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PALMERSTON
NORTH
CITY

PALMERSTON NORTH CITY COUNCIL

AGENDA

ENVIRONMENTAL SUSTAINABILITY COMMITTEE

9AM, WEDNESDAY 18 MAY 2022

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

MEMBERS

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

Vaughan Dennison	Orphée Mickalad
Renee Dingwall	Karen Naylor
Lorna Johnson	Aleisha Rutherford
Billy Meehan	Peter Te Rangi

AGENDA ITEMS, IF NOT ATTACHED, CAN BE VIEWED AT

pncc.govt.nz | Civic Administration Building, 32 The Square
City Library | Ashhurst Community Library | Linton Library

Chris Dyhrberg

Acting Chief Executive | PALMERSTON NORTH CITY COUNCIL

ENVIRONMENTAL SUSTAINABILITY COMMITTEE MEETING

18 May 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. Sustainability Review 2022

Page 7

Memorandum, presented by Olivia Wix, Communications Manager.

6. Presentation - Future Post

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7. Presentation - Environment Network Manawatū

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8. Confirmation of Minutes

Page 77

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

9. Investigation into Options for Eco-Burial

Page 83

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

10. Citywide Emissions Inventory 2021

Page 101

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

11. Update on Turitea Translocations

Page 107

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

12. Committee Work Schedule - May 2022

Page 111

13. 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].

MEMORANDUM

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Sustainability Review 2022

PRESENTED BY: Olivia Wix, Communications Manager

APPROVED BY: Sheryl Bryant, Assistant Chief Executive

RECOMMENDATION TO COUNCIL

- 1. That the Committee receive the Sustainability Review 2022.**
-

1. ISSUE

The Sustainability Review for 2022 has been completed. This is the second Environmental Sustainability Review – the first was completed and published in December 2020.

2. BACKGROUND

The review demonstrates how Council is committed to improving our environmental footprint and recent examples of how we've done that since the last review.

It also provides an opportunity to highlight some businesses or organisations in our community that are making an impact in this space.

This review does contain some data, however due to how and when data is collected, some of it may not have changed since the last review. For example, data for Transport is primarily collected through the census which last occurred in 2018, and for Resource Recovery the city-wide waste assessment only occurs every five years.

3. NEXT STEPS

The review will be published on the Council website and made available at our Customer Service Centre and libraries. The report will also be circulated to the organisations which feature in the review for their officers, customers and stakeholders. Over the coming months we will be sharing some of the information and stories across our social media channels and in media interviews.

Council officers will undertake an assessment on the Sustainability Review, including its frequency and contents and report back to the committee.

4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide? If Yes quote relevant clause(s) from Delegations Manual	Yes
Are the decisions significant?	No
If they are significant do they affect land or a body of water?	
Can this decision only be made through a 10 Year Plan?	No
Does this decision require consultation through the Special Consultative procedure?	No
Is there funding in the current Annual Plan for these actions?	Yes
Are the recommendations inconsistent with any of Council's policies or plans?	No
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in Environmental Sustainability	
The action is: Prepare a biannual city sustainability report.	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	Reporting on Council's sustainability activities ensures that members of the community are aware of how Council's is improving our environmental footprint.

ATTACHMENTS

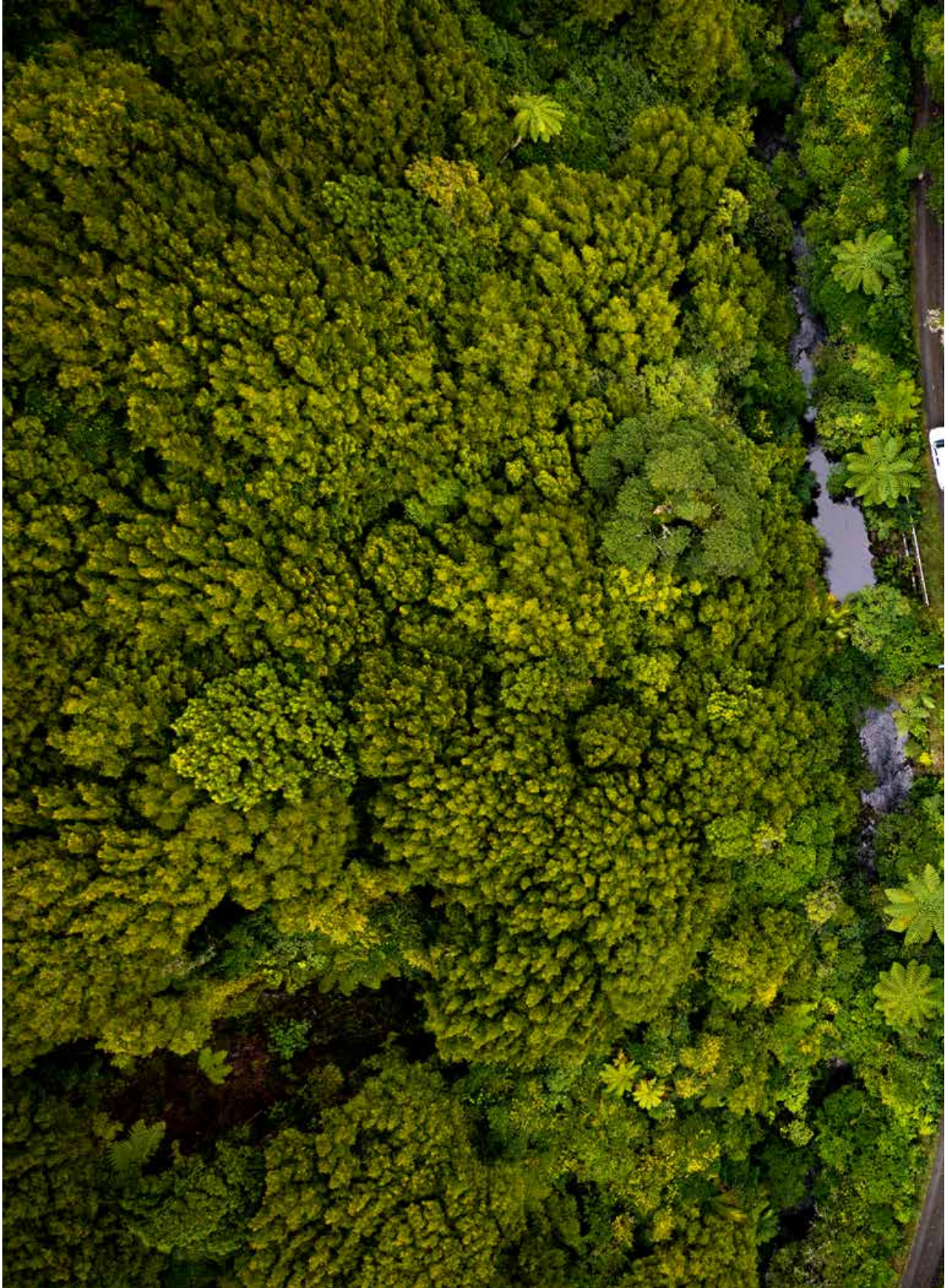
1. Environmental Sustainability Review 2022 [↓](#)



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Environmental Sustainability Review 2022



PRESENTATION

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Presentation - Future Post

RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

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

SUMMARY

Dave Elder, Director at Future Post will make a presentation on their business purpose, ethos and plans in the Palmerston North area.

