ORDINARY MEETING OF KŌRAU TŪĀPAPA | ENVIRONMENT AND INFRASTRUCTURE COMMITTEE AGENDA

Time: 9:30am
Date: Thursday, 8 December 2022
Venue: Ngake (16.09)
Level 16, Tahiwi
113 The Terrace
Wellington

MEMBERSHIP

Mayor Whanau
Deputy Mayor Foon
Councillor Abdurahman
Councillor Apanowicz
Councillor Brown (Deputy Chair)
Councillor Calvert
Councillor Chung
Councillor Free
Pouiwi Holden Hohaia
Pouiwi Liz Kelly
Councillor Matthews
Councillor McNulty
Councillor O'Neill
Councillor Pannett
Councillor Paul (Chair)
Councillor Randle
Councillor Wi Neera
Councillor Young

Have your say!
You can make a short presentation to the Councillors, Committee members, Subcommittee members or Community Board members at this meeting. Please let us know by noon the working day before the meeting. You can do this either by phoning 04-803-8337, emailing public.participation@wcc.govt.nz or writing to Democracy Services, Wellington City Council, PO Box 2199, Wellington, giving your name, phone number, and the issue you would like to talk about. All Council and committee meetings are livestreamed on our YouTube page. This includes any public participation at the meeting.

AREA OF FOCUS

The Kōrau Tūāpapa | Environment and Infrastructure Committee has responsibility for:

1) RMA matters, including urban planning, city design, built environment, natural environment, biodiversity, and the District Plan.
2) Housing.
3) Climate change response and resilience.
4) Council property.
5) Waste management & minimisation.
6) Transport including Let's Get Wellington Moving.
7) Council infrastructure and infrastructure strategy.
8) Capital works programme delivery, including CCOs' and Wellington Water Limited's capital works programmes.
9) Three waters

To read the full delegations of this committee, please visit wellington.govt.nz/meetings.

Quorum: 9 members

TABLE OF CONTENTS
8 DECEMBER 2022

1. Meeting Conduct

1.1 Karakia

The Chairperson will open the meeting with a karakia.

Whakataka te hau ki te uru,	Cease oh winds of the west
Whakataka te hau ki te tonga.	and of the south
Kia mākinakina ki uta,	Let the bracing breezes flow,
Kia mātaratara ki tai.	over the land and the sea.
E hī ake ana te atākura.	Let the red-tipped dawn come
He tio, he huka, he hauhū.	with a sharpened edge, a touch of frost,
Tihei Mauri Ora!	a promise of a glorious day

At the appropriate time, the following karakia will be read to close the meeting.

Unuhia, unuhia, unuhia ki te uru tapu nui	Draw on, draw on
Kia wātea, kia māmā, te ngākau, te tinana, te wairua	Draw on the supreme sacredness To clear, to free the heart, the body
I te ara takatū	and the spirit of mankind
Koia rā e Rongo, whakairia ake ki runga	Oh Rongo, above (symbol of peace)
Kia wātea, kia wātea	Let this all be done in unity
Āe rā, kua wātea!	

1.2 Apologies

The Chairperson invites notice from members of apologies, including apologies for lateness and early departure from the meeting, where leave of absence has not previously been granted.

1.3 Conflict of Interest Declarations

Members are reminded of the need to be vigilant to stand aside from decision making when a conflict arises between their role as a member and any private or other external interest they might have.

1.4 Confirmation of Minutes

The minutes of the meeting held on 15 September 2022 will be put to the Kōrau Tūāpapa | Environment and Infrastructure Committee for confirmation.

1.5 Items not on the Agenda

The Chairperson will give notice of items not on the agenda as follows.

Matters Requiring Urgent Attention as Determined by Resolution of the Kōrau Tūāpapa | Environment and Infrastructure Committee.

The Chairperson shall state to the meeting:

1. The reason why the item is not on the agenda; and

2. The reason why discussion of the item cannot be delayed until a subsequent meeting.

The item may be allowed onto the agenda by resolution of the Kōrau Tūāpapa | Environment and Infrastructure Committee.

Minor Matters relating to the General Business of the Kōrau Tūāpapa | Environment and Infrastructure Committee.

The Chairperson shall state to the meeting that the item will be discussed, but no resolution, decision, or recommendation may be made in respect of the item except to refer it to a subsequent meeting of the Kōrau Tūāpapa | Environment and Infrastructure Committee for further discussion.

1.6 Public Participation

A maximum of 60 minutes is set aside for public participation at the commencement of any meeting of the Council or committee that is open to the public. Under Standing Order 31.2 a written, oral or electronic application to address the meeting setting forth the subject, is required to be lodged with the Chief Executive by 12.00 noon of the working day prior to the meeting concerned, and subsequently approved by the Chairperson.

Requests for public participation can be sent by email to public.participation@wcc.govt.nz, by post to Democracy Services, Wellington City Council, PO Box 2199, Wellington, or by phone at 04 803 8334, giving the requester's name, phone number and the issue to be raised.

2. General Business

INTRODUCTORY SPEECH FOR TĀKAI HERE REPRESENTATIVE

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee asks that the introductory speech by Pouiwi Holden Hohaia, Tākai Here representative be received.

Strategic alignment with community wellbeing outcomes and priority areas

Strategic alignment with priority objective areas from Long-term Plan 2021–2031	Aligns with the following strategies and priority areas: ☐ Sustainable, natural eco city ☐ People friendly, compact, safe and accessible capital city ☐ Innovative, inclusive and creative city ☐ Dynamic and sustainable economy ☐ Functioning, resilient and reliable three waters infrastructure ☐ Affordable, resilient and safe place to live ☐ Safe, resilient and reliable core transport infrastructure network ☐ Fit-for-purpose community, creative and cultural spaces ☐ Accelerating zero-carbon and waste-free transition ☒ Strong partnerships with mana whenua
Relevant Previous decisions	On 28 April 2021, Council agreed to appoint one representative each from Taranaki Whānui ki Te Upoko o Te Ika and Ngāti Toa Rangatira to most committees and subcommittees. On 26 October 2022, Council agreed to appoint Liz Kelly and Holden Hohaia, representing Te Rangapū Ahikāroa, our Takai Here partners, as mana whenua representatives nominated by Taranaki Whānui ki te Upoko o te Ika and Ngāti Toa Rangatira to Council committees and subcommittees for the 2022-2025 triennium.

Financial considerations

☒ Nil	☐ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

Risk

☒ Low	☐ Medium	☐ High	☐ Extreme

Author	Leteicha Lowry, Democracy Advisor
Authoriser	Sean Johnson, Democracy Team Leader

	Stephen McArthur, Chief Strategy & Governance Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.
2. Thank Holden Hohaia for their introductory speech.

Whakarāpopoto | Executive Summary

2. Holden Hohaia was appointed to Council committees and subcommittees for the 2022-2025 triennium on 26 October 2022.

Takenga mai | Background

3. In April 2021 Council agreed to appoint mana whenua representatives to Council committees with full voting rights and remunerations.
4. On 29 April 2022, Council signed Tākai Here, with Te Rangapū Ahikāroa, the partners to the agreement: Ngāti Toa Rangatira, Taranaki Whānui ki Te Upoko o Te Ika and Te Runanganui o Te Āti Awa.
5. Port Nicholson Block Settlement Trust nominated Holden Hohaia as one of the mana whenua representatives sitting on Council committees for the 2022-2025 triennium. On 26 October 2022, Council confirmed the appointment.
6. This meeting will be the first where Pouiwi Holden Hohaia is acting as a member.

Kōrerorero | Discussion

7. Not applicable.

Ngā mahinga e whai ake nei | Next actions

8. Not applicable.

Attachments

Nil

E-BIKE SHARE TRIAL SCHEME

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee seeks approval to allow the two existing e-scooter operators to have up to 150 e-bikes each as part of their operation.

Strategic alignment with community wellbeing outcomes and priority areas

	Aligns with the following strategies and priority areas: ☒ Sustainable, natural eco city ☒ People friendly, compact, safe and accessible capital city ☒ Innovative, inclusive and creative city ☐ Dynamic and sustainable economy
Strategic alignment with priority objective areas from Long-term Plan 2021–2031	☐ Functioning, resilient and reliable three waters infrastructure ☒ Affordable, resilient and safe place to live ☒ Safe, resilient and reliable core transport infrastructure network ☐ Fit-for-purpose community, creative and cultural spaces ☒ Accelerating zero-carbon and waste-free transition ☐ Strong partnerships with mana whenua
Relevant Previous decisions	• 2019 Proposed evaluation of public electric scooter share schemes in Wellington City • 10 March 2022 – Adoption of the Bike Network Plan • 7 September 2022 – Traffic Resolutions – Bike Corrals
Significance	The decision is **rated low significance** in accordance with schedule 1 of the Council's Significance and Engagement Policy.

Financial considerations

☐ Nil	☒ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

2. All cost associated with introducing e-bikes will be met by the operators. The monitoring and evaluation of the trial will be undertaken in house from within existing budgets.

Risk

☒ Low	☐ Medium	☐ High	☐ Extreme

3. The risk of the operation falls with the operators in most cases. The term of the licence allows Council to withdraw or vary the terms if we begin to see poor or unsafe behaviours or practices. It is in the interest of the operators to ensure that the trial is successful and therefore do everything within their power to ensure risk is minimised.

4. Poor and unsafe behaviour of the users of public share e-bikes whether it be the way they are ridden or the way they are parked could lead to a risk to the riders, other road users and a reputational risk to Council. It is for this reason we will monitor the use and vary or withdraw the license if required.
5. Use of public share e-bikes on the Wellington network comes with risk and is equivalent to the personal risk faced by private riders of bikes every day. The roll out of the Council's Paneke Poneke programme will continue to reduce the risk of riding in the city.

Author	Paul Barker, Street Transformation Manager
Authoriser	Vida Christeller, Manager City Design Liam Hodgetts, Chief Planning Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion

That Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.
2. Agree that the existing e-scooter licences granted to Flamingo and Beam be amended to allow up to 150 e-bikes for each operator to be phased in as demand warrants on a trial basis from 1 January 2023 until the end of the current licence 30 March 2024 or any time that Council chooses.
3. Agree that officers will report back to committee on the outcome of the trial late in 2023 to inform any future licence beyond 30 March 2024.

Whakarāpopoto | Executive Summary

6. Over the last four years Wellington has had two operators operating a public share e-scooter scheme. To compliment the e-scooters it is proposed to extend the scheme to include e-bikes.
7. The current licence to operate e-scooters in Wellington expires at the end of March 2024, this would provide an opportunity to then embed a fit for Wellington public share micro mobility solution to take Wellington through towards the end of the decade.
8. While there is good evidence from other cities as to how e-bikes are used, it is felt that a small local trial would be beneficial and create the evidence base ahead making any decisions of issuing a longer-term licence.
9. Concerns from our Accessibility Advisory Group about how our disabled communities currently manage with e-scooters has led us to develop areas away from the clear footpath as drop zones. We will be including the use of these zones in our evaluation to ensure that any future micro-mobility scheme minimises impact on accessibility.
10. A variation to the existing e-scooter licence would allow the current operators to each have up to 150 e-bikes from 1 January 2023 until 30 March 2024 to be phased in as demand warrants. The operators would have requirements to work with officers to monitor and evaluate the e-bike scheme and how it works alongside their existing e-scooter operation. The learnings from the evaluation will inform any future RFP process.
11. Officers will report back to the Kōrau Tūāpapa | Environment and Infrastructure Committee late in 2023 with the results of the trial and proposals for public share micro mobility for Wellington beyond 1 April 2024.

Takenga mai | Background

12. In 2018 Council was approached by e-scooter operators seeking a licence to operate in Wellington. Officers brought a paper to committee in February 2019 seeking approval to run a contestable process to select up to two operators to have a limited number of scooters on our network for a limited time on a trial basis.
13. A draft code of practice was developed setting out conditions of use for scooters.
14. Committee approved the process and made suggestions on how the code of practice could be altered to assist with the trial.
15. We received interest from five providers to operate in Wellington. From this Flamingo and Jump were selected to participate in the trial.

16. Following the successful 18-month trial, officers reported back to committee with a recommendation to continue with two operators supplying e-scooters to the Wellington market with a three-year licence which was approved.
17. Following a contestable process licences were awarded to Flamingo and Beam.
18. In 2018 e-scooters rapidly extended their reach around the world and are now commonplace in most cities and urban centres.
19. Nationally and internationally we are now seeing the rollout of public share e-bikes. In some cities they are often complementing public share e-scooters but can also be completely stand alone.
20. Public share e-bikes are available in Auckland, Hamilton, and Christchurch.
21. Following the adoption of Paneke Pōneke in March this year we began conversations with New Zealand-based providers. There is strong interest in providing this offering to our community in Wellington.

Kōrerorero | Discussion

22. The introduction of public share e-bikes will complement the existing public share e-scooters and will extend the range available to the hirer.
23. Officers have reviewed the existing licence and code of practice. With a few minor changes they are considered generally suitable to apply to both scooters and bikes.
24. The existing licence for e-scooters expires at the end of March 2024. At this stage the intention is that Council will be running a contestable process for any further three-to-five-year licence late in 2023 or early in 2024. If we were to include the ability to provide both scooters and bikes in the new licence, then there is an advantage in trialling e-bikes ahead of the contestable process.
25. This trial of e-bikes would be evaluated and reported back to Committee mid-late 2023 seeking approval to commence the contestable process to select operators for the new licence.
26. In approving the commencement of the process, Committee would be able to determine:
    - Number of operators
    - Number of e-scooters
    - Number of e-bikes
    - Special conditions of use
    - Duration of the licence
    - Monitoring and reporting
27. Officers are seeking approval to commence a trial and report the results, including community sentiment, to inform Council and provide the evidence base for decision-making of any public share micro mobility scheme operating in Wellington beyond 1 April 2024.
28. The proposed trial would extend the current two licensees the ability to deploy up to 150 public share e-bikes each for the extent of their current licence (30 March 2024), noting that their licences can be withdrawn at any time if there is evidence of non-compliance with the licence conditions, including parking in a way that creates a hazard to other users.

29. Experience from other cities suggest that increasing public share micro mobility from just e-scooters to include e-bikes opens access to new users rather than transferring from scooters to bikes.

30. Auckland Transport, who have been operating both e-scooters and e-bikes for close to three years, have provided us their data on the number of reported incidents involving e-bikes and e-scooters.

31. As an example of the ratio of complaints about e-scooters/e-bikes Auckland Council have provided a breakdown for the licencing period Sep 2021 – Sep 2022. These show that although e-bikes account for 26% of the micro mobility market share in Auckland they account for only:
    - 15.3% of non-compliant parking notifications
    - 14.7% of complaints
    - 6% of accidents/incidents

32. Unlike e-scooters the use of e-bikes is already highly regulated including the requirement to wear a helmet and that users must obey New Zealand Road rules.

33. An area where we see the trial being most useful is in the monitoring of how bikes are left at the end of the hire. This is the biggest area of concern regarding existing e-scooter use and has been raised consistently by our Accessibility Advisory Group. While we don't expect that the bikes will be blown over as easily as the scooters, they could still pose a hazard to pedestrians if they are parked poorly on footpaths.

34. We had a Traffic Resolution approved on 7 September 2022 to create 11 bike corrals throughout the city, these will provide an opportunity for off footpath bike and scooter parking, to both increase supply and to reduce footpath clutter. The public share operators can incentivise the use of these on road corrals by creating a GIS drop zone. We will require in the central area that both operators must make this available and publicise it to all their members.

35. We will have a summer intern join our team with a focus on bike parking. They will be auditing bike parking in the CBD. If e-bikes are approved, we expect that these would be in place by the start of 2023 enabling our intern to incorporate public share e-bike parking practices into their audit and, if necessary, make recommendations for further bike corrals.

Kōwhiringa | Options

36. Consideration was given to running a contestable process for the provision of e-bikes for the duration of the trial. It was felt that this could lead to having four micro mobility providers in Wellington, the existing two e-scooters and two new providers for e-bikes. This paper seeks approval to extend the license to the existing providers only for a trial period that takes both providers to the end of their licence, where a contestable process is likely to be held anyway. The Committee may consider that a contestable process is warranted, and this would mean that the trial would commence in March 2023 at the earliest, missing most of this summer's riding and potentially skewing the results of the trial given that the evaluation is likely to happen in July/August.

37. Committee may choose to not approve a trial of e-bikes at this time. Further consideration could then be given to their inclusion in future licences late in 2023 noting that this would be without any local trial evidence.

38. Committee may decide that public share e-bikes are not appropriate for Wellington and resolve that any future requests are declined.

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

39. The move towards public share micro mobility is a step in our response to the climate and ecological emergency. It is consistent with the direction set in Paneke Pōneke, our bike network plan.

Engagement and Consultation

40. No specific engagement or consultation has been undertaken; however, the approval of the trial will enable public sentiment towards public share e-bikes to be captured and reported back before decisions are made about the long-term use of e-bikes.

Implications for Māori

41. There are no known implications for Iwi in approving an extension to the existing operators to trial the use of e-bikes in Wellington.

Financial implications

42. The cost to supply, operate and maintain a fleet of e-bikes will be met by the operators.

43. Monitoring of the trial will be undertaken in house by officers using existing opex budgets. Operators will be required to provide access to their usage data, including e-scooters to enable comparisons to be made between the two offerings.

44. A public sentiment survey is proposed like that used when e-scooters were trialled, this again will be undertaken in house using existing opex budgets.

Legal considerations

45. The operators will hold a trading in public places licence (allowed for in our bylaws) that references the code of practice. These two documents provide the legal necessities to operate public share micro mobility in Wellington.

46. The existing two providers were granted a licence following a contestable process. Following the trial, a committee decision will be sought for the future of public share micro mobility for Wellington. Any further on street provision will follow another contestable process to meet our legal obligation.

Risks and mitigations

47. The risk to Council is considered low, with good mitigation in place.

Disability and accessibility impact

48. Evidence from other cities offering e-bikes is that there are significantly fewer complaints about the use of e-bikes than e-scooters, however the parking of both e-scooters and e-bikes potentially poses a significant challenge for disability and accessibility.

49. We are working closely with the operators to develop "drop zones" for end of ride parking. These marked areas will have a geofence boundary that will provide a financial incentive to park in an area that minimises the impact on the footpath.

50. The recently approved bike corrals will be designated “drop zones” and we will look to propose more of these corrals following an audit this summer.

Climate Change impact and considerations

51. Road transport emissions (from vehicles including from cars, motorbikes, and trucks) represent 34 percent of our city’s emissions and are the single biggest source. Electric vehicles cannot solve this problem on their own, given their relative expense and constrained supply. Making it safe and easy to cycle, walk, and use public transport for everyday trips will be a key part of cutting road transport emissions in Wellington.

Communications Plan

52. The decisions made by the Committee today will be shared with the public through a news release and Council’s communications channels.

53. If approved a further news release will go out in conjunction with the operators ahead of the 1 January commencement of the trial.

