



**PAPAIOEA**  
PALMERSTON  
NORTH  
CITY

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# **PALMERSTON NORTH CITY COUNCIL**

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AGENDA

## **ENVIRONMENTAL SUSTAINABILITY COMMITTEE**

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**9AM, WEDNESDAY 21 SEPTEMBER 2022**

COUNCIL CHAMBER, FIRST FLOOR,  
CIVIC ADMINISTRATION BUILDING,  
32 THE SQUARE, PALMERSTON NORTH

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# MEMBERS

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**Brent Barrett (Chairperson)**  
**Zulfiqar Butt (Deputy Chairperson)**  
**Grant Smith (The Mayor)**

**Vaughan Dennison**  
**Renee Dingwall**  
**Lorna Johnson**  
**Billy Meehan**

**Orphée Mickalad**  
**Karen Naylor**  
**Aleisha Rutherford**  
**Peter Te Rangi**

AGENDA ITEMS, IF NOT ATTACHED, CAN BE VIEWED AT

[pncc.govt.nz](http://pncc.govt.nz) | Civic Administration Building, 32 The Square  
City Library | Ashhurst Community Library | Linton Library

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**Chris Dyhrberg**

**Acting Chief Executive | PALMERSTON NORTH CITY COUNCIL**

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# **ENVIRONMENTAL SUSTAINABILITY COMMITTEE MEETING**

21 September 2022

## **ORDER OF BUSINESS**

### **1. Apologies**

### **2. Notification of Additional Items**

Pursuant to Sections 46A(7) and 46A(7A) of the Local Government Official Information and Meetings Act 1987, to receive the Chairperson's explanation that specified item(s), which do not appear on the Agenda of this meeting and/or the meeting to be held with the public excluded, will be discussed.

Any additions in accordance with Section 46A(7) must be approved by resolution with an explanation as to why they cannot be delayed until a future meeting.

Any additions in accordance with Section 46A(7A) may be received or referred to a subsequent meeting for further discussion. No resolution, decision or recommendation can be made in respect of a minor item.

### **3. Declarations of Interest (if any)**

Members are reminded of their duty to give a general notice of any interest of items to be considered on this agenda and the need to declare these interests.

#### 4. **Public Comment**

To receive comments from members of the public on matters specified on this Agenda or, if time permits, on other Committee matters.

(NOTE: If the Committee wishes to consider or discuss any issue raised that is not specified on the Agenda, other than to receive the comment made or refer it to the Chief Executive, then a resolution will need to be made in accordance with clause 2 above.)

#### 5. **Confirmation of Minutes**

Page 7

"That the minutes of the Environmental Sustainability Committee meeting of 18 May 2022 Part I Public be confirmed as a true and correct record."

#### 6. **Update on the Low Carbon Road Map**

Page 13

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor.

#### 7. **National Emissions Reduction Plan Summary**

Page 21

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor.

#### 8. **PNCC Organisational Emissions Inventory 2020/21**

Page 33

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor & David Watson, Climate Change Analyst.

#### 9. **PNCC Zero Carbon Feasibility Study**

Page 111

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor.

#### 10. **Low Carbon Fund - 2021/22 Update**

Page 119

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor.



**11. Response to New Zealand Green Building Council Recommendations** Page 125

Memorandum, presented by Jono Ferguson-Pye, City Planning Manager and David Watson, Climate Change Analyst.

**12. Progress Towards Actions in the Waste Management and Minimisation Plan 2019** Page 133

Memorandum, presented by Bryce Hosking, Acting Group Manager - Resource Recovery, and Natasha Hickmott, Activities Manager - Resource Recovery.

**13. Process and resourcing required to establish a Food Resilience Policy** Page 145

Memorandum, presented by Julie Macdonald, Strategy and Policy Manager.

**14. Committee Work Schedule - September 2022** Page 151

**15. Exclusion of Public**

To be moved:

"That the public be excluded from the following parts of the proceedings of this meeting listed in the table below.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under Section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under Section 48(1) for passing this resolution

This resolution is made in reliance on Section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public as stated in

the above table.

Also that the persons listed below be permitted to remain after the public has been excluded for the reasons stated.

*[Add Third Parties]*, because of their knowledge and ability to assist the meeting in speaking to their report/s [or other matters as specified] and answering questions, noting that such person/s will be present at the meeting only for the items that relate to their respective report/s [or matters as specified].

## PALMERSTON NORTH CITY COUNCIL

### Minutes of the Environmental Sustainability Committee Meeting Part I Public, held in the Council Chamber, First Floor, Civic Administration Building, 32 The Square, Palmerston North on 18 May 2022, commencing at 9.03am

<b>Members Present:</b>	Councillor Brent Barrett (in the Chair), The Mayor (Grant Smith), Councillors Zulfiqar Butt, Vaughan Dennison, Renee Dingwall, Lorna Johnson, Billy Meehan, Orphée Mickalad, Karen Naylor and Mr Peter Te Rangi.
<b>Non Members:</b>	Councillors Susan Baty, Rachel Bowen, Lew Findlay QSM, Patrick Handcock ONZM, and Bruno Petrenas.
<b>Apologies:</b>	Councillors Leonie Hapeta (late arrival) and Susan Baty (early departure)

Councillor Leonie Hapeta entered the meeting at 10.02am during consideration of clause 10-22. She left the meeting at 2.32pm during clause 14-22. She was not present for clauses 8-22 and 9-22, 14-22, to 16-22 inclusive.

Councillor Karen Naylor was not present when the meeting resumed at 10.26am, she returned to the meeting at 10.35am. She was present for all clauses.

Councillor Susan Baty left the meeting at 11.00am during consideration of clause 11-22. She was not present for clauses 11-22 to 16-22.

Councillor Rachel Bowen left the meeting at 11.00am during consideration of clause 11-22. She returned at 11.34am during consideration of clause 13-22. She was not present for clauses 11-22 and 12-22.

Councillor Orphée Mickalad left the meeting at 11.00am during consideration of clause 11-22. He returned at 11.32am during consideration of clause 13-22. He was not present for clauses 11-22 and 12-22.

#### 8-22 Apologies

Moved Brent Barrett, seconded Zulfiqar Butt.

#### The COMMITTEE RESOLVED

1. That the Committee receive the apologies.

Clause 8-22 above was carried.

Councillor Alesha Rutherford entered the meeting at 9.10am

**9-22**

**Sustainability Review 2022**

Memorandum, presented by Olivia Wix, Communications Manager. and Adam Jarvis, Senior Climate Change Advisor.

Moved Grant Smith, seconded Aleisha Rutherford.

The **COMMITTEE RESOLVED**

1. To receive the Sustainability Review 2022.

Clause 9-22 above was carried.

**10-22**

**Presentation - Future Post**

Dave Elder from Future Post made a presentation to the committee on the company's business model and their planned expansion into the Manawatū in 2023.

Future Post makes fence posts out of recycled plastic products. They currently take all plastics (numbers 2,4,5,6 and 7) apart from PVCs and PVTs.

Based in Waiuku, South Auckland, Future Post currently supplies mostly to the South Island. The business is growing so they are building a distribution centre in the Manawatu region in 2023 to service the Central North Island.

Mr Elder spoke on the following:

- Creating a circular economy, all Future Post's products are collected and recycled back into new posts
- Focus on continuous improvement through R&D,
- Guaranteeing that all recycled material collected are used and
- Providing a minimum commodity price for suppliers (councils) for the whole term of a contract.

Councillor Leonie Hapeta entered the meeting at 10:02am

Moved Brent Barrett, seconded Aleisha Rutherford.

The **COMMITTEE RESOLVED**

1. That the Environmental Sustainability Committee receive the presentation for information

Clause 10-22 above was carried.

**Abstained:**

Councillor Leonie Hapeta.

The meeting adjourned at 10.07am

The meeting resumed at 10.26am

Councillor Karen Naylor was not present when the meeting resumed.

**11-22**

**Presentation - Environment Network Manawatū**

Dave Mollard and Madz Batache from Environment Network Manawatū made a presentation to the Committee advocating for a Council Kai Resilience Strategy for the city.

Dave Mollard said that food insecurity affects around 10,000 people on a regular basis in Palmerston North.

He outlined why Council should take the lead on developing a strategy which could list providers in the community and identify council resources for local food production. He highlighted how a Kai Resilience Strategy could meet the economic, social and environmental wellbeing of the city.

Councillor Karen Naylor returned to the meeting at 10.35am.

Councillors Rachel Bowen, Orphée Mickalad and Susan Baty left the meeting at 11.00am.

The Committee agreed with the presenters and moved a motion for further advice on the process and resourcing required to establish a Food Resilience Policy for Council.

Moved Lorna Johnson, seconded Brent Barrett.

The **COMMITTEE RESOLVED**

1. That the Environmental Sustainability Committee receive the presentation for information.
2. That the Chief Executive provides a short report to Environmental Sustainability Committee advising a suitable process and resourcing required to establish a Food Resilience Policy for Council.

Clause 11-22 above was carried.

**12-22**

**Confirmation of Minutes**

Moved Brent Barrett, seconded Zulfiqar Butt.

The **COMMITTEE RESOLVED**

1. That the minutes of the Environmental Sustainability Committee meeting of 30 March 2022 Part I Public be confirmed as a true and correct record.

Clause 12-22 above was carried.

**13-22**

**Investigation into Options for Eco-Burial**

Report, presented by Kathy Dever-Tod, Group Manager - Parks and Logistics.

The Committee moved the following changes to the officers recommendations:

- Resolution 1 was changed to require a progress report back to Council in 2023, to enable elected members to stay informed of the project.
- Resolution 2 was altered to include 'and natural burials' for clarity.

Councillor Orphée Mickalad returned to the meeting at 11:32am

Councillor Rachel Bowen returned to the meeting at 11:34am.

Moved Brent Barrett, seconded Patrick Handcock ONZM.

The **COMMITTEE RECOMMENDS**

1. That the Council adopt Option 2, continue to work with Manawatū District Council on the opportunity to establish a natural burial cemetery in the Manawatū and direct the Chief Executive to provide a progress report to Council in 2023.

**THE COMMITTEE RESOLVED:**

2. That the Committee note the findings of the investigation into options for eco-burial and natural burial in Palmerston North.
3. That the Committee note Manawatū District Council are currently investigating the establishment of a natural burial cemetery.

Clause 13-22 above was carried.

**14-22**

**Citywide Emissions Inventory 2021**

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor.

The meeting adjourned at 12.06pm

The meeting resumed at 2.30pm

Councillor Leonie Hapeta left the meeting at 2:32pm.

Moved Brent Barrett, seconded Aleisha Rutherford.

The **COMMITTEE RESOLVED**

1. To receive the memorandum titled 'Citywide Emissions Inventory 2021' for information.

Clause 14-22 above was carried.

#### **15-22 Update on Turitea Translocations**

Memorandum, presented by Adam Jarvis, Senior Climate Change Advisor.

Moved Aleisha Rutherford, seconded Peter Te Rangi.

The **COMMITTEE RESOLVED**

1. To receive the memorandum titled 'Update on Turitea Translocations' for information.

Clause 15-22 above was carried.

#### **16-22 Committee Work Schedule - May 2022**

Moved Brent Barrett, seconded Aleisha Rutherford.

The **COMMITTEE RESOLVED**

1. To receive its Work Schedule dated May 2022.

The meeting finished at 3.02pm

Confirmed 21 September 2022

**Chairperson**





## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** Update on the Low Carbon Road Map

**PRESENTED BY:** Adam Jarvis, Senior Climate Change Advisor

**APPROVED BY:** David Murphy, Chief Planning Officer

### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee receive the memorandum titled 'PNCC Low Carbon Roadmap' and the attachment titled 'PNCC Low Carbon Road Map Workflow Diagram' for information.

### 1. ISSUE

Government has made a commitment to reduce all long-lived greenhouse gases to net-zero and achieve a 24-47% reduction in biogenic methane by 2050. To achieve this Government has set emissions reductions targets which include a 6.4% reduction in national emissions by 2025 (compared to a 2019 baseline) and a carbon neutral public sector by 2025.

Through the Eco City Strategy 2021-31, PNCC has set a citywide target of a 30% reduction in net carbon emissions by 2031 (compared to a 2015/16 baseline). In order to achieve this target three workstreams are proposed:

- An assessment of the current processes within the council, in particular around higher emissions activities, as part of the PNCC Zero Carbon Feasibility Study. This will provide a basis for the development of projects and programmes to eliminate emissions where possible, minimise emissions where practicable and support pilot projects to demonstrate and promote emissions reductions across the city.
- A process of outcome-driven investment prioritisation, potentially including setting an internal price for carbon. This will allow us to determine the best long-term value options for projects put forward in the next Long Term Plan.
- An analysis of the National Emissions Reduction Plan. Officers will provide advice on the implications of this report on council operations, including any potential policy or programme changes.

## 2. BACKGROUND

### National Context

PNCC's 2018 Eco City Strategy and subsequent actions were largely carried out on a best practice basis in the absence of national policy and direction. New national and international targets and policy documents are changing the context of PNCCs climate programme and will require Council to adjust, and in some cases rethink, existing policy and strategy.

In November 2019 the Climate Change Response (Zero Carbon) Amendment Act (The Climate Act) was set into law. This document establishes the national commitment to reduce all greenhouse gasses (except biogenic methane) to zero by 2050.

In December 2020 National Government declared a climate emergency and subsequently committed to a carbon-neutral public sector by 2025. At the same time the government passed the Climate Change Response (Emission Trading Reform) Amendment Act which made changes to the New Zealand Emissions Trading Scheme (ETS). Since this change, the cost of one tonne of carbon at government auction has reached \$86.25 (February 2022). On secondary trading markets the current spot price is ~\$87 (as at 01/09/2022).

The Climate Act also requires the Minister to set nationwide emissions budgets, the first of which is for the period 2022 to 2025 then subsequently covering a 5-year period. The current national carbon emissions budgets are shown in Table 1 below:

	2022-2025	2025-2030	2030-2035
Annual Average (MtCO <sub>2</sub> e/yr)	73	61.4	48.4
change from 2019 baseline	-6.4%	-21.3%	-37.9%

*Table 1: National Emissions Budgets*

The first National Emissions Reduction Plan (NERP) was published in May 2022. This document is intended to provide a strategy to meet the established emissions budgets. The NERP indicates that the first budget is targeted at Transport, Energy and Industry in order to achieve the required reductions in a short timeframe.

### Local Context

Palmerston North is a signatory of the New Zealand Local Government Leaders Climate Change Declaration 2017. This declaration includes a commitment to:

- Promote low carbon transport options,
- Improve resource efficiency, and
- Support renewable energy use.

### Tracking Carbon Emissions

Through the updated Eco City Strategy 2021, PNCC has set itself the target of a citywide 30% reduction in carbon emissions by 2031, compared to the 2015/16 baseline. Council has been tracking progress towards its emission reduction goals since establishing this baseline, through the 'Toitū Carbonreduce' programme and an internally produced citywide carbon inventory. The 2021 Citywide Emissions Inventory was presented to the March 2022 Environmental Sustainability Committee. The 2020/21 Organisational Emissions Inventory is expected to be presented to the September 2022 Environmental Sustainability Committee. Future organisational inventories are expected to be delivered within the year following the completion of the inventory year, rather than the current lag of approximately 15-18 months.

### The Low Carbon Fund

Through the 2021-31 Long Term Plan (LTP) Council created the Low Carbon Fund (LCF) in order to provide marginal funding to existing approved renewal projects. Since 2021 projects supported by the fund are predicted to save the council thousands of dollars and over 1400 tonnes of carbon emissions over the lifetime of the purchased assets. A report on the performance of the 2021/22 LCF is expected to be presented to the September 2022 Environmental Sustainability Committee.

### Long Term Plan Project Development

The first LCF assessment process involved assigning a financial value to the proposed changes to determine if the carbon reduction resulting from those changes were good value for money. This process compared the capital cost of projects with the lifetime operational cost and identified opportunities to provide substantial operational savings in excess of capital costs in addition to providing significant carbon reductions, i.e. projects saved both money and carbon over their lifetime.

Going forward this process will be broadly applied to the development of operational and capital delivery programmes for the next LTP to allow a more robust analysis of whole life cost and climate impact to be made. This process could potentially include an internal price on carbon, essentially using the same mechanism at the LCF. Regardless, it is considered likely that this process will identify a number of opportunities for substantial carbon and financial savings.

### Carbon Neutral Programme Development

In addition to carbon efficiency savings, Council has indicated a desire to achieve carbon neutrality and has requested the development of a Zero Carbon Feasibility Study, to be delivered to the September 2022 Environmental Sustainability Committee. This study developed a model to predict PNCCs future carbon emissions based on population growth, the maturation of landfill assets, national policy decisions such as a drive towards 100% renewable electricity generation and other external factors. This model can then be adapted to predetermined scenarios to demonstrate the impact policy decisions can make on long term emissions.

Scenarios developed as part of the model include proposals to offset residual emissions through native planting that would allow PNCC to reach net-zero by mid-century.

#### Extension of Feasibility Study Methodology to Citywide Emissions

The March 2022 Environmental Sustainability Committee resolved:

*"That the Chief Executive continues to develop the Low Carbon Roadmap and report to Council in 2023 with specific options and actions to achieve the city-wide goal of 30% reduction in emissions by 2031, and that the proposed scope and methodology for that report be presented to the Environmental Sustainability Committee in September 2022."*

In response, officers propose that the same methodology used in the preparation of the 'PNCC Carbon Neutral Feasibility Study' be used to analyse and develop scenarios for the achievement of the Council's Eco City goals. Such an approach could also examine pathways for the City to achieve the national target of carbon neutrality by 2050. The scope of such a study would necessarily be at the same level of abstraction as the Citywide Emissions Inventory which is reported annually to this committee.

#### Citywide Reduction Projects that complement National Direction

The NERP includes significant policy drivers and funding opportunities that will affect the direction, scope and scale of climate related programmes nationwide. The plan acknowledges that *"Local government is fundamental to meeting our 2050 targets, mitigating the impacts of climate change and helping communities to adapt to climate change"*.

PNCC will be required under the NERP to take certain actions and achieve certain targets. Many of the targets, strategies and programmes envisioned by the plan are yet to be published; however, the actions included in the plan indicate that substantial changes to many council functions will be required. Some of the actions published to date include:

- Future transport plans & funding applications must include emissions assessments
- Deliver a 20% reduction in Vehicle KMs Travelled in line with sub-national targets
- 'Substantially improve' walking and cycling infrastructure
- Provide infrastructure to comply with safe travel to school requirements
- Improve kerbside waste collection, including requiring separation of organic waste and construction waste
- Integrate climate mitigation into infrastructure planning decisions
- Support emissions reductions in housing and urban development via policy, guidelines, direction, and partnerships

A detailed summary of the NERP is expected to be presented to the September 2022 Environmental Sustainability Committee.

In addition to the NERP, Government published the first National Adaptation Plan (NAP) in August 2022. This document includes further substantial changes around asset and infrastructure planning, local economies and emergency management. A more complete analysis and summary of the NAP will be presented to the Environmental Sustainability Committee in 2023.

Other legislative and national changes including (but by no means limited to) Three Waters reforms, Resource Consent Act reforms, and Local Government reforms will also have a significant effect on Councils' ability to affect organisational and citywide emissions. Considering these reforms from the perspective of climate change mitigation and adaptation, as set out in the Climate Leaders Declaration, will require further analysis and consultation as more specific information becomes available.

### 3. NEXT STEPS

Once Council has considered the emissions model scenarios in the Zero Carbon Feasibility Study (ZCFS), a formal target for PNCC emission's needs to be set, and direction on the desired rate of change and allocation of available resources will be required in order to develop a programme of projects for the next LTP (and subsequent LTPs) to achieve the desired outcomes.

Officers will develop a Citywide Emissions Reduction Study, utilising the same methodology as the ZCFS, to be reported to this committee in mid-late 2023.

As we prepare for the next LTP the Asset Value Optimisation process will be applied more widely to allow a determination of the whole life cost of projects or programmes. Further reports, workshops and training will be provided for councillors and staff to ensure that this process is clearly understood and used to best effect at all levels of LTP delivery.

As actions, strategies and programmes outlined in the NERP are developed and published by the relevant Government agencies further advice on the implications of each element will be provided. Where appropriate, this will be included in ongoing project delivery, policy and by-law changes, asset and infrastructure management and the development of future LTP proposals.

Citywide and Organisational Emissions Inventories will continue to be produced and refined using the best data available. This data will be used to monitor the effectiveness of carbon reduction programmes and projects as well as targeting future project development.

The Low Carbon Fund will continue to provide flexibility for projects to take advantage of changes in technology, funding or approach between LTP cycles. The size and scope of this fund may need to change over time to keep pace with the volume and type of projects within approved LTP budgets.

#### 4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide?	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>
Does this decision require consultation through the Special Consultative procedure?	<b>No</b>
Is there funding in the current Annual Plan for these actions?	<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or plans?	<b>No</b>
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in the Climate Change Plan	
The action is: Implement the Palmerston North Low Carbon Roadmap	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	Update on progress towards Eco City Goals.

#### ATTACHMENTS

1. PNCC Low Carbon Roadmap [↓](#) 

### **Rapidly Changing National Context**

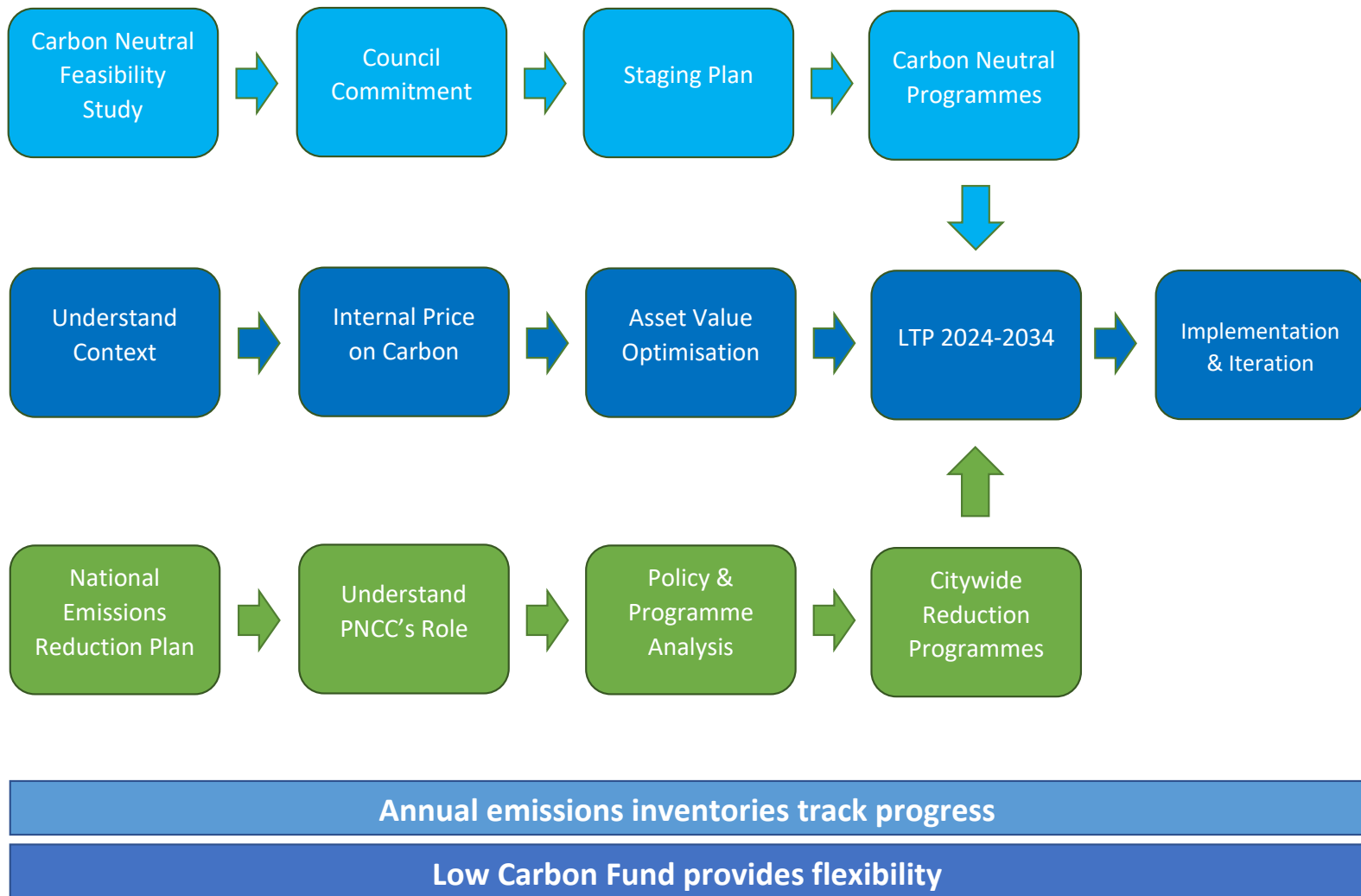
- Climate Change Response (Zero Carbon) Act 2019
- Establishment of Climate Change Commission
- National Emissions Reduction Plan – June 2022
- ETS carbon price has roughly tripled since 2020

### **PNCC Priorities**

- Organisational Emissions
- Transport
- Land Use Planning
- Forestry

### **Optimising Value**

- Set an internal price on carbon equal to the Emissions Trading Scheme price
- Identify opportunities for emission reductions
- Analyse projects in terms of 'net present value'
- Deliver projects that return value to ratepayers
- Low Carbon Fund provides flexibility, enabling Council to take further opportunities as they arise





## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** National Emissions Reduction Plan Summary

**PRESENTED BY:** Adam Jarvis, Senior Climate Change Advisor

**APPROVED BY:** David Murphy, Chief Planning Officer

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### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee receive the memorandum titled 'National Emissions Reduction Plan Summary' and the attachments titled 'Summary Table of NERP Actions and Implications' and 'Affected Strategy Documents, Plans, and Funding Opportunities' for information.
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#### 1. ISSUE

Government has made a commitment to reduce all long-lived greenhouse gasses to zero and achieve a 24-47% reduction in biogenic methane by 2050. While the timeframes are different, Council's own Eco City target of a citywide 30% reduction in carbon emissions by 2030 (compared to a 2015/16 baseline) is broadly comparable and mutually supportive.

Supporting these targets, Government recently released the first National Emissions Reduction Plan (NERP) covering the period 2022-2037. The plan provides greater detail on these headline targets, including Emissions Budgets by sector, and is the core National strategy to meet these Emissions Budgets. The NERP does not solely focus on emission reductions, and also includes actions around 'empowering Māori', 'ensuring an equitable transition to a low carbon economy', and 'protecting biodiversity'.

Actions in the NERP are reasonably comprehensive, and as these roll-out will directly or indirectly affect most of Council's operations, policy, and programmes. A summary of actions and implications is provided in Appendix 1, while a list of affected strategic documents, plans, and funding opportunities is included in Appendix 2.

#### 2. BACKGROUND

In November 2019 the Climate Change Response (Zero Carbon) Amendment Act was set into law. The Act established five key commitments:

1. Reduce all greenhouse gasses (except biogenic methane) to zero by 2050;

2. Reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030;
3. Establish emissions budgets, the first of which is for the period 2022 to 2025 then subsequently covering a 5-year period;
4. Require the Government to develop and implement policies for climate change adaptation and mitigation; and
5. Establish the Climate Change Commission to provide expert advice and determine the first three emissions budgets.

In December 2020 Government declared a climate emergency and subsequently committed to a carbon-neutral public sector by 2025. At the same time the government passed the Climate Change Response (Emission Trading Reform) Amendment Act which made changes to the New Zealand Emissions Trading Scheme.

The Climate Change Commission provided the first emissions budget to Government in June 2021. Public consultation concluded in November 2021. Subsequent changes in modelling, in particular forestry projections, have revised this budget. The currently operational budget, as of this report, is shown in Table 1 below:

	2022-2025	2025-2030	2030-2035
Annual Average (Mt CO <sub>2</sub> e) <sup>-1</sup>	72.4	61.0	48.0
change from 2019 baseline	-3.3%	-18.6%	-35.9%

*Table 1: National Emissions Budgets*

The first National Emissions Reduction Plan covering the period 2022-2037, was published in May 2022. This document provides a strategy, actions and areas for further research and data collection required to meet the established Emissions Budgets.

The first Emissions Reduction Plan signals changes across Transport, Energy and Industry, Building and Construction, Agriculture, Forestry and Waste in order to achieve the required reductions in a short timeframe. Areas within the first Emissions Reduction Plan that most directly impact PNCC operations include:

- Supporting 'community-based solutions'
- Promoting 'nature-based solutions'
- Land-use planning and urban planning; notably in infrastructure co-funding
- Promoting circular economy functions including 'bioenergy'

- Setting regional targets to reduce vehicle emissions and kilometres travelled by regulation, providing alternatives, and encouraging use of zero-emissions vehicles
- Setting a renewable energy target and regulating higher emission fuels such as coal
- Improving buildings energy efficiency including mandatory energy performance certificates; initially for government, commercial, and large residential buildings
- Reduce waste; particularly organic and construction waste disposal at landfill
- A review of forestry; particularly in relation to exotic forestry under the New Zealand Emissions Trading Scheme.

Funding for these programmes will be provided in part through the \$4.5 billion Climate Emergency Response Fund that is earmarked from the Emissions Trading Scheme. Other funding streams will be required to consider the impact of decisions on climate change targets as part of the application process.