ATTACHMENTS

Nil

PRESENTATION

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Presentation - Environment Network Manawatū

RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

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

SUMMARY

Dave Mollard & Madz BatacheEl from Environment Network Manawatū will make a presentation on the recently developed 4412 Kai Resilience Strategy, which has been developed by Manawatū Food Action Network on behalf of Ora Konnect 4412, (a collective of organisations working to improve outcomes for whanau in the 4412 post code area of Palmerston North).

This strategy, and the situational analysis that informed it, strongly shows the need for development of a city-wide food security policy.

ATTACHMENTS

Nil

PALMERSTON NORTH CITY COUNCIL

Minutes of the Environmental Sustainability Committee Meeting Part I Public, held as an Audio-Visual Meeting on 30 March 2022, commencing at 9.00am

Members Present: Councillor Brent Barrett (in the Chair) and Councillors Zulfiqar Butt, Vaughan Dennison, Renee Dingwall, Lorna Johnson, Billy Meehan, Orphée Mickalad, Karen Naylor and Aleisha Rutherford.

Non Members: Councillors Susan Baty, Rachel Bowen, Lew Findlay QSM, Patrick Handcock ONZM, Leonie Hapeta and Bruno Petrenas.

Apologies: The Mayor (Grant Smith) (late arrival), Councillor Lew Findlay (early departure and Mr Peter Te Rangī.

The Mayor (Grant Smith) entered the meeting at 9.32am during consideration of clause 2. He was not present for clause 1.

Councillor Rachel Bowen left the meeting at 10.00am during consideration of clause 3. She entered the meeting again at 11.05am during the consideration of clause 6. She was not present for clauses 3 to 5 inclusive.

Councillor Lew Findlay left the meeting at 10.26am during consideration of clause 6. He was not present for clauses 6 and 7.

Councillor Susan Baty left the meeting at 10.46am during consideration of clause 6. She was not present for clauses 6 and 7.

1-22 Apologies

Moved Brent Barrett, seconded Zulfiqar Butt.

The **COMMITTEE RESOLVED**

1. That the Committee receive the apologies from Mr Peter Te Rangī, Councillor Lew Findlay (early departure), and the Mayor (Grant Smith) (late arrival).

Clause 1-22 above was carried.

2-22 Presentation - Massey University

Presentation, by Dr Allanah Ryan, Director of Sustainability at Massey University.

Dr Ryan spoke on Massey University's Climate Action Plan and the goal

of being net zero carbon by 2030.

Massey has calculated its baseline figure for greenhouse gas emissions. Most emissions are generated from Transport 43% (of which air transport made up 38%) Farms 27%, and Energy 28%.

Based on the baseline information Massey's focus is on improving business intelligence (increasing monitoring/ analysis of energy use), reducing energy use, and switching from fossil fuels to renewable energy.

Actions include a commitment to building low carbon buildings, energy efficiency measures and changing energy suppliers to use only renewables sources.

Reducing the carbon footprint created by international air travel requires not only technological changes (meeting online) but also behavioural changes. Massey is looking for academic-led solutions and is working with their staff to determine the right level of travel.

To maintain international connections, Massey staff do need to travel abroad and it is a matter of finding the right balance between enabling successful academic collaboration and minimising the impact on the climate.

Dr Ryan saw opportunities for Council to collaborate with Massey on climate monitoring.

The Mayor (Grant Smith) entered the meeting at 9:32am.

Moved Lorna Johnson, seconded Renee Dingwall.

The **COMMITTEE RESOLVED**

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

Clause 2-22 above was carried.

Abstained:

The Mayor (Grant Smith).

3-22

Presentation - New Zealand Green Building Council (NZGBC)

Presentation, by Andrew Eagles, Chief Executive of the New Zealand Green Building Council.

Mr Eagles spoke on the Green Star standard which is a framework for lowering the carbon impact during the build, and constructing more energy efficient and healthier homes. He outlined several actions that Council could implement to encourage 'greener' homes to be built.

Mr Eagle said building a 'greener' home cost 1-2% more but reduced running costs significantly. This cost excludes the additional benefits of

having a healthier home with lower running costs.

Councillor Rachel Bowen left the meeting at 10.00 am.

Cr Johnson moved a motion for a report from the Chief Executive on the recommended changes to Council policies, suggested by Mr Andrew Eagles in his presentation.

Moved Lorna Johnson, seconded Grant Smith.

The **COMMITTEE RESOLVED**

1. That the Environmental Sustainability Committee receive the presentation for information.
2. That the Chief Executive report back to the Environmental Sustainability Committee on the options and implications of policy changes relating to the Green Building Council recommendations to councils.

Clause 3-22 above was carried.

4-22

Confirmation of Minutes

Moved Brent Barrett, seconded Susan Baty.

The **COMMITTEE RESOLVED**

1. That the minutes of the Environmental Sustainability Committee meeting of 17 November 2021 Part I Public be confirmed as a true and correct record.

Clause 4-22 above was carried.

Abstained:

Councillor Orphée Mickalad.

5-22

Confirmation of Gross vs Net Organisational Emissions Reporting

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

Moved Brent Barrett, seconded Orphée Mickalad.

The **COMMITTEE RECOMMEND**

1. That the Eco City strategy target of a 30% reduction in citywide carbon emissions is confirmed to relate to 'net' emissions, inclusive of sequestered carbon.
2. That the Council's own organisational emission progress is confirmed to relate to 'net' emissions, inclusive of sequestered carbon.

Clause 5-22 above was carried.

6-22

Low Carbon Roadmap

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

Councillor Lew Findlay QSM left the meeting at 10:26am.

The meeting adjourned 10.46am.

The meeting resumed 11.05am.

Councillor Rachel Bowen was present when the meeting resumed.

The Chair moved an additional motion seeking a report that outlined potential actions to achieve the 30% reduction in city-wide emission reduction, to get an idea of what tangible changes would be needed.

Moved Brent Barrett, seconded Zulfiqar Butt.

The **COMMITTEE RECOMMEND**

1. That the Council endorse the flowchart detailed in the Low Carbon Roadmap attached to the memorandum titled 'Low Carbon Roadmap' presented to the 30 March 2022 Environmental Sustainability Committee.
2. That the Council endorse the three approaches (listed in 2.14):
 - Internal Asset Value Optimisation
 - Carbon Neutral Programme Development
 - Citywide Reduction Projects that complement National Direction
3. 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.

Clause 6-22 above was carried.

7-22

Committee Work Schedule - March 2022

Moved Brent Barrett, seconded Lorna Johnson.

The **COMMITTEE RESOLVED**

1. That the Environmental Sustainability Committee receive its Work Schedule dated March 2022.

Clause 7-22 above was carried.

The meeting finished at 11.43am

Confirmed 18 May 2022

Chairperson

Report

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Investigation into Options for Eco-Burial

PRESENTED BY: Kathy Dever-Tod, Group Manager - Parks and Logistics

APPROVED BY: Sarah Sinclair, Chief Infrastructure Officer

RECOMMENDATION TO COUNCIL

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.