Health and Safety Impact considered

54. Making it easy to get access to a bike is expected to have a very positive impact on the health (mental and physical), safety and well-being of Wellingtonians now and in the future.

55. Impact of poor parking has been considered and outlined in the accessibility section above.

Ngā mahinga e whai ake nei | Next actions

56. If approved, officers will finalise the amendments to the Licence and Code of practice and will update the existing operators’ licences to allow up to 150 e-bikes through to the end of the current licence period.

57. In January/February 2023 officers using a summer intern are undertaking an audit of existing bike parking practices to understand the demand for future bike parking provision, this audit will also include any public share e-bikes.

58. Officers will work closely with the operators to ensure timely information is provided to monitor and evaluate the trial.

Attachments

Nil

ZERO WASTE STRATEGY

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee seeks approval to consult on the Wellington Zero Waste Strategy and note the priority actions that will deliver this strategy to achieve zero waste outcomes for Wellington.

Strategic alignment with community wellbeing outcomes and priority areas

Aligns with the following strategies and priority areas:

☒ Sustainable, natural eco city
☒ People friendly, compact, safe and accessible capital city
☐ Innovative, inclusive and creative city
☒ Dynamic and sustainable economy

Strategic alignment with priority objective areas from Long-term Plan 2021–2031

☐ Functioning, resilient and reliable three waters infrastructure
☐ Affordable, resilient and safe place to live
☐ Safe, resilient and reliable core transport infrastructure network
☐ Fit-for-purpose community, creative and cultural spaces
☒ Accelerating zero-carbon and waste-free transition
☒ Strong partnerships with mana whenua

Relevant Previous decisions

9 December 2021 - Pūroro Waihanga | Infrastructure Committee:

[Resolution 6] ***Note*** *that the Infrastructure Committee's resolution of 14th October 2021 requires officers to report back in March 2022 on the codesign and collaboration of the waste management initiatives, together with the potential financial implications of the waste minimisation roadmap and a high-level investment overview. A detailed investment plan will be developed with stakeholders over the coming months to support a revised WMMP Action Plan. To support this plan, we need to review the kerbside waste service as well as completing resource recovery investigations, organic waste investigations, and engaging extensively with stakeholders on the scope of the next (draft) WMMP Action Plan. Planning of this work suggests we will not be able to report back on the final plan by March 2022 and a more realistic timeframe is October 2022.*

and

[Resolution 7] Agree that officers will progress ongoing co-design and collaboration with mana whenua, key stakeholders and the community between February and October 2022, to refine the waste minimisation initiatives contained in the draft roadmap and to develop a new (draft) WMMP Action Plan and investment plan, with a report to Committee on the progress and outcomes in October 2022

Significance The decision is **rated high significance** in accordance with schedule 1 of the Council's Significance and Engagement Policy.

Financial considerations

☐ Nil	☒ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

2. There are no direct financial considerations associated with the Zero Waste Strategy. Any funding for projects will be met through the Annual Plan / Long-term Plan process or through alternative funding sources such as Ministry for the Environment or the waste levy funding.

Risk

☐ Low	☒ Medium	☐ High	☐ Extreme

3. This strategy document will help guide decision making in managing and minimising waste into the future. The risk of not meeting the communities' expectations is mitigated through the creation of the Zero Waste Programme, with the appropriate resourcing and governance structures.

Authors	Stephanie Steadman, Senior Waste Planner Diljinder Uppal, Manager Zero Waste Strategy
Authoriser	Chris Mathews, Manager Waste, Water and Resilience Siobhan Procter, Chief Infrastructure Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following:

That Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information
2. Agree to formally consult on the draft Zero Waste Strategy

Whakarāpopoto | Executive Summary

4. A Wellington City Council-specific Zero Waste Strategy (the Strategy) and action plan is required to provide direction for Wellington's move towards a circular economy.
5. This paper is seeking approval to formally consult on the Wellington Zero Waste Strategy. The strategy outlines the priority actions required to deliver the strategic objectives.
6. To support the Strategy, a detailed draft WCC Action Plan has been developed with stakeholder (community and waste minimisation groups) and in partnership with Iwi. A final Action Plan and Zero Waste Strategy will be presented to Council in April 2023 following the formal consultation process.
7. The WCC Action Plan contributes to the Regional Waste Minimisation and Management Plan 2023-2029, which will be publicly consulted upon in June 2023.
8. Some initiatives on the WCC Action Plan will feature in the regional WMMP, however some will be specific to just WCC.

Takenga mai | Background

9. A strategic waste operations review was done in early 2021. The key reasons for this review were:
    - Perceptions that the waste operations model at WCC was not aligned with or responsive to the expectations of key stakeholders – including councillors.
    - The need to develop a sustainable future model / direction, including the investment requirements to deliver on this.
    - The need to consider future resourcing model requirements including capability and capacity.
10. The review process was completed in July 2021 and highlighted a number of primary drivers for change to the council's waste operations model.
    - **Leadership:** Wellington City wants to be a leader in waste minimisation, but this is not possible under the constraints of current policy settings, including the funding policy.
    - **Investment:** significant funding will be required to underpin the implementation and provision of enhanced waste services.
    - **Stakeholder expectations:** The current business model and focus is outdated and does not meet stakeholder expectations. There is a leadership opportunity for Council to lead the city towards a low-waste future.

- **Best practice:** The current model is lagging behind best practice and is not in line with changing legislative, national and international policy direction.
- **Focus of effort:** Resources and effort are focused on waste collection and disposal, rather than waste minimisation.

11. Following completion of the strategic waste operations review, the Council commissioned the development of a second phase of work, which centred on the development of the 'Waste Minimisation Roadmap'.
12. The Roadmap was intended to respond to the key drivers for change identified by the review process through painting a strategic path ahead.
13. At the time, it was recognised that the Roadmap would only be part of the response required. Further work was also needed to consider how the Roadmap would be planned and implemented, with the associated resource, change and investment implications.
14. Given the scale and complexity of the programme identified within the Roadmap, including several projects of significance, the Zero Waste Programme was formally established in May 2022. One of the first priorities for the Programme was to develop a strategy.
15. The Zero Waste Strategy (Attachment 1) builds on the Roadmap and is supported by the Waste Action Plan (Attachments 2 and 3). The Waste Action Plan aligns a series of priority actions and initiatives with the four objectives of the draft Zero Waste Strategy (the Strategy).

Kōrerorero | Discussion

16. The Strategy provides clear guidance and direction on moving towards a circular economy over the next 20 years.
17. The Strategy identifies how the waste system will support the shift to a circular economy, contribute to the city's carbon emissions reduction and reduce the amount of material and resulting waste entering the city and our landfill.
18. A focus is placed on four waste types with the largest volumes, being:
    - Sludge – 26.5% of waste at the Southern Landfill
    - Organics – 25.5% of levied waste at the Southern Landfill
    - Construction and demolition – 22.0% of waste at Southern Landfill (but 40-50% of New Zealand's waste).
    - Plastics, packaging and consumables – 20.6% of waste disposed per week at the Southern Landfill.
19. There are four strategic objectives:
    - **Objective 1**: Products and services provided in Wellington are waste free – we aim to avoid unnecessary resource use and to design waste out.
    - **Objective 2**: Waste reduction is attractive and accessible to Wellingtonians – we aim to make it convenient for residents, businesses and consumers to recycle their waste.

- **Objective 3**: Resources are regenerated and repurposed in Wellington – we aim to recover and process materials to regain value from resources.
- **Objective 4**: Waste that cannot be avoided, reduced, reused, or recycled is managed pafely – we aim to treat waste infrastructure built today as a finite resource and carefully manage it.

20. In realising these objectives, the following targets inform the priority actions under each objective:
    - Reduce per capita kerbside waste by 40% by 2030
    - Reduce total waste to landfill by 50% by 2030
    - Reduce biogenic methane gas emissions by at least 30% by 2035
    - Divert 50% of construction and demolition waste from landfill by 2030; 70% by 2035
    - Divert 50-70% of organic waste from landfill by 2030
21. The Strategy articulates service, infrastructure and behavioural change initiatives and outlines priority actions and associated business cases (listed below) that will be presented mid-2023 to align with the 2024-2027 LTP process.

Priority Projects

- Redesigning Kerbside Collections
- Organics Processing Facility
- Resource Recovery Park + Construction and Demotion processing
- Resource Recovery Network

22. The Southern Landfill Extension and Sludge Minisation Facility are key components of the strategy and further work is underway on the options selected by Council.
23. The Zero Waste Programme also focuses on the associated behavioural change shifts needed to enable and support the outcomes through these projects.
24. Wider reinforcement of desired behaviours, social norms and habits will be part of an ongoing waste minimisation effort running alongside the Zero Waste Programme. It will take time to entrench the behaviours required of businesses and consumers acheive zero waste outcomes.
25. The priority actions are contained within the Strategy. This Strategy will be delivered by the Zero Waste programme and reported in the Priority Investment Report (quarterly).

Kōwhiringa | Options

26. The Council may:
    1. Agree to public consultation on the draft Zero Waste Strategy, or
    2. Resolve not to approve the public consultation of the Zero Waste Strategy.

Following public consultation, the Committee will have the opportunity to consider submissions on the Strategy.

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

27. The Strategy has been developed in alignment with:

- Tūpiki Ora Māori Strategy
- 2021-2031 Long Term Plan (LTP)
- Te Atakura
- The Wellington Region WMMP 2017-2023
- Economic Wellbeing Strategy – He Rautaki Ōhanga Oranga

Engagement and Consultation

28. If agreed, the Strategy will be available for public consultation during March 2023 with oral hearings scheduled during April, and the final report back scheduled for the Committee during May 2023.

Implications for Māori

29. The Council recognises the importance of its relationship with mana whenua and Māori in both creating and delivering on the Strategy. The Strategy is guided by the principles of Tūpiki Ora and embraces protecting and enhancing the mauri of resources by working towards a circular economy approach.

Financial implications

30. There are no financial implications at this point. Any actions that require funding will be included in the relevant financial planning processes.

Legal considerations

31. Nil

Risks and mitigations

32. This strategy is an aspirational document which will help guide decision making in managing and minimising waste into the future. The risk of not meeting the communities' expectations is mitigated through the creation of the Zero Waste Programme, with the appropriate resourcing and governance structures.

Disability and accessibility impact

33. Nil

Climate Change impact and considerations

34. Climate change is a key consideration in the development of the Strategy. Transitioning to a circular economy reduces carbon emissions and will contribute positively to Wellington's zero carbon goal.

Communications Plan

35. A communications plan is currently being developed with the intention that it will be approved and operational before consultation occurs.

Health and Safety Impact considered

36. There are no health and safety impacts arising from this strategy.

Ngā mahinga e whai ake nei | Next actions

37. If agreed, any amendments will be included in the Strategy and it will be prepared for consultation.

Attachments

A ZERO WASTE FUTURE FOR WELLINGTON

DRAFT ZERO WASTE STRATEGY
WELLINGTON CITY COUNCIL

DRAFT DEC 2022

CONTENTS

WHY DO WE NEED A ZERO WASTE STRATEGY?

This strategy is written in the context of the Wellington City Council 2040 vision: An inclusive, sustainable and creative capital for people to live, work and play. This is the first waste strategy for Council. We are one of the Wellington region councils partnering to produce and deliver the Wellington Region Waste Management and Minimisation plan (WRWMMP). This contains a Wellington City-specific Waste Action Plan that sets the activities for the city's waste management and minimisation journey over the next 6-years. National legislative and regulatory changes, combined with evolving strategies, are signalling a push to transition to a circular economy and a drive to heavily reduce carbon emissions. A circular economy means keeping resources in use for as long as possible and regenerating them when they reach their end of life. We have identified a need to create a Wellington City Council-specific waste strategy that aligns with the strategic direction of central government as well as the wider direction of Wellington City to effectively contribute to and deliver on the WRWMMP.

The Council's community outcomes (refer to diagram below) reflect the four wellbeings and provide us with overarching direction for delivering our waste services.

One of the priority objectives in the 2021 Long Term Plan is ***accelerating zero-carbon and waste-free transition.*** The desired outcomes of this objective are communities and the city economy adapting to climate change, development of low carbon infrastructure and buildings, and increased waste minimisation.

DEFINING ZERO WASTE

The Zero Waste International Alliance defines zero waste as:

> *"The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.[1]"*

Around the world, consumption and waste is leading to environmental damage of our land, air and water. Resources are taken from the land to create products, which are then used or consumed, and the packaging and products end up in landfills, or worse, into waterways and eventually the world's oceans. The resulting garbage patches in the ocean, such as the Great Pacific Garbage Patch, illustrate the dire consequences of contaminated waterways.

There are strong links between economic growth, construction, investment and consumption driving increases in global material use. Material extraction is heavily linked to carbon emissions, which are projected to more than double from 2011 to 2060.[2] In Wellington it's hard to see our city's true emissions, as we are not significant producers or manufacturers. However, we must recognise that we import many of the goods and materials we use and consume, and therefore have a role to play in influencing those goods and services.

Globally, there is increasing recognition that the earth's limited resources are being depleted at an accelerating rate, but our economy is still operating linearly – *take - make - use - dispose*. Only 8.6% of the world's economy is circular[3] – this needs to change.

A circular economy – Ohanga Āmiomio, designs out waste and pollution, keeps products and materials in use, and regenerates natural systems.[4] It means keeping resources in use for as long as possible and regenerating them when they reach their end-of-life. This might include improved recovery of products, designing products that have greater recyclable content, or ensuring there is a responsible means of recycling a product. The benefits of a circular economy include long-term cost savings, increased local job opportunities, technical innovation, reduced harmful waste, and reversed climate impacts. Reusing component materials of a product means not only are we reducing waste to landfill, but new raw materials are also not required to be extracted.

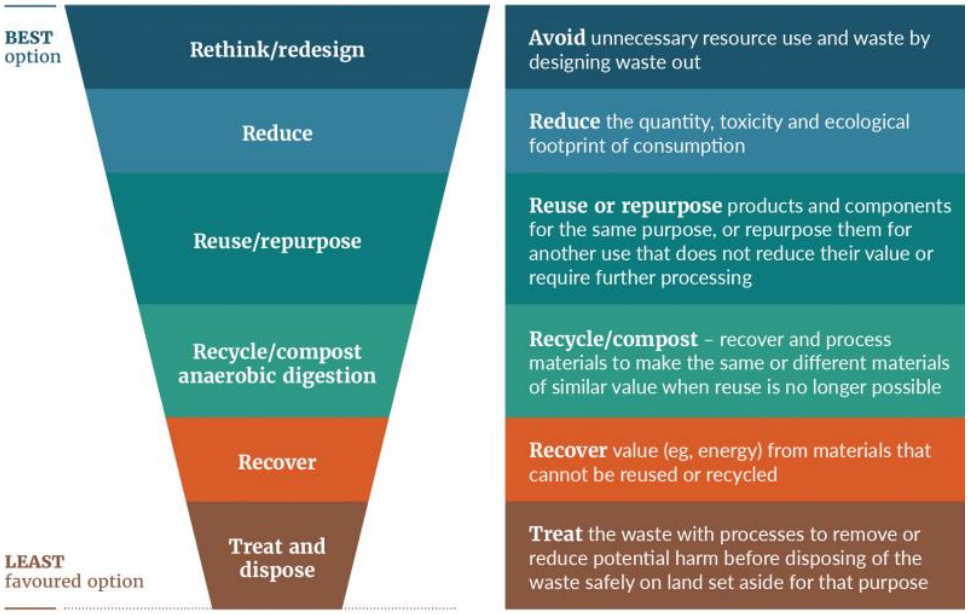
CHANGING THE SYSTEM FROM MANAGING WASTE TO PREVENTING WASTE

This strategy sets out the shifts in thinking and the approaches needed to achieve a waste-free transition for Wellington delivering on our four community outcomes. The core community outcome contributed to is environmental wellbeing, by preventing the use of virgin resources, as well as resources that could be reused, repurposed, and remade, from entering the landfill and from creating harmful pollution of our land, air and water. This means the first intervention is to rethink and redesign how products and materials are produced, as illustrated in the waste hierarchy graphic below. This strategy also has implications for Wellington's economic wellbeing, as our economic activities are the creators and suppliers of products and services that we all consume. It also requires change to how we address social wellbeing and cultural wellbeing so, as a city, we can embed new ways of living, working and operating. In 2020, the Council declared an Ecological and Climate Emergency, as well as developing a Spatial Plan in 2021 and a carbon emissions reduction plan – Te Atakura - First to Zero – in 2019. Collectively, these actions will, over time, shape the city's urban growth, housing and transport development. In 2022, the Council adopted a new Economic Wellbeing Strategy, directing a shift to a zero-carbon circular economy.

[1] Zero Waste Definition - Zero Waste International Alliance (zwia.org)
[2] https://www.oecd.org/environment/waste/highlights-global-material-resources-outlook-to-2060.pdf
[3] The world is now only 8.6% circular - CGR 2020 - Circularity Gap Reporting Initiative (circularity-gap.world)
[4] What is a circular economy? | Ellen MacArthur Foundation

Waste management and minimisation is a significant piece of the puzzle when it comes to achieving a circular economy. As global economies, including Aotearoa, transition to greater resource efficiency and move towards a circular economy, it is expected that demand on resources will reduce over time. This will result in a demonstrable reduction in environmental impacts. The circular economy is another way to express the Waste Hierarchy, which has long been a tool to illustrate the most important contributors to minimising waste. We see these two concepts as inherently related, illustrated below:

Pūnaha whakarōpū para - Waste Hierarchy



The Council's waste system efforts have largely focused on kerbside collection of recyclables and the safe management of the residual waste sent to the Southern Landfill. We operate the Tip Shop & Recycle Centre at the Southern Landfill, diverting items from landfill for reuse or recycling, including an online Trade Me sales function. We also have a small team who run initiatives aimed at raising awareness and facilitating behaviour change at an individual, corporate and community level. These include the delivery of the Zero Waste Education programme in schools, provision of infrastructure and guidance on reducing event waste, workshops, campaign development and delivery on topics including *Plastic Free July* and *Love Food Hate Waste* and encouraging Wellingtonians to be innovators through the provision of *Waste Minimisation Seed Funding*. We've run various trials to explore what services work, most recently a household battery recycling scheme. Residents can drop off their used household batteries at seven sites across the city, including the Tip Shop and some libraries and community centres. This reduces the hazards associated with landfilling batteries and saves valuable resources.

However, this hasn't been enough to change the trajectory of the waste profile in our society and economy. In fact, recycling rates are declining – in 2020/21 we collected 50.2kg of recycling per person compared with 53.8kg in 2016/17. Although, our waste per person is also declining - in 2020/21 we collected 418kg of general waste per person compared with 466kg in 2016/17.[5] Perhaps we are seeing a small change in consumer behaviour? Comparing 2016/17 to 2020/21 10% was recycled and 90% went into landfill, so while the volume of waste has slightly decreased, the proportions are staying the same. However, our efforts are further hampered by the requirement for sewage sludge to be disposed of at landfill, with a consenting requirement to mix sludge with solid waste. A certain volume of waste needs to be available to dispose of the sludge appropriately.