### 3. NEXT STEPS

Considering the NERP as a whole, a wide range of actions will be required of Council, while a host of others may be highly desirable to access funding and achieve Council's Eco City goal. Further analysis of the NERP, and in some cases clarification from MfE, is required. In other cases, the NERP signals further change through other mechanisms, the full extent of which is yet to be determined. However, one can see from the attached list of actions that significant changes are already underway for the future of the transport, waste, and planning functions of Council (as well of course, the Climate Change Office itself). Officers are still working to understand the resource implications of the plan, cognisant of the fact that the space is still rapidly evolving.

A summary of the expected implications for Council is included in Appendix 1. In many cases, local government is merely listed as a supporting party. However, given how such things have developed in the past, Council can reasonably expect that its responsibilities will only grow with time, local government and three waters reform notwithstanding.



As Government continues to publish more specific action plans, as signalled in the NERP, officers will return to committee to provide more detail on these, as well advice about how best to integrate this work with Council's Eco City goals.

### 4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide?	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>

Does this decision require consultation through the Special Consultative procedure?		<b>No</b>
Is there funding in the current Annual Plan for these actions?		<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or plans?		<b>No</b>
The recommendations contribute to Goal 4: An Eco City		
The recommendations contribute to the achievement of action/actions in the Climate Change Plan		
The action is: Work with city partners to reduce citywide emissions		
Contribution to strategic direction and to social, economic, environmental and cultural well-being	Update on Central Government plans to support emission reductions	

## ATTACHMENTS

1. Summary Table of NERP Actions and Implications [↓](#) 
2. Affected Strategy Documents, Plans, and Funding Opportunities [↓](#) 

## Appendix 1 - Summary of NERP Actions and Implications

Chapter Reference	NERP Objectives / Outputs	Implications	Timeline
Empowering Māori [2.3]	Support development of a Māori climate strategy and action plan	Future direction will require or attach funding to actions based on a 'Māori Climate Action Plan' or similar document.	2022-24
Equitable Transition [3.2.2]	Develop a low-emission, sustainable economy in a way that supports all sectors, including ones that may be fundamentally altered or phased out.	Future direction will require or attach funding to actions based on economic development and transition plans, with a particular focus on emissions and sustainability.	2022-24
Equitable Transition [3.2.2]	Access central funding to support emissions reductions and their impacts	A \$4.5 billion Climate Emergency Response Fund has been earmarked from the Emissions Trading Scheme that could be used to help achieve local emissions reductions and sustainability goals.	(ongoing)
Equitable Transition [3.5.3]	Support local community-based solutions	Future direction will require or attach funding to actions based on community-based solutions.	2023
Working with nature [4.1]	Identify policy requirements around nature-based solutions	Future direction will require or attach funding to actions based on nature-based solutions.	2022 (ongoing)
Planning & Infrastructure [7.1]	Embed climate outcomes in new legislation (e.g., the Natural and Built Environments Act and Strategic Planning Act).	Future direction will require or attach funding to actions based on the NERP Objectives.	2022-25
Planning & Infrastructure [7.2, 7.3]	Implement urban-development, housing policies and work programmes that include climate change objectives.	Future funding and design guidance will support local authorities to deliver low emissions urban design initiatives.	2022 (ongoing)
Planning & Infrastructure [7.4]	Improve the evidence base and tools for understanding and assessing urban development and infrastructure emissions.	Improve the evidence base and develop a nationally consistent toolkit to enable quantification of the emissions impact of urban development and infrastructure decisions.	2022-23
Planning & Infrastructure [7.5, 7.6]	Promote innovation in low- emissions, liveable neighbourhoods internally and within the private sector.	Future funding and design guidance will encourage local authorities to identify and pilot innovative approaches that deliver low- emissions alternatives to traditional neighbourhood and infrastructure approaches.	2022-27
Planning & Infrastructure [7.7]	Integrate climate mitigation into government decisions on infrastructure.	Future frameworks, guidelines and tools will factor climate outcomes into decision-making on infrastructure investment.	2022-23
Circular economy [9.1]	Commence a Circular Economy and Bioeconomy Strategy, that aligns with the Waste Strategy's vision and principles.	Public sector procurement and investment will include the use and promotion of circular economy principles, including training and upskilling staff. Regulatory systems will be realigned towards more circular systems.	2022-25

Circular economy [9.5]	The Government will consider partnering with key industry, Māori and local-government stakeholders to launch a circular economy hub, to support deployment of circular practices in Aotearoa.	Future funding and economic guidance may be focussed more towards circular economy approaches that deliver zero-waste alternatives to traditional approaches.	2022-24
Bioeconomy [9.1]	Commence a Circular Economy and Bioeconomy Strategy, that aligns with the Waste Strategy's vision and principles.	Develop a bioeconomy framework to guide the use of our bioresources and maximise wellbeing.	2022-25
Transport [10.1.1]	Regional Land Transport Plans (RLTPs) will have regard to Regional Spatial Strategies and Natural and Built Environment Act plans in their development.	Existing and future RLTPs will need to align with environmental and emissions plans and targets.	2023
	Develop an assessment tools to quantify transport emissions from proposed transport and urban developments.	Future funding and economic guidance may be required to include more data on emissions impacts and mode shift.	2022-24
	Completed assessments of joint spatial plans and implementation plans for all Urban Growth Partnerships, to understand transport emission and funding impacts, and to identify key risks and opportunities for reducing transport emissions.	Spatial plans will need to include transport emissions and potential impacts of proposed changes as well as identifying risks and opportunities for emissions savings.	2022-23
	Transport plans incorporate assessments of vehicle kilometres travelled (VKT) by light vehicles, mode share, and transport emissions. These assessments will be required to meet eligibility for transport funding (see funding settings below).	Existing and future transport plans will need to include data on proposed emissions and mode shift changes in order to be eligible for NZTA funding.	2024
	Identify transport and planning incentives and investment rules to encourage low- emission urban form that avoids/reduces travel and increases travel by public and active modes.	Future funding and regulation will support (and may require) local authorities to include emissions-reduction objectives and deliver lower emissions urban transport initiatives.	By 2025
Transport [10.1.2 A]	Palmy specific targets will be published, following consultation, that will align with the national target of reducing light vehicle VKT by 20 per cent by 2035. This will include updating Waka Kotahi's national mode shift plan.	Future funding and regulation will require local authorities to include VKT-reduction and mode shift objectives in line with sub-national targets.	2022-24
	A Palmy specific VKT reduction programme will be published that will identify activities required to meet sub- national VKT reduction targets by 2035, the funding required to deliver them at the scale and pace required, and the critical dependencies to achieve published targets.	Future funding and regulation will require local authorities to develop programmes line with published VKT-reduction plans.	2023-24

Transport [10.1.2 B]	Deliver a national public transport strategy to enable the development of a national public transport network. Publish guidance on the viability of interregional passenger rail, coach and bus services. Review the Public Transport Operating Model.	Opportunities may be presented to develop local/regional transport hubs within Palmy.	By 2025
Transport [10.1.2 C]	Deliver a national plan to significantly increase the safety and attractiveness of walking, cycling and micro-mobility. Support local government to develop network plans for walking and cycling.	Future funding and regulation will require local authorities to develop programmes in line with local cycle network plans and delivery strategies. Opportunities may be presented to develop capacity and expertise within PNCC.	2022-23
Transport [10.1.3]	Consider progressing legislative changes to enable congestion charging.	In the second half of 2022, the Government will decide whether to enable congestion charging. If passed legislation development will then take two years.	2022
Transport [10.1.4]	Establish a high threshold for new investments to expand roads, including new highway projects, if the expansion is inconsistent with emissions-related objectives.	Future funding will require projects to align with environmental and emissions plans and targets.	2024-25
Transport [10.1.5]	Analyse the transport system's potential to contribute to carbon sequestration, and whether there are any barriers to funding, delivering and maintaining nature-based solutions in the transport system.	Future funding will require projects to align with environmental and emissions plans and targets.	By 2025
Transport [10.3.1]	Deliver the national freight and supply chain strategy.	Decarbonisation of freight and wider supply chain including through spatial planning.	Strategy published mid-2023
Transport [10.4]	Develop the skills and capability required to transition to a low-emissions transport system and support an equitable transition.	Opportunities may be presented to develop capacity and expertise within PNCC.	By 2025
Energy [11.2.1]	Review national direction tools (including resource consents) for enabling investment in new renewable electricity generation and infrastructure, including small-scale generation.	Future funding and guidance will encourage local authorities to identify and pilot innovative approaches that deliver low- emissions alternatives to traditional electricity generation.	Consultation late 2022
Energy [11.2.1]	Assist local government to explore power purchase agreements with new generation projects to support new investment in renewable electricity generation.	Opportunities may be presented to develop purchase agreements that include climate goals in the decision-making process.	2022-24
Energy [11.2.1]	Support a Māori and Public Housing Renewable Energy Fund to trial community-scale renewable energy solutions with a focus on Māori communities and public housing.	Future funding will be available to local authorities to identify and pilot innovative approaches that deliver low- emissions micro-generation.	2021-24

Energy [11.2.2]	Ban new fossil-fuel baseload generation.	Any future baseload development plans may become stranded by legislation changes.	2022-24
Energy [11.4.1]	Support councils to make nationally consistent decisions on GHG discharges when considering applications for air discharge permits. Includes a ban on new low- and medium- temperature coal boilers and phasing out existing coal boilers by 2037.	Future applications for air discharge permits will need to take account of changes in regulation and rules around specific operations (coal boilers).	2022
Building & Construction [12.1.2]	Options for a grant programme to help address potential cost barriers to manufacturers seeking environmental product declarations (EPDs) for their products.	Local economic opportunities could be created and supported through central government grant funding.	2022-26
Building & Construction [12.1.2]	Options for a grant programme to help address potential cost barriers to households seeking to make carbon reductions.	Local economic opportunities could be created and supported through central government grant funding.	2022-26
Building & Construction [12.1.3]	Proposals for legislative and regulatory requirements (such as building consents) that could minimise construction waste and increase diversion from landfill.	Future regulation could require local authorities to include waste minimisation objectives in building consents and other regulations.	2022-23
Building & Construction [12.1.3]	Research to understand regulatory and system barriers to repurposing and recycling building materials, adaptive reuse of buildings and the development of a market for reused building materials.	An opportunity will be available to identify and resolve issues around construction waste recycling.	2022-25
Building & Construction [12.2.2]	Convene the Climate Change Government Infrastructure and Property Group.	An opportunity will be available to identify and resolve issues around purchasing, procurement and property management.	Ongoing
Building & Construction [12.3.1]	Implement amendments to Building Code Clause H1 (energy efficiency)	Regulation changes will require local authorities to include climate change objectives in some building consents and other regulations.	Late 2022
Building & Construction [12.3.2]	Introduce mandatory energy performance certificates for buildings. Initially, they could apply to government, commercial and large residential buildings and potentially expand to other residential buildings in future.	Future regulation could require local authorities to produce energy performance certificates for council owned property and administer certification through building consents and other regulations.	2022-24
Building & Construction [12.5.3]	Behaviour change programme to support uptake of low-emissions products and more adaptive building practices and drive regulatory compliance.	Future regulation could require local authorities to include carbon emissions objectives in building consents and other regulations.	2022-25



Building & Construction [12.5.5]	Legislative amendment to clarify that action to address climate change and reduce emissions falls within the scope of the Building Act.	Future regulation could require local authorities to include climate change objectives in building consents and other regulations.	2022-23
Agriculture [13.7]	Essential Freshwater.	"Halting further degradation of freshwater ecosystems and to restore Aotearoa New Zealand's freshwater to a healthy state within a generation."	2018 onwards
Forestry [14.1.1]	Ensure regulatory settings deliver the right type and scale of forests, in the right place.	Consider amendments to NZ ETS to restrict some exotic forests and adjust the ETS rules to support production on remote/marginal land	Consultation 2022 Decision 2022-23
Forestry [14.3.2]	Consider opportunities to incentivise and encourage management activities and mechanisms to enable recognition of additional carbon sequestration for pre-1990 forests.	Opportunities may be presented to develop capacity and expertise in the management of forests such as the Turitea.	2022-23
Forestry [14.5]	Consult on options to require fire management plans for all exotic forests over one hectare.	Fire management plans may be required for council owned forestry (e.g. Kahuterawa) and may impact emergency planning scenarios. Regulation changes may impact the forestry permitting process and affect capacity within the relevant teams.	Consultation late 2022
Waste [15.1.1-2]	National scale programmes to support consumers and businesses to prevent and reduce food and garden waste at home.	Opportunities may be presented to take part in and promote a national campaign around organic waste management/reduction/composting.	2023-25
Waste [15.1.3]	Provide resources and support to increase participation in and correct use of kerbside organic waste collections.	Future funding and guidance will support local authorities to deliver kerbside organic waste collection.	Consultation 2022 Decision 2023-25
Waste [15.2.1]	Improve handling of kerbside collections to increase the diversion of organic waste. These may include reporting against diversion (from landfill) targets.	Future funding and guidance will support local authorities to improve handling of organic waste collection. PNCC may be required to set, measure and report on diversion targets.	2023-30 subject to prior consultation

Waste [15.2.2]	Provide a targeted resource recovery infrastructure fund to invest in infrastructure to process food and garden waste. Increased investment in resource recovery infrastructure to improve recovery and diversion of key organic waste.	Future funding and guidance will support local authorities to improve handling of collected organic waste.	2023-25 subject to prior consultation
Waste [15.2.3]	Require the separation of organic waste at source through new Waste Management Act (2008) (WMA) regulations at every level of handling.	Future funding and regulation may require local authorities (and others) to separate organic waste at source, collection and/or processing.	2024-25 subject to WMA review
Waste [15.3.2]	Provide a targeted resource recovery infrastructure fund to invest in infrastructure to process construction waste. Increased investment in resource recovery infrastructure to improve recovery and diversion of construction waste.	Future funding and guidance will support local authorities to improve handling of construction waste.	2023-25
Waste [15.3.3]	Require the separation of construction waste at source through new WMA regulations at every level of handling.	Future funding and regulation may require local authorities (and others) to separate construction waste at source, collection and/or processing, in particular wood.	2024-25 subject to WMA review
Waste [15.4]	Investigate banning organic waste from landfill by 2030.	Future regulation may require local authorities to divert 100% of organic waste from landfill.	Monitor need from 2026
Waste [15.5.2]	Feasibility studies will determine the need for additional landfill gas capture requirements.	New regulation may place additional requirements on existing Awapuni Landfill gas capture.	2022-25
Waste [15.6.1]	Develop new legislation and regulations to support a national waste licensing scheme.	Additional regulation, data collection and reporting may be required by MfE.	2025 subject to WMA review
Waste [15.6.2]	Implement a national data collection and reporting programme on emissions reductions from waste.	Addition of a landfill waste material composition survey programme, kerbside collection reporting and feasibility studies for landfill gas capture improvements.	2022-25

Appendix 2: List of Strategy Documents, Plans & Funding Opportunities affected or created by the first National Emission Reduction Plan (2022)

Strategy Documents		
Section	Title	Timeline
Empowering Maori [2.3]	Maori Climate Strategy	(2022-24)
Equitable Transition [3.2]	Equitable Transition Strategy	(2022-24)
Planning & Infrastructure [7.1]	Natural and Built Environments Act	(2022-25)
Planning & Infrastructure [7.1]	Strategic Planning Act	(2022-25)
Circular economy [9.1]	Circular Economy and Bioeconomy Strategy	(2022-25)
Transport [10.1]	National Public Transport Strategy	(by 2025)
Transport [10.1]	Regional Spatial Strategies	(2023)
Transport [10.1]	Natural and Built Environment Act Plans	(2023)
Transport [10.2]	National EV-charging Infrastructure Strategy	(published 2022)
Transport [10.3]	National Freight and Supply Chain Strategy	(mid-2023)
Energy [11.3]	Hydrogen Roadmap	(2022-23)
Energy [11.5]	Energy Strategy	(2022-24)
Energy [11.5]	New Zealand Energy Efficiency and Conservation Strategy (to guide EECA funding priorities)	(2022-24)
Building & Construction [12.5]	Building Act	(2022-23)
Waste [15.2]	Waste Minimisation Act	(2024-25)

Action Plans		
Section	Title	Timeline
Empowering Maori [2]	Maori Climate Action Plan	(2022-24)
Equitable Transition [3.2]	Industry Transformation Plans	(2022-24)
Equitable Transition [3.2]	Just Transition Plans	(2022 onwards)
Circular Economy [9.1]	Waste Strategy (Action & Investment Plans)	(2022)
Transport [10.1]	Waka Kotahi's national mode shift plan (Keeping Cities Moving)	(2022-23)
Transport [10.1]	National Cycling and Micro-mobility Plan	(2022-23)
Transport [10.1]	National Walking Plan	(2022-23)
Transport [10.1]	Regional Land Transport Plans (RLTPs)	(2023)
Transport [10.1]	Active Transport Plans (schools)	(by 2025)
Transport [10.3]	New Zealand Rail Plan	(ongoing 2021-24)
Transport [10.3]	Government Policy Statement on Land Transport	(mid-2024)
Transport [10.4]	Transport Climate Research Plan	(2023)
Energy [11.3]	Gas Transition Plan	(2022-23)
Energy [11.4]	Regional Energy Transition Plans (via GIDI)	(2022-29)
Building & Construction [12.1]	Construction Waste Minimisation Programme Plan	(2022)
Building & Construction [12.2]	Carbon Neutral Government Programme (CNGP)	(2022-25)
Forestry [14.1]	National Environmental Standard for Plantation Forestry	(public consultation July 2022)
Forest [14.5]	Fire Management Plans (exotic forests)	(consultation 2022)

(Non-Research) Funding Opportunities		
Section	Title	Lead Department
Empowering Maori [2.4]	Māori and Public Housing Renewable Energy Fund	MfE
Equitable Transition [3.2]	Regional Strategic Partnership Fund	MBIE
Funding & Finance [6.1]	Climate Emergency Response Fund	TSY
Transport [10.1]	National Land Transport Fund (NLTF)	MOT
Transport [10.1]	Active Travel Fund (for schools)	MOT/Waka Kotahi
Energy [11.1]	State Sector Decarbonisation Fund	MBIE/EECA
Energy [11.4]	EECA Technology Demonstration Fund	EECA
Energy [11.4]	Government Investment in Decarbonising Industry Fund	MBIE/EECA
Waste [15.2]	Resource Recovery Infrastructure Fund	MfE

## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** PNCC Organisational Emissions Inventory 2020/21

**PRESENTED BY:** Adam Jarvis, Senior Climate Change Advisor & David Watson, Climate Change Analyst

**APPROVED BY:** David Murphy, Chief Planning Officer

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### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee note that the results of the PNCC Organisational Emissions Inventory 2020/21, excluding transmission and distribution losses, are:

**PNCC emissions have fallen from 26,444 tCO<sub>2</sub>e in 2015/16, to 19,297 tCO<sub>2</sub>e in 2020/21, a 27% reduction.**

**Non-landfill related emissions fell from 6,834 tCO<sub>2</sub>e to 5,374 tCO<sub>2</sub>e over the same period, a 21.4% reduction overall, and a -5.9% reduction from the previous 2019/20 period.**

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#### 1. ISSUE

Through the Eco City Strategy 2021, Palmerston North City Council has set itself the target of a citywide 30% reduction in carbon emissions by 2031, compared to a 2015/16 baseline. Council has been tracking progress towards its emission reduction goals since establishing this baseline, through the 'Toitū Carbonreduce' programme, previously known as Enviromark Carbon Emission Management and Reduction Scheme (CEMARS).

Unfortunately, the criteria for the 'Carbonreduce' programme are slightly different from those that Council has been following since 2015/16, requiring PNCC to include various emission sources that sit outside of Council's operational control, and making comparisons with prior years difficult. For clarity, the numbers quoted in this covering memo utilise the same methodology as previous years, while the numbers in the attached 'Inventory and Management Report' also include transmission and distribution (T&D) losses. Officers are reviewing Council's external audit contract with the expectation of resolving this issue, as well as substantially reducing cost and the current ~15-month delay between the end of a reporting period, and the delivery of the inventory report to elected members.

The results of the 2020/21 Inventory, excluding T&D losses, are:

- PNCC emissions have fallen from 26,444 tCO<sub>2</sub>e in 2015/16, to 19,297 tCO<sub>2</sub>e in 2020/21, a 27% reduction.
- Non-landfill related emissions fell from 6,834 tCO<sub>2</sub>e to 5,374 tCO<sub>2</sub>e over the same period, a 21.4% reduction overall, and a -5.9% reduction from the previous 2019/20 period.

Several emissions sources have been substantially affected by lockdowns and restrictions resulting from the COVID 19 pandemic. Many council operations deemed 'non-essential' during the lockdown period contributed significantly reduced emissions during those periods when those services were essentially non-operational. Some trends established during the lockdowns continued after the lockdowns were lifted, particularly workplace travel given the uptake of remote video meetings and working-from-home. Notably, international air travel contributed no emissions over the reporting period, compared with 97.6 tCO<sub>2</sub>e during FY2019. The longer-term impact of these changes remains to be seen.

## 2. BACKGROUND

The PNCC Organisational Emissions Inventory Report is compiled from usage and emissions data from the following emissions sources:

- Council stationary energy (electricity, natural gas, diesel generators) across all sites
- Wastewater processing emissions
- Vehicular fuel usage
- 'Small Plant Item' (e.g. chainsaws, leaf blowers, etc.) fuel usage
- Diesel use by Council generators
- Methane release from Awapuni and Ashhurst Landfills
- Gross waste tonnages collected from all council operated sites
- Staff air travel
- Staff commuting and taxi travel
- Air-conditioning unit gas refills
- Fertilizer use

A summary of the changes in the organisational emissions profile over time is provided below in figures 1 & 2:

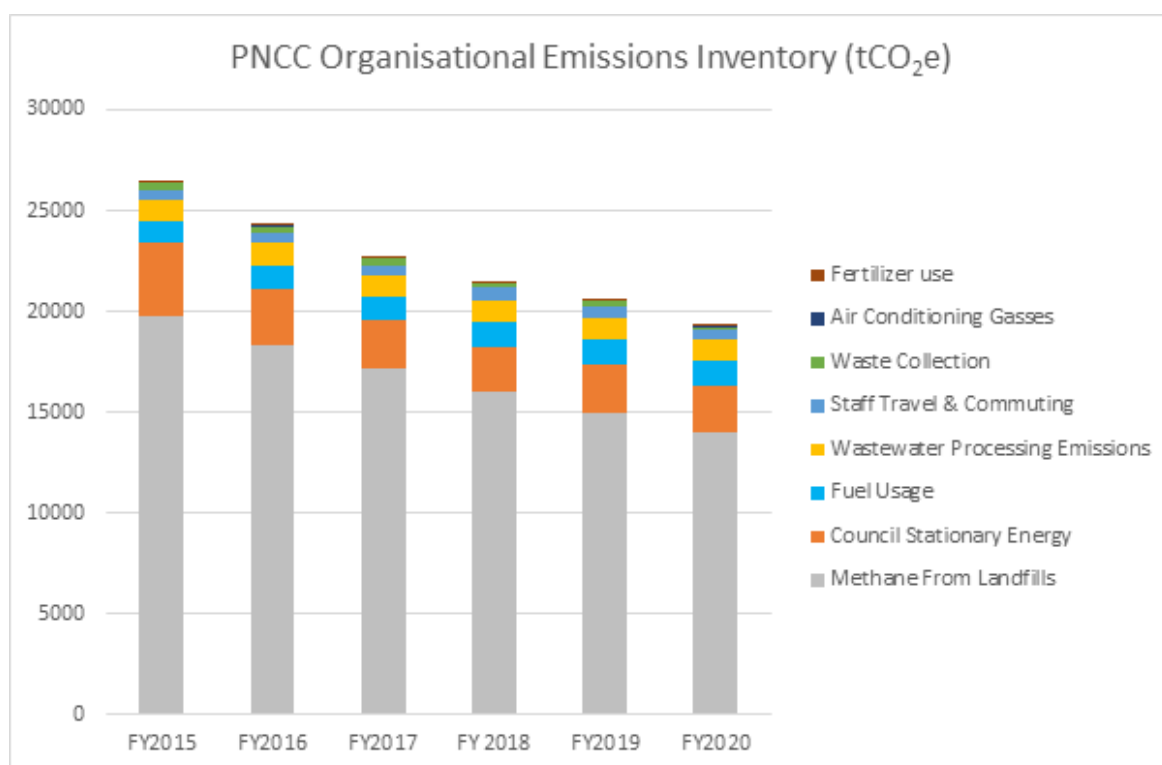


Figure 1 - Organisational Emissions Inventories FY2015 - FY2020

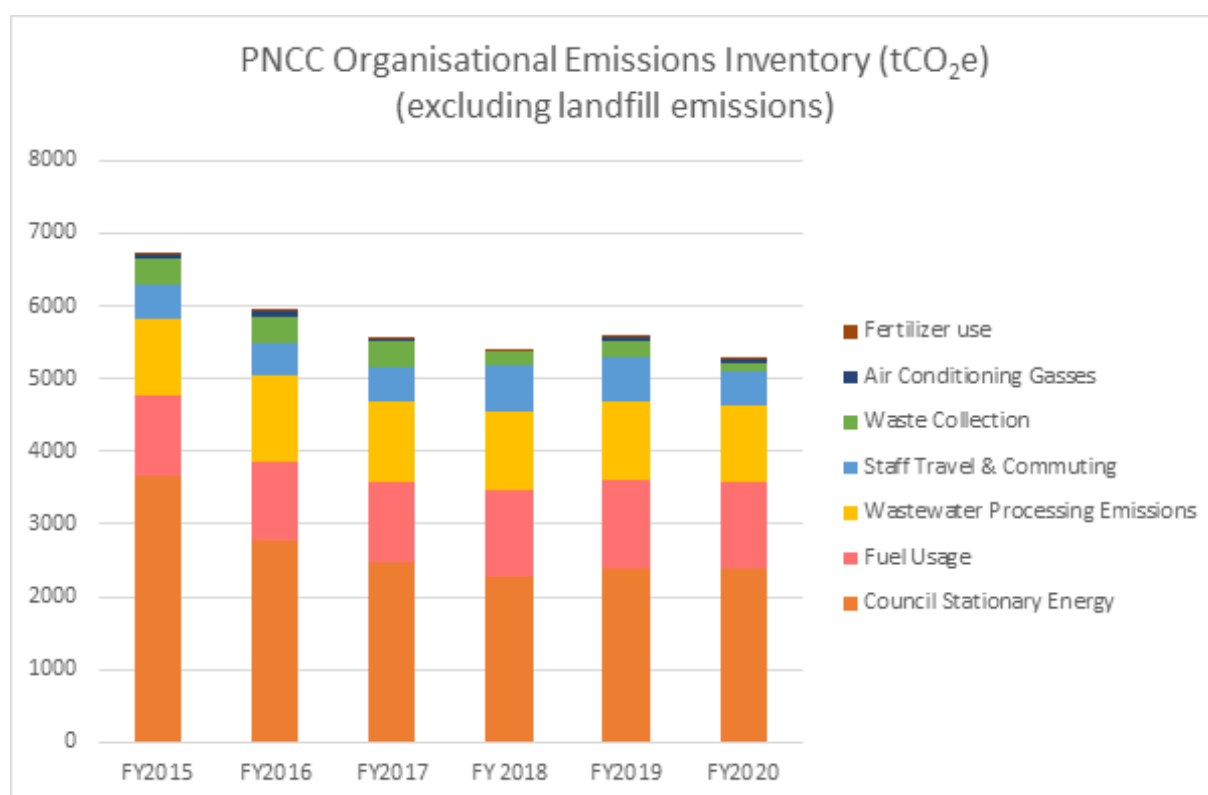


Figure 2 - Organisational Emissions Inventories (excluding landfill emissions) FY2015 - FY2020

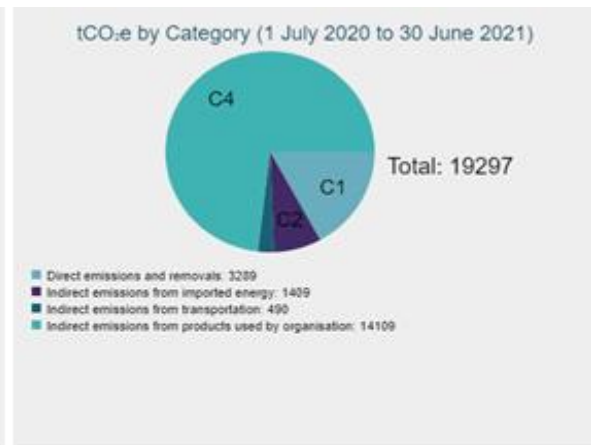
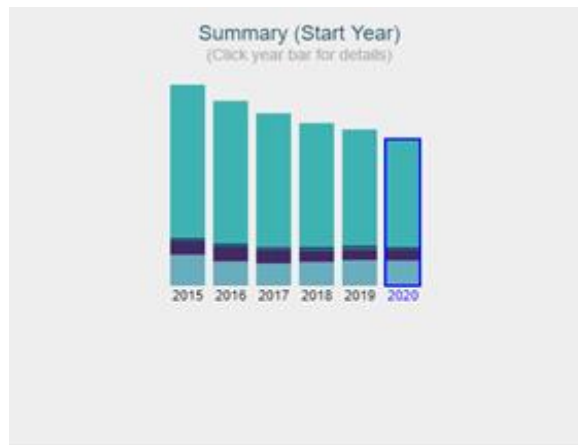
Per officer guidance to the 9 September 2020 Environmental Sustainability Committee, once the impacts of Covid-19 lockdowns are accounted for, the non-landfill component of Council's inventory otherwise presents a stalling of the previous downward trend. This was to be expected, given that most of the low/zero cost opportunities to reduce emissions have now been exhausted, and although many significant opportunities remain, these typically require greater investment (e.g. through the Low Carbon Fund – the impact of which will only begin to appear in the inventory of the current 2022FY).

