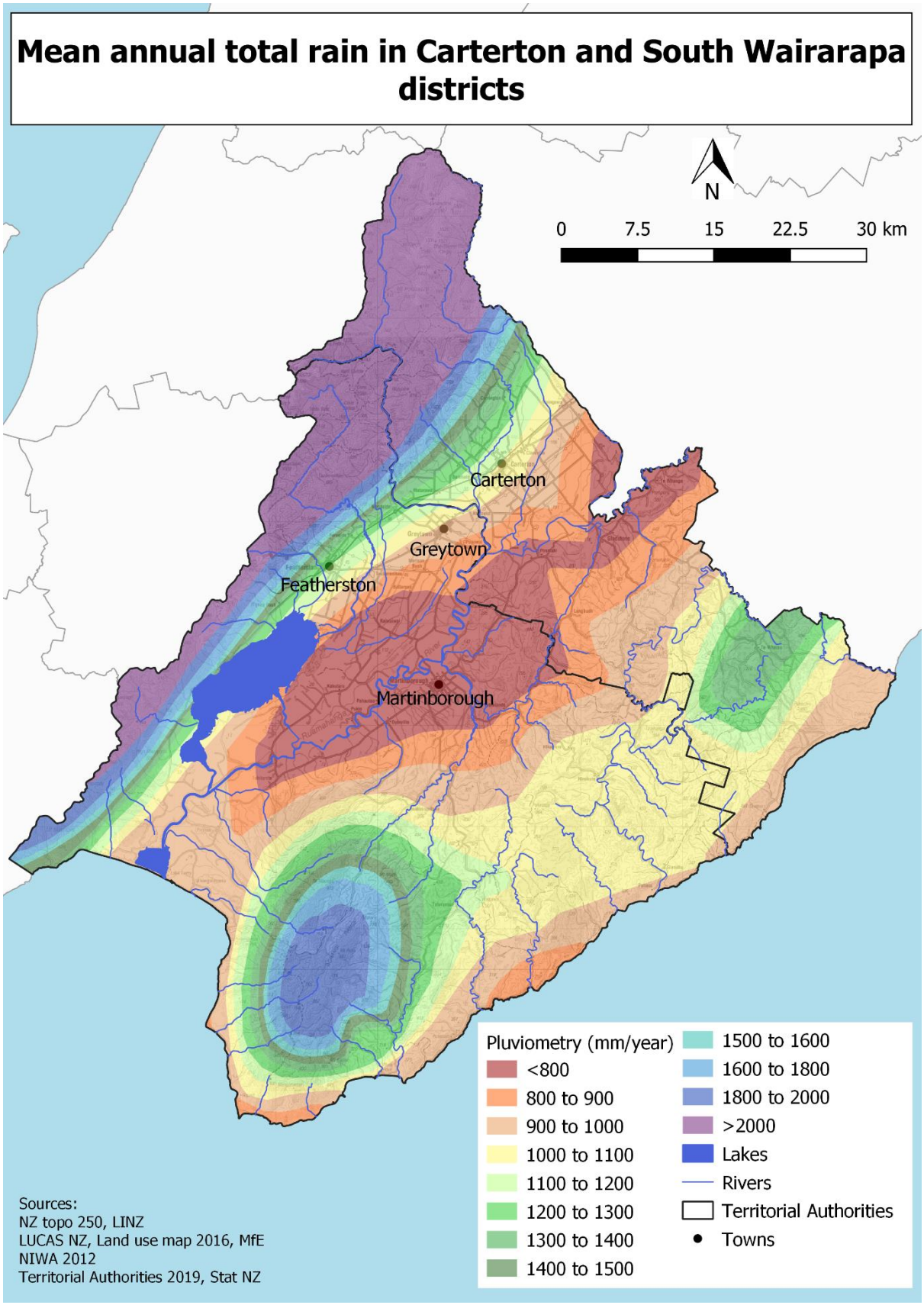


Figure 22: Mean annual total rainfall for CD and SWD

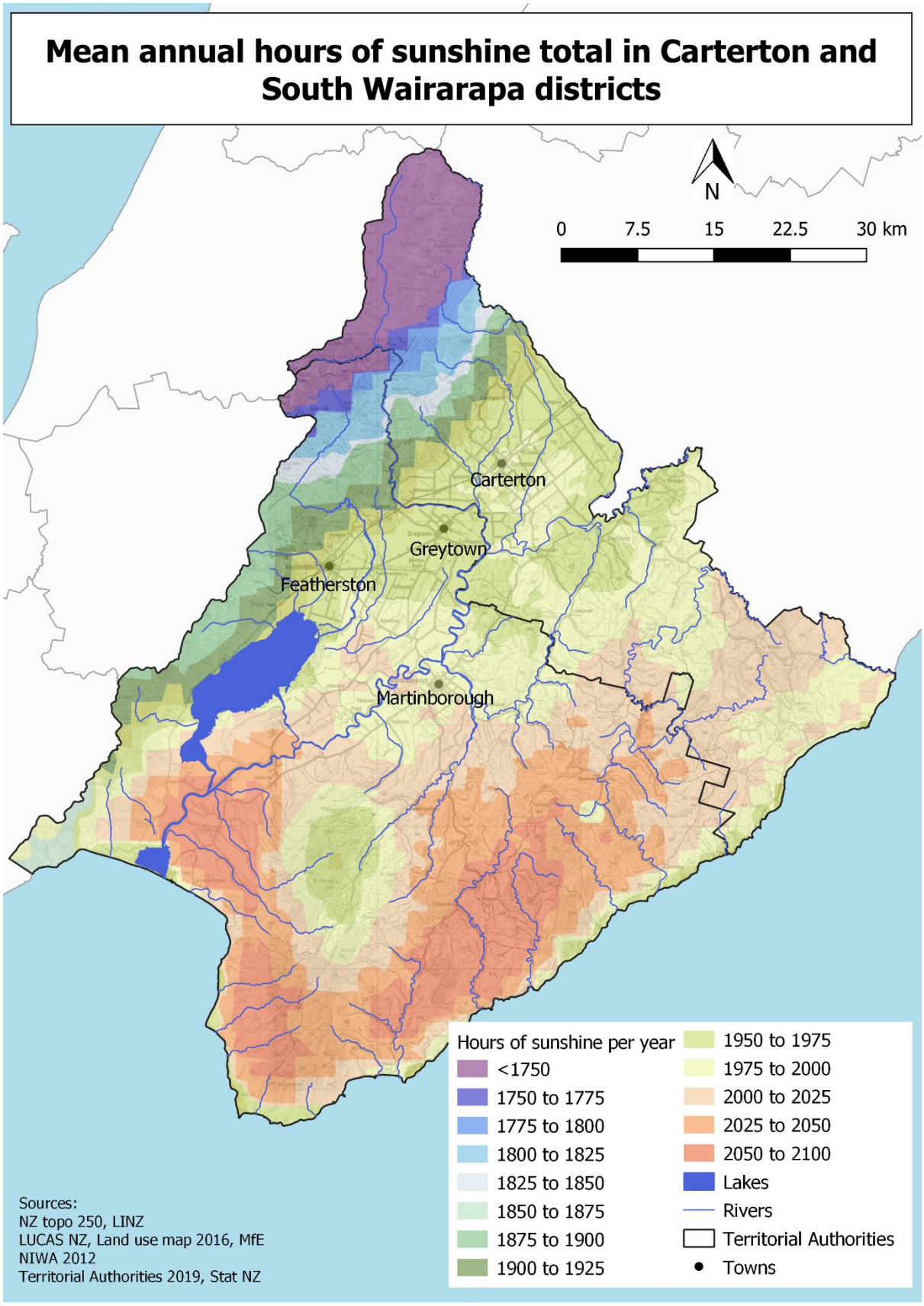


Figure 23: Mean annual sunshine hours total for CD and SWD

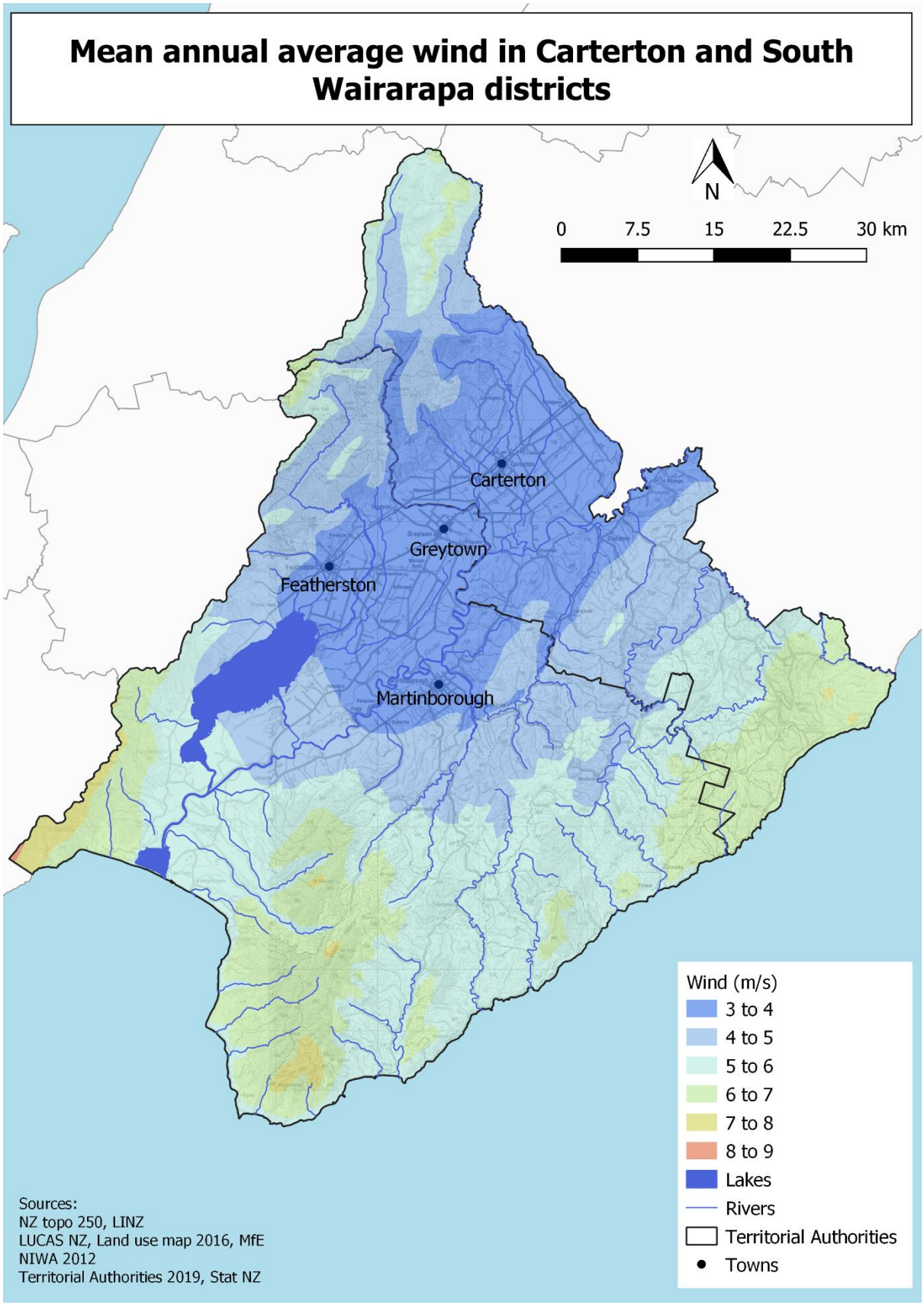


Figure 24: Mean annual average wind for CD and SWD

5.2 Landscape features

The main features in the landscape are the Tararua range in the North-West, the Aorangi range in the South, the Ruamāhanga plains and the rugged East coast.

Carterton and South Wairarapa Districts are mainly rural districts. The main features in the landscape are:

- The Tararua range in the North-West: mainly native forest;
- The Aorangi range in the South of SWD: mainly native forest;
- The plains between the ranges (around the Ruamāhanga river): mainly high producing exotic grassland but also wetlands around Lake Wairarapa and Lake Onoke;
- East of Wairarapa: this part is more rugged. The lowest part are mainly low producing grassland and the highest part are mainly forest (planted and native).

As shown in the Figure 25, page 35 and Figure 26, page 36, the landscape and the landcover depends very much on the ground elevation.

5.3 Landcover

The districts are mainly covered by farmlands (55.7%, including 6.7% of planted forests), closely followed by natural areas (43.8%, including 35.7% of natural forests). The farmlands and the four settlements of Featherston, Greytown, Martinborough and Carterton are mainly located in the Wairarapa plains and the Eastern Wairarapa. The Tararua Range and the Aorangi Range are the main natural areas of the districts.

Carterton and South Wairarapa Districts have a 142-kilometre shoreline. The coast has the settlements of Ngawi, Tora and Flat Point, but is mainly composed of rural and natural areas.

	Surface (km^2)	Percentage (%)
Agriculture and Forestry	2025	55.7%
Grassland - High producing	*1137*	*31.3%*
Grassland - Low producing	*595*	*16.4%*
Planted forest	*243*	*6.7%*
Cropland	*51*	*1.4%*
Natural areas	1594	43.8%
Forest - Natural	*1299*	*35.7%*
Grassland - With woody biomass	*176*	*4.8%*
Wetland	*120*	*3.3%*
Settlements	12	0.3%
Other	5	0.1%
TOTAL	**3636**	**100%**

Table 9: Landcover in 2016 for CD and SWD

5.3.1 Rural areas

The majority of Wairarapa's environment has a rural character, in which the environmental quality is largely determined by prevailing natural elements, whether the land is used for primary productive purposes or for conservation purposes.

Rural land is a significant resource due to the economic value of primary production activities to Wairarapa, and the associated processing and service industries. The use of this resource is constantly changing, in response to economic demands and conditions. The continued prosperity of Wairarapa as a whole is largely dependent on the use of rural resources adapting to changing economic opportunities.

The rural environment is typically characterised by the following elements:

- Open space, natural landscapes, and vegetation predominate over the built environment;
- Working productive landscape, with a wide range of agricultural, horticultural and forestry purposes;
- Large areas of exotic and indigenous vegetation, including pasture, crops, forest and scrublands;
- Place where people live and work, with low population density;

Significant areas of the Rural Zone are held in public ownership and managed for conservation purposes, with the key assets being the Tararua and Aorangi Forest Parks and Lake Wairarapa. Aside from their intrinsic ecological values, Wairarapa's conservation management areas also have important cultural, economic and recreational values. These areas are perceived to be part of Wairarapa's rural environment, although they differ from the primary production areas in their land use, environmental character and amenity values.

5.3.1.1 Agriculture and forestry

See Figure 27, page 37.

In South Wairarapa and Carterton Districts, agriculture, forestry and fishing represents 20.4% of the workforce industry sector of employment (2018). The land used for agriculture and forestry represents 55.7% of Carterton and South Wairarapa districts combined.

Most of the high producing grassland is located in the Wairarapa Plain and the low producing grassland is located in the East of Wairarapa. The planted forests are mainly in the East of Carterton district. Areas of planted forest can be found around the Aorangi and the Tararua ranges.

5.3.1.2 Natural areas

See Figure 28, page 38.

The natural forest covers 35.7% of South Wairarapa and Carterton Districts. It is mainly located in the Tararua and the Aorangi Ranges and in the Eastern Wairarapa.

South Wairarapa District presents 120 km^2 of wetlands, mainly located around Lake Wairarapa and lake Onoke. These wetlands are very important for the biodiversity.

5.3.2 Human infrastructure

See Figure 29, page 39.

Both districts contain a variety of residential areas, including those within the main urban communities of Carterton, Featherston, Martinborough and Greytown, as well as smaller coastal and rural settlements.

Most of the infrastructure is located in the Wairarapa plain.

Featherston, Greytown and Carterton are connected by the State Highway 2 (SH2) and Martinborough is connected to Featherston with the State Highway 53 (SH53). Bidwills Cutting road is the link between Martinborough and Greytown and Ponatahi road is the link between Martinborough and Carterton.

Featherton, Greytown and Carterton are linked with the railway (Featherston station, Woodside station, Matarawa station and Carterton station).

The settlements cover only 0.3% of the land of both districts.

