



If calling, please ask for Democratic Services

Climate Committee

Tuesday 22 September 2020, 9.30am

Council Chamber, Greater Wellington Regional Council
Level 2, 15 Walter Street, Te Aro, Wellington

Members

Cr Nash (Chair)

Cr Lee (Deputy Chair)

Cr Brash

Cr Connelly

Cr Gaylor

Cr Kirk-Burnnand

Cr Laban

Cr van Lier

Dr Maria Bargh

Recommendations in reports are not to be construed as Council policy until adopted by Council

Climate Committee

Tuesday 22 September 2020, 9.30am

Council Chamber, Greater Wellington Regional Council
Level 2, 15 Walter Street, Te Aro, Wellington

Public Business

No.	Item	Report	Page
1.	Apologies		
2.	Conflict of interest declarations		
3.	Public participation		
4.	Confirmation of the Public minutes of the Climate Committee meeting on 23 June 2020	20.255	3
5.	Update on progress of action items from previous meetings – September 2020	20.228	6
6.	Performance measures for the strategic priorities for the Climate Committee	20.332	11
7.	Carbon reduction pathways and budgets for the Long Term Plan	20.337	21
8.	Applications to the Low Carbon Acceleration fund	20.333	32
9.	Update on the Wellington Region Climate Change Working Group	Oral report	



Please note these minutes remain unconfirmed until the Committee meeting on 22 September 2020

Report 20.225

Public minutes of the Climate Committee meeting on Tuesday 23 June 2020

All members participating by Zoom at 9.30am.

Members Present

Councillor Nash(Chair)
Councillor Lee (Deputy Chair)
Councillor Brash
Councillor Connelly
Councillor Gaylor
Councillor Kirk-Burnnand
Councillor Laban
Councillor van Lier
Dr Maria Bargh

All members participated at this meeting via Zoom, and counted for the purpose of quorum, in accordance with clause 25B of Schedule 7 to the Local Government Act 2002.

Public Business

1 Karakia timatanga

The Committee Chair invited Dr Bargh to open the meeting with a karakia timatanga.

2 Apologies

There were no apologies.

3 Declarations of conflicts of interest

There were no declarations of conflict of interest.

4 Public participation

Elaine Gyde spoke to agenda item 4 – Strategic priorities for the Climate Committee

Quentin Duthie spoke to agenda item 4 – Strategic priorities for the Climate Committee

Cally O’Neill and Alayna Ashby, Te Reo o nga Tangata, spoke to agenda item 4 – Strategic priorities for the Climate Committee.

The Chair advised the Committee that the oral item Our climate future was not included in the agenda and requested that it be discussed.

5 Our climate future – oral report

Dr. Alex Pezza, Senior Climate Scientist, gave a presentation on climate science and current climate issues in the Wellington Region.

Noted: The Committee requested a report on how society changed and adapted during the Government’s COVID-19 Alert Level 4 and 3 lockdown, and how this can be used as a template to adapt to climate change. The Committee requested that the identified adaptations be promoted and shared with communities.

6 Strategic priorities for the Climate Committee – Report 20.113

Andrea Brandon, Programme Lead – Climate Change, spoke to the report.

Moved: Cr Connelly / Cr Lee

That the Committee:

- 1 Notes the current status of the climate change work programme.
- 2 Notes that the COVID-19 pandemic response will create challenges to progressing Greater Wellington’s climate action as well as opportunities to strengthen its climate response.
- 3 Notes the current strategic direction for climate action as outlined in the Greater Wellington Climate Emergency Response Programme.
- 4 Considers the contributing elements to the Climate Committee’s proposed strategic priorities for the 2019-22 triennium (paragraphs 2 to 43).
- 5 Agrees that the Climate Committee’s strategic priorities for the 2019-22 triennium are Option Three – Outcomes (paragraphs 52 and 53).
- 6 Agrees that performance measures for these strategic priorities will be developed and reported back for approval to the Climate Committee’s meeting on 22 September 2020.

The motion was **carried**.

Noted: The Committee requested that it receive reports on the items from the Regional Natural Hazards Management Strategy, due to the overlap of natural hazards with climate change impacts.

7 COVID-19 recovery and climate change – Report 20.201 [for information]

Suze Keith, Climate Change Advisor, spoke to the report.

8 The Low Carbon Acceleration Fund: status update – Report 20.213 [For information]

Jake Roos, Climate Change Advisor, spoke to the report.

Noted: The Committee requested a report on the carbon reduction potential of restoring wetlands and peatlands compared to reforestation.

9 Karakia whakamutanga

The Committee Chair invited Dr Bargh to close the meeting with a karakia whakamutunga.

The meeting closed at 11.38am.

Councillor T Nash
Chair

Date:

Climate Committee
22 September 2020
Report 20.228



For Information

UPDATE ON PROGRESS OF ACTION ITEMS FROM PREVIOUS MEETINGS – SEPTEMBER 2020

Te take mō te pūrongo

Purpose

1. To update the Climate Committee (the Committee) on the progress of action items arising from previous Committee meetings.

Te horopaki

Context

2. Items raised at Committee meetings, that require actions by officers, are listed in the table of action items from previous Council meetings ([Attachment 1](#) - Action items from previous Climate Committee meetings – September 2020). All action items include an outline of the current status and a brief comment.

Ngā hua ahumoni

Financial implications

3. There are no financial implications from this report, but there may be implications arising from the actions listed.

Ngā tūāoma e whai ake nei

Next steps

4. Completed items will be removed from the action items table for the next report. Items not completed will continue to be progressed and reported. Any new items will be added to the table following this Council meeting and circulated to the relevant business group/s for action.

Ngā āpitihanga

Attachment

Number	Title
1	Action items from previous Climate Committee meetings – September 2020

Ngā kaiwaitohu

5. Signatories

Writer	Lucas Stevenson – Kaitohutohu/Advisor, Democratic Services
Approvers	Tracy Plane, Manager, Strategic and Corporate Planning Luke Troy – Kaiwhakahaere Matua Rautaki/General Manager Strategy

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council’s roles or Committee’s terms of reference</i></p> <p>The action items are of an administrative nature and support the functioning of the Committee.</p>
<p><i>Implications for Māori</i></p> <p>Māori have a vested interest in climate change issues; however, there are no direct implications for Māori arising from this report.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>Action items contribute to Council’s and Greater Wellington’s related strategies, policies, and plans to the extent identified in Attachment 1.</p>
<p><i>Internal consultation</i></p> <p>There was no internal consultation.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>There are no known risks.</p>

Attachment 1 to Report 20.228

Action items from previous Climate Committee meetings

Meeting date	Action	Status and comment
23 June 2020	<p>Our climate future – oral report</p> <p>Noted:</p> <p>The Committee requested a report on how society changed and adapted during the Government’s COVID-19 Alert Level 4 and 3 lockdown, and how this can be used as a template to adapt to climate change. The Committee requested that the identified adaptations be promoted and shared with communities.</p>	<p>Status: ongoing</p> <p>Comment: We have been working with Council to consider the impacts of Covid-19 and the opportunities it presents to advance climate action (e.g., Report 20.201, presented to the 23 June 2020 Climate Committee). We have received additional funding under the Government’s ‘shovel-ready’ and ‘Jobs For Nature’ programmes aimed at stimulating the economy and creating jobs, to reduce the impact of the Government’s Covid-19 response measures. These programmes will contribute to increasing our regional resilience to climate impacts. We have released a report we commissioned on the economic impact of Covid-19.</p>
23 June 2020	<p>Strategic priorities for the Climate Committee – Report 20.113</p> <p>Resolution:</p> <p>Agrees that performance measures for these strategic priorities will be developed and reported back for approval to the Climate Committee’s meeting on 22 September 2020.</p>	<p>Status: completed</p> <p>Comment:</p> <p>Performance measures for strategic priorities will be developed and reported back on to 22 September Climate Committee</p>
23 June 2020	<p>Strategic priorities for the Climate Committee – Report 20.113</p> <p>Noted:</p> <p>The Committee requested that it receive reports on the items from the Regional Natural Hazards Management Strategy, due to the overlap of natural hazards with climate change impacts.</p>	<p>Status: Completed</p> <p>Comment An update on the Natural Hazards Management Strategy will be provided to the Climate Committee workshop on climate change adaptation. Oral reports will be provided to the Climate Committee as a standing item.</p>

Attachment 1 to Report 20.228

Action items from previous Climate Committee meetings

Meeting date	Action	Status and comment
23 June 2020	<p>The Low Carbon Acceleration Fund: status update – Report 20.213</p> <p>Noted: The Committee requested a report on the carbon reduction potential of restoring wetlands and peatlands compared to reforestation.</p>	<p>Status: Completed</p> <p>Comment The revised Queen Elizabeth Park Low Carbon Acceleration Fund proposal includes information on the carbon reduction potential of restoring peatlands compared to reforestation for that site.</p>

Climate Committee
22 September 2020
Report 20.332



For Decision

PERFORMANCE MEASURES FOR THE STRATEGIC PRIORITIES FOR THE CLIMATE COMMITTEE

Te take mō te pūrongo

Purpose

1. To advise the Climate Committee (the Committee) on the status of the climate change work programme, and the development of performance measures for its strategic priorities for the 2019-22 triennium.

He tūtohu

Recommendations

That the Committee:

- 1 **Agrees** that the performance measures for two of the Climate Committee's strategic priorities for the 2019-22 triennium are:
 - a Greater Wellington measures and reduces its' own carbon footprint – we “walk the talk”

Carbon budgets and emissions reduction pathways to enable Greater Wellington to reach its carbon reduction goals for corporate emissions are set for the period 2021-2035, are science-based and pragmatic, and an emissions reduction plan for achieving them is in place. Key Performance Indicators are:

 - i Greater Wellington's corporate carbon footprint is measured annually and certified on a regular basis
 - ii Carbon budgets, the emissions reduction pathway and plan are adopted by the Climate Committee
 - iii Corporate carbon emissions have peaked, meaning they will have begun to track downwards after 2020
 - iv Funding towards the emissions reduction pathway is allocated in the 2021-31 Long Term Plan.
 - b To demonstrate Greater Wellington leads the regional sector in climate action, equitable progress is made towards being a climate-resilient, low emissions region.

Greater Wellington works with the regional sector to build the evidence base required to develop a regional emissions reduction plan and adaptation plan,

enabling climate safe decision-making across the Wellington Region in times of uncertainty. Key Performance Indicators are:

- i Regional climate change impacts and risk assessments are up to date and complete at the regional scale
 - ii Regional greenhouse gas emissions are inventoried biennially
 - iii Funding for taking regional climate action is allocated in the 2021-31 Long Term Plan.
- 2 **Notes** that the third strategic priority to co-design Council’s strategy and approach for the Wellington Region to mitigate, adapt and transition to a low emissions regional economy with mana whenua, requires further discussion, additional resourcing and an assessment method for monitoring performance will need to be developed at a later point.

Te tāhū kōrero

Background

Greater Wellington Climate Emergency Response Programme

2. Council declared a climate emergency in August 2019. This decision responds to the urgency climate change presents and encourages a step change in how Greater Wellington addresses climate change, both corporately and in how it uses its influence in the region.
3. In order to demonstrate Council’s commitment to changing the status quo, the decision was strengthened by Council adopting two ten-point action plans - a Corporate Carbon Neutrality Action Plan and a Regional Climate Emergency Action Plan. These action plans are collectively referred to as the Greater Wellington Climate Emergency Response Programme (the Programme).
4. Officers have provided a status report on the Programme ([Attachment 1](#) - Climate Emergency Response Programme Status Report (September 2020)). The overall status of the Programme is on track, though, given its scope, we need to continue to be deliberate with resourcing. In June the Climate Committee established a set of strategic priorities for the 2019-12 triennium, to provide clear areas of focus. It was agreed that officers would report back with some suggested key performance indicators to measure progress against these priorities on a regular basis.
5. To recap, Council adopted the following strategic priorities for the Climate Committee for the 2019-2022 triennium:
 - a Drive the change needed in Greater Wellington’s activities to achieve Greater Wellington’s 2030 carbon neutrality target
 - b Lead the regional sector in climate action, by building relationships with central government, other regional councils and unitary authorities, and mana whenua, to promote dialogue and the exchange of ideas and good practice, to strengthen alignment with our national climate change obligations
 - c Co-design Council’s strategy and approach for the Wellington Region to mitigate, adapt and transition to a low emissions regional economy with mana whenua,

ensuring that action is aligned across all Committees while also addressing our obligations under the Resource Management Act 1991.

Te tātaritanga Analysis

Performance measures

6. The following key performance measures have been developed to assess the progress of these priority outcomes:
 - a Greater Wellington measures and reduces its' own carbon footprint – we “walk the talk”

Greater Wellington’s corporate carbon footprint is measured annually and certified through an independent verification process undertaken by Toitū Envirocare. Carbon budgets and emissions reduction pathways to enable Greater Wellington to reach its carbon reduction goals for corporate emissions are set for the period 2021-2035, are science-based and pragmatic, and an emissions reduction plan for achieving them is in place. Key Performance Indicators are:

 - i Greater Wellington’s corporate carbon footprint is measured annually and certified on a regular basis
 - ii Carbon budgets, the emissions reduction pathway and plan are adopted by Council
 - iii Corporate carbon emissions have peaked, meaning they will have begun to track downwards after 2020
 - iv Funding for implementing the emissions reduction plan is explicitly included in the 2021-31 Long Term Plan.
 - b To demonstrate Greater Wellington leads the regional sector in climate action, equitable progress is made towards being a climate-resilient, low emissions region.

Greater Wellington works with the regional sector to build the evidence base required to develop a regional emissions reduction plan and adaptation plan, enabling climate safe decision-making across the region in times of uncertainty. Key Performance Indicators are:

 - i Regional climate change impacts and risk assessments are up to date and complete at the regional scale
 - ii Regional greenhouse gas emissions are inventoried biennially
 - iii Regional climate action is explicitly included in the 2021-31 Long Term Plan.
7. In order to engender a genuine partnership with mana whenua to co-design our strategies, further discussion on that strategic priority, outcome and associated performance measure/s must be developed and agreed with all mana whenua in the Wellington Region.
8. For this to become a reality mana whenua will require the capacity and resourcing to co-design these regional mitigation, adaptation and transition strategies, and be

involved in developing appropriate performance measures to track satisfactory outcomes.

Ngā hua ahumoni
Financial implications

9. There are no direct financial implications from the matter for decision or this report. There may be financial implications over time as individual project analysis occurs, business cases are made and budget decisions taken. For the 2019-22 triennium, these will be considered during the 2021-31 Long Term Plan process.

Ngā tikanga whakatau
Decision-making process

10. The matters requiring decision in this report were considered by officers against the decision-making requirements of Part 6 of the Local Government 2002.

Te hiranga
Significance

11. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matters for decision, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that these matters are of low significance given their administrative nature.

Te whakatūtakitaki
Engagement

12. Given the low significance of the matters for decision, officers considered that no related public engagement was required. As this report is about the priorities of the Committee, we have not consulted externally on these. While the Terms of Reference for the Committee provides for a mana whenua representative, this member has not yet been nominated for appointment by Council, and as such, has not been able to contribute to the performance measure.

Ngā tūāoma e whai ake nei
Next steps

13. Once the Committee has determined its Key Performance Measures and associated Key Performance Indicators, officers will begin monitoring the indicators to assess progress over time. These will be reported back for annually at the Committee's third quarterly meeting each year.