Note:

1. The inventory is presented in terms of 'carbon dioxide equivalent' or 'CO<sub>2</sub>e'. This is because other gases such as methane and nitrous oxide have different relative impacts per unit weight. For example, the refrigerant R-22, typically only released in very small volumes, has a global warming potential 12,000 greater than carbon dioxide. CO<sub>2</sub>e accounting allows for the global warming potential of different greenhouse gases to be compared with one another.
2. The emissions inventory uses the Ministry for the Environment's standard emissions factors and guidelines. This inventory has been externally audited by Toitū Envirocare to provide confidence to Council and other interested parties that our emissions inventory is a true reflection of Council's emissions profile.



The following page presents the inventory by emission source type, and by site/activity.



**tCO2e by Sources (1 July 2020 to 30 June 2021)**

Waste to Landfill Municipal solid waste (CO2e)	14010
Electricity	1409
Wastewater precalculated (tCO2e)	1051
Diesel	1021
Natural Gas distributed commercial	972
Private Car default (petrol)	389
Petrol regular	168
Waste landfilled LFGR Mixed waste	99
HCFC-22 (R-22, Genetron 22 or Freon 22)	65
Air travel domestic (average)	55
Private Car average (diesel)	41
Fertiliser use Nitrogen	8
Petrol premium	3
Motorcycle	2
Bus travel (city)	2
Car Medium hybrid	2
CH4	2
Company Car average (petrol)	> 0
N2O	> 0
Taxi (regular)	> 0

**tCO2e by Sites (1 July 2020 to 30 June 2021)**

/Infrastructure/Waste Management/Avapuni Landfill	13925
/Infrastructure/Three Waters/Wastewater Treatment	1322
/Parks & Reserves/Aquatic Centres/Lido Aquatic Centre	653
/Workplace Travel/Staff Commuting	457
/Infrastructure/Logistics & Support/Vehicles/Heavy Trucks	368
/Infrastructure/Property/Civic Administration Building	277
/Infrastructure/Transport/Street Lighting	276
/Infrastructure/Logistics & Support/Tankers	215
/Customer/Libraries/City Library	173
/Marketing & Communications/Arena Operations	162
/Infrastructure/Logistics & Support/Vehicles/Light Trucks	145
/Infrastructure/Three Waters/Water Treatment & Pumps	134
/Infrastructure/Logistics & Support/Vehicles/Pool Vehicles	123
/Infrastructure/Logistics & Support/Vehicles/Utility Vehicles	115
/Infrastructure/Waste Management	99
/Infrastructure/Waste Management/Ashurst Landfill	87
/Infrastructure/Parks & Reserves/Aquatic Centres/Ashurst	78
/Infrastructure/Parks & Reserves/Cemeteries	75
/Infrastructure/Parks & Reserves/Citywide Reserves	69
/Infrastructure/Logistics & Support/Vehicles/Medium Trucks	65
/Infrastructure/Property	65
/Infrastructure/Logistics & Support/Vehicles/Tractors	55
/Infrastructure/Logistics & Support/Vehicles/Mowers	53
/Infrastructure/Logistics & Support/Vehicles/Heavy Plant	42
/Workplace Travel/Air Travel	33
/Infrastructure/Logistics & Support/Nursery	32
/Parks & Reserves/Aquatic Centres/Freyberg Aquatic Centre	30
/Infrastructure/Parks & Reserves/Local Reserves & Sportsfields	29
/Infrastructure/Three Waters/Wastewater Pump Stations	29
/Infrastructure/Logistics & Support/Depots	21
/Infrastructure/Property/Community Centres	21
/Customer/Libraries/Youth Space	9
/Infrastructure/Three Waters/Stormwater Pump Stations	9
/Infrastructure/Property/Public Toilets	9
/Infrastructure/Transport/Traffic Signals	9
/Customer/Wildbase Recovery Centre	7
/Customer/Libraries/Mobile Library	6
/Infrastructure/Property/Social Housing Buildings	4
/Infrastructure/Logistics & Support/Vehicles/Quad Bikes	4
/Customer/Libraries/Avapuni Library	2
/Customer/City Pound	2
/Infrastructure/Transport/City Bus Terminal	2
/Customer/Libraries/Highbury Library	1
/Customer/Libraries/Roslyn Library	1
/Customer/Libraries/Ashurst Library	1
/Workplace Travel/Hire Cars and Taxis	> 0
/Waste Management/Waste Management Operations	> 0

*Table 1 - FY2020 Organisational Inventory by Emission Source and Site*

### 3. NEXT STEPS

As noted above, putting aside the ongoing impacts of Council's response to Covid-19, most of the low/zero cost opportunities for emission reductions have already been actioned. This is not to say that there are not still significant opportunities for further reductions, many of which (as covered in the Low Carbon Fund Update to this September 2022 Committee) also carry considerable cost savings – only that these will typically require substantial investment in order to realise. Thus, between now and the 2024-2034 Long Term Plan, it is expected that the primary vehicle for the delivery of PNCC emission reductions over the next two years will be the \$1,000,000pa 'Low Carbon Fund'.

The Low Carbon Fund will facilitate a more structured approach to future emissions reduction decision making, allowing for the more effective allocation of resources, and hence enabling more effective emission reduction projects overall. Officers expect to apply the same methodology to a broader range of potential projects for Council's consideration through the next LTP process.

Finally, given the reporting changes required by Toitū continue to add greater compliance costs, as well as inconsistencies with Council's baseline reporting, officers consider that future participation in the 'Carbonreduce' programme is no longer providing value for money. Now that the process is well established, organisational emissions inventories could be completed internally, while continuing the practice of external audit. Such a change would allow presentation of future inventories to committee in a much-reduced timeframe, cutting the lag time from the current ~15 months, to an estimated 3-6 months instead – allowing much more rapid feedback on Council's progress towards its reduction goals.

### 4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide?	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>
Does this decision require consultation through the Special Consultative procedure?	<b>No</b>
Is there funding in the current Annual Plan for these actions?	<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or plans?	<b>No</b>
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in the Climate Change Plan	

The action is: Monitor, and have externally audited, PNCC greenhouse gas emissions.	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	This memorandum fulfils the above action for the FY2020/21 reporting period.

## ATTACHMENTS

1. PNCC Emissions Inventory and Management Report 2020-2021 [↓](#) 



## GREENHOUSE GAS EMISSIONS INVENTORY AND MANAGEMENT REPORT

Toitū carbonreduce programme

Prepared in accordance with ISO 14064-1:2018 and the Technical Requirements of the Programme



### Palmerston North City Council

Prepared by (lead author): David Watson, Climate Change Analyst

Dated: 24 August 2022

Verification status: Pending

Measurement period: 01 July 2020 to 30 June 2021

Base year period: 01 July 2015 to 30 June 2016

*Approved for release by:*

A handwritten signature in black ink, appearing to read "D. Watson".

David Watson, Climate Change Analyst



## DISCLAIMER

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This work shall not be used for the purpose of obtaining emissions units, allowances, or carbon credits from two or more different sources in relation to the same emissions reductions, or for the purpose of offering for sale carbon credits which have been previously sold.

The consolidation approach chosen for the greenhouse gas inventory should not be used to make decisions related to the application of employment or taxation law.

This report shall not be used to make public greenhouse gas assertions without independent verification and issue of an assurance statement by Toitū Envirocare.

## REPORT STRUCTURE

The Inventory Summary contains a high-level summary of this year's results and from year 2 onwards a brief comparison to historical inventories.

Chapter 1, the Emissions Inventory Report, includes the inventory details and forms the measure step of the organisation's application for Programme certification. The inventory is a complete and accurate quantification of the amount of GHG emissions and removals 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 Programme<sup>1</sup>, which is based on the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and ISO 14064-1:2018 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals<sup>2</sup>. Where relevant, the inventory is aligned with industry or sector best practice for emissions measurement and reporting.

Chapter 2, the reduction plan and progress report, forms the manage step part of the organisation's application for Programme certification.

See Appendix 1 and the related Spreadsheet for detailed emissions inventory results, including a breakdown of emissions by source and sink, emissions by greenhouse gas type, and non-biogenic and bio-genic emissions. Appendix 1 also contains detailed context on the inventory boundaries, inclusions and exclusions, calculation methodology, liabilities, and supplementary results.

This overall report provides emissions information that is of interest to most users but must be read in conjunction with the inventory workbook for covering all of the requirements of ISO 14064-1:2018.

<sup>1</sup> Programme refers to the Toitū carbonreduce and the Toitū carbonzero programmes.

<sup>2</sup> Throughout this document 'GHG Protocol' means the *GHG Protocol Corporate Accounting and Reporting Standard* and 'ISO 14064-1:2018' means the international standard *Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*.

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## EXECUTIVE SUMMARY

This is the annual greenhouse gas (GHG) emissions inventory and management report for Palmerston North City Council covering the measurement period 01 July 2020 to 30 June 2021.<sup>3</sup>

Total emissions from all of PNCCs operations in the 2020/2021 reporting period were 19,261 tCO<sub>2</sub>e. This is a -7,183 tCO<sub>2</sub>e (-27.2%) reduction since the 2015/2016 baseline year and a -1,317 tCO<sub>2</sub>e (-6.4%) reduction since the last reporting period in 2019/2020. The closed landfill at Awapuni continues to be PNCCs largest single emissions source, accounting for 72% of total emissions. Emissions from the landfill continue to degrade but are not readily amenable to further mitigation. Excluding landfill, emissions from all of PNCCs operations in the 2020/2021 reporting period were 5,338 tCO<sub>2</sub>e. This is a -1,496 tCO<sub>2</sub>e (-21.9%) reduction since the 2015/2016 baseline year and a -374 tCO<sub>2</sub>e (-6.6%) reduction since the last reporting period in 2019/2020. These non-landfill related emissions reductions are due to combination of factors relating to the COVID-19 lockdowns and subsequent restrictions. Of particular note is the +48 tCO<sub>2</sub>e increase in emissions from natural gas use at the Ashhurst Aquatic Centre with equivalent increases at the Lido due to a return to normal operational hours post-COVID. These emissions have been largely offset by reductions in other areas, such as from transport and air travel, which have predictably declined due to border closures and other restrictions related to the pandemic. The largest reductions came from lower electricity use in wastewater treatment, a -140 tCO<sub>2</sub>e reduction since last reporting year. Work on identifying cost efficient methods of further reducing PNCCs emissions and related operational expenditure continues through the Low Carbon Fund and the work of the Climate Change team.

**Table 1: Inventory summary**

Category (ISO 14064-1:2018)	Scopes (ISO 14064-1:2006)	2016	2020	2021
Category 1: Direct emissions	Scope 1	4,057.79	3,360.06	3,289.12
Category 2: Indirect emissions from imported energy	Scope 2	1,811.31	1,421.35	1,408.50
Category 3: Indirect emissions from transportation	Scope 3	479.33	596.87	490.22
Category 4: Indirect emissions from products used by organisation		20,095.58	15,190.23	14,294.56
Category 5: Indirect emissions associated with the use of products from the organisation		0.00	0.00	0.00
Category 6: Indirect emissions from other sources		0.00	0.00	0.00
<b>Total direct emissions</b>		<b>4,057.79</b>	<b>3,360.06</b>	<b>3,289.12</b>
<b>Total indirect emissions</b>		<b>22,386.23</b>	<b>17,208.45</b>	<b>16,193.28</b>
<b>Total gross emissions</b>		<b>26,444.02</b>	<b>20,568.51</b>	<b>19,482.40</b>
Category 1 direct removals		0.00	0.00	0.00
Certified renewable electricity certificates		0.00	0.00	0.00
Purchased emission reductions		0.00	0.00	0.00
<b>Total net emissions</b>		<b>26,444.02</b>	<b>20,568.51</b>	<b>19,482.40</b>

<sup>3</sup> Throughout this document "emissions" means "GHG emissions".

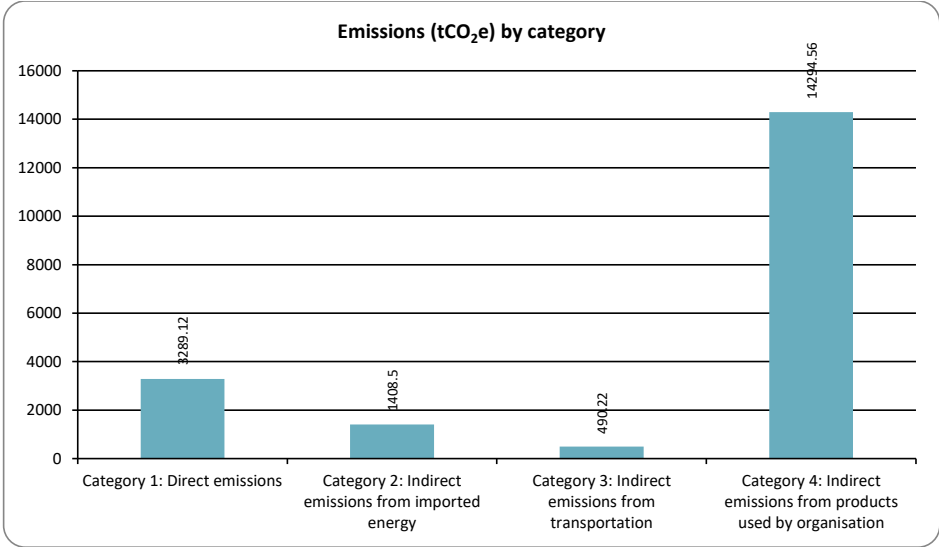


Figure 1: Emissions (tCO<sub>2</sub>e) by Category for this measurement period



## CHAPTER 1: EMISSIONS INVENTORY REPORT

### 1.1. INTRODUCTION

This report is the annual greenhouse gas (GHG) emissions inventory and management report for Palmerston North City Council.

This report is the annual greenhouse gas (GHG) Emissions Management and Reduction Plan prepared for Palmerston North City Council and forms the Manage step part of the organisation's application for programme certification.

Climate change will have significant impact on the city of Palmerston North, and consequently Palmerston North City Council. Impacts will include; more frequent flood events of greater severity, drier summer periods (with implications for the rural sector, and municipal water supply) and potential heat wave events exacerbated by the urban heat island effect (with implications for public health). Mitigating these impacts will be key for the long-term well-being of the City.

In its 'Eco City Strategy', council outlines the aspiration:

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

"... Palmerston North has a moral duty to reduce its emissions. A lack of action will not only contribute to further climate change, but risk the city missing out on the current wave of progress, and be forced to play catch up as international agreements strengthen. Alternatively, Palmerston North has an opportunity to be a leader, and reap the benefits of being a global leader exporting knowledge around the world."

To this end, Council has set an ambitious target for the city: A 30% reduction in citywide CO<sub>2</sub> emissions over the next decade. Clearly if such a target is to be achieved, Council needs to lead the way. Thus far, it has done so, having reduced its emissions by 27.2% since 2015/16. This plan outlines Council's actions over the next three years of this Long Term Plan cycle, as it makes use of its low carbon fund while building towards a more comprehensive approach to emissions reductions and management.

The inventory report and any GHG assertions are expected to be verified by a Programme-approved, third-party verifier. The level of assurance is reported in a separate Assurance Statement provided to the directors of the certification entity.

### 1.2. EMISSIONS INVENTORY RESULTS

**Table 2: GHG emissions inventory summary for this measurement period**

Measurement period: 01 July 2020 to 30 June 2021.

Category	Toitū carbon mandatory boundary (tCO <sub>2</sub> e)	Additional emissions (tCO <sub>2</sub> e)	Total emissions (tCO <sub>2</sub> e)
Category 1: Direct emissions	3,289.12  Natural Gas distributed commercial, Diesel, Petrol regular, Petrol premium, Fertiliser use Nitrogen, HCFC-22 (R-22, Genetron 22 or Freon 22), Wastewater precalculated (tCO <sub>2</sub> e), CH <sub>4</sub> , N <sub>2</sub> O, Company Car average (petrol)	0.00	3,289.12

Category	Toitū carbon mandatory boundary (tCO <sub>2</sub> e)	Additional emissions (tCO <sub>2</sub> e)	Total emissions (tCO <sub>2</sub> e)
Category 2: Indirect emissions from imported energy	1,408.50 Electricity	0.00	1,408.50
Category 3: Indirect emissions from transportation	486.86 Air travel domestic (average), Taxi (regular), Motorcycle, Private Car average (diesel), Private Car default (petrol)	3.36 Bus travel (city), Car Medium hybrid	490.22
Category 4: Indirect emissions from products used by organisation	14,294.56 Electricity distributed T&D losses, Natural Gas distributed T&D losses, Waste landfilled LFGR Mixed waste, Waste to Landfill Municipal solid waste (CO <sub>2</sub> e)	0.00	14,294.56
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00	0.00
<b>Total direct emissions</b>	<b>3,289.12</b>	<b>0.00</b>	<b>3,289.12</b>
<b>Total indirect emissions</b>	<b>16,189.92</b>	<b>3.36</b>	<b>16,193.28</b>
<b>Total gross emissions</b>	<b>19,479.04</b>	<b>3.36</b>	<b>19,482.40</b>
Category 1 direct removals	0.00	0.00	0.00
Certified renewable electricity certificates	0.00	0.00	0.00
Purchased emission reductions	0.00	0.00	0.00
<b>Total net emissions</b>	<b>19,479.04</b>	<b>3.36</b>	<b>19,482.40</b>
<b>Emissions intensity</b>		<b>Mandatory emissions</b>	<b>Total emissions</b>
Operating revenue (gross tCO <sub>2</sub> e / \$Millions)		142.18	142.21

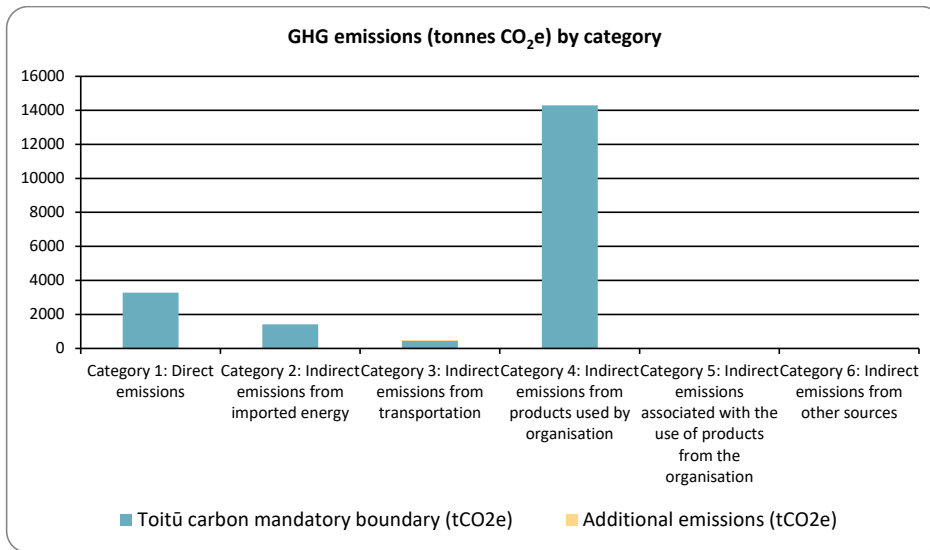


Figure 2: GHG emissions (tonnes CO<sub>2</sub>e) by category

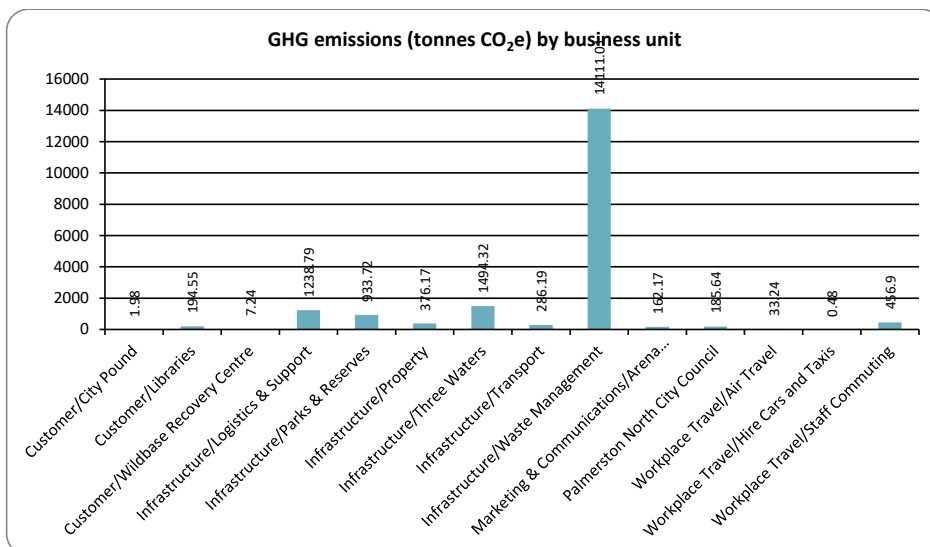


Figure 3: GHG emissions (tonnes CO<sub>2</sub>e) by business unit

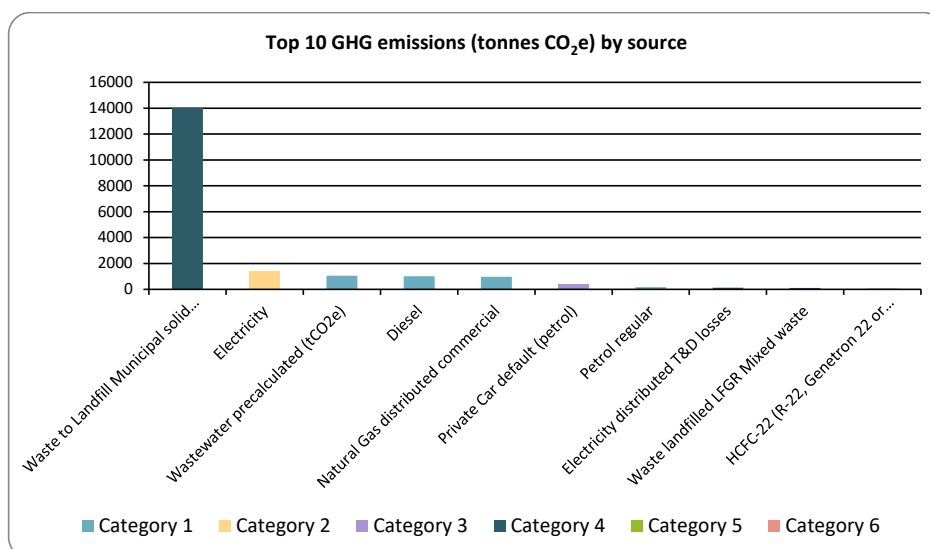


Figure 4: Top 10 GHG emissions (tonnes CO<sub>2</sub>e) by source

### 1.3. ORGANISATIONAL CONTEXT

#### 1.3.1. Organisation description

Te Kaunihera ō Papaioea, Palmerston North City Council (PNCC), is the territorial authority of Palmerston North, the lower North Island city of approximately 90,000 residents. With 545 full time equivalent staff, PNCC has responsibilities across: water supply, wastewater, stormwater, waste management, local roads, libraries, parks, community centres, animal control and regulatory services, while also providing a range of other services to the community including subsidised housing. Unlike many other councils in Aotearoa PNCC retains a substantial works department, and much of the city's maintenance work is done in-house rather than being contracted out.

PNCC through its 2021-2031 Long Term Plan (LTP) set a target of 30% reduction in citywide carbon emissions, compared to the 2016/17 baseline, by 2031. This target is the keystone of a wider series of sustainability plans that come under the 'Eco City Strategy'. This strategy includes measures around enhancing biodiversity, reducing waste, building infrastructure resilience to climate change, improving energy efficiency and encouraging active transport.

PNCC wholly owns four Council Controlled Organisations (CCOs). These are Te Manawa Museums Trust, Palmerston North Airport Limited, Globe Theatre Trust, and Regent Theatre Trust. Council is a 50% shareholder (along with Manawātū District Council) in the Central Economic Development Agency (CEDA). Council also owns three other small organisations which are exempted from CCO status. These are: Caccia Birch Trust, Palmerston North Performing Arts Trust, and the Manawātū-Whanganui Regional Disaster Relief Fund Trust.

PNCC owns a large number of properties within the city, many of which are leased out to businesses at market rates. Other properties are leased at a subsidised rate to community organisations. This includes bowls and other sports clubs, the Palmerston North Golf Course, and the lease of Hancock Community House to the Community Services Council who sublease parts of the building to other community organisations. Council also leases several of its facilities, notably its community libraries, from the private sector. Finally, while retaining ownership of the properties themselves, the operation of its community swimming pools (the Lido and Freyberg) is contracted to Community Leisure Management Limited.

#### **Commitment to certification**

Climate change will have significant impact on the city of Palmerston North, and consequently PNCC. Impacts will include; more frequent flood events of greater severity, drier summer periods (with implications for the rural sector, and municipal water supply) and potential heat wave events exacerbated by the urban heat island effect (with implications for public health). Mitigating these impacts will be key for the long-term well-being of the City.

To this end, Council has set an ambitious target for the city: A 30% reduction in citywide CO<sub>2</sub> emissions by 2031 as part of its Long Term Plan.

#### **GHG Reporting**

In its 'Eco City Strategy', council outlines the aspiration:

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

"... Palmerston North has a moral duty to reduce its emissions. A lack of action will not only contribute to further climate change, but risk the city missing out on the current wave of progress, and be forced to play catch up as international agreements strengthen. Alternatively, Palmerston North has an opportunity to be a leader, and reap the benefits of being a global leader exporting knowledge around the world."

To this end, Council has set an ambitious target for the city: A 30% reduction in citywide CO<sub>2</sub> emissions by 2031. Clearly if such a target is to be achieved, Council needs to lead the way. Thus far, it has done so, having reduced its emissions by 27.2% since 2015/16. This plan outlines Council's actions over the next three years of this Long Term Plan cycle, as it makes use of its low carbon fund while building towards a more comprehensive approach to emissions reductions and management.

#### **Climate Change Impacts**

Climate change will have significant impact on the city of Palmerston North, and consequently Palmerston North City Council. Impacts will include; more frequent flood events of greater severity, drier summer periods (with implications for the rural sector, and municipal water supply) and potential heat wave events exacerbated by the urban heat island effect (with implications for public health). Mitigating these impacts will be key for the long-term well-being of the City.

### **1.3.2. Statement of intent**

This inventory forms part of the organisation's commitment to gain Toitū carbonreduce certification. The intended uses of this inventory are:

#### **Intended use and users**

Data management and reporting are aligned to the Toitū net Carbonzero programme requirements. The report will be applied to the Carbonreduce programme and will help to target decision making and project development across council.

### **1.3.3. Person responsible**

David Murphy, Chief Planning Officer is responsible for overall emission inventory measurement and reduction performance, as well as reporting results to top management. David Murphy, Chief Planning Officer has the authority to represent top management and has financial authority to authorise budget for the Programme, including Management projects and any Mitigation objectives.

**State any other people/entities involved**

This report was prepared with the assistance of Adam Jarvis, Senior Climate Change Advisor, who was responsible for previous annual inventory reports since inception.

The officers involved in the compilation of this report have over a decade of combined experience in data engineering and management, including significant experience in carbon modelling, and data-driven scientific research.

**Top management commitment**

PNCC Councillors will receive and approve this report following auditing and verification.

**Management involvement**

Management provided support to officers as and when required.

**1.3.4. Reporting period**

**Base year measurement period: 01 July 2015 to 30 June 2016**

The base year was selected based on the availability of data.

**Measurement period of this report: 01 July 2020 to 30 June 2021**

Reports are completed annually.

The first PNCC carbon inventory was completed in 2019 and considered the 2015/2016 financial year July to June.

**1.3.5. Organisational boundary and consolidation approach**

An operational control consolidation approach was used to account for emissions.<sup>4</sup>

Organisational boundaries were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards.

**Justification of consolidation approach**

As the purpose of the inventory is to develop programmes to reduce emissions only those assets and processes that PNCC have operational control over are included in the inventory.

**Organisational structure**

Figure 5 shows what has been included in the context of the overall structure.

The organisational chart provides a summary overview of the primary PNCC structures and business units, outlining which units are included within the scope of this report.

<sup>4</sup>control: the organisation accounts for all GHG emissions and/or removals from facilities over which it has financial or operational control. equity share: the organisation accounts for its portion of GHG emissions and/or removals from respective facilities.