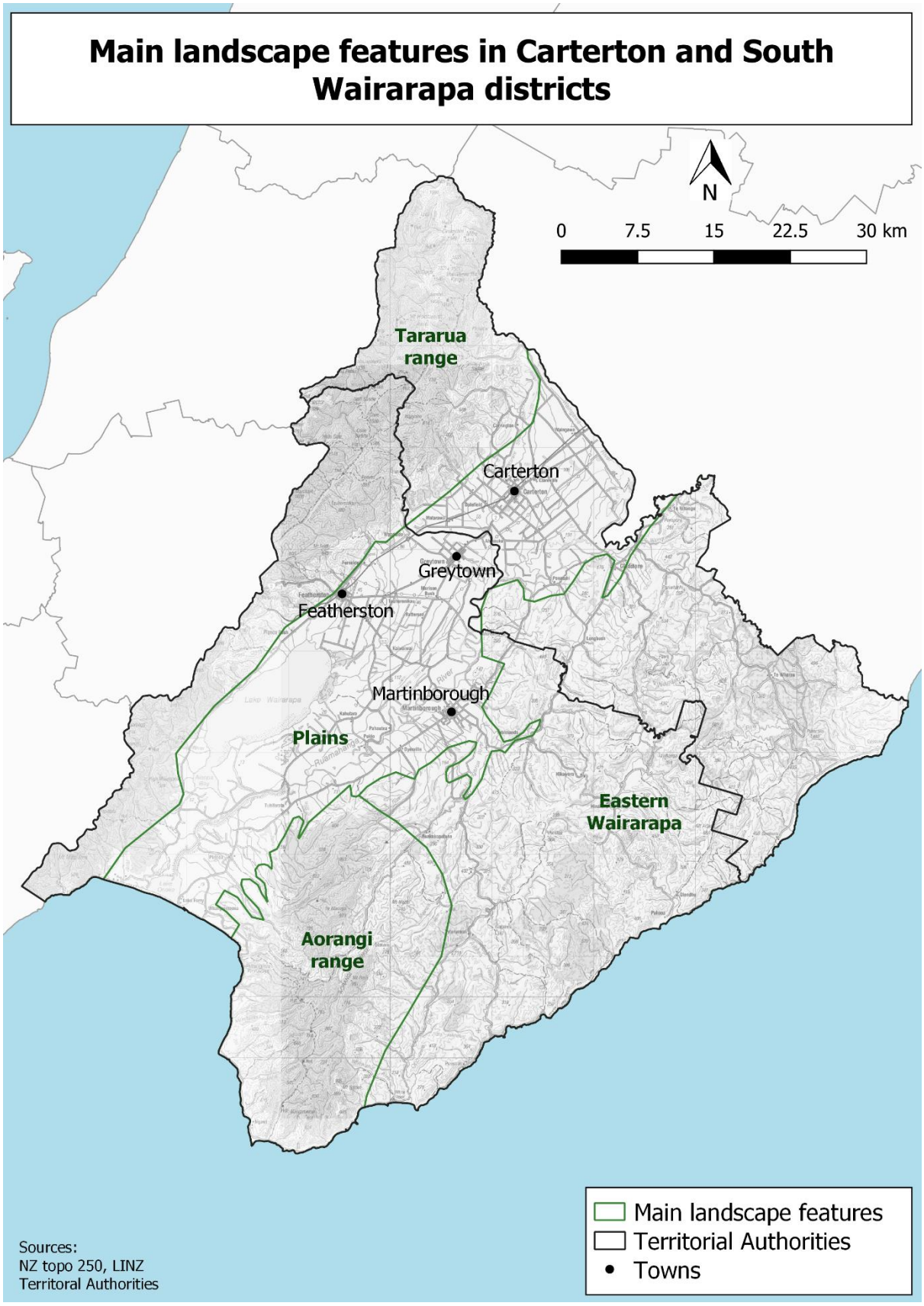


Figure 25: Main landscape features for CD and SWD

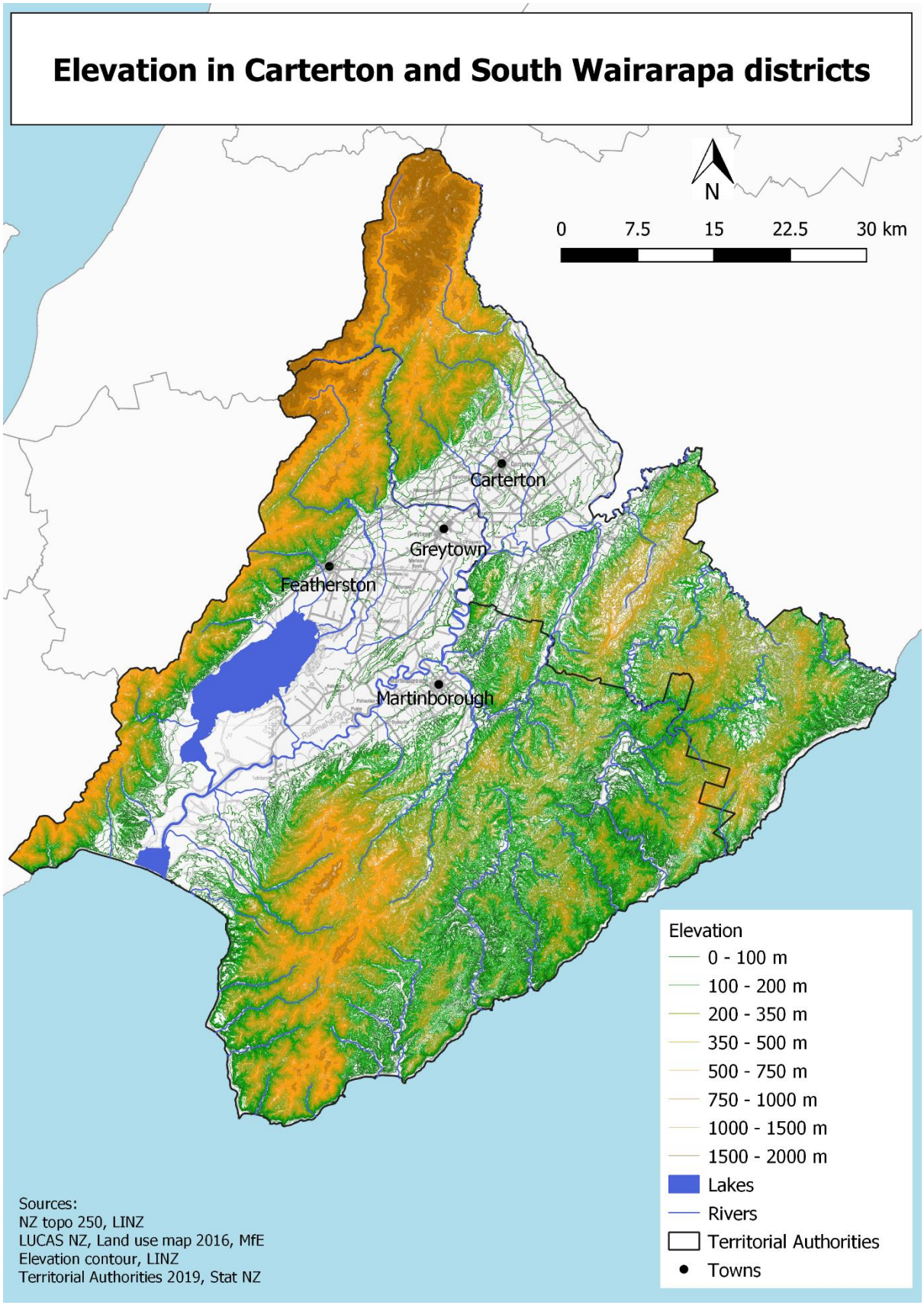


Figure 26: Elevation for CD and SWD

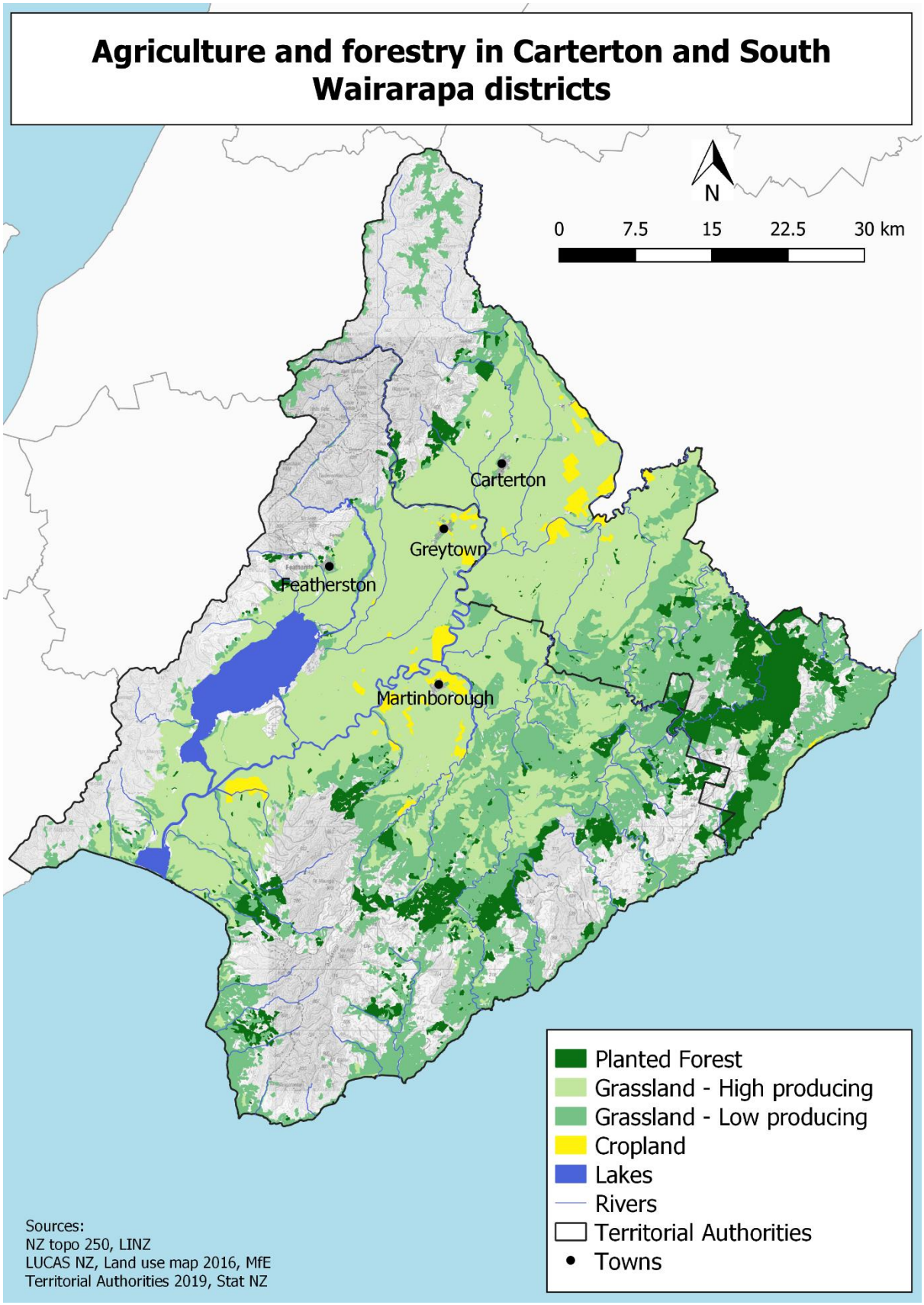


Figure 27: Agriculture in CD and SWD

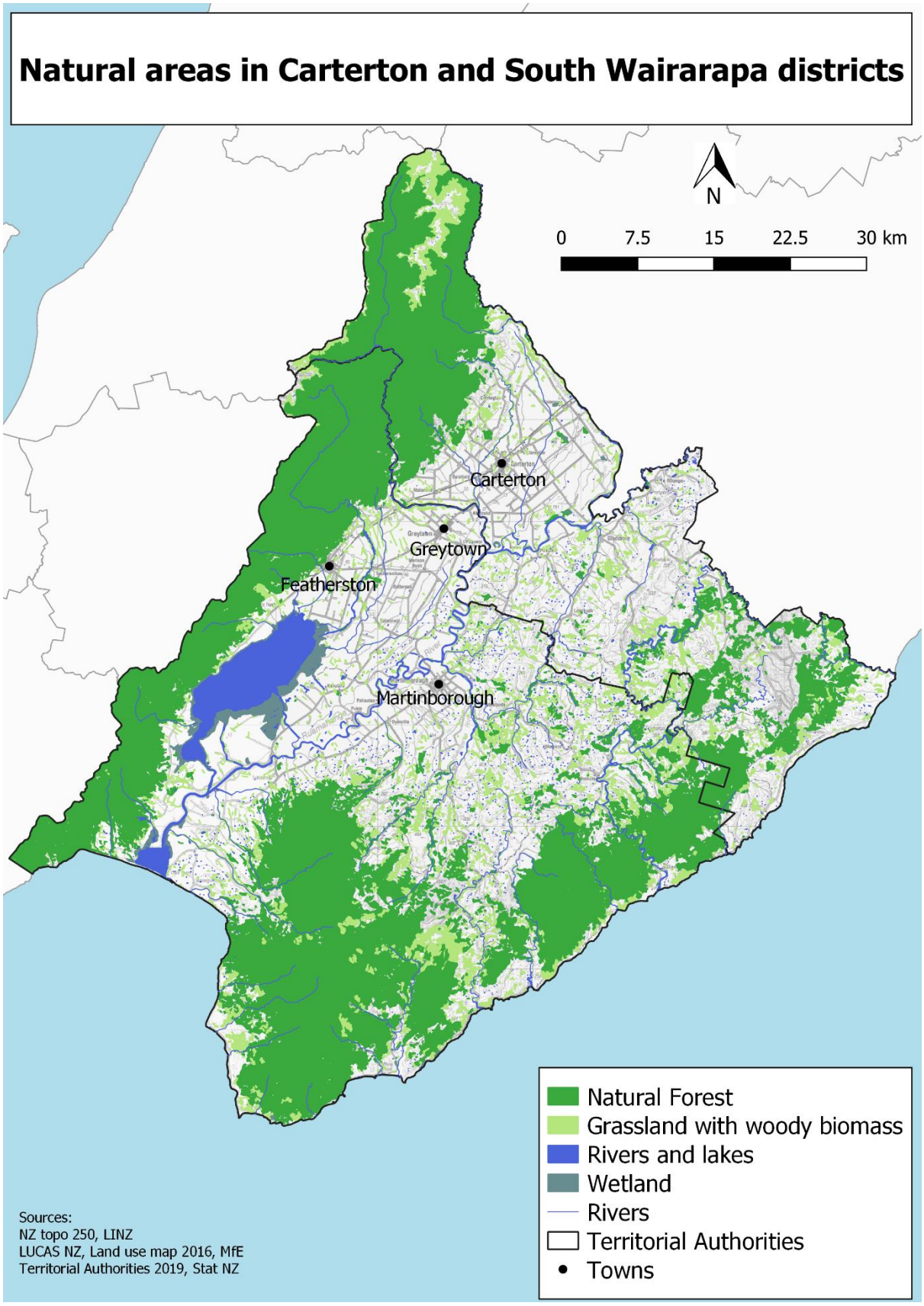


Figure 28: Natural areas in CD and SWD

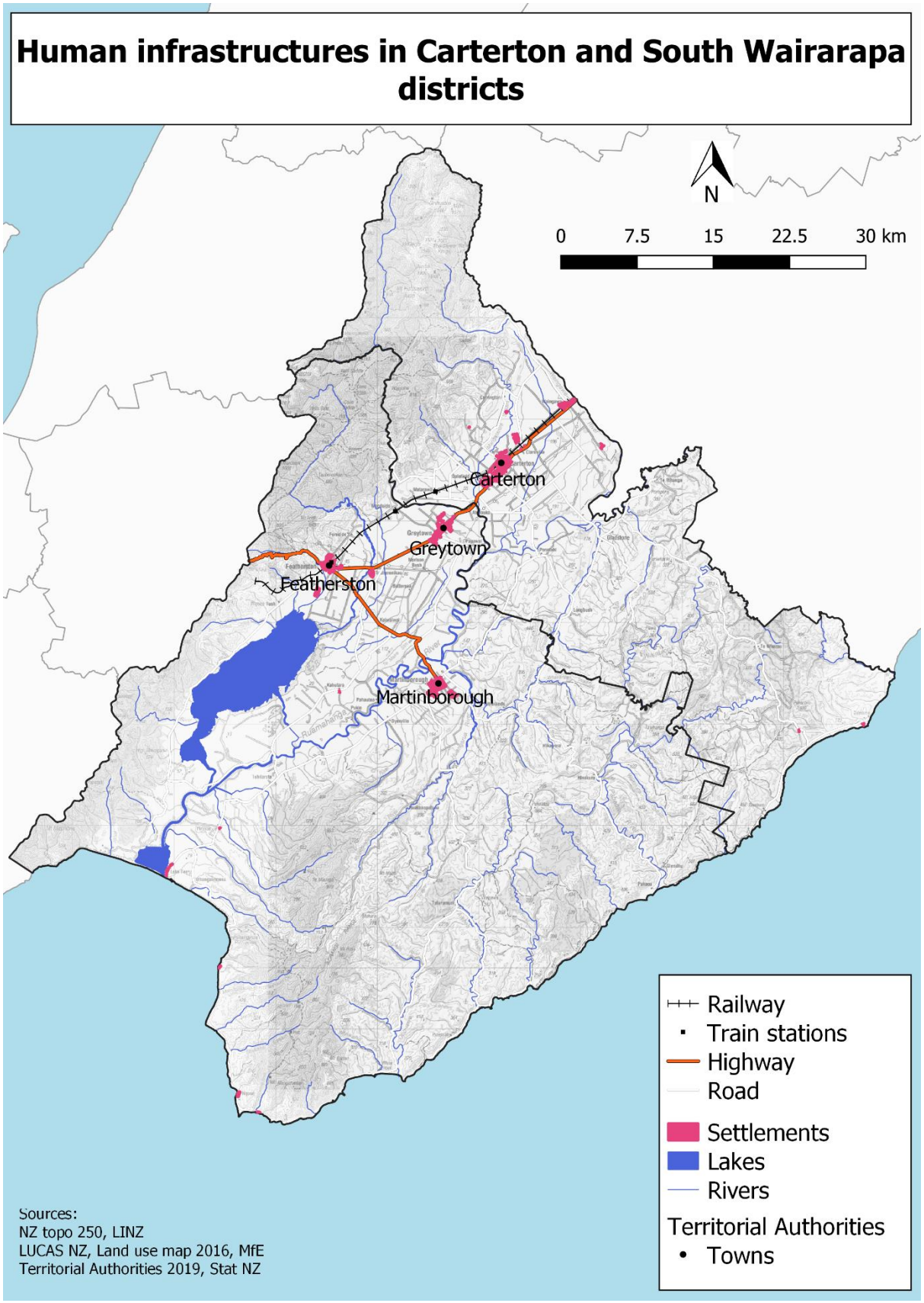


Figure 29: Human infrastructures in CD and SWD

6 Historical and cultural context

The Wairarapa has a strong mana whenua history with many important Māori heritage sites. The cultural landscape includes those places associated with ngā atua (deities), taniwha and kaitiaki (guardians and protectors of places), as well as places discovered, visited and or named by ancestors and explorers.

6.1 History

6.1.1 Pre-European era

Well established Māori communities lived in the southern Wairarapa since the 14th century. They were descended from a place of origin in the Pacific known to them as Hawaiki.

They were communities of people who:

- hunted and gathered food from the rocky shoreline, the coastal environment and the lakes, primarily harvesting tuna (eels) but also other native species including kokopu (whitebait) and piharau (lamprey);
- ventured into the interior to hunt for forest birds and gather other wild produce from the inland valleys, wetlands and hills;
- developed areas of land for the cultivation of kumara and probably also taro and gourd.

For centuries the natural environment has provided both material and spiritual sustenance for Māori communities. Lake Wairarapa and the South Wairarapa coastline are of immense cultural, spiritual and historic significance to Māori.

Wairarapa Māori regarded the lakes and their surrounding lands as an important source of physical and spiritual well-being, seeing it as a taonga, handed to them by their ancestors to be cherished. The land, the waters and all their inhabitants, human and non-human alike, were part of a wider world governed by gods and were tapu or sacred.

6.1.2 European colonisation

European settlers arrived on the margins of Wairarapa Moana in the early 1840s, bringing with them a completely different set of cultural values and a truly foreign way of looking at and assessing land.

For the early settlers, the land was a great opportunity to develop farming: *"The land is for the most part covered with fern and coarse grass, easily cleared and affording ample pasturage for cattle in its present state"* wrote the New Zealand Company's surveyor Robert Stokes in 1841. In 1844, the surveyor Henry Tiffen wrote that the soil is very fertile and up to six feet deep in places. He also said that the land around the bottom lake was prone to be flooded but if the lake could be kept at a lower level, 4,000 acres of rich watered meadow land would be available for graziers.

In 1844, the first stations were established around the shore of the lake. The Wharekākā farm was the first extensive sheep station in New Zealand. Then started the disagreement between Māori and Pākehā over the control of the lake Onoke outlet. Māori wanted a high-water level for tuna (eel) fishing when Pākehā wanted a low-water level for grazing.

In the 1850s, the Māori started to sell their land to the Pākehā after leasing was made illegal by the Crown. Māori made it clear the sale did not include the bed of the lakes and that they were selling to the tahakupu, the highwater mark. The failure to properly survey the land, and the disagreement over exactly what had been sold and what had been retained by Māori was to lead to tension over ownership of the land uplifted in the 1855 earthquake, and the ability to control the outlet to the sea.

This disagreement ended in 1896 when tangata whenua gifted the lakes to the Government. The settlers were then free to:

- Stop bank the Ruamāhanga river, the Lake Wairarapa Lake and the Lake Onoke;
- Drain the rich swamp pasture;
- Control the Lake Onoke outlet.

What has been gifted was the Native Land Court title the Crown had forced on Māori, and with it control of the outlet at Onoke. What had not been gifted, were the waters and fisheries of Wairarapa Moana. Premier Richard Seddon, who can take much of the credit for the gifting of the lakes said, *"The waters are still yours and so are the fish*". However, after a few years, these words were forgotten.

The last major wetland destruction around the lake happened in 1974 when the Te Hōpai Lagoon has been drained and turned into pasture.

6.2 Cultural context

Kaitiakitanga

Kaitiakitanga encompasses guardianship, preservation, conservation and protection. In its simplest form kaitiakitanga is the responsibility to care for the physical, ecological and spiritual well-being of a place or resource to ensure harmony within the environment and protection against elements that cause permanent imbalances.

The primary kaitiaki or guardian were the Atua; Tāne is the kaitiaki of the forest and Tangaroa is the kaitiaki of the sea. A kaitiaki can be spiritual (such as a taniwha) or physical such as the tōtara log of Wairarapa Moana.

Lake Wairarapa

Lake Wairarapa is of immense cultural and spiritual significance to Māori.

Traditional fishing (such as tuna/eel fishing) was a major activity on the lake. "*Throughout the ages, the mouth of Wairarapa Moana has paid homage to its eel migration by obligingly closing its mouth at the end of February or the beginning of March. Legend records that Rākai Uru, the taniwha who is the caretaker of the lake, is responsible for this seasonal closing. Rākai Uru takes the form of a large tōtara log. When the migration is about to take place he makes a journey out to sea, and the mouth of the lake closes behind him*"[2]. Māori exported as many as ten tons of tuna/eels annually as far away as the Bay of Plenty.

With the changes to the Lake Wairarapa wetlands over the past 150 years many traditional fishing sites and sources of plant materials such as flax, ti (cabbage tree) and pingao have been lost or greatly reduced. With appropriate management and plantings, some of these sites could be restored specifically for the sustainable harvest of cultural materials, which would have the additional benefit of increasing habitat diversity for wildlife.

Guidelines for the management of the Lake Wairarapa wetlands have been produced and adopted by interested parties.

[2] T.V. Saunders 'The eels of Lake Wairarapa', Te Ao Hou, June 1965.

Nowadays, projects are being led in order to restore wetlands (therefore the important role to local iwi for gathering kai moana) around Lake Wairarapa. For instance, the Pou Aruhe Saltmarsh Freshwater Initiative near Lake Onoke is an ambitious project with Greater Wellington Regional Council, mana whenua and local conservation groups. Ra Smith[3] said Māori bring important values to these projects which could connect the whole region.

Ruamāhanga river and other rivers

Ra Smith says, "*We [Māori] think of rivers as a character, and the character of the river holds the mauri[4], often called the life force*".

"*On the opposite side from where the two rivers meet is the whare kōhanga, a place like a maternity ward. When babies were born they would take the whenua [placenta] and be buried in the ground, and they would take the baby down into the river and make up a lullaby. It was no rockabye baby, it was eight verses of very intense lullaby about the blessing of the baby and its life expectancy.*"

Ra Smith says the most important confluence was where the Ruamāhanga met Lake Wairarapa, a point that no longer exists.

[3] Ra Smith is part of the Ngāti Kahungunu ki Wairarapa iwi.

[4] According to the Māori Dictionary, Mauri is "life principle, life force, vital essence, special nature, a material symbol of a life principle, source of emotions - the essential quality and vitality of a being or entity. Also used for a physical object, individual, ecosystem or social group in which this essence is located".

7 Climate Change and impacts for Carterton and South Wairarapa Districts

7.1 What is Climate Change

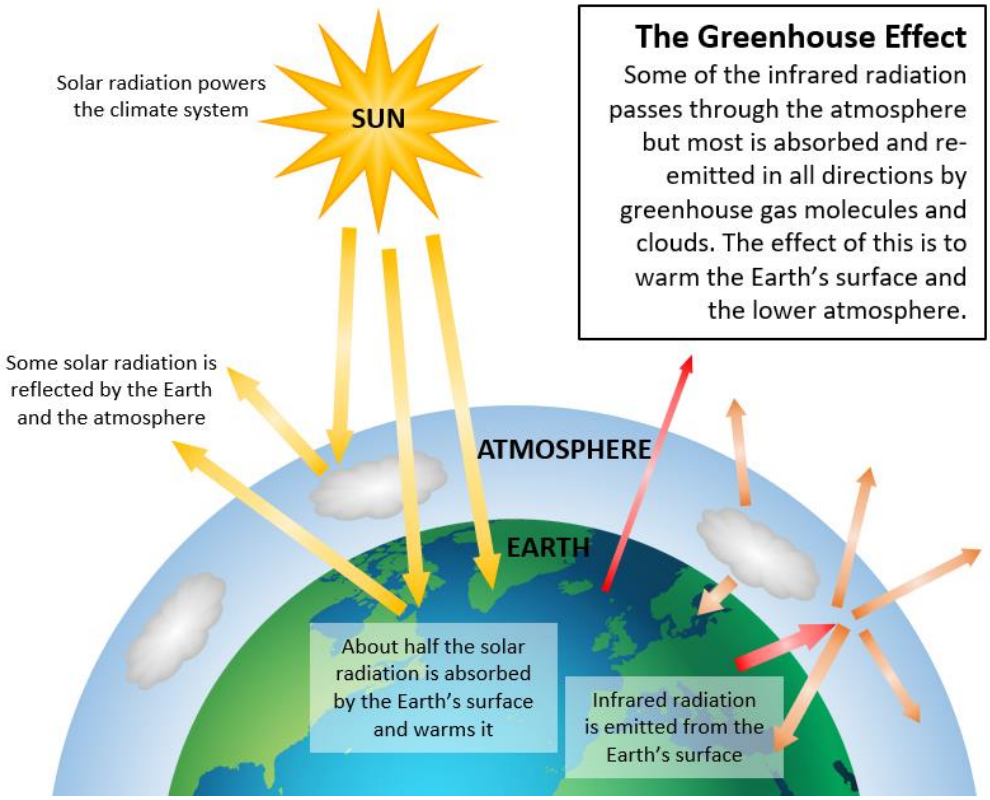
According to the UNFCCC (United Nation Framework Convention on Climate Change), Climate Change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

7.1.1 Atmosphere composition

Earth's atmosphere is made up of nitrogen (78%), oxygen (21%), and a small percentage of greenhouse gases, such as carbon dioxide and methane.

7.1.2 Greenhouse effect

Greenhouse gases trap warmth from the sun and make life on Earth possible. Without the influence of the greenhouse effect on our planet, the average surface temperature would be -18°C (average temperature on Earth with the greenhouse effect is 15°C).

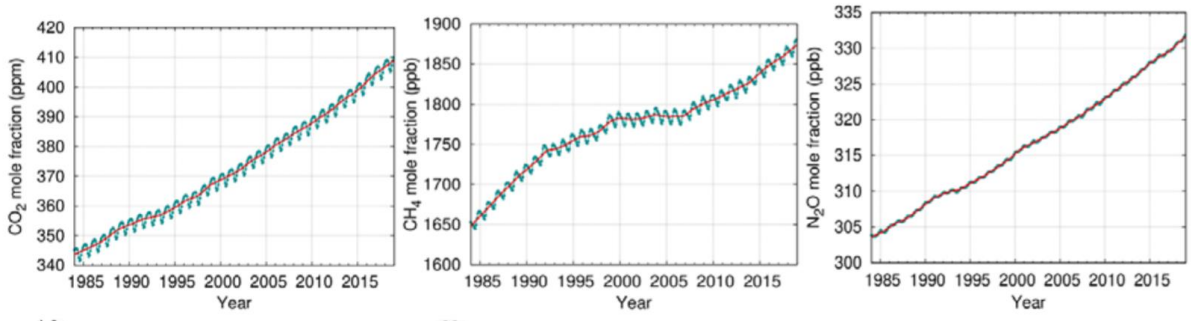


Source: NIWA, https://www.niwa.co.nz/our-science/climate/information-and-resources/clivar/greenhouse

Figure 30: The greenhouse effect

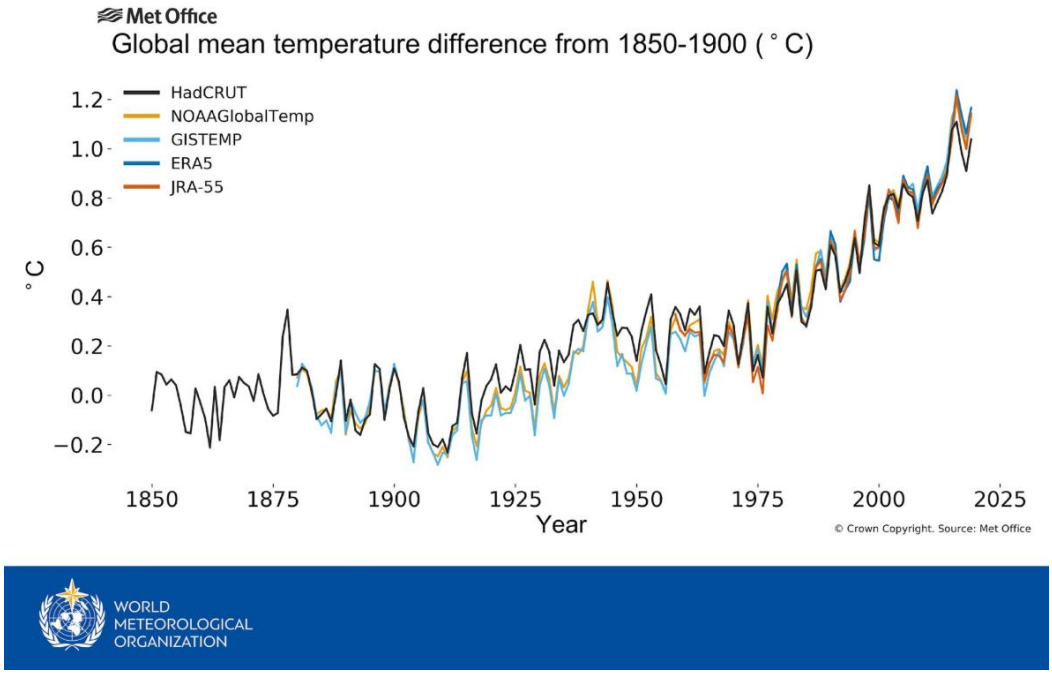
7.1.3 What causes Climate Change?

The greenhouse gas (CO_2, CH_4 and N_2O) concentration in the atmosphere has been raising quickly since the last 150 years (since the industrial revolution) because of fossil fuels burning, deforestation, etc. The temperature is correlated to the greenhouse gas concentration as shown in the graphs below.



Source: WMO Provisional Statement on the State of the Global Climate in 2019, World Meteorological Organization, 2019

Figure 31: Concentration (ppm) in Carbon dioxide, Methane and Nitrous oxide from 1984 to 2018.



Source: WMO Provisional Statement on the State of the Global Climate in 2019, World Meteorological Organization, 2019

Figure 32: Global annual mean temperature difference pre-industrial conditions (1850-1900, °C)

Not only are temperatures rising but the whole climate is changing (increase in the extreme weather events (e.g. storm, drought), melt of the ice pack, sea level rise, ocean acidification, etc).

The next section will expose the climate change projections and the likely impacts on Wairarapa.

7.2 Climate change projections and likely impacts

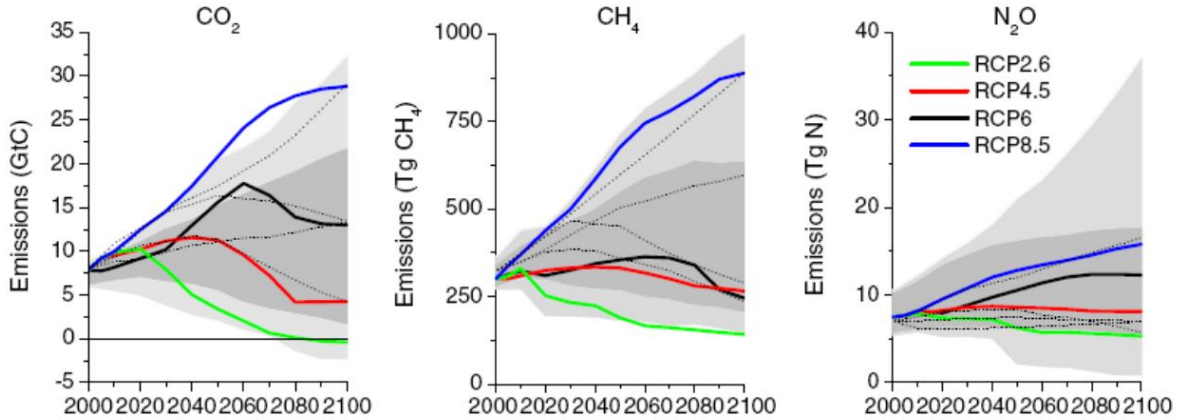
7.2.1 IPCC emissions scenarios

The IPCC (Intergovernmental Panel on Climate Change) set up different scenarios depending on the greenhouse gas emissions. RCP2.6 is a low emissions scenario, RCP4.5 is a low to moderate emissions scenario, RCP6.0 is a moderate emission scenario and RCP8.5 is a high emissions scenario.

Anthropogenic GHG emissions are mainly driven by population size, economic activity, lifestyle, energy use, land use patterns, technology and climate policy. The Representative Concentration Pathways (RCPs), which are used for making projections based on these factors, describe four different 21st century pathways of GHG emissions and atmospheric concentrations, air pollutant emissions and land use. The RCPs include:

- A stringent mitigation scenario (RCP2.6): aims to keep global warming likely below 2°C above pre-industrial temperatures. CO_2 emissions peak in 2020 and start to decline to reach net zero in 2050 and zero in 2100. Radiative forcing reaches 2.6 W m-2 at year 2100, relative to pre-industrial conditions;
- A low/intermediate scenario (RCP4.5): CO_2 emissions peak in 2040 and start to decline to reach net zero in 2080. Radiative forcing reaches 4.5 W m-2 at year 2100, relative to pre-industrial conditions;
- An intermediate scenario (RCP6.0): CO_2 emissions peak around 2060 and start to decline. Radiative forcing reaches 6.5 W m-2 at year 2100, relative to pre-industrial conditions;
- A scenario with very high GHG emissions (RCP8.5): no measures are taken to reduce the greenhouse gas emissions. Radiative forcing reaches 8.5 W m-2 at year 2100, relative to pre-industrial conditions.

Scenarios without additional efforts to constrain emissions ('baseline scenarios') lead to pathways ranging between RCP6.0 and RCP8.5.



Grey area indicates the 98th and 90th percentiles (light/dark grey) of the literature. The dotted lines indicate four of the SRES marker scenarios. Note that the literature values are not harmonized

Source: The representative concentration pathways: an overview, Van Vuuren et al., 2011 - https://link.springer.com/article/10.1007/s10584-011-0148-z

Figure 33: emissions of the main greenhouse gases across the RCPs

7.2.2 Likely global impacts

Globally, surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent. The ocean will continue to warm and acidify, and global mean sea level to rise.

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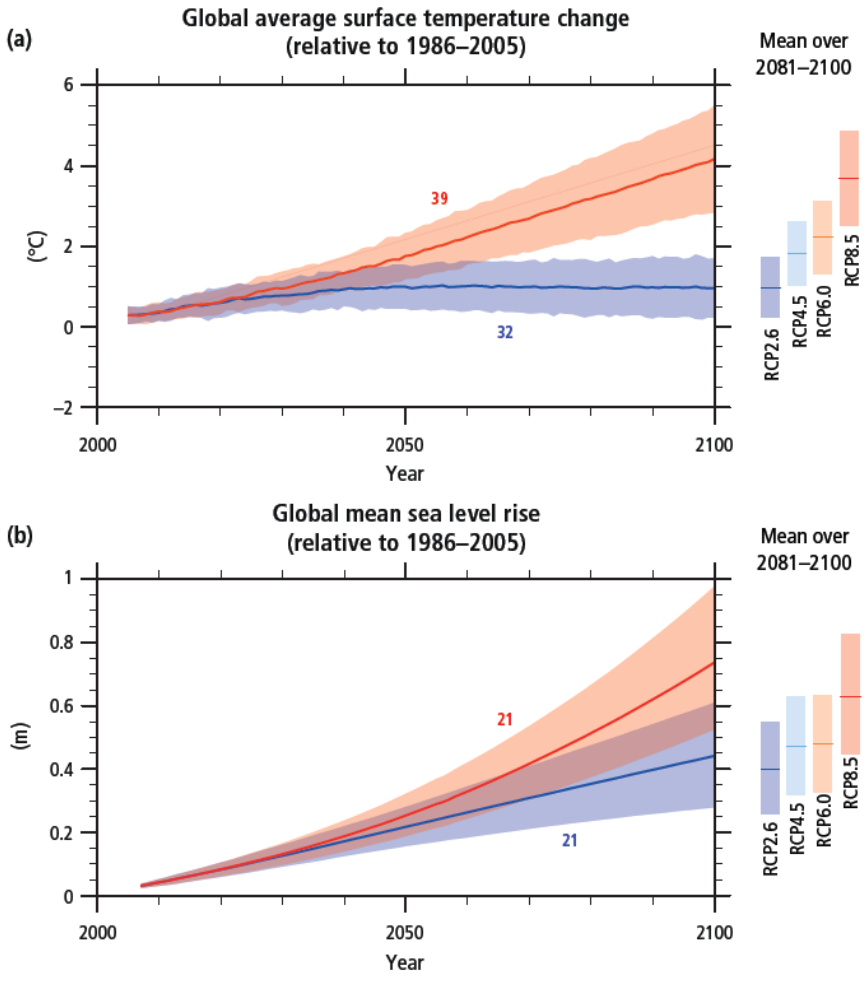
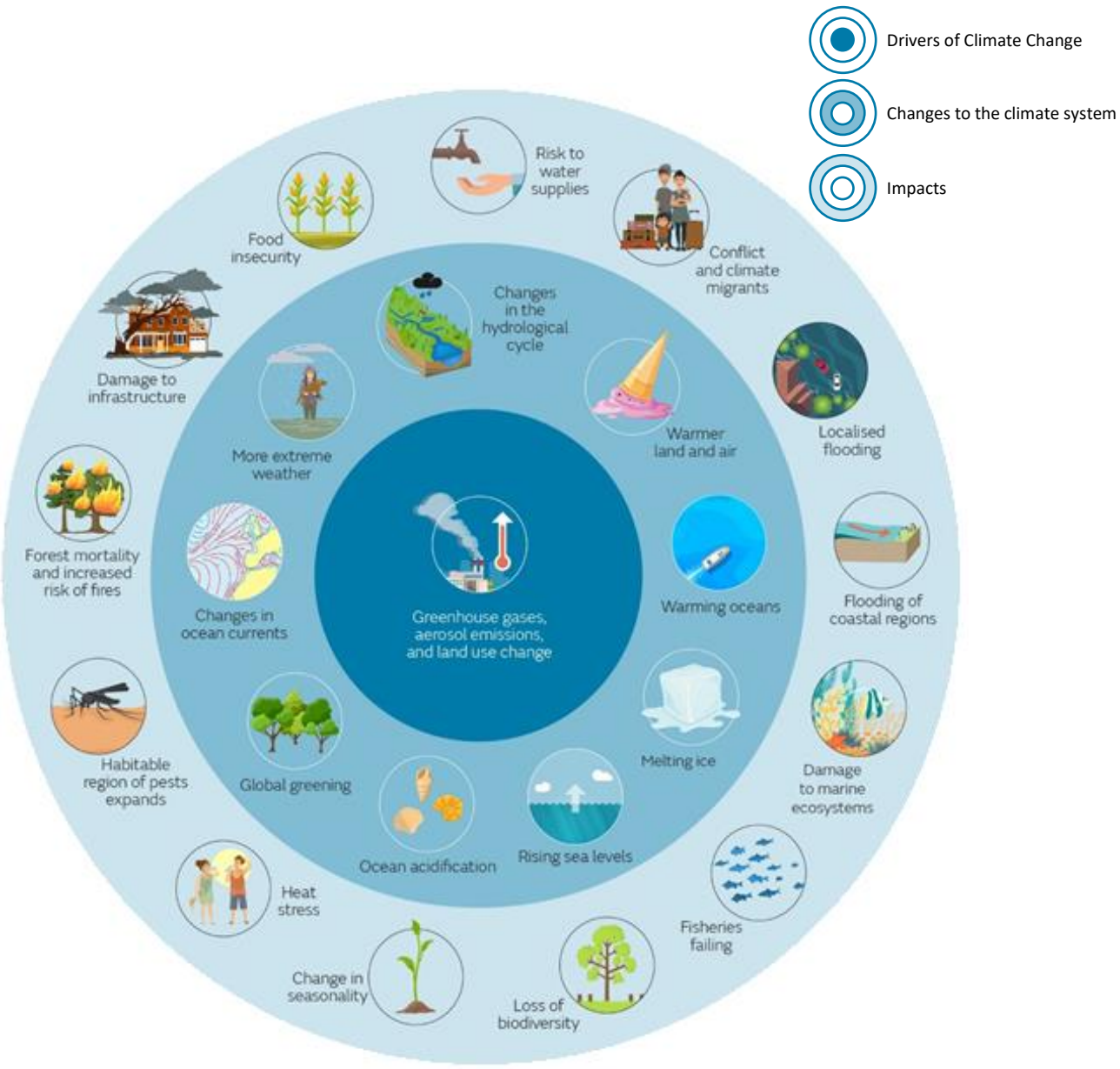


Source: Climate change 2014 – Synthesis report – Summary for policy makers, AR5, IPCC, 2014

Figure 34: Global average surface temperature change and global mean sea-level rise relative to 1986-2005



Source: Metoffice, https://www.metoffice.gov.uk/weather/learn-about/climate-and-climate-change/climate-change/effects-of-climate-change

Figure 35: Illustration of some of the drivers of Climate Change and impacts they could have on the climate system

7.2.3 Climate Change projections for Wairarapa

Greater Wellington Regional Council provides climate change assumptions based on the RCP4.5 and RCP8.5. These assumptions were used to understand the likely impacts of climate change in Wairarapa.