[5] Annual Report 2020/2021 - Volume 1 (wellington.govt.nz)

It's time now for a different approach that respects the environment, Tikanga Māori, and our long-term health and prosperity. Māori have an important role to play in addressing our many urgent environmental issues. This is not only because we are partners in Te Tiriti but because their very existence as tangata whenua (people of the land) depends upon the protection of the environment. Mātauranga Māori (Māori knowledge) has and is created to ensure people live in harmony with te taiao (the environment). Our modern way of living and its unsustainable use of nature has upset this balance. We acknowledge the learnings held within mātauranga Māori can help us find the right solutions for Wellington, and we are committed to ensuring mātauranga Māori informs and guides our work.

As the waste hierarchy sets out, keeping materials and products in the economy for as long as possible, keeping waste to a minimum and reducing the amount of virgin material inputs will also reduce greenhouse gas (GHG) emissions. Examples of such initiatives include:

- Resource recovery and reprocessing waste into secondary products (e.g., Tip Shop, organics processing).
- Reuse, repair and/or remanufacturing to extend the life of products (e.g., behaviour change and community engagement).
- Promotion and/or incentives for the use of recyclable content in product manufacturing or construction activities (e.g., supporting and encouraging businesses to use recovered materials, encourage Council to promote via procurement the use of recovered materials in contractual arrangements where appropriate).
- Encouraging businesses in designing out waste through our own procurement and financial incentives, as well as facilitating conversations and advocacy (e.g., Influencing system change).

To achieve this, we need to switch from just managing waste to enabling a step-change to the production and treatment of waste, including how materials are used and recovered, all in keeping with the waste hierarchy outlined above. That means getting to the heart of the problem and using all the tools we have available to us. We need to understand the complex interrelationships and the role of the economy, society and the environment in the system of using materials and creating and disposing of waste.

HOW TO HAVE YOUR SAY

Over the last three years we have been researching and considering what's needed to change the waste system and support the Wellington community to achieve zero waste.

This has included research and conversations with businesses and community groups. We now present our draft strategy for feedback, with a view to adopting the strategy in April / May 2023.

TO HAVE YOUR SAY, YOU CAN:

1. Make an online submission at www.wellington.govt.nz/haveyoursay/consultations
2. Download a submission form from the website and email the completed form to [INSERT]@wcc.govt.nz
3. Post your views on facebook.co/wellingtoncitycouncil
4. Pick up a submission form from your local library and drop off the completed submission to Arapaki Service Centre at 12 Manners Street
5. Complete the submission form and send it to:
6. Freepost 2199
7. Wellington 6140

You can also make an oral submission in support of your written feedback (please indicate on your submission form whether you wish to do this).

KEY DATES:

TBC

THE STRATEGIC CONTEXT

OUR ROLE IN WASTE

WELLINGTON CITY COUNCIL

The Council has many roles which are outlined below and described in terms of how we can influence waste outcomes. Waste is also affected by how the Council carries out its activities.

Provider – The Council's core role is to invest and maintain civic infrastructure and facilities, which provide the foundation for businesses and residents to thrive. This includes transport, water and waste infrastructure, as well as civic facilities and venues. We provide waste services such as kerbside rubbish and recycling collections, the Southern Landfill and Tip Shop & Recycle Centre, and organics composting. The Council can influence waste reduction outcomes through our procurement policies and practices.

Funder – We provide support for businesses and communities by funding initiatives which will help our city to avoid, reuse, recycle and recover resources and waste. For example, our Waste Minimisation Seed Fund supports innovative solutions for reducing waste and diverting organics from landfill. Our Environmental Sustainability Performance Fund supports residential developments to design a green certified building, conditional on reducing construction waste. Our Climate and Sustainability Fund supports communities and businesses to reduce carbon emissions.

Partner – We also partner with others to achieve waste minimisation outcomes, recognising where local providers can deliver alongside Council. We collaborate with Councils across the region to coordinate our work programmes and collectively solve problems, for example through the Wellington Region Management and Minimisation Plan, a cross-Council regional waste minimisation plan. We also partner with mana whenua so we can align with a Māori worldview of waste minimisation. Our Indigenous people have an in-depth knowledge of Aotearoa and Wellington's environment, and we must work together to draw from whakaaro Māori and achieve waste minimisation aspirations for Māori.

Facilitator – We bring people together to discuss issues, share ideas and connect people. This includes working with schools, communities and businesses to rethink waste. We offer free waste minimisation and composting education sessions for schools, community groups and workplaces. We also offer tours of the Southern Landfill for people to see first-hand where disposed waste ends up, and the alternative solutions available through the Tip Shop and Capital Compost.

Advocate – We advocate on behalf of our city and communities where we have no direct control. For example, through submitting to central government agencies and Parliament select committees on waste and environmental legislation and regulation changes. We also advocate internally to ensure initiatives being delivered by the Council's workforce are joined up and aligned to our strategies. This Strategy will set the direction for our Council's and community's waste minimisation efforts across all our work.

Regulator – Our regulatory teams provide services such as liquor licensing and building consenting which are important for business success. In the waste space, we have a Solid Waste Management and Minimisation Bylaw and a Trade Waste Bylaw. Using our current bylaws and consenting processes, we can influence cross-sector outcomes to achieve waste avoidance and reduction. The Solid Waste Bylaw is anticipated to have substantial influence on how groups consider the management of waste and will also be an important opportunity to collect data to inform the Council's waste minimisation efforts.

COLLECTIVE OWNERSHIP OF THE WASTE PROBLEM

Residents, businesses and the Council all have a vital role to play in protecting Wellington's rawa taiao (environmental resources). We all need to make responsible choices for managing and minimising our waste by understanding our individual and community impact on our city and our environment. As a collective issue, waste demands a collaborative solution. To achieve this strategy's objectives and targets, a model of collective responsibility and action is critical to achieving our zero waste outcomes. Transitioning from a take-make-dispose society to a circular economy where we keep resources in use for as long as possible is a vital step towards eliminating waste, circulating resources and adopting a low carbon, resource efficient system. The following highlights the different roles required of our community.

WASTE OPERATORS

Waste operators in the city undertake both waste collection and waste management services. There are three landfills operating in Wellington City to manage the city's waste – the Southern Landfill is owned by Wellington City Council, and two construction and demolition landfills are privately owned and operated. There are a few waste collection providers offering private collection services or providing municipal collection services on behalf of the Council. Operators of landfills and collection services have a key role to play in shaping the behaviours of residents and businesses through the options made available to minimise and manage waste.

RESIDENTS

Our city's residents are the customers of our current take-make-dispose linear economy through our consumption of goods and services and are a key influence in every step of the waste hierarchy.

- **Rethink / Redesign** – Consumer whai wāhi (participation) in waste minimisation efforts will play a vital role in protecting our natural resources. Consumers can influence the prevention of extraction of virgin materials, and increased regeneration, by, for example, avoiding products that use superfluous packaging, or by avoiding purchasing products produced by 'fast fashion' brands.
- **Reduce** – Consumers can reduce waste by being more mindful and only buying what they really need and planning consumption and purchasing of perishables to avoid discarding spoiled food.

- **Reuse / Repurpose** – Consumers can maintain or repair items to retain their usefulness or repurpose products for alternative use and drop off items they no longer need at the Tip Shop for others to reuse or repurpose.
- **Recycle / Compost** – Consumers can choose products that are made from materials that are easily and continuously recycled, make sure their recyclables are going to the right places to be recycled; and ensure unavoidable food waste and garden waste are composted.
- **Treat & Dispose** – Residents can aim to follow the waste hierarchy, so they no longer require waste disposal.

BUSINESSES

Building circularity into businesses' waste systems helps to increase our city's waste system resilience by placing more responsibility onto individuals and businesses to make waste minimisation front of mind. A circular economy also offers the potential to create new jobs, healthy lifestyles through reduced consumption and disposal, and sustainable growth by increasing repair and resource recovery activities. Through greater individual ownership of individuals' impacts on the environment, we will ensure that Wellington can continue to be a creative, sustainable capital for people to live, work and play.

TŪPIKI ORA MĀORI STRATEGY AND ZERO WASTE

Tūpiki Ora is a metaphor for the pursuit of well-being and establishes a new way for the Council to work together with our community to strengthen our relationships and support our whānau to prosper. This strategy provides the framework for the Council, Mana Whenua and Māori to achieve this vision.

Tūpiki Ora has eight guiding principles; they provide direction on how the Council conducts itself, undertake the mahi required, and make decisions that are mana enhancing for Māori in our community. Through this Zero Waste Strategy, we are giving effect to four of those principles in particular – mana ōrite, pito mata, rangatiratanga, and te auaha.

As this strategy is brought to life, it will contribute towards the overall vision of Tūpiki Ora, especially the nourishment of our city's environment, as the decisions and actions taken over the next 10 years will impact a generation of Wellingtonians to come.

Mana ōrite

We recognise equity as being important to Tūpiki Ora, to our relationships and partnerships, and to how we conduct ourselves

Mana motuhake

We recognise that Mana Whenua and Māori seek their own solutions for Mana Whenua and Māori issues, and that the Council plays a supporting role.

Toitū te whakaahu

We recognise that there will be individual and shared opportunities to invest in and support the development, aims, aspirations and positive outcomes of Mana Whenua and Māori.

Rangatiratanga

We recognise and respect each other's autonomy, mandates, constraints and priorities, and acknowledge and respect our differences.

Pito mata

We recognise the potential for opportunities and growth in all possible situations. We will do our very best to pursue the opportunities that will lead us to greater and increased whānau wellbeing.

Mahi tika

We recognise that the policies, practices, roles and responsibilities developed under this strategy will reflect the tikanga and values of mana whenua.

Te auaha

We recognise that working together means partners will seek to develop new, creative, and innovative models to achieve desired outcomes.

ENGAGEMENT

Through the development of this draft strategy and the accompanying Waste Management and Minimisation Action Plan, Wellington City Council has engaged with multiple internal and external stakeholder groups.

Internally, the Council's Waste Operations, Zero Waste, Mataaho Aronui – Māori Strategic Outcomes, and Climate Change Response teams have contributed input and advice on this strategy's content.

External partners and stakeholders engaged for the development of this strategy and the action plan include representatives of Taranaki Whānui, Waste Free Welly, multiple residents' associations and the Council's Environmental Reference Group.

The input provided by our internal and external partners and stakeholders has been invaluable in identifying the technical, social, cultural, environmental and economic factors of a waste-free Wellington.

GLOBAL TRENDS

Several international drivers and trends are forcing governments, including Aotearoa, to rethink their approach to resource recovery and waste management. Waste generation is linked to Gross Domestic Product (GDP) and population growth, with wealthier countries experiencing increasing volumes. As global economies and populations grow, continued pressure is put on Papatūānuku and rawa taiao (natural resources) to produce the wide range of products available on the market. To limit this, it will require countries to implement policies that improve whakahaere rauemi (resource management) and ensure sustainable materials management, building on the principles of the pūnaha whakarōpū para (the waste hierarchy).

The Platform for Accelerating the Circular Economy[6] reported that the global increase in material resource use is predominantly due to several factors including:

- global reliance on virgin materials rather than using existing resources
- ongoing growth of capital stock, including housing, infrastructure and machinery, to service a growing population
- lack of end-of-life processing systems and services
- poor design of products.

Countries around the world are recognising the multitude of issues related to waste and resource use and management. Natural resources are becoming scarcer; we're understanding that resources are finite and becoming more expensive and difficult to extract.[7] It is recognised that not all waste is currently able to be reused or repurposed. However, most things going into landfill is wasteful and a loss of valuable resource. The following highlights trends around the world that demonstrate shifts towards a circular economy and improved environmental outcomes.

PRODUCT STEWARDSHIP

Product Stewardship is a policy approach used in many European countries, where producers are made responsible for the entire life cycle of the products introduced to the market, from design to disposal.[8] This responsibility may be financial and/or physical contributions. Companies must mitigate the environmental impacts of their products throughout the life cycle. This incentivises prevention of waste at the source and aligns with public recycling and waste disposal goals of the policy enforcer – encompassing the circular economy model.

Germany introduced the Green Dot System, which requires retailers to pay a fee to finance the cost of collection, sorting and recycling of their packaging. The licence fee disincentivises unnecessary packaging and rewards retailers cutting packaging down with reduced licence fees. Consumers see the Green Dot on the

[6] https://pacecircular.org/
[7] Explore the Circularity Gap Report 2021 | Circular Point
[8] https://rev-log.com/extended-producer-responsibility-outside-of-europe/

product purchased and can be sure the packaging will be recycled appropriately. This practice has been adopted throughout European countries, America, Canada, Australasia and Asia (Japan). Aotearoa has many (circa 40) distinct types of eco-labels and criteria, and alongside the unregulated green washing of products, can leave consumers confused and overwhelmed.

REDUCTION AND DISPOSAL OF ORGANICS

More than half of food waste is generated by private households.[9] [10] Many countries are developing strategies to meet UN's sustainable development goal (12.3) of halving food waste from 2000 to 2030 - measured by retail, consumer, producer and supply chain losses.[11] Reducing avoidable food waste at source should be the priority, followed by feeding people, animal feed, exploring industrial uses to upcycle waste food, and finally composting of unavoidable food waste.

Food waste is difficult for many households to manage, as buying food in bulk can be cheaper, but does lead to increased wastage. This can be managed by learning to make the most of a household freezer. Additionally, time poor families struggle to find time to plan their meals.[12]

Cities around the world use legislation and bylaws to affect change.I They may require household's and business's recycling, composting and landfill to be separated. Cities are also banning organics into landfills.[13] Some cities and countries have substantial fines for non-compliance. To support these changes, cities are providing waste collection options to households, drop-off locations, and community gardens that enable food waste diversion from landfill. Appropriate reuse and disposal of construction and demolition materials

In 2012, approximately 1.3 billion tonnes of construction waste were generated globally and accounted for almost half of all waste generated.[14] Construction waste includes that generated by building and transport construction, repair and demolition. Construction and demolition are responsible for almost 40% of energy and process related emissions globally[15] and in the European Union (EU) accounts for one third of waste. Recycling and material recovery varies from 10-90%. The EU promotes selective demolition with standardised specifications, including separation at the construction site. Germany achieved a 90% reduction in construction and demolition waste by 2010, but Spain had only achieved 15%. The main barrier appears to be high costs. Banning or raising levies or increasing taxes on raw materials have been effective policies to make landfill unattractive.[16]

Other cities such as in Denmark[17] have begun to identify the impact of construction and demolition waste contributions, and local authority points of influence. In Sweden, practices such as eco-design and planned deconstruction are used to limit the use of raw materials, and use recycled and reclaimed materials as much as possible. This practice has been tested and proven in the construction of residential buildings.[18]

Japan is a global leader in this field, introducing the Construction Material Recycling Act, where demolition contractors must register their dismantling and recycling practices and on-site materials sorting facilities are provided for construction. Through the Act, and the demolition site patrols used to enforce it, 99% of concrete,

[9] More than half of food thrown away by households can be avoided: NEA study - TODAY (todayonline.com)
[10] US households waste one-third of the food they buy: study (nypost.com)
[11] https://champions123.org/publication/sdg-target-123-food-loss-and-waste-2021-progress-report
[12] Why do we still waste so much food at home? | Environment | The Guardian
[13] https://www.wastetodaymagazine.com/article/organic-waste-legislative-update-food/
[14] Construction Waste Market Share, Research Insights by 2025 (transparencymarketresearch.com)
[15] 2019 Global Status Report for Buildings and Construction (windows.net)
[16] Report on the management of construction and demolition waste in the EU - Construction and demolition waste (europa.eu)
[17] denmark-without-waste-ii_wasteprevention.pdf (mst.dk)
[18] https://issuu.com/cimark/docs/etude-eco_circulaire-2021-en_full_web/s/11902336

99% of asphalt and 94% of wood waste are recycled.[19] Wrecking balls and columns of trucks filing into landfill sites will soon be outdated; planned deconstruction is fast becoming a key stage in the construction industry value chain, involving every player in the industry, and supplying a plentiful source of recyclable and reusable materials.[20]

INCREASING CONSUMER'S CONVENIENCE TO MAKE ENVIRONMENTALLY FRIENDLY CHOICES

A lot of plastic waste is due to the convenience plastic packaging provides. A qualitative study in Germany revealed that to prevent waste, more plastic-free or reusable packaging options need to be available for consumers, while effective measures to increase recycling include better information and education as well as providing easier recycling collection schemes.[21] In Germany and Australia, bottle return schemes are available at supermarkets and returners can receive a refund on their deposit. For those less inclined to use this service, containers are available beside street waste bins where other residents can collect the containers and make the deposit for monetary return.

FROM EXPORTING RECYCLING AND WASTE MATERIALS TO TAKING OWNERSHIP

Before Operation National Sword (2018), China imported recyclables from North America and Europe for two decades to make up for a shortage in domestic materials.[22] Aotearoa sent 15,000 tonnes of waste to China annually – mostly mixed paper and plastics that aren't locally recycled.[23]

China's purchasing of recyclables brought in materials for industrial growth, but it also brought in contaminated recyclables that slowly accumulated in China and increased pollution. The Chinese government responded with *Operation National Sword*. The policy imposed more stringent monitoring of acceptable recyclable imports and levels of contamination including a ban on 24 kinds of recyclable waste (for example, polyethylene tetraphthalate (PET), polyethylene (PE), polyvinyl chloride (PVC) and polystyrene (PS)). From its implementation on January 1 2018, contaminants were reduced from a 5-10% acceptance rate to 0.5%, and global plastic imports dropped 99%.[24]

INCREASE IN PLASTICS RECYCLING RATE AND BANS ON PLASTICS

Global plastic production and waste exceeds 270 million tonnes per year. Around 3% of this ends up in oceans, injuring marine life and accumulating into garbage patches. Plastic waste has a negative impact on oceans and wildlife, predominantly in low- and middle-income countries. Marine life and seabirds can become entangled by plastic debris and may ingest plastics directly or unintentionally through ingestion of prey with plastic in their system. Plastics can cause a false sense of satiety leading to poor appetite and health and can cause

[19] Wood waste measures includes reduction measures. https://www.suishinkaigi.jp/en/Our%20works/case01.pdf
[20] https://www.suishinkaigi.jp/en/Our%20works/case01.pdf
[21] First reduce and reuse, then recycle! Enabling consumers to tackle the plastic crisis – Qualitative expert interviews in Germany - ScienceDirect
[22] https://www.nature.com/articles/s41467-020-20741-9
[23] https://thespinoff.co.nz/kai/07-10-2018/new-zealand-faces-up-to-its-plastic-problem
[24] https://www.lowyinstitute.org/the-interpreter/china-rejecting-rubbish

lacerations leading to death. The impact on human health is largely unknown, but considered low risk, as humans don't tend to eat the digestive tract of fish, birds and animals.[25]

The ill environmental effects of plastic production are further worsened by the long decomposition period required, ranging from 20 to 500 years. Packaging is the largest contributor to plastic generation (followed by textiles, and consumer products). Due to the single-use nature of packaging and lack of availability or convenience of recycling facilities, this plastic packaging including soft plastics often ends up in the landfill.