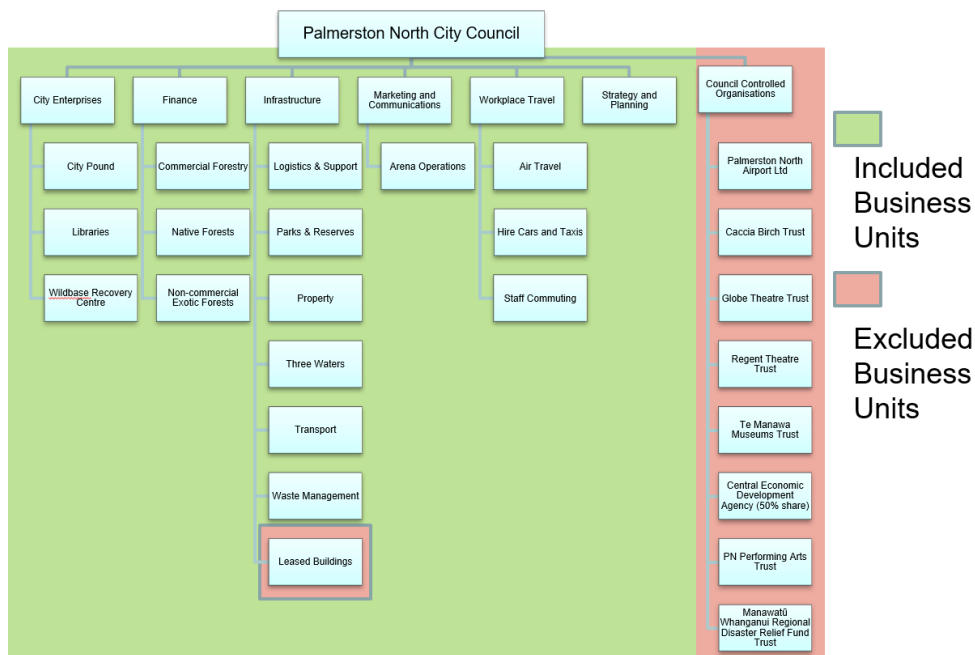


Figure 5: Organisational structure

Table 3. Brief description of business units, sites and locations included in this emissions inventory

Portfolio Categories	Property/Facility Name	No. of Buildings	Sub-Building Name
Operational Facilities (105 Buildings)	Civic Administration Building	1	Council Chambers and shops
	(Although structurally 5 building but treated as one building)		
			East and West Wing Building and Central Core
			Ground Floor and Shops Building Regulations area)
	CET Arena	14	Arena 5, Barber Hall
			Arena 1 (Grandstand Building)
			Arena 2
			Arena 3
			Arena 4 (B&M Centre)
			Horse Pavilion (Arena 6)

Portfolio Categories	Property/Facility Name	No. of Buildings	Sub-Building Name
			Sand storage shade
			Speedway Workshop Building
			Toilet block (Southern Side)
			Toilet Block (Western side)
			Sports fields changing room
			Sports fields storage building
			Sports fields garage store shed
			Sports fields workshop/storage building
	Libraries and Branches	3	Central Library
			Ashhurst Library and garage (also known as old post office)
			Highbury Library
	Water Treatment Plant	4	Clarifier and Flocculation Tank
			Sludge Tank
			Clear Water Tank
			Admin/Control Building
	Wastewater Treatment Plant	7	Main Admin Block
			Anaerobic Digesters
			Pre-aeration Tank and Sedimentation Tanks
			Secondary Clarifier
			UV Building and associate channels
			Sludge Drying Building and Chemical Tanks
			Liquid Waste Facility
	Awapuni Recycling Centre, Ashurst and Bunnythorpe Transfer Stations	8	Main Recycling Building
			Admin Block
			Waste Management Portacom
			Waste Management Building

Portfolio Categories	Property/Facility Name	No. of Buildings	Sub-Building Name
			Timber Recycling Building
			Weigh station Portacom
			Gas Flare Shed
			Ashhurst Transfer Station (Portacom)
	Kelvin Grove Cemetery	7	Crematorium
			Staff Amenities/Toilets
			Storage Shed
			Old Workshop
			New Workshop
			New Garage (By Pat's house)
			Pat's House
	Conference and Function Centre	1	Conference and Function Centre
	Globe Theatre	1	Globe Theatre
	Dog Pound	1	Dog Pound/ City pound
	The Depot	12	Amenities Block
			Recycling Centre
			Store Room (Below Leisure Community Centre)
			Workshops/Garage (including office space)
			Nursery Workshop/ Carpenters Workshop
			Vehicle Shelters
			Covered Shed 3 (back left corner)
			Covered Shed 4 (behind Community Centre) - Pipe Storage Shed
			Covered Shed 5 (by carpark)
			Covered Shed 6 (rear of site/plywood walls)
			Garage 3 (Civil Defence)
			Toilet Block

Portfolio Categories	Property/Facility Name	No. of Buildings	Sub-Building Name
	I-site and public Toilet	2	i-Site
			Public toilet
	3 water facilities (Pump Stations, chlorine building, bores etc)	18	Aokautere Sewer Pump Station
			Aokautere booster pump station building
			Ashhurst Bore Station Building
			Ashhurst water polishing building
			Bunnythorpe Water Treatment Plant Building
			Keith Street Bore Pump House
			Papaioea Park Bore Pump Station
			Papaioea Chlorine storage building water bores and pump station
			Railway Road Boar and Pump Station and Chemical storage building
			Roberts Line Pump House
			Roberts line new bore building
			Takaro Bore Pump House
			Upper Dam hydro building
			WWPS Maxwell's Line
			WWPS Jickell
			WWPS Massey
			WW Pumpstation Tremaine Avenue
			WW Pumpstation- Reserve Road
	Fitzherbert Depot Facilities	7	PNCC Fitzherbert Depot -Workshop, Office & Stores Building
			Staff Amenity Room
			Shed 1 - by Staff Amenity
			Shed 2 - Mower's shade
			Shed 3- (between staff amenity and ground staff shed)

Portfolio Categories	Property/Facility Name	No. of Buildings	Sub-Building Name
			Shed 4- Adjacent to Mower Shed
			Shed 5- Ground staff shed
	Public Toilet (Stand alone public toilet - not located in the premises of other facilities )	20	Moturimu Whare (Gordon Kear Forest) Public Toilet
			Arapuke Forest Park Public Toilet – Scotts Rd
			Bunnythorpe Public Toilets Campbell St
			Dittmer bridge toilets - He Ara Kotahi
			Guilford Street Public Toilets
			Hokowhitu Shops Public Toilets
			Kahuterawa Reserve Toilet Block
			Kahuterawa Road End Car Park Toilet
			Linklater Reserve Public Toilet
			Longburn Public Toilet
			Mahanga Kakariki Reserve
			Manawatu Gorge Carpark Toilets
			Milverton Park Public Toilets
			Papaioea Park Public Toilets
			Paneiri Park changing room
			Railway Land Public Toilets (skate park)
			Ruamahanga Wilderness Reserve
			Takaro Park Toilets
			Terrace End Public Toilets
			Waterloo Park Public Toilet

### 1.3.6. Excluded business units

Excluded from this inventory are:

1) Council Controlled Organisations. These organisations, while associated with PNCC, are separately managed and use different data management systems. Consequently, they have been excluded from this inventory.

- 2) Emissions from Council owned leased buildings. These emissions (e.g. from tenants energy use) are largely outside of the control of Council, and are thus not included in this inventory.
- 3) Embodied emissions of purchased Council products. Council procurement policy encourages officers to make sustainable purchasing decisions, but Council purchases an extremely wide range of products from a similarly wide range of suppliers, with highly variable carbon accounting practices and methodologies. Consequently, these emissions have been excluded at this stage.
- 4) Emissions resulting from externally contracted civil works and services. As above, Council procurement policy encourages the use of contractors that demonstrate sustainable practices, but for the same reasons these emissions are not currently within the scope of this inventory.

## CHAPTER 2: EMISSIONS MANAGEMENT AND REDUCTION REPORT

### 2.1. EMISSIONS REDUCTION RESULTS

Council is currently on track to achieve its GHG reduction targets, having reduced its emissions by 27.2% since the 2015/16 baseline year. If this trajectory can be maintained a 30% reduction should be achieved by the 2022/23 reporting year, seven years ahead of schedule.

Council's emissions remain dominated by gas from Awapuni Landfill, which accounts for the entire city's waste over a period of many decades. A modern landfill gas capture system has been installed at the site, and there seems to be little avenue to substantially further reduce these emissions. However, gas production at the site is declining over time as the landfill waste matures.

**Table 4: Comparison of historical GHG inventories**

Category	2016	2017	2018	2019	2020	2021
Category 1: Direct emissions	4,057.79	3,190.78	2,941.98	3,118.95	3,360.06	3,289.12
Category 2: Indirect emissions from imported energy	1,811.31	1,945.25	1,795.03	1,454.97	1,421.35	1,408.50
Category 3: Indirect emissions from transportation	479.33	453.62	459.18	631.02	596.87	490.22
Category 4: Indirect emissions from products used by organisation	20,095.58	18,734.58	17,495.58	16,195.48	15,190.23	14,294.56
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00	0.00	0.00	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total direct emissions</b>	<b>4,057.79</b>	<b>3,190.78</b>	<b>2,941.98</b>	<b>3,118.95</b>	<b>3,360.06</b>	<b>3,289.12</b>
<b>Total indirect emissions</b>	<b>22,386.23</b>	<b>21,133.45</b>	<b>19,749.79</b>	<b>18,281.46</b>	<b>17,208.45</b>	<b>16,193.28</b>
<b>Total gross emissions</b>	<b>26,444.02</b>	<b>24,324.22</b>	<b>22,691.77</b>	<b>21,400.42</b>	<b>20,568.51</b>	<b>19,482.40</b>
Category 1 direct removals	0.00	0.00	0.00	0.00	0.00	0.00

Category	2016	2017	2018	2019	2020	2021
Certified renewable electricity certificates	0.00	0.00	0.00	0.00	0.00	0.00
Purchased emission reductions	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total net emissions</b>	<b>26,444.02</b>	<b>24,324.22</b>	<b>22,691.77</b>	<b>21,400.42</b>	<b>20,568.51</b>	<b>19,482.40</b>
<b>Emissions intensity</b>						
Operating revenue (gross tCO <sub>2</sub> e / \$Millions)	239.59	193.05	176.32	149.65	141.85	142.21
Operating revenue (gross mandatory tCO <sub>2</sub> e / \$Millions)	239.54	193.00	176.27	149.64	141.83	142.18



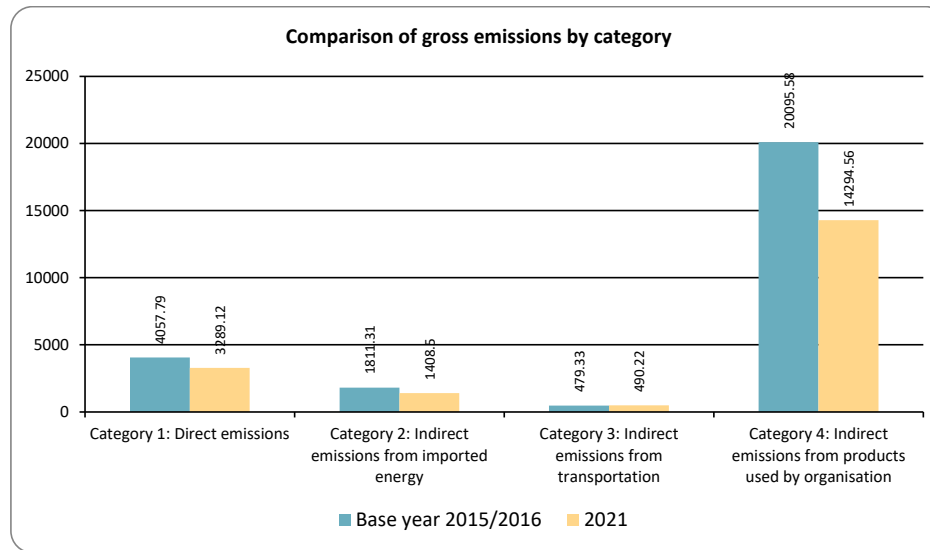
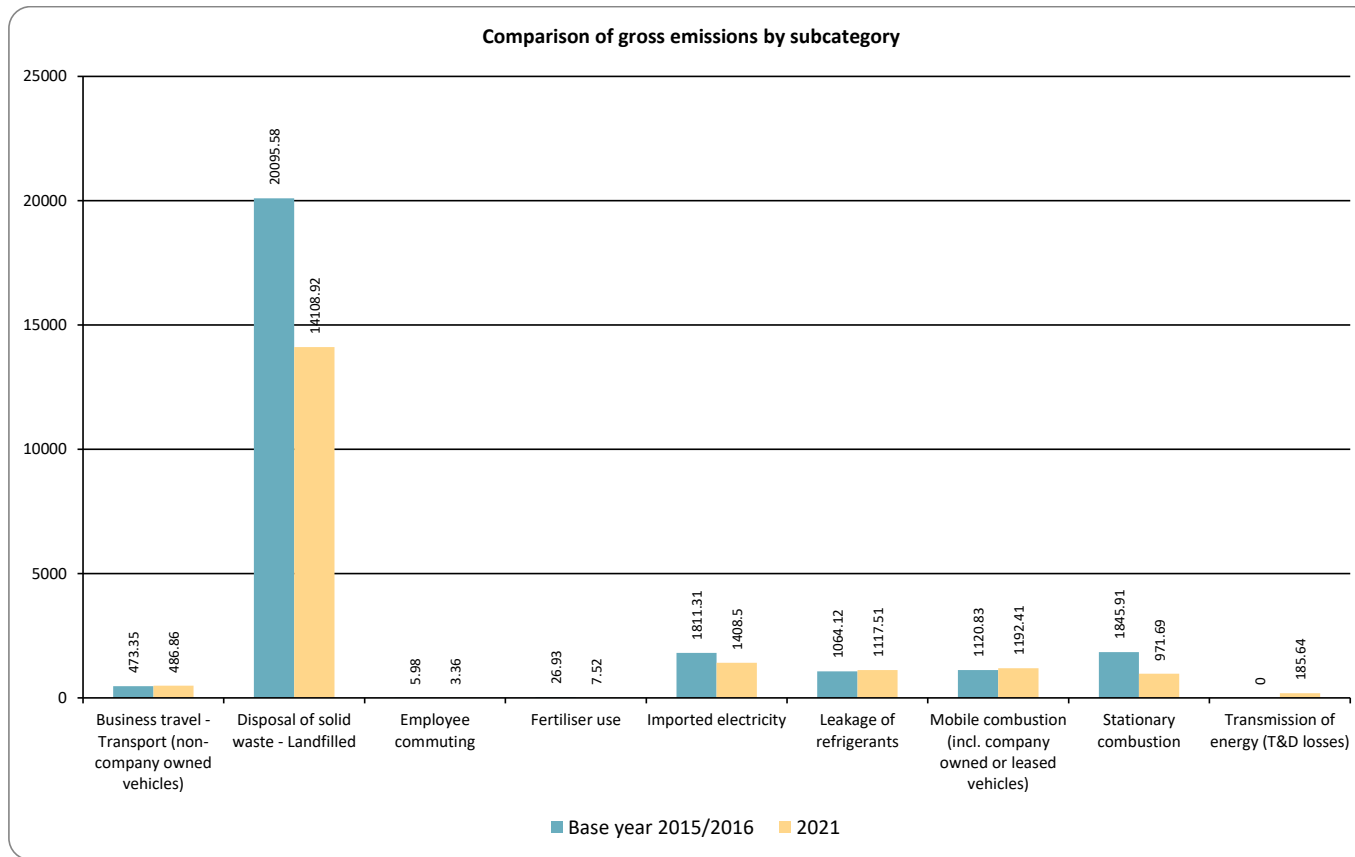


Figure 6: Comparison of gross emissions by category between the reporting periods



**Figure 7: Comparison of gross emissions by subcategory between the reporting periods**

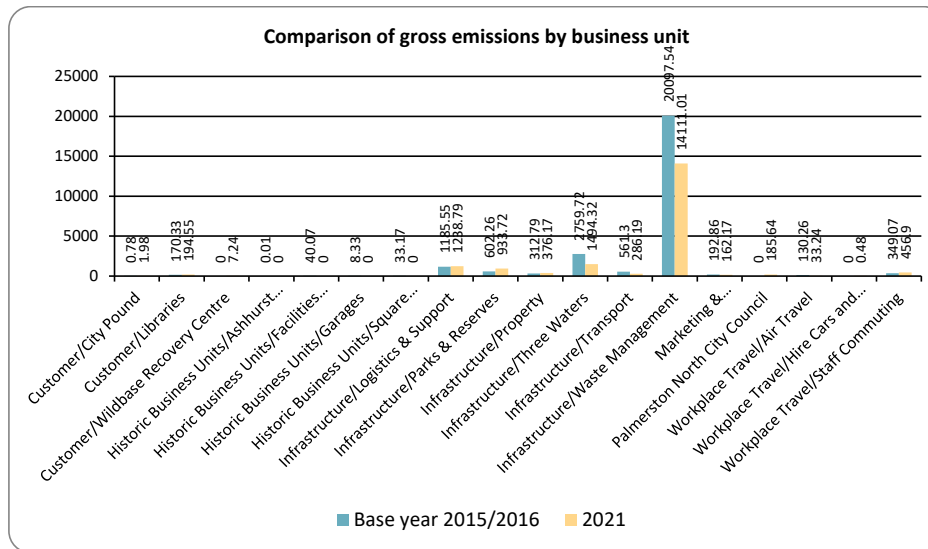


Figure 8: Comparison of gross emissions by business unit between the reporting periods

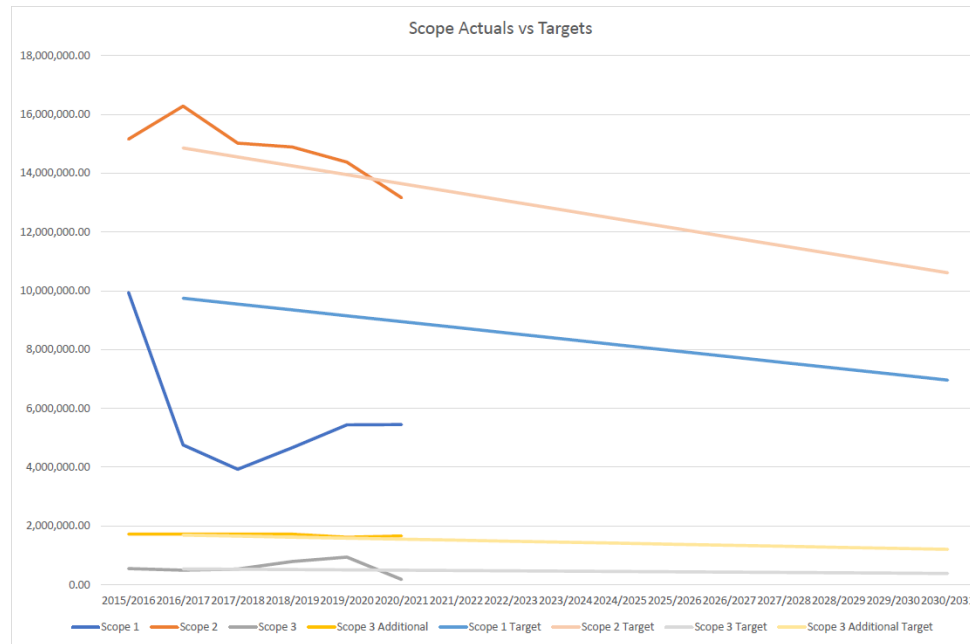


Figure 9: Performance against target since base year

Table 5. Performance against plan

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Customer/Libraries/City Library	Natural Gas distributed commercial		Scope 1	387,347.00	379600.060	371853.120	364106.180	356359.240	348612.300	340865.360	333118.420	325371.480	317624.540	309877.600	302130.660	294383.720	286636.780	278889.840	271142.900
Customer/Libraries/Mobile Library	Diesel		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Customer/Libraries/Youth Space	Natural Gas distributed commercial		Scope 1	53,486.00	52416.280	51346.560	50276.840	49207.120	48137.400	47067.680	45997.960	44928.240	43858.520	42788.800	41719.080	40649.360	39579.640	38509.920	37440.200
Historic Business Units/Facilities Management	HCFC-22 (R-22, Genetron 22 or Freon 22)		Scope 1	11.40	11.172	10.944	10.716	10.488	10.260	10.032	9.804	9.576	9.348	9.120	8.892	8.664	8.436	8.208	7.980
Historic Business Units/Facilities Management	Natural Gas distributed commercial		Scope 1	22,884.00	22426.320	21968.640	21510.960	21053.280	20595.600	20137.920	19680.240	19222.560	18764.880	18307.200	17849.520	17391.840	16934.160	16476.480	16018.800

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Historic Business Units/Facilities Management	R-410A		Scope 1	0.80	0.784	0.768	0.752	0.736	0.720	0.704	0.688	0.672	0.656	0.640	0.624	0.608	0.592	0.576	0.560
Historic Business Units/Facilities Management	R-438A		Scope 1	3.10	3.038	2.976	2.914	2.852	2.790	2.728	2.666	2.604	2.542	2.480	2.418	2.356	2.294	2.232	2.170
Historic Business Units/Garages	Natural Gas distributed commercial		Scope 1	42,910.00	42051.800	41193.600	40335.400	39477.200	38619.000	37760.800	36902.600	36044.400	35186.200	34328.000	33469.800	32611.600	31753.400	30895.200	30037.000
Infrastructure/Logistics & Support/Depots	Natural Gas distributed commercial		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Logistics & Support/Nursery	Natural Gas distributed commercial		Scope 1	228,303.00	223736.940	219170.880	214604.820	210038.760	205472.700	200906.640	196340.580	191774.520	187208.460	182642.400	178076.340	173510.280	168944.220	164378.160	159812.100
Infrastructure/Logistics & Support/Tankers	Diesel		Scope 1	73,006.00	71545.880	70085.760	68625.640	67165.520	65705.400	64245.280	62785.160	61325.040	59864.920	58404.800	56944.680	55484.560	54024.440	52564.320	51104.200

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Logistics & Support/Tankers	Petrol regular		Scope 1	6,366.00	6238.680	6111.360	5984.40	5856.720	5729.400	5602.080	5474.760	5347.440	5220.120	5092.800	4965.480	4838.160	4710.840	4583.520	4456.200
Infrastructure/Logistics & Support/Vehicles/Heavy Plant	Diesel		Scope 1	7,817.00	7660.660	7504.320	7347.980	7191.640	7035.300	6878.960	6722.620	6566.280	6409.940	6253.600	6097.260	5940.920	5784.580	5628.240	5471.900
Infrastructure/Logistics & Support/Vehicles/Heavy Plant	Petrol premium		Scope 1	978.00	958.440	938.880	919.320	899.760	880.200	860.640	841.080	821.520	801.960	782.400	762.840	743.280	723.720	704.160	684.600
Infrastructure/Logistics & Support/Vehicles/Heavy Plant	Petrol regular		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Logistics & Support/Vehicles/Heavy Trucks	Diesel		Scope 1	122,872.00	120414.560	117957.120	115499.680	113042.240	110584.800	108127.360	105669.920	103212.480	100755.040	98297.600	95840.160	93382.720	90925.280	88467.840	86010.400
Infrastructure/Logistics & Support/Vehicles/Leased Vehicles	Diesel		Scope 1	13,632.00	13359.360	13086.720	12814.080	12541.440	12268.800	11996.160	11723.520	11450.880	11178.240	10905.600	10632.960	10360.320	10087.680	9815.040	9542.400
Infrastructure/Logistics & Support/Vehicles/Leased Vehicles	Petrol premium		Scope 1	1,260.00	1234.800	1209.600	1184.400	1159.200	1134.000	1108.800	1083.600	1058.400	1033.200	1008.000	982.800	957.600	932.400	907.200	882.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Logistics & Support/Vehicles/Leased Vehicles	Petrol regular		Scope 1	24,469.00	23979.620	23490.240	23000.860	22511.480	22022.100	21532.720	21043.340	20553.960	20064.580	19575.200	19085.820	18596.440	18107.060	17617.680	17128.300
Infrastructure/Logistics & Support/Vehicles/Light Trucks	Diesel		Scope 1	33,709.00	33034.820	32360.640	31686.460	31012.280	30338.100	29663.920	28989.740	28315.560	27641.380	26967.200	26293.020	25618.840	24944.660	24270.480	23596.300
Infrastructure/Logistics & Support/Vehicles/Light Trucks	Petrol regular		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Logistics & Support/Vehicles/Medium Trucks	Diesel		Scope 1	30,224.00	29619.520	29015.040	28410.560	27806.080	27201.600	26597.120	25992.640	25388.160	24783.680	24179.200	23574.720	22970.240	22365.760	21761.280	21156.800
Infrastructure/Logistics & Support/Vehicles/Mowers	Diesel		Scope 1	8,281.00	8115.380	7949.760	7784.140	7618.520	7452.900	7287.280	7121.660	6956.040	6790.420	6624.800	6459.180	6293.560	6127.940	5962.320	5796.700
Infrastructure/Logistics & Support/Vehicles/Mowers	Petrol regular		Scope 1	215.00	210.700	206.400	202.100	197.800	193.500	189.200	184.900	180.600	176.300	172.000	167.700	163.400	159.100	154.800	150.500



Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Logistics & Support/Vehicles/Pool Vehicles	Diesel		Scope 1	35,821.00	35104.580	34388.160	33671.740	32955.320	32238.900	31522.480	30806.060	30089.640	29373.220	28656.800	27940.380	27223.960	26507.540	25791.120	25074.700
Infrastructure/Logistics & Support/Vehicles/Pool Vehicles	Petrol regular		Scope 1	38,210.00	37445.800	36681.600	35917.400	35153.200	34389.000	33624.800	32860.600	32096.400	31332.200	30568.000	29803.800	29039.600	28275.400	27511.200	26747.000
Infrastructure/Logistics & Support/Vehicles/Quad Bikes	Diesel		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Logistics & Support/Vehicles/Quad Bikes	Petrol regular		Scope 1	1,635.00	1602.300	1569.600	1536.900	1504.200	1471.500	1438.800	1406.100	1373.400	1340.700	1308.000	1275.300	1242.600	1209.900	1177.200	1144.500
Infrastructure/Logistics & Support/Vehicles/Tractors	Diesel		Scope 1	21,482.00	21052.360	20622.720	20193.080	19763.440	19333.800	18904.160	18474.520	18044.880	17615.240	17185.600	16755.960	16326.320	15896.680	15467.040	15037.400
Infrastructure/Logistics & Support/Vehicles/Utility Vehicles	Diesel		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Parks & Reserves	Fertiliser use Nitrogen		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Parks & Reserves/Aquatic Centres/Ashhurst	Natural Gas distributed commercial		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Parks & Reserves/Aquatic Centres/Lido Aquatic Centre	Natural Gas distributed commercial		Scope 1	1,489,882.00	1460084.360	1430286.720	1400489.080	1370691.440	1340893.800	1311096.160	1281298.520	1251500.880	1221703.240	1191905.600	1162107.960	1132310.320	1102512.680	1072715.040	1042917.400
Infrastructure/Parks & Reserves/Cemeteries	Natural Gas distributed commercial		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Parks & Reserves/Citywide Reserves	Natural Gas distributed commercial		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Parks & Reserves/Local Reserves & Sports fields	Fertiliser use	Nitrogen	Scope 1	2,310.00	2263.800	2217.600	2171.400	2125.200	2079.000	2032.800	1986.600	1940.400	1894.200	1848.000	1801.800	1755.600	1709.400	1663.200	1617.000
Infrastructure/Parks & Reserves/Local Reserves & Sports fields	Natural Gas	distributed commercial	Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Property	HCFC-22 (R-22, Genetron 22 or Freon 22)		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Property	HFC-134a		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Property	R-410A		Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Property/Civic Administration Building	Natural Gas distributed commercial		Scope 1	702,492.00	688442.160	674392.320	660342.480	646292.640	632242.800	618192.960	604143.120	590093.280	576043.440	561993.600	547943.760	533893.920	519844.080	505794.240	491744.400
Infrastructure/Property/Community Centres	Natural Gas distributed commercial		Scope 1	1,024.00	1003.520	983.040	962.560	942.080	921.600	901.120	880.640	860.160	839.680	819.200	798.720	778.240	757.760	737.280	716.800
Infrastructure/Threat Waters/Wastewater Treatment	Natural Gas distributed commercial		Scope 1	6,132,856.00	6010198.880	5887541.760	5764884.640	5642227.520	5519570.400	5396913.280	5274256.160	5151599.040	5028941.920	4906284.800	4783627.680	4660970.560	4538313.440	4415656.320	4292999.200

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Three Waters/Wastewater Treatment	Wastewater precalculated (tCO <sub>2</sub> e)	Waste Emissions from Totala Rd & Ashhurst Oxidation Ponds	Scope 1	1,033.00	1012.340	991.680	971.020	950.360	929.700	909.040	888.380	867.720	847.060	826.400	805.740	785.080	764.420	743.760	723.100
Infrastructure/Waste Management/Ashhurst Landfill	Waste to Landfill Municipal solid waste (CO <sub>2</sub> e)		Scope 1	114.00	111.720	109.440	107.160	104.880	102.600	100.320	98.040	95.760	93.480	91.200	88.920	86.640	84.360	82.080	79.800
Infrastructure/Waste Management/Awapuni Landfill	CH <sub>4</sub>	Biogas Burning	Scope 1	0.06	0.059	0.058	0.056	0.055	0.054	0.053	0.052	0.050	0.049	0.048	0.047	0.046	0.044	0.043	0.042