GWRC provides climate change parameters for each Whaitua catchment (super catchments) in the Wellington region. These parameters are based on the following reports:

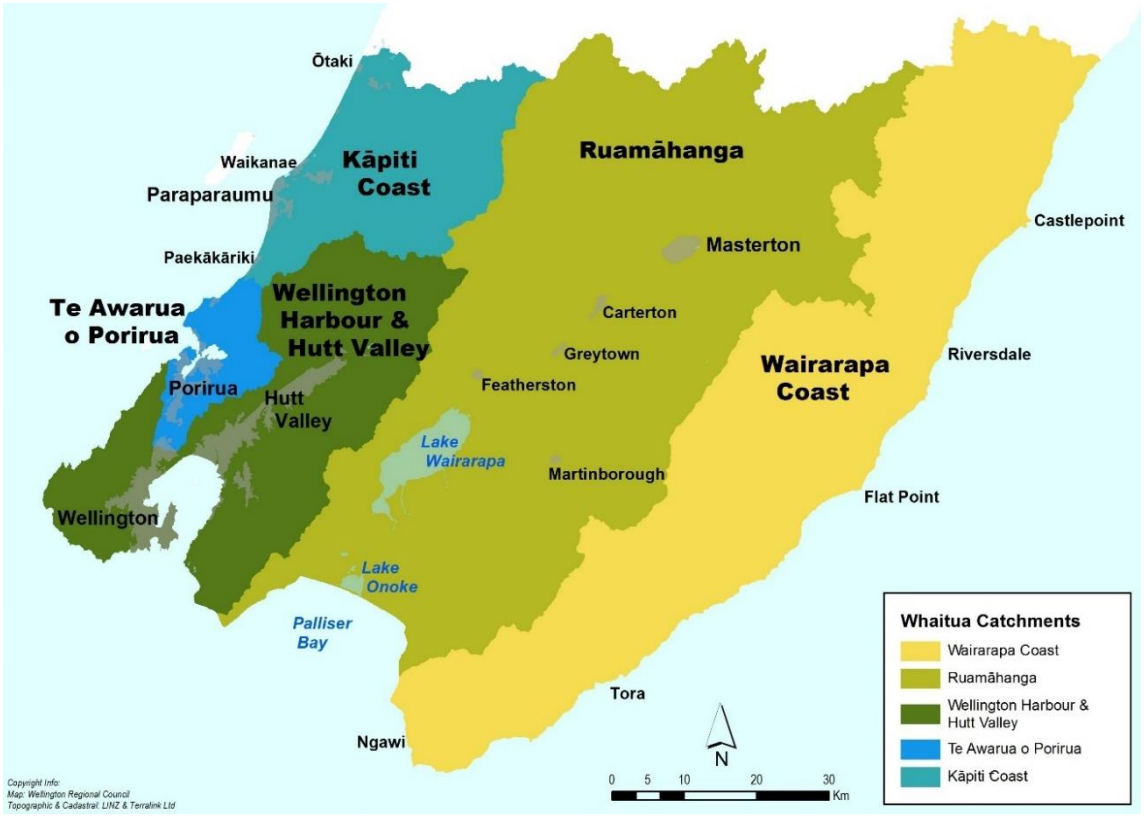
- Climate Change and variability – Wellington Region, report prepared by NIWA for GWRC, June 2017;
- Wellington Region climate change extremes and implications, report prepared by NIWA for GWRC, December 2019.

These reports and parameters are based on the following IPCC scenarios:

- RCP4.5: Intermediate/low emissions scenario;
- RCP8.5: High emissions scenario.

The following Table 10 summarise the projected impacts of climate change for the Wairarapa (Ruamāhanga Whaitua and Wairarapa Coast Whaitua, see Figure 37).

The uncertainties regarding the climate models are low: physics is well known and well modelised. However, there are uncertainties regarding the greenhouse gas emissions projections (how much anthropogenic greenhouse gas will be released in the atmosphere in the future).



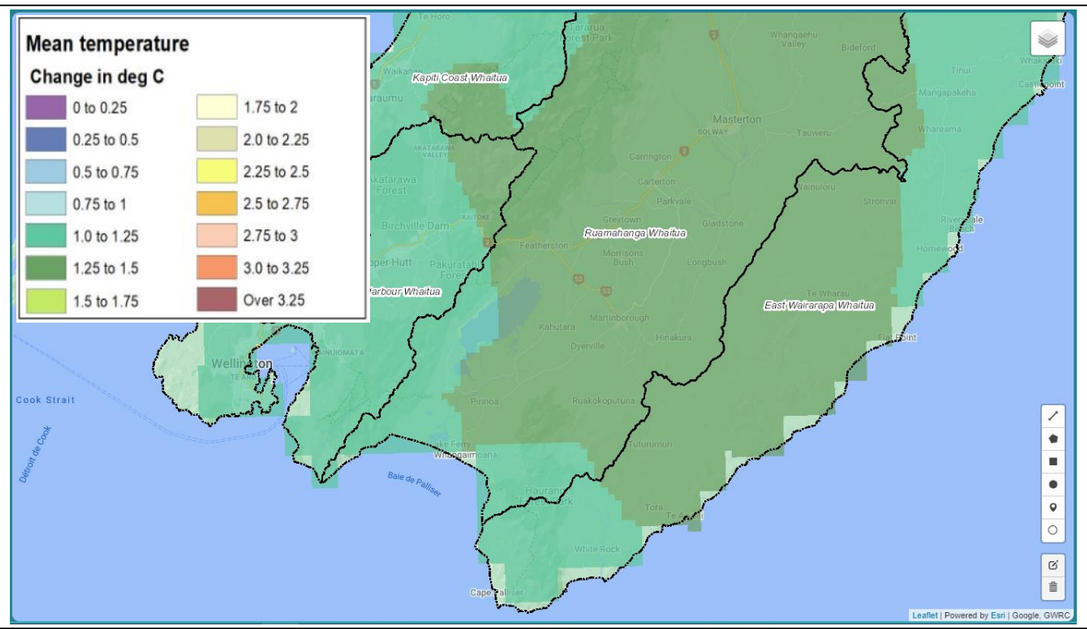
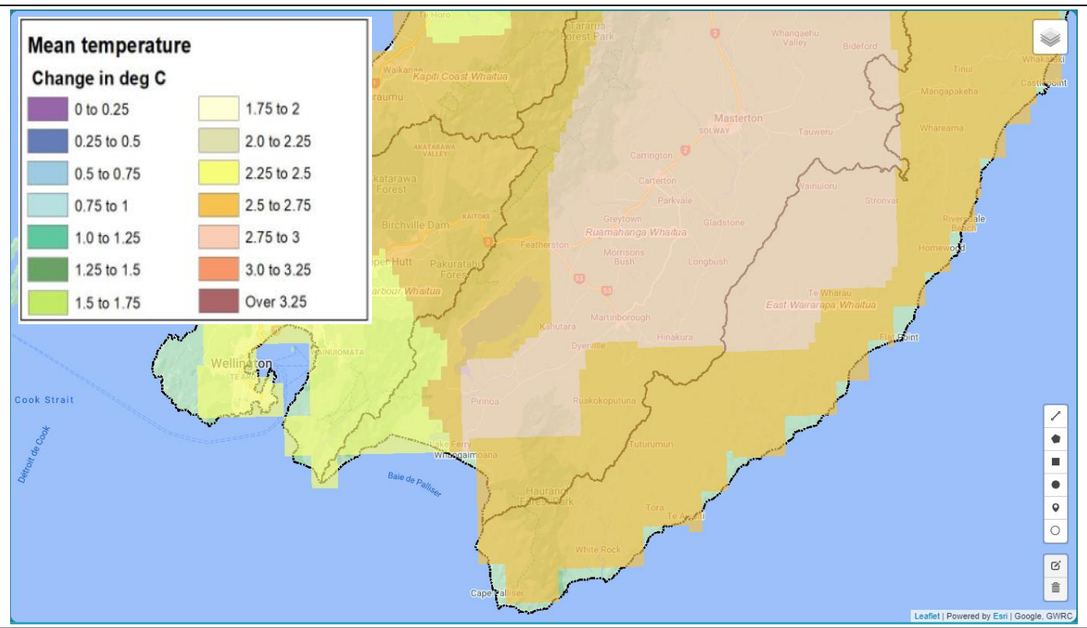
Source: GWRC, http://www.gw.govt.nz/assets/Whaitua-Te-Whanganui-a-Tara/whaitua-map.jpg

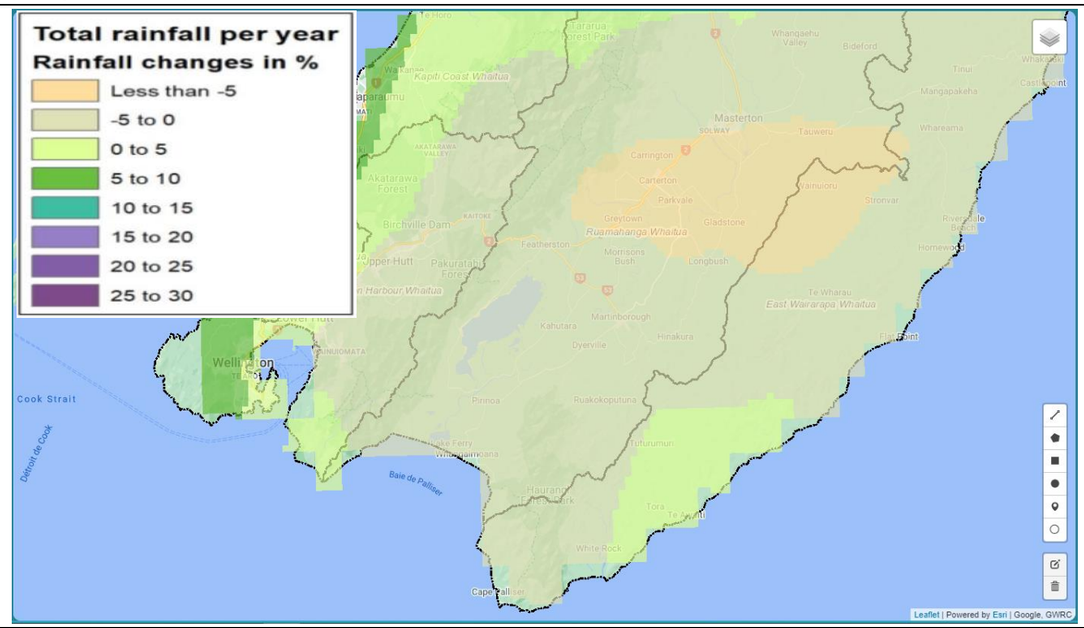
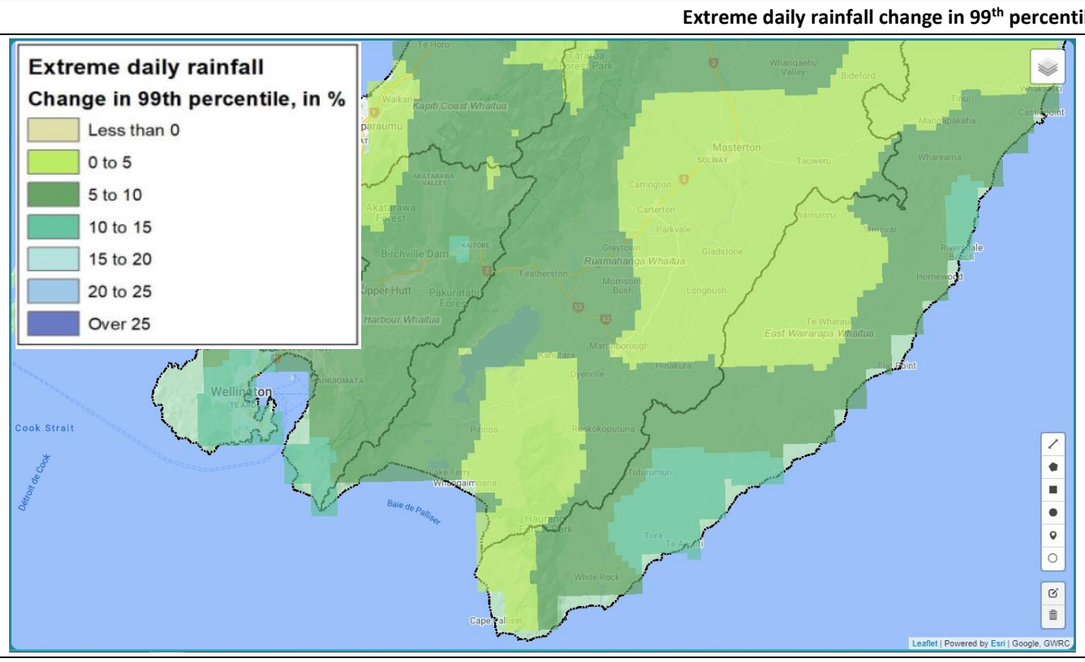
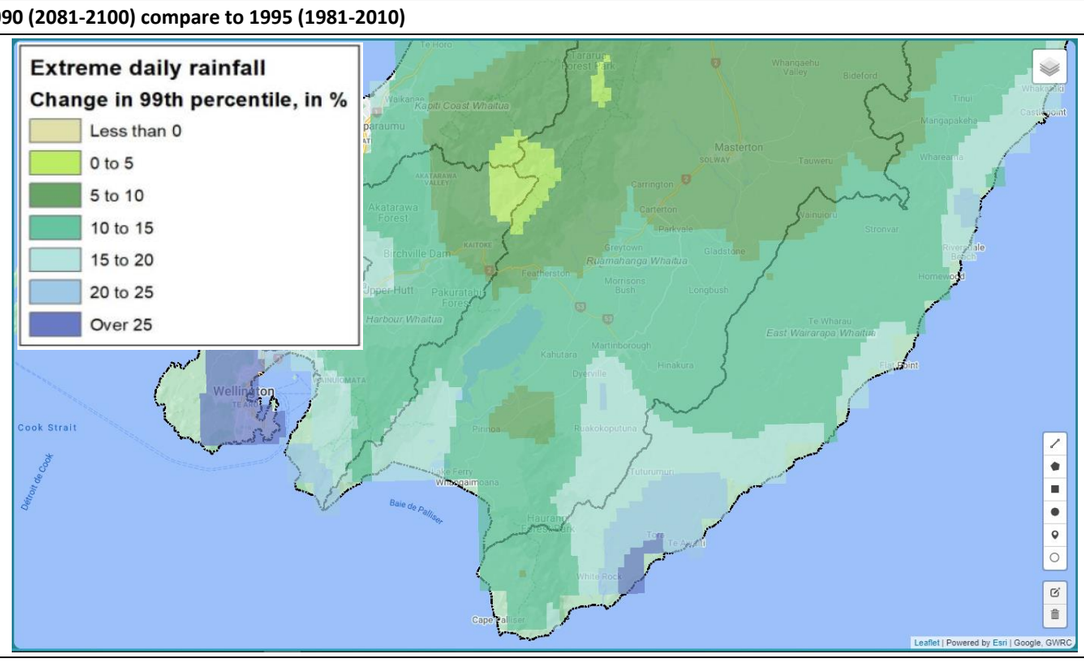
Figure 36: Whaitua Catchments in the Wellington Region

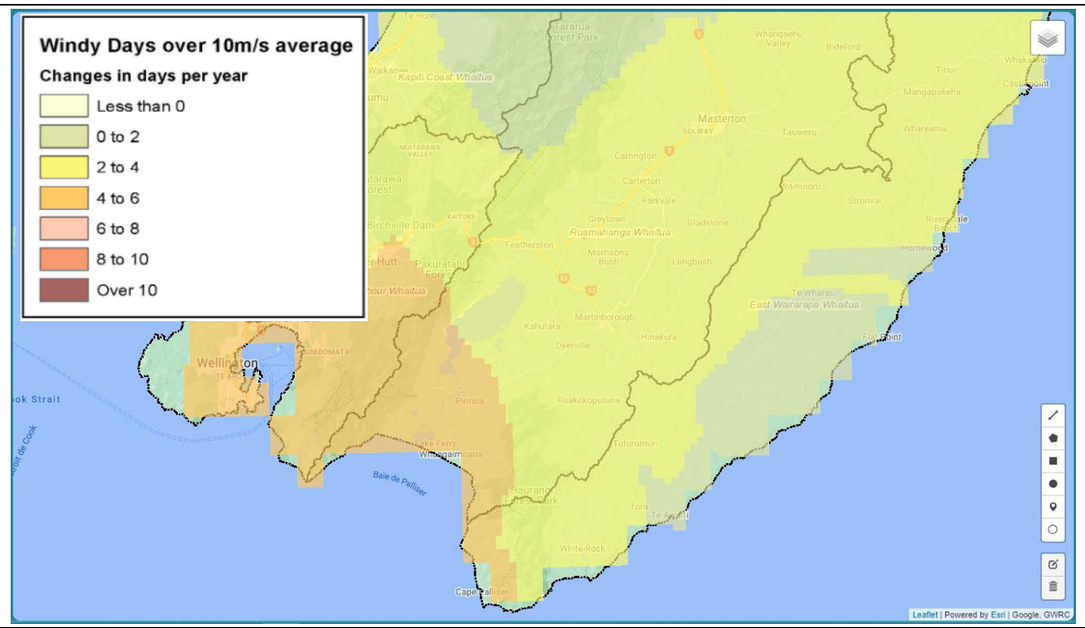
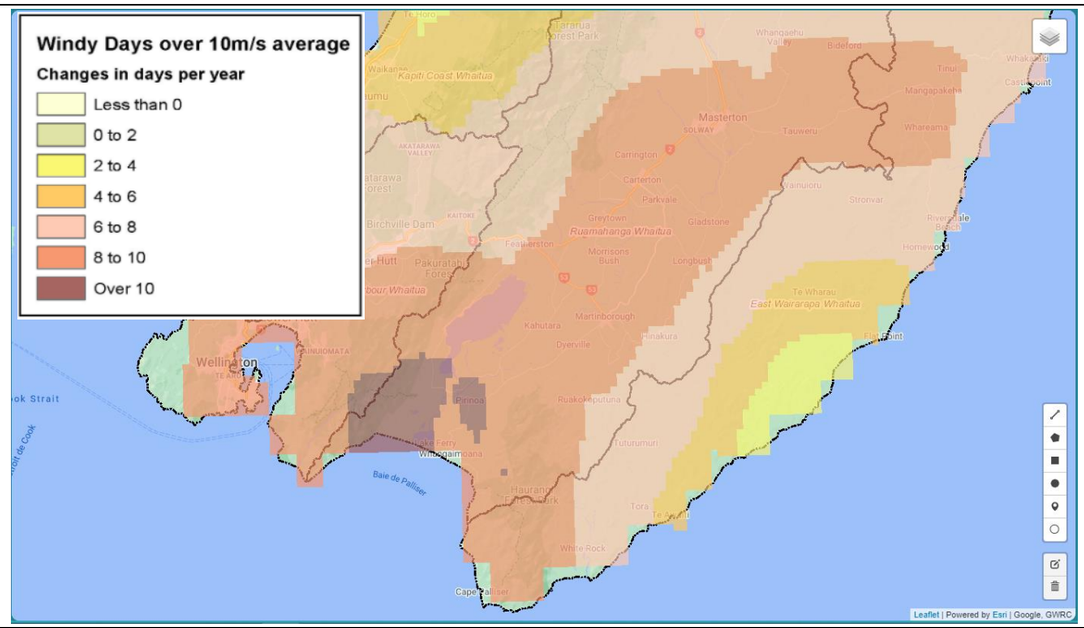
		2040	2090	Seasonal changes	Climate extremes predictions	Uncertainties
Temperature and seasonality	Average annual T°C	Ruamāhanga Whaitua: +0.7 to +1°C above present Wairarapa Coast Whaitua: +0.5 to +1°C above present	Ruamāhanga Whaitua: +1.2 to +3°C above present Wairarapa Coast Whaitua: +1 to +3°C above present	Ruamāhanga Whaitua: Maximum warming in autumn and summer, least in winter Wairarapa Coast Whaitua: Maximum warming in autumn and summer, least in spring	Warm nights (>15°C) could triple in Masterton by the end of the century, while cold days (<10°C) may entirely disappear Heat wave days (i.e. at least three consecutive hot days) could increase by fivefold Unprecedented weather: very long duration heat waves (more than 10 or 15 consecutive hot days) will start to occur in the future Long dry spells (10 or more consecutive days without rain) are expected to increase by up to 50% (additional 20 days per year)	Ruamāhanga Whaitua: lower range for significant emissions reduction (Paris Agreement targets met), and upper range for high emissions. Wairarapa Coast Whaitua: Lower range for RCP4.5 and upper range for RCP8.5
	Hot days (above 25°C)	Ruamāhanga Whaitua: Between 0 and 30 days increase Wairarapa Coast Whaitua: Between 5 and 30 days increase	Ruamāhanga Whaitua: Between 0 and 80 days increase Wairarapa Coast Whaitua: Between 15 and 60 days increase			
	Frost nights	Ruamāhanga Whaitua: Between 0 and 15 days reduction Wairarapa Coast Whaitua: Between 0 and 5 days reduction	Ruamāhanga Whaitua: Between 0 and 40 days reduction Wairarapa Coast Whaitua: Between 0 and 15 days reduction			
	Annual Growing Degree Days (GDD) base 10°C $GDD = (T°C_{max} + T°C_{min})/2) - T°C_{base}$ Measures potential for crop and pasture growth	Increase of 0 to 300 GDD units	Ruamāhanga Whaitua: Increase of 200 to 1000 GDD units Wairarapa Coast Whaitua: Increase of 200 to 900 GDD units			
	Annual potential evapotranspiration deficit (mm) Measures drought intensity	Ruamāhanga Whaitua: +20 to +120 mm Wairarapa Coast Whaitua: +40 to +120 mm	Ruamāhanga Whaitua: +0 to +180 mm Wairarapa Coast Whaitua: +40 to +160 mm			
Rainfall patterns and intensity	Average annual rainfall	5% decrease to 5% increase	Ruamāhanga Whaitua: 0% to 10% decrease Wairarapa Coast Whaitua: 10% decrease to 5% increase	Greater likelihood of positive changes in autumn, winter and spring.	High impact, short duration extreme rainfall events (expected to occur once every 100 years or longer) are predicted to occur more frequently, and also produce up to 13% more rain per degree of warming	There is a large uncertainty in the range of changes due to model differences, emissions scenarios. Changes against emission scenarios are not necessarily linear.
	Amount of rain falling during heavy rainfall days (>99th percentile of daily rainfall)	Ruamāhanga Whaitua: 0% to 10% increase Wairarapa Coast Whaitua: 0% to 15% increase	Ruamāhanga Whaitua: 0% to 20% increase Wairarapa Coast Whaitua: 0% to 30% increase			Although the uncertainty in average rainfall range is high, extreme rainfall increases are more certain due to the increased amount of water vapour that the atmosphere can hold as it gets warmer (about 8% increase in saturation vapour per degree of warming)
	River mean annual low flow discharge (MAL) Measure water shortage in the catchments	Up to 60% decrease	Up to 80% decrease			
	River mean annual flood discharge (MAF) Measures flood potential in the catchments	Ruamāhanga Whaitua: 20% decrease to 40% increase depending on catchment Wairarapa Coast Whaitua: 20% decrease to 20% increase depending on catchment	20% decrease to 60% increase depending on catchment			

	Days of very high and extreme forest fire danger	100% to 150% increase	100% to 150% increase			These figures are given by IPCC model averages. Individual models can show much higher increases of up to 700%.
Wind	Annual number of windy days	Ruamāhanga Whaitua: 0 to 4 days increase Wairarapa Coast Whaitua: 0 to 6 days increase	Ruamāhanga Whaitua: 0 to 12 days increase Wairarapa Coast Whaitua: 0 to 10 days increase			
	Intensity of wind during windy days (>99th percentile of daily mean)	0% to 3% increase	1% to 4% increase			
Sea level and coastal hazards	Permanent sea level rise	+0.12 m to +0.24 m above present	+0.68 m to +1.75 m above present	More regular storm events in the fragile coastal environment may also mean faster and more significant coastal retreat.		The projected sea level rise for 2090 is based on IPCC AR5 plus an estimated additional contribution from Antarctica, based on papers published in Nature in 2018. There is very high confidence in sea level rise projections, probably more so than any other variable.
Oceanic changes	Acidification of the ocean					
	General temperature rise of sea water					
	Marine heatwaves					