Cities like Seattle and Minneapolis require all take-away packaging to be compostable or recyclable, and Portland has a 'GO box' programme with 80 outlets returning, sanitising and reusing packaging.[26] Single use takeaway food and drink containers, whether compostable, recyclable plastic or otherwise, should be replaced with reusable containers. Scotland is leading in this space, banning single use plastics including drink stirrers, straws, and polystyrene takeaway boxes.[27]

MOVE AWAY FROM INCINERATION

Many countries have managed their waste and avoided landfill by incinerating. However, this disposal method is now recognised as poor practice and cities are trying to move away from this approach to one that values waste as a resource. Incinerators waste more energy than they produce, because incinerated materials need to be replaced by new materials. The energy costs of extraction and production of virgin materials far outweighs the benefits of incineration. Waste incineration uses three to five times the energy of reprocessing activities such as recycling and composting.[28] Incinerators also produce hazardous emissions that pollute the environment, such as leachates and greenhouse gases.[29]

In response to the move away from incineration, many countries are working to improve their recycling rates to reduce plastic waste going to landfill or incineration facilities. Globally, this has been achieved through education, communication and convenience. Germany and Switzerland have increased their recycling rates by combining waste disposal information and detailing where specific waste types must be disposed of, in either household waste bins, supermarkets or recycling depots.

NATIONAL CONTEXT

The Waste Minimisation Act 2008 encourages waste minimisation and a decrease in waste disposal to protect the environment and provide environmental, social, economic and cultural benefits. A Territorial Authority, such as the Wellington City Council, must promote effective and efficient waste management and minimisation within its district by adopting and implementing a Waste Management and Minimisation Plan that includes collection, recovery, recycling, treatment, and disposal services, facilities, and education activities.

Other legislation influencing the role of councils in waste management activities are the Resource Management Act 1991, Local Government Act 2002, Litter Act 1974, and Health Act 1956. New Zealand is also

[25] https://ourworldindata.org/plastic-pollution
[26] https://localwiki.org/pdx/Go_Box

[27] Scotland Zero Waste business assistance

[28] Morris, Jeffrey, Comparative LCAs for Curbside Recycling Versus Either Landfilling or Incineration with Energy Recovery, The International Journal of Life Cycle Assessment, July 2005. Available at: http://www.springerlink.com/content/m423181w2hh036n4/
[29] https://zerowasteeurope.eu/wp-content/uploads/edd/2019/09/ZWE_Policy-briefing_The-impact-of-Waste-to-Energy-incineration-on-Climate.pdf

a member of several international agreements which drive some waste management and minimisation decisions at the local level.

Recent changes in the international market, including restrictions by China on the importation on waste and recyclables through Operation National Sword, have highlighted the need to take a closer look at the way Aotearoa manages its waste. As a result, Aotearoa's mixed plastic and paper waste is now sold at a lower price to Indonesia, Thailand and Malaysia, or stockpiled here.[30] New Zealand's central government created a taskforce at the Ministry for the Environment to mitigate the effects of this ban and are currently using the Waste Disposal Levy to invest in more landfills, improve data systems, introduce onshore recycling plants and fund projects that will accelerate waste reduction.[31]

The Ministry for the Environment is currently working with stakeholders to co-design product stewardship schemes for six priority groups: plastic packaging, tyres, electrical/electronic products, agrichemicals, batteries, refrigerants and farm plastics. Although this is a regulated scheme, product stewardship benefits businesses too. For example, Sharp Corporation of New Zealand exemplify successful incorporation of product stewardship, with a focus on scalable solutions that reduce environmental impact. Sharp offer a free toner recycling programme, free packaging removal and recycling, and end of life refurbishment for all electrical and electronic products. They also provide a consultancy service to advise businesses on eliminating paper for good. In Christchurch a non-profit organisation, RAD, accept old laptops and teach rangatahi in-demand tech skills by refurbishing them for students in need and thereby diverting e-waste from landfill.[32]

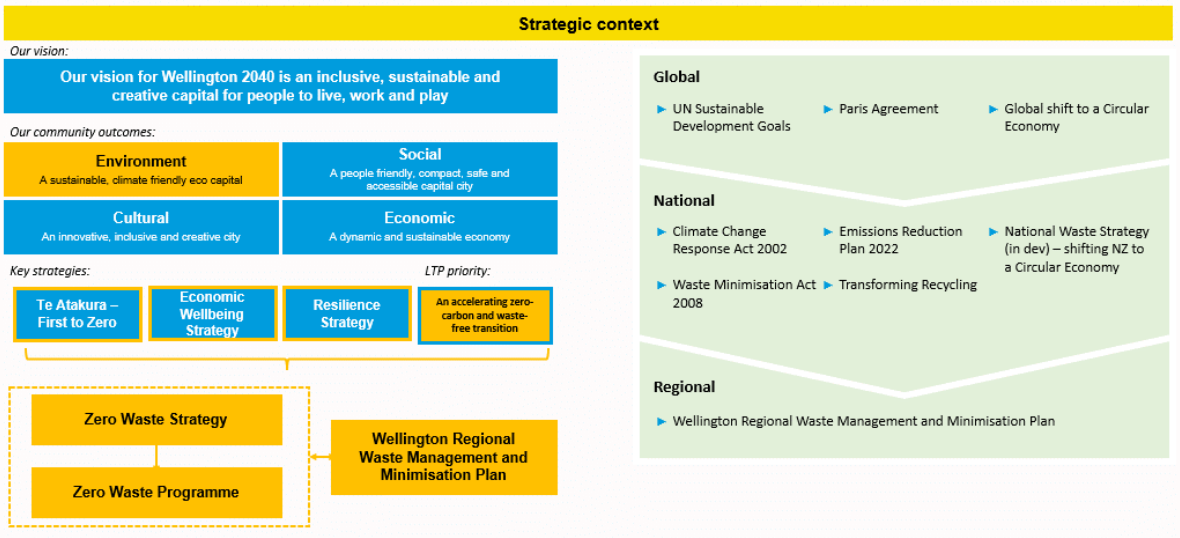
- New Zealand's government has also implemented a multi-tranche phase-out plan to remove certain hard-to-recycle plastics by mid-2025. The first tranche phased out certain products in October 2022, and other early steps have already been taken, such as expanding the waste levy, phasing out single use plastics, and introducing regulation of product stewardship for six priority areas.

Upcoming legislative renewals will require system level change for New Zealand to become a waste-free country. The New Zealand Waste Strategy (2010) will soon be replaced by Aotearoa New Zealand Waste Strategy (2022). The government is also proposing to create new legislation that will replace the Waste Minimisation Act (2008) and the Litter Act (1979). The legislative context is evolving, and the Council will need to work alongside it and exercise foresight in developing this strategy. This is an opportunity to rethink practices in the council, businesses, organisations, homes, and cities to prevent waste generation, extend the life of resources, return organics to the soil, and become a regenerative society and economy.

The strategic global, national and local context is illustrated in the diagram below.

[30] https://www.NZherald.co.nz/nz/recycling-new-zealand-still-sending-plastic-waste-to-developing-countries/ZBDBBO7SSFVPGLDZCVX46IHJ2U/

[31] https://environment.govt.nz/what-government-is-doing/cabinet-papers-and-regulatory-impact-statements/national-resource-recovery-taskforce-new-zealands-options-in-response-to-effects-created-by-the-implementation-of-the-national-sword-policy/



The intent of these changes is to reduce the amount of waste New Zealand produces, by:

1. Setting the direction for waste reduction
2. Increasing investment in waste reduction initiatives and infrastructure
3. Making system-level change
4. Addressing problems with individual products and materials
5. Strengthening compliance, monitoring, and enforcement

Transforming our recycling system is expected to involve three key areas:

- Implementing a *Container Return Scheme* to incentivise people to return empty beverage containers for recycling in exchange for a small refundable deposit (proposed 20-cents)
- Implementing standardised kerbside collections for recyclables and food scraps across the country
- Diverting residential and commercial organics (food scraps, garden waste) from landfill to reduce GHG emissions and make better use of organic material to help restore our soils

In turn, both global and national drivers will have influence on how each Territorial Local Authority undertakes waste management and minimisation activities to support Aotearoa's transition to a circular economy.

LOCAL CONTEXT

Wellington City Council has declared a climate and ecological emergency. This zero-waste strategy will begin to address the gap. In response to this, the Council is taking actions, including re-shaping where residents live, how we move about the city, and how we mitigate and adapt to the effects of climate change.

In 2019, Wellington City Council developed Te Atakura – First to Zero, a blueprint for moving Wellington's carbon footprint to zero. It identifies that waste makes up 4% of the city's carbon emissions but it forms 83.8% of the Council's carbon emissions, mainly from the landfill.[33]

WELLINGTON'S WASTE ACTIVITIES

Wellington City Council runs the Southern Landfill, which is one of three class 1 landfills in the region. We also partially own the Spicer Landfill in Porirua, where waste from our northern suburbs goes. At the Southern Landfill we run a Tip Shop and Recycle Centre where we encourage customers to drop off items that can be upcycled, reused or repurposed, before taking waste materials to our transfer station. Items such as clothing,

[33] zero-carbon-plan-final-web.pdf (wellington.govt.nz)

furniture, bric-a-brac, tools, toys, renovation materials and electrical and electronic equipment are accepted. The Tip Shop team of 20 staff rescue quality items from the transfer station and accept reusable items to sell in the shop or on TradeMe, as well as offering a range of recycling services. We constantly seek to increase reuse opportunities, for example testing and tagging electrical items for resale in working order, rather than selling for parts or recycling as e-waste. There are two privately owned and operated cleanfill sites in Happy Valley. However, resource consenting, capacity constraints, and accessibility in wet weather have resulted in difficulties using these sites. Kiwi Point Quarry is Council-owned and will be operational as a cleanfill site from October 2022.

We also have a composting facility, Capital Compost, which accepts food waste from some commercial premises and events, and garden waste.

The Council has three staff who deliver behaviour change programmes for schools and the community. We also provide waste hoods that can be hired for events to help sorting and collecting of materials by waste types; unaddressed junk mail has been banned in the city, and battery drop-off points are being trialled.

The city's collection services are contracted out, and private operators are also allowed to obtain a licence for collection of waste and recycling. Our 2018 Waste Assessment found that we have a declining Council kerbside refuse market share at approximately 40% of households; households increasingly choose private services with bins that are much larger than the bags offered by the Council. However, larger wheeled bins lead to greater quantities of waste disposed, including materials that could be recycled or composted.

We have a Solid Waste Management and Minimisation Bylaw that contains broad goals and objectives to encourage waste minimisation and the transition to a circular economy over time, and outlines:

- management of litter in public places
- regulation of the public's waste disposal methods to minimise waste going to the landfill
- responsibilities of waste collectors and operators
- requirements for waste management and minimisation plans for events, construction and demolition, and multi-unit developments.

We must consider how we can shift our focus to the top of the waste hierarchy – avoid/ reduce/ reuse/ recycle. We currently provide funding for organisations to develop innovative solutions that support reducing waste. We have signalled our desire to transition to a circular economy through the Economic Wellbeing Strategy 2022.

WASTE AT THE SOUTHERN LANDFILL

Waste to the Southern Landfill is a combination of kerbside collections, drop-offs at transfer station and dumping directly to the tip face. Data from the 2018 Waste Assessment highlights[34]:

- Organics (food scraps and garden waste) make up 57.8% of household waste (by weight for bags and bins collected at kerbside)
- Organics makes up 25.5% of all levied waste to the Southern Landfill
- Kerbside waste makes up 33.5% of all waste collected
- The refuse transfer station pit mainly receives trailer and carloads, 45.5% of this waste is timber, and a further 15.2% is rubble
- Potentially hazardous waste makes up 26.9% of all waste to the Southern Landfill and includes special waste such as sludge and asbestos. Approximately 97% of potentially hazardous material is special waste, primarily wastewater, otherwise known as sludge

[34] SWAP full report (wellington.govt.nz)

- Construction and demolition waste can include timber, concrete, glass, steel, brick, packaging, metal, plasterboard and other items, and while it only makes up 22% of the Southern Landfill disposal, for the city this is far higher, as the city also has 2 private construction and demolition landfills
- Plastic waste at the Southern Landfill is 149 tonnes per week and makes up 8.5% of our landfill waste
- Textiles are items like furniture fabrics, clothing and carpet that are made from materials such as cotton, nylon and polyester. The Southern Landfill receives 93 tonnes per week, making up 5.3% of waste to landfill
- Paper and cardboard can come from packaging, office printing and documents, notebooks, books, wallpaper, newspaper and decorating. It makes up 6.8% of the Southern Landfill waste profile at 119 tonnes per week

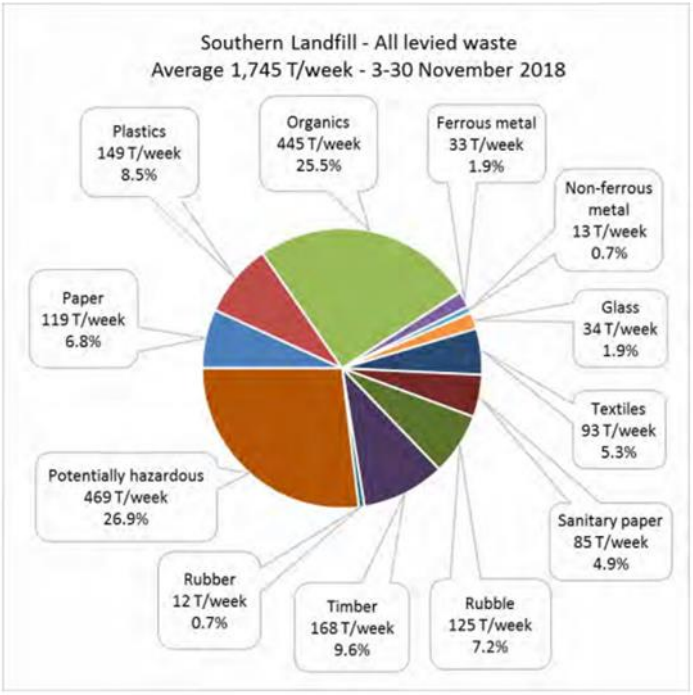


Figure 6.2 - All levied waste to Southern Landfill - 3-30 November 2018

Giving effect to this strategy and the waste hierarchy can be achieved for many council activities, especially when it comes to waste prevention and minimisation.

Our city's population is expected to increase by 50-80,000 over the next 30 years. The absolute growth in population and economic activity is likely to drive up household waste generation, waste production, and waste disposal to landfill. Our economy is largely a knowledge economy supported by creative arts, hospitality and retail.[35] Household waste generation is generally linked to retail spending and population, and although household sizes are going down, the per capita waste is projected to increase.[36]

WELLINGTON'S CHALLENGES AND OPPORTUNITIES

[35] Plans, policies and bylaws - Economic Wellbeing Strategy - Wellington City Council

[36] https://wellington.govt.nz/-/media/have-your-say/public-input/files/consultations/2017/04/wmmpfinalregionalwasteassessment090317.pdf?la=en&hash=C90FF4513FD437425A1CCD04C982176A99CC5369

HIGH VOLUMES OF WASTE COMPARED WITH OTHER CITIES

New Zealand has the third highest annual waste to landfill of all OECD countries at 781kg per capita, measured by municipal landfill data – the highest being 851kg and lowest at 243kg per capita.[37] Although the measuring of this indicator is inconsistent across countries; New Zealand includes construction and demolition waste whereas other countries data do not, it still signals that there is a way to go. Compared to other cities and districts across New Zealand, Wellington (including Porirua) sits in the middle of the pack, at 507kg per capita, compared with Gisborne at 305kg per capita and Upper Hutt & Hutt City at 874kg per capita (measured per annum)[38].

Wellington again sits in the middle of the pack for per capita disposal of kerbside refuse at 206kg per capita Christchurch City had the lowest per capita disposal rate of kerbside refuse with 110kg and Rotorua District the highest at 216kg[39].

FINDING THE RIGHT ORGANICS SOLUTIONS

Organic waste is garden and kitchen waste (food scraps). Organics makes up approximately 25.5% of all levied waste to the Southern Landfill, and household collections are around 57% organic waste.[40] This is compared to approximately 50% of global waste being organic.[41]

A wide variety of 'compostable' packaging exists in the market. However, there is no New Zealand standard for products claiming to be compostable, so even in commercial facilities packaging may not break down as a result, our commercial composting facility currently accepts very limited compostable packaging from tightly controlled events and venues.

SWITCHING THE FOCUS FROM WASTE MANAGEMENT TO INFLUENCING RESOURCE USE AND CONSUMPTION

The circular economy is based on three principles: elimination of waste, circulation of products and materials at their highest value, and regeneration. Having used a linear economy model since the Industrial Revolution, although urgent and essential, the switch to a circular economy is not a simple task. Considering society have had 200 years of take-make-dispose, extracting our earth's natural resources, the switch to a circular economy requires undoing those behaviours and changing the systems and infrastructure. The Council's current focus on waste disposal through landfills sits at the bottom of the waste hierarchy.

We have a small community of businesses operating in the circular economy model in Wellington, proving what's possible in our own community. For example, *Reusabowl,* provides a solution for plastic container waste; a durable bio-based takeaway container with a network of takeaway restaurants that participate in wash and return. The bowls can be purchased by individuals or workplaces to eliminate lunchtime container waste. *Planet Protector Packaging* utilised wool properties to maintain product quality in cold supply chains. *Bata* collect old gumboots and remanufacture them into new gumboots.

MAXIMISE REUSE AND REGENERATION OF MATERIALS THROUGH CONVENIENCE

Household items contain plastics, electrical components, wood, textiles, paper and carboard. Plastic, textiles, paper and cardboard make up a combined 361 tonnes (20.6%) per week at the Southern Landfill. Examples of these items include e-waste (such as laptops and phones, kettles, fridges, lamps, toys, tools), furniture, clothing, and plastic containers and packaging).

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[37] Waste - Municipal waste - OECD Data (https://data.oecd.org/waste/municipal-waste.htm
[38] Wellington Region Waste Assessment 2016
[39] Wellington Region Waste Assessment 2016 (mstn.govt.nz)
[40] SWAP full report (wellington.govt.nz) – pg 42
[41] https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html

Currently, the main recycling method is through kerbside collections. In Wellington, residents can also use the Tip Shop, Recycle Centre and other drop-off points around the city, such as the Sustainability Trust, for specified items such as plastic and metal lids, e-waste, curtains, metal, silicone, wool, car seats, bicycles, and more. However, recycling levels continue to drop, and contamination endures. The Tip Shop's location at the Southern Landfill is not easily accessible for all residents. In the current economic and social context, with a fast pace of life and dual income families, people are time poor.