RECOMMENDATIONS TO COMMITTEE:

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

SUMMARY OF OPTIONS ANALYSIS FOR

Problem or Opportunity	<p>In December 2020 Council received a submission received from Te Hā o Hine-ahu-one Palmerston North Women’s Health Collective urging Council to investigate eco-burial options. The submission also included reference to establishing a natural burial cemetery.</p> <p>Manawatū District Council is currently undertaking investigations into establishing a natural burial cemetery. If the investigation is successful officers have signalled a willingness to explore extending natural burial services to Palmerston North residents.</p>
OPTION 1:	Status Quo – Continue to enable eco-burial within existing sections of the city’s three cemeteries. Undertake no further investigation into natural burial in the city.
Community Views	A submission from Te Hā o Hine-ahu-one Palmerston North Women’s Health Collective urged Council to investigate eco-burial options.
Benefits	This option fulfils the Council’s commitment to Te Hā o Hine-ahu-one Palmerston North Women’s Health Collective that further investigation into eco-burials would be undertaken and

	<p>reported on.</p> <p>The investigation highlights that the existing cemetery bylaw provisions support eco-burial in city cemeteries and that natural burial is available in the region at Te Aramoho Cemetery, Whanganui.</p>
Risks	Expectations for a natural burial option in the city are not met
Financial	There are no financial implications arising from this option
OPTION 2:	Continue to work with Manawatu District Council on the opportunity to establish a natural burial cemetery in the Manawatu district. Undertake no further action regarding natural burial in the city.
Community Views	The submission from Te Hā o Hine-ahu-one Palmerston North Women's Health Collective includes reference to establishing a natural burial cemetery and that a collaborative regional approach could also be an option.
Benefits	<p>The Manawatū District Council is actively seeking partnership regarding cemetery provision.</p> <p>Council and the community will benefit from awaiting the results of the Manawatū District Council investigation before undertaking any further investigation in the city.</p> <p>If the District Council identifies a suitable site, there is an opportunity to explore a district -wide approach to the provision of a natural burial cemetery.</p> <p>Community views would be sought once a viable option had been established.</p>
Risks	Community expectations for natural burial options in or close to the city will not be met in the short term
Financial	There are no financial implications arising from this option
OPTION 3:	Develop a business case for the establishment of a natural burial cemetery at Kelvin Grove Cemetery for consideration as part of the 2024 Long Term Planning (LTP) process.
Community Views	There is no recent data on wider community views. A survey conducted in 2010 resulted in mixed views on the need for a natural burial cemetery option. A survey of 220 respondents shows that the majority (50%) would either be definitely not, or probably not interested in an eco-burial option if Council offered it.
Benefits	This option would enable community views on the benefits and costs of establishing a natural cemetery in the city to be sought as part of the 2024 LTP process.

Risks	<p>Council would investigate an option known to have a high environmental impact due to the unsuitable soils. This is not consistent with the underlying principle of eco-burial.</p> <p>The business case may not bring Council any closer to a decision on whether to proceed with development at Kelvin Grove, due to uncertainty regarding other developments in the District and likely demand</p> <p>Community expectations for natural burial options in or close to the city will not be met in the short term</p>
Financial	<p>There is no provision for the further investigation including the development of a business case. An estimate of the cost of this option is \$20-30K.</p>

RATIONALE FOR THE RECOMMENDATIONS

1. OVERVIEW OF THE PROBLEM OR OPPORTUNITY

- 1.1 The Palmerston North City Council provides crematorium and cemetery services for the city and the region. Cemeteries in Kelvin Grove, Terrace End, Ashhurst and Bunnythorpe provide for burials, and interment of ashes. The city does not have a natural burial cemetery.
- 1.2 In December 2020, Council received a submission from Te Hā o Hine-ahu-one Palmerston North Women’s Health Collective urging it to investigate eco-burial options. The submission also included reference to establishing a natural burial cemetery. Council resolved to investigate eco-burial options in Palmerston North and report back to the Environmental and Sustainability Committee.
- 1.3 This report provides the findings of the investigation, including the option to explore a district-wide natural burial cemetery.

2. BACKGROUND AND PREVIOUS COUNCIL DECISIONS

- 2.1 Council has previously investigated the establishment of a natural burial cemetery.
- 2.2 In 2010 Council considered and approved funding for the establishment of a natural burial cemetery in years 1 and 2 of the 2012-22 Long Term Plan.
- 2.3 A councillor workshop in August 2010 determined Elected Members were in favour of the following sites in order of priority: Kelvin Grove Cemetery, a site on Akers Road, Linton and two sites in Ashhurst.
- 2.4 Funding was carried forward to 2013/14 and again to 2014/15 while site investigations continued. As part of the 2015-25 10 Year Plan funding was

carried forward to 2015/16 and further funding was allocated for 2016/17 and 2017/18.

- 2.5 Geotech assessments were conducted in 2015 at Kelvin Grove Cemetery and McCraes Bush site, River Road, Ashhurst.
- 2.6 The Kelvin Grove Cemetery was initially discounted due to heavy clay soils and waterlogged soils that would inhibit natural decomposition. Although shortcomings could be mitigated with imported backfill for individual graves, at an additional \$1,000 per grave these costs were considered cost prohibitive.
- 2.7 McCraes Bush site was identified as having soils that would be ideal for a natural burial cemetery. However, the investigation report noted this option was met with significant opposition from River Road residents. Concerns were noted about the risk of bore water contamination used for stock and emergency domestic supply, proximity to a stream and high-water tables, and flooding potential.
- 2.8 Council decided that having regard to both options (Kelvin Grove and McCraes Bush) and a range of factors Kelvin Grove was identified as the preferred natural burial site.
- 2.9 Council made no provision in the 2018 or 2021 Long Term Plans for the development of a natural burial cemetery at Kelvin Grove cemetery. The development of a natural burial area in this location would require the excavation and replacement of the existing clay soil with free draining subsoil overlaid with an organic active topsoil layer. The mitigation activity would have a high environmental impact i.e. a high carbon footprint. This is not consistent with the philosophy of natural burial or council's Climate Change Plan.
- 2.10 The Palmerston North Cemeteries and Crematorium Bylaw in 2018 provides for natural burial within the city.
- 2.11 An objective in the community facilities chapter of the Connected Communities Plan is 'Palmerston North people have access to a natural burial option within the Manawatū/Whanganui region'.

3. SUBMISSION FROM TE HĀ O HINE-AHU-ONE PALMERSTON NORTH WOMEN'S HEALTH COLLECTIVE

- 3.1 In 2020 Te Hā o Hine-ahu-one Palmerston North Women's Health Collective made a submission to the 2021 Long Term Plan about eco-burial, which was referred to the Environmental Sustainability Committee. According to the submission, the Women's Health Collective and the Palmerston North Women's Home Death Group, have repeatedly raised the need for an eco-burial option in the city. The group has recently become active again in the after-death area and have recently attended a hui in Whakatāne. The submission states "We have come today to again urge Council to support the

establishment of eco-burial options as part of the mahi of striving for an eco-city”.

3.2 Submission summary points include that eco-burial options could be:

- Part of an existing Palmerston North City Council cemetery
- A stand-alone natural burial site in Palmerston North
- Provided in collaboration with the wider region
- Supported by community resources set up to provide low-cost options for whanau wanting to do things without a funeral director, training and support for families wanting to help care for the dead themselves.

3.3 The December 2020 meeting of the Council resolved to investigate eco-burial options in Palmerston North and report back to the Environmental Sustainability Committee.

4. ECO- AND NATURAL BURIAL DEFINED

4.1 The terms eco-burial, natural burial and natural cemeteries are often used interchangeably which can be confusing. While there are some similarities there are also many differences, especially evident in the New Zealand context with the work done by the Natural Burial Association. Research into eco- and natural burial in New Zealand has determined the following.

4.2 Eco-burial

4.2.1 Eco-burial is a term that covers a range of environmentally friendly burial practices, without strict requirements. There are a range of ways that a burial can be eco-friendly, including but not limited to:

- No embalming and/or embalming techniques that use non-or less-toxic chemicals as part of the process
- Caskets/shrouds that may be made from eco-friendly materials
- Provision of a cemetery site that may include elements in line with natural burial guidelines (as per the Natural Burial Association guidelines)
- Often buried at standard depth of 1600-2100mm below ground level.