Table 10: Projected impacts of climate change for the Wairarapa

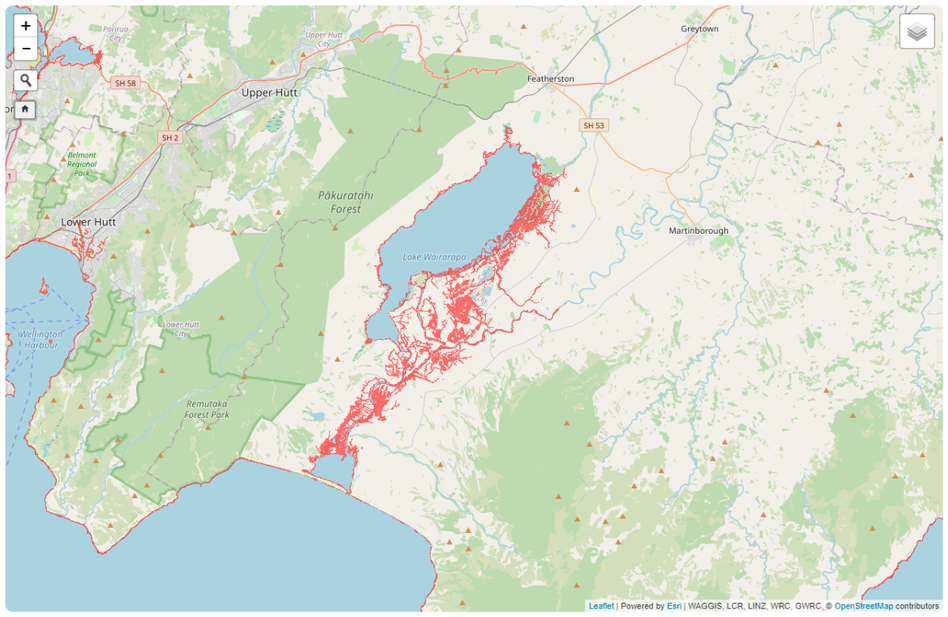
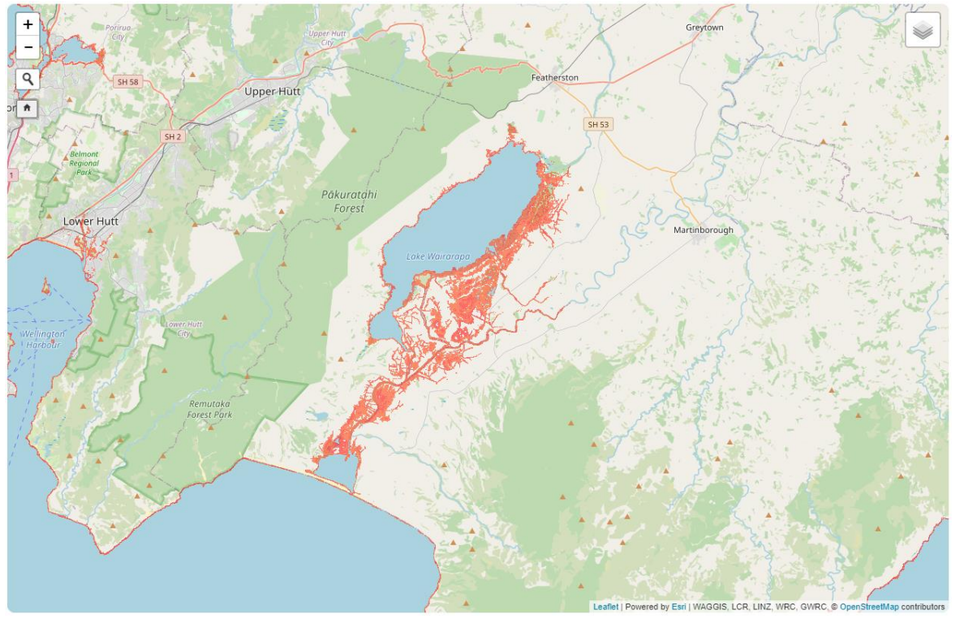
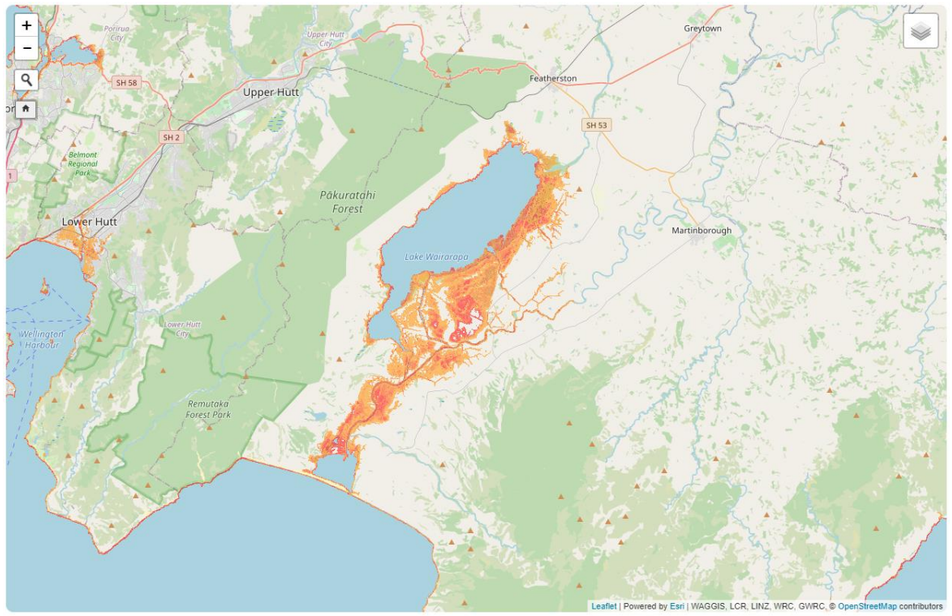
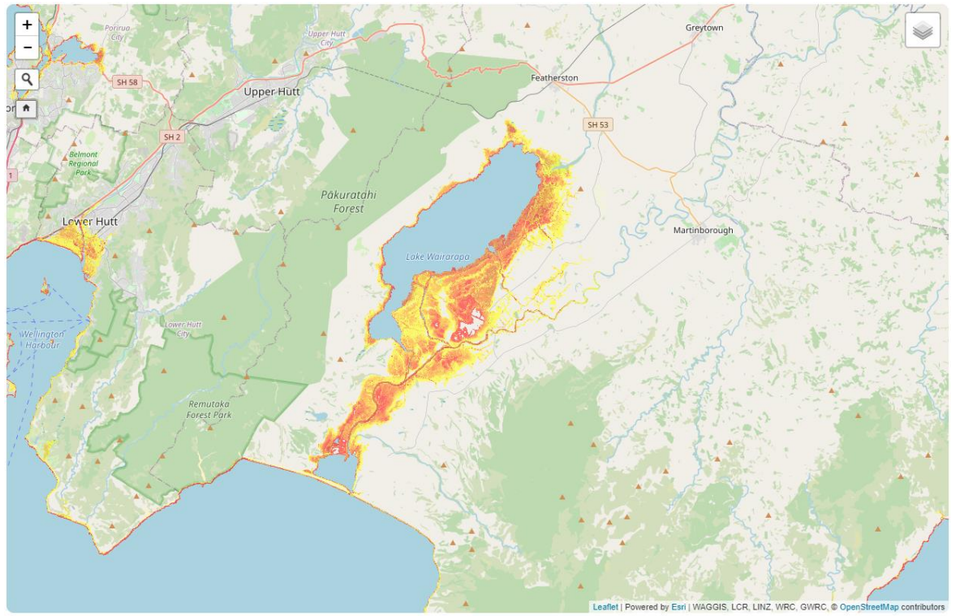
RCP4.5	RCP8.5
Mean temperature change in 2090 (2081-2100) compare to 1995 (1981-2010)	
	

RCP4.5	RCP8.5
Total rainfall change in 2090 (2081-2100) compare to 1995 (1981-2010)	
	
Extreme daily rainfall change in 99th percentile in 2090 (2081-2100) compare to 1995 (1981-2010)	
	

RCP4.5	RCP8.5
Days of windy days (over 10m/s average) change in 2090 (2081-2100) compare to 1995 (1981-2010)	
	

Source: GWRC, https://mapping1.gw.govt.nz/gw/ClimateChange/

Figure 37: Climate change predictions

Sea level rise in 2040 (2031-2050) compare to today	Sea level rise in 2090 (2081-2100) compare to today
+0.2m (predictions: +0.12 to +0.24m)	+0.6m (predictions: +0.68 to +1.75m) – best-case scenario
	
Sea level rise in 2090 (2081-2100) compare to today	**Sea level rise in 2090 (2081-2100) compare to today**
+1.2m (predictions: +0.68 to +1.75m) – Mid-range scenario	+1.8m (predictions: +0.68 to +1.75m) – Worst scenario
	

Source: GWRC, https://mapping1.gw.govt.nz/gw/slr/

Figure 38: Sea level rise predictions around Lake Wairarapa and Lake Onoke

7.2.4 Likely impacts of Climate Change for Wairarapa

The expected direct impacts of climate change (such as increased temperature, increased flood intensity and sea level rise) impact the communities living in Carterton and South Wairarapa District. The key impacts on the communities are:

- Impact on the environmental well-being (biodiversity losses, increased pests and rodents, increased coastal inundation…);
- Impact on the social well-being (increased risk on the human health and human life, increased pressure on drinking water quality and availability…);
- Impact on the economic well-being (reduced productivity, increased damage to properties, increased pressure on insurances and mortgages…);
- Impact on the cultural well-being (loss of cultural identity, loss of important cultural activities, loss of taonga species…).

Expected direct impacts of climate change	**Impacts on communities from expected effects of climate change**			
	Environmental well-being	**Social well-being**	**Economic well-being**	**Cultural well-being**
- **Increased temperatures, drought frequency and intensity***	- **Biodiversity losses*** - Extinction of some species - Higher stress on indigenous ecosystems, plants and animals - Range and habitat of native plants and animals will change (including marine species) - Timing of seasonal activities such as flowering, breeding and migration will change - **Increased pests such as wasps and rodents*** - **Reduced soil fertility*** - **High potential for fruit fly establishment*** - Increased air pollution	- **Increased seasonal allergies (e.g. pollen)*** - Increased human stress (climate anxiety) - Increased human heat stress and mental issues, rurally and in urban centres - Increased diseases (e.g. due to new pests, air pollution, etc) - Increased heat islands due to human activities, large areas of concrete, buildings and vehicles	- Reduced workplace productivity - Higher temperatures may allow for different crops to be grown - Impacts on rural productivity and forestry - Opportunity for tourism due to warmer temperatures	- Loss of cultural identity - Loss on taonga species
- **Increased flood intensity***	- Impacts on plants, animals and natural habitats	- Increased human stress (climate anxiety) - Impact on human life (injuries and/or deaths)	- Increased damage to property and infrastructure - Difficulty in obtaining insurance (reduce or remove insurances from certain areas, significant price increase, mitigation measure required by insurers) - Impacts on rural productivity and forestry	- Loss of identity - Loss of important cultural activities (e.g. mahinga kai)
- **Increased erosion (e.g. due to runoff or sea level rise)***	- Impacts on plants, animals and natural habitats	- Increased human stress (climate anxiety) - Impact on human life (injuries and/or deaths)	- Increased damage to property and infrastructure - Difficulty in obtaining insurance (reduce or remove insurances from certain areas, significant price increase, mitigation measure required by insurers) - Impacts on rural productivity and forestry	- Loss of identity - Loss of important cultural activities (e.g. mahinga kai)
- **Water quality and availability pressures***	- Increased level of toxic algae - Biodiversity losses	- **Increased pressure on water storage*** (higher demand for drinking water at times when water is likely to be scarcer) - Increased human stress (climate anxiety) - Health affected by poor water quality - Increased pressure to reduce water consumption - Impacts on recreational activities	- Impacts on rural productivity and forestry (water shortages) - Increased pressure on the community to become more resilient and self-sufficient (water tanks)	- Loss of identity - Impact Ko wai, mo wai, no wai (waterways connect communities) – cultural value
- **Saltwater intrusion*** on groundwater		- **Groundwater quality and availability pressures*** - Increased human stress (climate anxiety)		- Loss of identity - Impact Ko wai, mo wai, no wai (waterways connect communities) – cultural value
- **Increased wildfire***	- Impacts on plants, animals and natural habitats - Biodiversity losses	- Increased human stress (climate anxiety) - Impact on human life (injuries and/or deaths)	- Impacts on rural productivity and forestry	- Loss of identity
- Sea level rise	- **Increased coastal inundation (some areas to become permanently inundated)*** - Saltwater incursion into freshwater habitats - Biodiversity losses	- Increased human stress (climate anxiety) - Population displacement	- Increased damage to property and infrastructure - Difficulty in obtaining insurance (reduce or remove insurances from certain areas, significant price increase, mitigation measure required by insurers)	- Loss of identity - Loss of important cultural activities (e.g. mahinga kai) - Loss in archaeological sites
- **Ocean acidification***	- **Decline in fish population*** - Altered marine ecosystems, particularly affecting hard shelled species - Biodiversity losses	- Increased human stress (climate anxiety) - Impacts on recreational activities	- Impacts on aquaculture and fishing industries	- Loss of identity

Expected direct impacts of climate change	Impacts on communities from expected effects of climate change			
	Environmental well-being	**Social well-being**	**Economic well-being**	**Cultural well-being**
- Increased winds	- More frequent damages to trees	- Increased human stress (climate anxiety) - Impacts on recreational activities	- Impacts on forestry productivity	- Loss of identity

*** Key environmental impacts for the Ruamāhanga Whaitua and the Wairarapa Coast Whaitua**

Table 11: Impact on the communities from expected direct impacts of climate change

8 Greenhouse gas inventory

8.1 Wairarapa Combined District

In 2018/19 reporting year, the Wairarapa Combined District emitted gross 1,734,320 tCO2e and net 353,460 tCO2e. The biggest sector is agriculture (77.8%), followed by transport (15.7%). Stationary energy (3.4%), Waste (2.3%) and Industry (0.8%) are minor sources of emissions in the Wairarapa.

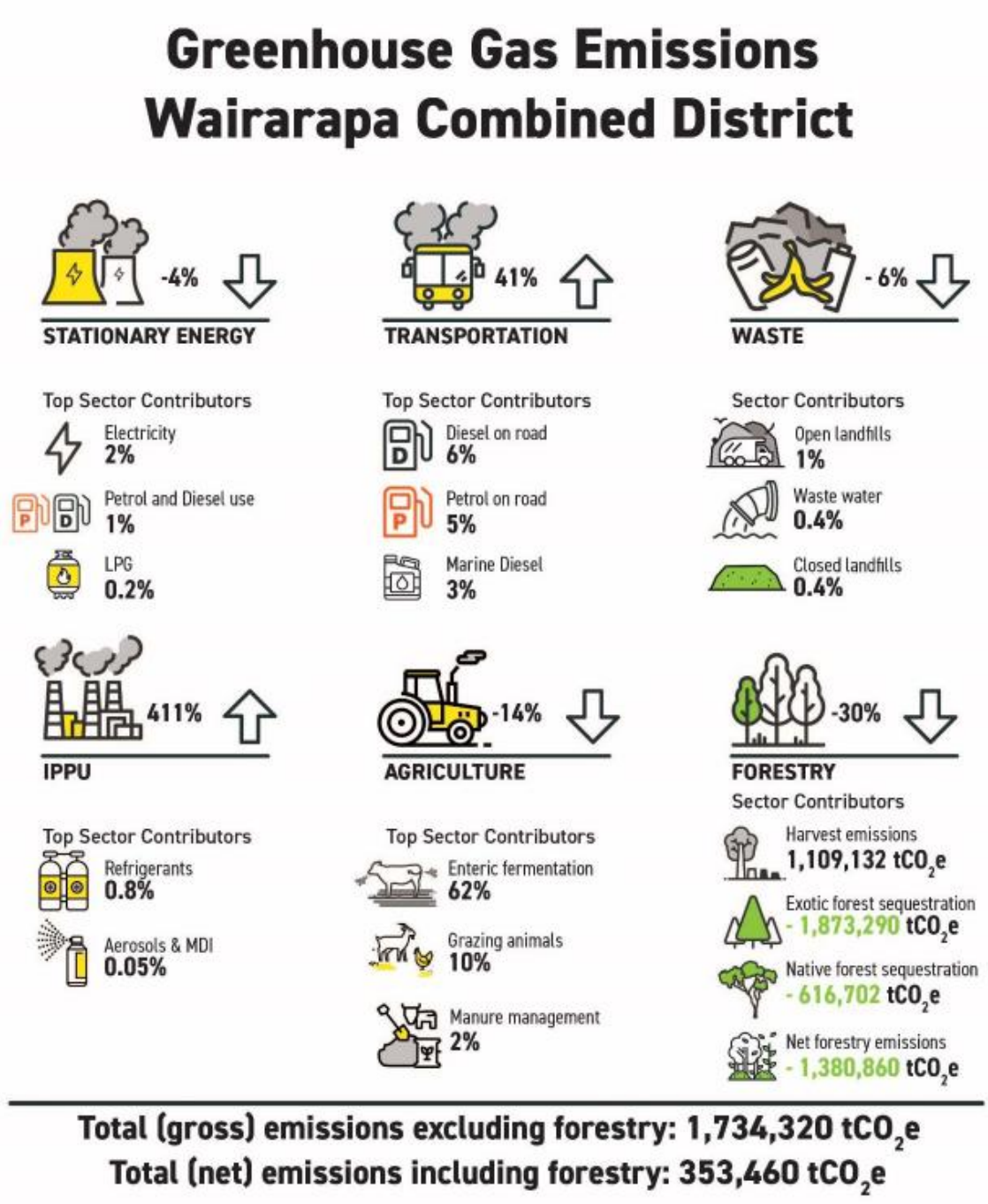
Total gross emissions fell by 7%, from 1,871,095 tCO2e in 2001 to 1,734,320 tCO2e in 2019. Reductions in emissions from stationary energy, waste and agriculture are responsible for the fall in total gross emissions. As the area's population has risen (by 22%, from 39,090 to 47,590), per capita gross emissions have reduced by 24% from 47.9 tCO2e in 2001 to 36.4 tCO2e in 2019.

Net forestry sequestration reduced by 30% between 2001 and 2019 causing net emissions to increase from net-negative total emissions (-91,460 tCO2e in 2001) to net-positive emissions (353,460 tCO2e in 2019).

Carbon emissions for the Wairarapa Combined districts have been measured using the Global Protocol for Community Scale Greenhouse Gas Emissions Inventory (GPC). The method includes emissions from stationary energy, transportation, waste, industry (IPPU), agriculture and forestry sectors. This work has been done by AECOM, commissioned by Greater Wellington Regional Council.

8.1.1 Summary

Figure 39 summarises the rate of change in emissions and top contributors to emissions for different sectors.



Source: Wairarapa Combined District Greenhouse Gas Inventory, AECOM, 2020

Figure 39: Summary of change in emissions from 2001 to 2019 including top contributors to total gross emissions from each sector in 2019

8.1.2 2018/19 Wairarapa Combined District inventory

Sector	tCO_2e	% Gross	% Sector
Stationary Energy			
Electricity Consumption	31,928	1.8%	53.8%
Electricity T&D Loss	2,622	0.2%	4.4%
Natural Gas	-	0.0%	0.0%
Natural Gas T&D Loss	-	0.0%	0.0%
LPG	3,130	0.2%	5.3%
Stationary Petrol & Diesel Use	20,159	1.2%	34.0%
Coal	718	0.0%	1.2%
Biofuel / Wood	737	0.0%	1.2%
Total:	59,293	3.4%	100%
Transportation			
Petrol	91,514	5.3%	33.7%
Diesel	105,330	6.1%	38.8%
Rail Emissions	696	0.0%	0.3%
Bus (Electric)	9	0.0%	0.0%
Jet Kerosene	23,367	1.3%	8.6%
Av Gas	51	0.0%	0.0%
Marine Diesel	47,294	2.7%	17.4%
Light Fuel Oil	3,018	0.2%	1.1%
LPG	232	0.0%	0.1%
Total:	271,511	15.7%	100%
Waste			
Solid Waste Disposal	32,665	1.9%	81.8%
Wastewater	7,285	0.4%	18.2%
Total	39,950	2.3%	100%
IPPU			
Industrial Emissions	14,219	0.8%	100.0%
Total	14,219	0.8%	100%
Agriculture			
Agriculture	1,349,348	77.8%	100%
Total	1,349,348	77.8%	100%
Forestry			
Exotic Forest Sequestration	-1,873,290	N/A	N/A
Native Forest Sequestration	-616,702	N/A	N/A
Harvest Emissions	1,109,132	N/A	N/A
Total	-1,380,860	N/A	100%

Total Emissions	tCO_2e
Total (net) incl. forestry	353,460
Total (gross) excl. forestry	1,734,320

Source: Wairarapa Combined District Greenhouse Gas Inventory, AECOM, 2020

Table 12: Summary of Wairarapa Combined District's gross emissions split by sector and associated sub-categories

In 2018/19 reporting year, the Wairarapa Combined District emitted gross 1,734,320 tCO_2e and net 353,460 tCO_2e.

The biggest sector is agriculture (77.8%), followed by transport (15.7%). Stationary energy (3.4%), Waste (2.3%) and Industry (0.8%) are minor sources of emissions in Wairarapa.

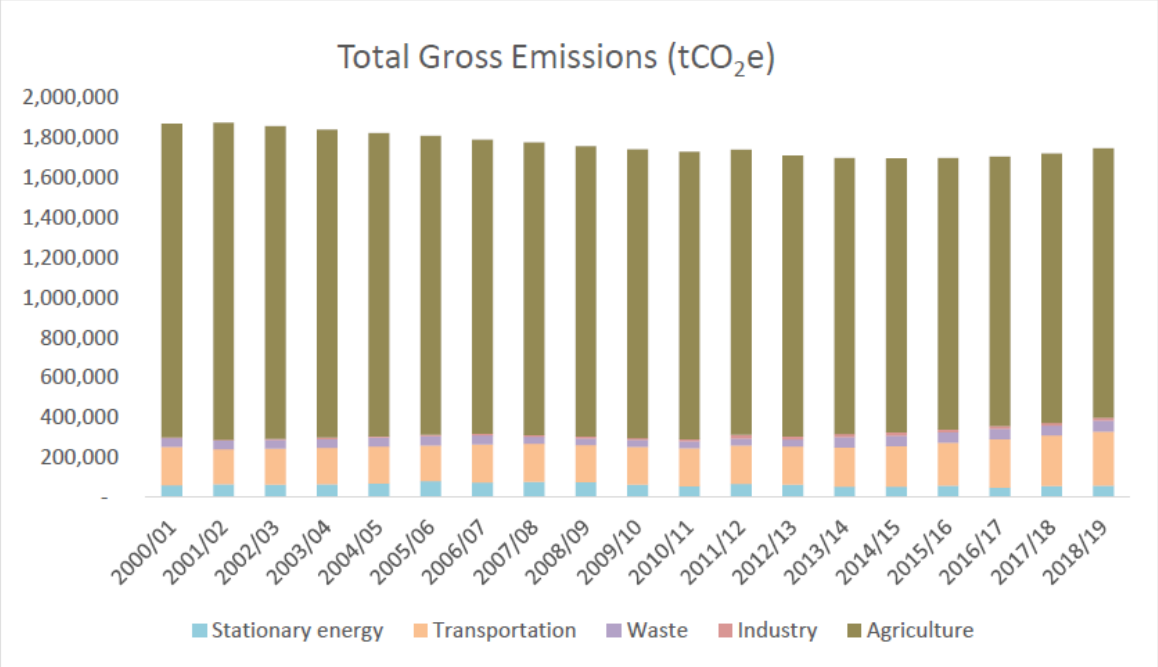
Biogenic Methane (Included in gross emissions)		
Biofuel	19	t CH_4
Biodiesel	-	t CH_4
Landfill Gas	961	t CH_4
Wastewater Treatment	187	t CH_4
Enteric fermentation	31,813	t CH_4
Manure Management	992	t CH_4
Total biogenic CH_4	**33,972**	**t CH_4**

Source: Wairarapa Combined District Greenhouse Gas Inventory, AECOM, 2020

Table 13: Biogenic Methane emitted in 2018/19

Table 13 state the biogenic methane emissions. The Wairarapa Combined District emitted 33,972 tons of Biogenic Methane in 2018/19. The importance of Biogenic Methane is highlighted in NZ's Climate Change Response (Zero Carbon) Amendment Act. The Act includes targets to reduce Biogenic CH_4 between 24 percent and 47 percent below 2017 levels by 2050, and 10 percent reduction below 2017 levels by 2030.

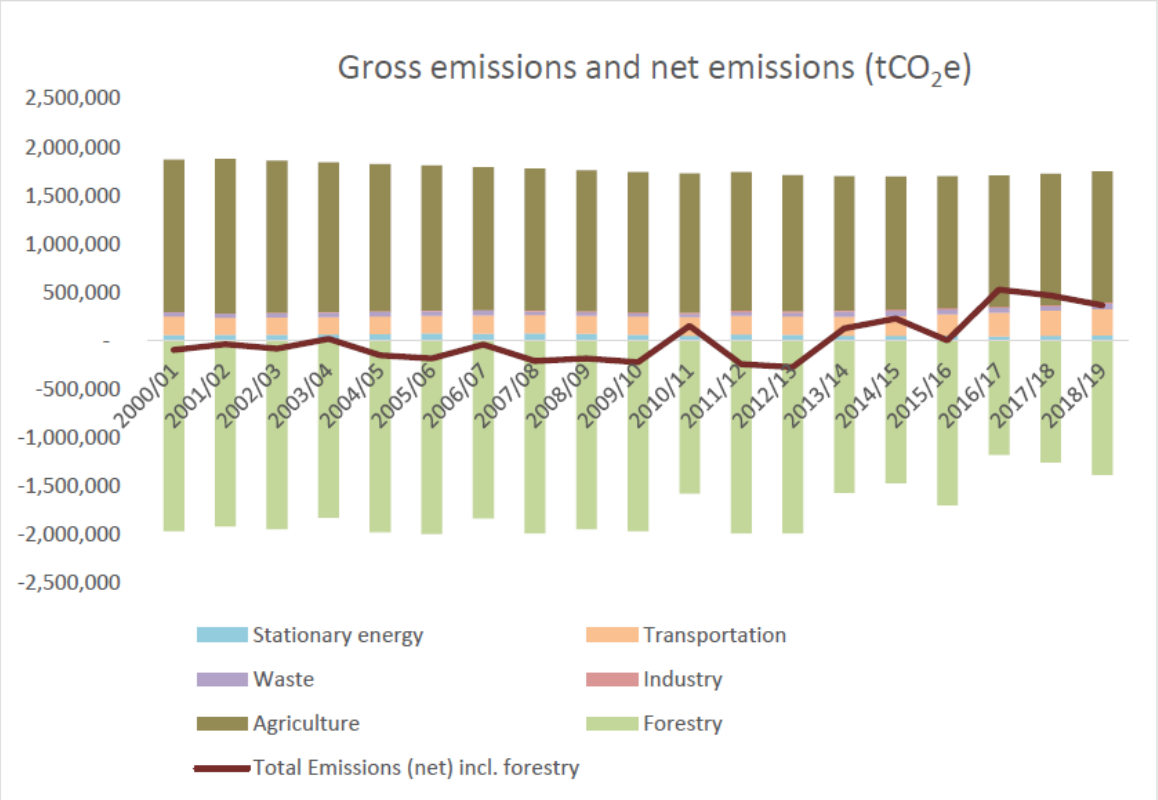
8.1.3 Changes in emissions inventory, 2001 to 2019



Source: Wairarapa Combined District Greenhouse Gas Inventory, AECOM, 2020

Figure 40: Gross emissions per year (excluding forestry) from 2001 to 2019

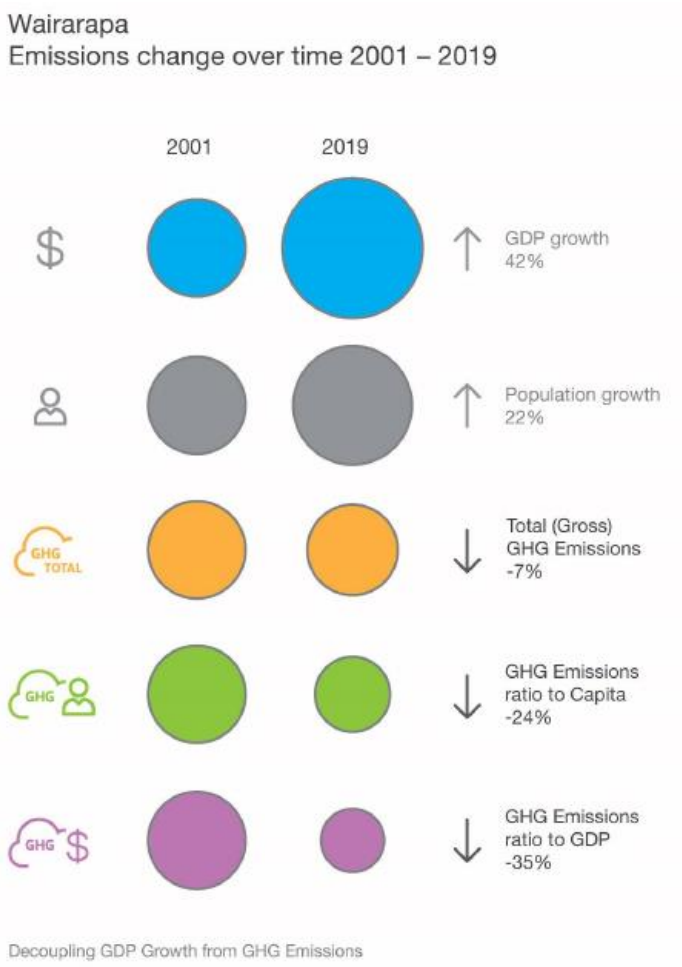
Total gross emissions fell by 7%, from 1,871,095 tCO_2e in 2001 to 1,734,320 tCO_2e in 2019. Reductions in emissions from stationary energy, waste and agriculture are responsible for the fall in total gross emissions. As the area's population has risen (by 22%, from 39,090 to 47,590) and per capita gross emissions have reduced by 24% from 47.9 tCO_2e in 2001 to 36.4 tCO_2e in 2019.



Source: Wairarapa Combined District Greenhouse Gas Inventory, AECOM, 2020

Figure 41: Annual emissions showing gross and net emissions (including forestry) from 2001 to 2019

Figure 41 shows the impact of sequestration in the forestry sector on reducing net emissions. Net forestry sequestration reduced by 30% between 2001 and 2019 causing net emissions to increase from net-negative total emissions (-91,460 tCO_2e in 2001) to net-positive emissions (353,460 tCO_2e in 2019).



Source: Wairarapa Combined District Greenhouse Gas Inventory, AECOM, 2020

Figure 42: Change in total gross emissions compared to other metrics of interest

Figure 42 shows the change in gross emissions when compared to changes in other metrics of interest between 2001 and 2019. Total gross emissions have reduced by 7%, against the backdrop of a 22% growth in population within the Wairarapa. Per capita emissions have fallen roughly in line with the rise in population observed (by 24%).

When emissions grow less rapidly than Gross Domestic Product (GDP) as a measure of income then this process is known as decoupling. The term decoupling is an expression of the desire to mitigate emissions without harming economic wellbeing. The changes in emissions and GDP illustrated in Figure 42 suggest at a high-level decoupling has occurred in the last two decades. GDP was 42% higher in 2019 than in 2001 while emissions per unit of GDP declined by 35%.

The exact drivers for the decoupling of emissions from GDP are difficult to pinpoint. New policies, for restructuring the way to meet demand for energy, food, transport and housing will all contribute. In this case, both direct local actions including reducing the emissions from landfill gas and indirect national trends e.g. reduction of emissions from electricity generation will have contributed to the trends noted.

8.2 Carterton District Council

Carterton District Council had a gross emission of 372.91 tCO_2e in 2018 (base year) and 275.99 tCO_2e in 2020 (-26%). The biggest source is transport (50%) followed by electricity (21%, wastewater treatment (19%) and water supply (9%). Waste and refrigerant are minor sources of greenhouse gas.

Carterton District Council had a net emission of -6,864.48 tCO_2e in 2018 (base year) and -6,961.40 tCO_2e in 2020 (+1.41%).

Biogenic methane emissions increased by 2.73% between 2018 and 2020.