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Waste Management/Awapuni Landfill	N <sub>2</sub> O	Biogas Burning	Scope 1	0.00	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Infrastructure/Waste Management/Awapuni Landfill	Waste to Landfill	Municipal solid waste (CO <sub>2</sub> e)	Scope 1	19,609.00	19216.820	18824.640	18432.460	18040.280	17648.100	17255.920	16863.740	16471.560	16079.380	15687.200	15295.020	14902.840	14510.660	14118.480	13726.300
Marketing & Communications/Arena Operations	Natural Gas distributed commercial		Scope 1	443,263.00	434397.740	425532.480	416667.220	407801.960	398936.700	390071.440	381206.180	372340.920	363475.660	354610.400	345745.140	336879.880	328014.620	319149.360	310284.100
Workplace Travel/Hire Cars and Taxis	Company Car average (petrol)	Hire Cars	Scope 1	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
			Scope 1 TOTAL		974855.254	9549605.147	9350655.039	9151704.932	8952754.825	8753804.718	8554854.610	8355904.503	8156954.396	7958004.289	7759054.182	7560104.074	7361153.967	7162203.860	6963253.753
Customer/City Pound	Electricity		Scope 2	6,549.00	6418.020	6287.040	6156.060	6025.080	5894.100	5763.120	5632.140	5501.160	5370.180	5239.200	5108.220	4977.240	4846.260	4715.280	4584.300
Customer/Libraries/Ashhurst Library	Electricity		Scope 2	9,081.00	8899.380	8717.760	8536.140	8354.520	8172.900	7991.280	7809.660	7628.040	7446.420	7264.800	7083.180	6901.560	6719.940	6538.320	6356.700
Customer/Libraries/Awapuni Library	Electricity		Scope 2	21,938.00	21499.240	21060.480	20621.720	20182.960	19744.200	19305.440	18866.680	18427.920	17989.160	17550.400	17111.640	16672.880	16234.120	15795.360	15356.600
Customer/Libraries/City Library	Electricity		Scope 2	620,282.00	607876.360	595470.720	583065.080	570659.440	558253.800	545848.160	533442.520	521036.880	508631.240	496225.600	483819.960	471414.320	459008.680	446603.040	434197.400
Customer/Libraries/Highbury Library	Electricity		Scope 2	1,341.00	1314.180	1287.360	1260.540	1233.720	1206.900	1180.080	1153.260	1126.440	1099.620	1072.800	1045.980	1019.160	992.340	965.520	938.700
Customer/Libraries/Roslyn Library	Electricity		Scope 2	9,777.00	9581.460	9385.920	9190.380	8994.840	8799.300	8603.760	8408.220	8212.680	8017.140	7821.600	7626.060	7430.520	7234.980	7039.440	6843.900
Customer/Libraries/Youth Space	Electricity		Scope 2	46,733.00	45798.340	44863.680	43929.020	42994.360	42059.700	41125.040	40190.380	39255.720	38321.060	37386.400	36451.740	35517.080	34582.420	33647.760	32713.100
Customer/Wildbase Recovery Centre	Electricity		Scope 2	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Historic Business Units/Ashhurst Transfer Station	Electricity	Ashhurst Transfer Station	Scope 2	77.00	75.460	73.920	72.380	70.840	69.300	67.760	66.220	64.680	63.140	61.600	60.060	58.520	56.980	55.440	53.900
Historic Business Units/Facilities Management	Electricity		Scope 2	52,735.00	51680.300	50625.600	49570.900	48516.200	47461.500	46406.800	45352.100	44297.400	43242.700	42188.000	41133.300	40078.600	39023.900	37969.200	36914.500
Historic Business Units/Square Gardens	Electricity		Scope 2	277,647.00	272094.060	266541.120	260988.180	255435.240	249882.300	244329.360	238776.420	233223.480	227670.540	222117.600	216564.660	211011.720	205458.780	199905.840	194352.900
Infrastructure/Logistics & Support/Depots	Electricity		Scope 2	170,579.00	167167.420	163755.840	160344.260	156932.680	153521.100	150109.520	146697.940	143286.360	139874.780	136463.200	133051.620	129640.040	126228.460	122816.880	119405.300
Infrastructure/Parks & Reserves/Aquatic Centres/Ashhurst	Electricity		Scope 2	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Parks & Reserves/Aquatic Centres/Freyberg Aquatic Centre	Electricity		Scope 2	278,669.00	273095.620	267522.240	261948.860	256375.480	250802.100	245228.720	239655.340	234081.960	228508.580	222935.200	217361.820	211788.440	206215.060	200641.680	195068.300



Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Parks & Reserves/Aquatic Centres/Lido Aquatic Centre	Electricity		Scope 2	2,111,944.00	2069705.120	2027466.240	1985227.360	1942988.480	1900749.600	1858510.720	1816271.840	1774032.960	1731794.080	1689555.200	1647316.320	1605077.440	1562838.560	1520599.680	1478360.800
Infrastructure/Parks & Reserves/Cemeteries	Electricity		Scope 2	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Parks & Reserves/Citywide Reserves	Electricity		Scope 2	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Infrastructure/Parks & Reserves/Local Reserves & Sports fields	Electricity		Scope 2	3,362.00	3294.760	3227.520	3160.280	3093.040	3025.800	2958.560	2891.320	2824.080	2756.840	2689.600	2622.360	2555.120	2487.880	2420.640	2353.400
Infrastructure/Property/Civic Administration Building	Electricity		Scope 2	1,367,567.00	1340215.660	1312864.320	1285512.980	1258161.640	1230810.300	1203458.960	1176107.620	1148756.280	1121404.940	1094053.600	1066702.260	1039350.920	1011999.580	984648.240	957296.900
Infrastructure/Property/Community Centres	Electricity		Scope 2	101,886.00	99848.280	97810.560	95772.840	93735.120	91697.400	89659.680	87621.960	85584.240	83546.520	81508.800	79471.080	77433.360	75395.640	73357.920	71320.200

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Property/Social Housing Buildings	Electricity		Scope 2	5,217.00	5112.660	5008.320	4903.980	4799.640	4695.300	4590.960	4486.620	4382.280	4277.940	4173.600	4069.260	3964.920	3860.580	3756.240	3651.900
Infrastructure/Threats/Waters/Stormwater Pump Stations	Electricity		Scope 2	38,099.00	37337.020	36575.040	35813.060	35051.080	34289.100	33527.120	32765.140	32003.160	31241.180	30479.200	29717.220	28955.240	28193.260	27431.280	26669.300
Infrastructure/Threats/Waters/Wastewater Pump Stations	Electricity		Scope 2	292,447.00	286598.060	280749.120	274900.180	269051.240	263202.300	257353.360	251504.420	245655.480	239806.540	233957.600	228108.660	222259.720	216410.780	210561.840	204712.900
Infrastructure/Threats/Waters/Wastewater Treatment	Electricity		Scope 2	2,912,914.00	2854655.720	2796397.440	2738139.160	2679880.880	2621622.600	2563364.320	2505106.040	2446847.760	2388589.480	2330331.200	2272072.920	2213814.640	2155556.360	2097298.080	2039039.800
Infrastructure/Threats/Waters/Water Treatment & Pumps	Electricity		Scope 2	1,240,555.00	1215743.900	1190932.800	1166121.700	1141310.600	1116499.500	1091688.400	1066877.300	1042066.200	1017255.100	992444.000	967632.900	942821.800	918010.700	893199.600	868388.500
Infrastructure/Transport/City Bus Terminal	Electricity		Scope 2	6,447.00	6318.060	6189.120	6060.180	5931.240	5802.300	5673.360	5544.420	5415.480	5286.540	5157.600	5028.660	4899.720	4770.780	4641.840	4512.900
Infrastructure/Transport/Street Lighting	Electricity		Scope 2	4,544,639.00	4453746.220	4362853.440	4271960.660	4181067.880	4090175.100	3999282.320	3908389.540	3817496.760	3726603.980	3635711.200	3544818.420	3453925.640	3363032.860	3272140.080	3181247.300

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Infrastructure/Transport/Traffic Signals	Electricity		Scope 2	147,816.00	144859.680	141903.360	138947.040	135990.720	133034.400	130078.080	127121.760	124165.440	121209.120	118252.800	115296.480	112340.160	109383.840	106427.520	103471.200
Infrastructure/Waste Management/Waste Management Operations	Electricity		Scope 2	1,335.00	1308.300	1281.600	1254.900	1228.200	1201.500	1174.800	1148.100	1121.400	1094.700	1068.000	1041.300	1014.600	987.900	961.200	934.500
Marketing & Communications/Arena Operations	Electricity		Scope 2	893,824.00	875947.520	858071.040	840194.560	822318.080	804441.600	786565.120	768688.640	750812.160	732935.680	715059.200	697182.720	679306.240	661429.760	643553.280	625676.800
			Scope 2 TOTAL		14860190.800	14556921.600	14253652.400	13950383.200	13647114.000	13343844.800	13040575.600	12737306.400	12434037.200	12130768.000	11827498.800	11524229.600	11220960.400	10917691.200	10614422.000
Infrastructure/Waste Management	Waste landfill LFGR Mixed waste	Total MSW from all facilities	Scope 3	840.00	823.200	806.400	789.600	772.800	756.000	739.200	722.400	705.600	688.800	672.000	655.200	638.400	621.600	604.800	588.000
Workplace Travel/Air Travel	Air travel domestic (average)		Scope 3	361,631.00	354398.380	347165.760	339933.140	332700.520	325467.900	318235.280	311002.660	303770.040	296537.420	289304.800	282072.180	274839.560	267606.940	260374.320	253141.700

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Workplace Travel/Air Travel	Air travel long haul (business)		Scope 3	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workplace Travel/Air Travel	Air travel long haul (econ)		Scope 3	77,188.00	75644.240	74100.480	72556.720	71012.960	69469.200	67925.440	66381.680	64837.920	63294.160	61750.400	60206.640	58662.880	57119.120	55575.360	54031.600
Workplace Travel/Air Travel	Air travel long haul (econ+)		Scope 3	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workplace Travel/Air Travel	Air travel short haul (econ)		Scope 3	109,980.00	107780.400	105580.800	103381.200	101181.600	98982.000	96782.400	94582.800	92383.200	90183.600	87984.000	85784.400	83584.800	81385.200	79185.600	76986.000
Workplace Travel/Air Travel	Air travel short haul b/f class		Scope 3	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Workplace Travel/Hire Cars and Taxis	Taxi (regular)		Scope 3	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workplace Travel/Staff Commuting	Air travel domestic (average)	Commuting Scope 3 Additional	Scope 3	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workplace Travel/Staff Commuting	Taxi (regular)		Scope 3	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			Scope 3 TOTAL		538646.220	527653.440	516660.660	505667.880	494675.100	483682.320	472689.540	461696.760	450703.980	439711.200	428718.420	417725.640	406732.860	395740.080	384747.300
Workplace Travel/Staff Commuting	Bus travel (city)		Scope 3 Additional	46,615.00	45682.700	44750.400	43818.100	42885.800	41953.500	41021.200	40088.900	39156.600	38224.300	37292.000	36359.700	35427.400	34495.100	33562.800	32630.500
Workplace Travel/Staff Commuting	Car Medium hybrid		Scope 3 Additional	16,466.00	16136.680	15807.360	15478.040	15148.720	14819.400	14490.080	14160.760	13831.440	13502.120	13172.800	12843.480	12514.160	12184.840	11855.520	11526.200

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Workplace Travel/Staff Commuting	Company Car average (petrol)		Scope 3 Additional	51,155.00	50131.900	49108.800	48085.700	47062.600	46039.500	45016.400	43993.300	42970.200	41947.100	40924.000	39900.900	38877.800	37854.700	36831.600	35808.500
Workplace Travel/Staff Commuting	Motor cycle		Scope 3 Additional	29,663.00	29069.740	28476.480	27883.220	27289.960	26696.700	26103.440	25510.180	24916.920	24323.660	23730.400	23137.140	22543.880	21950.620	21357.360	20764.100
Workplace Travel/Staff Commuting	Private Car average (diesel)		Scope 3 Additional	127,639.00	125086.220	122533.440	119980.660	117427.880	114875.100	112322.320	109769.540	107216.760	104663.980	102111.200	99558.420	97005.640	94452.860	91900.080	89347.300
Workplace Travel/Staff Commuting	Private Car default (petrol)		Scope 3 Additional	1,451,894.00	1422856.120	1393818.240	1364780.360	1335742.480	1306704.600	1277666.720	1248628.840	1219590.960	1190553.080	1161515.200	1132477.320	1103439.440	1074401.560	1045363.680	1016325.800

Business unit	Activity	Activity Description	Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
			Scope 3 Additional TOTAL		16889 63.360	16544 94.720	16200 26.080	15855 57.440	15510 88.800	15166 20.160	14821 51.520	14476 82.880	14132 14.240	13787 45.600	13442 76.960	13098 08.320	12753 39.680	12408 71.040	12064 02.400

## 2.2. SIGNIFICANT EMISSIONS SOURCES

### Significant sources

The second largest Scope 1 emission source after landfill is the wastewater treatment plant (WWTP) which has decreased by -1.7% against baseline, again at least partially due to the effects of COVID19. This source is substantial, because Council is effectively accounting for the entire City's wastewater emissions. A major upgrade in 2016 allowed gas from the adjacent Awapuni Landfill (previously flared) to be used to power the treatment plant, substantially offsetting the treatment plant's emissions. Council is progressing options for replacement of the WWTP. It is expected that whichever option is ultimately selected, the incorporation of modern technology and processes will result in lower emissions from the new WWTP as compared to the existing facility.

Third on the list is the Lido Aquatic Centre. A comprehensive energy audit of the site was conducted in 2016, and a range of energy saving measures implemented. Energy consumption at the site does vary dramatically depending on weather, which makes it difficult to determine precisely what impact this has had. However, comparing the 2020/21 figures to the 2015/16 baseline, we see a +45.2% increase in Scope 1 emissions has been reported at this site. Given the reported +11.9% increase in emissions compared to 2019/20 further investigation into the causes of this change are required. Further emission reductions at the Lido are likely to require substantial capital investment, and these will be considered, alongside other options, through the 'Low Carbon Fund' process.

The fourth highest source of Scope 1 emissions is from the Council's fleet of heavy trucks, which includes rubbish and recycling vehicles, transport vehicles, and miscellaneous vehicles including a single water tanker. Some progress has been made since 2018, with the incorporation of two fully electric recycling vehicles into the fleet, as well as a number of other low-emission vehicles replacing end-of-life petrol and diesel vehicles. As with the Lido, moving from emissions increases to reductions will require additional capital investment, to be considered through the Low Carbon Fund process.

### Activities responsible for generating significant emissions

The largest Scope 2 emission source is electricity usage resulting from urban street lighting. An extensive LED Street Lighting upgrade programme was completed during the previous reporting period resulting in a -51.8% reduction in emissions against baseline. Since this change year on year emissions have varied very little and the relative importance of this source is primarily due to the dramatic reduction in other sources.

Scope 2 emissions at the WWTP which had increased by +5.8% against baseline in 2019/20 are reported at a -34.5% decrease in this inventory, again at least partially due to the effects of COVID19. Again, this source is substantial because Council is effectively accounting for the entire City's wastewater emissions. The planned WWTP replacement may result in lower overall emissions from the new WWTP as compared to the existing facility but this may be reported as an increase in Scope 2 emissions due to electrification of existing Scope 1 emissions.

2020/21 Scope 2 emissions from the Lido Aquatic Centre have reduced by -12.4% against baseline which partially offsets the increase in Scope 1 emissions. It is likely that future emission reductions projects will migrate Scope 1 emissions further into Scope 2 (via electrification) with resulting reductions overall.

### Influences over the activities

The largest Scope 3 emissions source on the list of Council's emissions is staff commuting, which has been voluntarily included within scope. A workplace travel survey conducted in 2020 found that, compared with the previous 2011 survey, while Council's efforts to encourage more active transport had been somewhat successful, staff commuting emissions had nonetheless substantially increased. This is due to a relatively small proportion of staff commuting much larger distances than previously, which unfortunately more than offsets the small reductions caused by some staff living locally making the switch to less carbon intensive modes. It is expected that the impact of the Covid-19 lockdown has had a substantial impact on the travel patterns of staff, so a refreshed travel survey will be conducted as part of future inventories in order to determine where the opportunities and challenges are moving forward.



Other staff travel such as taxi and air travel has dropped significantly, again at least partially due to the effects of COVID19.

**Significant sources that cannot be influenced**

Emissions from waste are largely unchanged however a SWAP audit and assessment completed in June 2022 revealed a significant increase in waste to landfill from the Waste Recovery Plant. This is largely due to changes in recycling collection methods and subsequent increases in contamination of recycling (i.e. non-recyclable products being placed in recycling bins).

### 2.3. EMISSIONS REDUCTION TARGETS

The organisation is committed to managing and reducing its emissions in accordance with the Programme requirements. Table 6 provides details of the emission reduction targets to be implemented. These are 'SMART' targets (specific, measurable, achievable, realistic, and time-constrained).

Council had previously set for itself a 25% reduction target by 2026, which it has achieved in the 2020/21 reporting period with a 27.2% reduction.

In the 2021-2031 Long Term Plan, the Council set a new citywide target (and implied organisational target) of a 30% reduction by 2031 compared to the 2015/16 baseline. With the Council's largest emission source of Awapuni Landfill continuing to mature, it seems likely that Council will achieve this target on current trends. The Council has also begun work on a carbon neutral feasibility study, which is likely to inform revised longer-term targets once completed.

Council is currently on track to achieve its GHG reduction targets, having reduced its emissions by 27.2% since the 2015/16 baseline year. If this trajectory can be maintained a 30% reduction should be achieved by the 2022/23 reporting year, seven years ahead of schedule.

**Table 6. Emission reduction targets**

Target name	Baseline period	Target date	Type of target (intensity or absolute)	Categories covered	Target		KPI	Responsibility	Rationale
Total Gross Scope 1, 2 and 3 mandatory emissions	July 2015 - June 2016	30/06/2031	Absolute	All categories	-30%		Absolute	Chief Executive Officer	Council citywide target as set in the 'Eco City Strategy' during 2021 LTP
Non-Landfill Gross Scope 1, 2 and 3 mandatory emissions	July 2015 - June 2016	30/06/2031	Absolute	Category 1 & 4	-30%		Absolute	Chief Executive Officer	Extension of Eco City target to Non-Landfill emissions
Emission specific 'subtargets'									
Low Carbon Fund	July 2015 - June 2016	30/06/2024	Intensity			2Tonnes	per \$100	Senior Climate Change Advisor	Low Carbon Fund projects must exceed ETS spot price as a minimum criteria
Continued maturation of closed landfills	July 2015 - June 2016	30/06/2031	Intensity	Category 4	-60%		Absolute	Waste Engineer	Expected reduction based on first order decay modelling

## 2.4. EMISSIONS REDUCTION PROJECTS

In order to achieve the reduction targets identified in Table 6, specific projects have been identified to achieve these targets, and are detailed in Table 7 below.

**Table 7. Projects to reduce emissions**

Objective	Project	Responsibility	Completion date	Potential co-benefits	Potential unintended consequences	Actions to minimise unintended consequence
Deliver the low carbon fund	Deliver prioritised capital works to permanently reduce Council emissions	Senior Climate Change Advisor	2024			

Objective	Project	Responsibility	Completion date	Potential co-benefits	Potential unintended consequences	Actions to minimise unintended consequence
Transition to Electric Vehicles	Progressively replace fleet vehicles with electric where practical	Fleet Manager	Ongoing			
Energy Audits of Council Facilities	Sequentially audit facilities energy usage to identify opportunities to reduce energy consumption	Infrastructure Sustainability Coordinator	Ongoing			
Reduce soft plastic packaging and polystyrene	Use purchaser power to influence current suppliers to reduce non-recyclable packaging	Procurement Manager	Ongoing			
Staff Travel	Promote active transport. Provision of bikes for staff travelling to meetings, adequate parking facilities, and wet weather gear.	Transportation Planner	Ongoing			

Table 8 highlights emission sources that have been identified for improving source the data quality in future inventories.

**Table 8. Projects to improve data quality**

Emissions source	Actions to improve data quality	Responsibility	Completion date
Council Waste Production	Updated Waste Assessment	Rubbish and Recycling Engineer	2021/22
Staff Commuting	Update Travel Survey, post-Covid	Senior Climate Change Advisor	Completed
Taxi Travel	Obtain taxi travel data from provider	Senior Climate Change Advisor	Completed
Rented Cars	Quantify organisational rental car use	Senior Climate Change Advisor	2021/22
Freight	Quantify organisational freight use	Senior Climate Change Advisor	2021/22
Electricity and Natural Gas	Review discrepancy between reported and invoiced data	Senior Climate Change Advisor	Completed

The emissions inventory chapter identified various emissions liabilities (see Liabilities section). Table 9 details the actions that will be taken to prevent GHG emissions from these potential emissions sources.

**Table 9. Projects to prevent emissions from liabilities**

Liability source	Actions to prevent emissions	Responsibility	Completion date
Air conditioning units (refrigerant gasses)	Regular servicing and maintenance to prevent damage	Parks and Property Manager (via contracted services)	Ongoing
Forestry (Damage from pest plants and animals, fire)	Management of pest plants and animals in Turitea, Arapuke & Hardings Park forests. Rural fire management plan.	Water & Waste Services Manager	Ongoing
Diesel Generators & Tanks (leakage)	Monthly fuel dips & regular maintenance	Treatment Plants Manager	Ongoing

## 2.5. STAFF ENGAGEMENT

Additional staff resources have been employed to bring further expertise into key parts of the organisation: asset management and infrastructure delivery in particular. Asset management, project management and procurement processes are being, or have already been, reformed to bring greater emphasis on the carbon impact of various decisions. Following development of a framework and training of key staff asset management plans will now include an assessment of the estimated future carbon emissions associated with maintenance, renewal, and 'capital new' programmes.

## 2.6. KEY PERFORMANCE INDICATORS

Note that while PNCC's formal targets are absolute rather than relative, these revenue adjusted figures can give a sense of the scale of the change that has been achieved, with a 42% reduction in gross emissions per million dollars revenue.

**Table 10. Key Performance Indicators (KPIs).**

KPI	Rationale of using the additional KPI
Total gross GHG emissions per Turnover/revenue (\$Millions)	
Total mandatory GHG emissions per Turnover/revenue (\$Millions)	

## 2.7. MONITORING AND REPORTING

Energy (Electricity and Natural Gas) data is reported monthly, via SmartPower, to the Climate Change Team (CCT). Vehicle data is reported monthly, via PNCC's internal data management systems to the CCT and the Fleet Manager. Air travel data is collected by PNCC's travel providers (Orbit, House of Travel), and compiled in an annual report to the CCT. Refrigerant use is reported yearly by the refrigerant contractor to the CCT. Wastewater data is collected daily by PNCC's wastewater operations team and reported yearly to the CCT. Landfill gas emissions are estimated yearly by the CCT. Workplace commuting data is collected during the workplace travel survey, most recently completed by in Feb 2020. Council waste (from Council facilities & offices, street & park bins, the Arena, and non-recyclable products deposited in Council provided kerbside recycling bins and not identified and rejected by the streetside operational staff) is collected during the Council Facility Waste Audit, last completed in 2009, and reported to the Rubbish and Recycling Engineer and the CCT. This survey was completed again in 2022 and will be incorporated into the next inventory report.

Ultimately, all GHG emission data is the responsibility of the CCT, who report on progress to the Council and Executive Leadership Team every twelve months following external auditing.

## APPENDIX 1: DETAILED GREENHOUSE GAS INVENTORY

Additional inventory details are disclosed in the tables below, and further GHG emissions data is available on the accompanying spreadsheet to this report (Appendix1-Data Summary Palmerston North City Council.xls).

**Table 11. Direct GHG emissions and removals, quantified separately for each applicable gas**

Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NF <sub>3</sub>	SF <sub>6</sub>	HFC	PFC	Desflurane	Sevoflurane	Isoflurane	Emissions total (tCO <sub>2</sub> e)
Stationary combustion	969.19	2.02	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	971.69
Mobile combustion (incl. company owned or leased vehicles)	1,167.58	3.27	21.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,192.41
Emissions - Industrial processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Removals - Industrial processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leakage of refrigerants	1,052.80	0.00	0.00	0.00	0.00	64.71	0.00	0.00	0.00	0.00	1,117.51
Treatment of waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Treatment of wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions - Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Removals - Land use, land-use change and forestry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fertiliser use	0.00	0.00	7.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.52
Addition of livestock waste to soils	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Addition of crop residue to soils	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enteric fermentation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Addition of lime to soils	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Open burning of organic matter	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total net emissions	3,189.57	5.29	29.55	0.00	0.00	64.71	0.00	0.00	0.00	0.00	3,289.12

**Table 12. Non-biogenic, biogenic anthropogenic and biogenic non-anthropogenic CO<sub>2</sub> emissions and removals by category**

Category	Anthropogenic biogenic CO <sub>2</sub> emissions	Anthropogenic biogenic (CH <sub>4</sub> and N <sub>2</sub> O) emissions (tCO <sub>2</sub> e)	Non-anthropogenic biogenic (tCO <sub>2</sub> e)
Category 1: Direct emissions	0.00	0.00	0.00
Category 2: Indirect emissions from imported energy	0.00	0.00	0.00
Category 3: Indirect emissions from transportation	0.00	0.00	0.00
Category 4: Indirect emissions from products used by organisation	0.00	98.92	0.00
Category 5: Indirect emissions associated with the use of products from the organisation	0.00	0.00	0.00
Category 6: Indirect emissions from other sources	0.00	0.00	0.00
<b>Total gross emissions</b>	<b>0.00</b>	<b>98.92</b>	<b>0.00</b>



## A1.1 REPORTING BOUNDARIES

### A1.1.1 Emission source identification method and significance criteria

The GHG emissions sources included in this inventory are those required for Programme certification and were identified with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards as well as the Programme Technical Requirements.

Smartpower provide a breakdown and analysis of Natural Gas and Scope 2 emissions. Relevant staff and departments provide data on fuel and materials use (e.g. fertiliser). Operational staff maintain accessible databases for landfill and wastewater volumes. Third party providers collate data on travel (e.g. flights and taxis). Staff commuting data is gathered from voluntary survey responses.

Significance of emissions sources within the organisational boundaries has been considered in the design of this inventory. The significance criteria used comprise:

- All direct emissions sources that contribute more than 1% of total Category 1 and 2 emissions
- All indirect emissions sources that are required by the Programme.

No changes to the significance criteria have been made since this inventory was initially developed in the base year.

### A1.1.2 Included sources and activity data management

As adapted from ISO 14064-1, the emissions sources deemed significant for inclusion in this inventory were classified into the following categories:

- **Direct GHG emissions (Category 1):** GHG emissions from sources that are owned or controlled by the company.
- **Indirect GHG emissions (Category 2):** GHG emissions from the generation of purchased electricity, heat and steam consumed by the company.
- **Indirect GHG emissions (Categories 3-6):** GHG emissions that occur as a consequence of the activities of the company but occur from sources not owned or controlled by the company.

Table 13 provides detail on the categories of emissions included in the GHG emissions inventory, an overview of how activity data were collected for each emissions source, and an explanation of any uncertainties or assumptions made based on the source of activity data. Detail on estimated numerical uncertainties are reported in Appendix 1.

Data is collected and compiled by officers then saved in a shared online Teams folder.

**Table 13. GHG emissions activity data collection methods and inherent uncertainties and assumptions**

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
<p>INSTRUCTIONS - Please complete all applicable rows as indicated in the instructions and example. It can be helpful to re-generate the inventory spreadsheet and have it open on another screen to ensure you have not missed an emission source.</p> <p>Upon completing the template, ensure you delete the first 2 rows before uploading</p> <p>These are the overall emissions categories under ISO 14064-1:2018</p>	<p>These are the subcategories as outlined in ISO 14064-1, GHG Protocol or other standards.</p> <p>The subcategories shown with bold text contain mandatory emissions sources. Where you are not reporting any emissions against a subcategory, the relevant row may be deleted from the table.</p>	<p>These are the emission sources that were reported in this subcategory.</p> <p>Each Category has a sub total row (in light purple) in which the quantitative uncertainty for the category's emissions have been calculated.</p>	<p>Please describe the ways your information may have some level of uncertainty, either from the nature of the activity data, the evidence available, assumptions made, or calculations you have used. If this varies for individual emissions sources please feel free to add as many rows as required to describe each sources uncertainties.</p> <p>In the Category subtotal row (the light purple row), please indicate the overall level of uncertainty as low, medium, or high based on how accurate the majority of your emissions are.</p>	<p>Where the EF used was not the most accurate, please explain why it was not practicable to use a more accurate factor. This applies if you used a spend based or other 'average' emissions factor but another more accurate factor is available</p>	<p>Was any of your data pre-verified?</p> <p>Please indicate if any of the data presented to audit was already verified according to state methodology or a compliance scheme. If you are unsure please enquire with your account manager</p>
e.g. Category 1: Direct emissions and removals	e.g. Direct emissions from mobile combustion	e.g. Petrol, petrol premium, diesel coming from fuel card reports, invoices and GL codes	e.g. Assumed all supplier reports are accurate and all additional fuel spent has been captured within our internal financial tracking systems. There is a higher level of uncertainty in regards to the spent based data compared to the fuel card report but it represents a smaller proportion	e.g. The internal claim for fuel process does not yet allow us to export litres of fuel used. We are working on improving our GL code categorisation and tracking methodology to report more accurately in the future	e.g. Yes - My fuel card reports are pre-verified as a 'Toitū compatible report' but the rest is not.