4.3 Natural Burial Association (Natural Burials NZ)

4.3.1 The Natural Burial Association is a not-for-profit organisation formed in 1999 by a group of New Zealanders wanting to create and operate natural burial cemeteries. The Association promotes and certifies natural cemeteries, caskets and funeral directors. The Natural Burial Association advises local councils on how to establish natural burial cemeteries.

4.4 Certified Natural Burial Cemeteries

4.4.1 Certified natural burial cemeteries must meet set criteria of the Natural Burial Association. The principle behind natural burials is that nothing synthetic is added to the soil, and in doing so nature can “do its work” and decompose the body. Certified Natural Burial Cemeteries:

- Follow rigorously applied environmental, operational and ethical guidelines
- No embalming
- Caskets/shrouds that are made from eco-friendly materials and certified
- Use of certified funeral directors
- A cemetery site that is natural and has “active soil” to support decomposition
- Deceased are buried in the active soil layers 400mm-1000mm below ground level.

4.5 Natural Burial Cemeteries

4.5.1 Some local authorities offer non-certified natural burial sites. These sites do not (or have not chosen to) meet the Natural Burial Association requirements.

- May follow some of the Natural Burial Association’s environmental, operational and ethical guidelines
- Generally, no embalming, or may allow eco-embalming
- Generally, require use of eco-caskets but may not be as strict as certified
- Generally, require a cemetery site to be natural and has “active soil” to support decomposition, other more active soils may be transported in if required
- Deceased are generally buried in the active soil layers between 400mm and 1000mm but could also be buried at depth 1600mm to 2100mm.

4.6 In preparing this report, officers have investigated eco- and natural burial.

5. FUNERAL INDUSTRY ROLE IN ECO- AND NATURAL BURIAL

5.1 Requirements relating to the deceased body i.e. cause of death, preparation and disposal, rests with medical professionals and funeral service providers.

5.2 Desktop research reveals that Palmerston North City has numerous and locally based funeral directors offering a wide range of funeral services. While none of the funeral directors actively promote themselves as eco-friendly there is evidence that some eco-friendly options are available. The services

that funeral directors provide can be generally into three distinct areas, embalming and body care, caskets, and funeral services.

5.3 Embalming and body care

- 5.3.1 There are several options provided for care of the body of the deceased. Embalming is an option where families require time to arrange funerals or where the body is required to be transported to another area or country. Careful and efficient management of bodies that are not embalmed is required to manage the process of decay and ensure the safety of all involved with burial services.
- 5.3.2 Embalming involves the use of chemicals to disinfect and preserve the body and to restore it to a natural appearance. Some aspects of embalming are optional, and it depends on the deceased and family's circumstances. The embalming process usually involves aldehyde-based chemicals. When aldehyde is cremated it is completely destroyed and when buried breaks down into the earth as carbon, hydrogen and water. Several funeral directors use modern embalming chemicals in low concentrations with the aim of being mild on the environment.
- 5.3.3 Embalming is optional and bodies can be buried in any cemetery within Palmerston North without the need to be embalmed.
- 5.3.4 Eco-friendly options provided in other centres include:
- Low Index embalming - using very low concentration aldehyde chemicals
 - Natural embalming – using plant based embalming chemicals
 - Aldehyde free embalming - using non-preserving natural products
- 5.3.5 It is not clear that Palmerston North based funeral directors provide this range of embalming options. However, families can arrange for the deceased to be transported outside the city to access eco-friendly options.
- 5.3.6 Body care (that does not involve embalming) does not necessarily have to be provided by a funeral director. Families may choose to care and prepare bodies for burial. As outlined in the submission from Te Hā o Hine-ahu-one Palmerston North Women's Health Collective families that choose these options may require assistance with refrigeration, or other forms of cooling, and training and/or assistance to those wanting to help care for the dead themselves.
- 5.3.7 Eco-burial services are provided by funeral directors based in neighbouring cities and towns. Neighbouring funeral directors advertise as "providing services" to Palmerston North (and surrounding areas).

5.4 Caskets

- 5.4.1 While Palmerston North funeral directors do not actively promote themselves as providing eco-friendly caskets there is evidence that eco-friendly casket options are available in the city.
- 5.4.2 Eco-friendly caskets are considered those that are constructed from soft timbers and do not involve hardware i.e. screws or plastic/metal handles, fabrics or glues that will not decompose or be harmful to the environment. Menz Shed make caskets and help people make their own caskets.
- 5.4.3 Caskets are optional and bodies can be buried in city cemeteries without a casket. Shrouds and other forms of eco-friendly materials i.e. flax baskets can be used to wrap bodies.

6. COUNCIL ROLE IN ECO- AND NATURAL BURIAL

- 6.1 Councils' role in the provision of cemeteries is outlined by the Burials and Cremation Act 1964. Roles are limited to the establishment, maintenance, and regulation of cemeteries. The Council's burial services are outlined by the Palmerston North Cemeteries and Crematorium Bylaw 2018 and Administration Manual.
- 6.2 Some eco-burial options are possible at current City cemetery facilities. For example, the city has a lawn cemetery that allows people to be buried without a headstone or other marker, positioned in the direction that their personal beliefs require (i.e. not restricted by plot alignments), and depending on the area can be surrounded by a tree environment. People can use eco-embalming and eco-caskets; this is as close to a natural burial that is currently possible.
- 6.3 Clauses 5.3 and 5.4 of the Palmerston North Cemeteries and Crematorium Bylaw 2018 provide for burial in a Natural Burial Cemetery as follows.

5.3 Any interment in a Natural Burial Cemetery must comply with natural burial practices including:

- (a) Human remains are not embalmed; and
- (b) Human remains are enclosed in either a shroud made of natural material or a casket made of untreated sustainable wood; and
- (c) Shallow burial of the human remains in the ground at a maximum depth of 1000 millimetres, and a minimum

depth cover of 400 millimetres.

5.4 Only natural burials will be permitted in a natural burial cemetery

subject to the application requirements of section 5.1 above.

6.4 An objective in the community facilities chapter of the Connected Communities Plan is 'Palmerston North people have access to a natural burial option within the Manawatū/Whanganui region'.

6.5 Whilst Council does not provide a natural burial area in the city, Whanganui District Council provide a natural burial area in the region. The natural burial area at Aramoho Cemetery in Whanganui is discussed further in section 8.3.

7. INTERMENT TRENDS IN NEW ZEALAND

7.1 Cemetery management has changed considerably over the last 100 years. Many cemeteries including, the Kelvin Grove Cemetery, have moved away from complete concrete gravesite coverage typical of the 1800s. Lawn cemeteries interspersed with trees and manicured gardens are now commonplace and promoted as places to farewell and commemorate loved ones. Cremation is also a popular end of life choice with 70-80% of people choosing this option.

7.2 Numerous studies have quantified the detrimental environmental impacts cremations and burials, particularly the effects of embalming chemicals, casket de-composition, have on the environment¹. In response to changing trends some funeral directors are now providing eco-friendly options e.g. plant-based embalming, eco-caskets, use of low emission hearses and environmentally friendly funeral service consumables.

7.3 In 2008 New Zealand's first natural burial site was established in partnership between Wellington City Council and the Natural Burial Association. The cemetery is in Makara, Wellington.

7.4 A total of 19 Natural Burial Cemeteries have been established throughout New Zealand. Natural cemeteries in Otaki and Whanganui are the closest to Palmerston North.