Ngā āpitihanga
Attachment

Number	Title
1	Climate Emergency Response Programme Status Report (September 2020)

**Ngā kaiwaitohu
Signatories**

Writer	Andrea Brandon – Programme Lead – Climate Change
Approvers	Tracy Plane – Manager Strategic and Corporate Planning Luke Troy – General Manager Strategy

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council's roles or with Committee's terms of reference</i></p> <p>The Climate Committee's approval of the proposed performance measures fits with its specific responsibility to "oversee the development and review of Council's... environmental strategies, policies, plans, programmes and initiatives".</p>
<p><i>Implications for Māori</i></p> <p>There are implications for mana whenua and Māori. A mana whenua representative has not yet been appointed to the Committee, so the related views, goals and aspirations are not reflected in this report.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>The strategic framework provided by the Greater Wellington Climate Emergency Response Programme and Climate Change Strategy forms the basis of determining the Committee's strategic priorities and associated performance measures.</p>
<p><i>Internal consultation</i></p> <p>The Strategic and Corporate Planning team were consulted in the development of this report.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>There are no identified risks relating to the content or recommendations of this report.</p>

Attachment 1 to Report 20.332

Climate Emergency Response Programme Status Report (September 2020)

Corporate Carbon Neutrality Project

Action point	Short description	Status Feb Quarter	Status June Quarter	Status Sept Quarter	Progress	Percent complete
1	Carbon policy	On track	On track	On track	Policy endorsed by Executive Leadership Team (ELT), support package to accompany policy in progress, 1 July 2020 launch delayed, on track for release mid-August	90
2	Chief Executive (CE) accountability	On track	On track	On track	Completed for 20/21	100
3	Electricity supply	On track	On track	On track	Nearing completion. Preferred supplier Meridian can provide renewable electricity certificates. However whether these can or should be used requires further investigation and consideration. Dynamic market conditions make the best strategy for increasing renewable electricity supply less clear.	80
4	Accelerate Electric Vehicle (EV) bus fleet	At risk	On track	At risk	Work underway to increase electric bus fleet to 108 by December 2023. Planning for a fully decarbonised bus fleet by 2030 is underway, but is funding and resource dependent	25
5	Greater Wellington EV fleet	On track	On track	On track	EV First policy in place, with fleet optimisation review completed. Internal EV charging infrastructure being increased with move to Cuba Street and new build in Masterton. Plan in development to adopt optimisation review findings. Review identified 21-36 candidates for replacement with battery electric vehicles, but further consideration is needed.	60
6	Off road EV supply	On track	On track	On track	Awaiting market developments. Dependent on suitable vehicle being available – there is likely to be in 2021/22.	5
7	Parks reforestation	At risk	At risk	At risk	Planning work underway to understand the timing and implications of phasing out grazing, Low Carbon Acceleration (LCA) Fund applications for two sites, requires significant funding, plus partnerships with other agencies.	10
8	Grazing phase out	At risk	At risk	At risk	Direction agreed through Parks Networks Plan, phase out in the planning phase as above, implementation dependent on timing and land management funding	10

Attachment 1 to Report 20.332**Climate Emergency Response Programme Status Report (September 2020)**

Action point	Short description	Status Feb Quarter	Status June Quarter	Status Sept Quarter	Progress	Percent complete
9	Align CCO targets	At risk	At risk	On track	Letters of expectation sent, each Council Controlled Organisations is at a different stage, but all are working towards managing carbon emissions and reduction plans	25
10	Low-carbon fund	At risk	On track	On track	Fund operational, funding approved through 2020-21 Annual Plan. Formal fund establishment requires consultation through 2021-31 LTP process.	80

Regional Climate Emergency Project – status report

Action point	Short description	Status Feb Quarter	Status June Quarter	Status Sept Quarter	Progress	Percent complete
1	Governance	On track	On track	Complete	Climate Committee established	100
2	Climate Change impacts analysis	On track	On track	On track	Tools reviewed, new guidance created, to build capability/capacity across business. Carbon policy completed, Climate Change Consideration guide revised. To be rolled out to the business through the change programme, start delayed till mid-August	25
3	Strategy review & General Manager (GM) champion assigned	On track	On track	On track	GM Strategy is Programme Sponsor. New direction, set through the two 10-pt plans, will provide components of a revised overall strategy	50
4	Central Government advocacy	At risk	At risk	At risk	Occurring at officer level, level of engagement at times need to be at a higher level (CE to CE; Chair to Minister)	NA (ongoing)

Attachment 1 to Report 20.332

Climate Emergency Response Programme Status Report (September 2020)

Action point	Short description	Status Feb Quarter	Status June Quarter	Status Sept Quarter	Progress	Percent complete
5	Support the Region's Territorial Authorities (TA) to adapt	At risk	At risk	At risk	Good relationships with TAs, but no funding allocated to this, unclear on scope of Greater Wellington's contribution, risk to capacity to partner with mana whenua, requires additional advisory resource. Need to work through with the Council via the Long Term Plan process.	10
6	Technical research to support regional adaptation	At risk	At risk	At risk	Work underway, responsibilities lie across teams & TAs, Wellington Regional Growth Framework interaction identified, some lack of alignment and lack of resourcing in this area	20
7	Funding	At risk	On track	At risk	Researching potential funding opportunities underway, but currently limited capacity to progress. Some wins with Crown funding for "Shovel-ready", 1 Billion Trees and "Jobs for nature" funding	10
8	Regional mitigation	At risk	At risk	At risk	Regional inventory completed for 2019, target may be informed by the Zero Carbon Act, two regional working groups established in previous triennium – Wellington Region Climate Change Working Group (councillor reps) meet quarterly, officer level equivalent meet 6-weekly, there is interest in working together across the Region, working on value proposition for TAs, risk to capacity to partner with mana whenua	5
9	Increase forested area	At risk	At risk	At risk	Work underway with Greater Wellington Parks and with Hutt City Council. But underlying issues remain including need to partner with iwi, TAs, communities, Ministry for Primary Industries, unclear who has lead responsibilities, limited capacity to progress (as with Action 7)	10
10	Embed regional emissions reduction targets	At risk	At risk	On track	Good collaboration occurring with Regional Land Transport Plan, Wellington City Council and Let's Get Wellington Moving on agreeing targets, also Wellington	20

Climate Emergency Response Programme Status Report (September 2020)

Action point	Short description	Status Feb Quarter	Status June Quarter	Status Sept Quarter	Progress	Percent complete
	in key programmes				Regional Growth Framework, potential to work with WellingtonNZ/WREDA on the economic transition approach, some progress is being made	

Climate Committee
22 September 2020
Report 20.337



For Decision

CARBON REDUCTION PATHWAYS AND THE LONG TERM PLAN

Te take mō te pūrongo

Purpose

1. To advise the Climate Committee (the Committee) of the summary of carbon reduction pathway scenarios and confirm next steps.

He tūtohu

Recommendations

That the Committee:

1. **Agrees** that the measures required to reverse our increasing emissions trend and achieve our carbon reduction goals require a significant change to current practices from 2021 onwards.
2. **Recommends** to Council that two or more options for the corporate carbon emissions pathways and their associated measures (including one option for a scenario that represents a similar level of net emissions reduction to that achieved in the scenario B2-R2-P2 in Attachment 1) be included in the Consultation Document for the 2021-31 Long Term Plan.
3. **Notes** that officers will prepare a report, for the 8 December 2020 Climate Committee meeting, to provide a greater level of analysis into offsetting options, and to explore the environmental impacts and preferences expressed by Councillors at the 3 September 2020 workshop.

Te horopaki

Context

2. On 9 August 2019, Councillors, Executive Leadership Team (ELT) and other staff came together at Ramaroa, Queen Elizabeth Park, to discuss and workshop emissions reduction targets for Greater Wellington Regional Council (Greater Wellington) with respect to our corporate emissions. At its 21 August 2019 meeting, Council agreed to adopt the following greenhouse gas (carbon) reduction targets for its corporate operations and areas of direct influence, using the 2018-19 year as a baseline (Setting a carbon neutrality target for GWRC (Report 19.364)):
 - a. 40 percent net reduction in 2024-25 financial year

- b 100 percent net reduction (carbon neutral) in 2029-30 financial year and thereafter
- c Become a net producer of carbon credits (carbon negative) by the 2034-35 financial year

At that meeting Council also agreed to:

- d Set five-yearly carbon budgets for the organisation to guide progress towards the targets, but did not set what those budgets should be, or how these should be managed across Greater Wellington
 - e Set the targets for Greater Wellington on a net basis, but did not address the exact approach to using carbon offsets to help achieve the targets.
3. While this provided a strong direction for Greater Wellington, not all of the important details of the decision were resolved that day. Therefore, on 3 September 2020 a Council workshop was held to achieve the following objectives:
- a consider Greater Wellington's 5 yearly carbon budgets (net emissions) within the context of possible carbon reduction pathways (gross emissions) to 2030
 - b Discuss the use of carbon offsets to help achieve them.
4. Scenarios for Greater Wellington's carbon emissions (excluding Centreport (a port company), Wellington Water and the other Council Organisations (COs)) were constructed for the period 2020 to 2035. The key determinants were the level of action to decarbonise public transport buses and Wairarapa trains, and to retire grazing land and reforest these areas in Greater Wellington's parks ([Attachment 1](#) - Summary of carbon emissions scenarios for Greater Wellington Regional Council).
5. Greater Wellington's corporate carbon footprint for 2018/19 was assigned as the baseline. The scenarios were evaluated against a carbon budget that descends in a straight line from the baseline to the agreed target levels of:
- a A 40 percent reduction in net emissions in 2024/25
 - b A 100 percent reduction in net emissions (carbon neutral) in 2029/30 (followed by a net emissions budget of zero)
 - c Being 'carbon positive' by 2034/35.
6. In practice, 'carbon positive' means that the rate of carbon sequestration occurring on Greater Wellington-managed land is higher than the rate of Greater Wellington's gross carbon emissions. While emissions units (carbon offsets) can be bought from external sources to meet a net carbon budget, this approach would not satisfy a requirement to be carbon positive.

Te tātaritanga

Analysis

7. Analysis of the possible scenarios showed that for the Bus programme, only the most ambitious scenario presented was consistent with being carbon positive by 2034/35 (referred to as 'Step Change' or 'B2' in [Attachment 1](#)). The moderate scenarios for the Rail and Parks programmes are also required to meet the carbon positive target

(described as 'R1' and 'P1' respectively in the scenarios in [Attachment 1](#)). The most ambitious scenarios presented for Rail and/or Parks (e.g. those described as 'R2' and 'P2' in [Attachment 1](#)) create a large and increasing emissions unit surplus that could potentially offset Centreport and the CO's gross carbon emissions, should this be required.

8. Higher levels of carbon reduction for buses are possible by replacing the spare buses with electric vehicles, but the amount of reduction per bus is significantly less than that of replacing the vehicles that are used to serve the peak requirement. Other reduction actions are possible in other areas (such as 'corporate'), but the overall impact of these actions on outcomes is not material for scenario modelling purposes.
9. For the investment in public transport, a considerable proportion of the cost will need to be met by central government. As the level of government's financial assistance is yet to be determined and is subject to future negotiations and bilateral agreements, the estimated total costs have been included in [Attachment 1](#). Also, neither estimate of costs for bus or rail includes the operational cost savings that would arise from switching from diesel to electricity. At present the contractual arrangements preclude those savings accruing to Greater Wellington. Further work is being carried out to understand the implications and options.
10. To achieve Council's stated carbon neutral target, it will be necessary to include programmes and funding for strong action to reduce gross emissions in the 2021-31 Long Term Plan (LTP). Given the considerable funding implications associated with this approach, it is essential to provide a range of options for consultation with the community through the LTP Consultation Document. This document will allow the community to consider trade-offs, and to be given a clear and genuine choice. One of these options should be for a scenario that represents a similar level of net emissions reduction to that achieved in the scenario B2-R2-P2 in [Attachment 1](#).
11. In developing the options for emissions reduction actions in the 2021-31 Long Term Plan, one of the guiding principles will be to maximise carbon reduction and co-benefits at least cost, as well as maintain overall affordability. These costs and benefits will be clearly explained to stakeholders in the LTP Consultation Document. The feedback will be used to inform the final carbon reduction scenario that is included in the 2021-31 Long Term Plan.
12. Meeting a net emissions budget or target is very likely to require carbon offsetting, which involves obtaining and cancelling emissions units to cover the difference between gross emissions and the budget/target level. As this approach is voluntary however, there is no obligation on Greater Wellington to start immediately. The options are to operate a carbon budget beginning with the period of the five years ending 30 June 2025, or only from 2024/25, the first year in which a net emission target has been set, and thereafter. Council would need to have a carbon budget of zero from 2030 onwards to maintain its carbon neutral status. A report specifically on options for carbon budgets and offsets will be brought back to the Committee its 8 December 2020 meeting.

Ngā hua ahumoni

Financial implications

13. There are no direct financial implications from the matter for decision or this report. Cost estimates were provided for each scenario (**Attachment 1**), but further work is required particularly in relation to electric buses to understand the contractual and procurement options as well as to refine the cost estimates. The impact of the carbon reduction pathway options will have to be considered in the context of the Greater Wellington's overall budget, the impact on rates and affordability for the community.
14. Greater certainty of the level of funding assistance available through Waka Kotahi NZ Transport Agency and central government will be sought over the coming months and through the development of the Regional Land Transport Plan 2021.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

15. The proposed matter for decision contributes to Council's and Greater Wellington's policies and commitments relating to climate change as the emissions scenarios proposed for inclusion in the draft 2021-31 Long Term Plan will be consistent with achieving Greater Wellington's climate change targets.
16. The proposed matter has the potential to fundamentally alter the greenhouse gas emissions of Greater Wellington, as the scenarios in **Attachment 1** illustrate. However, the decisions sought in this paper will not directly determine the outcome. The related decisions will be made following the 2021-31 Long Term Plan consultation.
17. The matter for decision has no direct emissions associated with it.
18. Climate change impacts will not have any direct effect upon the proposed matter for decision. Consideration will be given to climate change impacts on Greater Wellington's operations and assets as part of the 2021-31 Long Term Plan.

Ngā tikanga whakatau

Decision-making process

19. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga

Significance

20. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matter for decision, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that this matter is of low significance. Since the declaration of a Climate Emergency on 21 August 2019 by Council a degree of public interest exists in Greater Wellington increasing its climate action. However, the matters remain consistent with existing Council policy and strategy and do not impact on the Council's capability and capacity.

Te whakatūtakitaki

Engagement

21. As the matter for decision is of low significance it is recommended that no external engagement is required.

Ngā tūāoma e whai ake nei

Next steps

22. Pending the Committee's decision on the proposed matter, this matter will be presented to Council on 24 September 2020 for a decision.

Ngā āpitihanga

Attachment

Number	Title
1	Summary of carbon emissions scenarios for Greater Wellington Regional Council

Ngā kaiwaitohu

Signatories

Writers	Jake Roos - Climate Change Advisor Andrea Brandon - Programme Lead Climate Change
Approvers	Tracy Plane – Manager Strategic and Corporate Planning Luke Troy – General Manager Strategy

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council’s roles or with Committee’s terms of reference</i></p> <p>The Committee’s involvement in and consideration of Greater Wellington’s carbon budgets and emissions reduction pathways fits with its specific responsibility to “oversee the development and review of Council’s... environmental strategies, policies, plans, programmes and initiatives”.</p>
<p><i>Implications for Māori</i></p> <p>There are implications for mana whenua and Māori. A mana whenua representative has not yet been appointed to the Committee, so the related views, goals and aspirations are not reflected in this report.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>The matter for decision contributes towards meeting the Council’s goal to be carbon neutral by 2030.</p>
<p><i>Internal consultation</i></p> <p>The Strategic and Corporate Planning department was consulted in the development of this report.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>There are no identified risks relating to the content or recommendations of this report.</p>

Attachment 1 to Report 20.337**Summary of carbon emissions scenarios for Greater Wellington Regional Council**

All Greater Wellington Regional Council (Greater Wellington) scenarios include:

- Renewable electricity percentage in NZ increasing to 100 percent by 2035
- Greater Wellington's light fleet being all battery electric by 2030
- Moving offices to the new Cuba Street premises

Centreport, Wellington Water and the other Council Organisations (COs) are excluded from modelling. Together they presently represent approximately 10,000 tonnes of CO₂e per year that will need to be reduced and then offset from 2029/30 onwards.