As the city grows and urban intensification evolves, solutions will need to cater to intensification of Wellington neighbourhoods and to meet multi-unit development servicing needs. Future developments can be protected by making changes to the development requirements in the district plan, but existing units will still need to be addressed in order to bring the convenience of recycling to the doorstep of all inner-city residents. The Council has required a Waste Management Plan for all existing multi-unit dwellings through the Solid Waste Management Bylaw 2020. There are issues with some multi-unit dwellings, where there is not enough space for the necessary bins and the ability to collect is challenging.

COMMERCIAL, CONSTRUCTION AND DEMOLITION WASTE

Construction and demolition waste can include timber, concrete, glass, steel, brick, packaging, metal, plasterboard and other items. While it only makes up 7% of the Southern Landfill disposal, there are other landfills taking the bulk of this resource in Wellington. Construction and demolition waste makes up 40-50% of New Zealand's waste.[42] As Wellington City is projected to grow by 50,000 – 80,000 people over the next 30 years, our need for construction and demolition will continue to increase.[43]

There is also a looming problem in the Wellington region with construction and demolition landfills reaching capacity – urgent solutions are needed. When thinking wider about construction and demolition and business activities, there is a perception that it is cheaper to send waste to landfill, or uneconomic to make the greener choice, however, this is not always the case. As landfill levies increase the incentive to reuse, recycle and repurpose will become stronger.

Additionally, through the building code, architects must specify the requirements for building materials to be used for different building elements, depending on, for example, the required loads and strength needed. But architects often specify the branded product, which results in the building inspector not being able to approve anything other than the specified brand. This limits innovative options that may have a better waste outcome.

RETHINKING SLUDGE PRACTICES

At the Southern Landfill, hazardous waste includes special waste such as sludge and asbestos categorised as potentially hazardous. Potentially hazardous waste makes up 26.9% of all waste to the Southern Landfill, of which, approximately 97% is special waste, primarily wastewater [otherwise known as sludge][44].

In the 1990's, the Council decided to co-compost sludge with green waste at the Southern Landfill; to use the output to improve the soil quality of land not being used for food production. The building was completely sealed to prevent odours from reaching the community, but over time this failed. In 2008, Council determined to treat the sewage at the dewatering plant and dispose to landfill. The dewatering plant process has meant that 15,000 tonnes of sewage waste per year has gone into the landfill. The conditions of the resource consent included a requirement to mix one part sludge to four parts waste, to reduce odour and ensure the stability of the landfill. This requirement has limited what the city can do to reduce waste, as a reduction in waste would likely result in the Council breaching this condition.

[42] https://www.level.org.nz/material-use/minimising-waste
[43] News and information - Spatial Plan adopted - Wellington City Council
[44] SWAP full report (wellington.govt.nz) – pg 42

To address the city's reliance on waste to safely dispose of the city's sludge, the Council began working with Wellington Water two years ago to identify a solution, resulting in consultation in the 2021-24 Long-term Plan for investment in new technology called Lysis Digestion. Lysis Digestion is a two-step process involving a pressure cooker to break down the materials followed by a digestion process using bugs.

A ZERO WASTE FUTURE FOR WELLINGTON

OUR VISION FOR WELLINGTON CITY

The Council's vision for our city is:

Wellington is an inclusive, sustainable and creative capital for people to live, work and play.

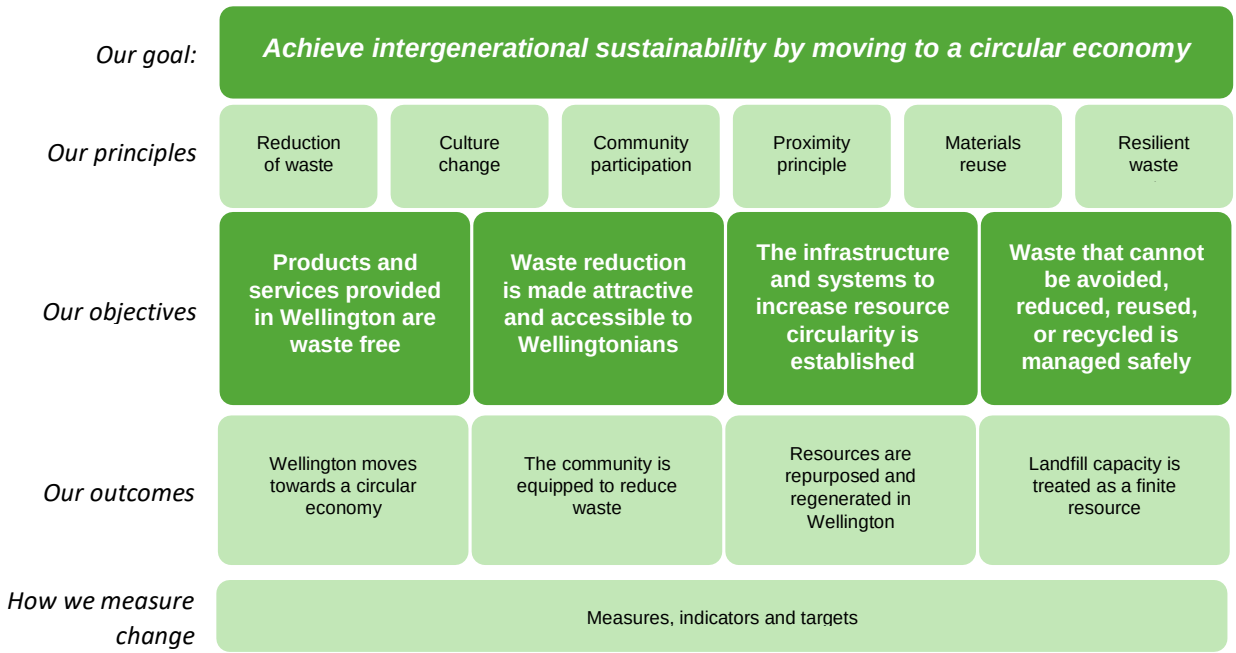
The goal of this strategy is to:

Achieve intergenerational sustainability by moving to a circular economy.

ACHIEVING A ZERO WASTE FUTURE

HOW THIS STRATEGY IS STRUCTURED

This document outlines the different strategic components required to realise intergenerational sustainability in Wellington City.



The components of this strategy, illustrated in the above framework, are:

VISION
WCC's overarching vision for the city, guiding all that we do

PRINCIPLES

The fundamental reasoning and guidance for the direction of the strategy

OBJECTIVES

The broad direction this strategy will take to achieve a zero-waste future for Wellington

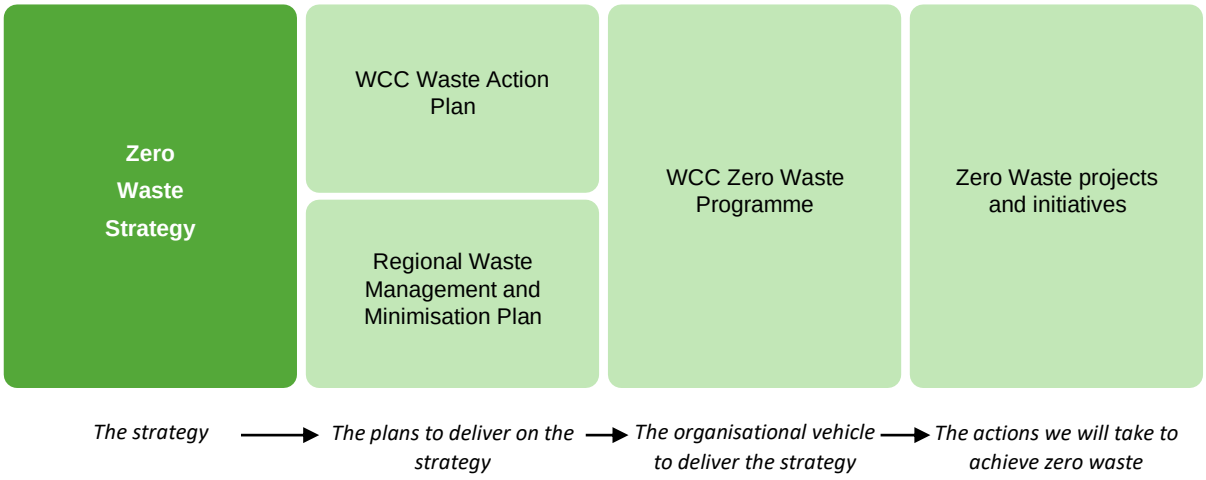
PRIORITY ACTIONS
The actions from WCC's Waste Action Plan, which are crucial to delivering this strategy, and are identified under each objective

OUTCOMES
The cumulative results of delivering the components of this strategy.

HOW WE MEASURE CHANGE
The measures and indicators we have set in this strategy to know we are achieving our outcomes, and the targets we have set to work towards a zero waste future.

HOW THIS STRATEGY WILL BE DELIVERED

To enable this strategy, the Council is developing an accompanying WCC Waste Action Plan which will contribute to an equivalent plan for the Wellington region, the Wellington Region Waste Management and Minimisation Plan (WMMP). At the Council, we have established a Zero Waste Programme, which is a delivery vehicle for the individual projects and initiatives outlined in this strategy and the Council's WMMP. The relationship between the strategy and its delivery mechanisms is shown below.



TŪPIKI ORA AND ZERO WASTE

'He tirohanga Māori i te para me te mahi hangarua (Māori views on waste and recycling) emphasise whakapapa (genealogical) connections between humans and the natural world. The respect for rawa taiao

(natural resources) and the materials made from them is demonstrated by maintaining their value for as long as possible before they reach the end of their life, at which point they are disposed of in a way that causes the least harm to Papatūānuku. In this way, he tirohanga Māori i te para precedes the concept of a circular economy (ōhanga āmiomio) but similarly acknowledges the mauri (life force) of natural resources.'[45]

Tūpiki Ora is a metaphor for the pursuit of well-being, establishing a new way of working together with our community to strengthen our relationships and support our whānau to prosper. The strategy document outlines the framework for the Council, Mana Whenua and Māori to follow to achieve this vision collaboratively.

Tūpiki Ora has eight guiding principles which provide direction on how the Council conducts itself to undertake the mahi required and make decisions that are mana enhancing for Māori in our community. Through this Zero Waste Strategy, we are placing four of the Tūpiki Ora guiding principles front and centre in how we bring about the change required to make Wellington a Zero Waste city:

Mana ōrite: we recognise equity as being important to Tūpiki Ora, to our relationships and partnerships, and to how we conduct ourselves. The Council will look for partnership opportunities with mana whenua and all community stakeholders who have a keen interest in the protection of our natural environment and the minimisation of waste.

Rangatiratanga: we recognise and respect each other's autonomy, mandates, constraints and priorities, and acknowledge and respect our differences. The Council will use our services and infrastructure to meet our community's goals for zero waste, acknowledging that as the service provider for waste management in the city, we hold the greatest opportunities to effect change.

Pito mata: we recognise the potential for opportunities and growth in all possible situations. We will do our very best to pursue the opportunities that will lead us to greater and increased whānau wellbeing. The Council, through the behaviours change required in this strategy, will ensure our city's environment is left in a better, healthier state than when we found it, saving this previous taonga for future generations.

Te auaha: we recognise that working together means partners will seek to develop new, creative, and innovative models to achieve desired outcomes. The Council will provide opportunities, through the delivery of the Zero Waste Programme, for local partners and stakeholders to experiment and innovate in order to deliver the most effect services and waste minimisation system to Wellingtonians.

This working approach with mana whenua and the community commits Wellington City Council to:

1. Endeavour to act as kaitiakitanga to protect and enhance the mauri of resources by working towards a circular economy approach
2. Engage with, empower and involve our community in changing behaviour and solutions
3. Apply a waste hierarchy approach, to increasingly shift our effort and focus towards enabling redesign, reduction and reuse.

We believe taking a circular economy approach to the waste hierarchy helps us to understand the complexity of waste and resources and enables us to prioritise focusing efforts where the use of resources begins and follow it through its lifecycle.

ZERO WASTE PRINCIPLES

WELLINGTON CITY'S PRINCIPLES FOR A ZERO WASTE FUTURE

This strategy is anchored by six core principles. These principles inform how we will achieve a zero-waste future for Wellington City by guiding the development of this strategy's objectives, priority actions, and outcomes.

[45] WasteMINZ, 2020, Recommendations for standardisation of kerbside collections in Aotearoa, p10

Reduction of waste	Preventing waste before it occurs. It reduces the environmental impact of treatment and disposal of waste. There is opportunity for Wellington to take a leading role in advocating reducing our reliability on production of new virgin material and increasing material circularity to increase the life of materials.
Culture change	Current linear production, consumption and disposal patterns are based on the myth that we live in a world of infinite resources. We need to create a mindset shift of treating waste as a resource to realise a circular economy in which our behaviours and habits are geared towards achieving zero waste outcomes.
Community participation	Community participation is critical for achieving zero waste outcomes. Citizens need to be enabled to adopt waste free practices and actively involved in design of resource efficiency systems, contributing to a culture shift towards reduction of waste.
Proximity principle	Optimal citizen and community access to resource recovery facilities will ensure people have the means and location to reuse and repair items. Transportation of waste in and out of Wellington, optimal collection systems and reduced truck movements contribute significantly to reduce economic, environmental and nuisance impacts on the city. The proximity principle encourages processing, recycling, reuse or disposal of waste to the nearest point of production as possible.
Materials reuse	The reusing principle means using products and materials more than once. It involves extended use of materials for the same purpose of for other purposes. Normalising use of reused, repaired and repurposed materials is a critical part of a successful sharing economy.
Resilient waste system	A system that can not only manage and endure itself through an extreme event, but also reduce its vulnerability to changes outside its control. This can be achieved by investing in infrastructure to increase material processing and recovery, develop local community and market capability, ensure chain of custody of materials being diverted, and funding innovation to keep increasing circularity of materials. Ensuring a city has the capacity and capability to manage and reduce its waste is an inherent feature of a resilient waste system.

These principles are informed by the New Zealand Ministry for Environment's waste hierarchy, which guides the reduction and diversion of waste.

ZERO WASTE OBJECTIVES

Zero waste is an ambitious goal for Wellington. It signals a significant shift in how we as city think about waste, the services and infrastructure we provide, and how businesses, residents and the Council can contribute to making a difference for our city's environmental, societal and economic future. To deliver this strategy's objectives, a model of collective responsibility and action is critical.

This strategy identifies Wellington-specific waste issues, placing a focus on waste types that are of significant volume and will therefore achieve the greatest gains in the next 10 years. Our focus waste types are:

- Sludge
- Organics
- Construction and demolition
- Household items and consumables.

Our focus waste types, combined with our zero waste principles, inform the four objectives outlined in this strategy which set the future direction for Wellington's waste system:

- Objective 1: Products and services provided in Wellington are waste free
- Objective 2: Waste reduction is made attractive and accessible to Wellingtonians
- Objective 3: The infrastructure and systems to increase resource circularity is established
- Objective 4: Waste that cannot be avoided, reduced, reused, or recycled is managed safely.

FOCUS WASTE TYPES

SLUDGE

At the Southern Landfill, hazardous waste includes special waste such as sludge and asbestos and are categorised as 'potentially hazardous'. Potentially hazardous waste makes up 26.9% of all waste to the Southern Landfill. Approximately 97% of potentially hazardous material is special waste, primarily wastewater, otherwise known as sludge.[46]

Our focus is to remove sludge from the landfill by investing in a sludge minimisation facility to remove the city's reliance on waste to dispose of sludge, as well as creating a biosolids biproduct. Removing sludge from the landfill unlocks opportunities to drive waste minimisation and resource recovery once solid waste is no longer needed to make the landfill safe.

Once operational, the sludge minimisation facility will result in the sludge material being dried and its quantity in the landfill significantly reduced to 2,000 tonnes per year. This volume can be further reduced, as the material is a potential resource which, if a use is identified, could avoid entering the landfill entirely. The Council will investigate beneficial use of the material – for example, as fertiliser for public gardens.

Hazardous waste also includes pesticides and herbicides, lead-acid and other batteries, electronic or electrical waste (e-waste), waste from the production of leather, ink, dyes, paint, latex, glues, and wood preserving chemicals, and clinical and pharmaceutical waste.[47] For the purposes of this strategy, e-waste is included within *plastics, packaging and consumables*.

ORGANICS

Organic waste is garden and kitchen or food scraps and makes up approximately 25.5% of all levied waste to the Southern Landfill; household collections comprise around 57% organic waste.[48] The Council's focus is to remove all organics from the landfill through investment in an organics processing facility.

Organic waste in landfills is a large contributor to carbon emissions. Yet, organic matter processing, such as composting, can reduce or eliminate the need for fertilisers, and present cost savings through higher crop yields and better water retention.[49] Actively changing the systems in place for organic waste will significantly reduce waste to landfills. Organic food loss refers to the decrease in edible food as it moves from harvest to

[46] SWAP full report (wellington.govt.nz) – pg 42
[47] https://www.epa.govt.nz/industry-areas/hazardous-substances/hazardous-waste/hazardous-waste-types/
[48] SWAP full report (wellington.govt.nz) – pg 42
[49] https://www.epa.gov/sustainable-management-food/reducing-impact-wasted-food-feeding-soil-and-composting#:~:text=Organic%20waste%20in%20landfills%20generates,higher%20yields%20of%20agricultural%20crops.

processing and transporting. Food waste refers to discarded food by retailers, hospitality and consumers[50] and may be **avoidable** – food that could have been eaten – or **unavoidable,** such as eggshells and fruit cores.

We're focusing on food waste, as the Wellington economy has very little food production, with a large hospitality sector. We will focus on hospitality, grocery, and landscaping sectors, as well as households. We already have a fund available that targets innovative projects that minimise organic waste.

We have been a partner in delivering the Love Food Hate Waste (LFHW) campaign, coordinated at a national level by WasteMINZ, since 2016. LFHW aims to reduce the amount of food going to waste at the household level by raising awareness and sharing tips, tricks and recipes that make it simple to reduce food waste and save money. Initially receiving Ministry for the Environment funding, the campaign is now resourced by participating Councils, and there is scope to significantly build on and extend the work done so far.

We will need to continue advocating to central government for appropriate standards and regulation of products and work closely with the packaging industry to ensure product compliance.

CONSTRUCTION AND DEMOLITION

Our third waste focus is construction and demolition. Construction and demolition waste can include timber, concrete, glass, steel, brick, packaging, metal, plasterboard and other items. While it only makes up 22% of the Southern Landfill disposal, there are other landfills taking the bulk of this resource. Construction and demolition waste makes up 40-50% of New Zealand's waste.[51]

There is also a looming problem in the Wellington region with construction and demolition landfills reaching capacity – urgent solutions are needed. A large volume of construction and demolition waste is unnecessary, with multiple repurposing and regeneration opportunities. However, separation and processing are considered time-consuming and costly. Added to this, separation and processing are currently not regulated at a national level, and we lack data to understand in detail the scope of the problem and potential waste minimisation opportunities across the country. The Ministry for the Environment are beginning to gather construction and demolition waste data.