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Category 1: Direct emissions and removals	Direct emissions from stationary combustion	Natural Gas distributed commercial			
	Direct emissions from mobile combustion	Company Car average (petrol), Diesel, Petrol premium, Petrol regular			
	Direct fugitive emissions arising from the release of GHGs in anthropogenic systems	CH <sub>4</sub> , N <sub>2</sub> O, HCFC-22 (R-22, Genetron 22 or Freon 22), HFC-134a, R-410A, Wastewater precalculated (tCO <sub>2</sub> e)			
Overall assessment of uncertainty for Category 1 emissions and removals		0%	Very low		
Category 2: Indirect emissions from imported energy	Indirect emissions from imported electricity	Electricity			
Overall assessment of uncertainty for Category 2 emissions and removals		0%	Very low		
Category 3: Indirect emissions from transportation	Business travel	Company Car average (petrol), Motorcycle, Private Car average (diesel), Private Car default (petrol), Air travel domestic (average), Air travel long haul (business), Air travel long haul (econ), Air travel long haul (econ+), Air travel short haul (econ), Air travel short haul b/f class, Taxi (regular)			

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
	Emissions from employee commuting	Car Medium hybrid, Bus travel (city)			
Overall assessment of uncertainty for Category 3 emissions and removals		0%	Very low		
Category 4: Indirect emissions from products used by organisation	Disposal of solid waste - landfilled	Waste to Landfill Municipal solid waste (CO <sub>2</sub> e)			
Overall assessment of uncertainty for Category 4 emissions and removals		0%	Very low		
Infrastructure	Awapuni Landfill	Waste to Landfill Municipal solid waste (CO <sub>2</sub> e)	Calculated from base assumptions and flared gas recovery rates (mod)		
Infrastructure	Wastewater Treatment	Wastewater precalculated (tCO <sub>2</sub> e)	Calculated from M1 data (high)		
Infrastructure	Lido Aquatic Centre	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Heavy Trucks	Diesel	Measured by supplier (high)		
Infrastructure	Tankers	Diesel	Measured by supplier (high)		
Infrastructure	Utility Vehicles	Diesel	Measured by supplier (high)		
Infrastructure	Civic Administration Building	Natural Gas distributed commercial	Measured by supplier (high)		

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Customer	City Library	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Pool Vehicles	Petrol regular	Measured by supplier (high)		
Infrastructure	Light Trucks	Diesel	Measured by supplier (high)		
Infrastructure	Ashhurst Landfill	Waste to Landfill Municipal solid waste (CO <sub>2</sub> e)	Calculated from base assumptions and flared gas recovery rates (mod)		
Infrastructure	Medium Trucks	Diesel	Measured by supplier (high)		
Infrastructure	Cemeteries	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Property	HCFC-22 (R-22, Genetron 22 or Freon 22)	Measured by supplier (high)		
Infrastructure	Ashhurst	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Tractors	Diesel	Measured by supplier (high)		
Marketing & Communications	Arena Operations	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Citywide Reserves	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Depots	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Local Reserves & Sports fields	Natural Gas distributed commercial	Measured by supplier (high)		

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Infrastructure	Nursery	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Wastewater Treatment	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Mowers	Diesel	Measured by supplier (high)		
Infrastructure	Tankers	Petrol regular	Measured by supplier (high)		
Infrastructure	Heavy Plant	Diesel	Measured by supplier (high)		
Infrastructure	Light Trucks	Petrol regular	Measured by supplier (high)		
Infrastructure	Pool Vehicles	Diesel	Measured by supplier (high)		
Customer	Mobile Library	Diesel	Measured by supplier (high)		
Customer	Youth Space	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Community Centres	Natural Gas distributed commercial	Measured by supplier (high)		
Infrastructure	Quad Bikes	Petrol regular	Measured by supplier (high)		
Infrastructure	Mowers	Petrol regular	Measured by supplier (high)		
Infrastructure	Awapuni Landfill	CH <sub>4</sub>	Calculated from base assumptions and flared gas recovery rates (mod)		
Workplace Travel	Hire Cars and Taxis	Company Car average (petrol)	Measured by supplier (high)		

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Infrastructure	Awapuni Landfill	N <sub>2</sub> O	Calculated from base assumptions and flared gas recovery rates (mod)		
Infrastructure	Property	HFC-134a	Measured by supplier (high)		
Infrastructure	Property	R-410A	Measured by supplier (high)		
Infrastructure	Local Reserves & Sports fields	Fertiliser use Nitrogen	Measured by supplier (high)		
Infrastructure	Parks & Reserves	Fertiliser use Nitrogen	Measured by supplier (high)		
Infrastructure	Quad Bikes	Diesel	Measured by supplier (high)		
Infrastructure	Leased Vehicles	Diesel	Measured by supplier (high)		
Infrastructure	Leased Vehicles	Petrol premium	Measured by supplier (high)		
Infrastructure	Leased Vehicles	Petrol regular	Measured by supplier (high)		
Infrastructure	Heavy Plant	Petrol premium	Measured by supplier (high)		
Infrastructure	Heavy Plant	Petrol regular	Measured by supplier (high)		
Historic Business Units	Garages	Natural Gas distributed commercial	Measured by supplier (high)		
Historic Business Units	Facilities Management	HCFC-22 (R-22, Genetron 22 or Freon 22)	Measured by supplier (high)		
Historic Business Units	Facilities Management	Natural Gas distributed commercial	Measured by supplier (high)		
Historic Business Units	Facilities Management	R-410A	Measured by supplier (high)		

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Historic Business Units	Facilities Management	R-438A	Measured by supplier (high)		
Overall assessment of uncertainty for Category 1 emissions and removals		0%	Very low		
Infrastructure	Street Lighting	Electricity	Measured by supplier (high)		
Infrastructure	Wastewater Treatment	Electricity	Measured by supplier (high)		
Infrastructure	Lido Aquatic Centre	Electricity	Measured by supplier (high)		
Infrastructure	Civic Administration Building	Electricity	Measured by supplier (high)		
Infrastructure	Water Treatment & Pumps	Electricity	Measured by supplier (high)		
Marketing & Communications	Arena Operations	Electricity	Measured by supplier (high)		
Customer	City Library	Electricity	Measured by supplier (high)		
Infrastructure	Citywide Reserves	Electricity	Measured by supplier (high)		
Infrastructure	Freyberg Aquatic Centre	Electricity	Measured by supplier (high)		
Infrastructure	Wastewater Pump Stations	Electricity	Measured by supplier (high)		
Infrastructure	Local Reserves & Sports fields	Electricity	Measured by supplier (high)		
Infrastructure	Depots	Electricity	Measured by supplier (high)		
Infrastructure	Community Centres	Electricity	Measured by supplier (high)		
Infrastructure	Ashhurst	Electricity	Measured by supplier (high)		



GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Infrastructure	Stormwater Pump Stations	Electricity	Measured by supplier (high)		
Customer	Wildbase Recovery Centre	Electricity	Measured by supplier (high)		
Infrastructure	Traffic Signals	Electricity	Measured by supplier (high)		
Infrastructure	Social Housing Buildings	Electricity	Measured by supplier (high)		
Customer	Youth Space	Electricity	Measured by supplier (high)		
Customer	City Pound	Electricity	Measured by supplier (high)		
Infrastructure	City Bus Terminal	Electricity	Measured by supplier (high)		
Customer	Highbury Library	Electricity	Measured by supplier (high)		
Customer	Awapuni Library	Electricity	Measured by supplier (high)		
Customer	Roslyn Library	Electricity	Measured by supplier (high)		
Customer	Ashhurst Library	Electricity	Measured by supplier (high)		
Infrastructure	Cemeteries	Electricity	Measured by supplier (high)		
Infrastructure	Waste Management Operations	Electricity	Measured by supplier (high)		
Historic Business Units	Square Gardens	Electricity	Measured by supplier (high)		
Historic Business Units	Facilities Management	Electricity	Measured by supplier (high)		
Historic Business Units	Ashhurst Transfer Station	Electricity	Measured by supplier (high)		

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Overall assessment of uncertainty for Category 2 emissions and removals		0%	Very low		
Workplace Travel	Air Travel	Air travel domestic (average)	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Air travel domestic (average)	Calculated from M1 data (high)		
Workplace Travel	Hire Cars and Taxis	Taxi (regular)	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Taxi (regular)	Calculated from M1 data (high)		
Workplace Travel	Air Travel	Air travel long haul (business)	Calculated from M1 data (high)		
Workplace Travel	Air Travel	Air travel long haul (econ)	Calculated from M1 data (high)		
Workplace Travel	Air Travel	Air travel long haul (econ+)	Calculated from M1 data (high)		
Workplace Travel	Air Travel	Air travel short haul (econ)	Calculated from M1 data (high)		
Workplace Travel	Air Travel	Air travel short haul b/f class	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Private Car default (petrol)	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Private Car average (diesel)	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Motorcycle	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Car Medium hybrid	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Bus travel (city)	Calculated from M1 data (high)		
Workplace Travel	Staff Commuting	Company Car average (petrol)	Calculated from M1 data (high)		

GHG emissions category	GHG emissions source or sink subcategory	Overview of activity data and evidence	Explanation of uncertainties or assumptions around your data and evidence	Use of default and average emissions factors	Pre-verified data
Overall assessment of uncertainty for Category 3 emissions and removals		0%	Very low		
Infrastructure	Waste Management	Waste landfilled LFGR Mixed waste	Based on averaged aggregate historic data (low) (review pending)	SWAP data scheduled from June 2022 will clarify LFGR rates	
Overall assessment of uncertainty for Category 4 emissions and removals		0%	Very low		

### A1.1.3 Excluded emissions sources and sinks

Emissions sources in Table 14 have been identified and excluded from this inventory.

**Table 14. GHG emissions sources excluded from the inventory**

Business unit	GHG emissions source or sink	GHG emissions category	Reason for exclusion
Leased Buildings	Source	Scope 2	Responsibility for these emissions lies with the tenants
Council Controlled Organisations	Source	Scope 2	Responsibility lies with the respective organisations
Embodied emissions of purchased Council products/services			Responsibility lies with the respective organisations

## A1.2 QUANTIFIED INVENTORY OF EMISSIONS AND REMOVALS

### A1.2.1 Calculation methodology

A calculation methodology has been used for quantifying the emissions inventory based on the following calculation approach, unless otherwise stated below:

$$\text{Emissions} = \text{activity data} \times \text{emissions factor}$$

The following alternative emissions quantification approaches have been used in this inventory:

- Forest removals using programme supplied template based on growth rate lookup tables.

The quantification approach(es) has not changed since the previous measurement period

All emissions were calculated using Toitū 'emanage' with emissions factors and Global Warming Potentials provided by the Programme (see Appendix 1 - data summary.xls). Global Warming Potentials (GWP) from the IPCC fifth assessment report (AR5) are the preferred GWP conversion<sup>5</sup>.

Where applicable, unit conversions applied when processing the activity data has been disclosed.

There are systems and procedures in place that will ensure applied quantification methodologies will continue in future GHG emissions inventories.

### A1.2.2 Liabilities

#### A1.2.2.1 LAND-USE LIABILITIES

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. Where sequestration is claimed, then this also represents a liability in future years should fire, flood, management activities or other intentional or unintentional events release the stored carbon.

<sup>5</sup> If emission factors have been derived from recognised publications approved by the programme, which still use earlier GWPs, the emission factors have not been altered from as published.

Table 15. Land-use liabilities (total)

Site name	Total sequestration during reporting period (tCO <sub>2</sub> e)	Contingent liability (tCO <sub>2</sub> e)	Total potential liability (tCO <sub>2</sub> e)
Palmerston North City Council	0	27516	1011424

### A1.2.3 Supplementary results

Holdings and transactions in GHG-related financial or contractual instruments such as permits, allowances, renewable energy certificates or equivalent, verified offsets or other purchased emissions reductions from eligible schemes recognised by the Programme are reported separately here.

#### A1.2.3.1 CONTRACTUAL INSTRUMENTS FOR GHG ATTRIBUTES

Contractual instruments are any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims. This includes Renewable Energy Certificates.

n/a

#### A1.2.3.2 DOUBLE COUNTING AND DOUBLE OFFSETTING

There are various definitions of double counting or double offsetting. For this report, it refers to:

- Parts of the organisation have been prior offset.
- The same emissions sources have been reported (and offset) in both an organisational inventory and product footprint.
- Emissions have been included and potentially offset in the GHG emissions inventories of two different organisations, e.g. a company and one of its suppliers/contractors. This is particularly relevant to indirect (Categories 2 and 3) emissions sources.
- Programme approved 'pre-offset' products or services that contribute to the organisation inventory
- The organisation generates renewable electricity, uses or exports the electricity and claims the carbon benefits.
- Emissions reductions are counted as removals in an organisation's GHG emissions inventory and are counted or used as offsets/carbon credits by another organisation.

Double counting / double offsetting has not been included in this inventory.

## APPENDIX 2: SIGNIFICANCE CRITERIA USED

Table 16. Significance criteria used for identifying inclusion of indirect emissions

Appendix 2
Council includes emissions which are under its operational control. That is, emissions that it recognises a responsibility and ability to influence – for example workplace travel emissions, given Council's provision of staff vehicles, bike parking, showers, etc.

## APPENDIX 3: CERTIFICATION MARK USE

Certification is included in reports to Council and on our website.



## APPENDIX 4: REFERENCES

International Organization for Standardization, 2018. ISO 14064-1:2018. Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. ISO: Geneva, Switzerland.

World Resources Institute and World Business Council for Sustainable Development, 2004 (revised). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. WBCSD: Geneva, Switzerland.

World Resources Institute and World Business Council for Sustainable Development, 2015 (revised). The Greenhouse Gas Protocol: Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard. WBCSD: Geneva, Switzerland.



## APPENDIX 5: REPORTING INDEX

This report template aligns with ISO 14064-1:2018 and meet Toitū carbonreduce programme Organisation Technical Requirements. The following table cross references the requirements against the relevant section(s) of this report.

Section of this report	ISO 14064-1:2018 clause	Organisational Technical Requirement rule
<a href="#">Cover page</a>	9.3.1 b, c, r 9.3.2 d,	TR8.2, TR8.3
<a href="#">Availability</a>	9.2 g	
<a href="#">Chapter 1: Emissions Inventory Report</a>		
<a href="#">1.1. Introduction</a>	9.3.2 a	
<a href="#">1.2. Emissions inventory results</a>	9.3.1 f, h, j	TR4.14
<a href="#">1.3. Organisational context</a>	9.3.1 a	
<a href="#">1.3.1. Organisation description</a>	9.3.1 a	
<a href="#">1.3.2. Statement of intent</a>		TR4.2
<a href="#">1.3.3. Person responsible</a>	9.3.1 b	
<a href="#">1.3.4. Reporting period</a>	9.3.1 l	TR5.1, TR5.8
<a href="#">1.3.5. Organisational boundary and consolidation approach</a>	9.3.1.d	TR4.3, TR4.5, TR4.7, TR4.11
<a href="#">1.3.6. Excluded business units</a>		
<a href="#">Chapter 2: Emissions Management and Reduction Report</a>		
<a href="#">2.1. Emissions reduction results</a>	9.3.1 f, h, j, k 9.3.2 j, k	TR4.14, TR6.18
<a href="#">2.2. Significant emissions sources</a>		
<a href="#">2.3. Emissions reduction targets</a>		TR6.1, TR6.2, TR6.4, TR6.6, TR6.8,
<a href="#">2.4. Emissions reduction projects</a>	9.3.2 b	TR6.8, TR6.11, TR6.12, TR6.13, TR6.14, TR6.15
<a href="#">2.5. Staff engagement</a>		TR6.1, TR6.9
<a href="#">2.6. Key performance indicators</a>		TR6.19
<a href="#">2.7. Monitoring and reporting</a>	9.3.2 h	TR6.2
<a href="#">Appendix 1: Detailed greenhouse gas inventory</a>	9.3.1 f, g	TR4.9, TR4.15
<a href="#">A1.1 Reporting boundaries</a>		
<a href="#">A1.1.1 Emission source identification method and significance criteria</a>	9.3.1 e	TR4.12, TR4.13
<a href="#">A1.1.2 Included emissions sources and activity data collection</a>	9.3.1 p, q 9.3.2 i	TR5.4, TR5.6, TR5.17, TR5.18,
<a href="#">A1.1.3 Treatment of biogenic emissions and removals</a>	9.3.1 g	TR4.15
<a href="#">A1.1.4 Excluded emissions sources and sinks</a>	9.3.1 i	TR5.21, TR5.22, TR5.23
<a href="#">A1.2 Quantified inventory of emissions and removals</a>		
<a href="#">A1.2.1 Calculation methodology</a>	9.3.1 m, n, o, t	
<a href="#">A1.2.2 Historical recalculations</a>		
<a href="#">A1.2.3 Liabilities</a>		
<a href="#">A1.2.3.1 GHG stocks held</a>		TR4.18
<a href="#">A1.2.3.2 Land-use liabilities</a>	9.3.3.	TR4.19

<a href="#">A1.2.4 Supplementary results</a>		
<a href="#">A1.2.4.1 Contractual instruments for GHG attributes</a>	9.3.3	TR4.16, TR4.17
<a href="#">A1.2.4.2 Carbon credits and offsets</a>	9.3.3.3	
<a href="#">A1.2.4.3 Purchased or developed reduction or removal enhancement projects</a>	9.3.2 c	
<a href="#">A1.2.4.4 Double counting and double offsetting</a>		
<a href="#">Appendix 2: Significance criteria used</a>	9.3.1.e	TR4.12
<a href="#">Appendix 3: Certification mark use</a>		TR3.6
<a href="#">Appendix 4: References</a>		
<a href="#">Appendix 5: Reporting index</a>		

## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** PNCC Zero Carbon Feasibility Study

**PRESENTED BY:** Adam Jarvis, Senior Climate Change Advisor

**APPROVED BY:** David Murphy, Chief Planning Officer

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### RECOMMENDATIONS TO COUNCIL

1. That the Council receive the memorandum titled 'PNCC Zero Carbon Feasibility Study' and the attachment titled 'List of considered projects by scenario' for information.
  2. That the Council use the information provided in the memorandum titled 'PNCC Zero Carbon Feasibility Study' to inform future direction setting, including but not limited to the formal adoption of a carbon neutrality target, the selection of a preferred emissions scenario, and resourcing to achieve that trajectory through the 2024-34 Long Term Plan.
- 

### 1. ISSUE

Government has set a national target, through the Climate Change Response (Zero Carbon) Amendment Act 2019, of carbon neutrality by 2050. Complementing this is PNCC's own Eco City Target of a 30% reduction in citywide emissions by 2021. Targets for PNCC's own emissions have previously been set through such the 2010 Climate Change Action Plan, but as this document was rescinded along with a suite of obsolete strategic documents, no target for PNCC emissions currently formally exists at present.

As part of the 2021-31 Climate Change Plan PNCC included an action to: Complete a feasibility study to determine process, actions and time required for PNCC to be carbon neutral. This feasibility study outlines four broad strategies for the organisation to achieve carbon neutrality by 2050.

PNCCs existing policies, along with those of Horizons and Government, provide a strong foundation for climate progress; existing policies reflected in this study's Scenario 2 are set to reduce emissions by more than 60% by mid-century. PNCC can continue to support transition away from fossil fuel use and reach direct emissions reductions of 80% or more through additional actions (modelled in Scenario 3 & 4). None of the scenarios entirely eliminate emissions, and hence require varying degrees of new forestry plantings to offset residual emissions.

The recommendations presented below are based on analysis of the Scenarios and are not a prediction of the future but are intended to inform City actions and robust, long-term emissions reduction strategies.

## 2. BACKGROUND

### *Scenario Modelling*

In order to provide a range of options and demonstrate the impact of the timing and magnitude of possible policy decisions four scenarios were developed:

Scenario 1 - This baseline case assumes that the population of Palmy will continue to grow in line with Stats NZ demographic predictions and national policy as detailed in the National Emissions Reduction Plan (NERP) including the establishment of a 100% renewable electricity generation system will be implemented. Council operations are assumed to grow at a rate proportional to population. Other local or regional policy changes are not enacted. This scenario is not intended as a likely position for council to take but acts as a baseline or 'do nothing' scenario to judge other scenarios against.

Scenario 2 - This scenario includes the changes in scenario 1, and also considers various projects that can be reasonably expected to be cost negative or neutral. That is, investments that provide operational savings equal to or in excess of the capital and interest costs of delivery. This includes the expectation that most of the light vehicle fleet will be efficiently converted to EVs, as well as a range of energy efficiency upgrades.

Scenario 3 - This scenario builds on scenario 2 by establishing an internal cost per tonne of carbon, presumed to be set at the current voluntary Emissions Trading Scheme (ETS) rate of \$85 per tonne, making investments in more marginal projects like increased solar generation and a partial conversion of the heavy fleet to electric/hydrogen as the costs of these decline.

Scenario 4 - This scenario looks at what is currently possible with currently available technology. It is assumed that carbon savings are the primary driver of decision making and capital cost is not a restriction. This scenario is not intended as a likely position for council to take but rather demonstrates the limit of what is theoretically achievable.

Note that there is considerable uncertainty regarding the individual trajectories of each scenario, which will obviously depend on funding availability, and organisational capacity, among other factors. None of the above scenarios will result in the achievement of the goal of creating a carbon neutral city on their own. Operations, such as ongoing methane production at the wastewater treatment works, make this practically impossible. However, any remaining carbon produced by the city can be 'sequestered' by planting forests, resulting in the carbon neutral target described in the Climate Change Plan. Each scenario assumes that native forest planting will begin as part of the next LTP and will continue to 2050. The volume of carbon emissions to be balanced is reflected in the area of forest each scenario will require to offset predicted emissions and the rate of planting required. At this

stage there has not been an attempt to determine the financial value of the land area required as this is subject to market fluctuations that are hard to predict.

### Scenario Results

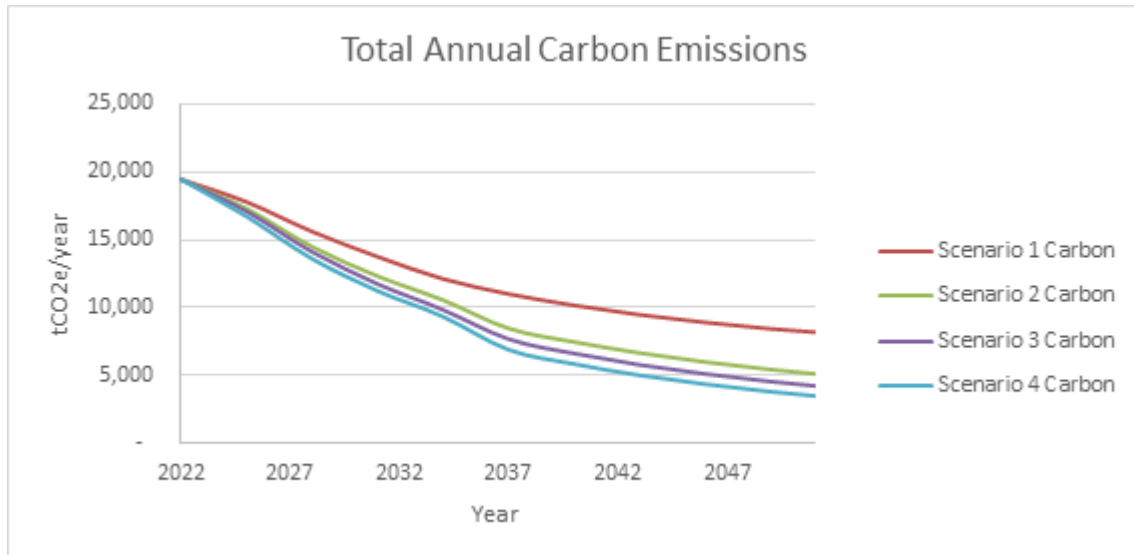


Figure 1 - PNCC Non-landfill Annual Emissions by Scenario

Emissions	2022	2025	2028	2031	2034	2037	2040	2043	2046	2049	2052
Scenario 1	19,461	17,813	15,637	13,786	12,164	11,061	10,219	9,530	8,965	8,504	8,127
Scenario 2	19,461	17,307	14,511	12,349	10,591	8,507	7,510	6,705	6,040	5,481	5,010
Scenario 3	19,461	17,097	14,122	11,751	9,846	7,685	6,624	5,785	5,116	4,553	4,079
Scenario 4	19,461	16,724	13,598	11,226	9,327	6,888	5,829	5,004	4,345	3,790	3,321

Table 1: Tonnes of carbon dioxide equivalent emitted under Scenario 1-4

As the above data demonstrates, there is a consistent downward trend across all four scenarios. This is primarily due to the ongoing maturation of the close Awapuni Landfill which is predicted to continue developing methane for the foreseeable future with a 70% reduction by 2045 and a very long period of relatively minor emissions after that.

Given the Awapuni landfill already has a gas capture system installed (and this gas is used to feed the Totara Rd WWTP), there is little that can be done to further reduce landfill emissions. Included on the next page is a projection of each scenario with the impact of the landfill removed, so that the differences of each scenario can be more clearly seen.

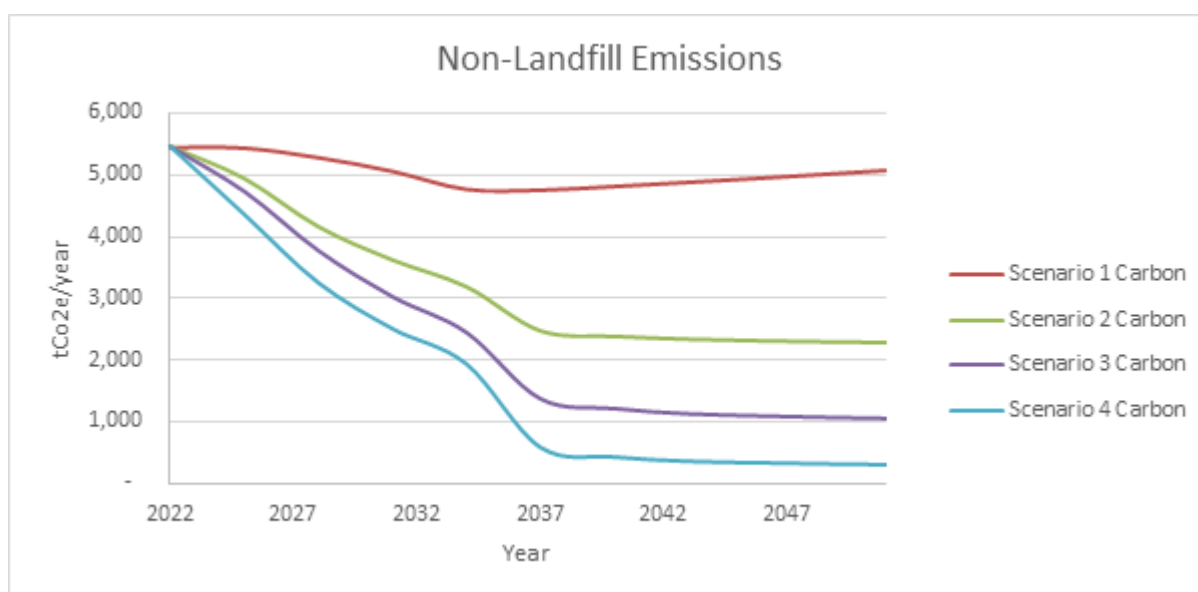


Figure 2 - PNCC Non-landfill Annual Emissions by Scenario

Non-Landfill Emissions	2022	2025	2028	2031	2034	2037	2040	2043	2046	2049	2052
Scenario 1	5,451	5,442	5,286	5,064	4,769	4,755	4,817	4,883	4,953	5,026	5,104
Scenario 2	5,451	4,937	4,161	3,626	3,195	2,202	2,108	2,058	2,027	2,003	1,987
Scenario 3	5,451	4,726	3,772	3,029	2,450	1,379	1,222	1,138	1,103	1,076	1,055
Scenario 4	5,451	4,353	3,247	2,503	1,931	582	427	357	33	313	298

Table 2: Tonnes of Carbon Emitted under Scenario 1-4 excluding landfill methane emissions

Residual emissions in scenario 2 include the significant impact of the WWTP, even post-upgrade (though significantly less than the existing), the heating of the Lido Aquatic Centre, diesel emissions resulting from the majority of the heavy fleet continuing to use diesel, and Citywide Street and Traffic lighting.

Scenario 3 assumes that the majority of the heavy fleet will be switched to electric/hydrogen as these technologies/markets mature, while also seeing significant energy efficiency gains across the board.

Scenario 4, as a result of almost total electrification still retains significant electricity related emissions, though obviously these are much lower than they would be if Council continued to use fossil fuels for these activities.

As discussed, none of the four scenarios examined deliver carbon neutrality on their own. Consequently, they all require varying degrees of sequestration via additional forestry plantings. The chart on the following page shows the annual sequestration required to offset the residual emissions of each scenario, in order to meet the carbon neutrality target by 2050.