Three options each for Bus, Rail and Parks (27 possible combinations) were used to develop the scenarios. These were:

Public transport - bus

Level/ label	Description	Cost estimate (compared to Base Case, total 2022-30)
B0	Existing commitment to 98 new EV buses only. No new electric buses after 2023	N/A
B1	Existing commitment, plus new EVs at end-of-life replacement of old buses only	\$89M
B2	All bus peak vehicle commitment EV from contract renewal, spares are diesel	\$160M

Note: Cost estimates are based on existing contracts which have high depreciation rates and do not return operational savings to Greater Wellington. Cost estimates also do not factor in cost reductions in Electric Vehicle (EV) technology. Therefore the actual costs for introducing EV buses may be substantially different.

Public transport – rail

Level/ label	Description	Cost estimate (capex only, compared to Base Case)
R0	Increase in diesel trains on Wairarapa line (to meet growth) from 2025	N/A
R1	Dual mode diesel-electric (DMMU) trains on Wairarapa line from 2025	\$34M
R2	Battery-electric trains on Wairarapa line from 2025	\$346M

Attachment 1 to Report 20.337

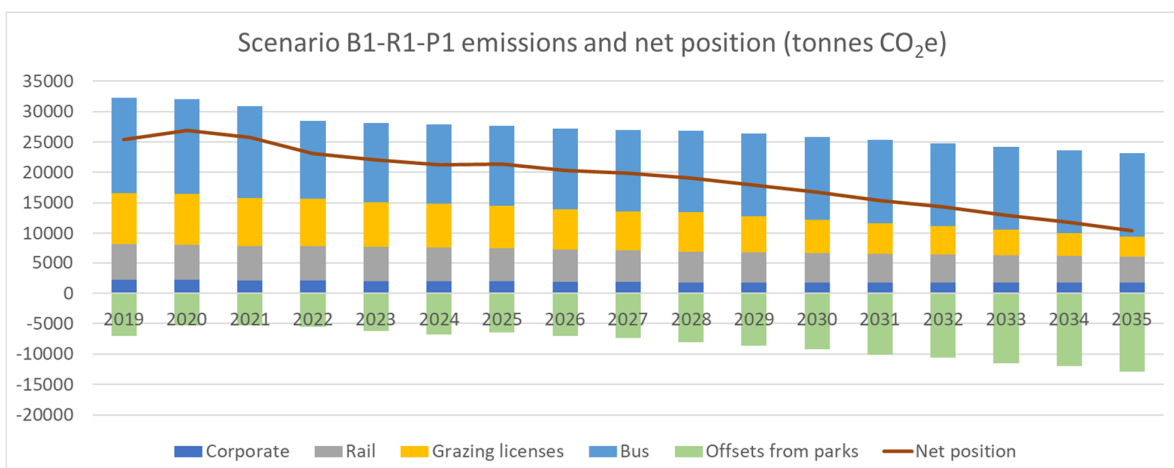
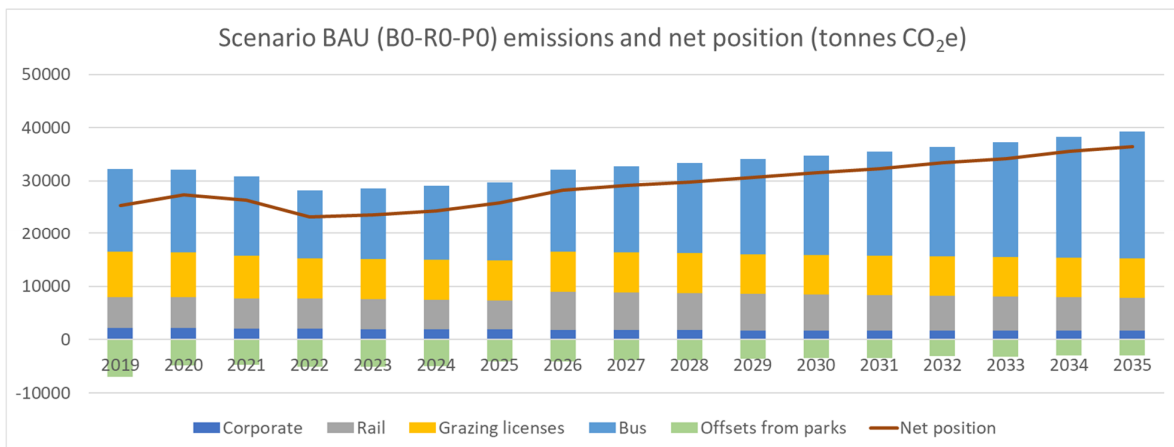
Summary of carbon emissions scenarios for Greater Wellington Regional Council

Note: the lower operation costs of using electricity to power trains compared to diesel will offset capex costs in both R1 and R2.

Parks reforestation

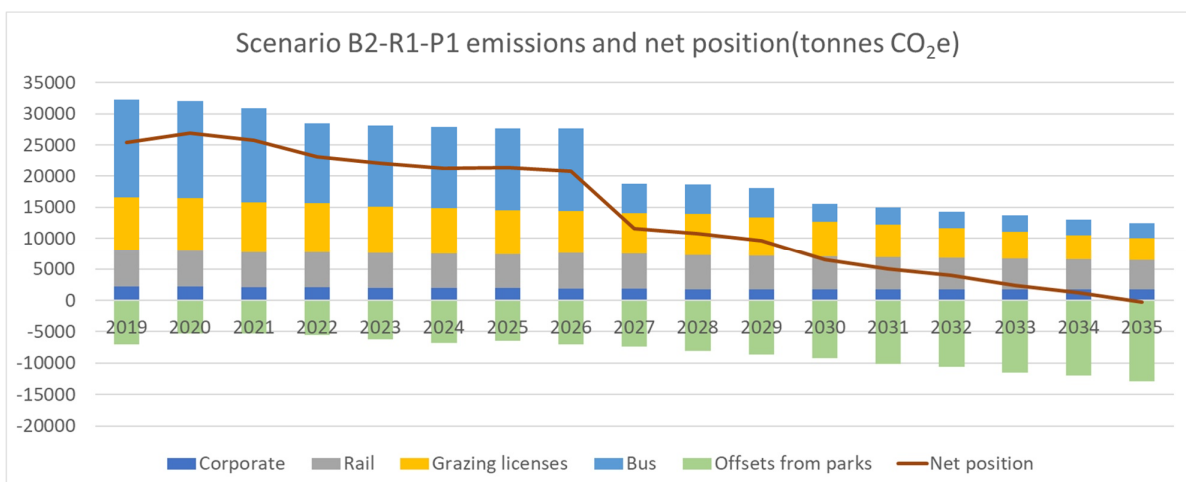
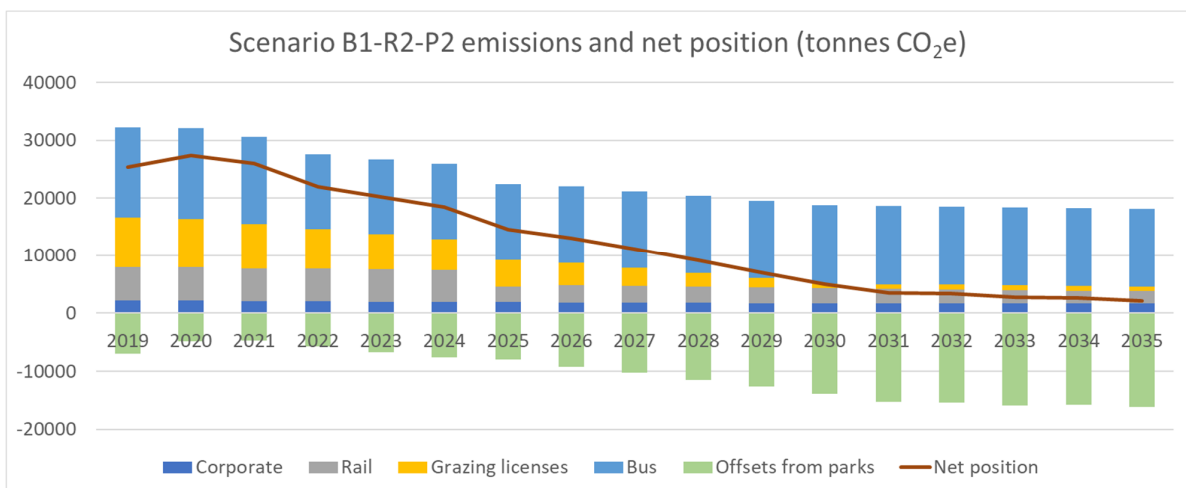
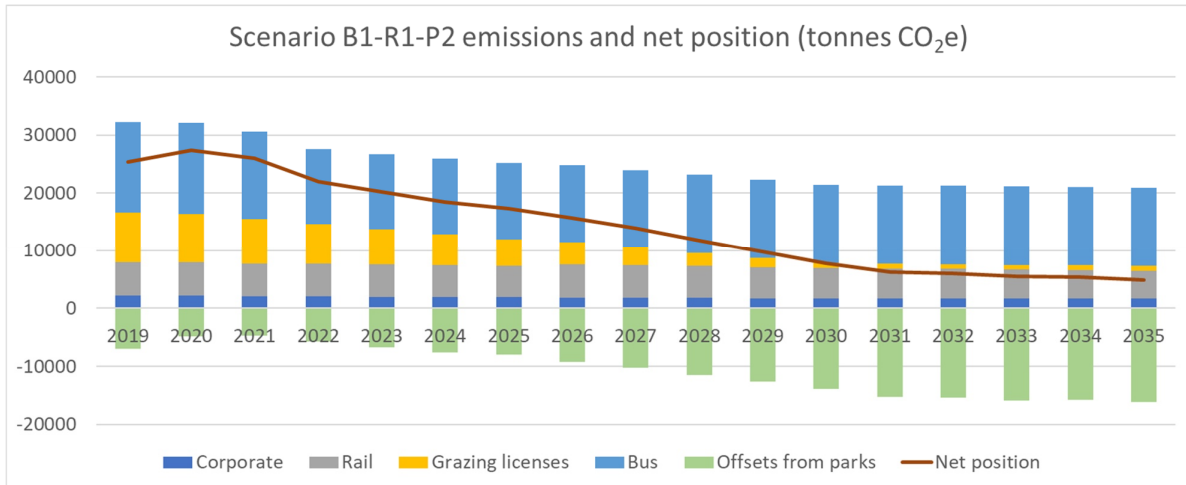
Level/label	Description	Cost estimate (total to 2035)
P0	Existing plans for Queen Elizabeth Park and Kaitoke grazing retirement and new forest planting only	\$2.2M
P1	Moderate grazing phase out, one third of grazing retained, the remainder new native forest	\$21.5M
P2	All grazing licenses except Battle Hill phased out, planted in new native forest	\$34.8M

Combined emissions scenarios



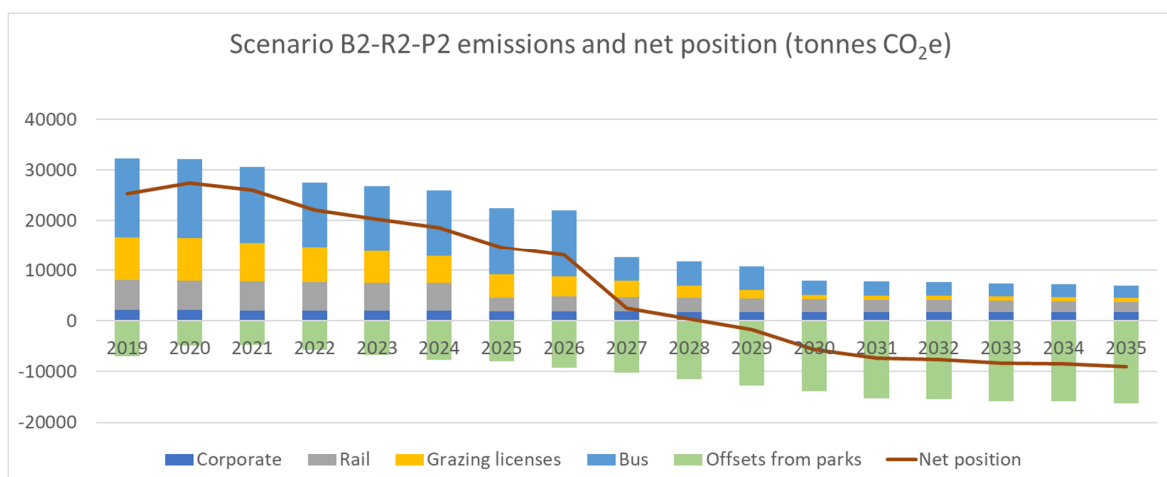
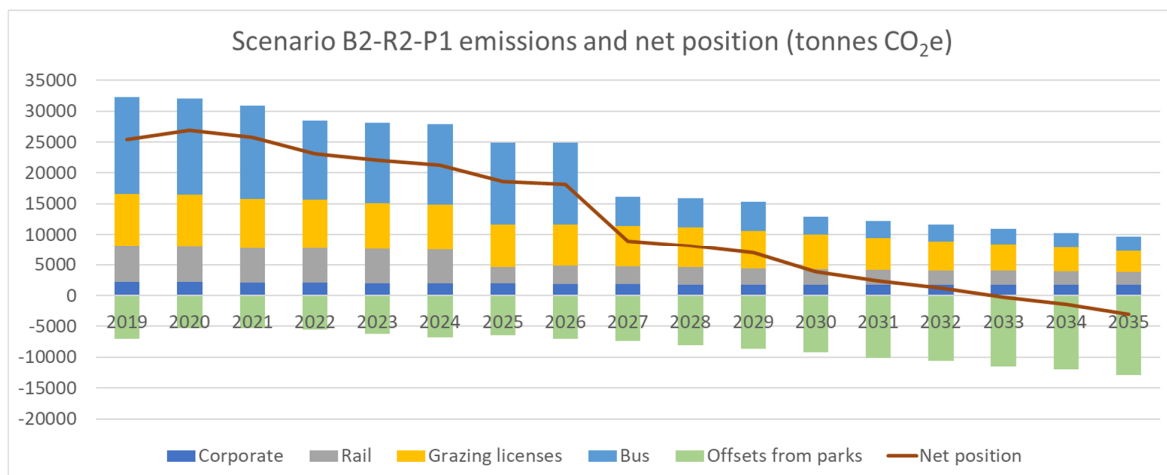
Attachment 1 to Report 20.337

Summary of carbon emissions scenarios for Greater Wellington Regional Council



Attachment 1 to Report 20.337

Summary of carbon emissions scenarios for Greater Wellington Regional Council



Summary

Scenario	Carbon positive 2035 target achieved?	Net emissions unit position in 2035 (tonnes CO ₂ e)	Total of cost estimates \$M
BOR0P0	No	-196,000 (deficit)	2
B1R1P1	No	-24,000 (deficit)	144
B1R1P2	No	57,000 (surplus units)	158
B1R2P2	No	87,000 (surplus units)	436
B2R1P1	Yes (marginal)	63,000 (surplus units)	215
B2R2P1	Yes	93,000 (surplus units)	423
B2R2P2	Yes	179,000 (surplus units)	507

Notes

Attachment 1 to Report 20.337

Summary of carbon emissions scenarios for Greater Wellington Regional Council

'Carbon positive' means that Greater Wellington is sequestering carbon at a higher rate than it is producing it. The target is that Greater Wellington is carbon positive from 2034/35 onwards.

The net emissions unit position is calculated assuming that carbon budgets are implemented from 2020/21 onwards. It also includes/counts Greater Wellington's pre-2021 emissions unit reserve of 86,129 units.