Wellington City Council requires a Construction and Demolition Waste Management and Minimisation Plan for developments over $2 million, allowing Council officers to track the planned disposal of the construction and demolition waste. However, the Council does not include separation and processing requirements as a component of the CDWM plans, leaving disposal of construction and demolition waste largely unregulated at a local level.

There are a few companies supplying deconstruction services in Aotearoa, but this is not yet widespread practice. Kāinga Ora adopted an 80% diversion from landfill target. They have worked with a deconstruction company in Auckland on their first pilot involving deconstruction of 10 homes and rebuilding 50 homes - and achieved 85% diversion.[52]

PLASTICS, PACKAGING AND CONSUMABLES

Our fourth focus waste type is household items and consumables. Household items contain plastics, electrical components, wood, textiles, paper and carboard. Plastic, textiles, paper and cardboard make up a combined 361 tonnes (20.6%) per week at the Southern Landfill. Examples of these items include e-waste (such as laptops and phones, kettles, fridges, lamps, toys, tools), furniture, clothing, and plastic containers and packaging).

Plastic waste at the Southern Landfill is 149 tonnes per week and makes up 8.5% of our landfill waste. High income countries including New Zealand generate more plastic waste per person due to higher rates of production and consumption. Although we do not generate significant volumes due to our smaller population

[50] https://www.fao.org/platform-food-loss-waste/en/
[51] https://www.level.org.nz/material-use/minimising-waste
[52] https://kaingaora.govt.nz/news/reducing-waste-through-deconstruction/

base, there is a high amount of environmental harm caused by raw material extraction in the production of plastic, and plastic as a single-use product.

Textiles are items like furniture fabrics, clothing and carpet that are made from materials such as cotton, nylon and polyester. The Southern Landfill receives 93 tonnes per week, making up 5.3% of waste to landfill. The textile waste stream is growing quickly, up 109% from 2009 when it averaged 45 T/week. In New Zealand, we don't produce many textiles, but they make up 2% of the nation's GDP. 100,000 tonnes of textiles go to landfill in Aotearoa every year.[53]

Paper and cardboard can come from packaging, office printing and documents, notebooks, books, wallpaper, newspaper and decorating. It makes up 6.8% of the Southern Landfill waste profile at 119 tonnes per week. There are many opportunities to avoid this type of waste, such as through digitisation of traditionally written or printed materials.

Electrical appliances generally contain plastics, metals, and chemicals known to be hazardous to human health. These items present a significant opportunity for reuse, repair, and repurposing. New Zealand produces 80,000 tonnes of e-waste per year, but only 2% is recycled.[54] As a country we produce one of the highest amounts of e-waste per capita, yet we are the only country in the OECD that do not have a national e-waste scheme.

OBJECTIVE 1: PRODUCTS AND SERVICES PROVIDED IN WELLINGTON ARE WASTE FREE

We aim to avoid unnecessary resource use and to design waste out.

WHY IS THIS IMPORTANT?

Through Wellington City's Economic Wellbeing Strategy, we have signalled a shift to a Circular Economy away from a linear 'take-make-dispose' model. Avoiding waste is at the top of the waste hierarchy, to prevent unnecessary extraction of our rawa taiao (natural resources). Intervention should be at the earliest possible points in the lifecycle of a product or service, as well as at every point along the way; this will have the greatest impact on reducing waste.

The Ministry for the Environment, through their public consultation on a new waste strategy, is considering bans and phasing out of various materials, through their public consultation on a new waste strategy (2022). This could include bans on organic materials like food and garden waste, paper and cardboard, and construction and demolition waste from being disposed of into landfills. A three-staged approach to phasing out hard -to- recycle plastics is under way, and significant recycling transformation is proposed. We need to work alongside Ministry for the Environment, and to support consumers and businesses to transition to these bans.

Wellington's economy is highly connected to the global economy, and while it might appear that we are doing well on the climate impact scale, we don't directly see the impacts on the environment from the production and transportation of imported goods. However, we see the end waste products such as packaging, and broken and unwanted items in our landfill.

Collectively, we need to think about the ways we can influence our suppliers and make changes in our own practices that result in less waste being created. In the circular economy model, this means focusing effort to

[53] https://www.nzherald.co.nz/brand-insight/govt-biggest-problem-in-clothing-carbon/EOTEB7ESZIAXLJHCUXTGP2I4GQ/#:~:text=New%20Zealand%20sends%20about%20100%2C000,cent%20of%20the%20carbon%20impacts.

[54] https://www.rnz.co.nz/programmes/the-detail/story/2018733818/our-gigantic-e-waste-problem

influence the design of products and services. This is about the choices local businesses and organisations make to influence the level of waste entering our system. The efficient design of consumables can result in less use of paper, plastic, textiles and electronic goods, and using recycled materials can drive this down even further. Designing products to be resource efficient and repairable will save a significant volume of material use. This includes ensuring products are made to last, are repairable, have home compostable or recyclable packaging, and eliminate waste as far up the supply chain as we can. For example, an electronics retailer could ask for changes to be made to the packaging, insist on use of recycled materials, and introduce return and repair solutions.

OUR APPROACH

RETHINK COUNCIL'S WASTE MANAGEMENT PRACTICES

Rethinking how we manage waste is a critical element of success for the Council's own activities. Removing sludge from the landfill, targeting Council's waste generating activities, and investing in diversion technology will have the most impact.

We're the only Council in New Zealand sending sludge to the landfill. This contributes significantly to our emissions and limits our ability to drive waste minimisation, as we must mix sludge 1 part to 4 with solid waste for health and safety. To remove sludge disposal from the landfill, we will progress investment in new sewage treatment technology as agreed in the 2021 Long-term plan. This will break down the sewage into a beneficial substance that can regenerate our city's soils and allow us to minimise waste without relying on it for sludge processing.

We will also work with our internal business units to identify waste generators and solutions for avoiding waste. This could include office activities, public facilities such as pools, sports fields and libraries, events and infrastructure. This will enable critical thinking to redesign our practices. We're already using bus boarding platforms made from recycled plastic.

Another challenge for the Council is supporting many more residents, businesses and organisations to make changes towards the circular economy. There is an opportunity to drive change through the existing Council spend by ensuring our processes and criteria for contracts and procurement meet the strategic direction for environmental, social, cultural and economic outcomes.

We will invest in technology to divert waste streams away from landfill from a mix of funding sources; landfill revenue, service delivery charging mechanisms of rates funding and through grants and minimisation funding. We will invest in system resilience to future proof our infrastructure for unexpected change. The idea is to have a system that can moderate and correct itself when exposed to vulnerability.

We will invest in system resilience to future proof our infrastructure for unexpected change. The idea is to have a system that can moderate and correct itself when exposed to vulnerability. We will aim to achieve this by increasing community and market capability, gaining commercial leverage through our procurement strategy to achieve our waste service delivery, processing systems, and waste emissions objectives.

Re-thinking the Council's waste management practice also requires identifying appropriate funding mechanisms (e.g., rates funded vs non-rates funded, pay-as-you-throw) which need to be underpinned by detailed options analyses. To achieve this step change in the way we view waste and the amount of waste we each produce, we also need to recognise that collectively we need to share the burden of this transition, including the choices we make, and the investment needed.

ENCOURAGE WELLINGTON'S BUSINESSES TO DESIGN WASTE OUT OF THEIR PRODUCTS AND SERVICES

Recycling alone is not enough for sustainable waste management. Waste management activities such as recycling and composting reduce waste to landfill and help mitigate greenhouse gas emissions, but are considered downstream activities, at the bottom of the waste hierarchy. However, upstream measures include influencing the business activities and supply chains to reduce waste. In our role as a facilitator, we want to

work with businesses and organisations across Wellington to help with avoiding waste creation and reducing dependence on use of new and imported materials, particularly relating to organics, household items and consumables, and construction and demolition. As a Council, we can build a local understanding of the challenges we need to overcome to achieve change alongside businesses and communities. We can also collectively advocate for change in regulations around importing requirements to further reduce waste in Aotearoa.

To do this, it's necessary to consider how best to facilitate sector wide conversations and knowledge dissemination to bring about change at scale, whilst also supporting smaller grassroots change programmes. We'll use our waste priorities to guide how we work with each sector. This includes government administration and the knowledge economy, retail (including grocery), hospitality, and construction and demolition. We'll also develop a grassroots programme that is adaptable across different businesses. The focus will be on providing detailed support to a few businesses in different sectors that are then able to share their knowledge more broadly within their networks.

As outlined in the city's Economic Wellbeing Strategy, we aim to collaborate with universities, crown research institutes, and WellingtonNZ to connect businesses with science and innovation and minimise duplication of effort. This is a significant addition to how we encourage others to adopt waste mitigation practices and will require funding investment to be effective. We're also supporting zero waste businesses through the promotion of eco-tourism, our waste minimisation seed funds, and procurement strategy. We are also conscious that the Council is looking to work with businesses to improve transport and carbon emission outcomes, so we'll make sure to coordinate and integrate that work.

Regarding construction and demolition, Council is actively promoting the Resource Efficiency in Building and Related Industries (REBRI) resources. Our 2020 Solid Waste Management and Minimisation Bylaw requires high value projects to submit a waste management and minimisation plan using the REBRI template. We'll work with demolition specialists, developers, architects and builders to drive better practices that result in as much reuse and recycling as possible to maximise our bylaws' effect. We'll need to continue to review the Bylaw to identify whether the regulatory measures are having an impact. We'll also promote adaptive reuse practices, as these tend to result in lower material costs, but higher labour costs which supports the local economy and protects our built heritage.

We already have an Environmental and Accessibility Performance Fund to encourage economic development, accessible design and recognise the strategic importance of green certified buildings across newly built and refurbished residential and commercial developments in Wellington. In the short term, we'll actively encourage use of construction materials made from recycled materials, while looking to consider requirements for deconstruction in the longer term.

INSPIRE WELLINGTONIANS TO MAKE CONSCIOUS CONSUMER CHOICES

Consumer whai wāhi (participation) in waste minimisation efforts will play a vital role in protecting our natural resources. Consumers can influence the prevention of extraction of virgin materials, and increased regeneration, for example, by avoiding products that use superfluous packaging, or by avoiding purchasing products produced by 'fast fashion' brands. With improved access to information, through media channels and word of mouth, residents can make informed choices about the support they provide to companies that are not actively addressing the environmental impacts of their production practices. If a consumer has a choice between two equally priced products, one made from virgin plastic and one made from recycled plastic, by being well-informed, they are likely to choose the sustainable option. Some consumers are willing to pay a premium for environmentally sound purchases, however sometimes it may mean the environmentally conscious product is not equally available to all. A 'Just Transition' is an important consideration; where impacts and opportunities are more fair, equitable, and inclusive for all.

Circular economy businesses already exist, and we need to help inform people, organisations, and businesses to choose products and services that are waste-free or made from regenerated materials. We can achieve this

by promoting businesses and organisations that are rethinking and redesigning their products, services, systems, and processes, to demonstrate what is available and how to access it. Many people want to make sustainable choices but find it difficult to access and navigate the options available. This includes concerns about greenwashing where products are labelled as environmentally friendly because of one aspect, but don't tell the full story.

We want to make it easy for people to make conscious consumer choices. This might be through the Council use our existing communications platforms such as placing information available on our website, public campaigns, or other alternative incentive programmes. We'll investigate how best to do this, and whether there are local policies or bylaws we can introduce to incentivise or require companies to design waste out of their services, products and packaging as well. This might include our Solid Waste Bylaw, Food and Liquor Licencing, and Building Consenting. We'll collaborate with other organisations to ensure actions are complementary. The Council has a search tool to assist in identifying where residents can dispose of materials in an environmentally friendly way; we need to ensure it remains relevant, kept up-to-date and adopts best practice from international examples so the tool is well used by the community.

PRIORITY ACTIONS

- Deliver the benefits of re-use and waste prevention through active use of Council regulations, compliance activities and enforcement
- Deliver lasting behaviour change interventions by making people understand the benefits of change and then help them make that long term change easy
- Work with partners and stakeholders to empower individuals to have courage to make a change in the world by inspiring individuals to reduce waste and live a more sustainable life
- Work with Central Government agencies to shape policy decisions that can be developed into actions that prevent waste
- Transform Wellingtonians relationship with packaging
- Work with partners and stakeholders to support the redesign of systems, including changing design and production, creating new markets for reuse and recycling and inspiring Wellingtonians to cut waste, save resources and reduce Greenhouse Gas emissions
- Encourage businesses, social enterprise and charities to create local and regional markets for waste materials

OBJECTIVE 2: WASTE REDUCTION IS MADE ATTRACTIVE AND ACCESSIBLE TO WELLINGTONIANS

We aim to make it convenient for residents, businesses and consumers to recycle their waste.

WHY IS THIS IMPORTANT?

The council recognises that becoming a net zero carbon city will only happen with the support of our entire community. Both systematic transformation by the public and private sectors and individual behaviour changes are needed to achieve zero emissions – one without the other will not achieve the necessary scale of change at the requisite pace.

Greater emphasis is being placed on activities to support recovery of materials before they disposed of to landfill. With organics being 57% of household waste by weight, organics is an obvious focus area. To support this, we should consider food waste reduction behaviour change programmes, home composting subsidies, kerbside collection of organic waste, and drop-off facilities. Globally, approximately 36% of plastic is single-use packaging and plastic items, designed for on-the-go convenience.[78] Plastic is the greatest proportion of the litter stream by item count (69%) and the third greatest by weight (19%).[79] Construction related plastics such as cable ties, safety tape and plastic wrap also make up a large proportion of plastics. These statistics clearly indicate that making reusable alternatives more convenient would make a significant difference in reducing this waste stream from entering our economy.

Influencing consumption patterns within households will go a long way to reducing household waste. A lot of waste is created by today's fast fashion and consumerism. As a consumer society we need to become more conscious of our purchasing decisions, this can help reduce waste. We should consider alternatives to buying new items, like sourcing items second-hand, or temporarily borrowing it. If we do really need it, we should also consider whether it must be new, or finding a second-hand item or borrowing from someone would work. The Council can work to stimulate and support the sharing economy. However, societal expectation and stigma about buying new versus old items needs to become accepting of environmentally conscious choices.

In addition to finding creative ways to share and promote changes in behaviour and social norms, we also need the right services and facilities to enable these right behaviours. Knowing where and how to recycle is a crucial step to ensuring recyclable and regenerative materials are not sent to landfill. With today's busy lifestyles, we must consider how best to make it waste minimisation as easy and convenient as possible. To achieve this, people need accessible information about where and how to reduce, reuse, and recycle. Consumers also need, and the facilities and services that provide this should be to be located conveniently. This is crucial to ensure that recyclable and regenerative materials are not sent to landfill. This might mean kerbside collections, local community hubs, and services provided by retailers that can collect items for repair or repurposing.

Repairing items rather than replacing them can be a smart choice for reducing waste. However, there are very few businesses that can repair items, and many items are not made with repairing in mind. Further to this, the skills needed to repair products is also exceedingly rare. We need to consider how to enable repair options in our communities.

OUR APPROACH

PROVIDE COLLECTION SERVICES AND COMMUNITY HUBS

In many cases, waste infrastructure has been viewed, for example, as a landfill, recycling building, disposal facility or kerbside rubbish bins. However, we know that sustainable waste infrastructure must relate to all other facets of society from construction and demolition of buildings, development of policies and regulations and providing good and services to communities. Investment in sustainable waste infrastructure needs to consider risk (e.g., availability of offshore recycling markets, disaster events), putting security and resilience (e.g., climate change resilience) at its centre. Investment also needs to consider existing infrastructure and how these facilities fit into providing current and future services.

Requirements for services and processing facilities are being considered by the Ministry for the Environment. This includes the introduction of a container return scheme, and the need for better data collection to monitor and measure waste improvement over time. Our Council and city will have a role to play in supporting this.

Changes to kerbside collections are also coming. We must consider the best ways to collect recyclables and organics from households, including multi-unit dwellings, and from businesses and organisations. We must recognise that as the city's population continues to grow and more people move into apartment living, the way in which we provide waste services must also adapt ensuring equitable service to all Wellingtonians. In Melbourne, bookable bins for hard waste and e-waste collections are available for this purpose.

Organic waste reduction results in emission reductions. Tauranga City Council have shown how quickly change can occur – within one year of introducing food scraps and garden waste collection, waste going to landfill has

almost halved. The results from the Para Kai trial indicated that if a weekly food waste collection service is introduced in the current collections schedule, approximately 37% of food waste will be diverted from landfill. A plan will need to be in place to develop the market for use of the organic material that is regenerated from the facility. We'll consider adjusting frequencies of collection – for example reducing collection of residual waste from weekly to fortnightly or monthly, and retaining or increasing the frequency of recyclables and introducing weekly organic waste collection.

We are trialling battery recycling drop-off locations around the city, through community centres, libraries and the Tip Shop, although more could be done to raise awareness of these services; e-waste can be dropped off at the Tip Shop. Many e-waste items received by the Tip Shop are refurbished and tested, with mobile devices and computers reset, and sold in the shop or on Trade Me. Lower quality items are broken down for parts or for recycling. Sustainability Trust offers similar collection services, working with local partners to redistribute working items and recycle others. Most small household appliances, digital devices and office equipment can be accepted by both. However, many residents stockpile their old items or send them to landfill as there is little awareness of these services and disposing of e-waste and other tricky household items is inconvenient. We must consider how we can make these services more accessible in a way that works for the future city intensification, such as providing drop-off points in all town centres. This will be essential as we progress housing intensification, pedestrianisation, and reduced parking availability through the Let's Get Wellington Moving infrastructure investments.

Wellington is growing rapidly. Our waste service infrastructure will need to cater to the growth of our city; that means collections, processing, disposal, chain of custody, advocacy and resilience. This is an opportunity to understand the mix of options, standardisation vs customisation of services and charging mechanisms to align with the strategic objectives in this document. For example, improving and providing long-term sustainable waste solutions will require each of us to take more responsibility to reduce the amount of waste we produce and to seek new ways to repurpose materials rather than dispose of items. To support this, this strategy sets a way forward to plan, implement and deliver a range of sustainable waste infrastructure and services that are attractive and accessible to Wellingtonians. This may for example include, establishing a network of resource recovery facilities for Wellingtonians to drop-off unwanted household items and purchase repaired and/or good quality pre-loved items, partnering with community and social enterprises to deliver strong outreach education programmes, and providing all Wellingtonians with an attractive and accessible kerbside collection service for a range of items including food scraps. We must also recognise that as the city's population continues to grow and more people move into apartment living, the way in which we provide waste services must also adapt ensuring equitable service to all Wellingtonians.

STANDARDISE PROVISION IN OUR OWN FACILITIES AND EVENTS

We want to set an example for the city by putting best practice into place at our facilities and events. We want to ensure our staff know how to avoid and reduce waste creation and appropriate recycling behaviours are followed. It will require setting standards and expectations that are consistent across the organisation, with budgets to enable it. This means providing a level of service that is predictable and exemplifies best practice across the waste hierarchy. This demonstrates our ability to discard waste appropriately so that recycling and composting can occur, while encouraging and enabling reusable containers towards the top of the waste hierarchy.