The Table 14, Table 15, Table 16, Table 18, Table 17 and Table 20 are the summary on the greenhouse gas inventory made for CDC since 2018. For further information, refer to the greenhouse gas inventory reports.

The methodology used for these greenhouse gas inventories is the methodology provided by MfE 'Measuring Emissions: A Guide for Organisations'. The emission factors were updated in 2020. Also, due to Covid-19, a lockdown (level 3 and 4) happened between the 23rd of March 2020 and 14th May 2020.

	Scope	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Evolution 2018 - 2020
CORPORATE SERVICES		**13.77**	**14.11**	**15.17**	**+10.16%**
Electricity – Other	Scope 2	*3.10*	*2.92*	*3.07*	
Transport and distribution losses	Scope 3	*0.27*	*0.25*	*0.26*	
Transport – Diesel	Scope 1	*0*	*0*	*0*	
Transport – Petrol	Scope 1	*7.50*	*7.89*	*8.06*	
Transport – Flights	Scope 3	*0.60*	*0.75*	*0.83*	
Waste	Scope 3	*2.30*	*2.30*	*2.95*	
Refrigerant	Scope 1	*0*	*0*	*0*	
COMMUNITY SERVICES		**63.70**	**57.99**	**23.14**	**-63.68%**
Electricity – Other	Scope 2	*58.67*	*53.41*	*21.31*	
Transport and distribution losses	Scope 3	*5.03*	*4.58*	*1.83*	
OPERATIONS		**112.73**	**127.31**	**79.43**	**-29.54%**
Electricity – Other	Scope 2	*3.04*	*3.18*	*1.57*	
Electricity – Street lights	Scope 2	*64.89*	*49.70*	*20.38*	
Transport and distribution losses	Scope 3	*5.82*	*4.35*	*1.88*	

	Scope	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Evolution 2018 - 2020
Transport – Diesel	Scope 1	*30.82*	*55.71*	*48.98*	
Transport – Petrol	Scope 1	*8.16*	*14.19*	*6.62*	
WATER		**106.68**	**106.56**	**118.33**	**+10.92%**
Transport – Diesel	Scope 1	*47.82*	*43.42*	*41.30*	
Transport – Petrol	Scope 1	*0*	*0*	*0*	
Water supply	Scope 3	*21.64*	*24.97*	*25.55*	
Wastewater treatment	Scope 3	*47.82*	*38.16*	*51.48*	
PARKS AND RESERVES		**64.04**	**42.32**	**28.89**	**-54.89%**
Electricity – Other	Scope 2	*12.63*	*7.95*	*6.57*	
Transport and distribution losses	Scope 3	*1.08*	*0.68*	*0.56*	
Transport – Diesel	Scope 1	*42.09*	*25.42*	*20.11*	
Transport – Petrol	Scope 1	*0.74*	*0.77*	*0.78*	
Green waste	Scope 3	*7.50*	*7.50*	*0.86*	
REGULATORY		**12.00**	**10.35**	**11.04**	**-8.04%**
Transport – Diesel	Scope 1	*6.52*	*5.93*	*2.63*	
Transport – Petrol	Scope 1	*5.48*	*4.42*	*8.40*	
GROSS EMISSIONS		**372.91**	**358.67**	**275.99**	**-25.99%**

Table 14: Emissions by business units

	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
Scope 1	149.12	157.74	136.89	-8.20%
Scope 2	142.33	117.16	52.91	-62.83%
Scope 3	81.46	83.73	86.20	+5.82%
GROSS EMISSIONS	**372.91**	**358.67**	**275.99**	**-25.99%**

Table 15: Emissions by scopes[5]

[5] Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions not included in scope 2

	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
ELECTRICITY	**154.53**	**127.21**	**57.44**	**-62.83%**
Streetlights	*64.89*	*49.70*	*20.38*	
Other	*77.44*	*67.46*	*32.53*	
Transport and distribution losses	*12.20*	*10.05*	*4.54*	
TRANSPORT	**149.72**	**158.49**	**137.71**	**-8.02%**
Petrol	*21.87*	*27.27*	*23.86*	
Diesel	*127.25*	*130.47*	*113.02*	
Flights	*0.60*	*0.75*	*0.83*	
WASTEWATER	**37.21**	**38.16**	**51.48**	**+38.33%**
WATER SUPPLY	**21.64**	**24.97**	**25.55**	**+18.07%**
WASTE	**9.80**	**9.80**	**3.81**	**-61.16%**
REFRIGERANT	**0.00**	**0.00**	**0.00**	**0%**
GROSS EMISSIONS	**372.91**	**358.67**	**275.99**	**-25.99%**

Table 16: Emissions by sources

	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Evolution 2018 - 2020
GROSS EMISSIONS	**372.91**	**358.67**	**275.99**	**-25.99%**
Sequestration (forests)	*-7,237.39*	*-7,237.39*	*-7,237.39*	*0%*
Harvest emissions	*0*	*0*	*0*	*0%*
TOTAL	-7,237.39	-7,237.39	-7,237.39	0%
NET EMISSIONS	**-6,864.48**	**-6,878.76**	**-6,961.40**	**+1.41%**

Table 17: Forestry

	2018	2019	2020	Evolution 2018 - 2020
Gross emissions per FTE (t CO_2e) 2018: 59.8 FTE 2019: 61.2 FTE 2020: 66.3 FTE	6.24	5.86	4.16	-33.25%
Gross emissions per capita (kg CO_2e) 2018: 9,440 2019: 9,690 2020: 9,888	39.50	37.01	27.91	-29.43%

Table 18: Emissions per FTE and per head of population

	tCH_4 – 2018	tCH_4 – 2019	tCH_4 – 2020	Evolution 2018 - 2020
Waste	2.30	2.30	2.95	+28.00%
	7.50	7.50	0.50	-93.33%
Wastewater	18.61	19.08	25.74	+38.33%
Total	28.41	28.88	29.19	+2.73%

Table 19: Biogenic methane emissions

8.3 South Wairarapa District Council

South Wairarapa District Council had a gross emission of 248.20 tCO_2e in 2018 (base year) and 243.17 tCO_2e in 2020 (-2%). The biggest source is the electricity (38%) followed by water supply (21%), transport (21%) and wastewater treatment (19%). Waste and refrigerant are minor sources of greenhouse gas.

South Wairarapa District Council had a net emission of 2,687.68 tCO_2e in 2018 (base year) and 665.70 tCO_2e in 2020 (-795%).

Biogenic methane emissions decreased by 2.29% between 2018 and 2020.

The Table 20, Table 21, Table 22, Table 24, Table 23 and Table 25 are the summary on the greenhouse gas inventory made for SWDC since 2018. For further information, refer to the greenhouse gas inventory reports.

The methodology used for these greenhouse gas inventories is the methodology provided by MfE 'Measuring Emissions: A Guide for Organisations'. The emission factors were updated in 2020. Also, due to Covid-19, a lockdown (level 3 and 4) happened between the 23rd of March 2020 and 14th May 2020.

	Scope	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
CORPORATE SERVICES		**34.55**	**43.20**	**30.85**	**-10.70%**
Electricity – Other	Scope 2	5.52	4.75	*5.48*	
Transport and distribution losses	Scope 3	0.47	0.41	*0.47*	
Transport – Diesel	Scope 1	7.35	12.87	*9.82*	
Transport – Petrol	Scope 1	16.55	18.66	*13.02*	
Transport – Flights	Scope 3	1.93	3.78	*0*	
Waste	Scope 3	2.73	2.73	*2.07*	
Refrigerant	Scope 1	0.00	0.00	*0*	
COMMUNITY SERVICES		**20.98**	**25.60**	**25.79**	**+22.90%**
Electricity – Other	Scope 2	19.33	23.58	*23.75*	
Transport and distribution losses	Scope 3	1.66	2.02	*2.04*	
OPERATIONS		**55.19**	**44.99**	**35.82**	**-35.10%**
Electricity – Other	Scope 2	0.33	0.33	*2.04*	
Electricity – Street lights	Scope 2	30.71	23.27	*22.77*	
Transport and distribution losses	Scope 3	2.66	2.02	*2.13*	
Transport – Diesel	Scope 1	7.64	6.23	*1.48*	

	Scope	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
Transport – Petrol	Scope 1	13.85	13.14	*7.40*	
WATER		**93.16**	**81.43**	**97.99**	**+5.18%**
Water supply	Scope 3	46.04	46.05	*52.04*	
Wastewater treatment	Scope 3	47.12	35.39	*45.95*	
PARKS AND RESERVES		**31.40**	**30.85**	**39.15**	**+24.68%**
Electricity – Other	Scope 2	26.46	25.22	*31.11*	
Transport and distribution losses	Scope 3	2.27	2.16	*2.67*	
Transport – Diesel	Scope 1	0.00	0.00	*0*	
Transport – Petrol	Scope 1	2.67	3.46	*5.37*	
REGULATORY		**12.91**	**12.72**	**13.56**	**+5.04%**
Transport – Diesel	Scope 1	11.48	11.58	*11.71*	
Transport – Petrol	Scope 1	1.43	1.15	*1.86*	
GROSS EMISSIONS		**248.20**	**238.80**	**243.17**	**-2.03%**

Table 20: Emissions by business units

	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
Scope 1	60.97	67.08	50.66	-16.94%
Scope 2	82.35	77.16	85.15	+3.42%
Scope 3	104.88	94.56	107.35	+2.37%
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	**-2.03%**

Table 21: Emissions by scopes[5]

	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
ELECTRICITY	**89.41**	**83.77**	**92.46**	**+3.42%**
Streetlights	*30.71*	*23.27*	*22.77*	
Other	*51.64*	*53.88*	*62.38*	
Transport and distribution losses	*7.06*	*6.62*	*7.31*	
TRANSPORT	**62.90**	**70.86**	**50.66**	**-19.49%**
Petrol	*34.50*	*36.40*	*27.65*	
Diesel	*26.47*	*30.68*	*23.01*	
Flights	*1.93*	*3.78*	*0*	
WASTEWATER	**47.12**	**35.39**	**45.95**	**-2.49%**
WATER SUPPLY	**46.04**	**46.05**	**52.04**	**+13.04%**
WASTE	**2.73**	**2.73**	**2.07**	**-24.16%**
REFRIGERANT	**0.00**	**0.00**	**0.00**	**0%**
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	**-2.03%**

Table 22: Emissions by sources

	t Co_2e – 2018	t Co_2e – 2019	t Co_2e – 2020	Evolution 2018 - 2020
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	**-2.03%**
Sequestration (forests)	*-2,511.26*	*-2,408.15*	*-2,332.09*	*-7.13%*
Harvest emissions	*4,950.74*	*2,659.96*	*2,754.62*	*-44.36%*
TOTAL	2,439.48	251.81	422.53	-82.68%
NET EMISSIONS	**2687.68**	**490.60**	**665.70**	**-75.23%**

Table 23: Forestry

	2018	2019	2020	Evolution 2018 - 2020
Gross emissions per FTE (t CO_2e) 2018: 41 FTE 2019: 44 FTE 2020: 48 FTE	6.05	5.43	5.07	-16.31%
Gross emission per capita (kg CO_2e) 2018: 10,920 2019: 11,100 2020: 11,245	22.73	21.51	21.63	-4.86%

Table 24: Emissions per FTE and per head of population

	tCH_4 – 2018	tCH_4 – 2019	tCH_4 – 2020	Evolution 2018 - 2020
Waste	2.07	2.07	2.07	0%
Wastewater	23.56	17.69	22.97	-2.49%
Total	25.63	19.77	25.05	-2.29%

Table 25: Biogenic methane emissions

9 Targets

Carbon targets have been set up. They are ambitious but also, achievable and realistic. Being small councils, we must be aware of our limits.

During the period 2020 – 2030, Carterton and South Wairarapa District Councils aim to:

- Reduce their gross greenhouse gas emissions;
- Increase the reservoirs, therefore the amount of greenhouse gas sequestered every year;
- Reduce biogenic methane by 10% below 2017 levels.

9.1 International targets – Paris Agreement

The Paris Agreement was adopted by Parties under the United Nations Framework Convention on Climate Change (UNFCCC) on 12 December 2015. It commits all countries to take action on climate change. New Zealand ratified the Paris Agreement on 4 October 2016.

The purpose of the Paris Agreement is to:

- keep the global average temperature well below 2°C above pre-industrial levels, while pursuing efforts to limit the temperature increase to 1.5°C;
- strengthen the ability of countries to deal with the impacts of climate change;
- make sure that financial flows support the development of low-carbon and climate-resilient economies.

By ratifying the agreement New Zealand commits to having an emissions reduction target and regularly updating it. Ratification also commits us to:

- continue to regularly report on our emissions and how we're tracking towards meeting our target;
- continue to provide financial support to assist developing countries' mitigation and adaptation efforts;
- plan for adaptation.

9.2 National targets – Climate Change Response (Zero Carbon) Amendment Act

The Climate Change Response (Zero Carbon) Amendment Act sets a greenhouse gas reduction targets and require that:

- net accounting emissions of greenhouse gases in a calendar year, other than biogenic methane, are zero by the calendar year beginning on 1 January 2050 and for each subsequent calendar year;
- emissions of biogenic methane[6] in a calendar year:
    - are 10% less than 2017 emissions[7] by the calendar year beginning on 1 January 2030;
    - are 24% to 47% less than 2017 emissions by the calendar year beginning on 1 January 2050 and for each subsequent calendar year.

The 2050 target will be met if emissions reductions meet or exceed those required by the target.

[6] Methane produced from biological sources (plant and animal).

[7] 2017 emissions mean the emissions of biogenic methane for the calendar year beginning on 1 January 2017.

9.3 Councils' targets

Carterton and South Wairarapa District Councils aimed to set up greenhouse gas emissions targets in order to comply to Climate Change Response (Zero Carbon) Amendment Act and to the Paris agreement.

The targets must be ambitious but also, achievable and realistic. Being small councils, we have to be aware of our limits.

During the period 2020 – 2030, Carterton and South Wairarapa District Councils aim to:

- Reduce their gross greenhouse gas emissions;
- Increase the reservoirs, therefore the amount of greenhouse gas sequestered every year;
- Reduce biogenic methane[8] by 10% below 2017 levels.

To be able to be able to achieve these targets, the councils set up an action plan that is exposed in the following part of the strategy. The actions are intended for:

- the councils;
- the community;
- the businesses.

The greenhouse gas inventories will allow the councils to keep track and record of their emissions and make sure the councils are in the right direction.

[8] Biogenic methane is produced from biological (plant and animal) sources.

10 Conclusion

By writing this ambitious strategy and action plan, Carterton District Council and South Wairarapa District Council are compliant to:

- the Paris Agreement;
- the Climate Change Response (Zero Carbon) Amendment Act;
- the New Zealand Local Government Leaders' Climate Change Declaration.

Indeed, the councils:

- Wrote a Climate Change Strategy in order to reduce their greenhouse gas emissions;
- Committed to regularly report on their greenhouse gas emissions;
- Set up carbon reduction 2030 targets that are compliant to the Climate Change Response (Zero Carbon) Amendment Act:
    - Reduce gross greenhouse gas emissions;
    - Increase the reservoirs, therefore the amount of greenhouse gas sequestered every year;
    - Reduce biogenic methane by 10% below 2017 levels.

This strategy was adopted in February 2020 for CDC and March 2020 for SWDC. This version is the first review of the Ruamāhanga Strategy (April 2021).

11 Contacts and workgroups

The councils are part of many groups to improve its efficiency in climate change mitigation:

- the Wellington Region Climate Change Forum;
- the Wellington Region Electric Vehicle Working Party;
- the Climate Change Officer Network (across New Zealand);
- The Enviroschools Climate Change Group;
- Wairarapa Climate Change Caucus.

12 References

Websites

ID Community: https://profile.idnz.co.nz/carterton - consulted 28/05/2020

ID Community: https://profile.idnz.co.nz/south-wairarapa - consulted 28/05/2020

Greater Wellington Regional Council: https://mapping1.gw.govt.nz/gw/ClimateChange/ - consulted on 24/09/2019

Maori Dictionary: https://maoridictionary.co.nz/ - consulted 07/01/2020

Metoffice: https://www.metoffice.gov.uk/weather/learn-about/climate-and-climate-change/climate-change/effects-of-climate-change - consulted on 04/12/2019

Ministry for Environment: https://www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region/wellington - consulted 24/09/2019

Ministry for Environment: https://www.mfe.govt.nz/climate-change/why-climate-change-matters/global-response/paris-agreement - consulted 23/01/2020

NIWA: https://www.niwa.co.nz/our-science/climate/information-and-resources/clivar/greenhouse - consulted 04/12/2019

NIWA: https://niwa.co.nz/climate/national-and-regional-climate-maps/wellington - consulted 08/01/2020

New Zealand Government: https://www.beehive.govt.nz/release/national-climate-change-risk-assessment-panel-appointed - consulted 04/12/2019

Stats NZ: https://www.stats.govt.nz/ - consulted 03/03/2021

Infometrics: https://portal.infometrics.co.nz/ - consulted 03/03/2021

Commuter Waka App: https://commuter.waka.app/ consulted 03/03/2021

Publication, books, articles

WMO Provisional Statement on the State of the Global Climate in 2019, World Meteorological Organization, 2019

The representative concentration pathways: an overview, Van Vuuren et al., 2011

United Nations Framework Convention on Climate Change, 1992

Climate Change and variability – Wellington Region, NIWA, 2017

New Zealand's Environmental Reporting Series: Our atmosphere and climate, Ministry for the Environment & Stat NZ, 2020

Carterton District Council Long Term Plan 2018 – 2028, Carterton District Council, 2018

South Wairarapa District Council Long Term Plan 2018 – 2028, South Wairarapa District Council, 2018

Wairarapa Combined District Plan, Carterton District Council, South Wairarapa District Council, Masterton District Council

Wairarapa Economic Development Strategy and Action Plan, Carterton District Council, South Wairarapa District Council, Masterton District Council, Greater Wellington Regional Council, October 2018

Wairarapa Combined District Greenhouse Gas Inventory, AECOM, May 2020

Wairarapa Moana, the lake and its people, Ian Fraser Grant, 2012

Onoke – A saga of Wairarapa Moana and its people, Mary Tipoki

Ruamahanha: The story of a river, Stuff, 24 feb 2018

Conservation minister launches wetland project in South Wairarapa, Stuff, 3 May 2019

APRIL 21

RUAMĀHANGA STRATEGY

VOLUME 2: ACTION PLAN

TE KAUNIHERA-Ā-ROHE O TARATAHI
CARTERTON
DISTRICT COUNCIL

SOUTH WAIRARAPA
DISTRICT COUNCIL
Kia Reretahi Tātau

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Document review

Version	Date	Review details
2020	29/05/2020	Final version #1
2021_A	22/04/2021	Draft reviewed strategy

Disclaimer

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1 Achievements for the period 2019-2021

The period 2019-2021 was the first years of implementation of the Ruamāhanga Strategy. This year's main objective was to raise awareness and start reducing the emissions.

The gross emissions (and net emissions) have reduced for both Councils between 2018 and 2020. However, emissions naturally fluctuate from one year to the other (more or less emissions). Therefore, we must wait to see if this reduction is a long-term trend or meaning the Councils are truly making efforts to reduce its footprint.

Awareness was increased in the organisations and the community through many actions (workshops, themed week, dashboard and newsletter, social media, etc).

1.1 Councils: lead by example

Action	Time frame	KPI	Achievements	
			CDC	SWDC
Councils' activities				
1-1.1.1. Measure and report on council's emissions	2018 - ongoing	One inventory and report published each year.	Gross emissions: - 2018: 777.12 tCO_2e - 2019: 774.55 tCO_2e - 2020: 275.98 tCO_2e	Gross emissions: - 2018: 764.10 tCO_2e - 2019: 625.50 tCO_2e - 2020: 243.18 tCO_2e
1-1.1.2. Work with GWRC and other TAs	2019 – ongoing	Attendance to meetings and support to other TAs	Attendance to the WRCCF and the WWECWP meetings. Attendance to the climate change officers network meetings. Formation of the Wairarapa Climate Caucus (group of climate change officers, elected members and Iwi representative in Wairarapa Region).	
1-1.1.3. Review the procurement policy	2020 – 2021	Adoption of the procurement policy	The procurement policy is currently being reviewed and will consider a sustainable procurement (environmental, social, economic and cultural outcomes). The policy will be adopted in April 2021.	The procurement policy will be reviewed in 2021 and will consider a sustainable procurement (environmental, social, economic and cultural outcomes).
			This action also answers the action 3-1.1.2.	

Action	Time frame	KPI	Achievements	
			CDC	SWDC
1-1.1.4. Implement a Carbon Reduction Policy	2020 – 2021	The internal Carbon Reduction Policy is written and used by 2020. The other policies are reviewed and approved by 2020.	The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. All other policies were revised, and climate change clauses were added if necessary. The conclusion of this work was given to the policy managers.	The Carbon Reduction Policy and guidance were shared with the policy and governance manager. All other policies were revised, and climate change clauses were added if necessary. The conclusion of this work was given to the policy and governance manager.
1-1.1.5. Input Climate Change in planning documents and strategies	2020	Climate change is embedded is the planning in the Councils' systems.	Climate change was considered in the LTP, and other strategies (infrastructure strategy). Climate change is being considered in the review of the special plan. The WRCCWF is working on two project of the Wellington Region Growth Framework (WRGF). One project is about climate change mitigation and the second is about climate change adaptation. Climate change will need to be considered during the combined district plan review in 2022.	
Transportation				
1-1.2.1. Consider other options than ICE vehicle	2019 – 2023	Council's employees are aware about the other options available to reduce the use of car. The transport's emissions decrease.	An electric vehicle drive test was cancelled by the EV provider (Feb 19). Alternative to ICE vehicles were promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20) E-bike scheme set up in March 2021 for all staff members, elected members and opportunity for the councils to purchase a discounted e-bike for its fleet.	
				4 hybrid vehicles were purchased in October 20. Looking into purchasing an e-bike.
1-1.2.2. Adopt fuel-efficient driving techniques	2019 – ongoing	Council's employees are aware about fuel-efficient driving techniques and they use them. The transport's emissions decrease.	Fuel-efficient driving techniques were promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20) CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	

Action	Time frame	KPI	Achievements	
			CDC	SWDC
1-1.2.3. Lead a fleet review	2020	Report on the results of the fleet review.	The fleet review was finalised in June 20 and given to managers for consideration.	The fleet review has not been done because the fleet was not GPS tracked (Argus). The system was implemented in March 20 so a fleet review will be possible at some point in 2021 (after a full year of data available).
Energy consumption				
1-1.3.1. Adopt an energy saving behaviour	2019 – ongoing	Council's employees are aware about energy saving behaviour and they adopt it. The energy use decrease (in the offices).	Energy saving behaviour was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20) CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	
1-1.3.2. Use LED technology (including streetlights)	2018 – ongoing	The numbers of Led lights increase until 100% of the lights are LED and the emissions decrease.	2018-2019: transition the streetlights to LED CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	
1-1.3.3. Lead a building efficiency assessment	2020	The assessment is done, and a report is written.	A self-building-efficiency-assessment was conducted in 2020 but the results were not reliable. To have reliable results, we would need to do an energy audit conducted by an expert.	
Renewable energy				
1-1.4.1. Buy electricity from a company that uses 100% renewable energy	2019	The power company supplying the councils uses 100% renewable energies.	Since Oct 19, 91% of the energy used is renewable	Since Oct 19, 100% of the energy used is renewable
3-waters				
1-1.5.1. Reduce reticulated water leaks	2019 - ongoing	The amount of water losses goes down.	CDC keeps doing leak detection and repair in order to reduce the water losses.	Wellington Water keeps doing leak detection and repair in order to reduce the water losses.

Action	Time frame	KPI	Achievements	
			CDC	SWDC
1-1.5.2. Use water saving technologies	2019 - ongoing	The water consumption goes down and the water saving technologies are always an option in the choices for new devices.	Energy saving behaviour was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20). The adoption of the procurement policy will help making the right decision and using water saving technologies. CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	
1-1.5.3. Reduce storm water and ground water in the sewers	2019 - Ongoing	Old and defective sewers are being replaced by new pipes.	CDC keeps fixing sewers in order to reduce leaks and groundwater intrusion.	Wellington water keeps fixing sewers in order to reduce leaks and groundwater intrusion.
Waste				
1-1.6.1. Compost	2019 – ongoing	Every kitchen has a caddy that is emptied in a compost bin.	Staff members organised food scrap collection in the kitchens (to compost or to feed animals) Compost was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20) CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	
1-1.6.2. Recycle	2019 – ongoing	Staff knows about recycling and uses the recycling stations.	Recycling options are available in the offices. Recycling was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20) CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	

Action	Time frame	KPI	Achievements	
			CDC	SWDC
1-1.6.3. Optimise the IT (especially paper prints)	2019 – ongoing	The prints number goes down.	Support paperless with Stellar and other initiatives. Prints reduction was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20) CDC: The Carbon Reduction Policy and guidance were shared with the managers and are currently being explained to all staff members. SWDC: The Carbon Reduction Policy and guidance were shared with the policy and governance manager.	
			Prints tracked since 2020	Prints tracked since 2019
Carbon sequestration				
1-1.7.1. Preserve our forests	2019 – ongoing	The surface of forest owned is stable and if deforestation a report is done to prove the purpose of it.	Carbon sequestration was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20)	
				Harvested forests are being replanted as much as possible
1-1.7.2. Lead a land assessment to increase tree planting and wetland restoration	2020	The land assessment is done.	The Reserve Management Plan is currently being reviewed and is an opportunity to identify possible areas for planting.	Areas where identified to plant natives (2 ha around the Waiohine bores and 4 ha at Lake Ferry in replacement of pine trees)
Communication and education				
1-1.8.1. Engage the staff in the carbon footprint reduction	2019 – ongoing	The staff is engaged in the carbon footprint reduction and act to reduce their emissions.	Greenhouse gas emissions reduction was promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Workshops were organised to explain what climate change is, explain the council's emissions and explain how to reduce the emissions (Feb-Mar 20). Monthly dashboard and newsletter to understand the councils' emissions. These are sent to all staff members.	

Action	Time frame	KPI	Achievements	
			CDC	SWDC
1-1.8.2. Keep the Council's members and staff informed	2019 – ongoing	The Councils' members and staff are well informed about the actions of the Climate Change Advisor.	A climate change component was added in the Council's reports in 2019. A clear guidance was developed to help staff members filling this section.	A climate change component in the Council's reports is currently under development. A clear guidance will accompany this component to help staff member filling the section.

Table 1: Achievements for the Council's actions in 2019-2021

1.2 Community and businesses: support low carbon behaviours and circular economy

Action	Time frame	KPI	Achievements
Transportation			
1-2.1.1. Promote alternatives to ICE vehicles	2019 - ongoing	The community and businesses use alternatives to combustion engine vehicles more and more.	Promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Promoted in Midweek articles.
1-2.1.2. Promote fuel-efficient driving techniques	2019 - ongoing	The community is aware of the fuel-efficient driving techniques.	Promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Promoted in Midweek articles.
1-2.1.3. Develop bike lanes	2019 - ongoing	The Climate Change Advisor is in contact with the Five Towns Trails Trust and supports it until the success of the project.	Coordination between the Five Towns Trails officer and Climate Change Advisor. Climate Change Advisor is part of discussions for the Regional Land Transport Plan.
1-2.1.4. Support the development of the EV chargers' network	2020	An application is done in February 2020 (approvals provided late July 2020).	EV charger already present in Featherston (Super Value) and successful application for an EV charger in Carterton (New World). EV charger to be installed in Martinborough (P&K).
Housing			
1-2.2.1. Promote an energy saving behaviour	2019 - ongoing	The community is aware of the energy saving behaviour.	Promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Promoted in Midweek articles.
Love local			
1-2.3.1. Promote locally produced food, goods and services	2019 - ongoing	The community and businesses are aware of alternatives such as farmers market and choose to consume wisely.	Promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Promoted in Midweek articles.
Carbon sequestration			
1-2.5.1. Promote forest preservation and afforestation	2019 - ongoing	The community is aware of the benefice of the forests, protect them and plant trees.	Promoted during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Promoted in Midweek articles.

Action	Time frame	KPI	Achievements
Communication and education			
1-2.6.1. Coordinate the Conservation week	2019 – ongoing	Communication campaigns are held once a year during Climate Change week or Conservation week.	Events held during Global Climate Change week (Oct 19) and Conservation week (Aug 20).
1-2.6.2. Hold a Climate Change stall at local events	2020 – ongoing	The community's awareness towards climate change increases as well as its engagement.	COVID-19 stopped us to do so. Will be done at future events.
1-2.6.3. Educate the children to Climate Change	2020 – ongoing	The councils are engaged with Enviroschools and actions / programmes are being held with the children.	Support Enviroschools. Two sessions "How to be a Climate Warriors" were held in October 20 for the School Holiday Programme. Two sessions "Tawashis – the zero waste Japanese sponge" were held in April 21 for the School Holiday Programme.
1-2.6.4. Watch for new scientific publications, laws, rules to keep the community informed	2019 – ongoing	The community is well informed about Climate Change and everyone is able to understand it.	Continuous watch from the climate change advisor. Information shared during Global Climate Change week (Oct 19) and Conservation week (Aug 20). Information shared almost every day through the Facebook page "Climate Change Wairarapa".