Climate Committee
22 September 2020
Report 20.333



For Decision

APPLICATIONS TO THE LOW CARBON ACCELERATION FUND

Te take mō te pūrongo

Purpose

1. To advise the Climate Committee (the Committee) on the two applications submitted for funding from the Low Carbon Acceleration Fund, and to seek the Committee's agreement to recommend these applications to Council.

He tūtohu

Recommendations

That the Committee:

- 1 **Notes** the two applications for funding from the Low Carbon Acceleration Fund (Attachments 1 and 2).
- 2 **Considers** the cost/benefit ratio of the two applications in reducing our corporate carbon footprint along with the wider co-benefits each project brings to Greater Wellington Regional Council.
- 3 **Agrees** to recommend the revised application for Queen Elizabeth Park to Council for funding of \$1,399,101 (GST exclusive) from the 2020/21 allocation for the Low Carbon Acceleration Fund.
- 4 **Agrees** to recommend the application for Kaitoke Regional Park to Council for funding of \$370,810 (GST exclusive) from the 2020/21 allocation for the Low Carbon Acceleration Fund.

Te tāhū kōrero

Background

2. On 21 August 2019, Council declared a climate emergency, set a target for carbon neutrality by 2030 and adopted two ten-point action plans to ramp up climate action. (Setting a carbon neutrality target for GWRC (Report 19.364) and Declaring a climate emergency (Report 19.342)).
3. One of the actions agreed on 21 August 2019 was to establish the Low Carbon Acceleration Fund (the LCA Fund). The LCA Fund was formally established through the 2020/21 Annual Plan.
4. The objective of the LCA Fund is to help Greater Wellington Regional Council (Greater Wellington) achieve the goal of becoming 'carbon neutral' by 2030 through funding projects that will reduce our corporate carbon footprint.

5. Council approved the design of the LCA Fund at its 9 April 2020 meeting (Design of the Low Carbon Acceleration Fund (Report 20.112)). The LCA Fund, designed to help spur a step change in Greater Wellington's activities to reduce emissions and put it on track to achieve Council's carbon reduction goals (primarily corporate carbon neutrality from 2030), funds activities or initiatives that reduce net emissions more quickly and/or at a greater scale than otherwise would occur.

Te tātaritanga Analysis

6. Two applications to the LCA Fund are presented for consideration ([Attachment 1](#) – Low Carbon Acceleration Fund Queen Elizabeth Park application and [Attachment 2](#) – Low Carbon Acceleration Fund Kaitoke Regional Park application). These applications are a revised application for Queen Elizabeth Park, and one for Kaitoke Regional Park, both from the Parks Department (Parks) at Greater Wellington.
7. Taken together, these applications are seeking
 - a \$1,399,101 (being \$1,271,910 plus a 10 percent contingency) from October 2020 to June 2026, to restore 128.5 hectares of peatland (a rare type of wetland) and dune forest at Queen Elizabeth Park
 - b \$370,810 from October 2020 to June 2025, to restore 21.8 hectares of pasture land at Kaitoke Regional Park. This funding will also cover the planting of mānuka in year two if a seeding establishment trial in year one proves unsuccessful.
8. The applications were assessed following the Council approved process ([Attachment 3](#) – Design of the Low Carbon Acceleration Fund). The criteria for funding are:
 - a Dollars of funding sought per tonne of CO₂e emissions mitigated is lowest (implementation projects only).
 - b The project would not proceed without the extra funding.
 - c The project will have demonstrable emissions impact, particularly for Greater Wellington itself.
 - d The project has other wider benefits e.g. for biodiversity, contribution to freshwater outcomes.
 - e The level of ongoing rates impact once the funding allocation has been used.
 - f The project is of strategic importance to achieving Greater Wellington's corporate carbon reduction targets.
 - g The project will help secure external funding for the project or related projects.
9. If Council approves these funding applications, the Committee will receive and assess annual progress reports.

Revised application for Queen Elizabeth Park



Figure 1 View of Currently Grazed Land at Queen Elizabeth Park looking south-west from the north-east corner

10. Queen Elizabeth Park (Figures 1 and 2) is public conservation land that is managed by Greater Wellington. Parks submitted an application for restoration of grazing land at Queen Elizabeth Park in May 2020. The application was assessed, applying the process outlined in Design of the Low Carbon Acceleration Fund (Report 20.112). Following initial analyses it was found that while the project represented an excellent opportunity to make progress and demonstrate leadership on climate action, further opportunities to make carbon savings needed to be explored (The Low Carbon Acceleration Fund – status update (Report 20.213)).
11. Parks submitted a revised application in August 2020. The revised application has increased the area being restored, and reduced the amount being sought, which has improved the carbon savings that will be achieved by funding this project. The revised application now covers 128.5 hectares and would reduce Greater Wellington’s corporate carbon footprint by 1.2 percent of its gross emissions, and two percent of its net emissions, by 2030, for an investment of \$1,399,101.
12. Firstly, the net position to 2030 and the total cost to fund the project were analysed. The cost per tonne of carbon saved from the corporate carbon footprint to 2030 is \$150. This is calculated by adding together the emissions reductions from reducing grazing plus the carbon sequestration gains from restoring the dune forests, but only to 2030. The current New Zealand carbon market pricing is sitting at around the \$34 mark. If we were only interested in the short-term cost/benefit ratio, we would have to consider whether this represents good value for money. However, we have carried out further analyses that include all the emissions saved to 2030 from the reduced grazing activities and those that we will capture through restoring the peatland, along with all the carbon sequestered by the new dune forests growing to maturity. In these analyses the full value of the carbon sequestered by the forests we establish will continue to be accounted for until these forests reach maturity. When analysed in this way, the cost

per tonne of carbon saved reduces to \$34. That value is comparable to current New Zealand carbon market pricing.

13. The Government recently enacted amendments to the New Zealand Emissions Trading Scheme (Climate Change Response (Emission Trading Reform) Amendment Act 2020) and has signalled other changes to the scheme that will put pressure on the price of carbon over time. Investing now will reduce our risk exposure to rising carbon prices and the potential for more stringent regulatory obligations to be handed down from central government. If we do not start reducing our corporate emissions now, we will not be able to achieve our goal of being carbon positive by 2035.
14. While the emissions gains from restoring the peatland cannot currently be converted to tradeable carbon units, these gains still represent real emissions reductions to the atmosphere. More detail on the value of restoring peatlands is provided in the full Queen Elizabeth Park application ([Attachment 1](#)).
15. The co-benefits this project can deliver are broad. The restoration of native dune ridge ecosystems which are critically endangered in the Wellington Region would make a significant contribution to the existing dune ecosystems extending from Paekākāriki to Whanganui.
16. The restoration of peatland ecosystems not only reverses the current carbon flux from being a constant source of emissions to being a permanent carbon sink, it also makes a highly significant contribution to wetland conservation both regionally and nationally. As less than three percent of the Wellington Region's wetlands remain intact, a restoration of 75.8 hectares represents a regionally significant contribution to wetland protection. It would also be one of the largest wetland enhancement projects undertaken in New Zealand.
17. As both parts of the project would be highly visible to the public, this application presents an opportunity to increase public engagement and education as well as demonstrate best practice restoration.
18. The restoration of wetlands also contributes to the improvement of water quality in the area by filtering pollutants and capturing sediment suspended in the water column.

19. The size of this project also presents additional regional employment opportunities to aid in the economic recovery as part of the COVID-19 response.

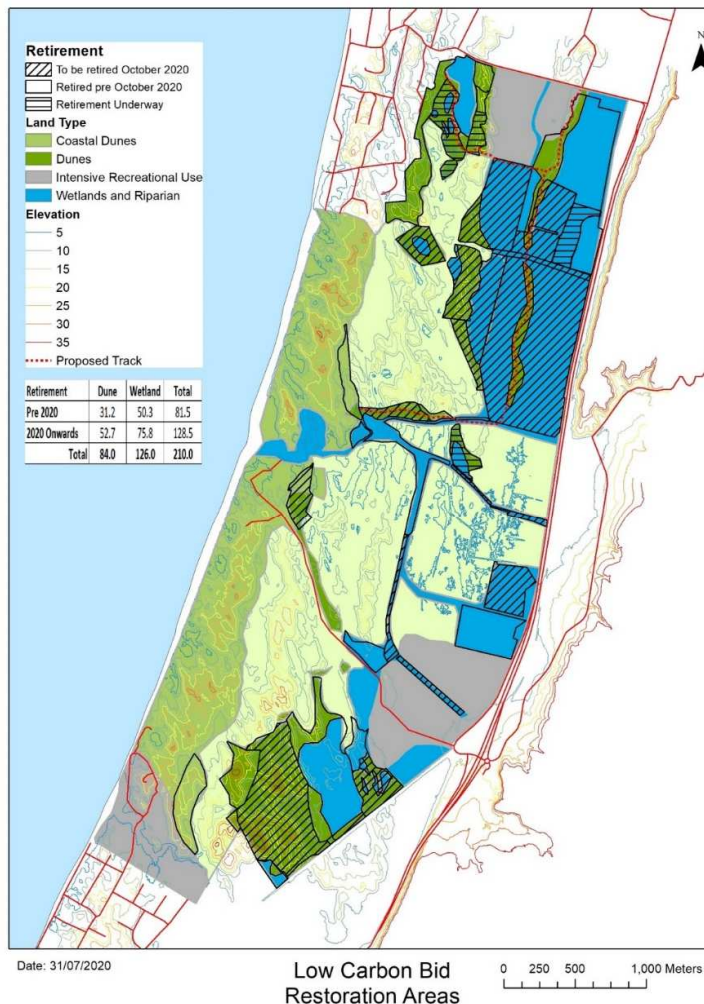


Figure 2 Proposed Restoration Areas and Surrounding Environment of Queen Elizabeth Park

20. A number of risks also need to be considered. Achieving the carbon reductions outlined in paragraph 8 requires scientific input and expertise in managing a complex restoration of this nature, including the restoration of the natural hydrology of the peatland ecosystem and the mitigation of edge effects for isolated planting areas shown in Figure 2. The effects of climate change will potentially impact on the restoration as proposed, notably rising groundwater, increasing temperatures, drier summers and more severe storms, which may threaten the viability of the proposed forest plantings. Extra care will be needed to ensure these plantings survive and realise their full potential to sequester carbon. Expertise in restoring dune forests, peatlands and hydrology from both internal and external sources forms an integral component of this application to address these risks.
21. Queen Elizabeth Park is public conservation land. In order to claim the carbon sequestration from the new forests to offset our emissions, we would need to enter into a Crown Conservation Contract with the Department of Conservation. This is

required before Greater Wellington can register these forests in the NZ Emissions Trading Scheme and therefore earn carbon credits. Further analysis is required once the dune forest restoration is underway to further explore our options and understand the costs and benefits of proceeding in this direction.

22. We recommend the funding application for Queen Elizabeth Park be approved.

Application for Kaitoke Regional Park



Figure 3 Aerial Photo of Kaitoke Regional Park - the Land Covered in this Application is Outlined in Yellow

23. Parks’ application for restoration of 21.8 hectares at Kaitoke Regional Park which is currently being grazed as seen in Figure 3 would reduce Greater Wellington’s corporate carbon footprint by 0.2 percent of gross emissions, and 0.5 percent of its net emissions, by 2030. This is in line with the Draft Park Networks Plan seeking to reduce the amount of grazing. The cost per tonne of carbon saved for the corporate carbon footprint to 2030 is \$116. Including all emissions saved to 2030 and all the carbon sequestered by the new forest growing to maturity, the cost per tonne of carbon saved is \$27.
24. There is a range of co-benefits which arise from this restoration. The two forest types found adjacent to the site are regionally endangered and regionally critically endangered respectively. Expanding these forest types will significantly improve biodiversity in the local area and increase habitat available for native birds and other native fauna.
25. There is also potential for mānuka honey production from this site, which could contribute annual income of up to \$325 per hectare. This opportunity will need to be further investigated. The outcome of this investigation will not have any negative implications for the overall success of this application.

26. Furthermore, establishing this area in native forest may provide additional amenity in form of walking tracks adjacent to the Kaitoke camping area over the long term.
27. A number of risks also need to be considered, with the greatest being pest animals, specifically pigs, hares and rabbits. These risks will be mitigated through active control of pigs prior to planting, and ongoing control for all species over the establishment period.
28. Weeds such as gorse present a risk which can be controlled by good site preparation and ongoing management of plantings. There is a low risk of public concerns over land use change and the loss of flat pastoral land such as can be seen in Figure 4. This will likely be offset by public interest in native restoration; the site's proximity to the Kaitoke Regional Park campground represents a further opportunity to promote the restoration of forest and its expected benefits.
29. The effects of climate change will potentially impact on the restoration as proposed, notably increasing temperatures, drier summers and more severe storms, which may threaten the viability of the proposed forest plantings. Extra care will be needed to ensure these plantings survive and realise their full potential to sequester carbon.



Figure 4 Photo of Currently Grazed Land at Kaitoke Regional Park

30. Officers recommend the application be approved.

Ngā hua ahumoni Financial implications

31. The financial implications of agreeing to these applications are:
 - a Revised application for Queen Elizabeth Park - \$1,399,101 (GST exclusive)
 - b Application for Kaitoke Regional Park - \$370,810 (GST exclusive).
32. The LGA Fund's budget allocation for 2020/21 is \$2 million. Approval of both applications would reduce this allocation to \$230,089.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

33. The proposed decisions contribute to Council's and Greater Wellington's policies and commitments relating to climate change by funding projects that reduce our corporate carbon footprint.
34. The proposed applications will together reduce our corporate carbon footprint by 2.5 percent of net emissions by 2030. Our target for 2030 is to be carbon neutral, so this step will take us just 2.5 percent of the way there. Regional emissions will be reduced by 0.025 percent, although we currently do not have a regional emissions reduction target.
35. The approach to reducing emissions from the proposed applications over their lifetime is to change land use in our regional parks. We will retire grazing and restore the natural ecosystems that would have been present at those sites.
36. The impacts of climate change over the lifetime of the proposed projects will be addressed by reducing the vulnerability of the land to extreme events and thereby increase its resilience to those impacts.

Ngā tikanga whakatau

Decision-making process

37. The matters requiring decision in this report were considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga

Significance

38. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matters for decision, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that these matters are of low significance. Since the declaration of a Climate Emergency on 21 August 2019 by Council a certain level of public interest exists in Greater Wellington taking climate action generally as well as restoring Queen Elizabeth Park. However, the matters are consistent with existing Council policy and strategy and do not impact on the Council's capability and capacity.

Te whakatūtakitaki

Engagement

39. A media release is being prepared to accompany the decision, should this Committee agree to recommend these projects for funding to Council.

Ngā tūāoma e whai ake nei

Next steps

40. If the Committee agrees to recommend funding the two applications, a report seeking Council's approval will be presented at the 24 September 2020 Council meeting for decision.