GROW THE REPAIR AND REUSE ECONOMY

When it comes to household items and consumables, resources can be given an extended or new life through repair and reuse. We can facilitate the expansion of the repair economy by encouraging consumers to choose alternatives to landfill.

In conjunction with promoting repair and reuse consumer behaviours, we'll work with businesses and organisations keen to establish repair and reuse services. This repair and reuse economy is a critical part of the circular economy and is beginning at a grassroots level, but there is a limit to what is possible without active support. We already have a seed fund available for innovative solutions to reducing waste, however, capacity and capability to deliver such services needs incubation of talent on a larger scale Many skills to repair products have been depleted and it will take time to regrow this skillset across many industries, such as

electronic goods, furniture and toys. Growing the repair economy will not only reduce waste, but also add value to the local economy. We have indicated in the Economic Wellbeing Strategy of the work that will be needed to develop skills for the future.

For appliances and bulky household items, we want to support the 'right to repair' movement across the globe. This focuses on the consumer and independent repairer's rights to repair goods which requires products to be designed in a way that is easily repairable.[74] However, can be thought as a barrier to technological progress, hindering the movement. Another option is in changing the business model to a pay to access rather than pay to own, in which case the business retains the responsibility for repairing items. It's likely that both models will advance, depending on the level of complexity and technology involved. Enabling DIY repairs is considered empowering for citizens as the journey of learning new skills is uplifting and provides opportunities for social connection. We'll consider opportunities to facilitate the repair economy through running fix it events or providing spaces for repair services and workshops to establish. We'll also encourage retailers to voluntarily participate in Product Stewardship and take back old goods when supplying new goods to consumers – building a repair, reuse, and repurpose economy.

The reuse economy is reasonably well established with the likes of Trade Me, Cash Converters, Opportunity Shops, The Tip Shop, and other trading stores that enable the economic exchange of pre-loved items. However, there is still plenty of room for this to grow. Part of the challenge is encouraging more people to realise the benefits of this. Many people who are time-poor may find this challenging, so alternative drop-off or collection opportunities may be needed. Active promotion of reusing items and purchasing second-hand may be necessary to normalise this activity. Furthermore, a sharing economy successfully facilitates sharing of goods that are infrequently used, which reduces demand for purchasing individual items. This can be facilitated through physical and virtual libraries and rental services.

PROVIDE INFORMATION SO RESIDENTS KNOW WHAT TO DO

We want to influence household behaviours and patterns of consumption, from enabling efficient use of leftovers at the end of the week, encouraging 'slow-fashion', to breaking down the stigma of buying second-hand clothing, or furniture.

Holistic behaviour change programmes are proven to be effective in changing social norms and actively engaging communities. We'll establish campaigns and behaviour change programmes to raise awareness and encourage change, help people find information they need, navigate recycling systems, and support the reuse and repair economy. We currently have a limited resource for behaviour change activity. We have strong relationships with community-based and not-for-profit groups and largely work with schools. We will need to increase our behaviours change resources to extend this work across businesses and consumers to significantly reduce waste to landfill. To be successful in this we'll adopt techniques that are most likely to motivate individuals through their own self-interests – ideas and messaging that support people to feel competent, needed, and enhance quality of life.[72]

The greatest opportunity in household and community waste reduction is organics, plastics and e-waste. We can teach people how to do organic composting at home and provide better information on how to recycle plastics and e-waste. Behaviour change works best when the infrastructure and services change alongside it to enable the right behaviours. As container return schemes become active, we'll have a prime opportunity to promote plastic recycling. We'll also actively promote where and how to extend the life of products and encourage active engagement in the repair and reuse economy. Investing in public drinking water access and having policies to facilitate public drinking water access at shops and other facilities, will assist in reducing single use plastic bottles.[73]

PRIORITY ACTIONS

- Delivery of consistent, equitable and accessible waste collections
- Manage funds and revenues to support Wellington's re-use, re-purpose and recycling capacity by creating a catalyst for other investment

- Deliver value for money waste services to Wellingtonians
- Deliver sustainable waste services to Wellingtonians
- Innovation encouraged to support delivery of Wellingtons transition to a zero-waste future
- Monitoring and evaluation of waste arisings to support effective policy making and insights
- Deliver lasting behaviour change interventions by making people understand the benefits of change and then help them make that long term change easy
- Work with Central Government agencies to inform and shape system changes
- Promote and encourage the re-use of materials for the same purpose and recover materials so that they can be re-used throughout Wellington
- Increase the amount of material that is recovered, re-used and recycled to minimise waste and reduce the amount of virgin materials used in production
- Work with partners and stakeholders to scale up interventions to support the citywide goal to be a leader in minimising the use of resources and maximisation of reuse and recovery

OBJECTIVE 3: THE INFRASTRUCTURE AND SYSTEMS TO INCREASE RESOURCE CIRCULARITY IS ESTABLISHED

We aim to recover and process materials to regain value from resources.

WHY IS THIS IMPORTANT?

It is critical that the collection of recyclable and regenerative materials is accompanied by the repurposing of these resources, retaining their value while decreasing the need for virgin resources. To achieve this, Wellington needs the right facilities to return resources into valuable outputs. We need to identify the degree of intervention the Council should play in the market for regeneration of resources. To do this, the Council will work with businesses to support the development of reprocessing facilities; where it makes greater sense for the community to own the facility, the Council can investigate the case for investment. Having the facilities in place also provides residents with confidence that their efforts are paying off. Not only do we need new facilities and regulations to cater for the waste Wellington already produces, but as the city is growing at a rapid rate, the facilities and regulations will need to cater for the impending growth. This is an opportunity to understand the mix of options, standardisation versus customisation of services and charging mechanisms to align with the strategic objectives in this document.

One example of where the Council could support further recourse regeneration and repurposing efforts in the city is with food and garden waste. Food waste, once broken down into compost, can improve soil health by returning natural resources to the ground. It also absorbs carbon rather than releasing it and reduces reliance on fertilisers and pesticides to improve soil fertility. A broader outcome of healthy soils for the community is that healthy topsoil is also more resilient to flooding and droughts.[55] However, not everyone can compost their organic waste. To address this, local authorities can intervene by investing in facilities to regenerate organics on a large scale and then marketing the outputs, supporting local food production, nature reserves, parks, gardens and other green spaces.

Environmentalists in Japan have demonstrated how this can be undertaken successfully by harnessing their country's rich religious and cultural history to encourage a circular economy. 'Mottainai' is a Japanese

[55] https://ellenmacarthurfoundation.org/regenerate-nature

expression of regret at the value of something not being used to its full potential, dating back to the 15th century. This expression reflects the idea that people should respect all objects and not waste them. This was disseminated as a slogan to encourage citizens to regenerate and repurpose their products and demonstrates why communication is crucial to the implementation of regenerative practices.

OUR APPROACH

USE MARKET DEMAND TO INFORM OUTPUTS FROM REGENERATED RESOURCES

In order to understand the demand for the outputs of resource regeneration, what needs to be understood are the opportunities and potential markets the products of outputs could be repurposed and marketed to. This is essential for establishing the right facilities with the right technologies and will help to inform any potential investment requirements. It will also inform the Council of partnership opportunities with different organisations and businesses that have an interest in enabling innovation and commercialisation of regenerated outputs. We will undertake an investigation into the potential market opportunities and work with businesses, and research and innovation organisations to identify and make progress. This investigation will consider gaps in market offerings or supply issues as well as what technologies are available to progress ideas. Supply of building materials is an obvious consideration, where supply of products may be strained and alternative products from recycled materials may present a long-term solution. We'll consider all types of materials, with a specific focus on our priority waste streams – organics, plastics, and construction and demolition. We also need to consider how we can support advancing technologies so that plastics are recycling to add value, rather than losing their value. We'll support businesses to establish recycling and re-engineering of plastics.

INVEST IN ORGANICS PROCESSING

The Council will undertake a detailed investigation to consider the benefits of investing in an organic processing facility to manage the city's significant volume of organic waste. This will require investigating technology and site options and then, if investment is decided, building the processing plant. Any plant would need to have robust design measures to ensure that community health and safety, as well environmental impacts, are mitigated.

Other cities around the world and the country are already delivering organic kerbside collections which are achieving significant waste reductions. The Para Kai Miramar Peninsula Trial, which concluded in early 2022, provided 500 households with a weekly kerbside food waste collection service. Another 450 households were provided a compost bin, worm farm or bokashi system. Surveys and audits were undertaken to understand participant's perceptions and the amount of food waste which was diverted from landfill. The findings of this trial will help inform organic waste regeneration and collection options for residents. We'll need to consider what worked more effectively and how we'll fund organic materials solutions.

For businesses, we need to consider different issues in various locations and for different business types. Our local economy has some food production business, but plenty of hospitality businesses, plus those businesses in grocery and landscaping. Hospitality will have a larger volume of food waste than others and greater needs for collection services. Ensuring the solutions we implement are easy for businesses to adopt, regardless of the mechanisms used – for example, regulations, incentives, and education – is key. We need to ensure the transparency of information flows through to support customers to make informed decisions.

INVEST IN CONSTRUCTION AND DEMOLITION RESOURCE RECOVERY FACILITIES AND TO FACILITATE SECTOR CHANGE

Regionally, approximately 600 million tonnes a year of construction and demolition material go into landfills – three times the amount of general waste (200 million tonnes). The Council, together with construction sector stakeholders, must consider the opportunities for sorting, reusing and repurposing construction and demolition materials. We have levers in place that enable us to require waste management and minimisation plans by developments over $2 million. However, there is not sufficient resourcing or processes to critique,

provide support, and enforce these plans. Regionally, an automated calculator has been developed that shows the baseline requirements based on value and size of a construction process which, over time, could be developed to support this.

Added to this, New Zealand does not currently have national legislation surrounding construction and demolition deconstructing practices, making it difficult for local authorities to create proper and consistent criteria. Central Government intervention and leadership will help to support the market shifts required. Kāinga Ora adopted an 80% diversion from landfill target. They have worked with a deconstruction company in Auckland on their first pilot involving deconstruction of 10 homes and rebuilding 50 homes - and achieved 85% diversion.[56]

In Auckland, pilot programmes have proven it's possible to deconstruct a house at equal or better pricing than demolition and have successfully diverted 87% of the material from landfill.[82] Evidence indicated that material sorting should ideally occur at the development site to minimise the potential damage and contamination. Some smaller collectors provide residential refurbishments with skips bins and do a sort at the depot before sending the non-valuable items to the landfill. Given Wellington's density and topography, the Council will need to undertake further investigation to consider what would work best for our city to achieve a target rate of 80% diversion from landfill as the city undertakes further intensification.

Not only does Wellington need services in the city for deconstruction, but we also need a facility that can receive, store and market the materials for reuse, repurposing, and regenerating. This facility needs to be in place as soon as practical – likely in the three-to-five-year horizon. For too long it's been too easy to throw construction and demolition waste into a hole in the ground. The wrong incentives have been in place for the landfill operators meaning the profit comes from filling the hole. The Council will explore the potential for requiring the Class 2-4 landfill operators to run mandatory diversion and recycling facilities or developing our own, for example at Kiwi Point Quarry. We will also support the sector to develop the end markets for the reuse and recycled materials.

The Council can also consider our own bylaws and advocate to central government for change. We have introduced a requirement to provide Construction and Demolition Waste Management Plans for projects worth more than $2 million and has a provision for licencing construction and demolition waste operators. Through this process (which is under development) the Council will have the ability to influence how these materials are managed, but there needs to be appropriate infrastructure in place for these materials to be recovered.

There currently is not sufficient resourcing for the review, approval and enforcement of the Construction and Demolition Waste Management Plans. We should consider providing examples of a good plan, and alternatives for the construction and demolition work. The resale network isn't currently in place; the Councils needs to investigate what role we can play to stimulate this. Furthermore, we should consider whether the $2 million threshold is too high and whether reducing that amount to a lower figure, such as $500,000, will encourage the reuse, recovery and resale network in the construction industry.

INCENTIVISE COMPLIANCE OF COUNCIL'S REGULATIONS TO ENSURE ALL RESOURCES ARE RECOVERED

In order to successfully minimise waste in Wellington, the Council will need to review our regulatory levers to ensure they are fit-for-purpose, effective, and ultimately leading to change in the sectors which are the largest contributors to waste in Wellington. This is particularly crucial given possible regulatory changes being considered by central government.

The Ministry for the Environment is considering banning organics into landfills. In addition to providing accessible and convenient organic diversion services, this anticipated change will require adequate enforcement resource to ensure compliance.

[56] https://kaingaora.govt.nz/news/reducing-waste-through-deconstruction/

To date, the Council's resources to undertake enforcement of the Waste Bylaw have had to be split between other regulatory compliance services the Council must deliver. Considering the Council's compliance and enforcement levels of service for waste will be a visible and important piece in achieving our strategy. For example, through the Bylaw the Council requires Waste Management Plans to be provided and reported on (for significant events, multi-unit developments and larger construction projects). This will mean that applicants/ developers/ organisers will need to think carefully about how materials are managed, and then report back to the Council. The regulatory component will be crucial to measure the performance and outcomes of the other actions the Council will be taking to minimise waste.

PRIORITY ACTIONS

- Support the provision of consistent, equitable and accessible kerbside waste collections for Wellingtonians
- Work together with households, producers, collectors and reprocessors to extract the maximum value possible from food that would otherwise be wasted
- Implement a kerbside organic collection and processing service to generate biofertilisers and renewable energy from organic waste
- Promote and encourage the re-use of materials for the same purpose and recover materials so that they can be re-used throughout Wellington
- Work with partners and stakeholders to scale up interventions to support the citywide goal to be a leader in minimising the use of resources and maximisation of reuse and recovery
- Create a waste ecosystem that demands and influences the right behaviours for desired outcomes
- Support the creation of markets for secondary materials

OBJECTIVE 4: WASTE THAT CANNOT BE AVOIDED, REDUCED, REUSED, OR RECYCLED IS MANAGED SAFELY

We aim to treat waste infrastructure built today as a finite resource and carefully manage it.

WHY IS THIS IMPORTANT?

The Council is currently operating the city's 37th landfill in 157 years. We are committed to ending the legacy of digging new landfills every time one is filled. The Council's aspiration is that the Southern Landfill located at Happy Valley is the city's last one, however the city will continue to need landfill capacity for some time yet as transitioning our economy to ensure products and consumables are reused, recycled and regenerated requires time to build the right facilities to collect, repair, process and remanufacture, and to undertake behaviour change. It will also take time for global product redesign to completely design waste out of the system.

The role of a landfill is to manage waste through burying waste materials. Landfills are also play a critical piece of infrastructure to support the resilience of cities, particularly when managing and disposing of waste materials safely in response to emergencies and natural disasters[57]. The COVID-19 Pandemic illustrated how crucial core municipal functions such as landfills are, as they were required to safely manage the significant

increase in medical waste, as well as household waste due to people spending more time at home. Landfills are crucial infrastructure to maintain the resilience of cities.

Without landfills, people would dump waste in vacant spots and create an unhealthy environment.[58] Landfills themselves can also have negative effects on nearby residents, wildlife and waterways, so it is vitally important that landfill sites are well-managed. This includes preventing animals from feeding off the landfill and ensuring the design of the landfill prevents leachate and enables gas capture. As Wellington eliminates the need for landfills, there will continue to be legacy hazardous waste products that will require disposal and management while mitigating possible risks to the health and safety of our people and environment. Hazardous waste requires segregation and management to prevent environmental and population health issues. Hazardous waste contains materials that may catch fire, explode or be corrosive or toxic and can include asbestos, paints, cleaners, batteries, pesticides and aerosol cans.[59]

OUR APPROACH

ALLOW ONLY RESOURCES THAT CANNOT BE REUSED OR RECYCLED IN THE LANDFILL

Currently, approximately 1,745 tonnes of waste are deposited into the Southern Landfill every week. Without change, this will increase as the population grows. About a quarter of this is special waste, or potentially hazardous waste. The bulk of this is made up of sludge disposal. As described in Objective 1, the Council is re-developing our approach to managing sludge; this will unlock the potential for recycling and regenerating waste as resources.

The Ministry for the Environment are also increasing the waste disposal levy from $10/tonne to $60/tonne by 2024. This will increase the pool of funds available to Wellington City Council in direct levies and via targeted funding from the Ministry for the Environment. Significant waste reduction to landfill will also reduce our emissions trading scheme financial liability.

This will enable a shift to treat the landfill as a precious asset and means only allowing that which cannot be avoided, reduced, reused, recycled or regenerated, into the landfill. If this can be achieved, Wellington City should not need another landfill – at least not for a very long time.

Delivering on the first three objectives and prioritising investments needed to enable reuse, recycling, and regeneration of resources will result in the decreased reliance on landfill capacity. Regulations, education, and enforcement will also support this shift. To ensure they are fit for purpose will require a review of the Council's policies and bylaws, as well as ensuring enforcement and education activities are geared for success. Looking at the process of delivering resources to the refuse transfer station, and how resources can be diverted from the landfill at this point, also requires investigation on how to achieve this safely.

Materials that cannot be reused or recycled include asbestos and contaminated soils. Asbestos, when airborne, provides a risk to peoples' health as it can enter the respiratory system. The use of asbestos was banned in the 1990s. As it is removed from buildings through demolition, there is a need to dispose of and manage it safely. The Council's current asbestos management protocols have been recently updated to be more stringent. The Council will only be accepted at the landfill from approved asbestos handlers, and it must be pelletised and double wrapped. The pellets are carefully placed into the landfill, GPS tagged and covered – an expensive process to manage.

Contaminated soils come from sites that have exposure to petroleum or chemicals, such as disestablished petrol stations. Materials must be tested first, and disposers must inform the landfill of what contaminants the soil contains. The current consent conditions require contaminated soil to be disposed of in the landfill – if the consent allowed, it could be used as capping material. As landfill capacity is decreasing, contractors will need to identify alternative locations for this material.

[58] https://www.conserve-energy-future.com/advantages-disadvantages-landfills.php
[59] https://www.epa.gov/hw/universal-waste

CAPTURE GAS EMISSIONS FROM LANDFILL

Capturing gas emissions from the landfill and convert this to energy cleanly involves installing wells and pipes to capture the gas to an electricity generator. The Council has been doing this for the past 20 years but have gained little benefit from the process. Added to this, the Council must pay for the carbon emissions under the Emissions Trading Scheme (ETS) based on calculation of our unique emission factor (UEF); our current UEF is 0.89:1. By establishing new contractual arrangements with a specialist landfill gas capture service provider, the Council has incentivised UEF reduction, assisting carbon footprint reduction and better utilising the gas available, in turn reducing our payments under the ETS.

ADDRESS IMMEDIATE CLEANFILL GAPS

Wellington City has two cleanfill sites in the region for construction and demolition waste, however one has recently reached capacity and the other is considering closure as it nears its current capacity. This creates an immediate issue with regards to where and how the Wellington's construction and demolition waste can be disposed, as well as testing the resilience of the city's waste system when managing waste from slips and floods. Without addressing this gap, the Southern Landfill may become the only option for disposing of cleanfill, which will consume the limited capacity available there. The other alternative is transferring cleanfill waste out of the region.