Table 2: Achievements for the community and businesses' actions in 2019-2021

2 Summary of coming actions

2.1 Councils: lead by example

	2021-2023 Strengthen the engagement towards Climate Change and keep reducing the emissions	**2023-2033** Achieve and go beyond our targets
1. Councils: lead by example		
1. Council's activities	*1-1.1.1. Measure and report on council's emissions* *1-1.1.2. Work with GWRC and other TAs* *1-1.1.5. Input Climate Change in planning document and strategies* 3-1.1.1. Update the Ruamāhanga Strategy 3-1.1.3. Implement a Low Carbon Events policy	*1-1.1.1. Ongoing* *1-1.1.2. Ongoing* 3-1.1.1. Ongoing
2. Transportation	*1-1.2.1. Consider other options than ICE vehicle* *1-1.2.2. Adopt fuel-efficient driving techniques* 3-1.2.1. Update the fleet according to the results of the fleet review	*1-1.2.1. Ongoing* *1-1.2.2. Ongoing* 3-1.2.1. Ongoing 10-1.2.1. Lead a strong fleet vehicle transition to EV
3. Energy consumption	*1-1.3.1. Adopt an energy saving behaviour* *1-1.3.2. Use LED technology (including streetlights)* 3-1.3.1. Lead an energy audits 3.1.3.2. Implement the energy audits	*1-1.3.1. Ongoing* *1-1.3.2. Ongoing* 3.1.3.2. Ongoing
4. Renewable energy	-	10-1.4.1. Investigate photovoltaic 10-1.4.2. Implement the photovoltaic feasibility study
5. 3-waters	*1-1.5.1. Reduce reticulated water leaks* *1-1.5.3. Reduce storm water and ground water in the sewers* 3-1.5.1. Increase the rainwater collection	*1-1.5.1. Ongoing* *1-1.5.3. Ongoing* 3-1.5.1. Ongoing
6. Waste	*1-1.6.1. Compost* *1-1.6.2. Recycle* *1-1.6.3. Optimise the IT (especially paper prints)*	*1-1.6.1. Ongoing* *1-1.6.2. Ongoing* *1-1.6.3. Ongoing*

	2021-2023 Strengthen the engagement towards Climate Change and keep reducing the emissions	**2023-2033** Achieve and go beyond our targets
7. Carbon sequestration	*1-1.7.1. Preserve our forests* *1-1.7.2. Lead a land assessment to increase tree planting and wetland restoration* 3-1.7.1. Increase afforestation 3-1.7.2. Restore wetlands	*1-1.7.1. Ongoing* 3-1.7.1. Ongoing 3-1.7.2. Ongoing
8. Communication and education	*1-1.8.1. Engage the staff in the carbon footprint reduction* *1-1.8.2. Keep the council's members and staff informed*	*1-1.8.1. Ongoing* *1-1.8.2. Ongoing*

Table 3: Summary of the Councils' action plan

2.2 Community and businesses: support low carbon behaviours and circular economy

	2021-2023 Strengthen the engagement towards Climate Change and keep reducing the emissions	**2023-2033** Achieve and go beyond our targets
2. Community and businesses: support low carbon behaviours and circular economy		
Action: Explore and present future opportunities for co-development of the joint Wairarapa Community Climate Change Action Plan to the three Wairarapa District Councils for their consideration. Explanation: Masterton District Council (MDC) is about to start the co-development of the Masterton District Climate Change Action Plan with their community. Once that plan is adopted by the Masterton District Council there will be opportunities for aligning and integrating the actions from both MDC and Ruamāhanga Action Plans into one Wairarapa wide action plan. This will provide for enabling Wairarapa wide climate action whilst still allowing the three district councils to address specific actions within their respective districts. Officers will work collaboratively on presenting the three Councils with potential options for the process and practicalities of how Wairarapa wide action plan can be developed.		
1. Transportation	*1-2.1.1. Promote alternatives to ICE vehicles* *1-2.1.2. Promote fuel-efficient driving techniques* *1-2.1.3. Develop bike lanes*	*1-2.1.1. Ongoing* *1-2.1.2. Ongoing* *1-2.1.3. Ongoing* 10-2.1.1. Support a long-term bike hire between the five towns 10-2.1.2. Support carpool carparks
2. Housing	*1-2.2.1. Promote an energy saving behaviour* 3-2.2.1. Promote healthy homes and buildings for ratepayers and businesses 3-2.2.2. Promote renewable energies for ratepayers and businesses 3-2.2.3. Work with the building team to increase houses' health 3-2.2.4. Purchase and make available for the community self-assessment kits	*1-2.2.1. Ongoing*
3. Love Local	*1-2.3.1. Promote locally produced food, goods and services*	*1-2.3.1. Ongoing*
4. Waste	Solid waste emits methane which is a strong greenhouse gas (1 ton of methane has the same effect on the climate as 28 tons of carbon dioxide). It is why reducing solid waste is very important (especially food waste). The solid waste reduction is managed by the Regional Zero Waste Advisor; therefore, the actions are not developed in this strategy	
5. Carbon sequestration	*1-2.5.1. Promote forest preservation and afforestation* 3-2.5.1. Support a bank seed across Wairarapa region	*1-2.5.1. Ongoing*

	2021-2023 Strengthen the engagement towards Climate Change and keep reducing the emissions	**2023-2033** Achieve and go beyond our targets
2. Community and businesses: support low carbon behaviours and circular economy		
6. Communication and education	*1-2.6.1. Coordinate the Conservation week* *1-2.6.2. Hold a Climate Change stall at local events* *1-2.6.3. Educate the children to Climate Change* *1-2.6.4. Watch for new scientific publications, laws, rules to keep the community informed* 3-2.6.1. Organise the Climate Change biennial	*1-2.6.1. Ongoing* *1-2.6.2. Ongoing* *1-2.6.3. Ongoing* *1-2.6.4. Ongoing* 3-2.6.1. Ongoing

Table 4: Summary of the community and businesses' action plan

3 Coming actions

3.1 Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions

3.1.1 Councils: lead by example

Council's activities

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.1. Council's activities	
3-1.1.1. Update the Ruamāhanga Strategy	
Description	The Ruamāhanga Strategy will be updated every three years in order to follow up in the actions already done and set up another set of actions. This action also aims to keep the context and greenhouse gas inventories up to date.
Project management	Climate Change Advisor
Time frame	Every 3 years (starting May 2021)
Key Performance Indicator	The Ruamāhanga Strategy is kept updated.

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.1. Council's activities	
3-1.1.3. Implement a Low Carbon Events policy	
Description	In order to reduce the carbon footprint of the events organised by the councils, a policy will be implemented. This policy will be developed with the events managers of the councils to make sure that is suitable and that the managers will be able to use it in an appropriate way.
Project management	Event managers
Time frame	2021
Key Performance Indicator	The Policy will be written and used by 2021

Transportation

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.2. Transportation	
3-1.2.1. Update the fleet according to the results of the fleet review	
Description	The fleet vehicle will be update according to the results of the fleet review. Where possible, low carbon vehicle will be preferred (EVs, e-bike, etc). This action aims to significantly reduce the emissions coming from transport.
Project management	Fleet managers
Time frame	2020 – ongoing
Key Performance Indicator	The fleet vehicle is being updated. The emissions coming from transport are decreasing.

Energy consumption

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.3. Energy consumption	
3-1.3.1. Lead and energy audits	
Description	An expert will be contracted to lead energy audits to efficiently reduce the emissions from energy consumption.
Project management	Climate Change Advisor
Time frame	2021-2022
Key Performance Indicator	Energy audits done

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.3. Energy consumption	
3-1.3.2. Implement the energy audits	
Description	Start by the low hanging fruits. This action aims to reduce the emissions from stationary energy and reduce costs (long-term) of energy consumption.
Project management	Will depend on the actions proposed in the energy audits.
Time frame	2024 - ongoing
Key Performance Indicator	Actions are implemented and emissions from stationary energy decrease.

3-waters

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.5. 3-waters	
3-1.5.1. Increase the rainwater collection	
Description	Water treatment is a large part of the greenhouse gas emissions. In order to reduce the water consumption, the councils will install water tank to collect rainwater on their premises where possible. This water can be used in the toilets for instance.
Project management	Amenities managers
Time frame	2021 – ongoing
Key Performance Indicator	Water tanks are being installed where possible.

Carbon sequestration

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.7. Carbon sequestration	
3-1.7.1. Increase afforestation	
Description	According to the results of the land assessment, trees will be planted on suitable location in order to increase carbon reservoirs. The planting could be a community or school project.
Project management	Climate Change Advisor Parks and Reserves managers
Time frame	2022 – ongoing
Key Performance Indicator	The surface of the forests increases as well as the carbon sequestration.

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-1. Councils: lead by example	
3-1.7. Carbon sequestration	
3-1.7.2. Restore wetlands	
Description	According to the results of the land assessment, suitable wetlands will be restored in order to increase carbon reservoirs. The restoration could be a community or school project.
Project management	Climate Change Advisor Parks and Reserves managers
Time frame	2022 – ongoing
Key Performance Indicator	Wetlands are being restored and carbon sequestration increases.

3.1.2 Community and businesses: support low carbon behaviours and circular economy

Wairarapa Community Action Plan

Action: Explore and present future opportunities for co-development of the joint Wairarapa Community Climate Change Action Plan to the three Wairarapa District Councils for their consideration.

Explanation: Masterton District Council (MDC) is about to start the co-development of the Masterton District Climate Change Action Plan with their community. Once that plan is adopted by the Masterton District Council there will be opportunities for aligning and integrating the actions from both MDC and Ruamāhanga Action Plans into one Wairarapa wide action plan. This will provide for enabling Wairarapa wide climate action whilst still allowing the three district councils to address specific actions within their respective districts. Officers will work collaboratively on presenting the three Councils with potential options for the process and practicalities of how Wairarapa wide action plan can be developed.

Housing

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.2. Housing	
3-2.2.1. Promote healthy homes and buildings for ratepayers and businesses	
Description	Climate Change Advisor in collaboration with appropriate stakeholders will develop two flyers to promote healthy homes and buildings. The first flyer will be intended to ratepayers and the second to businesses. This action aims to engage the community and businesses into reducing their emissions through healthy homes and buildings.
Project management	Climate Change Advisor Communication managers
Time frame	2021
Key Performance Indicator	The flyers are done and widely known by the community and businesses.

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.2. Housing	
3-2.2.2. Promote renewable energies for ratepayers and businesses	
Description	Climate Change Advisor in collaboration with appropriate stakeholders will develop two flyers to promote renewable energies. The first flyer will be intended to ratepayers and the second to businesses. This action aims to engage the community and businesses into reducing their emissions by preferring renewable energies.
Project management	Climate Change Adviso Communication managers
Time frame	2021
Key Performance Indicator	The flyers are done and widely known by the community and businesses.

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.2. Housing	
3-2.2.3. Work with the building team to increase houses' health	
Description	Collaboratively with the team building, implements techniques that will increase the houses' health (such as mentioning certification (Homefit, Homestar) on the LIM reports).
Project management	Climate Change Advisor Building managers
Time frame	2022
Key Performance Indicator	Techniques to increase the houses' health have been investigated and implemented.

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.2. Housing	
3-2.2.4. Purchase and make available for the community self-assessment kits	
Description	These kits will allow residents and businesses to understand how their houses and/or buildings performs (heat losses, devices efficiency, etc). This will give support to the residents and businesses to make changes and increase the efficiency of their houses and/or buildings. Therefore, it will help reduce the emissions from buildings in the region.
Project management	Climate Change Advisor Library managers
Time frame	2022
Key Performance Indicator	The self-assessment kits are available for free at each library in Wairarapa Region.

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.2. Housing	
3-2.2.5. Support the Wairarapa Healthy Homes Programme	
Description	Support the Wairarapa Healthy Homes Programme (including financial support).
Project management	Group Manager, Partnerships and Operation Community Services Manager
Time frame	2021 - ongoing

Carbon sequestration

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.5. Carbon sequestration	
3-2.5.1. Support a bank seed across Wairarapa region	
Description	Provide a stand at each library for people to share their seeds. Provide a proper communication around this initiative will ensure the success of the seed bank.
Project management	Climate Change Advisor Communication managers
Time frame	2021
Key Performance Indicator	The seed bank is established.

Communication and education

3- Three-year action plan – Strengthen the engagement towards Climate Change and keep reducing the emissions	
3-2. Community and businesses: support low carbon behaviours and circular economy	
3-2.6. Communication and education	
3-2.6.1. Organise the Climate Change biennial	
Description	The Climate Change Advisor will organise the Climate Change biennial in collaboration with appropriate stakeholders. This event aims to increase the awareness, understanding and engagement of Climate Change by the community.
Project management	Climate Change Advisor Communication managers
Time frame	2022 – ongoing
Key Performance Indicator	The first biennial is held in 2022.

3.2 Ten-year action plan – Achieve and go beyond our targets

3.2.1 Councils: lead by example

Transportation

10- Ten-year action plan – Achieve and go beyond our targets	
10-1. Councils: lead by example	
10-1.2. Transportation	
10-1.2.1. Lead a strong fleet vehicle transition to EV	
Description	Following the action *3-1.2.1. Update the fleet according to the results of the fleet review*, the councils may lead a stronger transition to EVs in order to significantly reduce their emissions.
Project management	Fleet managers
Time frame	2030

Renewable energy

10- Ten-year action plan – Achieve and go beyond our targets	
10-1. Councils: lead by example	
10-1.4. Renewable energy	
10-1.4.1. Investigate photovoltaic	
Description	The Climate Change Advisor, helped with an expert, will study the feasibility of photovoltaic on the councils' buildings and other assets (such as streetlights)
Project management	Climate Change Advisor
Time frame	2024-2025
Key Performance Indicator	Potential sites identified to install photovoltaic.

10- Ten-year action plan – Achieve and go beyond our targets	
10-1. Councils: lead by example	
10-1.4. Renewable energy	
10-1.4.2. Implement the photovoltaic feasibility study	
Description	When and where possible, the councils will transition from grid power to photovoltaic. This action aims to reduce the stationary emissions.
Project management	Amenities managers
Time frame	2026 - ongoing
Key Performance Indicator	Solar panels are being installed when and where possible.

3.2.2 Community and businesses: support low carbon behaviours and circular economy

Transportation

10- Ten-year action plan – Achieve and go beyond our targets	
10-2. Community and businesses: support low carbon behaviours and circular economy	
10-2.1. Transportation	
10-2.1.1. Support a long-term bike hire between the five towns	
Description	Alongside with the action *1-2.1.3. Develop bike lanes*, the councils may support a long-term bike hire facility in order to increase the usage of bikes between the five towns therefore, to reduce the emissions.
Time frame	2030

10- Ten-year action plan – Achieve and go beyond our targets	
10-2. Community and businesses: support low carbon behaviours and circular economy	
10-2.1. Transportation	
10-2.1.2. Support carpool carparks	
Description	The councils may support carparks dedicated to car-poolers (especially in Featherston where people commute to Wellington).
Time frame	2030

Appendix 2 – 2020 Greenhouse Gas Inventory Report for SWDC

MAY 21

GREENHOUSE GAS INVENTORY

SOUTH WAIRARAPA DISTRICT COUNCIL - 2020

SOUTH WAIRARAPA DISTRICT COUNCIL
Kia Reretahi Tātau

Contents

1 Summary

Note #1: The emissions factors provided by MfE were updated in 2020. Therefore, emissions for 2018 and 2019 were updated.

Note #2: The district was in lock down level 3 and 4 between the 23rd of March 2020 and 14th May 2020 due to Covid-19 pandemic.

	Scope	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Uncertainties
CORPORATE SERVICES		**34.55**	**43.20**	**30.85**	30.85*
Electricity	Scope 2	5.52	4.75	*5.48*	*
T&D losses[1]	Scope 3	0.47	0.41	*0.47*	*
Transport - Diesel	Scope 1	7.35	12.87	*9.82*	*
Transport - Petrol	Scope 1	16.55	18.66	*13.02*	*
Transport - Flights	Scope 3	1.93	3.78	*0*	*
Waste	Scope 3	2.73	2.73	*2.07*	*
Refrigerant	Scope 1	0.00	0.00	*0*	*
COMMUNITY SERVICES		**20.98**	**25.60**	**25.79**	25.79*
Electricity	Scope 2	19.33	23.58	*23.75*	*
T&D losses	Scope 3	1.66	2.02	*2.04*	*
OPERATIONS		**55.19**	**44.99**	**35.82**	35.82*
Electricity - Other	Scope 2	0.33	0.33	*2.04*	*
Electricity - Streetlights	Scope 2	30.71	23.27	*22.77*	*
T&D losses	Scope 3	2.66	2.02	*2.13*	*
Transport - Diesel	Scope 1	7.64	6.23	*1.48*	*
Transport - Petrol	Scope 1	13.85	13.14	*7.40*	*
WATER		**93.16**	**81.43**	**97.99**	[66.51 ; 135.44]
Water supply	Scope 3	46.04	46.05	*52.04*	*
Wastewater treatment	Scope 3	47.12	35.39	*45.95*	*+/-10% activity data +/-40% CH_4 factor +/-90% N_2O factor [14.47 ; 83.40]*

[1] Transport and Distribution

PARKS AND RESERVES		**31.40**	**30.85**	**39.15**	39.15*
Electricity	Scope 2	26.46	25.22	*31.11*	*
T&D losses	Scope 3	2.27	2.16	*2.67*	*
Transport - Diesel	Scope 1	0.00	0.00	*0*	*
Transport - Petrol	Scope 1	2.67	3.46	*5.37*	*
REGULATORY		**12.91**	**12.72**	**13.56**	13.56*
Transport - Diesel	Scope 1	11.48	11.58	*11.71*	*
Transport - Petrol	Scope 1	1.43	1.15	*1.86*	*
GROSS EMISSIONS		**248.20**	**238.80**	**243.17**	[211.69 ; 280.61]

* Uncertainties exist but are not quantifiable

Table 1: Emissions by business units

	t Co_2e - 2018	**t Co_2e - 2019**	**t Co_2e - 2020**	**Uncertainties**
Scope 1	60.97	67.08	50.66	50.66*
Scope 2	82.35	77.16	85.15	*85.15**
Scope 3	104.88	94.56	107.35	*[75.89 ; 144.82]*
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	[211.69 ; 280.61]

* Uncertainties exist but are not quantifiable

Table 2: Emissions by scopes

	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020	Uncertainties
ELECTRICITY	**89.41**	**83.77**	**92.46**	92.46*
Streetlights	30.71	23.27	*22.77*	*
Other	51.64	53.88	*62.38*	*
T&D losses	7.06	6.62	*7.31*	*
TRANSPORT	**62.90**	**70.86**	**50.66**	50.66*
Petrol	34.50	36.40	*27.65*	*
Diesel	26.47	30.68	*23.01*	*
Flights	1.93	3.78	*0*	*
WASTEWATER	**47.12**	**35.39**	**45.95**	*+/-10% activity data* *+/-40% CH_4 factor* *+/-90% N_2O factor* *[14.47 ; 83.40]*
WATER SUPPLY	**46.04**	**46.05**	**52.04**	52.04*
WASTE	**2.73**	**2.73**	**2.07**	*2.07**
REFRIGERANT	**0.00**	**0.00**	**0.00**	0*
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**	[211.69 ; 280.61]

* Uncertainties exist but are not quantifiable

Table 3: Emissions by sources

	t Co_2e - 2018	t Co_2e - 2019	t Co_2e - 2020
GROSS EMISSIONS	**248.20**	**238.80**	**243.17**
Forestry (removals)	-2,511.26	-2,408.15	*-2,332.09*
Forestry (harvest emissions)	4,950.74	2,659.96	*2,754.62*
TOTAL	2,439.48	251.81	422.53
NET EMISSIONS	**2687.68**	**490.60**	**665.70**

Table 4: Forestry

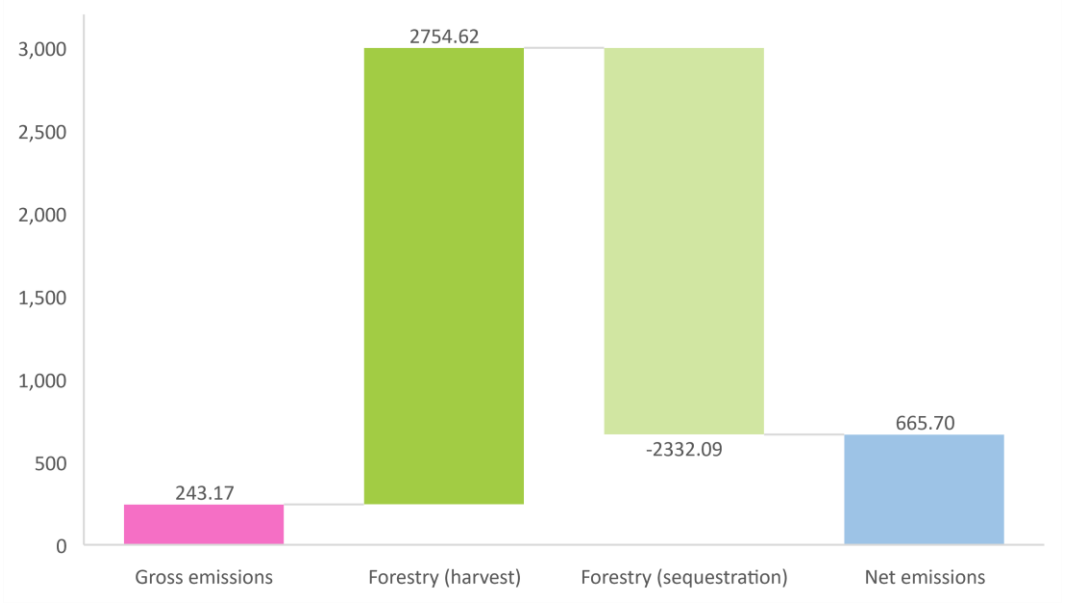


Figure 1: Gross versus Net emissions including forestry (tCO_2e)

	2018	2019	2020
Gross emissions per FTE (t CO_2e) 2018: 41 FTE 2019: 44 FTE 2020: 48 FTE	6.05	5.43	5.07
Gross emissions per capita (kg CO_2e) 2018: 10,920 2019: 11,100 2020: 11,245	22.73	21.51	21.63

Table 5: Emissions per FTE and per head of population

2 Introduction

This report is the annual greenhouse gas (GHG) emissions[2] inventory report for South Wairarapa District Council. The inventory is a complete and accurate quantification of the amount of GHG emissions that can be directly attributed to the organisation's operations within the declared boundary and scope for the specified reporting period.

The inventory has been prepared in accordance with the requirements of the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)* and *ISO 14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*[3].

3 Organisation Description

South Wairarapa District Council (SWDC) is the territorial authority for the South Wairarapa District. SWDC is located in the heart of the Wairarapa. The 30th of June 2020, SWDC employed 48 FTEs (Full Time-Equivalent) and is responsible for water and wastewater, waste, local roads (excluding State Highway), streetlighting, parks and reserves, community facilities and performing statutory duties such as regulatory compliance.

The council is organised as shown below:

- Corporate services,
- Community services,
- Operations,
- Water,
- Parks and reserves,
- Regulatory.

[2] Throughout this document 'emissions' means GHG emissions.

[3] Throughout this document 'GHG Protocol' means the GHG Protocol Corporate Accounting and Reporting Standard and 'ISO 14064- 1:2006' means the international standard Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals.

4 Inventory boundaries

This inventory covers a period from January 2020 to December 2020.

4.1 Organisational boundaries

4.1.1 Organisational boundaries included for this reporting period

Organisational boundaries were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2006 standards. The GHG Protocol allows two distinct approaches to consolidate GHG emissions: the equity share and control (financial or operational) approaches. We used an operational control approach to account for emissions.

This GHG inventory includes all the council's business units as shown in Figure 2: Organisational structure bellow.

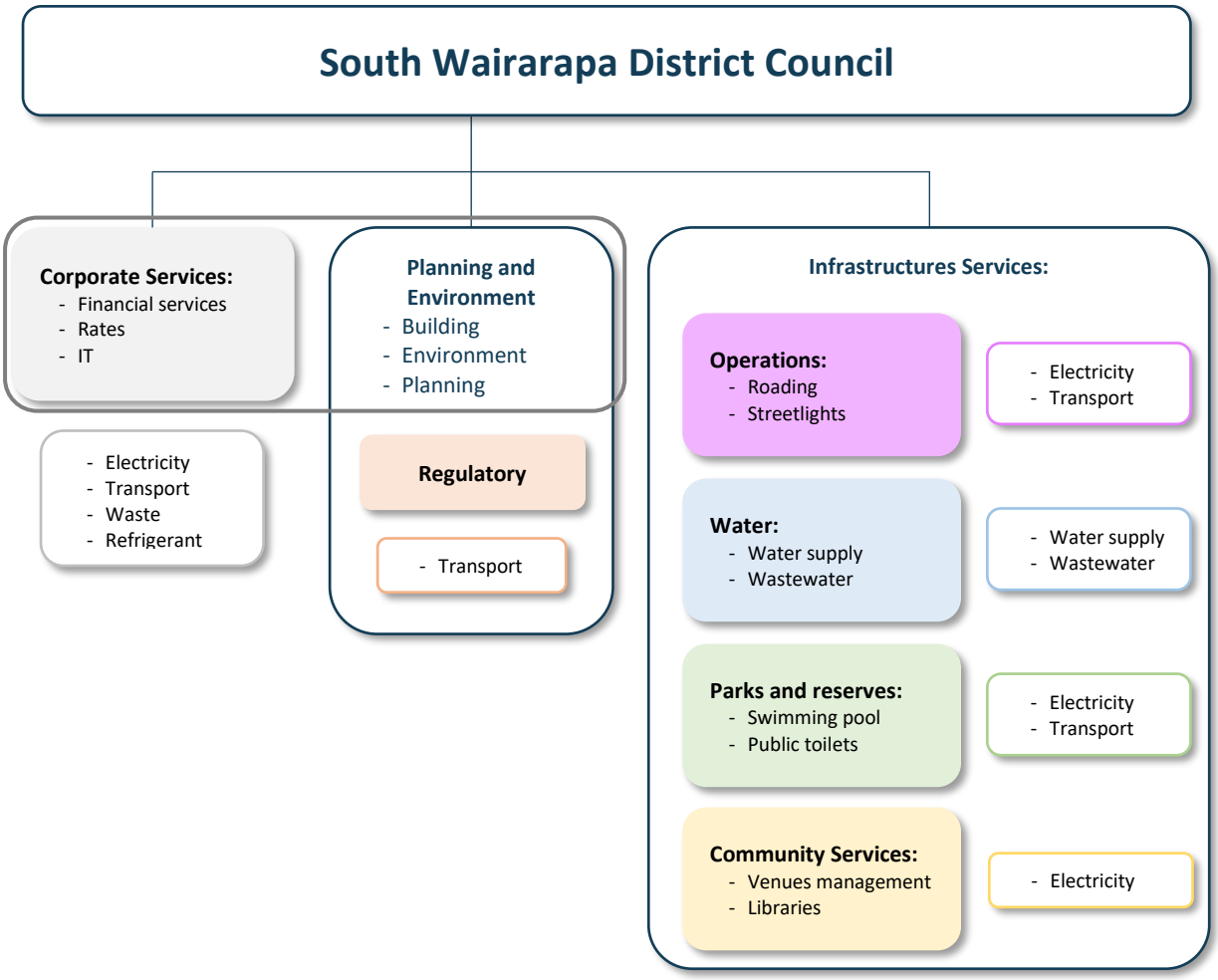


Figure 2: Organisational structure and emission sources

Planning and environment service share the same building as Corporate services. Therefore, it has been aggregated under the same business unit "Corporate services". However, because the Regulatory service has dedicated vehicles, it was possible to create its own business unit.

The operational control of the water services has been transferred to Wellington Water in October 2019. However, to stay consistent with the previous greenhouse gas inventories, it is still included in this inventory.

4.1.2 Organisational business units excluded from inventory

Business unit	GHG emission source	Scope	Reason for exclusion
Community services - Properties	Electricity	Scope 2	Tenants pay their own power accounts
Operations - Waste management	Waste from the community	Scope 3	Outside of SWDC operational control Contractor: Earth Care
Operations - Roading	Emissions from road maintenance	Scope 3	Outside of SWDC operational control Contractor: Fulton Hogan

Table 6: Business units and GHG emission source excluded from this inventory

4.2 Reporting boundaries

4.2.1 GHG emission sources inclusions

The GHG emissions sources included in this inventory were identified with reference to the methodology in the *GHG Protocol and ISO14064-1:2006 standards*. As adapted from the *GHG Protocol*, these emissions were classified under the following categories:

- **Direct GHG emissions (Scope 1):** emissions from sources that are owned or controlled by the company (emissions from vehicles, refrigerant leaks)
- **Electricity indirect GHG emissions (Scope 2):** emissions from the generation of purchased electricity consumed by the company.
- **Other indirect GHG emissions (Scope 3):** emissions that occur as a consequence of the company's activities but from sources not owned or controlled by the company (waste, wastewater, energy transport and distribution losses, …).