Ngā āpitihanga

Attachments

Number	Title
1	Low Carbon Acceleration Fund Queen Elizabeth Park application
2	Low Carbon Acceleration Fund Kaitoke Regional Park application
3	Design of the Low Carbon Acceleration Fund

Ngā kaiwaitohu

Signatories

Writers	Katharina Achterberg – Project Coordinator Climate Change Andrea Brandon – Programme Lead Climate Change
Approvers	Tracy Plane – Manager Strategic and Corporate Planning Luke Troy – General Manager Strategy

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council's roles or with Committee's terms of reference</i></p> <p>The Committee's consideration of the LCA Fund applications fits with its role to consider and recommend applications suitable for funding to Council, being a key element of the Council approved process for funding activities or initiatives that reduce net emissions more quickly and/or at a greater scale than otherwise would occur.</p>
<p><i>Implications for Māori</i></p> <p>There are implications for Māori and mana whenua of the Committee recommending to Council that these applications be approved. These restoration activities will reverse the degradation of both sites. In particular, the restoration of Queen Elizabeth Park will improve the Wainui Stream area which has significant values for Ngāti Toa Rangatira, and the Whareroa stream and coastal marine area which have significant values for Te Ātiawa ki Whakarongotai. Peatland and dune forest habitat, biodiversity and water quality will all be improved through restoring these sites.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>This report contributes towards meeting Council's goal to be carbon neutral by 2030.</p>
<p><i>Internal consultation</i></p> <p>The Corporate Carbon Neutrality Project Steering Group, Parks Department, Biodiversity team, Environmental Science team and the Strategic and Corporate Planning team were consulted in the development of this report.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>Risks have been identified relating to the content or recommendations of this report and are addressed in paragraphs 19, 26 and 27.</p>

Attachment 1 to Report 20.333

Low Carbon Acceleration Fund Queen Elizabeth Park application

LOW CARBON ACCELERATION FUND APPLICATION

Queen Elizabeth Park Peatland and Dune Forest Restoration

Contents

1.	Introduction	1
2.	Applicant	1
3.	Proposed project.....	1
3.1	Project background	2
3.2	Project governance	2
4	Carbon reduction	2
5	Restoration approach	3
5.1	Forest establishment	3
5.2	Plant management.....	4
5.2	Peatland restoration	5
6	Costs.....	6
7	Co-benefits.....	8
7.1	Restoration of native dune ridge ecosystems	8
7.2	Restoration of peatland ecosystems	8
7.3	Public education and engagement	8
7.4	Water quality	9
7.5	Employment.....	9
8	Risks	9
8.1	Hydrology.....	9
8.2	Vegetation survivorship	9
8.3	Pest organisms	9
8.4	Drought and fire.....	10
8.5	Achieving carbon sequestration	10
9	Carbon calculations.....	11
9	Appendices.....	12
Appendix 1:	Low carbon bid restoration areas	12
Appendix 2:	Supporting information.....	13

1. Introduction

This revised application is intended to fulfil the information requirements of the Low Carbon Acceleration Fund. A first version of this application was submitted on May 29. Our revised application responds to suggestions from the Climate Emergency Response Programme Board.

2. Applicant

This revised application is provided on behalf of the Greater Wellington Parks department. Internal information to support the proposal has been provided by staff from across the council, including from Parks, Environmental Science, Environmental Policy, Biodiversity, Strategy, Customer Engagement and Te Hunga Whiriwhiri. External information has been provided from Myers Ecology, James Blyth, Groundtruth, and Wildlands Consultants.

3. Proposed project

The proposed restoration would encompass a 128.5 hectare area of retired farmland. The goal would be to restore 75.8 hectares to native peatland ecosystems and 52.7 hectares to native dune ridge ecosystems. Restoration would mainly be undertaken in the northern section of the park with some additional smaller areas in the southern section of the Park (see Appendix 1).

Restoration of these ecosystems would require re-engineering the hydrology of the area to allow for the permanent re-inundation of areas of peatland. Dune ridge areas would need to be cleared of weed species and planted in appropriate native species. Stock are currently excluded from 15.6 hectares of the proposed area. The remaining areas will be excluded from stock by 1 November 2020.

These areas have been adversely affected by past drainage, burning, clearance and farming activity and are currently comprised primarily of grassland and scattered rushes with numerous weeds such as gorse and blackberry found throughout. While unmeasured, there is evidence of peatland degradation and areas of drained peatlands are expected to be a significant carbon source. Many in the local community are in favour of restoration of the park peatlands and support native biodiversity.

We think that this project provides an opportunity to both reverse the loss of carbon from the drained peatlands by restoring the hydrology and to make a significant contribution towards the restoration of the natural dune forest and peatland ecosystems that once covered much of the Kāpiti coast. It would represent one of the largest wetland and dune restoration initiatives in the country.

The work would be undertaken over a 5-year period and carried out by Greater Wellington staff alongside consultants Myers Ecology (ecological assessment and monitoring) and Groundtruth (planning and vegetation establishment) and James Blyth (Hydrology). Members of the local community would be asked to assist with enrichment planting.

3.1 Project background

Greater Wellington has been progressively restoring indigenous ecosystems at Queen Elizabeth Park for the past 30 years. This work has focused on the restoration of coastal ecosystems, dunes, wetlands and remnant bush areas.¹ Over the past two years Greater Wellington has been accelerating their work to restore natural wetlands, focusing on a 23 hectare area in the north eastern end of the park. This work has been funded by the Maclean Trust. The present funding proposal aims to expand this Maclean Trust work to restore a substantial further and adjacent area.

The draft Parks Network Plan identifies the restoration of peatlands in Queen Elizabeth Park as a high priority action to be implemented in the short term. This is an integral part of the progressive retirement of grazing land and the move toward a revised focus on maximising opportunities for restoration and recreation in the park.

In early-2021 Greater Wellington will commence development of a landscape master plan for the park which will provide further detail and direction on the restoration of additional park areas. This application seeks to maintain momentum for restoration work in the park prior to the completion of this master planning work. Given the need for further community input into park planning, this project strikes an interim balance between scale (i.e., ensuring that options are not closed prematurely), risk and affordability.

Further background information on the project is provided in Appendix 2.

3.2 Project governance

This project would be managed by a team reporting to the Corporate Carbon Neutrality Project Steering Group (the Steering Group). The project team would provide a progress report to the Steering Group every six months. An annual report would also be provided to the Climate Committee. Both reports would be the responsibility of the GW project lead. A technical lead (sitting under the project lead) would provide further oversight of the project, ensuring consistency of restoration methods across the experts tasked with implementing the various technical aspects of the project (e.g., peatland restoration, dune restoration, hydrology).

4 Carbon reduction

We estimate that the project would reduce Greater Wellington's corporate carbon footprint by 1.2% of gross emissions by 2030 and 2.0% of its net emissions by 2030. Since our initial application we have increased the total area of restoration by 27% with the area of dune forest restoration increasing by 25% and the area of peatland restoration increasing by 28%.

A significant new source of carbon sequestration would be provided by the planting of native woody tree species. All 52.7 hectares of planting in dune ridge ecosystems is expected to ultimately meet the definition of 'forest' (i.e., exceeding a 5 metre canopy) and thus be captured under the Emissions Trading Scheme (ETS) (see further on risks in section 8.5).

Emissions estimates are provided to quantify the other carbon savings from this project that will be made through restoring the peatland ecosystems. Peatlands are very important stores of carbon. This storage is achieved by the gradual accumulation of carbon from plants due to the anaerobic

¹ The Key Native Ecosystem Operational Plan for Queen Elizabeth Park contains a description of some of the primary ongoing restoration activities occurring in the park. See <http://www.gw.govt.nz/assets/council-publications/Key-Native-Ecosystem-Operational-Plan-for-Queen-Elizabeth-Park-2017-2020.pdf>

conditions that occur in very wet environments. Worldwide peatlands store more carbon than all other types of vegetation combined.

Large amounts of carbon are locked away in peat soils. This carbon is released back to the atmosphere when they are drained and the peat is exposed to oxygen. They will continue to be a source of emissions until no peat remains. In fact, drained peatlands now contribute about 10% of the world's greenhouse gas emissions. Given this, the restoration of drained peatlands is important in limiting emissions and in doing so limiting the impacts of climate change.

Emissions estimates for the carbon fluxes predicted from peatland restoration activities are provided separately. This is for two main reasons; firstly they are not included in our corporate carbon footprint and secondly there is no mechanism in place to earn credits from reducing emissions from this activity. This is because we do not account for those emissions in our international climate change target accounting (under the United Nations Framework Convention on Climate Change, and its Kyoto Protocol or Paris Agreement), unless they are associated with a deforestation activity or an afforestation activity, but only where exotic forests are established for timber production. With drained peatlands occupying 0.5 percent of New Zealand's total land area, the scale of this activity is relatively small. The NZ ETS only includes forestry activities, but even so, excludes the soil carbon pool, which is where the carbon fluxes in peatlands occur.

The application includes an allowance for hydrology assessment and management that is needed to understand the current state of the park and establish a baseline for future measurement. We anticipate that not only would the restoration of peatlands at Queen Elizabeth Park reduce carbon emissions, it would also increase the resilience of the park and surrounding land to increasingly frequent and intense weather events, contribute knowledge towards successfully restoring peatlands and signal the importance of peatland restoration to the wider community.

5 Restoration approach

5.1 Forest establishment

Retired areas where forest is to be established vary considerably with soil type, hydrology, and proximity to the coast. There is a major distinction between vegetation on extensive wetland areas and dune forests. Planting in wetland areas is addressed in section 5.3. More detailed design of any plantings in the wetland areas will occur following completion of hydrological studies and work to modify water levels.

Sand dune areas are more clearly defined, and there is greater clarity on the appropriate forest type to be established in different areas. Initial plantings will be on dunes further back from the coast that would have originally had a cover of totara, matai, broadleaved forest on the stable Motuiti and Foxton dune phases (Singers et al. 2019). This forest type is regionally critically endangered, with only 2% remaining. The areas of dune in the southern end of the park are earlier sequences (Waitarere phase) and would have supported forest types transitioning toward this forest type, but likely with less podocarp component due to their lower level of soil development.

Singers et al. (2019) identify that kanuka was the dominant colonising species but with akeake, ngaio, kohuhu, akiraho, lancewood, kaikomako, mahoe and kowhai present. Forest succession resulted in totara, matai and a wide variety of broadleaf species such as titoki and kohekohe subsequently occurring.

Dune forest establishment will include initial planting of a kanuka-dominant mix of colonising species, as identified by Singers et al. 2019. It will also include planting of harakeke and toetoe as

part of mixes in some areas as this forms an important part of early naturally occurring species mixes in this area. Enrichment planting at around age 3-5 will begin to introduce totara, matai and broadleaf species historically present including titoki and kohekohe. The diversity of initial plantings and of subsequent enrichment planting will be greater on the older phase dunes in the mid and northern park. This reflects the greater soil development on these dunes that influences the originally occurring forest of these areas.

5.2 Plant management

Operational research over the past 6 years in Queen Elizabeth Park and elsewhere, undertaken by Groundtruth in partnership with Greater Wellington, has refined the approach to native forest establishment across the park. This includes a strong focus on effective forest establishment on dune areas. The forest establishment approach set out below is based on the results of this work and other practical native forest restoration.

A fully integrated approach to forest establishment will be undertaken. This will connect early planning and seed collection to planting, ongoing weed control and maintenance, and early enrichment planting with long term canopy and emergent species. This approach is important to ensure that the required forest type is rapidly established and that risks to its long-term establishment and growth are minimised.

- *Assessment and planning:* Assessment of individual planting sites within the plan will identify any underlying weed or pest animal issues, particular environment types or risks. This will be taken into account in planning for any site preparation, species selection and future management needs.
- *Local eco-sourced seed collection:* This includes record keeping of all planting areas and species to seed source.
- *Managed plant propagation to required quality standards:* The production of plants to required quality standards and tracking of plants produced from different seedlots will be overseen at nurseries. Community nurseries will also be used to produce and grow-on some plants, particularly enrichment species.
- *Pre-plant site preparation and weed control:* Site preparation and weed control will be based on individual site needs. This may include pest animal control where necessary.
- *Management of plant delivery and maintenance of plant health:* Plant supply and handling will be overseen to ensure the right plant mixes are provided to different sites and that plant condition is maintained.
- *Planting:* This will be undertaken by contractors under close supervision for large planting areas. For some smaller areas and enrichment plantings, community groups and volunteers will be involved.
- *Monitoring:* All planting areas will have permanent monitoring plots established to track plant survival and growth through their first 3-4 years (and beyond if required).
- *Post-plant releasing and management:* Planting is just one step in forest establishment and the releasing of the plant from grass and weed competition, and sometimes animal control, are critical aftercare steps. Management seeks to avoid planting failures but, if there are significant losses through events such as drought, these can be picked up and replacement planting undertaken in the subsequent year if needed.

- *“Free to grow” certification:* There comes a point where initial plantings are well-established and require little ongoing management because of their size, established root systems, and other factors. Experience in the park suggest this “free to grow” stage is reached at about 3-4 years, depending on the site. Plantings will be assessed and identified if they are in a free to grow state.
- *Enrichment planting:* A final stage for plantings is the inter-planting of small numbers of enrichment species. These include the long term canopy and emergent species such as in dune forest, matai, torara, titoki etc. These plantings will occur from around years 3-5.

5.2 Peatland restoration

Restoration of the peatlands will require re-engineering the hydrology of the peatlands as a priority. This will require restoration of a water table that is generally close to or just above the ground surface, and relatively constant, with the water source primarily recharged from rainwater. Restoration of water levels and of the peatland ecosystem will have to be through a staged approach (adaptive management), following monitoring of changes across the peatland.

The aim is to restore and enhance the original low fertility peatland bog wetland ecosystems. These peatland wetland systems occur within broad depressions between dune ridges in the sand dune country of the park. Maps of peatlands within the park show extensive areas of remaining peatland, particularly in the northern sections of the park, north of Whareroa Stream (Waterfall Stream branch), with over 50ha of peatland with peat depths up to 3m in some places.

Pollen records of the pre human (AD 1280) vegetation cover of the park show that in the consistently wet peaty areas of the site, wetland vegetation characteristic of bogs was present. In areas with higher water tables, sphagnum, sedges (Cyperaceae, including species of *Gahnia*, *Carex*, *Machaerina*, and *Eleocharis*), swamp umbrella fern (*Gleichenia dicarpa*), and *Gonocarpus* species, were present, with flax and raupo, and swamp forest species in swamp wetlands.

Environmental conditions need to be created encouraging regeneration of peat forming, low nutrient species such as sphagnum moss, gleichenia ferns, and some sedge species. Some of these species including sphagnum moss, *Gleichenia* and *Gonocarpus*, are already present within the peatlands, and will expand with restoration of peatland bog conditions. The aim is to undertake restoration based on the patterns of depth of peat, and will include facilitating natural regeneration of peatland species into the wetlands.

Any planting would need to be undertaken in a staged approach, and only after approximately 4 years of monitoring hydrological changes and regeneration of peatland species. We have budgeted for a limited amount of supplementary planting (e.g. of manuka or peat forming species) in year 4 of the project.

6 Costs

Greater Wellington have already funded the initial development of the project proposal, including work to assess the project's feasibility. We have no external funding for this work and no internal funding has been allocated for it. Further work is dependent on additional funds either from the LCA fund or elsewhere.

The total estimated cost for the project is \$1,271,910. This is comprised of \$654,910 for restoration of the north-eastern area and \$617,000 for restoration of the remaining areas. With 10 percent contingency added, that increases the budget to \$1,399,101. Since our initial application we have reduced our project costs by 20%.² Below is our detailed budget for the work.

Costs for the project apply to the 'land sector' category in the LCA fund. Direct costs make up 84% of the estimated budget (including spraying, fencing, planting, boardwalk construction) with 16% going to indirect costs (including ecological assessment and implementation planning).

Costs for erecting or removing fences are integral to this work – and indeed for much ecological restoration in the region. Unfortunately, these costs cannot be met by the grazing license holder as we have no license holder from 1 November 2020. Including fencing costs in licence conditions is inconsistent with our management approach (no other GW grazing licences include capital fencing costs), and reduces the attraction to potential licence tenderers. We have endeavoured to keep the fencing costs to an absolute minimum, including use of recycled materials. These costs constitute less than 2% of the project budget.

We have retained our request for the funding of wetland boardwalks and signage for two interrelated reasons. First, we believe that wetland boardwalks and signage are integral to the ability of the public to experience the restored wetland areas³ and thus central to the realisation of the co-benefit identified in section 7.3. Boardwalk construction through restored peatlands is identified in the draft Parks Network Plan as a key element of the wetland discovery experience for park visitors. Signage is particularly important to our ability to 'tell the story' of the restoration work as it happens.

Second, boardwalks and associated signage should be constructed before the wetlands begin to be restored. If they are not we would face the considerable technical difficulty of sensitively designing a substantial boardwalk area in an existing wetland.⁴ Constructing boardwalk facilities prior to commencing wetland restoration ensures that the council would not encounter these obstacles.