7.5 Natural burials provide an alternative burial option to traditional burial or cremations. Natural burials are often popular with people and families who hold strong environmental beliefs and who want an option to be buried in line with their philosophies. It is an appealing option to those who wish their body to return to nature, and in a way that does not harm the environment. Supporters advocate that burial is best for the environment, and that a natural cemetery should be "as natural as possible" meaning

¹ Caruba, J. (2013) Sustainable End-of Life Arrangements: An overview
Shellock, M (2021) et al Beyond the Corporitisation of Death Systems, Towards Green Death Practices.

nothing should be introduced that can interfere with or pollute the environment.

8. FORECAST DEMAND FOR NATURAL BURIAL

8.1 Demand forecasts in 2010 identified that if the city went ahead with establishing a natural burial cemetery it should prepare for approximately 10% of burial being natural burials or 15 natural burials per annum. This figure allowed for the 20% percent of residents that “definitely” supported that concept, less 10% the rate of completion.

8.2 Attachment One contains case studies for two natural burial cemeteries that have been in operation for some time. They provide an insight into the uptake of natural burial as a burial option in New Zealand.

8.3 Makara Natural Burial Cemetery opened in 2008. There are 350 people buried in the Makara Cemetery averaging 27 burials per year. This is 2.9% of the number of deaths in Wellington per annum.

8.4 Te Aramaho Cemetery in Whanganui opened in 2011. In a resident survey undertaken prior to the establishment, 10-15% of people indicated that they intend to use the natural burial cemetery, which equated to 48-73 people being laid to rest in the natural burial cemetery each year.

8.5 Since its establishment in 2011 a total of 14 burials have occurred in the cemetery. This represents 0.3% of all deaths in the district over the 10-year period.

8.6 Discussions with members of the industry indicate that families often decide against natural burial for the following reasons:

8.6.1 Price: Natural burials are generally more expensive than traditional burials. This is generally due to several factors including:

- Larger plot sizes
- More labour intensive e.g. plots are ideally hand dug to reduce the risk of soil compaction of nearby graves, and root disturbance of nearby trees and shrubs
- Additional compost and soil is transported into the gravesite by hand to assist with decomposition.

When council considered a natural burial cemetery in 2010, the estimated price for a natural burial was \$2,768.38 + GST compared to \$1,848.88 +GST for a traditional burial.

8.6.2 Family burials: Due to the way the cemetery is filled, adjacent plots cannot be reserved. As only one burial occurs in each plot, family members cannot be laid alongside each other.

8.6.3 Memorialisation: memorials of no type whatsoever are permitted, and graves cannot be personalised with markers, statues or fences. Floral tributes must not be wrapped. This contrasts with the growing trend in New Zealand towards grave decoration.

8.7 The case studies show that the uptake of natural burial is likely to be considerably lower than the city-wide demand forecast used in the 2010 feasibility study.

9. MANAWATŪ DISTRICT COUNCIL CEMETERIES MANAGEMENT STRATEGY 2020

9.1 In 2020 Manawatū District Council adopted the Cemeteries Management Strategy. The Strategy sets out a vision and values for public cemeteries in the District along with goals, objectives and actions, assumptions and an implementation plan.

9.2 Of relevance to this report are the following sections:

Assumptions and Trends

The demand for diversity of service options is expected to increase and the Council may need to respond to those needs e.g. natural burials, tree planting options.

Goal 2: To respond to the needs of the community in times of grief and celebration of life

Objective 2.4 To provide, upgrade or optimize facilities at cemeteries in response to the needs of users.

Review facilities with consideration given to:

- *Suitability for natural burials*

Goal 3: Ensure sustainable provision of cemetery services

Objective 3.1 To continue to develop the Feilding Cemetery to a level consistent with it being the main cemetery for the District.

Implementation Plan

Prepare a structure plan/design for Feilding Cemetery including the following design principles:

- *A requirement to accommodate a wide range of options for Cemetery users e.g. burial, cremation, natural burial.*

Objective 3.3 Explore opportunities for partnerships in the provision of cemetery services

- *Under this objective Council will explore any potential benefits from partnership with neighbouring Councils in the development of a regional cemetery.*
- *The demand for diversity of service options is expected to increase and the Council may need to respond to those needs e.g. natural burials, tree planting option*

Implementation Plan

Convene a forum at officer level to discuss the potential of a regional Cemetery with neighbouring Councils.

Initiate discussions amongst Council officers of neighbouring territorial authorities by June 2025.

- 9.3 Several meetings have been held with Manawatū District Council officers responsible for the natural burial cemetery investigations. Palmerston North City Council officers have shared Geotech reports completed for the city.
- 9.4 The provision for the natural burial investigation has been included in the Manawatū District Council's 2022/23 Annual Plan.
- 9.5 Manawatū District Council are currently undertaking Geotech assessments in Feilding and Sanson cemeteries to determine suitability for a natural burial site. The investigation is due to be completed in 2022-23.

10. DESCRIPTION OF OPTIONS

- 10.1 The following options have been identified following the investigation into eco-burial and natural burial options in Palmerston North.
- 10.2 **OPTION ONE:** Status Quo – Continue to enable eco-burial within existing sections of the city's three cemeteries. Undertake no further investigation into natural burial in the city.
 - 10.2.1 Council continues to enable ecoburial in its role as cemetery administrator and regulator; bodies can be buried in any cemetery within Palmerston North with or without first being embalmed.
- 10.3 **OPTION TWO:** Continue to work with Manawatū District Council on the opportunity to establish a natural burial cemetery in the Manawatū district. Undertake no further action regarding natural burial in the city.
 - 10.3.1 The Manawatū District Council is actively seeking partnerships regarding cemetery provision.
 - 10.3.2 The Manawatū District Council Cemeteries Management Strategy also references investigating a natural burial cemetery, including developing a structure plan for the Feilding Cemetery which must include design principles for accommodating natural burials.
 - 10.3.3 This option involves officers continuing to work alongside staff from Manawatū District Council to investigate the opportunity to develop a natural burial cemetery in the Manawatū district, including the opportunity to establish a shared service arrangement.
 - 10.3.4 Council would not undertake any further investigation into a natural cemetery for the city until the Manawatū District Council investigations had been concluded.

- 10.4 **OPTION THREE:** Develop a business case for the establishment of a natural burial cemetery at Kelvin Grove Cemetery for inclusion in the 2024 Long Term Planning process.
- 10.4.1 Council decided in 2015 that Kelvin Grove Cemetery was the preferred site for a natural burial cemetery within the city. The establishment of the natural burial site has not advanced since that time.
- 10.4.2 This option involves developing a business case for consideration as part of the 2024 Long-Term Plan process.

11. ANALYSIS OF OPTIONS

- 11.1 All three options presented relate to the role of Council in aftercare. Council's role is set out in the Burial and Cremation Act 1964, and is limited to the establishment, maintenance, and regulation of cemeteries. The care of the deceased including funerals and preparation of the deceased rests with the funeral industry.
- 11.2 The range of eco-friendly embalming and body care options available in the city could be extended to provide more choices for families. It would be more appropriate for an interest group to lobby and advocate for a wider range of eco-friendly embalming and body care than Council.
- 11.3 Council currently supports eco-type burials, through bylaw provisions, enabling deceased bodies to be buried without embalming, in eco-friendly shrouds and/or caskets and in a range of "natural" settings.
- 11.4 Option 1 does not provide the community with a natural burial option close to the city. The closest natural burial cemetery would remain Te Aramoho Cemetery in Whanganui. This does address the requests of Te Hā o Hine-ahu-one Palmerston North Women's Health Collective.
- 11.5 Under Option 3 council would pursue a city-wide rather than district natural burial cemetery. There is considerable risk associated with this option. The case studies show that demand for natural burial in New Zealand is low, and that the 2010 forecast of demand in the city is likely to be overstated. The combination of low demand and the high cost of preparing an area of land at Kelvin Grove Cemetery, would mean that the price per plot would need to be high to recover costs.
- 11.6 The soils in the two Manawatū cemeteries under investigation are more conducive to natural burial than Kelvin Grove, and development in the Manawatū district is likely to be more cost effective and have a lower environmental footprint. If Manawatū District Council proceed with a natural burial cemetery, residents of the city may choose the Manawatū cemetery based on plot price, and the development at Kelvin Grove may never recover its costs.