This inventory considers:

- Corporate services:
  - Electricity
  - Transport and distribution losses
  - Transport – Diesel
  - Transport – Petrol
  - Transport – Flights
  - Waste
  - Refrigerant
- Community services:
  - Electricity
  - Transport and distribution losses
- Operations:
  - Electricity – Other
  - Electricity – Streetlights
  - Transport and distribution losses
  - Transport – Diesel
  - Transport – Petrol
- Water:
  - Water supply
  - Wastewater treatment

- Parks and reserves:
    - Electricity
    - Transport and distribution losses
    - Transport – Diesel
    - Transport – Petrol
- Regulatory:
    - Transport – Diesel
    - Transport – Petrol

4.2.2 GHG emission source exclusions

For more information, refer to Table 6: Business units and GHG emission source excluded from this inventory.

5 Data collection and uncertainties

Table 7 gives an overview of how data were collected for each GHG emissions source, the source of the data and an explanation of any uncertainties or assumptions.

A calculation methodology has been used for quantifying the emissions inventory using emissions source activity data multiplied by emission or removal factors. All emission factors and uncertainties were sourced from the Ministry for the Environment's 2020 *Measuring Emissions: A Guide for Organisations*.

Business Unit	GHG emission source	Scope	Data source	Data collection unit	Uncertainty (description)
Corporate services	Electricity	Scope 2	Electricity company	kWh	Low It is assumed that the meter readings were done correctly
	Transport and distribution losses	Scope 3			
Corporate services	Transport - Diesel	Scope 1	Fuel company	L	Low It is assumed that the supplier reports are complete and accurate
	Transport - Petrol	Scope 1			
	Transport - Flights	Scope 3	Finance team	Km	Low/Moderate It is assumed that the supplier invoices are complete and accurate. The distance between airports has been estimated
Corporate services	Waste	Scope 3	Council officer	Kg	Moderate Estimation made by the staff in charge of the waste collection
Corporate services	Refrigerant	Scope 1	A/C company	Kg	Low It is assumed that the supplier data is complete and accurate
Community services	Electricity	Scope 2	Electricity company	kWh	Low It is assumed that the meter readings were done correctly
	Transport and distribution losses	Scope 3			
Operations	Electricity - other	Scope 2	Electricity company	kWh	Low It is assumed that the meter readings were done correctly
	Electricity - Streetlights	Scope 2			
	Transport and distribution losses	Scope 3			
Operations	Transport - Diesel	Scope 1	Fuel company	L	Low It is assumed that the supplier reports are complete and accurate
	Transport - Petrol	Scope 1			

Business Unit	GHG emission source	Scope	Data source	Data collection unit	Uncertainty (description)
Water	Water supply	Scope 3	Council officer	m^3	Low It is assumed that the data source is an appropriate representation of activities
	Wastewater treatment	Scope 3	Council officer	m^3	Low It is assumed that the data source is an appropriate representation of activities
Parks and reserves	Electricity	Scope 2	Electricity company	kWh	Low It is assumed that the meter readings were done correctly
	Transport and distribution losses	Scope 3			
Parks and reserves	Transport - Diesel	Scope 1	Fuel company	L	Low It is assumed that the supplier reports are complete and accurate
	Transport - Petrol	Scope 1			
Regulatory	Transport - Diesel	Scope 1	Fuel company	L	Low It is assumed that the supplier reports are complete and accurate
	Transport - Petrol	Scope 1			

Table 7: GHG emission sources, data collection and uncertainty

6 GHG emission calculations and results

6.1 Evolution of the GHG emissions

6.1.1 Base year

The first greenhouse gas inventory done for South Wairarapa District Council was made in 2018 (January to December). It set up the baseline.

6.1.2 Evolution of the GHG emissions and significant emissions changes

Note #1: The emissions factors provided by MfE were updated in 2020. Therefore, emissions for 2018 and 2019 were updated.

Note #2: The district was in lock down level 3 and 4 between the 23rd of March 2020 and 14th May 2020 due to Covid-19 pandemic.

The gross emissions decreased by 2% between 2018 and 2020.

The emissions from the business units Parks and Reserves, Community Services Water Supply and Wastewater Treatment and Regulatory increased by 25%, 23% 5% and 5%. The emissions from the business units Operation and Corporate Services decreased by 35% and 11%.

The scope 1 decreased (17%) and scope 2 and 3 increased (3% and 2% respectively).

The emissions from Electricity and Water supply increased (+3% and +13%) while the emissions coming from Transport, Wastewater and Waste decreased (-19%, -2% and -24% respectively).

Net emissions reduced a lot (-75%) due to lower harvest emissions (-44%). Emissions sequestered by the forests decreased (-7%).

	Evolution 2018 - 2020
Corporate Services	-10.70%
Community Services	+22.90%
Operations	-35.10%
Water supply and Wastewater treatment	+5.18%
Parks and Reserves	+24.68%
Regulatory	+5.04%
GROSS EMISSIONS	-2.03%

Table 8: Changes for the emissions by business units between 2018 and 2020

	Evolution 2018 - 2020
Scope 1	-16.94%
Scope 2	+3.42%
Scope 3	+2.37%
GROSS EMISSIONS	-2.03%

Table 9: Changes for the emissions by scopes between 2018 and 2020

	Evolution 2018 - 2020
Electricity	+3.42%
Transport	-19.49%
Wastewater	-2.49%
Water supply	+13.04%
Waste	-24.16%
Refrigerant	0%
GROSS EMISSIONS	-2.03%

Table 10: Changes for the emissions by sources between 2018 and 2020

	Evolution 2018 - 2020
Gross emissions per FTE	-16.31%
Gross emissions per capita	-4.86%

Table 11: Changes for the emissions per FTE and per capita between 2018 and 2020

	Evolution 2018 - 2020
GROSS EMISSIONS	-2.03%
Sequestration (forest)	-7.13%
Harvest emissions	-44.36%
TOTAL	-82.68%
NET EMISSIONS	-75.23%

Table 12: Changes for the net emissions between 2018 and 2020

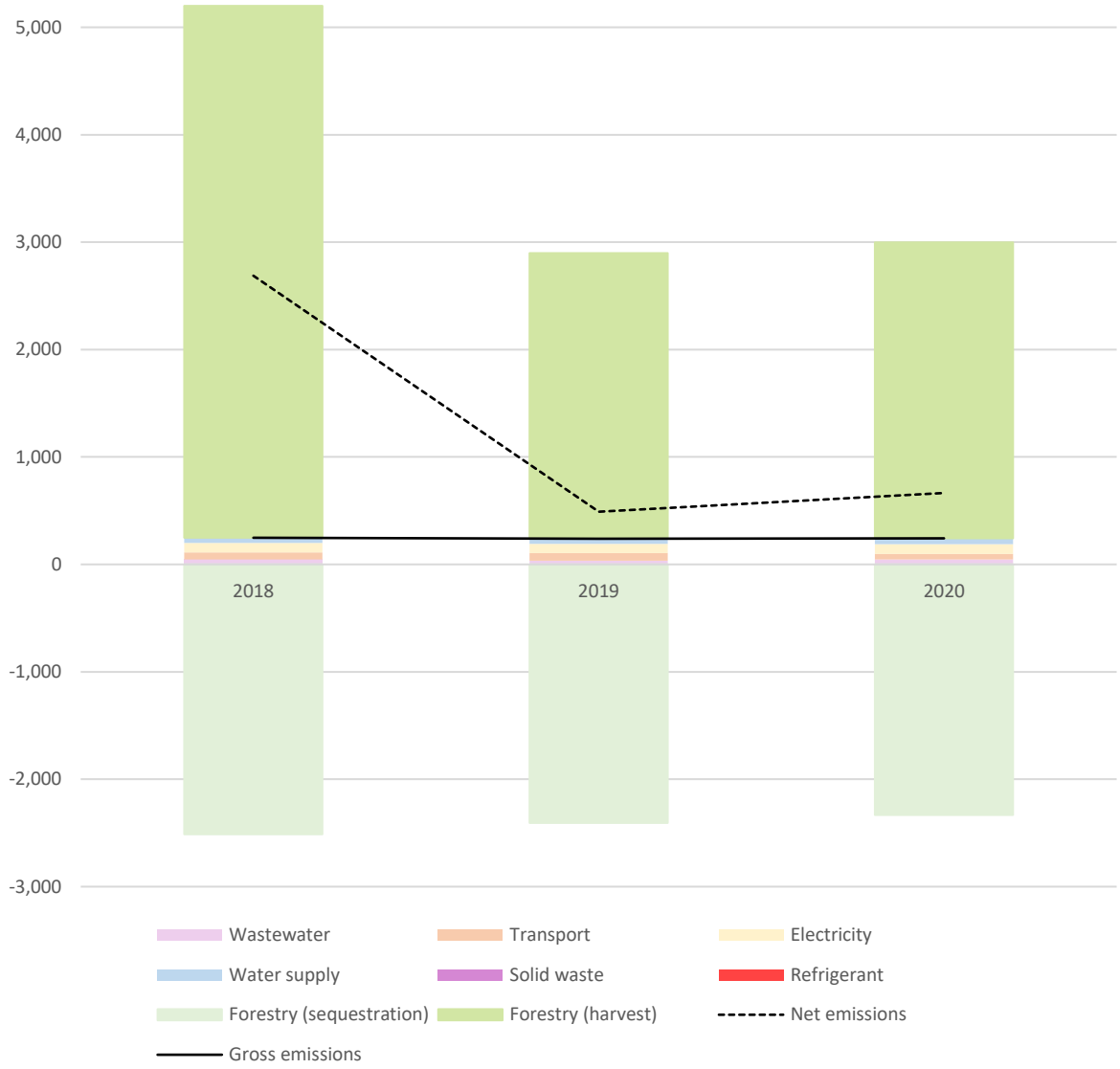


Figure 3: Annual emissions showing gross and net emissions (including forestry) since 2018

6.1.3 Evolution of the biogenic methane emissions

	2018	2019	2020	Evolution 2018 - 2020
Waste	2.07	2.07	2.07	0%
Wastewater	23.56	17.69	22.97	-2.49%
Total	25.63	19.77	25.05	-2.29%

Table 13: Biogenic methane emissions (tCH_4)

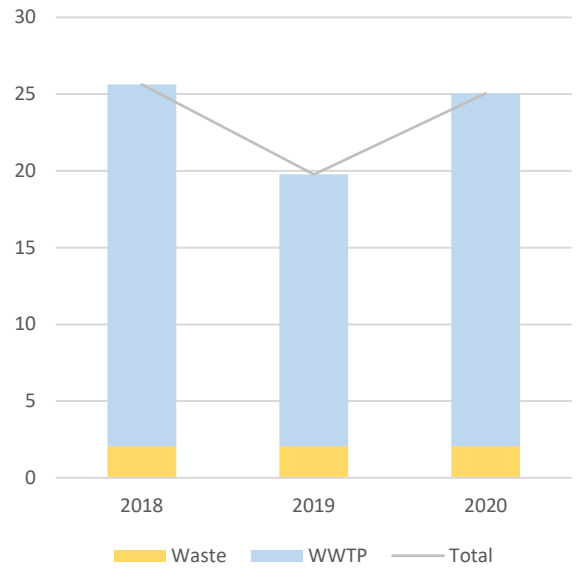


Figure 4: Biogenic methane emissions since 2018

6.2 Emissions for all seven GHGs

The seven GHG included in this inventory are:

- Carbon dioxide: CO_2
- Methane: CH_4
- Nitrous oxide: N_2O
- Hydrofluorocarbons: HFCs
- Perfluorocarbons: PFCs
- Sulfur hexafluoride: SF_6
- Nitrogen trifluoride: NF_3

	2018	2019	2020	Uncertainties
t CO_2 e	247.54	238.14	243.17	[211.69 ; 280.61]
t CO_2	190.70	193.06	187.50	*187.50**
t CH_4	31.55	25.50	31.26	*[20.69 ; 43.67]*
t N_2O	25.29	19.57	24.41	*[3.50 ; 49.45]*
t HFCs	0	0	0	
t PFCs	0	0	0	
t SF_6	0	0	0	
t NF_3	0	0	0	

* Uncertainties exist but are not quantifiable

Table 14: Emissions for all seven GHGs

6.3 Gross emissions by scope, business unit and source

GHG emissions for South Wairarapa District Council for 2020 are provided in the GHG Inventory summary section at the start of this report.

The following figures give an overview of where the gross emissions are occurring across the organisation.

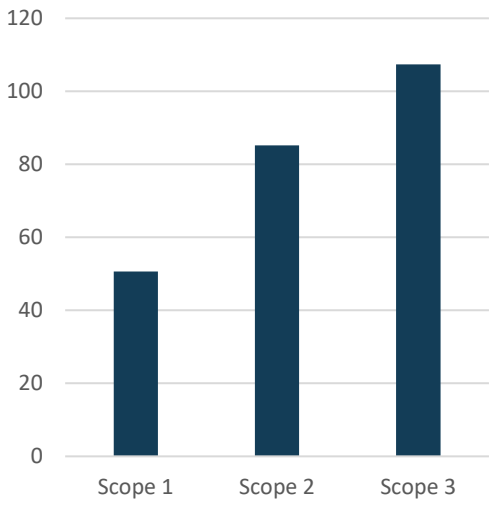


Figure 5: Gross emissions by scope (tCO_2e)

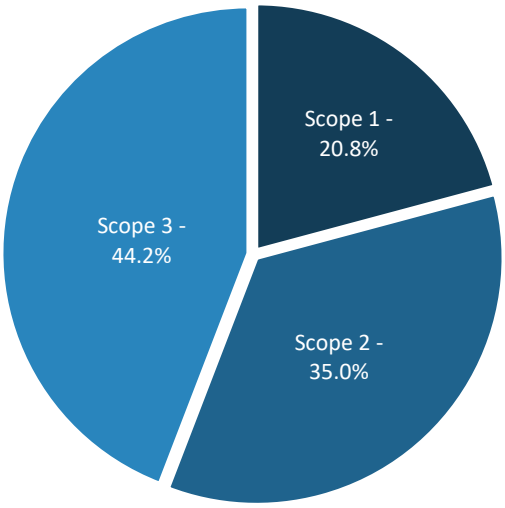


Figure 6: Gross emissions by scope (%)

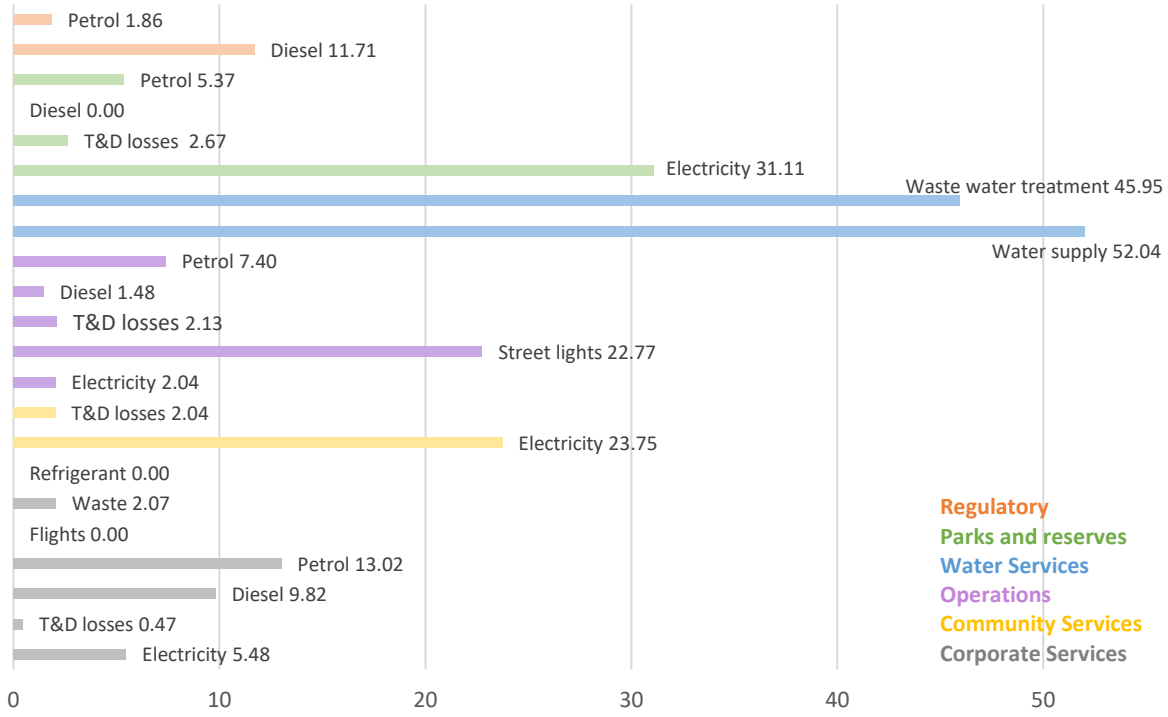


Figure 7: Gross emissions by business unit (tCO_2e)

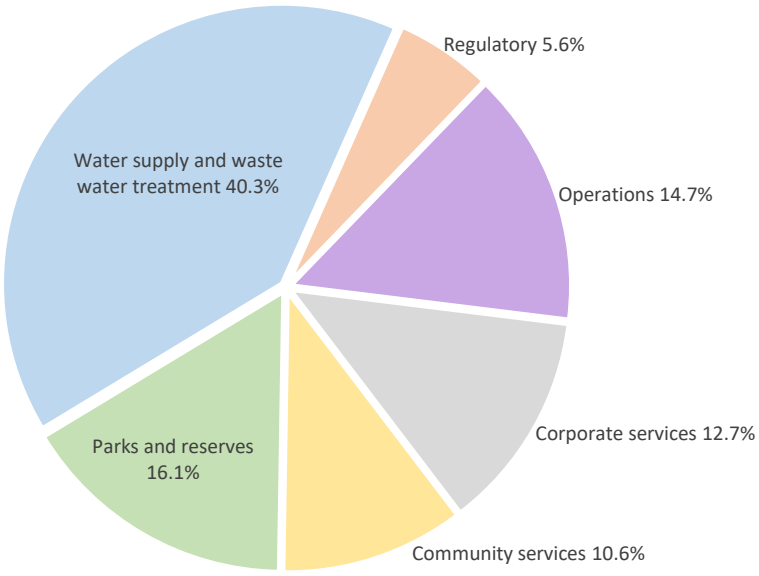


Figure 8: Gross emissions by business unit (%)

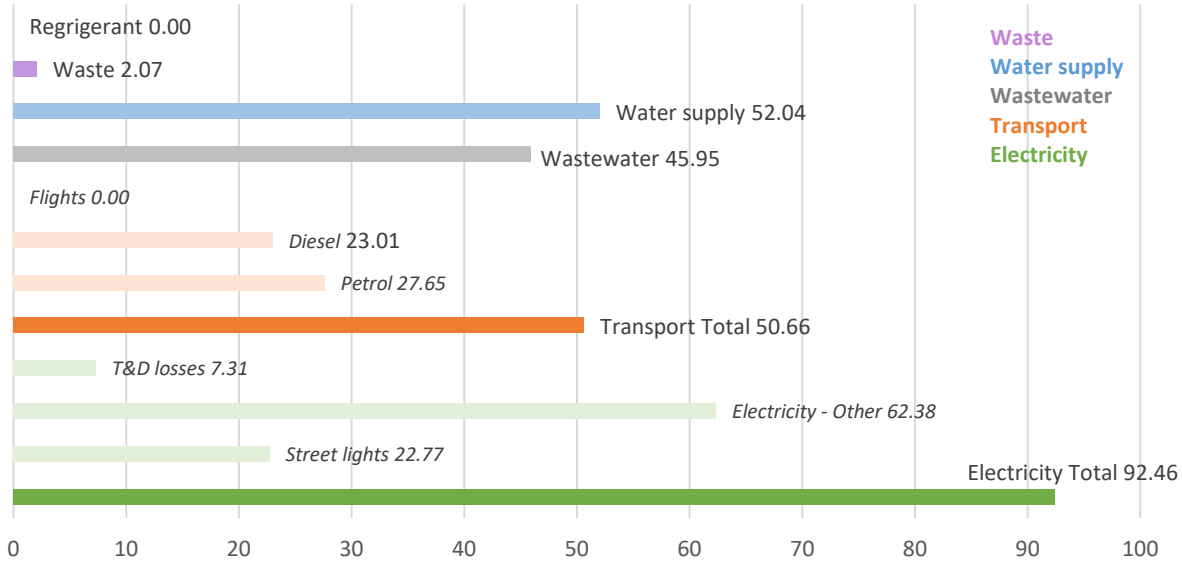


Figure 9: Gross emissions by source (tCO_2e)

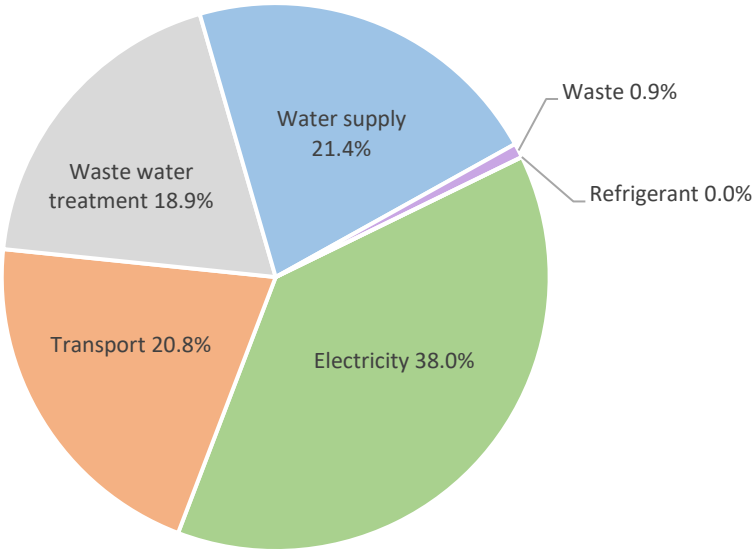


Figure 10: Gross emissions by source (tCO_2e)

6.4 Emissions from biologically sequestered carbon

The following data can be found in a report made by Woodnet (now Forest 360) in 2014. This report makes a list of the forests owned by SWDC. For this greenhouse gas inventory, the only stands considered are the ones owned by SWDC.

In 2020, South Wairarapa District Council owned 73.80 ha of forest, mainly in road reserves but also in the Martinborough Golf.

- Planted forest: 68.93 ha
- Native – tall (84%): 4.09 ha
- Native – regenerating (16%): 0.78 ha

2.91 ha of forest (pine) have been deforested in 2020 at Lake Ferry.

		Units	t CO_2e	t CO_2	t CH_4	t N_2O
Planted forest Sequestration	Growth	68.93 ha	-2,330.32	-2,330.32	n/a	n/a
Natural forest Sequestration	Regenerating	0.78 ha	-1.77	-1.77	n/a	n/a
	Tall	4.09 ha	0	0	n/a	n/a
Harvest emissions	Planted forest	2.91 ha	2,754.62	2,754.62	n/a	n/a
	Native forest	0 ha	0	0	n/a	n/a
		TOTAL	**422.53**	**422.53**	**n/a**	**n/a**

Table 15: Total CO_2 sequestered and emitted by forestry in 2020

7 Liabilities

7.1 GHG stocks held

HFCs, PFCs and SF_6 represent GHGs with high global warming potentials. Their accidental release could result in a large increase in emissions for the reporting period. Therefore, any GHG stocks are included in the greenhouse gas emissions inventory to identify significant liabilities and implement procedures for minimising the risk of their accidental release.

HFCs, PFCs and SF_6 represent GHGs with high global warming potentials. Their accidental release could result in a large increase in emissions for that year, and therefore the stock holdings are reported in this inventory (Table 16: HFCs, PFCs and SF6 held by).

Source	Amount held – January 2020	Amount held – December 2020	Potential liability
R410-A	10.39 kg	10.39 kg	1.8 tCO_2e
R32	2.61 kg	2.61 kg	21.7 tCO_2e
TOTAL			**23.5 tCO_2e**

Table 16: HFCs, PFCs and SF_6 held by SWDC

Because of the difficulty to reach the cooling units, the data doesn't include:

- The units from the main office – 19 Kitchener Street, Martinborough,
- One unit on top the office – 18 Kitchener Street – Martinborough,
- One unit on top of the Featherston library,
- One unit on top of the wall of the Featherston Information Centre.

This units will be included as soon as possible.

7.2 Land-use change

Organisations that own land subject to land-use change may achieve sequestration of carbon dioxide through a change in the carbon stock on that land. If a sequestration is claimed, this also represents a liability in future years should fire, flood or other management activities release the stored carbon.

Land-use change has been included in this inventory. SWDC owns 73.80 ha of forest (68.93 ha of planted forest and 4.87 ha of native forest). The potential liability of the land-use change is 69,285.09 tCO2e.

	t CO_2e	t CO_2	t CH_4	t N_2O
Carbon emission (deforestation) – Planted forest	65,249.48	65,249.48	n/a	n/a
Carbon emission (deforestation) – Native forest	4,035.61	4,035.61	n/a	n/a
TOTAL	**69,285.09**	**69,285.09**	**n/a**	**n/a**

Table 17: Potential liability of the land-use change

8 Methodology and references

8.1 Methodology

To do the greenhouse gas inventory, South Wairarapa District Council used the Interactive Workbook made by the Ministry for Environment.

It is possible to download it here: https://www.mfe.govt.nz/consultation/interactive-workbook-download

We simply had to input our activity data (such as litres of fuel used, or kWh consumed) in this workbook to measure our greenhouse gas emissions.

This greenhouse gas inventory was made with the factors available in April 2021.

8.2 References

Measuring Emissions: A guide for Organisations – MfE, 2020

The Greenhouse Gas Protocol: A corporate accounting and reporting standard – World Business Council for Sustainable Development and World resources Institute, 2004 (revised)

ISO14064-1:2018. Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals – International Organization for Standardization, 2018 (revised)

AGENDA ITEM C1

PLANNING AND ENVIRONMENT GROUP REPORT

Purpose of Report

To update the Planning and Regulatory Committee on the activities of the Planning and Environment Group and progress against Annual Plan performance measures.

Recommendations

Officers recommend that the Committee:

1. Receive the Planning and Environment Group Report.

1. Planning and Environment Group Summary

1.1 Planning Services

For land uses and subdivisions robust and timely decision making has continued. We are still currently advertising and seeking to fill the vacant planning manager position. The team continues to be busy, including many queries regarding subdivisions, new dwellings, tiny homes. Staff have been giving helpful advice with some appreciative feedback provided. A few big projects have come to a close e.g. Plan Change 10 Notable Tree Register and some larger subdivisions are nearly finished, eg Pinot Grove. The community were excited and quite involved in the Spatial Plan topic. We had good Spatial Plan engagement meetings in each of the towns with positive feedback comments about a good transparent process, and the explanative information given.

1.2 Building Services

The level of building consent applications has continued to remain quite high. Timely processing has continued together with ongoing site inspections services. The team is experiencing an increase in consent applications (currently 66 more than the first 4 months last year) and requests for inspections. Currently there is around a one week wait for inspections. The contractors we use for processing consents are also experiencing high demand from the Councils they serve. This means we need to pick up more in-house, some processing times may be impacted. A staff member will be returning part time from maternity leave, which will help for our busy work volumes.

2. Environmental Services

Decisions and helpful advice in the areas of food safety, alcohol, bylaws work, and dog control has continued. From continued inspections work and we are ahead of

premise's verifications benchmark. District dog registrations are at 98%. Environmental Health Officers chaired the Wellington EHO regional cluster group in late April, which was a big success. Our alcohol inspector has been doing compliance checks with various operators, to ensure good practice continues. Bylaws/Animal Control have been busy in the proactive education realm, including attending at the Dogs N Togs event in March. The team appreciated the previous praise conveyed by elected members.

3. Proposed Legislative Change to the RMA

The Government is delivering on its promise to reform the Resource Management system based on the comprehensive review led by former Appeal Court Judge Tony Randerson, published July 2020. The Resource Management Act 1991 (RMA) will be repealed and replaced with three new Acts:

- Natural and Built Environments Act (NBA) - to provide for land use and environmental regulation (this would be the primary replacement for the RMA)
- Strategic Planning Act (SPA) - to integrate with other legislation relevant to development, and require long-term regional spatial strategies.
- Climate Change Adaptation Act (CAA) - to address complex issues associated with managed retreat and funding and financing adaptation.

The Minister for the Environment David Parker has summed up the changes by stating as follows. "The new laws will improve the natural environment, enable more development within environmental limits, provide an effective role for Māori, improve housing supply and affordability.

Other key changes include stronger national direction and one single combined plan per region. There will be more focus on natural environmental outcomes and pursuit of better urban design.

Under the NBA there will be a mandatory set of national policies, standards to support the natural environmental limits, outcomes and targets specified in the new law. These will be incorporated into combined regional plans prepared by local and central government and mana whenua.

The Strategic Planning Act will integrate functions under the RMA, Local Government Act 2002, Land Transport Management Act 2003 and the Climate Change Response Act 2002 to enable clearer and more efficient decision-making and investment. The purpose is for new spatial strategies to enable regions to plan for the wellbeing of future generations, to ensure development and infrastructure occurs in the right places at the right times.

4. South Wairarapa Spatial Plan

In April the South Wairarapa Spatial Plan Consultation Document was out for feedback. In terms of submissions, at the timing of writing, the Spatial Plan had received a total of 180 submissions. Several submissions were sent in with detailed supporting text outlining various views.