We have no additional funding to cover the cost of boardwalk construction and signage prior to wetland restoration and therefore ask that this funding be accepted as a component of this application.⁵

² While factoring in a 10% contingency as per standard project management approaches.

³ Further to this, we received an email from a member of the public this week. The email expressed delight at the possibility of further wetland restoration at the park, noting particular support for 'boardwalks for people to get amongst it'.

⁴ While the intention to do this could be identified in our restoration management plan for the wetland (and thus avoid having to obtain resource consent), this would not reduce the technical difficulty in implementing the work.

⁵ As implied above, the cost to the council of constructing wetland boardwalks and signage after the restoration commences would be much higher.

North-eastern wetland

Operation	Responsibility	Cost	Year of activity	Notes
Aerial spray	Greater Wellington	\$37,500	1	
Ground follow up spray	Greater Wellington	\$18,750	2	Added as additional areas will require some treatment as follow up post grazing, extra 20 hectares, total 75 hectares
Fence removal	Greater Wellington	\$10,000	2-3	
Fencing	Greater Wellington	\$24,000	1	Lanes and boundary
Wetland boardwalks	Greater Wellington	\$80,000	2	
Exotic tree removal	Greater Wellington	\$17,000	1	
Signs & interpretation	Greater Wellington	\$50,000	3	
Hydrology assessment and planning	James Blyth	\$25,000	1	
Hydrology management, structures etc	James Blyth	\$125,000	2-3	Detail Design/Consenting/Installation
Ecological assessment and planning	Myers Ecology	\$21,000	1	
Implementation plan	Groundtruth	\$7,000	1	
Vegetation establishment	Groundtruth	\$36,000	4	5000 Manuka, assume equivalent to 3 hectares
Enrichment planting	Groundtruth, Greater Wellington, Community	\$37,500	4-5	Limited areas within peat zone
Reviews				
Hydrology Years 1,3 &5	James Blyth	\$56,160	1,3,5	No change
Ecological monitoring	Myers Ecology	\$20,000	2-5	No change

Operation	Responsibility	Cost	Year of activity	Notes
Year 3 review	Myers Ecology	\$10,000	3	No change
Year 5 review	Myers Ecology	\$5,000	5	No change
GT Project management	Groundtruth	\$75,000	1-5	Annual/Milestone reporting against Wetland restoration plan, site management, record keeping

Subtotal = \$654,910

Other areas

Operation	Responsibility	Cost	Year activity undertaken	Notes
Implementation plan	Groundtruth	\$7,500	1	No change
Vegetation establishment	Groundtruth	\$530,000	1-2	
Enrichment planting	Groundtruth	\$79,500	4-5	

Subtotal = \$617,000

TOTAL = \$1,271,910

GRAND TOTAL (including 10% project contingency) = \$1,399,101

7 Co-benefits

This project provides a number of benefits beyond its contribution to carbon neutrality. These are described below.

7.1 Restoration of native dune ridge ecosystems

This restoration would make a significant contribution to the existing dune ecosystems extending from Paekākāriki to Whanganui. These are the most extensive dune systems in New Zealand. They are both naturally uncommon and severely reduced from their historical extent. Coastal dune forests are critically endangered in the Wellington region.

7.2 Restoration of peatland ecosystems

This restoration would make a highly significant contribution to the conservation of wetlands. In New Zealand less than 10% of the original wetland extent remains. This figure is even worse in the Wellington region with only 3% of the region's wetland extent remaining. At 75.8 hectares of wetland restoration, this project would represent one of the largest wetland enhancement projects in the country.

7.3 Public education and engagement

Restoration of this area would be highly visible to the public. Much of it would be able to be viewed from the adjacent railway and, to a lesser extent, the highway. Part of the restoration would also

include the provision of interpretive signage and access for the public, including via wetland boardwalks, to learn about native dune and peatland ecosystems.

The project thus represents an opportunity for Greater Wellington to both engage with, and educate, the public on the values of these ecosystems, and to demonstrate best practice restoration of them. It would serve as a local restoration exemplar and respond to recent public calls to restore biodiversity in this area in particular. An opportunity for the local community to assist with enrichment planting further underlines the contribution this project could make to engaging local people with biodiversity restoration.

7.4 Water quality

Restoration of wetlands would also make a contribution to the improvement of water quality in the area. Wetlands are well-known to filter pollutants and capture suspended sediment in the water column. They also slow the release of flood waters, in this case to the coastal environment.

7.5 Employment

The recent response to Covid-19 has resulted in significant economic repercussions that are likely to continue to negatively impact on the Wellington region. This project represents an additional work opportunity much needed at this time. The requested funding will all be spent employing local people to undertake the work (with the exception of one Auckland-based consultant).

8 Risks

We believe that this project has a high likelihood of success. To reduce the risks inherent to this complex work we have built a technical lead role into the governance structure of the project (see section 3.2). The integrated approach to forest establishment outlined, is designed to avoid manageable risks. Some other risks can be reduced but not eliminated. Comments on management of some key risks are provided below.

8.1 Hydrology

Advice we have received from internal and external experts is that the restoration of the peatland hydrology is both practicable and sustainable. The water table is already close to the surface. Though not without complexity, and some risk, the task of re-inundating local peatland areas is primarily a matter of capturing rainfall and ensuring it does not all flow into surrounding drains. We consider the risk of hydrological complications to be moderate but manageable.

8.2 Vegetation survivorship

The soil chemistry of the area, along with the effects of previous land uses and current climatic conditions, would affect the survivorship of plantings. Our plant selections have been made with these factors in mind, incorporating a diversity of species known to tolerate local conditions. While we may experience some issues with plant survival we consider the overall risk of vegetation survivorship to be low. Plant dieback is factored into our planting ratios.

8.3 Pest organisms

Pests also represent a risk to the success of the project. Pest plants will be managed by initial spraying of weed species followed by periodic clearance of weeds around native plantings. A diversity of native plants will be established to reduce the risk of any potential dieback caused by myrtle rust. Pest animals such as rabbits and hares will be controlled as necessary. We will focus on planting less palatable species if pest animal browse damage becomes an issue. The risk of browsing damage by stock will be managed through some further fence establishment and maintenance where required. We consider the risk of pest organisms to the project to be low.

8.4 Drought and fire

Work to manage drought risk would include the use of drought tolerant species in early establishment, particularly on drier sites. A delay in enrichment planting until the early colonising species provide shelter is also important to reducing drought risks. Planning of open areas and boundaries to reduce fire risks, while providing spaces to contain any major fire, will be important as well. We will update our fire preparedness and public education/visitor management protocols where necessary. We consider the risks of drought and fire significantly affecting the project to be low.

8.5 Achieving carbon sequestration

Forest establishment is being undertaken in a way that will meet the criteria for forest eligibility in the NZ Emissions Trading Scheme (ETS). This also means that these newly established forests could be registered for earning New Zealand Units (NZU'S) into the ETS. As the land is public conservation land, this would first require a crown conservation contract to be entered into with the Department of Conservation. The ETS provides a well-known and regulated framework for enabling owners of forests established since 1989 the ability to earn NZU's for the carbon these forests sequester.

The ETS definition of a forest is land with forest species of at least a hectare in size that has or will have more than 30% crown cover of forest species and have an average width of 30m. Forest species are trees capable of reaching five meters in height at maturity. This may make some small riparian areas at Queen Elizabeth Park ineligible under the ETS. In some cases this can be managed by connections to larger areas. It is not expected to have a significant impact on the overall ETS carbon sequestration of the project however.

The ETS defines forest species as those that can reach at least 5m in height when mature at that location. The plantings that are planned across the dune areas will easily meet this ETS forest definition. Currently established plantings using a mix of initial establishment tree species including kanuka, manuka, akeake, ti kouka are likely to achieve 30% canopy cover of tree species sometime between year 4 and 8, depending on site. Subsequent enrichment planting through these areas with long term species such as titoki, kohekohe, totara and matai will further boost canopy cover of tree species. This enrichment planting will occur from around years 3-5.

A number of important management steps are in place to ensure that any risks of not meeting ETS requirements are avoided. These are:

- *An integrated approach to forest establishment:* The project and the management contracts around it does not involve just planting, but rather forest establishment. This encompasses the entire chain from species selection, seed collection, seedling quality, site preparation, planting, and maintenance – through to an established “free to grow” state where plantings are ahead of any weed competition or other threats.
- *Survival monitoring and response:* Monitoring plots are established in all planting areas and measured at planting and in autumn each year. This allows plant losses to be monitored and if these fall below set levels (likely to be 75% survival) then replacement planting can be undertaken in the subsequent year if required.
- *Monitoring of growth and canopy cover:* Monitoring plots annually measure height growth and canopy cover, allowing accurately tracking progress toward height and canopy cover

criteria. Existing measurement and experience suggests that ETS cover and height requirements are likely to be met sometime around 6-8 years.

9 Carbon calculations

Below is the estimated carbon reduction facilitated by this project, calculated following Greater Wellington's Emissions Measurement Guide.⁶

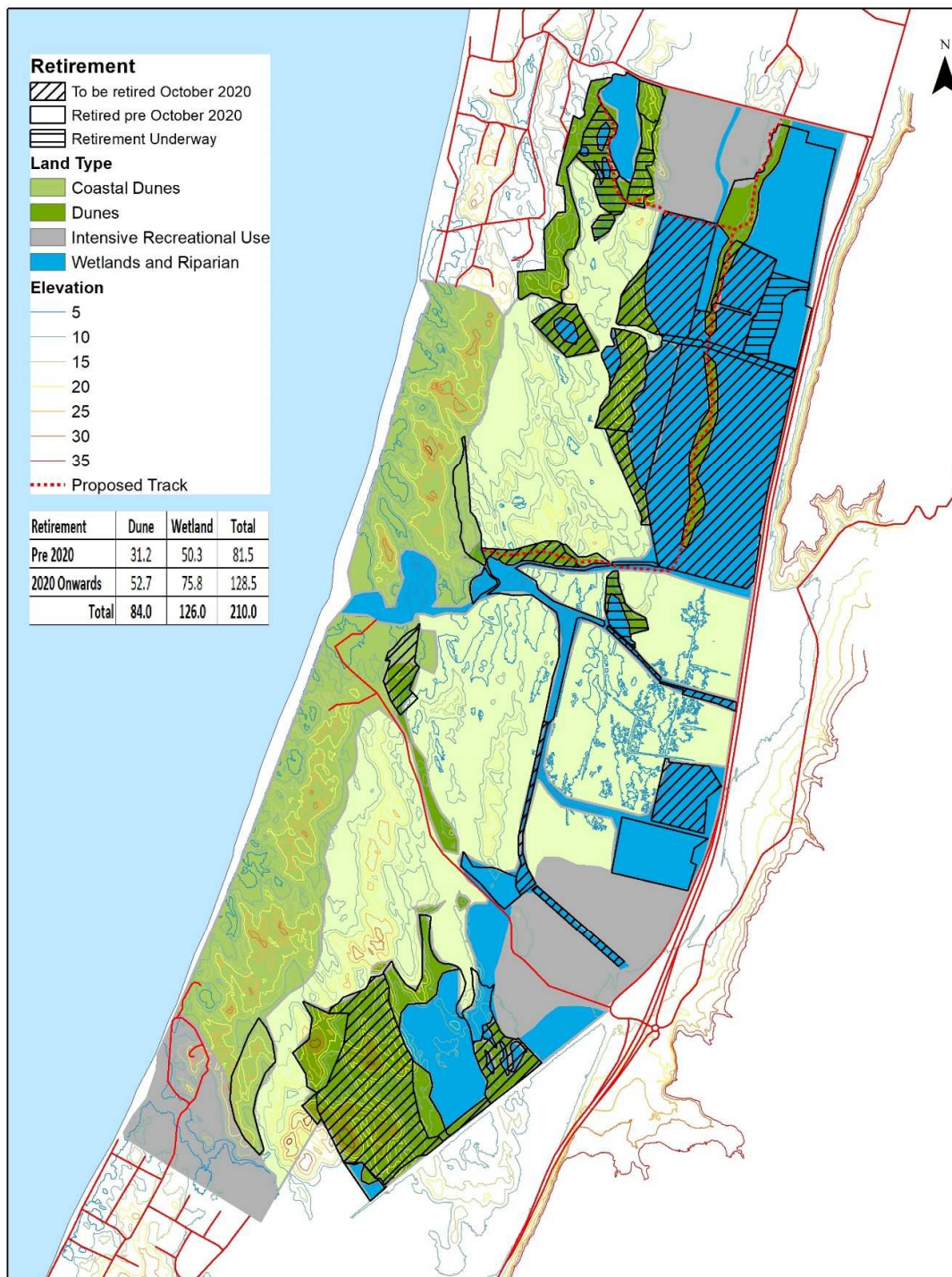
Scenario	Activity	Unit	In GW footprint?	Amount
BAU	Grazing	112.9 ha	Y	507.36 t CO ₂ -e/yr
Restore 101.1 ha at QEP (includes 15.6 ha already retired)	Restore dune forest	52.7 ha	Y	20,342.2 t CO ₂ -e at maturity
	Restore peat wetland	75.8 ha	N	1,250.7 t CO ₂ -e/yr

Funds applied for		\$ 1,271,910
Corporate carbon footprint only	Cost/t CO ₂ -e savings as at 2030	\$150.22/t CO ₂ -e
All emissions saved	Cost/t CO ₂ -e savings as at 2030	\$60.64/t CO ₂ -e
Forest only savings (Includes all costs but only forest absorption emissions decreases)	Cost/t CO ₂ -e savings at maturity	\$62.53/t CO ₂ -e
Corporate carbon footprint savings to 2030, forests at maturity	Cost/t CO ₂ -e savings	\$50.04/t CO ₂ -e
All cumulative savings (includes grazing and wetland emissions decreases to 2030, forest absorption to maturity)	Cost/t CO ₂ -e savings	\$33.54/t CO ₂ -e
All cumulative savings (includes grazing and wetland emissions decreases to 2040, forest absorption to maturity)	Cost/t CO ₂ -e savings	\$22.92/t CO ₂ -e
All cumulative savings (includes grazing and wetland emissions decreases to 2050, forest absorption to maturity)	Cost/t CO ₂ -e savings	\$17.40/t CO ₂ -e

⁶ Full calculations can be accessed here:
<http://ourspace.gw.govt.nz/project/crpcnp/desspec/LCAF%20and%20Parks%20carbon%20calculations%2010.8.20.xlsx>

9 Appendices

Appendix 1: Low carbon bid restoration areas



Date: 31/07/2020

Low Carbon Bid
Restoration Areas

0 250 500 1,000 Meters

Appendix 2: Supporting information

Introduction

Restoration of wetland and dune forest areas is occurring at Queen Elizabeth Park. This bid to the low carbon fund will allow a major increase in work undertaken and will secure long term carbon storage, as well as providing new carbon sequestration.

Restoration of wetlands is underway. Early work has been supported by the Maclean Trust in the north east of the park and has occurred over the past 2 years. There is now a decision to greatly expand and refine this restoration work south to Waterfall Stream.

The next phase of wetland restoration work is to restore and enhance the peatland ecosystems, and associated wetlands in the northern block of retired farmland at Queen Elizabeth Park. These peatland systems occur within broad depressions between dune ridges in the sand dune country of the park. They have been impacted by past drainage, burning, clearance and farming activity.

The project will require, firstly, detailed investigation of hydrology and examination of the potential to restore peatland hydrology. There is a critical relationship to the highway on the east and residential areas to the north that constrain actions such as raising water levels in some locations. Ecological restoration planning will need to be undertaken in conjunction with and in tandem with the hydrological plan.

In addition to the wetland areas through the north east of the park, areas once predominantly covered by dune forest are also proposed for restoration throughout the Park.