- 11.7 Option 3 would also require the council to commit additional funding of between \$20 -30K in the 2022/23 Annual Plan.
- 11.8 Option 2 builds on the existing dialogue between officers of Palmerston North and Manawatū District Council officers regarding investigations into a natural burial cemetery in the Manawatū.
- 11.9 The Manawatū District Council Cemeteries Management Strategy includes references to working alongside neighbouring Councils to investigate a regional cemetery and exploring opportunities for partnerships and the benefits of partnerships of a regional cemetery and cemetery services.
- 11.10 Time spent exploring options for regional cemetery services, including a natural burial area, will ensure that Palmerston North City Council and Manawatu District Council and their respective communities, are well informed on the opportunities for collaboration on a natural burial cemetery option, any further investment is required.
- 11.11 Option 2 is the option recommended by officer on the above basis.

Does the Committee have delegated authority to decide? If Yes quote relevant clause(s) from Delegations Manual	No
Are the decisions significant?	No
If they are significant do they affect land or a body of water?	No
Can this decision only be made through a 10 Year Plan?	No
Does this decision require consultation through the Special Consultative procedure?	No
Is there funding in the current Annual Plan for these actions?	Yes
Are the recommendations inconsistent with any of Council's policies or plans?	No
The recommendations contribute to Goal 3: A Connected and Safe Community	
The recommendations contribute to the achievement of action/actions in Connected Communities	
The action is: Palmerston North people have access to a natural burial option within the Manawatū/Whanganui region.	
Contribution to strategic direction and to social, economic,	Cemeteries provide a final resting place for former residents of the city and surrounding area. They are not just a place for burials, they hold significant social connections. Supporting eco- and natural burial options enables families to

<p>environmental and cultural well-being</p>	<p>have choices and supports cultural and spiritual beliefs</p> <p>Investigating a district-wide natural burial area supports community collaboration and provides an opportunity to identify the lowest environmental impact option, consistent with the underlying principles of natural burial</p>
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ATTACHMENTS

1. Naturla Burial Cemetery case studies [↓](#) 

MEMORANDUM

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Citywide Emissions Inventory 2021

PRESENTED BY: Adam Jarvis, Senior Climate Change Advisor

APPROVED BY: David Murphy, Chief Planning Officer

RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the memorandum titled 'Citywide Emissions Inventory 2021' be received.

1. ISSUE

- 1.1 The Eco City Strategy 2021 set a target of a 30% reduction in CO₂e emissions in Palmerston North by 2031, compared to the 2016/17 baseline. This inventory has been prepared to measure progress against these targets.
- 1.2 This memo has not been prepared to inform policy responses by the Council to work towards the Eco City Strategy target. As detailed in previous reporting, work continues on the implementation of the 'Low Carbon Roadmap' that will inform future policy responses and LTP budgets.

2. BACKGROUND

- 2.1 In 2016/17 PNCC conducted its first citywide inventory to provide context for the Eco City Strategy's 25% citywide carbon emission reduction target. This inventory was conducted by AECOM and was presented to Council in 2018. This latest inventory follows the same methodology and has been completed 'in-house' by Council staff.
- 2.2 The relaxation of COVID-19 restrictions as well as other national economic drivers continue to affect the city's emissions profile. The biggest change from 2020 is due to forestry related emissions, as discussed in the 2020 memorandum, with forestry removals and replanting returning to more normal levels.

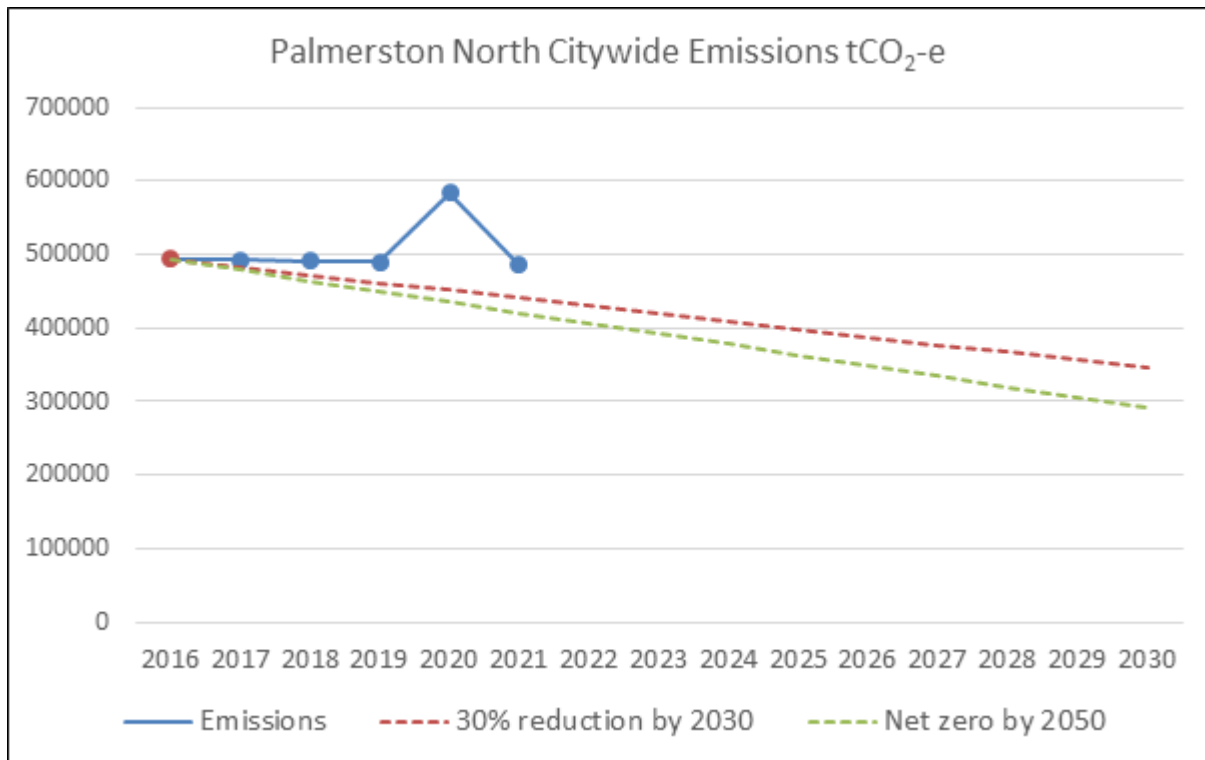


Figure 1 - Citywide Emissions and Target Trends

- 2.3 Encouragingly, the beginnings of a downward trend in Citywide emissions have begun to emerge, with the 2021 inventory (see Table 1 below) showing a 0.5% decline in emissions relative to the 16/17 baseline, representing a per-capita decline of ~6.5%. However as the chart in Figure 1 above demonstrates, Palmerston North remains significantly behind schedule in meeting the Eco City Strategy 30% reduction target in remaining 8 years, as well as the national target, set through the Climate Change Response (Zero Carbon) Amendment Act 2019, of carbon neutrality by 2050.
- 2.4 Not unsurprisingly, and as per officer guidance provided alongside the 2020 inventory, it is becoming increasingly clear that the 2020 year was an outlier in terms of emissions. Covid related lockdowns had a variety of transient impacts on emissions. By 2021, these appear to have largely settled, the August 2021 lockdown notwithstanding, revealing a range of longer-term trends that 2020 either masked, or in some cases accelerated.