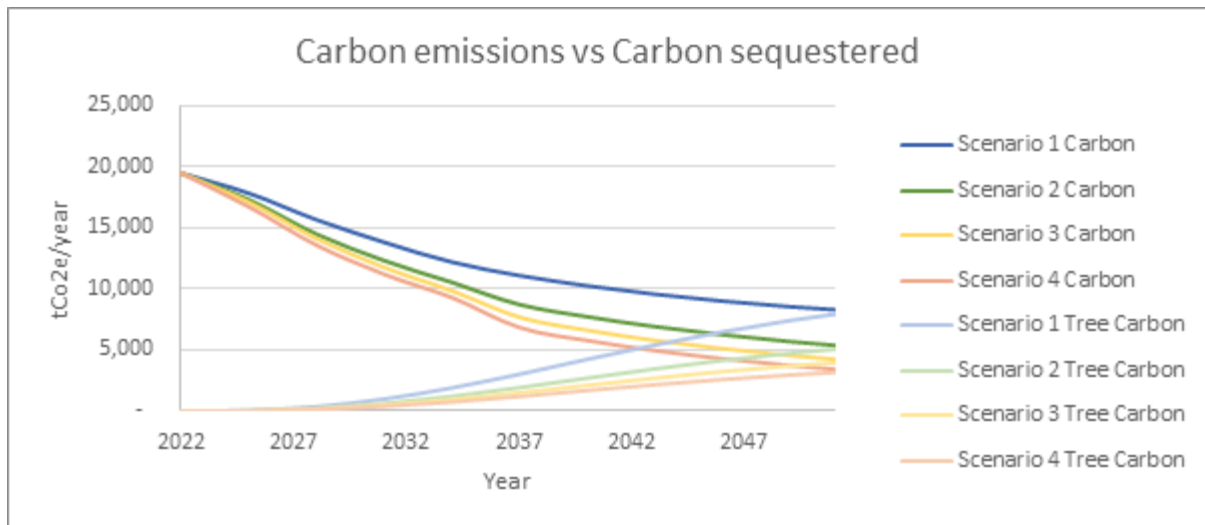


Figure 3 - Required Sequestration by Scenario

Our model assumes a constant annual planting rate of native trees starting in 2023 through to the carbon neutral date. This approach has the effect of maximising total sequestration, and minimising cost/contractor availability etc. Depending on the emissions scenario, required planting rates/totals can be seen in the table below:

Scenario	Annual Planting (Ha)	Total Trees (Ha)
1	31.56	946.82
2	20.65	619.38
3	15.84	475.20
4	12.90	386.95

Table 3 – Hectares required to offset residual emissions

An alternative approach would be to use exotic forestry instead of native, which would reduce 'upfront' planting requirements (as exotic forestry sequesters carbon at a faster rate than native forests), at the expense of reaching steady state maturity much sooner (i.e. where the trees are mature and no longer sequester net carbon). Consequently, such an approach would require continuing planting virtually indefinitely, whereas a native approach would continue to sequester carbon for generations, as well as providing additional biodiversity outcomes.

### 3. NEXT STEPS

Officers expect to deliver a complementary model considering scenarios for reducing citywide emissions in 2023, as signalled in the Low Carbon Roadmap.

Council use the information provided in this study to inform future direction setting, including but not limited to the formal adoption of a carbon neutrality target, the selection of a preferred emissions scenario, and resourcing to achieve that trajectory through the next Long Term Plan.

#### 4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide?	<b>No</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>
Does this decision require consultation through the Special Consultative procedure?	<b>No</b>
Is there funding in the current Annual Plan for these actions?	<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or plans?	<b>No</b>
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in the Climate Change Plan	
The action is: Complete a feasibility study to determine process, actions and time required for PNCC to be carbon neutral	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	This memorandum helps to define a range of scenarios to assist with future decision-making vis Eco City goals.

#### ATTACHMENTS

1. List of considered projects by scenario [↓](#) 



**Appendix 1 - PNCC Carbon Emissions Model Project Descriptions**

Project Title	Description	Scenarios
Population Growth	Calculated from StatsNZ census data	1,2,3,4
National Electricity Generation	NERP proposals to convert to 100% renewable generation by 2035	1,2,3,4
Fuel Change (Diesel)	NERP proposal to reduce emissions intensity from diesel by 10% by 2035	2,3,4
Light Fleet Vehicle Electrification	Replacing fleet vehicles with battery electric vehicles (BEV) at end of life	2,3,4
Light Fleet VKT reduction / mode shift	MoT mandated 16% reduction in Vehicle Kms Travelled (VKTs) by 2035	2,3
Light Fleet VKT reduction / mode shift	Requiring formal consent for fleet car use within the city. Presumption towards active transport wherever possible	4
Light Plant Electrification	Converting all mowers and power tools to battery electric at end of life	2,3,4
Heavy Fleet/Plant Fuel Change (Biofuel mix)	Changing diesel stores to a biofuel mix and upgrading plant items to match	2
Heavy Fleet/Plant Fuel Change (Hydrogen)	Converting heavy vehicles to hydrogen at end of life, installing new H <sub>2</sub> infrastructure	3,4
Staff Commuting Transport Mode Shift	Encouraging/assuming varying reduction in car use for non-essential/short commutes in favour of active transport (walking/cycling etc.)	2,3,4
Commuting Electrification	Encouraging/assuming varying degrees of battery electric vehicle uptake by staff	2,3,4
Air Travel Mode Shift	Encouraging a reduction in air travel for non-essential trips. Increasing use of video conferencing (Teams/Zoom etc.)	2,3,4
Air Travel Fuel Change	Sustainable Aviation Fuel Mandate to reduce emissions intensity by 10% by 2035	2,3
Air Travel Fuel Change	Assumes national aircraft fleet is converted to hydrogen as aircraft reach end of life, installing new H <sub>2</sub> infrastructure	4
Taxis and Hire Cars	Assumes 30% of taxis converted to BEV by 2035, per National targets	2
Taxis and Hire Cars	100% of taxis converted to BEV by 2040	3,4
Buildings Electrification of Heating	Conversion of boilers from gas to electric at end of life where cost neutral	2
Buildings Electrification of Heating	Rapid conversion of all boilers and appliances from gas to electric	3,4
Buildings Efficiency Improvements	Continued conversion of lighting to LED, some additional insulation, and double glazing. Appliances are swapped at end-of-life to energy efficient models	2
Buildings Efficiency Improvements	As with scenario 2, except Lighting improvements, insulation and double glazing installed in all property. Motion sensors and other smart control devices installed where appropriate.	3

Buildings Efficiency Improvements	All new buildings are constructed to high energy efficiency standards, existing builds are retrofitted wherever possible.	4
Solar PV Generation	Solar PV is installed at locations with excellent solar exposure and demand profile	2
Solar PV Generation	Solar PV is installed at additional locations with reasonable solar exposure and demand profile	3
Solar PV Generation	100% of building electricity demand is generated on-site via Solar PV.	4
Aquatic Centres VSDs and Pumps	All pumps and plant converted to VSDs	2,3,4
Aquatic Centres Thermal Envelope	Modern best practice insulation and double glazing installed in all areas.	2,3,4
Aquatic Centres Electrification	Conversion of heating and plant machinery to electric where cost effective	2,3
Aquatic Centres Electrification	Conversion of all heating and plant machinery to electric	4
Crematorium Electrification	Convert gas cremator to electric and use waste heat to generate power	2,3,4
Nursery Heating Electrification	Conversion of heating and equipment to electric where cost effective	2,3,4
Nursery Efficiency Improvements Heating	Modern best practice insulation and double glazing installed in all areas	2,3,4
Waste Reduction	Removal of remaining organic material from council generated waste	3
Waste Reduction	Removal of organic material from council responsible waste including street bins	4
Continued Landfill Maturation	Ongoing decline of methane production from Awapuni and Ashhurst landfills	1,2,3,4
Wastewater Electrification	Conversion of heating and plant machinery to electric where possible	2,3,4
Wastewater Processing	Estimated impacts of BPO replacement project	2,3,4
Water Treatment Efficiency Improvements	Efficiency improvements to existing plant machinery and processes	2,3,4
Water Pumps and Bores Efficiency Improvements	Efficiency improvements to existing machinery and processes	2,3,4
Streetlighting Efficiency	Improve lighting efficiency to meet best practice provision	3
Streetlighting Efficiency	Installation of motion sensors to dim lights to 20% when not in use	4
Buildings Refrigerant Replacement	Replace R22 with modern refrigerant at end of life, as required by law.	1
Buildings Refrigerant Replacement	Replace R22 and R404 with lower carbon refrigerant at end of life	2
Buildings Refrigerant Replacement	Replace all refrigerant with EC recommended low carbon refrigerant	3,4
Parks Fertilizer Replacement	Replace chemical fertiliser with organic	2,3,4
Completion of LED Streetlighting Upgrade	Convert the remaining 8% of streetlights	3,4

## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** Low Carbon Fund - 2021/22 Update

**PRESENTED BY:** Adam Jarvis, Senior Climate Change Advisor

**APPROVED BY:** David Murphy, Chief Planning Officer

### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee note that collectively the projects delivered through the Low Carbon Fund during the 2021/22 financial year are estimated to save 102.71 tCO<sub>2</sub>e per year and have a net present value of \$1,100,872 compared to a total capital cost of \$711,781.

#### 1. ISSUE

The Low Carbon Fund was established through the 2021 Long Term Plan (LTP) and provides \$1,000,000 of capital funding per year to enable investments in organisational greenhouse gas emission reductions. The fund prioritises for allocation to internal projects based upon their capital cost, operational savings, emission savings, and wider strategic benefit. This memorandum provides information on the activities of the Low Carbon Fund during the 2021/22 financial year.

Collectively, the projects delivered through this fund during the 2021/22 financial year are estimated to save 102.71 tCO<sub>2</sub>e<sup>1</sup> per year. They will also provide considerable return on investment due to lower energy and maintenance requirements, with an estimated net present value of \$1,100,872 compared to a total capital cost of \$711,781. Hence, the projects will deliver approximately \$390,000 of financial value to Council, in addition to the carbon emission reductions.

#### 2. BACKGROUND

##### Strategic Context

The Eco City Strategy 2021 sets a 30% reduction target for citywide greenhouse gas emissions (compared to the 2018 baseline). Council recognises that a key aspect of achieving this goal must be reducing its own operational emissions. Progress has been steady, with a 27% reduction in organisational emissions since 2015/16, as

<sup>1</sup> tCO<sub>2</sub>e stands for **tonnes (t) of carbon dioxide (CO<sub>2</sub>) equivalent (e)**. Carbon dioxide equivalent is a standard unit for counting greenhouse gas emissions regardless of whether they're from carbon dioxide or another gas, such as methane.

reported in the Annual Organisational Emissions Inventory. However, there is still a long way to go to meet, for example, the requirement of the Climate Change Response (Zero Carbon) Act 2019 for net-zero emissions by 2050. In light of this, infrastructure decisions made today will often 'lock-in' emissions through the lifetime of the asset, in some cases making Council's task more difficult (and more costly) than it needs to be in the absence of up-front investment (e.g. through expensive retrofitting). Even in absence of this strategic driver, a substantial incentive exists to modernise Council assets and reduce costs through improved energy efficiency.

Thus, the purpose of the Low Carbon Fund is to provide flexibility, enabling Council to take advantage of unforeseen and unbudgeted opportunities, such as sources of external funding, synergies with other programmes or early renewal of energy-inefficient assets, in order to reduce organisational emissions and, where possible, costs.

### **Scope and Methodology**

The purpose of the Low Carbon Fund is to flexibly provide capital to enable operational emission reductions. The scope for funding is therefore the same as that in Council's Annual Organisational Emissions Inventory. These are emissions that occur across the lifetime of an asset or activity and sit within our operational control. Conversely, 'embodied emissions' of construction materials, or emissions otherwise controlled by another organisation are out of scope for funding through the Fund.

Officers worked with a range of Infrastructure staff to identify eligible and operationally deliverable projects. These were then assessed by the Senior Climate Change Advisor with assistance of the Finance Unit. Each is analysed in terms of its 'Net Present Value' (specifically, looking at their projected operational savings discounted by PNCC's cost of capital subtracted by the capital cost of the project), the projected carbon savings, and a 30% weighting to wider strategic benefit, if any. Applications are then prioritised by which projects deliver the greatest benefit per dollar. Consequently, leaving aside deliverability concerns, the fund is generally ambivalent to the scale of the project, and a \$30,000 application is at no inherent disadvantage compared to a \$300,000 application. If the former provides greater value for money then it will receive priority. The current cut off benchmark for funding is the spot price of carbon through the New Zealand Emissions Trading Scheme (ETS) – only projects that deliver emission reductions at a lower cost per tonne of carbon equivalent than the cost Council could pay through the ETS (\$86 per tonne on 22.08.2022) are eligible.

Following this analysis, a series of recommendations are made to the Chief Executive to approve the re-allocation of funds from the Low Carbon Fund into the respective programmes associated with each project that meets the above criteria. These are then delivered by the respective activity teams as with any other programme.

## Funding Allocation – 2021/22

A total of \$747,558 was allocated during the 2021/22 FY to the following capital programmes:

Project Description	Capital Cost	Annual Savings	Project Status (as of 22.08.22)
Programme 1837 - Upgrade of the variable speed drives at the Lido Aquatic Centre	\$39,558	\$21,336 10 tCO <sub>2</sub> e	Complete.
Programme 1451 – Upgrade of public toilet lighting to LEDs	\$50,000	\$7,083 3 tCO <sub>2</sub> e	Complete.
Programme 1451 – Upgrade of community centre lighting to LEDs	\$150,000	\$19,694 7.5 tCO <sub>2</sub> e	Complete.
Programme 1451 – Upgrade of the Materials Recovery Facility lighting to LEDs	\$30,000	\$2,799 0.9 tCO <sub>2</sub> e	Complete.
Programme 1791 – Upgrade of the Ferguson Street Depot boiler to modern energy efficiency standards.	\$90,000	\$7,950 30.9 tCO <sub>2</sub> e	Carried forward. Installation FY 22/23
Programme 1791 – Upgrade of the Victoria Esplanade boiler to modern energy efficiency standards.	\$115,000	\$9,214 41.2 tCO <sub>2</sub> e	Procured. Installation H2 2022
Programme 1875 – Support the purchase of 8 battery electric pool vehicles, the installation of charging infrastructure in the CAB and branding and communications work to promote this change.	\$268,000	\$23,635 9.21 tCO <sub>2</sub> e	Complete, pending branding.

Table 1 - List of 2021/22 Low Carbon Fund Allocations

The delivery of these projects will reduce ongoing operational costs by an estimated \$91,711 per year, assuming energy and other costs remain level. Over the lifetime of these assets, total estimated operational savings are ~\$1,100,000, alongside saving an estimated 1,430 tCO<sub>2</sub>e that would otherwise have been emitted.

The following projects were considered and not funded:

- Upgrades to modern LED street lighting at Ashhurst, Bunnythorpe and Longburn were analysed. Given capital cost increases, it was found that without co-funding, further upgrades would not provide sufficient savings to

cover the cost of installation and resulting in a cost/tonne carbon saved well in excess of the ETS benchmark.

- Upgrades to modern electric boilers at various smaller community centres across the city were analysed. It was found that usage rates were low so the achievable savings would not cover the cost of purchase and installation. As above, cost/tonne was well in excess of the benchmark.
- A range of proposals for a number of additional projects at the Lido Aquatic Centre were considered, including a 'daylight harvesting' passive solar project, and the installation of LEDs in the Learn to Swim area. However, these had not yet been scoped in sufficient detail to allow an analysis to be completed and hence were not eligible for funding.
- An investigation was made into modifying mowing regimes in selected areas to determine if carbon savings could be made without compromising the agreed level of service and utility of parks and reserves. Given the proposed future electrification of fleet vehicles including mowers and the complex overlapping demands on parks and reserves it was determined that further investigation was required before any funds could be allocated.
- A preliminary investigation of the possibility of procuring hydrogen-electric heavy vehicles found that capital expense of these systems was still prohibitive, being far in excess of projected operational savings – though noting that the technology and economies are continuing to improve.
- Investigation of a proposal to install a Demand Flex system of power control at the Lido to reduce overall stress on the power supply network found that the project would not lead to direct carbon savings and therefore was out of scope for the fund.

All of these projects remain potentially eligible for future funding through the Low Carbon Fund should circumstances change (e.g. declining costs, EECA<sup>2</sup> co-funding).

### **3. NEXT STEPS**

Officers will continue to work across the organisation to identify carbon reduction projects. These projects will be analysed through the Low Carbon Fund process outlined above, with eligible projects receiving funding. This process is ongoing, but officers expect significant opportunities for improvements at large energy using sites like the Arena, and with continuing the rollout of electric vehicles within the light fleet.

Officer advice over the past half-decade or so has been to recommend against investments in solar photovoltaics due to the relatively unattractive cost/benefit of these systems in Palmerston North. However, costs have continued to decline

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<sup>2</sup> Energy Efficiency and Conservation Authority

substantially over that time period, and preliminary investigations suggest that there is now a potential opportunity to begin deploying solar PV to favourable sites with appropriate North-facing roof areas and a demand profile aligned with periods of maximum solar gain (e.g. during summer days). Consequently, officers expect to conduct more detailed investigations, and look to utilise the Low Carbon Fund to deploy these systems should the analysis prove them to be an attractive option to reduce emissions at a favourable cost.

#### **4. COMPLIANCE AND ADMINISTRATION**

Does the Committee have delegated authority to decide?	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>
Does this decision require consultation through the Special Consultative procedure?	<b>No</b>
Is there funding in the current Annual Plan for these actions?	<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or plans?	<b>No</b>
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in the Climate Change Plan	
The action is: Create a low carbon fund to allow Council the flexibility to respond to opportunities to reduce organisational emissions and, where possible, costs.	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	The Low Carbon Fund contributes towards the Eco City Goal of a 30% reduction in emissions by 2031, and is a critical mechanism for reducing Council's environmental impact.

#### **ATTACHMENTS**

Nil





## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** Response to New Zealand Green Building Council Recommendations

**PRESENTED BY:** Jono Ferguson-Pye, City Planning Manager and David Watson, Climate Change Analyst

**APPROVED BY:** David Murphy, Chief Planning Officer

### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee receive the memorandum titled 'Response to New Zealand Green Building Council Recommendations' for information.

#### 1. ISSUE

The 30 March 2022 Environmental Sustainability Committee resolved that the Chief Executive report back on the options and implications of policy changes recommended by the Green Building Council's presentation to the Committee on March 30, 2022.

#### 2. BACKGROUND

On 30 March 2022 the Environmental Sustainability Committee received for information a presentation by the New Zealand Green Building Council (NZGBC) titled 'Lower Carbon Buildings and Homes PNCC'. This presentation included several 'actions' that Council could take to reduce the environmental impacts of the construction and renovation of Council buildings as well as seven specific 'recommendations' relating to Council functions.

This memorandum provides the Committee with information on the options and implications associated with responding to these seven recommendations.

#### 3. NEW ZEALAND GREEN BUILDING COUNCIL

The NZGBC is a not for profit industry organisation founded and financially supported by the construction industry. Its primary functions are advocacy in relation to the Building Code, education and training and the promotion and assessment of proprietary rating tools. Charges for these ratings range between \$250 to \$500 per house for a Homestar rating or \$15,000 to \$75,200+ for a commercial Green Star rating.

NZGBC products are a comprehensive and tested methodology for generating more sustainable and efficient buildings. Their established process provides certainty to developers and a trusted benchmark to consumers. Should Council wish to outsource the assessment and certification of sustainable buildings this would be one of the main providers considered.

The NZGBC presentation included the following regulatory recommendations / actions:

- 1) Reduced cost (fees) for consenting buildings that are certified as lower carbon.
- 2) Enable greater density for homes built to the Homestar standard.
- 3) Reduce the Infrastructure Growth Charge for homes or buildings that are water efficient.
- 4) Provide greater consenting support to applicants undertaking projects with a 6 Homestar rating or higher.
- 5) Reduced development contributions for sustainable buildings or homes.
- 6) When a LIM report is requested, include information on the Homestar rating.
- 7) Include case studies of Homestar or Greenstar buildings on the PNCC website.

These actions can be broken down into three broad categories;

- a) Changes to fees and costs related to new development (1, 3 & 5)
- b) Changes to regulation or levels of service (2, 4 & 6)
- c) Providing information and support (7)

#### **4. OPTIONS AND IMPLICATIONS ASSOCIATED WITH RESPONDING TO ACTIONS**

##### ***Changes to Fees and Costs Related to New Development***

Statistics NZ reports that 41,019 new dwellings were consented across New Zealand in 2021. The 2020/21 NZGBC annual report states 4871 Homestar projects were rated nationally. Given this information it can be implied that roughly 12% of new homes may want to apply for Homestar rating (i.e. 'certified as lower carbon') without further incentive.

### *Building Consent Fees*

Building consent fees cover granting consents, processing, vetting, compliance checks, inspections and advice. Fees for these services are either fixed, based on the value of work or based on an hourly rate for staff time.

Currently the consenting process is partly self-funding. If building consent fees are reduced for one development typology, an increase in fees in other areas would be needed to maintain existing funding levels.

Alternatively, an Annual Plan or 10 Year Plan programme could be developed to fund building consent fees for Homestar and Greenstar development.

### *Infrastructure Growth Charges & Development Contributions*

Section 198 of the Local Government Act 2002 (LGA) gives territorial authorities the power to require a contribution for developments. Development Contributions (DCs) provide Council with the means to fund infrastructure required due to growth. PNCC does not currently charge a separate Infrastructure Growth Charge.

The current DC Policy is underpinned by an averaging approach, i.e. the cost of infrastructure growth is averaged across all development. The approach is simple but does not directly reflect the individual demand profile of each activity on infrastructure (e.g. water, wastewater, stormwater and transport). It is likely that NZGBC certified buildings would place a lower demand on Council infrastructure than conventional building typologies so could pay a proportionately lower fee. However, this is complicated by DC fees being paid and infrastructure installed in advance of construction (and therefore certification).

A review of the DC Policy (2021) could be carried out as part of the 2024-34 10 Year Plan process to determine a methodology that includes a more finely grained matching of the activity with its actual demand profile on infrastructure. However, removing the averaging approach that underpins the Policy would remove one of the key principles of the Policy and trigger a full rebuild of the underlying principles the city applies to collecting the cost of growth. This approach would be administratively onerous and costly to operationalise.

If Council were of the view that reduced development contributions or reduced consenting fees were an appropriate lever to pull to encourage greater uptake of more sustainable buildings, then an Annual Plan or 10 year Plan programme could be developed to fund these fees similar to the programme that funds the payment of DC fees for community groups.

One alternative, put in place by Wellington City Council in August 2022, would be to provide a grant to sustainable housing or commercial developments that would cover costs including certification fees and consent charges. This would be paid in arrears once the development is built and certified. An assessment of need and cost of sustainable development would be required when setting the value of this fund and the allocation to specific projects.

Monitoring of fund applicants would be required to ensure that the value and allocation of the fund are promoting the uptake of sustainable practices and not supporting greater profits for developers or inflating house prices.

## ***Changes to Regulation and Levels of Service***

### *Housing and the District Plan*

The density of housing is currently determined by the PNCC District Plan. Under the District Plan, multi-unit housing is considered to be three or more dwellings on a site. This is a restricted discretionary activity (in multi-unit zone) and requires a resource consent. The resource consent planner will look at standards such as site layout, design and appearance to determine whether the development complies with the District Plan.

The City Planning team are currently working on Plan Change I: NPSUD Intensification (PC: I) which aims to enable a range of heights and density throughout the city. The National Policy Statement for Urban Development does not require Council to implement eco/healthy homes standards. The purpose is to ensure there is enough housing to meet the demands of the city and to contribute to housing affordability.

There is potential for environmental sustainability standards to be incorporated into the District Plan. PC: I is looking at opportunities to incorporate sustainability standards into the District Plan regulatory framework for housing density. However, this is limited to performance standards and rules relating to building size, site coverage and stormwater management. The Resource Management Act (RMA) generally limits regulation to the control of direct effects on the environment. It is unlikely that an RMA Section 32 assessment seeking to enable a greater density envelope for sustainable buildings over and above that of other development topologies would pass the required statutory tests.

### *Engineering Standards*

Council's Engineering Standards for Land Development are reviewed periodically and opportunities to promote a sustainable approach to infrastructure provision are investigated, particularly in the way stormwater management is approached.

### *Construction Materials*

Changes relating to construction materials would require a change to the building code which is a nation-wide standard that Council has no control over.

### *LIMs*

LIMs currently provide information that is held by PNCC on a property to the public for a fee. When supplying a LIM Council is responsible for the accuracy of the information provided.

The information contained within a LIM must comply with the requirements of the Local Government Official Information and Meetings Act 1987 Section 44A. The Act requires territorial authorities to provide certain specific information (detailed under sub-section 2) and allows them to provide “such other information concerning the land as the authority considers, at its discretion, to be relevant”.

NZGBC have offered to provide PNCC with a copy of any audit certificate (Homestar, Greenstar etc.) issued in the city for inclusion in council records. If Council is happy to agree that this information is ‘relevant’ and is willing to take responsibility for its accuracy there does not appear to be a legal barrier to including Homestar ratings in information provided to LIM requests.

### ***Providing Information and Support***

The purpose of the website is to provide a gateway to Council services for the public. Whilst it does also provide an education or information resource, this is for internal services and may link to external entities (such as Council Controlled Organisations or the Department of Internal Affairs) on occasion, if required and approved by the web team. The website would not duplicate this information on our site.

The accuracy and control of third party content on our website cannot be guaranteed and would quickly become out of date if not regularly maintained. This is not the role of the web team and we would not provide externals with editing rights to the website.

In order for PNCC website to be seen to be accurate and unbiased, the purpose of the website would not be changed to allow NZGBC and their competitors to promote sustainability as this is likely to result in many other requests which would also be declined.

## **5. NEXT STEPS**

Should Council wish to implement recommendation 1 or 5 a further financial investigation would be required to determine what level of discount could be applied to consent fees and DC fees and what that would mean for the cost of consenting and the Council budget more generally (e.g. Rates impact).

Should Council wish to allocate funds to a Sustainable Development Fund (or similar) a further investigation into how big this fund would have to be to achieve desired outcomes would be needed. Consultation with local developers and the wider public to determine the barriers to sustainable development would be desirable. This could be included as a project for consideration within the next 10 Year Plan.

Should Council wish to implement recommendation 2 or 5 (greater density for homes and reduced DC fees) a further investigation into the detail of these policies, plans and the economic, legal and policy impacts of these changes would be needed. It is likely that significant additional resource would be required to

complete this work, particularly in relation to changing the DC Policy. This could be included as a project for consideration within the next 10 Year Plan.

Should Council wish to implement recommendation 6 (LIMs information) this can be completed through a Council resolution and a subsequent agreement with the NZGBC.

Officers do not recommend pursuing Recommendation 7.

## 6. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide? If Yes quote relevant clause(s) from Delegations Manual	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>
Does this decision require consultation through the Special Consultative procedure?	<b>No</b>
Is there funding in the current Annual Plan for these actions?	<b>No</b>
Are the recommendations inconsistent with any of Council's policies or plans?	<b>No</b>
The recommendations contribute to Goal 1: An Innovative and Growing City	
The recommendations contribute to the achievement of action/actions in City Growth Economic Development Climate Change Environmental Sustainability The action is: Goal 1, Priority 3. Support the development of more housing that meets community needs Goal 1, Priority 4. Support the diversification of the economy to reduce reliance on traditional industries Goal 1, Priority 5. Support an 'innovation economy' to underpin growth into the future Goal 1, Priority 6. Transform the economy to a low carbon economy Goal 4, Priority 2. Work with the community to reduce carbon emissions Goal 4, Priority 5. Use Council's legislative powers and policies to ensure urban development is sustainable now and into the future	
Contribution to strategic	If supported changes to rules and costs around building consents and DCs have the capacity to transition the

direction and to social, economic, environmental and cultural well-being	construction sector in Palmerston North towards sustainable development (one of the priority sectors identified in the Innovative and Growing City Strategy). This in turn would create opportunities for developing and trialling new products, processes and ideas in the construction industry.
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## ATTACHMENTS

Nil





## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** Progress Towards Actions in the Waste Management and Minimisation Plan 2019

**PRESENTED BY:** Bryce Hosking, Acting Group Manager - Resource Recovery, and Natasha Hickmott, Activities Manager - Resource Recovery

**APPROVED BY:** Sarah Sinclair, Chief Infrastructure Officer

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### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee receive the memorandum titled 'Progress Towards Actions in the Waste Management and Minimisation Plan 2019' for information.
- 

#### 1. ISSUE

- 1.1 Section 6 of the Waste Management and Minimisation Plan 2019 (WMMP) requires progress on each of the actions and targets within the WMMP to be reported annually to Council.
- 1.2 This report provides the annual progress update from the 2021/22 financial year.

#### 2. BACKGROUND

##### Waste Management and Minimisation Plan

- 2.1 The Council has a statutory requirement under the Waste Minimisation Act 2008 to promote effective and efficient waste management and minimisation within Palmerston North City.
- 2.2 This is done through adopting a Waste Management and Minimisation Plan (WMMP). The WMMP sets the priorities, actions, targets and strategic framework for managing waste in the city as well as aligning to the New Zealand Waste Strategy, waste hierarchy and Council's Long-term and Annual Plans.
- 2.3 Council's WMMP covers all solid waste and diverted material in the city, whether it is managed by council or not. It also covers hazardous waste like chemicals and the outputs of our wastewater treatment plant.