Background

Queen Elizabeth Park is located within the long strip of sand dune country from Paekākāriki almost as far north as Whanganui, and which forms the most extensive sand dune system in New Zealand. The coastal dune system provides habitat for wetlands in the form of dune slacks and swales which are elongated depressions between old dune ridges. These have formed in sequence as the land has risen relative to sea level and as the coast has built seaward.

The peatlands on the park have been farmed and drained, with farming in the northern block retired in 2017. Despite the impacts of the network of drains across the site, the peatlands still remain, the area is wet, with water lying in the low-lying areas of the paddocks, following rain.

Maps of peatlands within the park show extensive areas of remaining peatland, with areas of deep peat (2,541-3,702mm), particularly in the northeastern sections of the park, north of Whareroa Stream.

Pollen records of the pre human (AD 1280) vegetation cover of the park show that in the consistently wet peaty areas of the site, wetland vegetation characteristic of bogs was present. In areas with higher water tables, Sphagnum, flax (*Phormium tenax*), sedges (Cyperaceae, including *Gahnia*, *Carex*, *Machaerina* and *Eleocharis acuta*), swamp umbrella fern (*Gleichenia dicarpa*), *Gonocarpus*, and raupō (*Typha orientalis*) were present. These low fertility bog wetlands would have occurred within a mosaic, with swamp forest (kahikatea, swamp maire) on areas of shallower peat, and with dune forest on the ridges.

Importance of peatlands for climate change

Peatlands are very important stores of carbon. Over long periods (thousands of years) they slowly accumulate carbon from plants due to reduced decomposition occurring in very wet environments.

Recent research by the International Union for the Conservation of Nature shows that worldwide peatlands store more carbon than all other types of vegetation combined.⁷

Large amounts of carbon, fixed from the atmosphere into plant tissues through photosynthesis, are locked away in peat soils, representing a valuable global carbon store. Internationally, damaged peatlands contribute about 10% of greenhouse gas emissions. Peatlands are highly significant to global efforts to combat climate change, as well as wider sustainable development goals. The protection and restoration of peatlands is vital in the transition towards a low-carbon and circular economy.

When damaged or drained, peatlands can become a major source of greenhouse gas emissions. Restoration of peatlands protects them from degrading activities such as agricultural conversion and drainage, and reinstates the waterlogged conditions required for peat formation to prevent the release of carbon stored in peat soil.

Rarity and threatened nature of wetland ecosystems

Remaining natural wetlands cover only a fraction of their original global area and have been progressively declining for centuries in most of the world, through drainage and conversion, and rates of wetland loss continue to grow. Less than 10% of the original extent of wetlands still remain in New Zealand, with less than 3% remaining in the Wellington region. Worldwide, about half of all wetlands on the planet have been destroyed since 1900.⁸

The Dune slacks and swales are a naturally uncommon/rare wetland ecosystem type in New Zealand. Historically, extensive dunelands were converted into farms and forestry, and very few unmodified dunelands remain.

Restoring endangered native forests and sequestering carbon

In addition to the critical steps to retain carbon storage in peatland ecosystems, the project will also involve establishment of native forest on areas that previously supported coastal dune forest and swamp forests. The totara, matai, broadleaf forests of the dune areas have been identified as regionally critically endangered, with only 2% of their original extent remaining in the region making their restoration important. This is also the case for kahikatea, pukatea forest that was present in some swamp areas, this forest type has only 1% of its original extent remaining.

These new forests will provide important sequestration of carbon, as well as greatly benefiting biodiversity, recreation and landscape at Queen Elizabeth Park.

⁷ See <https://www.iucn.org/resources/issues-briefs/peatlands-and-climate-change>

⁸ According to the United Nations Environment Programme. See <https://phys.org/news/2012-10-wetlands.html>

Vision

An extensive restored wetland and dune complex within Queen Elizabeth Park is a core value of the regional park. It includes protection of important peatland ecosystems. It provides a mosaic of vibrant and unique biodiversity, recreational and education experience and secures long term carbon storage.

Objectives

1. Wetland processes representative of those that formed the area and their succession through time are restored.
2. Peatland is secured from further degradation and loss of carbon storage.
3. Biodiversity is supported by a mosaic of restored vegetation and habitat matched to hydrology, soil type and other environmental factors
4. Key human infrastructure around the area including the highway and residential areas is protected from flooding and damage
5. Recreational access and interpretation provides a diversity of experience and ability to learn about wetland processes and wetland biodiversity
6. Restoration and management is practical and sustainable, based on underlying hydrology, soil type and other environmental factors.

Process

Task	Description	Timing
1. PLANNING		
Hydrological study	<ul style="list-style-type: none"> • Install water monitoring, data gathering and modelling • Design of possible structures to modify drainage and modelling of impact • Conclusions on best approach and long term hydrology • Resource consents 	Year 1
Ecological study	<ul style="list-style-type: none"> • Review of existing wetland situation – assessment of remnants and local wetlands etc • Wetland processes, modification and trajectory • Restoration opportunities and objectives – developed in collaboration with restoration planning component. 	Year 1
Restoration planning	<ul style="list-style-type: none"> • Development of a practical approach to restoration that integrates with long term hydrology and ecological objectives. This will also consider recreational use and carbon sequestration opportunities. 	Year 1 (dunelands) Year 2 (wetlands)

Task	Description	Timing
	<ul style="list-style-type: none"> Restoration planning will cover weed control, habitat restoration, natural regeneration of wetland species, and planting. It will also address ongoing management of weeds and animal pests. It will also include a monitoring plan 	
2. IMPLEMENTATION		
Hydrology	<ul style="list-style-type: none"> Modification of drainage, install structures etc, potentially in a staged way 	Year 1-2
Restoration	<ul style="list-style-type: none"> Early – immediate weed control to avoid expansion of current gorse and other weed species 	Year 1
	<ul style="list-style-type: none"> Duneland forest restoration 	Year 1 - 5
	<ul style="list-style-type: none"> Establishment of wetland plants and dryland / dune plants on different areas defined by hydrological and ecological studies. This may include a mix of natural regeneration, seeding, planting etc 	Year 2-5
	<ul style="list-style-type: none"> Management and maintenance of plantings including weed and animal control 	Year 1-5
	<ul style="list-style-type: none"> Monitoring 	Year 1-5
3. ANNUAL REVIEW	Annual review and more detailed review at year 3 & 5	Year 2-5
Hydrology	<ul style="list-style-type: none"> Review hydrology data and function of structures / modifications. Effectiveness and opportunities for improvement 	Year 2-5
Ecological	<ul style="list-style-type: none"> How well are restoration approaches supporting desired retention and expansion of particular species and habitat types. Potential improvements 	Year 2-5
Restoration	<ul style="list-style-type: none"> Review monitoring data from different areas and their performance How well are different approaches delivering on objectives Opportunities for improvement 	Year 2-5

Frequently Asked Questions

1. *Why not get the water from Waterfall Stream and spread that over the peatlands to rewet them?*

Sediment and nutrient rich waters raise the fertility of the peatland, altering their natural chemistry and affecting peat supporting plants. Peatland ecologists recommend that rainwater (nutrient free) is held in peatlands, with sediment laden water in the adjacent waterways acting as “buffers” to slow rainwater outflow. Therefore it is more ecologically robust to hold the rainwater in the peatlands (e.g. through blocking overflow from SH1, or otherwise retaining water on the land).

All waterways in Queen Elizabeth Park are registered in the pNRP as important native fish habitat and sites of cultural significance. Any excavations, earthworks or in-stream structures require a level of statutory permission.

There is about 1.5 metres of fall between Poplar Ave and Waterfall Stream, so this would require water to flow upstream. This would require major excavations in peat, which would release further carbon.

2. *Why not block the north Whareroa waterway to hold the water from Poplar Ave and get that to flood over the peatlands?*

As noted above, holding rainwater in the peatlands preserves their natural fertility; whereas flooding them with sediment laden water changes that intrinsic characteristic, with resulting ecological impacts.

Greater Wellington needs to allow water to flow away from Poplar Ave, from neighbouring houses and expressway infrastructure.

Because there is a lack of historical data on groundwater, the plan includes tools to manage and monitor water levels. It will nearly double the network of piezometers (mini- bores), to monitor ground water levels and changes. These will be installed in spring 2020.

Two weir structures will allow manipulation of water levels based on impact and risk, to be installed from spring 2021. These need to be designed to allow for fish passage and consents obtained for installation.

One weir is to be located at the confluence of the north Whareroa and Waterfall Stream, which will include provision for fish passage. Subject to resource consent, this should result in a gradual build-up of water in the entire catchment; monitoring over ensuing months will show change over time and management of any upstream effects.

The second weir about 1km upstream, to be installed about a year after the first, and following review of hydrographic (water level and flow) data after installation of the first structure.

3. *Will peatlands or forests sequester more carbon?*

Peatlands are a massive store of carbon. It is critical they are protected so they don't release carbon. Accumulation and storage of carbon in peatlands is much slower than sequestration of carbon by the growth of new native forests.

Low Carbon Acceleration Fund Kaitoke Regional Park application

LOW CARBON ACCELERATION FUND

Kaitoke Regional Park

19 August 2020



1. OVERVIEW	1
2. TIMING	1
3. LOCATION	3
4. RESPONSIBILITIES	3
5. PROJECT APPROACH	4
6. COULD THE PROJECT PROCEED WITHOUT LCA FUNDING.....	5
7. TRACKING OF PROGRESS.....	5
8. CARBON REDUCTION	6
9. COST	6
10. CO-BENEFITS.....	8
11. RISKS.....	8
APPENDIX 1: MAP OF PROJECT AREAS	10

1. OVERVIEW

This project involves the retirement from farming of approximately 21.8 hectares of pasture land that is owned by Greater Wellington as part of Kaitoke Regional Park. This land will be established in forest meeting the definitions under the NZ Emissions Trading Scheme (ETS).

The project will result in reduced emissions from cessation of livestock farming. It will provide carbon sequestration from conversion of pasture to forest. The land use change from pasture to forest will be staged over two years. Forest establishment on the flat pasture areas will be delayed until the second year to allow final investigation of other land use options for this higher quality land, and to enable trialling of direct seeding approaches to forest establishment. This will help ensure good decisions are made in terms of long term carbon reduction and sustainable land use.

There are alternative approaches that can be taken to the establishment of carbon forest, are summarised in the table below.

Approach	Forest establishment	Description	Advantages	Disadvantages
Native forest	Native forest planting	<ul style="list-style-type: none"> Plant manuka dominant seedling mix Allow natural regeneration of climax forest species from adjacent forest seed sources. Some enrichment planting of slow dispersing species. 	<ul style="list-style-type: none"> Rapid and relatively low risk establishment Moderate cost Potential manuka honey production 	<ul style="list-style-type: none"> Lower rates of carbon sequestration than exotic species
	Direct seeding manuka on flats	<ul style="list-style-type: none"> Grass control and cultivation on flats to expose soil and allow direct seeding with manuka. 	<ul style="list-style-type: none"> Reduced establishment cost compared to planting. 	<ul style="list-style-type: none"> May be variation in establishment Increased risk of weed issues in shorter term If dense establishment, slower potential regeneration of enrichment species.

Direct seeding of manuka on the flats provides an interesting potentially low cost approach to forest establishment. This would be trialled in the first year, and could be undertaken in year two if successful. Back up options for seedling establishment could be retained. Trialling of this option provides more information for potential use of this approach over other land areas in the future.

2. TIMING

The current grazing licence for this area expires on 31 May 2021. Detailed planning for decisions on final land use and approaches to forest establishment can begin immediately. Some small trial works on direct seeding approaches could also begin immediately depending on availability of trial sites.

Initial land preparation and planting will occur immediately following the end of the current grazing licence.

It is planned to stage the work over 2 years, as follows:

Year	Tasks	Notes
2020 October	Site assessment and detailed planning	<ul style="list-style-type: none"> • Site management issues • Hydrology of potential wetland areas • Sustainable land management assessment and final decision on flats, including ecological and economic values
2020 October	Small direct seeding trial on flats if possible	<ul style="list-style-type: none"> • Depending on presence of a small site with stock excluded and machine access.
2020 October	Seedling production begins	
2020 October, ongoing	Animal control	<ul style="list-style-type: none"> • Pigs, hares and rabbits. Ongoing for first 2 years.
2020 October, ongoing	Spot weed control	<ul style="list-style-type: none"> • If any problem weed invasions or future risks identified
2021 May	Retired from grazing	
2021 June	Site preparation	
2021 August	Planting of hill country areas	<ul style="list-style-type: none"> • At least some of ridge areas. • Sloping area of flats • Possibly wet flat area (may be shifted to 2022) • Approximately 11 ha
2021 August	Trial direct seeding preparation	
2021 Oct	Trial direct seeding	<ul style="list-style-type: none"> • Trial only, 0.5-1 ha
2021 Oct	Releasing	
2022 May	Site preparation	
2022 July	Planting if not direct seeding	9ha
2022 August - October	site preparation and direct seeding if undertaken	9ha
2021 August – 2025 December	Ongoing spot weed control and pest animal control.	
May 2024 or 2025	Assessment and confirmation of “free to grow status”	Check against stand measurements and weed and pest situation.

3. LOCATION

Forest establishment will occur on grazed areas of land, east of the Kaitoke Regional Park campground. These areas are broadly classified into three types

- Developed pasture flats
- Pasture flats with wet areas
- Pasture ridges

The map in Appendix 1 shows these areas. The following table gives a broad summary.

Type	Area (ha)	Notes
Developed pasture flats	11.5	
Pasture flats with wet areas	1	Approximate area only. Area of wet flats to be determined.
Pasture ridges	9.3	
TOTAL	21.8	

In order to allow initial trialling of direct seeding methods to be potentially used on the flats, and also allow time for final consideration of higher value uses for the flats, the hill areas plus a trial on the flats will be undertaken in the first year. A small area (approximately 1 hectare) of wet flats may also be established in this first year.

In the second year the remaining area will be established in forest.

4. RESPONSIBILITIES

The project will be overseen by Greater Wellington Parks, with project management and delivery by Groundtruth Ltd.

Who	Roles and responsibilities
GW Eastern Parks staff	<ul style="list-style-type: none"> • Oversight • Approval of plans and annual work programme • Summary reporting to Climate Committee
Other GW staff	<ul style="list-style-type: none"> • Climate change, biodiversity
Groundtruth Ltd	<ul style="list-style-type: none"> • Project planning and management • Organising and completing seed collection, overseeing ecosourced plant production • Site preparation and planting • Maintenance and monitoring of plantings to a “free to grow ” state. • Reporting to GW Eastern Parks Staff

5. PROJECT APPROACH

There are alternative approaches that could be used. These vary in their cost, management requirements and pathway to ecological restoration.

Standard approach to native forest establishment by planting - suitable for all areas

Site preparation: This will include:

- Spot weed control where localised areas of gorse or problem ecological weeds are present.
- Pre plant spot control of grass

Animal control: This will involve initial more intensive control to minimise risks from pigs, rabbits, hares and other animal pests. This will also involve checking and maintenance of boundary fences where necessary. Ongoing maintenance level animal control will be required throughout the early years of forest establishment. Control will be undertaken either by GW Biosecurity or contract animal control organisations, depending on availability and cost.

Weed control: Spot control of localised areas of gorse or problem ecological weeds prior to planting. Occasional spot control of any problem weeds will be required through the period until canopy closure.

Planting: Planting of small plug size container stock at 2500 stems per hectare will be used to achieve a final stocking of around 2000 stems per hectare. This may be reduced slightly where there are benefits in long term forest diversity. Natural forest regeneration processes in this area involve dense early establishment of manuka, followed by relatively rapid spreading of climax forest species into the area from adjacent seed sources. In order to replicate this, the early planting will be predominantly manuka. A small proportion of other species likely to establish naturally on the site such as kohuhu will also be included.