Sector/Category Source		Emissions (tCO ₂ e)		tCO ₂ e difference since 16/17 (%)
Stationary Energy	Electricity Consumption	44502	128398	-5674 (-4.23%)
	Electricity T&D Loss	4628		
	Petrol and Diesel	23761		
	Natural Gas	44191		
	Natural Gas T&D Loss	4850		
	LPG	5010		
	Landfill Gas	7		
	Coal	1448		
	Biofuels	1		
Transportation	Petrol	124147	226425	-13486 (-5.62%)
	Diesel	90459		
	Rail Emissions	1642		
	Jet Kerosene	8512		
	Av Gas	975		
	LPG	690		
Waste	Solid Waste Disposal	15550	17407	1586 (10.02%)
	Waste Water	1857		
IPPU (Industry)			31953	+5604 (+18.83%)
Agricultural			122634	+10836 (+9.69%)
Total gross emissions (excl. forestry)			526817	-1674 (-0.32%)
Forestry	Exotic Forest Sequestration	-87,434	-67203	-734 (-1.1%)
	Native Forest Sequestration	-19,091		
	Total Harvest Emissions	39322		
Total net emissions (incl. forestry)			459614	-2408 (-0.52%)

Table 1 - 2021 Citywide Emissions Inventory Results Summary

- 2.5 Compared with the 2016/17 baseline, 2021 saw significant progress in electrification of stationary energy, with notable declines in natural gas and coal usage (down ~12 and 37% respectively). Balancing these reductions were increases in IPPU (e.g. refrigerants, aerosols, chemical process emissions), and a modest increase in electricity emissions. Increased electricity demand may in fact be a positive sign of change from more emissions intensive technologies to more efficient electric alternatives. It is likely that as the city continues to decarbonise electricity use will continue to increase.
- 2.6 The transport sector saw a 9% reduction in petrol usage, likely primarily due to the effects of the August 2021 lockdown and increased incidence of working from home. Regionally, EVs are still an insignificant proportion of the overall fleet, though ~2.5% of new vehicle registrations are battery electric, up from ~0% in 16/17, but lagging significantly behind major centres such as Auckland and Wellington at ~6-9%.

- 2.7 The ongoing effect of Covid lockdowns continues to be observed in aviation, with these emissions ~23% below the baseline. It may be that the normalisation of remote working and online meetings will have a lasting effect on short-haul business travel. Officers anticipate an upcoming increase in 2022 aviation emissions related to latent demand for holidays and other recreational travel as national borders reopen, though the long-term impacts remain to be seen. Diesel emissions increased slightly, but this was not reflected in registration numbers, suggesting that the existing diesel fleet is seeing higher utilisation, possibly due to an increase in home-deliveries of goods post-Covid.
- 2.8 Waste emissions have increased by 10%, somewhat outpacing population growth due to a reduction in recycling volumes following the decision of China to no longer accept these materials, and the subsequent reduction in the number of plastic types our recycling service accepts.
- 2.9 Agricultural emissions in Palmerston North have normalised somewhat since the large uptick observed in 2020 which was likely a statistical anomaly as per officer guidance during the presentation of the 2020 inventory. However, this decline is balanced by a shift from lower intensity pastoral farming to higher intensity dairy.
- 2.10 Forestry emissions have largely returned to the 2016/17 baseline from the 2020 uptick, as there were relatively few large harvesting operations. That said, a substantial number of forestry blocks are reaching maturity (24-26 years), and further substantial harvesting operations are predicted in the coming years.

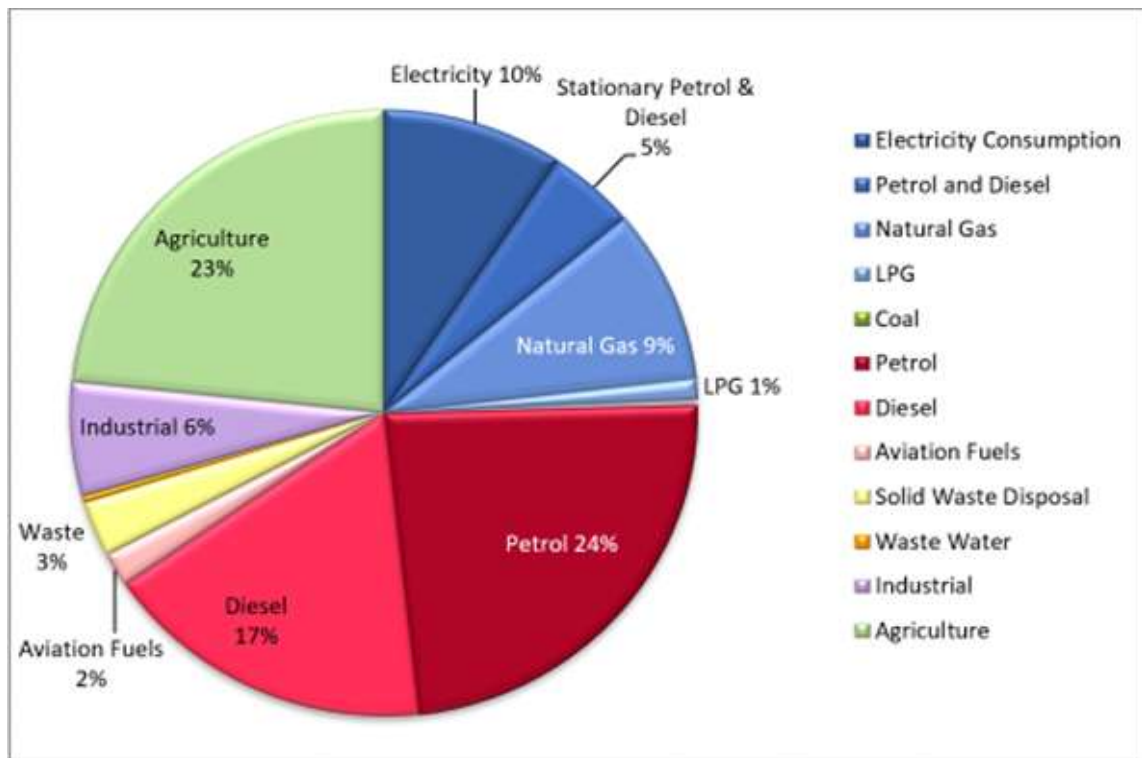


Figure 2 - Citywide Inventory Emissions Source Comparison

3. NEXT STEPS

- 3.1 Council officers will continue to monitor citywide emissions, publishing inventories annually for the previous calendar year. It is anticipated that the 2022 inventory will be published in Autumn 2023.
- 3.2 Work continues on the implementation of the 'Low Carbon Roadmap', in particular with respect to the analysis of cost/benefits of carbon reduction options feeding into the development of the next Long Term Plan. A report on the 2021/22 Low Carbon Fund is expected to be reported to the September Environmental Sustainability Committee.
- 3.3 An organisational emissions inventory is currently being compiled for the 2020/2021 financial year. It is expected that this inventory will be externally audited in July, and reported to the September Environmental Sustainability Committee.