5. District Plan Review

Boffa Miskell is supporting the review alongside officers and councillors of all three councils. District Plan Review Committee meetings and officer advisory group meetings continue to consider the extent of change needed for each chapter, and national planning standards. The DP review will be a mix of full review of key chapters, targeted review for some, and minor review. The review will be across 2021-2023 and any appeals sorted in 2024.

6. Dark Sky

For the draft Wairarapa International Dark Sky-Outdoor Artificial Lighting Plan Change, two submitters, Wairarapa Sports Artificial Surface Trust and Genesis Energy Ltd had wished to be heard. As a result of recent discussion meetings, matters have been resolved. There is no need for a hearing, and a commissioner will determine this Council initiated plan change.

7. Proposed Combined Council Dog Pound SWDC/CDC

A tender process was undertaken to provide requested costings information for a combined pound facility to serve both CDC and SWDC, for the site at Dalefield Rd, Carterton. This process ended on 7th April 2021. Unfortunately, no tenders were received from any firms for the proposed facility.

Accordingly, officers are researching land options within the SWDC region for a potential local solution. Also, part of this has involved thinking creatively, in terms of both design and construction, for a suitable animal shelter. A land option has been considered at 248 Lake Ferry Road, which is land currently used for the regions refuse site. There are 2 options for locations within this suggested site.

As to potential structure and design, the officers have made enquiries regarding the use of 20 foot and 40 foot shipping containers as the pound structure. SWDC officers have spoken to a very reputable supplier (Royal Wolf) who has a national presence and reputation. In addition, they have been at the forefront of design and construction of containers into structures to house people, civil defence offices, food outlets and dog shelter for the NZ Police. In talking to the supplier, they are comfortable with the design brief given to them. They were provided the requirements to meet disease management, climate control and security.

The company has provided an indicative list of requirements their container design can meet. They have indicated that the build time is 6 – 8 weeks dependent on current schedule.

This site has no amenities to connect to, therefore, there are unknown costs involving power, sewage & water connection, the land needs to be surveyed as the land is unknown under the surface. In addition, the land also has lease/rental questions.

Advantages

- SWDC will retain the pound in the region.
- The design is modular and therefore can move site, can be expanded.
- The cost fits with current numbers and budget currently set.
- innovative

Disadvantages

- untested design
- has not been fully costed of soils survey, resource consents with sceptic.

Once this latest option has been further explored, and associated matters investigated, we will provide a further update to the Committee.

8. Service Levels

8.1 Resource Management

SERVICE LEVEL – Council has a Combined District Plan that proves certainty of land-use/environmental outcomes at the local and district levels.

RESOURCE MANAGEMENT KEY PERFORMANCE INDICATORS	TARGET	RESULT	COMMENT SOURCE AND ACTIONS TAKEN TO ACHIEVE TARGET
Ratepayers and residents' image of the closest town centre ranked "satisfied"	80%	89%	NRB 3 Yearly Survey October 2018 (2016: 87%)
The district plan has a monitoring programme that provides information on the achievement of its outcomes (AER's)		-	Consultants have established data to be recorded and stored to enable effective reporting against AER's in WCDP. A final monitoring strategy is still to be completed.

8.2 Resource Management Act Consents (Year to date 01/07/2020-31/03/2021)

SERVICE LEVEL – All resource consents will be processed efficiently.

Resource management Key Performance Indicators	Target	YTD Result	Comment Source, and actions taken to achieve Target
Consent applications completed within statutory timeframes	**100%**	**100%**	**Total 152/152**
		100%	74/74 Land Use applications were completed within statutory timeframes. NCS
		100%	63/63 Subdivision applications were completed within statutory timeframes. NCS
		100%	15/15 permitted boundary activity applications were completed within statutory timeframes. NCS
s.223 certificates issued within 10 working days	100%	100%	55/55 s223 certificates were certified within statutory timeframes. NCS.
s.224 certificates issued within 15 working days of receiving all required information (note no statutory requirement)	95%	100%	45/45 s224 certificates were certified. NCS.

8.3 Local Government Act – LIM's

SERVICE LEVEL – Land Information Memoranda: It is easy to purchase information on any property in the District.

Resource management Key Performance Indicators	Target	YTD Result	Comment Source, and actions taken to achieve Target
LIMs contain all relevant accurate information (no proven complaints)	100%		G:\LIMs\LIMS PROCESSED 2020-2021
Standard LIMs are processed within 10 days	100%	92.57%	162/175 standard LIMs were completed G:\LIMs\LIMS PROCESSED 2020-2021

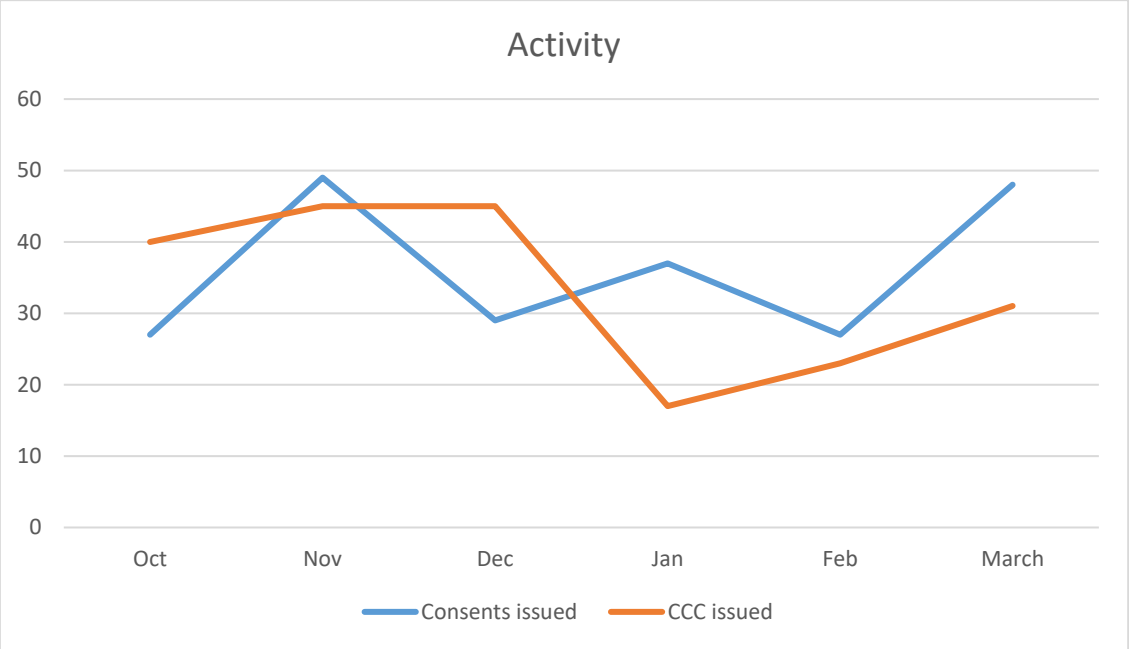
	YTD 1st July 2020 to 31st March 2021	Previous YTD 1st July 2019 to 31st March 2020	Period 1st March 2021 to 31st March 2021	Previous Period 1st March 2020 to 31st March 2020
Standard LIMs (Processed within 10 working days)	175	137	24	13
Urgent LIMs (Processed within 5 working)	77	71	9	13
Totals	**252**	**208**	**33**	**26**

8.4 Building Act - Consents and Enforcement

SERVICE LEVEL - Council certifies all consented work complies with the building code, ensuring our communities are safe. The Council processes, inspects, and certifies building work in my district.

PUBLIC PROTECTION KEY PERFORMANCE INDICATORS	TARGET	YTD RESULT	COMMENT SOURCE, AND ACTIONS TAKEN TO ACHIEVE TARGET
Code Compliance Certificate applications are processed within 20 working days	100%	98.42%	NCS – 312 out of 321 CCC's were issued within 20WD YTD – Human/technical error, process put in place to prevent this from happening in the future.
Building consent applications are processed within 20 working days	100%	99.29%	NCS –421 consents were issued within 20WD YTD
Council maintains its processes so that it meets BCA accreditation every 2 years	Yes	Yes	Next accreditation review due January 2022. Council was re-accredited in January 2020
BCA inspects new building works to ensure compliance with the BC issued for the work, Council audits BWOF's and Swimming Pools	Yes	Yes	**Building Consents** Council inspects all new work to ensure compliance 1st March 2021 – 31st March 2021 441 inspections **BWOF's –** Total 189 – average of 3 audits per month required, 0 Audits carried out in March 2021 **Swimming Pools –** Total 303– average of 7 audits per month required.8 Audits carried out in March
Earthquake prone buildings reports received	100%	N/A	Of the remaining buildings: 25 - Identified as EPB 9 - Require engineer assessment from owners 2 - Requested extension to provide engineers report

	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21
Monthly Building Consents issued	27	49	29	37	28	48
Monthly CCC issued	40	45	45	17	23	31



8.5 Building Consents Processed

Type – 1 March 2021 to 31 March 2021	Number	Value
Commercial (shops, restaurants, rest home – convalescence, restaurant /bar / cafeteria / tavern, motel, commercial building demolition - other commercial buildings)	1	$3,000,000
Industrial (covered farm yards, building demolition, warehouse and/or storage, factory, processing plant, bottling plant, winery)	0	$0
Residential (new dwellings, extensions and alterations, demolition of building, swimming and spa pools, sleep-outs, garages, relocations, heaters, solid fuel heaters).	71	$13,330,503
Other (public facilities - schools, toilets, halls, swimming pools)	2	$756,000
Totals	**74**	**$17,086,503**

8.6 Environmental Health and Public Protection

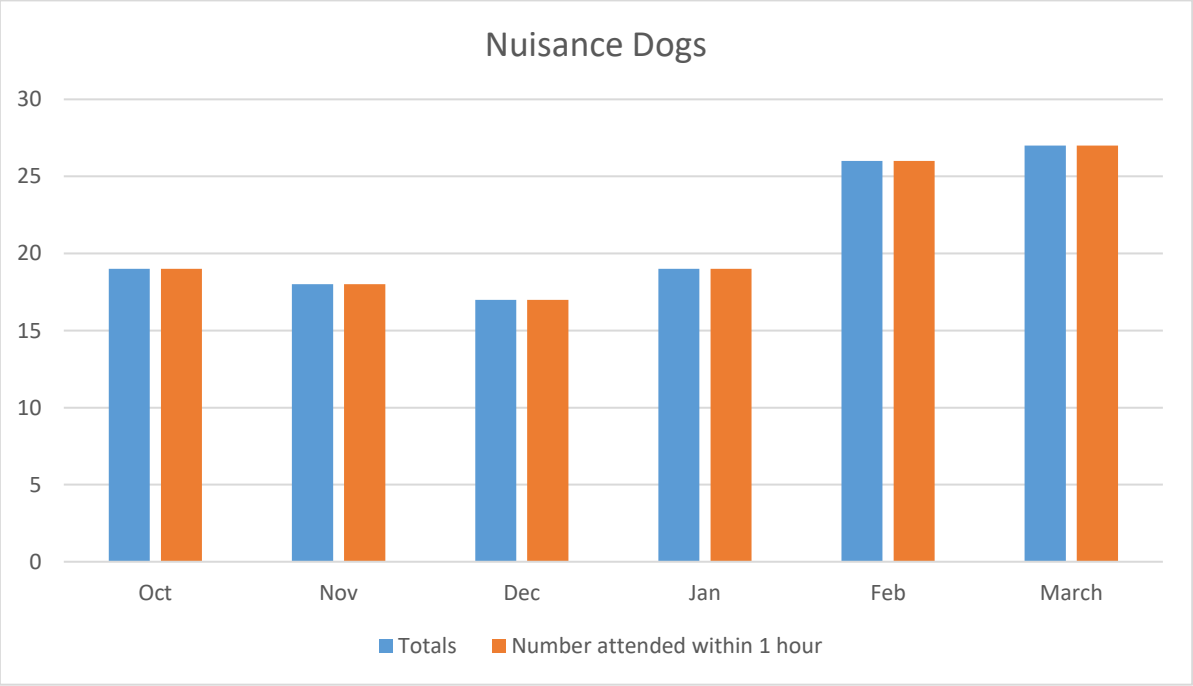
8.6.1. Dog Control Act – Registration and Enforcement

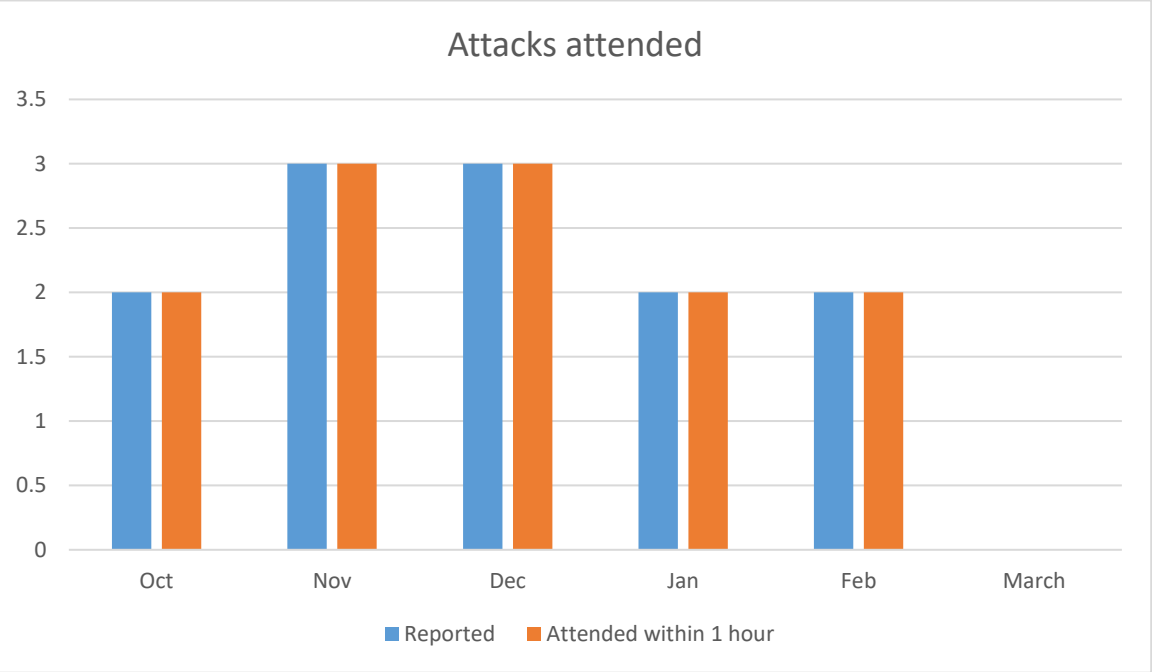
SERVICE LEVEL – Dogs don't wander freely in the street or cause menace to humans or stock.

Public Protection Key Performance Indicators	Target	YTD Result	Comment Source, and actions taken to achieve Target
Undertake public education, school and community visits to promote safe behaviour around dogs and/or responsible dog ownership	3 visits	3	1 at dog event in Featherston (Dogs in togs), 1 national organisation (Red Cross) 1 internal (meter readers)
Complaints about roaming and nuisance dogs are responded to within 1 hours	100%	100%	K:\resource\Bylaw Officers\Registers\AC Service Requests.xls 187/187
Complaints about dog attacks on persons, animals or stock are responded to within 1 hour	100%	100%	16/16

INCIDENTS REPORTED FOR PERIOD 1ST MARCH 2021 – 31ST MARCH 2021	FEATHERSTON	GREYTOWN	MARTINBOROUGH
Attack on Pets	-	-	-
Attack on Person	-	-	-
Attack on Stock	-	-	-
Barking and whining	2	1	3
Lost Dogs	1	-	-
Found Dogs	1	-	-
Rushing Aggressive	-	1	1
Wandering	3	8	6
Welfare	1	-	-
Fouling	-	-	-
Uncontrolled (off leash urban)	-	-	-

	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21
Nuisance dogs	19	18	17	19	26	27
Attended to within 1 hours	19	18	17	19	26	27
Attack totals	2	3	3	2	2	0
Attacks attended within 1 hours	2	3	3	2	2	0





8.6.2. Public Places Bylaw 2012 - Stock Control

SERVICE LEVEL – Stock don't wander on roads, farmers are aware of their responsibilities.

PUBLIC PROTECTION KEY PERFORMANCE INDICATORS	TARGET	YTD RESULT	COMMENT SOURCE, AND ACTIONS TAKEN TO ACHIEVE TARGET
Stock causing a traffic hazard is responded to within 1 hour	100%	100%	K:\resource\Bylaw Officers\Registers\AC Service Requests.xls 22/22
In cases where multiple stock escapes (more than 1 occasion) have occurred from a property taking compliance or enforcement or prosecution action against the property owner	100%	-	No incidents
Council responds to complaints regarding animals within 48 hours.	100%	100%	K:\resource\Bylaw Officers\Registers\AC Service Requests.xls 13/13

INCIDENTS REPORTED	TOTAL FOR YTD PERIOD 1 JULY 2020 TO 31 MARCH 21
Stock	29

8.6.3. Bylaws

Between 1 July 2020 and 31 March 2021 there were:

Trees & Hedges

- 71 notices were sent by Council requesting the owner/occupier to remove the obstruction from the public space.

Litter

- 20 litter incidents were recorded and from this, Council sent 8 notices to the identifiable people associated with these incidents, 2 resulted in an infringement.

Abandoned vehicles

- There were 25 total vehicle related calls in the SWDC area, of which 15 were abandoned vehicles, 9 of those were removed by their owners and the remaining 6 vehicles were removed by Councils' contractor or NZTA.

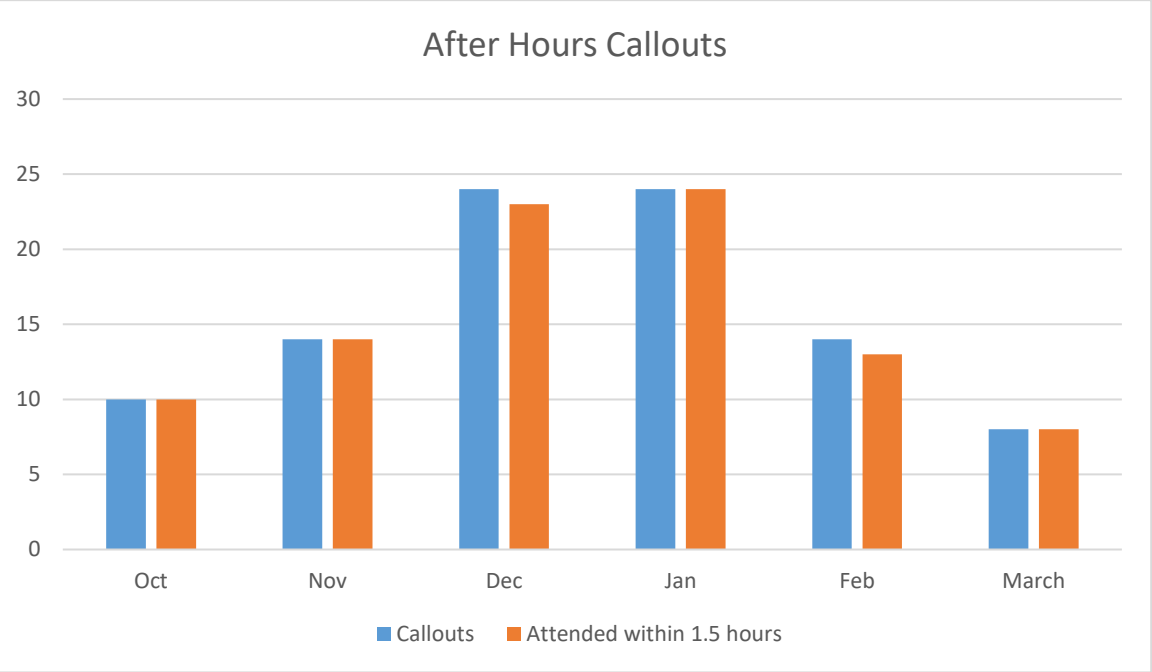
8.6.4. Resource Management Act – afterhours Noise Control

SERVICE LEVEL – The Council will respond when I need some help with noise control.

Public Protection Key Performance Indicators	Target 20/21	YTD Result	Comment Source, and actions taken to achieve Target
% of calls received by Council that have been responded to within 1.5 hours	100%	98.3%	K:\resource\Health\Resource Management\Noise Control Complaints 120/122 attended within timeframe YTD 8 callouts Mar 21 8/8 attended to within 1.5 hours

After Hours Noise Control Complaints Received	YTD 1 July 20 to 31 March 21	Previous YTD 1 July 19 to 31st March 20	Period 1 March 2021 to 31st March 2021	Previous Period 1 March 2020 to 31sr March 2020
Total	122	123	8	8

	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21
Calls	10	14	24	24	14	8
Attended to within 1.5 hours	100%	100%	99%	100%	99%	100%



8.7 Sale and Supply of Alcohol Act - Licensing

SERVICE LEVEL – The supply of alcohol is controlled by promoting responsible drinking.

	TARGET 20/21	YTD RESULT	COMMENT SOURCE, AND ACTIONS TAKEN TO ACHIEVE TARGET
Premises are inspected as part of licence renewals or applications for new licences.	100%	87.7% YTD	MAGIQ data. All premises inspected at new or renewal application stage. Inspections are completed based around licence renewal date throughout the year 50/57 Number of inspections completed of new licences or licences coming up for renewal within the YTD period. 9 inspections Mar 21 Total number of licences is subject to change month by month as new businesses open and existing premises close.
Premises that are high risk are inspected annually, while low or medium risk premises are audited no less than once every three years.	100%	74.4% YTD	MAGIQ data. There are no high risk premises in the district. Low and medium risk premises are inspected every 3 years as part of the renewal process. There are currently 43 low and medium licenses due for renewal or new inspections in this financial year which will be inspected once they have made their application. 5 for low and medium inspections March 21 Total number of licenses is subject to change month by month as new businesses open and existing premises close. Total number of inspections done year to date 32/43
Compliance activities are undertaken generally in accord with the Combined Licencing Enforcement Agencies agreement.	100%	100%	1 Controlled purchase Operation has been undertaken this YTD in conjunction with other agencies. 6 Compliance visits undertaken March 2021. Usual practice is for the SWDC alcohol licensing inspector is to undertake identified compliance

	Target 20/21	YTD Result	Comment Source, and actions taken to achieve Target
			inspections at licensed premises. This is to encourage open communication with our licensees and provide support and education to help our licenced premises comply with their requirements under the Act.

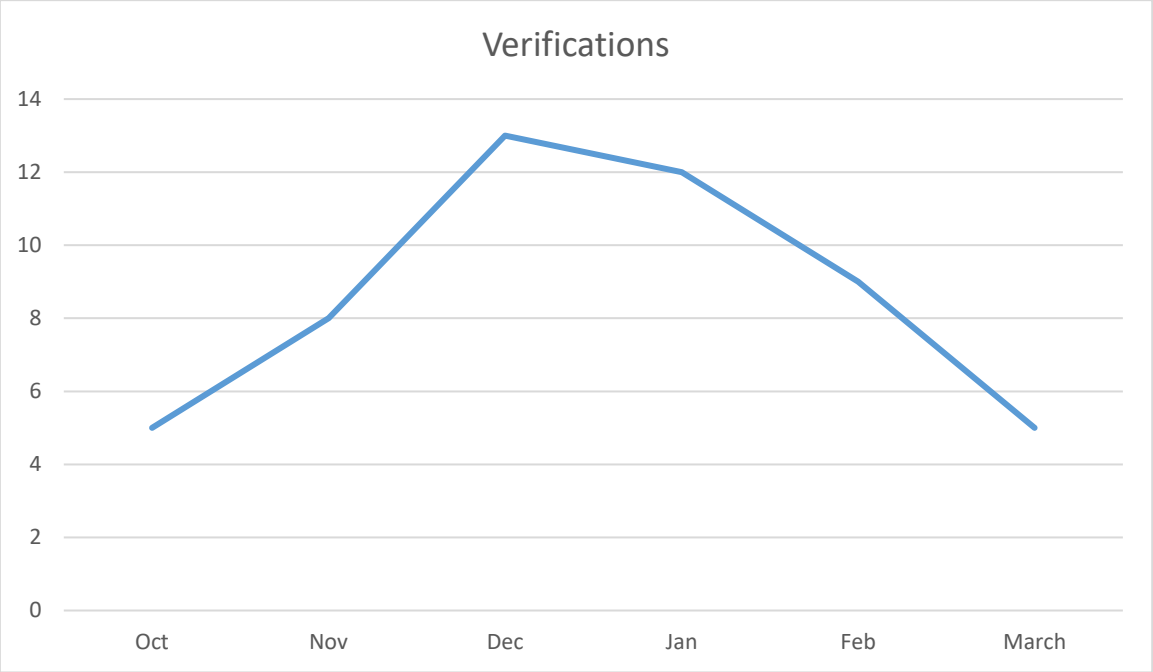
Alcohol Licence Applications Processed	YTD 1 July 20 to 31 March 21	Previous YTD 1 July 19 to 31 March 20	Period 1 March 21 to 31st March 21	Previous Period 1 March 2020 tp 31 March 2020
On Licence	28	22	4	3
Off Licence	21	26	5	2
Club Licence	4	6	2	0
Manager's Certificate	105	122	14	18
Special Licence	26	43	4	3
Temporary Authority	3	1	0	0
Total	**187**	**220**	**29**	**26**

8.9 Health Act - Safe Food

SERVICE LEVEL – Food services used by the public are safe.

Public Protection Key Performance Indicators	Target 20/21	YTD Result	Comment Source, and actions taken to achieve Target
Premises have appropriate FMP in place and meet the risk based standards set out in the Plan.	100%	100%	FHR – 0 FCP (Food Act) – 94 NP – 63 Total number of premises is subject to change month by month as new businesses open and existing premises close. 8 businesses have surrendered registration TYD 2 risk based measure changes
Premises are inspected in accord with regulatory requirements.	100%	85.1%	FCP verifications – 80/94 *Total number of premises is subject to change month by month as new businesses open and existing premises close. 5 verifications were undertaken in March 21 We were able to finalise (close out) 7 premises in March 2021

	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	March 21
Verifications	5	8	13	12	9	5



Contact Officer: Russell O'Leary, Group Manager – Planning and Environment

ACTION ITEMS REPORT

Purpose of Report

To present the Planning and Regulatory Committee with updates on actions and resolutions.

Recommendations

Officers recommend that the Committee:

1. Receive the Planning and Regulatory Action Items Report.

1. Executive Summary

Action items from recent meetings are presented to the Committee for information. The Chair may ask officers for comment and all members may ask officers for clarification and information through the Chair.

If the action has been completed between meetings it will be shown as 'actioned' for one meeting and then will be remain in a master register but no longer reported on. Procedural resolutions are not reported on.

2. Appendices

Appendix 1 - Action Items to 12 May 2021

Contact Officer: Suzanne Clark, Committee Advisor
Reviewed By: Russell O'Leary, Group Manager Planning and Regulatory

Appendix 1 – Action Items to 12 May 2021

Number	Raised Date	Responsible Manager	Action or Task details	Open	Notes
130	29-Apr-20	Russell	At the end of the spatial plan consultation period, provide the total cost attributed to spatial plan community engagement to the Planning and Regulatory Committee	Open	27/5/20: Action transferred to the P&R Committee
300	1-Jul-20	Russell	PLANNING AND REGULATORY RESOLVED (P&R2020/09): 1. To receive the Proposed Combined Dog Pound Facility Report. (Moved Cr Hay/Seconded Cr Plimmer) Carried 2. To receive the Armstrong Dixon Limited April 2020 Report. (Moved Cr Fox/Seconded Cr Hay) Carried 3. That officers should continue negotiations with Masterton District Council to receive a quote for services, and to continue working with Carterton District Council for a combined facility and to present back to the Planning and Regulatory Committee the detailed alternatives. (Moved Cr Vickery/Seconded Mayor Beijen) Carried	Open	14/9/20: Direction from P&R on 12 August was 'to produce a framework for a swift resolution with Carterton District Council'. 5/12/20: Continual discussions with Carterton and that we are scoping a tender document to go to market in the new year with a design and build concept. This is limited to the build of the structure only. 5/5/21: An update has been provided to P&R 12 May 21. Officers will work with the Committee to bring a resolution to the dog pound situation at the earliest opportunity.
65	17-Mar-21	Karen	PLANNING AND REGULATORY RESOLVED (P&R2021/07): 1. To receive the Alcohol Control Bylaw Review Report. (Moved Cr Plimmer/Seconded Cr Hay) Carried 2. To note that officers will commence a review of the Featherston Liquor Control Bylaw 2010 and the South Wairarapa Liquor Control bylaw 2011 and will report back to the Committee on the outcome of the review and any recommendations regarding a replacement alcohol control bylaw. (Moved Cr Colenso/Seconded Cr Plimmer) Carried	Actioned	5/5/21: Closed, work has begun.
66	17-Mar-21	Russell	Present a solution that will bring a resolution to the dog pound situation at the earliest opportunity	Actioned	5/5/21: An update has been provided to P&R 12 May 21. Closed and merged as a comment with P&R2021/07.
67	17-Mar-21	Cr Plimmer/Cr Jephson	Provide a regular report to Council meetings on the Wairarapa Combined District Plan development	Open	