Maintenance: Release spraying will be undertaken in the first spring / early summer to minimise weed competition and maximise survival. As identified under animal control and weed control, above, ongoing maintenance control of animal pests and any problem weed growth will be undertaken.

Monitoring: Fixed monitoring plots will be established a planting and used to monitor survival and growth through to a “free to grow” stage at around year 4. Regular management inspections will also be undertaken to check on any emerging weed or animal control problems etc.

Free to grow: Once planting reach a point where they are well established after around 3-4 years they are relatively immune to animal impacts and are above usual weed growth. At this stage plantings are likely to be in the order of 2m tall and with a strong stem that is resilient to animal damage. Once this “free to grow” stage is reached, management is much less intensive, only involving occasional checks of any unexpected weed or other issues. Planting areas will be monitored and assessed to meet a free to grow requirement at which they can be considered fully established, signalling achievement of the project.

Enrichment: The site is surrounded by diverse mature forest including rimu, kahikatea, beech and a wide range of other canopy and emergent species. The bird spread species have spread through previous areas of natural regeneration. Because of this, enrichment planting may be more than matched by natural bird and wind spread establishment of climax forest species, so does not appear worthwhile. The level of natural enrichment can be monitored and enrichment planting undertaken if necessary. An allowance for enrichment planting is included.

Trialing and application of direct seeding on flats

This approach will involve largely the same requirements as planting natural forest - around initial weed and animal control, and maintenance - but varies significantly in the site preparation and planting. This approach will be limited to the flats where machine access is easy. The approach would also be trialed in the first year across a small area to confirm its performance. Groundtruth have undertaken some trials of this approach in other areas in the past, and have agricultural crop establishment expertise, so have experience in this type of approach. The following general steps would be involved, though they may vary slightly:

- Blanket weed control of grass areas to be established.
- Ploughing or disking
- Broadcast seed sowing.
- Monitoring and spot weed control

6. COULD THE PROJECT PROCEED WITHOUT LCA FUNDING

The grazing lease expires in May 2021, however it is uncertain whether this will result in the area being retired if LCA funding is not obtained. Without significant funding to support weed and animal control and forest establishment the area would be likely to be either re leased for grazing, or left ungrazed. Left in an ungrazed state the area would be likely to establish with a large gorse component, be relatively slow to move to full native species cover. The presence of weed species, particularly gorse, would also make the area unattractive for recreation and amenity.

7. TRACKING OF PROGRESS

The project includes regular reporting and monitoring, in line with the following schedule

Timing	Monitoring and reporting
Planting	Establishment of fixed monitoring plots
	Reporting of establishment details including species, numbers and area
Autumn	Re measurement of fixed plots in the autumn following planting and then for a minimum of 2 years following planting. Measure and report: <ul style="list-style-type: none"> • Survival • Height and diameter • Canopy cover
3-4 years following planting	Assessment that plantings are “free to grow” – i.e ahead of any significant weed competition or animal damage, and able to continue to grow with minimum management input.

8. CARBON REDUCTION

Carbon reduction will be achieved by ceasing of livestock emissions on the site and through carbon sequestration from landuse change to native forest.

Scenario	Activity	Unit	In GW footprint?	Amount/year **
Remove stock	<ul style="list-style-type: none"> Enteric Fermentation Beef Cattle 	Reduction of approximately 300 stock units. Equivalent to 42 cattle.* compared to business as usual	Y/N	-63
Retire and establish manuka	<ul style="list-style-type: none"> Sequestration by natural forest 	Tonnes of CO2	Y	-187.5
TOTAL				-250.5

Note: * This based on a broad estimate of the carrying capacity of this site, not on actual numbers of stock that have been carried by lessee. It is assumed that this current business as usual emission can be claimed as a reduction every year over the project life. **Average tonnes CO2 over period to 2050, across the entire 21.8 hectare area. Sequestration of natural forest is based on the NZ Emissions Trading Scheme look up tables.

This gives a total carbon reduction, from removal of livestock plus land use change to forest, of 250.5 tonne/yr over the 21.8 ha.

These are all within the GW carbon footprint. They involve a reduction in emissions through cessation of grazing and farming. They involve sequestration (negative emissions) through landuse change - establishing forests on pasture land.

There has been minor use of fertiliser, and this has a relatively small affect on emissions, so this is not included in the summary here. Stock units are calculated from the average expected stock carrying capacity from LUC broadscale mapping for the area.

Calculation of carbon sequestration was undertaken using the ETS look up tables for post 1989 forest, rather than the CIPA spreadsheet. The CIPA spreadsheet does not include values for hardwood forest. Annual carbon stock increases for post 1989 forest are used from the ETS look up tables.

9. COST

Business as usual

There are currently few costs associated with this site as it is leased for grazing. No management costs have been included

A lease revenue of \$4119 per year will be forgone.

Project costs

Two alternative costings are provided in the summary table below, depending on whether the whole area is planted, or the hill areas are planted and the flats are direct seeded.

Approach	Scenario A: All planted	Scenario B: Planting on hills, direct seeding of flats
Planning	\$9,000	\$9,000
Pre plant animal and weed control	\$7,000	\$7,000
Planting / seeding	\$239,800	\$136,300
Ongoing maintenance	\$30,000	\$30,000
Enrichment planting	\$21,800	\$21,800
Project management	\$22,500	\$22,500
Project reviews	\$7,000	\$7,000
Contingency (10%)	\$33,710	\$23,360
TOTAL	\$370,810	\$256,960

Assuming a project life from 2021 to 2050 (29 years). This would amount to the following approximate sequestration costs.

Scenario	Project cost / ha	Carbon per hectare	Cost per tonne CO ₂
A Planting native forest	\$17,010	333.2	\$51
B Planting on hills direct seeding on flats	\$11,787	333.2	\$35

Greater Wellington's climate team calculations for Scenario B.¹

We estimate that the project would reduce Greater Wellington's corporate carbon footprint by 0.2% of gross emissions by 2030 and 0.5% of its net emissions by 2030. The cost effectiveness of this proposal, at under \$28/t of CO₂-e exceeds the internal benchmark level of \$50/t CO₂-e, and the current trading price for standard emissions units in NZ (which is ~\$34/t of CO₂-e).

Corporate carbon footprint only	Cost/t CO ₂ -e savings as at 2030	\$116.47 /t CO ₂ -e
Forest only savings (Includes all costs but only forest absorption emissions decreases)	Cost/t CO ₂ -e savings at maturity	\$30.54/t CO ₂ -e
Corporate carbon footprint savings to 2030, forests at maturity	Cost/t CO ₂ -e savings	\$27.35 /t CO ₂ -e

Notes:

All costs of establishment, management, and contingency included. Assumes 21.8 hectares available for forest and eligible for carbon under ETS.

No account is taken of the revenue received from honey production.

¹ GW's carbon calculations are calculated separately as methods applied here differ from the guidance. They can be found [here](#)

10.CO-BENEFITS

Biodiversity

This area adjoins diverse beech and tawa podocarp forests on the lower slopes of the regional park.

These areas have been classified by Singers et al 2019 (Forest Ecosystems of the Wellington Region) as originally tawa/kamahi/podocarp forest which is regionally endangered with only 22% of the original remaining. It is adjacent to areas classified as totara/matai/ribbonwood forest, and it is likely that the flat would have had some elements of this type. This forest type is regionally critically endangered with only 3% remaining.

This project will expand these forest types over the long term. This will significantly improve biodiversity in the local area, moving from a pasture to regenerating native forest over the period of the project.

The increase in forest area will increase habitat available for native birds and other native fauna.

Honey

The main species planted in initial forest establishment will be manuka. There is potential for manuka honey production from this site, particularly given the easy access.

Returns from manuka honey from a 2015 study in the ANZ Research Bulletin October 2015: "Manuka Honey – A Growth Story" indicated the following possible numbers for Manuka returns.

Honey yield	30 kg/ha
Honey price	\$60/kg
Share of apiary revenue	20%
Less operating costs	\$35/ha
Annual net income	\$325/ha

Honey certainly has potential to contribute some income but this will need to be further monitored and investigated over time.

Amenity & Recreation

Over the long term, establishing this area in forest will provide access to additional amenity in the form of flat native forest areas adjacent to the Kaitoke camping area. Walking tracks may be provided through the area over the long term.

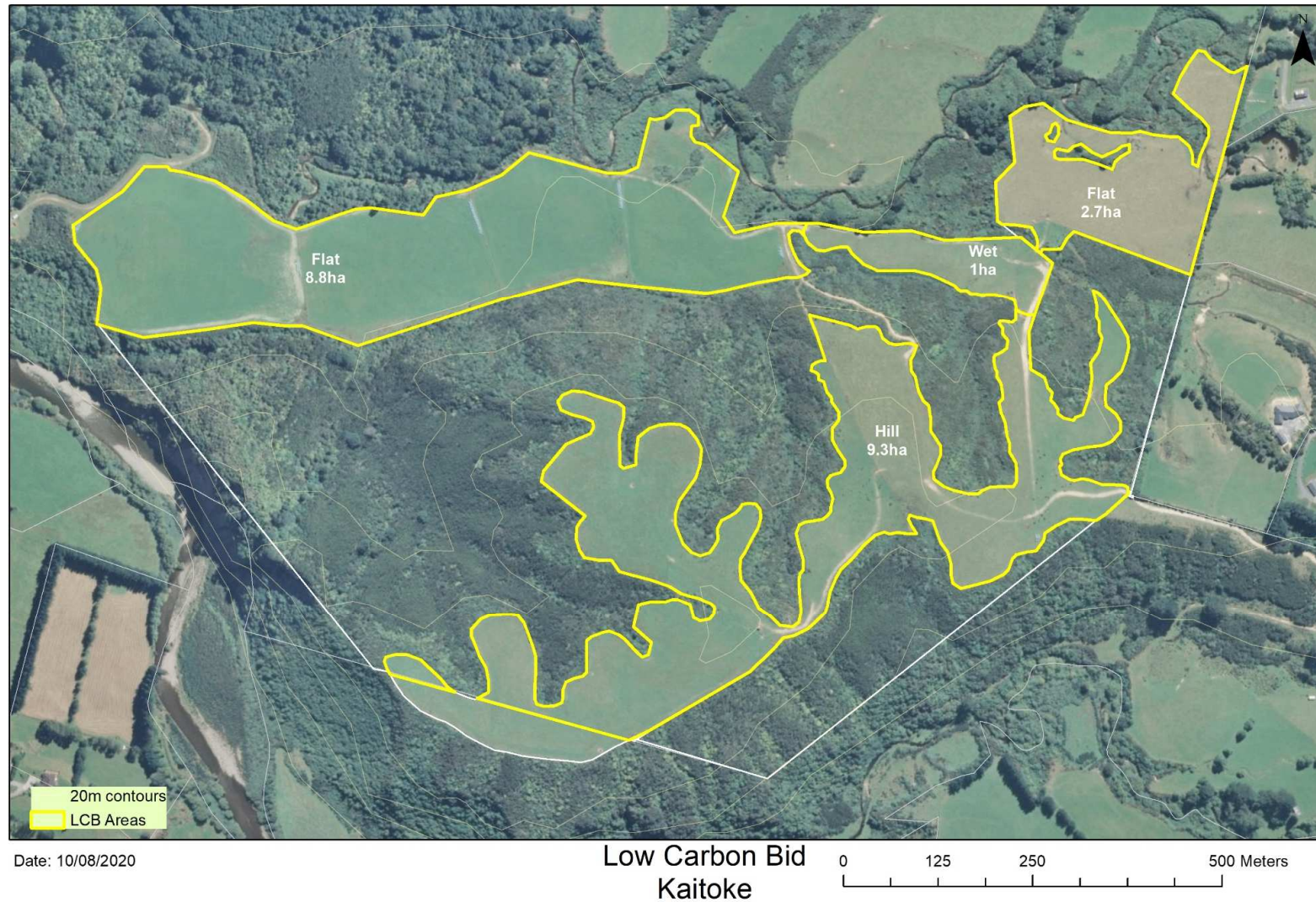
11.RISKS

Risks and risk management are summarised in the following table

Risk	Description	Level	Management
Pest animals	Pigs are currently an issue Hares and rabbits may be a problem	Moderate	Active control of pigs prior to establishment. This likely to remove this risk rapidly, but will require ongoing control over establishment period. Regular pest control for other species

Weeds	There is some risk of growth of gorse and other weeds competing with plantings. This is unlikely to be a major problem with good management	Low - Moderate	Through good site preparation and ongoing management of plantings this can be controlled.
Public concerns	Possible concerns over land use change and loss of flat pastoral land.	Low	This appears unlikely to be a significant public issue, and likely to be offset by interests in restoration.

APPENDIX 1: MAP OF PROJECT AREAS



Attachment 3 to Report 20.333

Design of the Low Carbon Acceleration Fund

Purpose of the Fund

1. To help spur a step change in Greater Wellington's activities to reduce emissions and put it on track to achieve Council's carbon reduction goals (primarily corporate carbon neutrality from 2030) by funding activities or initiatives that reduce net emissions more quickly and/or at a greater scale than otherwise would occur.

Initial period and Long Term Plan confirmation

2. The Fund will operate using borrowing for the first year (2020/21).
3. The level of borrowing budgeted for in the Annual Plan for 2020/21 will be \$2.0 million.
4. Further operation of the Fund is subject to Council approval following the consultation process for the 2021-31 Long Term Plan. This consultation will include seeking the community's views regarding the sale of Greater Wellington's free allocation NZUs to repay borrowing costs incurred by the Fund and/or create a cash reserve to support subsequent years of the Fund's operation.

Key elements

5. The Fund is open to bids for projects that would occur within Greater Wellington's operations and reduce its carbon footprint. This includes the Metlink bus fleet.
6. The aim is to allocate the entire Fund over a period of approximately four years (i.e. 2020—24).
7. Only the proportion of project costs that is additional to business as usual activity will be funded.
8. The Fund is partitioned so it is not fully monopolised by one type of activity, although this can be reviewed at any time if any part of the Fund is undersubscribed.
9. The Fund can be used for a small level of project development/feasibility studies as well as project implementation.
10. Quarterly, the Climate Emergency Response Programme Board will provide bids to the Climate Committee.
11. The Climate Committee will consider these bids, and recommend suitable bids to Council for approval.

Fund criteria for projects

12. Dollars of funding sought per tonne of CO₂e emissions mitigated is lowest (implementation projects only).
13. The project would not proceed without the extra funding.
14. The project will have demonstrable emissions impact, particularly for Greater Wellington itself.
15. The project has other wider benefits e.g. for biodiversity, contribution to freshwater outcomes.

Attachment 3 to Report 20.333

Design of the Low Carbon Acceleration Fund

16. The level of ongoing rates impact once the funding allocation has been used.
17. The project is of strategic importance to achieving Greater Wellington's corporate carbon reduction targets.
18. The project will help secure external funding for the project or related projects.

Split of Fund for 2020/21

19. Project implementation:
 - a Land sector (e.g. afforestation, land use change, wetlands): 40 percent
 - b Energy and other sources (e.g. EVs, renewable energy, waste): 40 percent
20. Project development/feasibility: 20 percent.

Administration

21. The climate change team within the Strategy and Corporate Planning department will:
 - a Develop the required documentation, including application forms and guidance
 - b Promote the Fund
 - c Work with activity managers to help them develop project bids/business cases
 - d Provide analysis to decision makers regarding the bids received.
22. The Climate Emergency Response Programme Board will review the bids and decide which to propose to the Climate Committee for its recommendation to Council for approval.
23. The Finance team will support all the necessary transactions and provide advice on financial strategy – in particular the opportune time to sell the free allocation NZUs.

Review

24. The Fund's details and settings, along with whether to hold or sell the free allocation NZUs, will be reviewed annually by the Climate Emergency Response Programme Board (the Board). The Board can suggest any adjustments to these matters to the Climate Committee, which may recommend any changes to Council for approval.