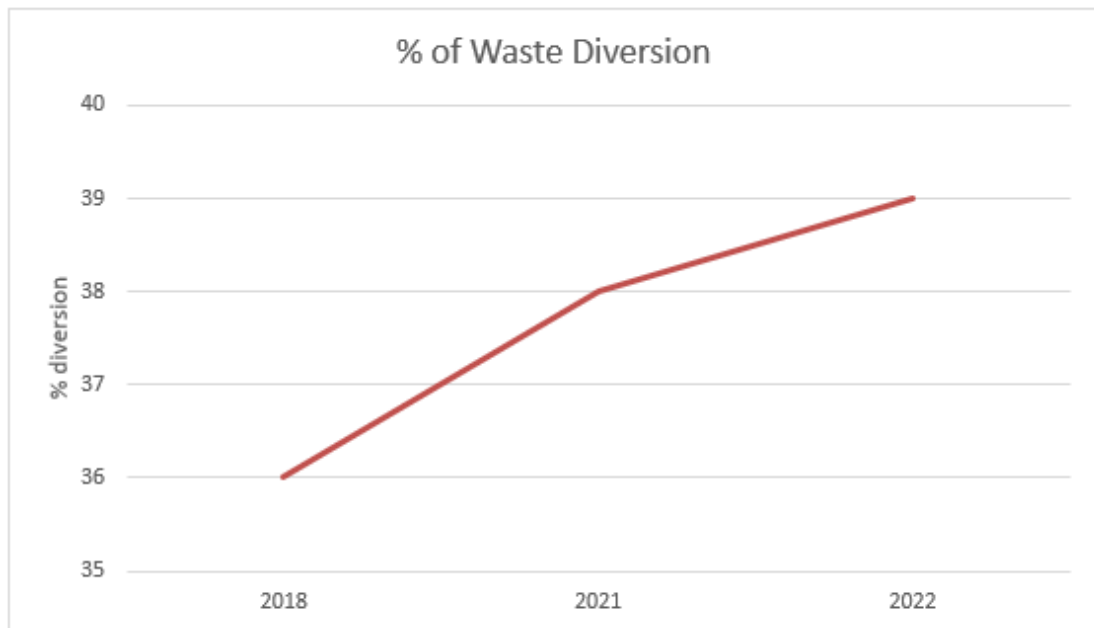
- 2.4 This does not necessarily mean that the council is going to have direct involvement in the management of all waste – but there is a responsibility for the council to at least consider all waste in our city, and to suggest areas where other groups, such as businesses or householders, could take action themselves.
- 2.5 Officers regularly brief Rangitāne through the bi-monthly meeting forum on developments, successes and challenges in resource recovery.

Ministry for the Environment Changes and Initiatives

- 2.6 A clear pathway has been mapped out by the Ministry for the Environment (MfE) which will direct activities to move New Zealand to a low carbon, circular economy.
- 2.7 An updated New Zealand Waste Strategy is due out later this year, which will enable investment opportunities in prioritised areas, and better coordination between central and local government, industry, iwi and communities.
- 2.8 Recently MfE initiated a working group on food scraps collections; PNCC has offered to be involved in this workstream with the MfE. The key aim of this working group is to understand best practice for food scraps collections to ensure maximum engagement and therefore maximise removal of food scraps from the residual waste stream.

**3. CURRENT STATUS OVERVIEW AS AT 30 JUNE 2022**

- 3.1 The Waste Management and Minimisation Plan 2019 (WMMP), sets a target of increasing waste diversion from 38% to 48% by 2025. Reducing the amount of material sent to landfill is to be achieved via 26 actions in the WMMP.
- 3.2 Note: The 2019 WMMP set the waste diversion baseline at 38%, however, this has been revised to 36%. This is due to a portion of waste to landfill (road sweepings) not being included in the calculation due to the nature of how it was managed by the previous contractor. This waste is now dealt with through PNCC, so is now considered as part of the baseline, hence the revised baseline figure of 36%.
- 3.3 The current waste diversion rate, as of 30 June 2022, is estimated to be 39%. This is a 3% diversion increase from the 36% baseline, and a 1% increase from 30 June 2021 which is a fantastic result. Unlike last year's desktop estimate, this year's waste diversion rate was derived through a Solid Waste Analysis Protocol (SWAP) and waste assessment, so it is an accurate gauge of progress.
- 3.4 The graph below highlights the progress we've made in increasing the amount of diverted material:



- 3.5 The annual waste to landfill per capita is 606kg, which has increased from the 550kg per capita that was reported last year. Construction and demolition (C&D) waste and industrial, commercial and institutional (ICI) waste, as well as inclusion of road sweepings have contributed to the increase in the amount of waste the city sends to landfill.
- 3.6 Kerbside recycling per annum has dropped from 67kg per capita reported in 2017 to 57kg. This can be attributed to a higher portion of recycling being sent to landfill during to last year's COVID lockdown and the increasing occurrence of contaminated recycling. This has unfortunately resulted in some entire truckloads being rejected for processing when the level of contamination is deemed significant.

#### **4. KEY ACHIEVEMENTS IN 2021/22**

- 4.1 Two new materials have been added to PNCC's recycling collection points: tyres and liquid paperboard. These are processed in New Zealand and turned into fuel and building materials respectively. These have both had popular uptake with the community.
- 4.2 Submissions were provided on the five key consultations from the Ministry for the Environment in the last year:
1. The emissions reduction plan,
  2. Transforming recycling (including kerbside standardisation and Container return scheme),
  3. The new waste strategy: 'Taking responsibility for our waste',
  4. Product stewardship for tyres,
  5. Product stewardship for e-waste and product stewardship for large batteries.

- 4.3 The Resource Recovery Fund was launched this year and was successfully contested by 4 applicants. Officers will continue to observe the projects' progress, which include a repair café, support to two charity stores to increase the number of donated items that are fit for sale, and a trial on the effectiveness of different home composting solutions.
- 4.4 Engagement with the community continued; the Zero Waste Action group supported the Plastic Pollution Challenge to offer another series of stream clean up this year. The group remains strong, with new members from the community recently joining and great ideas for the next actions.
- 4.5 Responding to the change in materials accepted in our recycling, a Plastic Campaign was held earlier this year which involved various forms of media promoting simple switches from single use plastic. Part of this campaign was working with select kindergartens in the city to provide yoghurt makers and pottles to reduce the amount of unrecyclable yoghurt pottles being used in children's lunches.
- 4.6 Council officers leveraged 'Plastic Free July' this year and ran a local social media campaign in parallel to the nationwide campaign.
- 4.7 Tours of the Materials Recovery Facility (MRF) started to occur again in mid-2022 after pausing for much of the year under the COVID protection framework. There is now a form on the PNCC website where interested parties can register for a tour.
- 4.8 Regional meetings were set up with other resource recovery professionals, sharing successes and pinch points. This also helps to keep lines open for potential regional food waste processing facilities.
- 4.9 Officers continue to work with commercial customers to maximise the amount of resources that are recovered. This resulted in a 35% increase in material diverted from landfill in 2021/22. Officers focus on diverting waste via PNCC's commercial collection services; co-mingled recycling, glass and food waste, and provide bespoke solutions where required.
- 4.10 In addition to these key achievements, Appendix 1 contains a detailed list on the status of all 26 actions in the WMMP.

## 5. KEY CHALLENGES FACED IN 2021/22

- 5.1 Contributing factors to the relatively static diversion rate include the ongoing impact of COVID, the increased cost of living across the board, anticipated central government changes and the aligning of the WMMP with the LTP.
- 5.2 The central government changes will continue to flow through into local government for the foreseeable future as we move through the "catching up" phase anticipated when the New Waste Strategy is released later in 2022. Although this requires significant resource and operational investment, these

changes will ultimately provide more legislative backing for waste minimisation.

- 5.3 Legislative support for licencing waste and diverted material collectors are signalled to be included in the MfE update of the New Zealand Waste Strategy. This will include improved monitoring and reporting requirements back to the MfE on waste and diverted materials. It is anticipated that funds will be made available to support the Capital investment required to meet these objectives. Similarly, signalled material limits in Councils current WMMP, which intend to prohibit recyclable materials from being put in the waste stream, could be partially addressed through the proposed product stewardship for plastic packaging.
- 5.4 Although a trial for mattress recycling is currently scheduled for year 5 of LTP, there are some furniture stores in the city that will take back old mattresses at a cost when consumers buy a new one from them. Aside from the fact that there are resources that can be recovered from old mattresses, their bulky nature makes them undesirable items at landfills.
- 5.5 The amount of illegal dumping collected has increased in the last year. Monitoring of this activity continues. We are expecting new legislation in 2023/24 that will replace the Waste Minimisation and Litter Acts.

## **6. SCHEDULED ACTIVITIES FOR 2022/23**

- 6.1 Officers are in the initial stages of planning a food scraps collection trial. This will consider actions at the top of the waste hierarchy, such as reducing food scrap production, diversion of edible food to food rescue programmes or animal food if not fit for human consumption, potential for use in biodigesters, as well as home composting solutions to remove food scraps from the residual waste stream.
- 6.2 Improved data systems have been identified by MfE as being key to building the foundations of New Zealand's improved waste system. Overall, PNCC has good, reliable data relating to its controlled activities. However better infrastructure is desirable to capture, maintain and manage this and ensure we can meet MfE reporting standards, as well as monitor and respond to trends in the city.
- 6.3 We can expect further consultations from MfE, including the review of the Waste Minimisation Act and Litter Act, other products identified for regulated product stewardship, as well as any other potential consultations. Each consultation requires significant resource to prepare and make a submission.
- 6.4 Officers continue to keep abreast of new opportunities to broaden the range of materials that can be recovered for beneficial use. Factors such as longevity of a project, the environmental impact of processing and the end use or circularity of the product it's getting made in to, and the cost versus benefit are considered before introducing a new service to the city.

- 6.5 An updated New Zealand Waste Strategy is expected to be released by MfE towards the end of 2022. The outcome of this will further direct local councils in waste management and minimisation efforts.
- 6.6 Officers plan to review the WMMP early to incorporate central government changes and strategically align the resulting actions with the Long-Term Plan process. This review is scheduled to begin early 2023.

## 7. CONCLUSION

- 7.1 The 2021/22 year was another challenging year with the effects of Covid-19 continuing to impact staffing and resourcing levels, availability of contractors and consultants, and causing supply chain disruptions. This has impacted Council Officers capacity to introduce more services to minimise waste.
- 7.2 Interestingly despite the Covid-19 impacts, there has continued to be significant levels of construction in the region, considerably increasing the construction and demolition waste being produced.
- 7.3 However, despite all these challenges, the diversion rate has increased by 1% from the previous year and Council has been able to achieve considerable wins throughout the year, progressing most of the 2019 WMMP actions which is worth celebrating.
- 7.4 Looking forward to the 2022/23 year, there have also been a considerable amount of change being signalled by MfE through new legislation and a multitude of consultation.
- 7.5 If implemented these changes will influence Council's resource recovery direction, with investigation and planning for these beginning in 2022/23, alongside understanding the implementation investment required.
- 7.6 As such the decision has been made by Council officers to review the WMMP early to incorporate central government changes and strategically align the resulting actions with the Long-Term Plan process.

## 8. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide? If Yes quote relevant clause(s) from Delegations Manual	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do, they affect land or a body of water?	<b>No</b>
Can this decision only be made through a 10 Year Plan?	<b>No</b>
Does this decision require consultation through the Special Consultative procedure?	<b>No</b>
Is there funding in the current Annual Plan for these actions?	<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or	<b>No</b>

plans?	
The recommendations contribute to Goal 4: An Eco City	
<p>The recommendations contribute to the achievement of action/actions in Resource Recovery</p> <p>The action is:</p> <ul style="list-style-type: none"> <li>• Ensure the city's solid waste is adequately and affordably managed</li> <li>• Maximise the proportion of waste diverted from landfill (e.g. through recycling and composting)</li> <li>• Manage hazardous waste in an environmentally responsible manner.</li> </ul>	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	This report on actions in the Waste Management and Minimisation Plan (WMMP) provides Elected Members with an update on progress to achieving the outcomes of that Plan. And contributes information that will support the next review of the WMMP.

## ATTACHMENTS

1. Progress on WMMP Action 2021-22 [↓](#) 

Reference	Abbreviated Description	Timeframe	Status	Funding (from WMMP)	21/22 Summary
R01	Implement provisions in Waste Management and Minimisation bylaw to allow licensing of and data collection from Waste Collectors	2019	Behind schedule	Rates and licencing fees	The project to establish a repository for private waste collectors to provide information about the waste and diverted materials they collect remains on hold; however, this is being addressed at a national level by Ministry for the Environment. Details of a national waste and diverted materials reporting system is expected to be announced at the end of 2022 with the new Waste Strategy.
R02	Introduce rules that would prohibit collection companies from collecting bins that contain lots of divertible material	2020	Behind schedule	Rates	This will be partially covered by the Emissions Reduction Plan's action to remove organic waste from landfill by 2030. It is expected that further measures to reduce other divertible materials will be addressed to some extent in "Transforming Recycling" when it is released later in the year, for example, the establishment of a container return scheme. We also expect performance measures to be an integral part of the new waste strategy
R03	Enforcement of illegal dumping	Ongoing	On track	Rates and income from infringements	BAU.
D01	Undertake occasional SWAP's and Waste Assessments	As required	On track	Waste Levy	A full SWAP and waste assessment was undertaken in early 2022 to inform the review of the WMMP in 2023.
D02	Improve internal data collection and analysis	Ongoing	On track	Rates	Data capture and storage processes are continually being optimised, however more resource will be required to monitor, manage and improve this.
E01	Maintain current education and engagement	Ongoing	On track	Rates and Waste Levy	Events including PNCC's "Plastics Campaign" and the national "Plastic Free July" were leveraged to inform the public of what can be recycled, and simple switches for single use plastic. MRF visits were put on hold for much of the year due to the COVID protection framework but continue to occur when practicable.
E02	Specific communication of new services	As required	On track	Rates and Waste Levy	This occurs as required, including upon introduction of new recycling service for tyres and liquid paperboard.
E03	Establish community led zero-waste action	2019	Completed	Waste Levy	ZWAG funded PPC to undertake another round of stream clean ups. Regular meetings are held and are attended by PNCC staff representatives.



	group to include Rangitane representation, supported by Council though coordination and some funding, to deliver project areas prioritised and planned by the community.				
E04	Investigate establishment of a waste minimisation competitive fund	2020	Completed	Waste Levy	The first Resource Recovery Fund was contested by 11 applicants, with 4 successful applicants receiving their share of \$40,000
E05	Work closely with iwi and other regional partners to ensure culturally appropriate waste management methods where possible, particularly relating to biosolids.	Ongoing	On track	Rates	A wastewater biosolids strategy is currently being developed as part of the Wastewater Discharge Consenting Programme. This work includes identifying future beneficial reuse options and will be developed in consultation with Rāngitane, Ngāti Whakarete and Te Tūmatakahuki.
E06	Investigate removing food from residual waste stream including reduction of food waste, home composting and kerbside food waste collection.	2020	On track	Rates and Waste Levy	Funding has now been made available and investigation for a food waste collection service will begin in 22/23. The investigation will include looking at actions further up the waste hierarchy.
C01	Maintain kerbside recycling collections and make the most of data collected from RFID tags	Ongoing	On track	Rates and Waste Levy	Mostly BAU, apart from during the peak of the COVID outbreak when several staff were unwell, glass collections were paused for 6 weeks to reduce the pressure on the collections team.

C02	Maintain kerbside rubbish collection	Ongoing	On track	User pays	BAU.
C03	Subject to investigation, provide city-wide kerbside food waste collection service	2021 (investigate )	On hold	Rates and Waste Levy	Pending investigation outlined in E06. This will be considered as part of the WMMP review scheduled for 2023.
C04	Encourage use of existing services for garden waste	Ongoing	On track	Waste Levy	BAU. Periodic comms about greenwaste and compost services
C05	Provide recycling services to non-residential customers	2020	On track	User pays	BAU. Customers signed up to our non-residential recycling services continue to increase – in the last financial year this increase 34% when compared with the previous financial year. The amount of food waste collected has increased by 45%, and co-mingled recycling by 15%. The amount of glass collected through commercial arrangements has dropped by 5%, however the number of customers has increased, suggesting this is related to the restraints on the hospitality industry in a COVID environment.
C06	Hazardous waste disposal	2019	Ongoing	Rates and Waste Levy	The next event is scheduled for year 3 of LTP, then every second year after that. Residents wanting to dispose of hazardous waste in the meantime are encouraged to contact one of the numerous companies that offer this service in the region (although this approach is a user pays service)
C07	Continue to investigate recycling services for hard to recycle materials, such as polystyrene	2019	Ongoing	Waste Levy	Tyres and liquid paper board recycling services are now available in the city, and work is underway to reduce the amount of mixed coloured glass that is dropped off. Investigations are ongoing for other materials. Funding to investigate polystyrene recycling has been deferred to year 2 of the LTP.
C08	Trial mattress recycling programme	2019	Behind schedule	Waste Levy	Funding allocated in program 1810 in year 5 of the LTP.
C09	Investigate how Council can support early childhood facilities and schools to divert more waste	2019	Completed		Trail yoghurt pottle campaign at two local kindergartens. Officers work with schools on request and provide free trials at the commencement of a commercial service. We have 7 schools and 6 ECE's getting one of our three commercial collection services, but many more are signed up to the rated kerbside collections. Anecdotally, the biggest barrier to diverting more waste is cost.

IN1	Maintain existing Recycling Drop Off Points and Awapuni Resource Recovery Park	Ongoing	On track		BAU.
IN2	Investigate new site for green waste and recycling drop-off facility	2019-2021	Behind schedule	Rates	There is no program in the current LTP to advance investigations for a new site in the city.
IN3	Investigate establishment of construction and demolition recycling facility	2021-2022	Completed	Rates and Waste Levy, then Rates, User Pays and Waste Levy for implementation phase	Regional facility in the process of being developed by private company with help from funding by MfE's Waste Minimisation Fund.
LM1	Central government advocacy	Ongoing	On track		Officers have submitted on 5 consultations over the last year and are presently on the working committee for organics which will drive progress in this sector.
LM2	Work closely with mana whenua and community groups	Ongoing	On track		Officers attend Rangitāne bi-monthly meetings and engage regularly with Environment Network through various projects.
LM3	Review procurement policy to require lower-waste purchasing	Ongoing	On track		Draft policy plan prepared but currently on hold.



## MEMORANDUM

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** Process and resourcing required to establish a Food Resilience Policy

**PRESENTED BY:** Julie Macdonald, Strategy and Policy Manager

**APPROVED BY:** David Murphy, Chief Planning Officer

### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee receive the memorandum titled 'Process and resourcing required to establish a Food Resilience Policy' for information.

#### 1. ISSUE AND BACKGROUND

In May 2022 Dave Mollard and Madz BatacheI from the Food Action Network and Environment Network Manawatū made a presentation to the Environmental Sustainability Committee about food resilience. They defined food resilience as

physical and economic access, by all Palmerston North residents, at all times, to enough food to maintain an active and healthy life.

The presenters advocated for Council to take a leadership role in developing a policy to support the economic, social and environmental wellbeing of the city. They suggested a city strategy could list community providers and identify council resources for local food production. A food resilience policy was defined by them as:

A foundation document to create the framework to collaborate with our community to achieve food resilience. To identify and make available suitable council resources for local food production, community gardens and related activities, and establish supportive frameworks that enable community use of our spaces.

The Committee resolved that:

the Chief Executive provides a short report to Environmental Sustainability Committee advising a suitable process and resourcing required to establish a Food Resilience Policy for Council.

This memo is in response to that resolution.

## 2. PROCESS FOR POLICY DEVELOPMENT

The Executive Leadership Team approved a policy framework for the Council in March 2022. The development of this framework is the outcome of a recommendation from a Business Assurance review received by the Finance and Audit Committee in June 2021. The framework provides a process for the development of any new policy (and the review of existing policy) The policy framework sets out how a policy should be initiated, developed, adopted, implemented and monitored.

### ***Policy framework process***

A summary diagram of the policy process is attached. The first stage is the initiation of a policy process:

#### *Stage 1: Initiation of policy process*

The initiation of the policy process could be a resolution of Council, a change in legislation, or some other process where a potential policy gap is identified.

#### *Stage 2: Problem identification*

This stage is identification of the issue to be addressed. This stage could include:

- Scoping the issue and consideration of roles
- Relationship to current activities and direction of Council
- Local, national, and potentially, international research
- Engagement with mana whenua
- Community engagement

In this instance, problem identification would include further discussion with elected members, the Food Action Network, and other stakeholders to clarify what outcomes are sought.

#### *Stage 3: Options analysis*

This stage of the policy process is when various options are considered to respond to the problem (scoped in stage 2). For example, Council's response to the request for action on food resilience could be a policy, but it could also be additional resources into existing actions, operational guidance for staff, support for community initiatives, or various other activities.

The purpose of this stage of the policy process is to ensure that any policy developed by Council is the *best* response to the identified issue, and the one that is most likely to achieve the desired outcomes.

Once those stages are completed a report would be brought to the Council recommending either the development of a policy, or another option. If Council agreed to develop a policy, then the further stages of the process would be followed.

### Resources

The development and adoption of Council policy is complex and may involve considerable resources, depending on the subject. The development of a new policy about Council's role in food security could take around a year. This is why the initial stages of the policy process put such emphasis on properly identifying and scoping the issue, and on recommending the best response to the issue. A Food security policy is not allowed for within current resources as it was not anticipated when the 10-Year Plan was adopted and is not therefore listed in any plan.

### 3. NEXT STEPS

There is currently little organisational capacity for new policy work. If Council wishes to embark on stages two and three of the policy development process, then either additional resources would need to be secured or this work could be prioritised over other policy work. If the work was completed in addition to the current programme it would need to be contracted and cost up to \$20,000.

Options to authorise additional resources, to enable a recommendation about a potential Food security policy to be incorporated into the development of the next Long Term Plan, include:

1. Approval of unbudgeted expenditure in 2022/23
2. A new programme in the 2023/24 Annual Budget

Options to reallocate current resources, to enable a recommendation about a potential Food security policy to be incorporated into the development of the next Long Term Plan, include:

1. The Chief Executive considers the potential to reallocate existing resources following an assessment of the Council budget at the end of the second quarter
2. Delay one or more policy projects in the current work plan (such as the review of the class 4 venues gambling policy or new public art policy)

### 4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide? If Yes quote relevant clause(s) from Delegations Manual	<b>Yes</b>
Are the decisions significant?	<b>No</b>
If they are significant do they affect land or a body of water?	

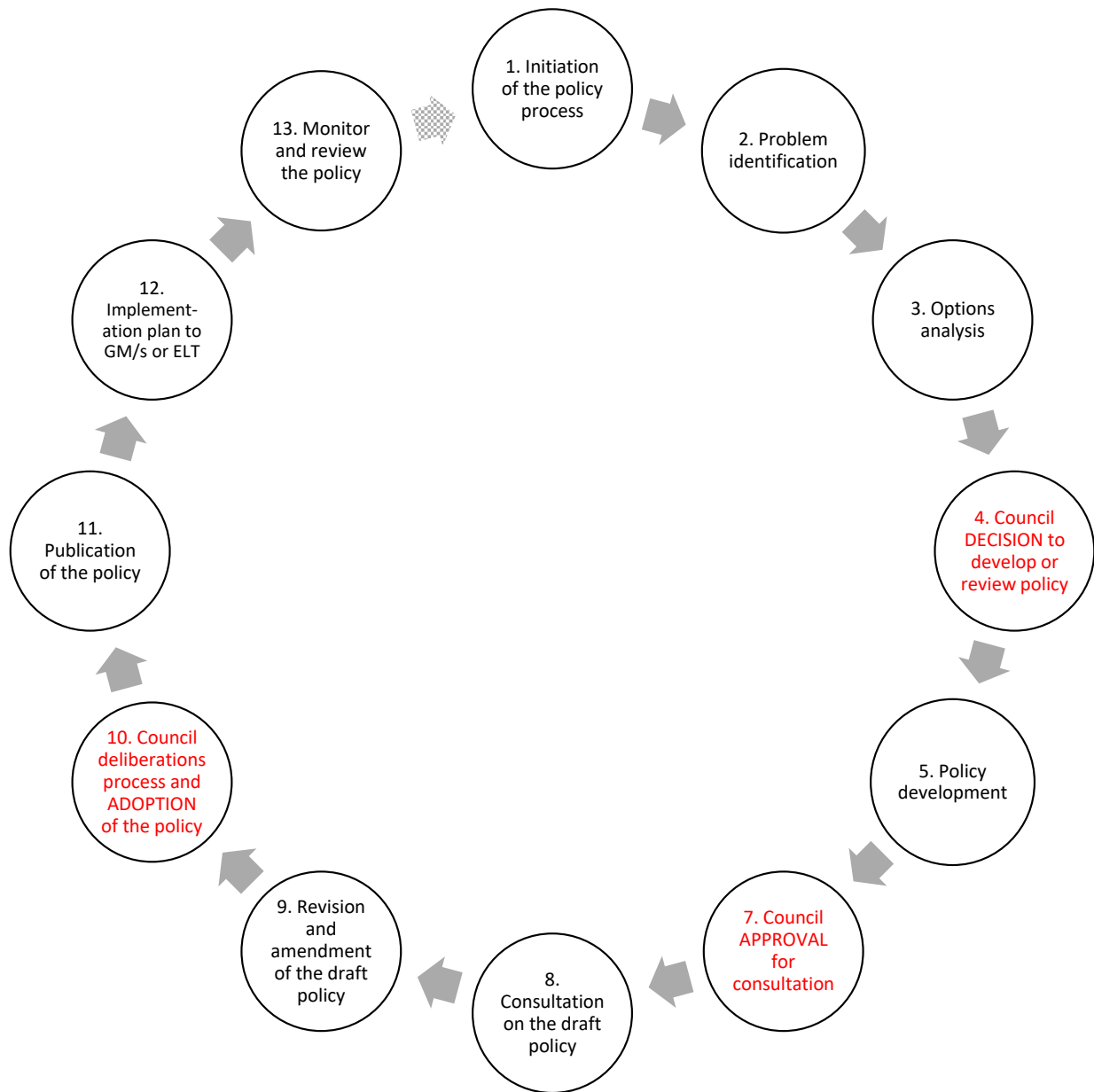
Can this decision only be made through a 10 Year Plan?		<b>No</b>
Does this decision require consultation through the Special Consultative procedure?		<b>No</b>
Is there funding in the current Annual Plan for these actions?		<b>Yes</b>
Are the recommendations inconsistent with any of Council's policies or plans?		<b>No</b>
The recommendations contribute to Goal 5: A Driven & Enabling Council		
The recommendations contribute to the achievement of action/actions in Governance and Active Citizenship		
Contribution to strategic direction and to social, economic, environmental and cultural well-being	The policy framework ensures that Council carefully considers whether a policy response is the most appropriate and assists in good governance and decision-making.	

## ATTACHMENTS

1. Policy framework diagram  



*Policy process*





## WORK SCHEDULE

**TO:** Environmental Sustainability Committee

**MEETING DATE:** 21 September 2022

**TITLE:** Committee Work Schedule - September 2022

### RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Committee receive its Work Schedule dated September 2022.

COMMITTEE WORK SCHEDULE 2022					
	Estimated Report Date	Subject	Officer Responsible	Current Position	Date of Instruction
1	21 September 2022	Low Carbon Fund Annual Report	Chief Planning Officer		<u>Committee of Council</u> <u>9 June 2021</u> <u>Clause 28.18-21</u>
2	21 September 2022	PNCC Organisational Emissions Inventory 2020/21	Chief Planning Officer	-	<u>Climate change plan ongoing action #1</u>
3	21 September 2022	PNCC Zero Carbon Feasibility study	Chief Planning Officer	-	<u>Climate change plan ongoing action #3</u>
4	21 September 2022 March 2023	Update on the Regional Climate Change Committee	Chief Planning Officer	Delayed due to draft regional climate action report not being released till after election.	<u>Climate change plan ongoing action #1</u>
5	21 September 2022	Waste Management and Minimisation Plan 2019 - Annual Progress report.	Chief Infrastructure Officer	-	9 September 2020 Clause 17-20
6	21 September 2022	Low Carbon Roadmap - Scope and Methodology for achieving reductions in emissions.	Chief Planning Officer	-	<u>30 March 2022</u> <u>Clause 6-22</u>

7	21 September 2022	Green Building Council recommendations- Options and implications of Policy Changes	Chief Planning Officer	-	<u>30 March 2022</u> <u>Clause 3-22</u>
8	September 2022	Food Resilience Policy Process	Chief Planning Officer		<u>18 May 2022</u> <u>Clause 11-22</u>
9	May 2023	Environmental Sustainability Report 2023	Assistant Chief Executive		<u>Terms of Reference of Committee</u>
10	May 2023	Opportunities for native species re-introductions in the Turitea Reserve area.	Chief Planning Officer		<u>17 November 2021</u> <u>Clause 38.21</u>
11	May 2023	Citywide Emissions Inventory 2022	Chief Planning Officer		<u>Climate change plan ongoing action #3</u>
12	September 2023	Waste Management and Minimisation Plan 2019 - Annual Progress report	Chief Infrastructure Officer		9 September 2020 Clause 17-20
13	September 2023	Low Carbon Fund – Annual Report 2023	Chief Planning Officer		<u>Committee of Council</u> <u>9 June 2021</u> <u>Clause 28.18-21</u>
14	September 2023	PNCC Organisational Emissions Inventory 2021/22	Chief Planning Officer		<u>Climate change plan ongoing action #1</u>
15	2023	Low Carbon Roadmap - options to achieve the city-wide goal of 30% reduction in emissions by 2031	Chief Planning Officer		<u>30 March 2022</u> <u>Clause 6-22</u>

## ATTACHMENTS

Nil