4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide?	Yes
Are the decisions significant?	No
If they are significant do they affect land or a body of water?	No
Can this decision only be made through a 10 Year Plan?	No
Does this decision require consultation through the Special Consultative procedure?	No
Is there funding in the current Annual Plan for these actions?	Yes
Are the recommendations inconsistent with any of Council's policies or plans?	No
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in Climate Change	
The action is: Develop a road map to achieving a low carbon city.	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	Measuring progress towards the Eco City Strategy carbon reduction target.

ATTACHMENTS

Nil

MEMORANDUM

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Update on Turitea Translocations

PRESENTED BY: Adam Jarvis, Senior Climate Change Advisor

APPROVED BY: David Murphy, Chief Planning Officer

RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the memorandum titled 'Update on Turitea Translocations' be received for information.

1. ISSUE

- 1.1 Forty Toutouwai (North Island Robins) were successfully re-introduced to the Turitea Reserve in April 2021. Though initially faring well, an explosion in rat numbers, observed nationally, has put the future survival of the population at risk. Distinguished professor Doug Armstrong of Massey University, key partner for the project, is modelling a greater than 50% chance the population will decline to local extinction in the absence of significant action from PNCC to reduce rat numbers in the reserve.
- 1.2 Officers have begun preparing a substantial operation to be conducted Winter 2022, manually laying a high density of diphacinone 'striker' strips across 400ha of the Turitea Reserve, protecting the core area plus a buffer zone around where the Toutouwai have been attempting to established. This operation is expected to be carried out within existing budgets.
- 1.3 While the Environmental Sustainability Plan calls for a plan to be developed regarding future translocations, officers believe that, given the circumstances, this work would be premature until the ongoing situation can be rectified.

2. BACKGROUND

- 2.1 The 17 November 2021 Environmental Sustainability Committee resolved that:

'The Chief Executive report to the Environmental Sustainability Committee on opportunities for native species re-introductions in the Turitea Reserve area.'
- 2.2 In April 2021, PNCC was able to successfully release 40 Toutouwai (North Island Robins) to the Turitea Reserve, after being locally extinct for

generations. This project was approximately four years in the making, and followed a lengthy process of iwi engagement, DOC consultation, permitting, project planning, and two years of delays due to an inability to conduct the operation during the brief Autumn window when translocations are possible. The project was only possible with the significant support of Rangitāne, Massey University, Parker Conservation, Pukaha Mt Bruce, Daniel Ritchie Contracting, and numerous volunteers.

- 2.3 While the birds were successfully released, it takes years before it can be said with certainty whether the translocation was successful. The newly introduced individuals must establish themselves a territory in an unfamiliar environment, avoid dispersing beyond the range of their peers, escape predation, establish nests, successfully fledge enough young to set the population on the path of sustainable growth and become resilient to shocks such as cold winters or increased predation. Consequently, the first few breeding seasons post-release are the most critical.

- 2.4 Unfortunately, a combination of factors resulted in a large increase in rat numbers within the reserve throughout the 2021/2022 summer breeding season. Rats are the primary predator of note for Toutouwai, particularly targeting the females, eggs, and chicks in the nest. Rats increased from 2020/21 summer tracking tunnel rates of 11%, through to 24% in 2021/22, an increase of 220%. Some of this increase can be attributed to annual variability, particularly in podocarp seedfall, but it is also believed that the Turitea project, like many other projects of similar age nationally is potentially becoming a victim of its own success. PNCC has been conducting extensive predator control operations within the reserve for over 15 years now, during which time the suppression of browsing species such as possum, deer, and other ungulates has allowed a dramatic reinvigoration of the floral health of the bush. The Turitea is now producing seedfall several orders of magnitude greater than previously, which in turn is providing ample food available for large explosions in rat numbers through the spring – particularly during podocarp mast years where this seedfall is substantially higher. Council officers are investigating how our control operation might be adapted over time to adjust to this new reality.

- 2.5 In the meantime, in order to maximise the chances of Toutouwai survival during the critical upcoming breeding season, officers in partnership with Rangitāne are preparing a special operation targeting rats this upcoming 2022 Winter. Diphanone 'strikers' (essentially cardboard strips) are to be stapled to trees at high densities across an identified 400ha core area which generally encompasses the lower Turitea area surrounding the dams. The goal is to place a striker in the home range of every rat within the target area. The Turitea project typically uses Brodifacoum bait in its stations, so using a different poison for this operation should also allow Council to reach any rats that have become shy or resistant to our regular regime.

3. NEXT STEPS

- 3.1 In concert with Rangitāne partners, conduct widespread diphacinone operation in Winter 2022, while rat food availability is at its lowest.
- 3.2 Continue to monitor rat numbers, Toutouwai breeding success, and other key indicators.
- 3.3 Revisit future translocations at a later date, if and when circumstances allow.

4. COMPLIANCE AND ADMINISTRATION

Does the Committee have delegated authority to decide?	Yes
Are the decisions significant?	No
If they are significant do they affect land or a body of water?	No
Can this decision only be made through a 10 Year Plan?	No
Does this decision require consultation through the Special Consultative procedure?	No
Is there funding in the current Annual Plan for these actions?	Yes
Are the recommendations inconsistent with any of Council's policies or plans?	No
The recommendations contribute to Goal 4: An Eco City	
The recommendations contribute to the achievement of action/actions in Environmental Sustainability	
The action is: Monitor Toutouwai reintroduction, and develop a plan for future translocations	
Contribution to strategic direction and to social, economic, environmental and cultural well-being	As above

ATTACHMENTS

Nil

COMMITTEE WORK SCHEDULE

TO: Environmental Sustainability Committee

MEETING DATE: 18 May 2022

TITLE: Committee Work Schedule - May 2022

RECOMMENDATION TO ENVIRONMENTAL SUSTAINABILITY COMMITTEE

1. That the Environmental Sustainability Committee receive its Work Schedule dated May 2022.

COMMITTEE WORK SCHEDULE 2022					
No	Estimated Report Date	Subject	Officer Responsible	Current Position	Date of Instruction
1	18 May 2022	Investigate options for eco-burial in Palmerston North	Chief Infrastructure Officer		9 December 2020 clause 19.20
2	18 May 2022	Environmental Sustainability Review 2022	Chief Planning Officer		Terms of Reference of Committee
3	18 May 2022 Quarter 4 2023	Opportunities for native species re-introductions in the Turitea Reserve area.	Chief Planning Officer	Update report attached to agenda. Further updates will be presented in 2023.	17 November 2021 Clause 38.21
4	18 May 2022	Citywide Emissions Inventory 2021	Chief Planning Officer		Climate change plan ongoing action #3
5	21 September 2022	Low Carbon Fund Annual Report	Chief Planning Officer	Implementation of Low Carbon Fund	Committee of Council 9 June 2021 Clause 28.18-21
6	21 September 2022	Organisational Emissions Inventory 2020/21	Chief Planning Officer		Climate change plan ongoing action #1

7	21 September 2022	Carbon Neutral PNCC feasibility study	Chief Planning Officer		<u>Climate change plan ongoing action #3</u>
8	21 September 2022	Update on the Regional Climate Change Committee	Chief Planning Officer		<u>Climate change plan ongoing action #1</u>
9	21 September 2022	Annual Progress report – Actions from the Waste Management and Minimisation Plan 2019.	Chief Infrastructure Officer		9 September 2020 Clause 17-20
10	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>
11	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>
12	Quarter 4 2023	Environmental Sustainability Report 2023	Assistant Chief Executive		<u>Terms of Reference of Committee</u>

ATTACHMENTS

NIL