The Council is already acting to address this issue, with a new cleanfill site at Kiwi Point Quarry planned to be operational by the end of 2022. However, this is a short-to-medium term solution. More work is required to include the full waste hierarchy process to minimise the volumes going straight to landfill. The Council will investigate where and how is best to facilitate or provide construction and demolition sorting and remanufacturing services and the required infrastructure to do this.

INCREASE RESILIENCE TO REDUCE OUR WASTE SYSTEM'S VULNERABILITY

The COVID-19 pandemic impacted nearly every aspect of running a city, including the management of waste. The pandemic produced increased quantities of household waste due to national and localised lockdown orders, and produced increased hazardous medical waste from both medical facilities and households.

The global pandemic, as well as the range of disaster events across Aotearoa New Zealand, has exposed vulnerabilities in the resilience of our waste system and has increased the risk of system failure. The traditional approach to increasing waste system resilience has been to plan for post-event response and recovery. To help change the way Wellington manages waste into the future, system resilience needs to include greater focus on the role it plays before an event.

The Zero Waste Strategy aims to increase resilience to reduce our waste system's vulnerability to natural and socio-economic events, and to support our city to absorb, accommodate, adapt to, transform and recover from the effects of a hazard. Increasing system resilience is complex due to the diverse network of partners and stakeholders and the evaluation needed to assess physical, social, economic, and natural conditions.

The Zero Waste Strategy, supported by the Wellington Waste Action Plan, will aim to build waste system resilience by:

- Building a socio-economically resilient waste management system that can build back stronger faster and better after a shock (e.g., China National Sword) or disaster (e.g., earthquakes, biosecurity incursions)
- Shift from disaster event management to proactive disaster event risk management
- Establishing long-term local and regional resilience strategies.

PRIORITY ACTIONS

- Manage the treatment and disposal of sludge
- Provide for and manage emergency waste

- Ongoing management of the Southern landfill to support Wellington's transition to a zero waste city
- Work with partners and stakeholders to scale up interventions to recover and divert as much waste from landfill and ensure that any remaining waste is appropriately managed at Southern landfill to protect our environment

ZERO WASTE OUTCOMES

We will know the implementation of this strategy has been successful when we see the following outcomes occurring, demonstrating the cumulative positive effects of a zero waste future for Wellington.

Reliable waste data and insights are critical to measure the below outcomes. The Council will work with industry, partners, operators and community to gather accurate data to measure waste outcomes in the city. This will include identifying gaps in data collection, and the required solutions to address these. Once a review of the data capture processes is complete, a more comprehensive plan will be developed to identify the o measures and indicators for this strategy's outcomes.

OUTCOME 1

WELLINGTON MOVES TOWARDS A CIRCULAR ECONOMY

Taking the lead to design waste out, empowering businesses, organisations and communities to avoid unnecessary resource use. This involves intervention at the earliest point in the waste lifecycle – encouraging the redesign of systems and products in businesses and at the Council so waste is not created in the first place.

OUTCOME 2

THE COMMUNITY IS EQUIPPED TO REDUCE WASTE

Make it convenient for residents, businesses and consumers to recycle their waste. To do this, we need to ensure the networks, services and infrastructure are in place to enable residents, consumers and businesses to sort their waste for reuse, recycling, and composting, making waste minimisation the default mindset of everyone.

OUTCOME 3

RESOURCES ARE REPURPOSED AND REGENERATED IN WELLINGTON

We will recover and process materials to regain value from resources. This will return value to the materials collected through the Council's waste management services, minimising the reliance on virgin resources.

OUTCOME 4:

LANDFILL CAPACITY IS TREATED AS A FINITE RESOURCE

Treating the waste infrastructure built today as a finite resource requires careful management of residual waste. It recognises that transition to a zero waste city will take time, and that hazardous waste will continue to need to be manged in the long-term for the health and safety of our people and the environment.

OUR ZERO WASTE TARGETS

The overarching targets each of these outcomes will collectively contribute to are:

KERBSIDE WASTE:
Reduce per capita kerbside waste by **40%** by **2030**

WASTE TO LANDFILL
Reduce total waste to landfill by **50%** by **2030**

GAS EMISSIONS
Reduce biogenic methane gas emissions by at least **30%** by **2035**

CONSTRUCTION AND DEMOLITION WASTE
Divert **50%** of C&D waste from landfill by **2030**; **70%** by **2035**

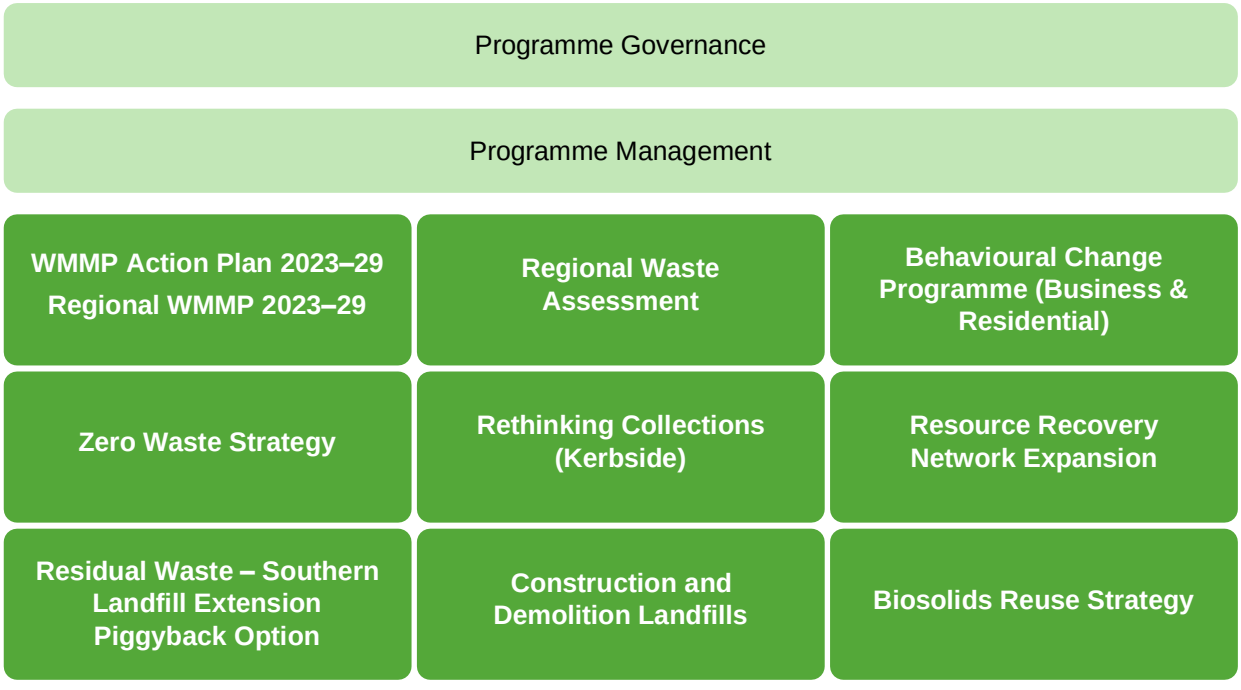
ORGANIC WASTE
Divert **50-70%** of organic waste from landfill by **2030**

ZERO WASTE STRATEGY AND THE ZERO WASTE PROGRAMME

This strategy is a key contributor to the wider direction setting of the Council's Zero Waste Programme. The Zero Waste Programme is the Council's delivery vehicle for zero waste projects and initiatives in Wellington.

This programme is a part of the Council's Priority Investment Programme, reflecting the significant level of investment the Council is committing to reduce waste in our city. The Council's Investment Delivery Framework is a quality assurance and financial viability assessment tool. This framework is being applied to the Programme's projects and initiatives to help assess their viability.

THE ZERO WASTE PROGRAMME:



REPORTING ON PROGRESS

Regular reporting on the strategy and accompanying action plan will take place through the Zero Waste programme governance structure. This will include measurement and reporting on progress towards the strategy's outcomes.

A review of this strategy will take place in 18 months' time. This will primarily assess progress on the priority actions.

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Wellington City Council – Draft Waste Action Plan

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Statement of Purpose

This Draft Waste Action Plan (Action Plan) sets out how Wellington City Council (WCC) will work towards and achieve the outcomes of the draft Waste Strategy. Specifically, the Action Plan sets out the priority actions and initiatives to:

- Support the shift to a circular economy
- Contribute to the city's carbon emissions reduction
- Reduce the amount of material and resulting waste entering the city and our landfill

To guide the above, the Action Plan has been developed under the strategic direction and goal of supporting Wellington City to be a leader in minimising use of resources and maximising whakamahi anō – reuse and recovery. This is in keeping with Wellington's aspiration to reduce disposal to landfill and rethinking how Wellington City manages waste and how this material should be managed into the future.

Why Do We Need a Waste Action Plan?

The Wellington City Council Waste Management and Minimisation Plan Action Plan (Action Plan) is a key document that will set the activities for the city's waste management and minimisation journey over the next 6-years whilst accounting for the current operations needed to maintain waste management activities and services. This Action Plan is an update to that included in the 2017-2023 Wellington Region Waste Management and Minimisation Plan (WRWMMP) and as such will be included in the next WRWMMP. The revised Plan is Wellington-specific and sets out a series of tangible and measurable priority actions and initiatives aligned to each of the four draft Waste Strategy outcome areas.

National legislative and regulatory changes, combined with evolving strategies, are signalling a push to transition to a circular economy and a drive to heavily reduce carbon emissions. A circular economy means keeping resources in use for as long as possible and regenerating them when they reach their end of life. We have identified a need to create a Wellington City Council-specific waste action plan that aligns with the strategic direction of central government as well as the wider direction of Wellington City to effectively contribute to and deliver on the WRWMMP.

The Council's community outcomes (refer to diagram below) reflect the four wellbeings and provide us with overarching direction for delivering our waste services.

One of the priority objectives in the 2021 Long Term Plan is accelerating zero-carbon and waste-free transition. The desired outcomes of this objective are communities and the city economy adapting to climate change, development of low carbon infrastructure and buildings, and increased waste minimisation.

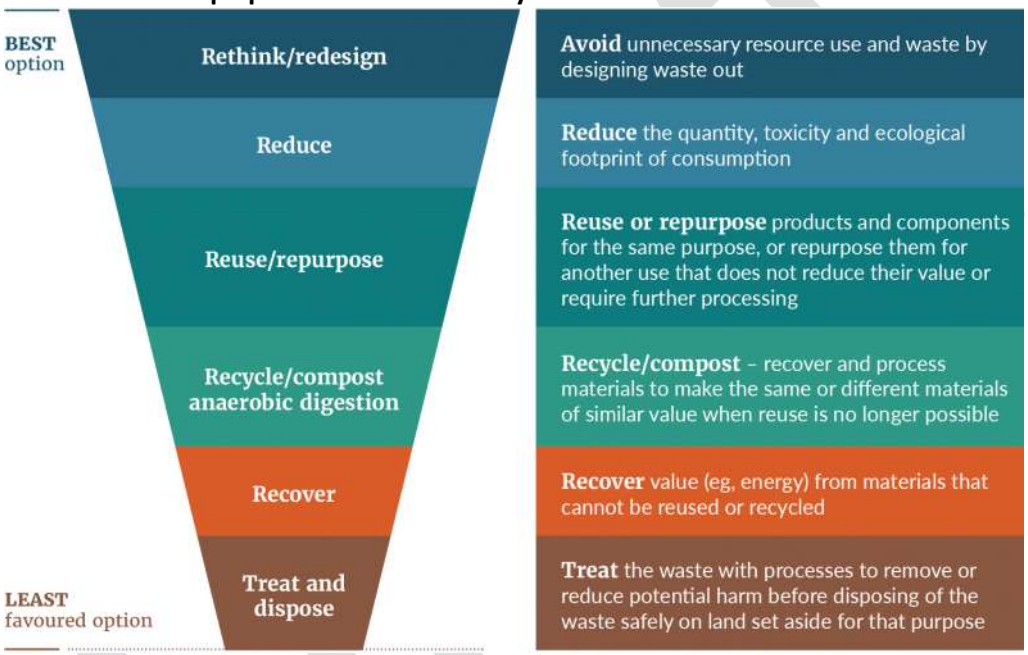
Defining the Action Plan

The Action Plan builds on and expands the 2021 WCC Waste Minimisation Roadmap which provided a strategic 30-year framework for the management and minimisation of waste and waste resources within Wellington City. This Action Plan also aligns with the draft Waste Strategy and Tūpiki Ora – Māori Strategy, and the climate change action plan Te Atakura – First to Zero. The core community outcome delivered on being environmental wellbeing – by preventing the use of virgin resources, as well as resources that could be reused, repurposed and remade from entering the landfill and from creating harmful pollution of our land, air and water. This Action Plan also has implications for Wellington's economic wellbeing, as our economic activities are the creators and suppliers of products and services that we all consume.

Importantly, and recognising Council's commitment to Te Tiriti o Waitangi – The Treaty of Waitangi, this Action Plan endeavours to closely align the waste and resource management and minimisation initiatives to Te Ao Maori.

Waste management and minimisation is a significant piece of the puzzle when it comes to achieving a circular economy. As global economies including Aotearoa New Zealand transition to greater resource efficiency and move towards a circular economy, it is expected that demand on resources will reduce over time. This is expected to result in a demonstrable reduction in environmental impacts. The circular economy is another way to express the waste hierarchy, which has long been a tool to illustrate the most important contributors to minimising waste. We see these two concepts as inherently related, as illustrated below:

Pūnaha whakarōpū para - Waste Hierarchy



The Action Plan sets out a new approach that respects the environment and provides for the long-term health and prosperity of Wellington. This new approach is aligned with the principles of the waste hierarchy and sets out how Wellington City will move towards a circular economy by keeping materials and products in the economy for as long as possible and keeping waste to a minimum.

Our Role in Waste

The Council has many roles, which are outlined below and described in terms of how we can influence waste outcomes. Waste is also affected by how the Council carries out its activities. The Action Plan acknowledges these roles and uses them to help define our role in delivering successful initiative outcomes.

Provider – The Council's core role is to invest and maintain civic infrastructure and facilities, which provide the foundation for businesses and residents to thrive. This includes transport, water and waste infrastructure, as well as civic facilities and venues. We provide waste services such as kerbside rubbish and recycling collections, the Southern Landfill and Tip Shop & Recycle Centre, and organics composting. The Council can influence waste reduction outcomes through our procurement policies and practices.

Funder – We provide support for businesses and communities by funding initiatives which will help our city to avoid, reuse, recycle and recover resources and waste. For example, our Waste Minimisation Seed Fund supports innovative solutions for reducing waste and diverting organics from landfill. Our Environmental Sustainability Performance Fund supports residential developments to design a green certified building, conditional on reducing construction waste. Our Climate and Sustainability Fund supports communities and businesses to reduce carbon emissions.

Partner – We also partner with others to achieve waste minimisation outcomes, recognising where local providers can deliver alongside Council. We collaborate with Councils across the region to coordinate our work programmes and collectively solve problems, for example through the Wellington Region Management and Minimisation Plan, a cross-Council regional waste minimisation plan. We also partner with mana whenua so we can align with a Māori worldview of waste minimisation. Our Indigenous people have an in-depth knowledge of Aotearoa and Wellington's environment, and we must work together to draw from whakaaro Māori and achieve waste minimisation aspirations for Māori.

Facilitator – We bring people together to discuss issues, share ideas and connect people. This includes working with schools, communities and businesses to rethink waste. We offer free waste minimisation and composting education sessions for schools, community groups and workplaces. We also offer tours of the Southern Landfill for people to see first-hand where disposed waste ends up, and the alternative solutions available through the Tip Shop and Capital Compost.

Advocate – We advocate on behalf of our city and communities where we have no direct control. For example, through submitting to central government agencies and Parliament select committees on waste and environmental legislation and regulation changes. We also advocate internally to ensure initiatives being delivered by the Council's workforce are joined up and aligned to our strategies. This Strategy will set the direction for our Council's and community's waste minimisation efforts across all our work.

Regulator – Our regulatory teams provide services such as liquor licensing and building consenting which are important for business success. In the waste space, we have a Solid Waste Management and Minimisation Bylaw and a Trade Waste Bylaw. Using our current bylaws and consenting processes, we can influence cross-sector outcomes to achieve waste avoidance and reduction. The Solid Waste Bylaw is anticipated to have substantial influence on how groups consider the management of waste and will also be an important opportunity to collect data to inform the Council's waste minimisation efforts.

Collective Ownership of the Waste Problem

Residents, businesses and the Council all have a vital role to play in protecting Wellington's rawa taiao - environmental resources. We all need to make responsible choices for managing and minimising our waste by understanding our individual and community impact on our city and our environment. As a collective issue, waste demands a collaborative solution. To achieve the Action Plan objectives and targets, a model of collective responsibility and action is critical to achieving our zero waste outcomes. Transitioning from a take-make-dispose society to a circular economy where we keep resources in use for as long as possible is a vital step towards eliminating waste, circulating resources and adopting a low carbon, resource efficient system.

Māori Responsibility

Tūpiki Ora has eight guiding principles which provide direction on how the Council conduct ourselves, undertake the mahi required, and make decisions that are mana enhancing for Māori in our community. Through this Zero Waste Strategy, we are placing four of the Tūpiki Ora guiding principles front and centre in how we bring about the change required to make Wellington a Zero Waste city:

Mana ōrite: we recognise equity as being important to Tūpiki Ora, to our relationships and partnerships, and to how we conduct ourselves. The Council will look for partnership opportunities with mana whenua and all community stakeholders who have a keen interest in the protection of our natural environment and the minimisation of waste.

Rangatiratanga: we recognise and respect each other's autonomy, mandates, constraints and priorities, and acknowledge and respect our differences. The Council will use our services and infrastructure to meet our community's goals for zero waste, acknowledging that as the service provider for waste management in the city, we hold the greatest opportunities to effect change.

Pito mata: we recognise the potential for opportunities and growth in all possible situations. We will do our very best to pursue the opportunities that will lead us to greater and increased whānau wellbeing. The Council, through the behaviours change required in this strategy, will ensure our city's environment is left in a better, healthier state than when we found it, saving this previous taonga for future generations.

Te auaha: we recognise that working together means partners will seek to develop new, creative, and innovative models to achieve desired outcomes. The Council will provide opportunities, through the delivery of the Zero Waste Programme, for local partners and

stakeholders to experiment and innovate in order to deliver the most effect services and waste minimisation system to Wellingtonians.

This working approach with mana whenua and the community commits Wellington City Council to:

Endeavour to act as kaitiakitanga to protect and enhance the mauri of resources by working towards a circular economy approach.
Engage with, empower and involve our community in changing behaviour and solutions
Apply a waste hierarchy approach, to increasingly shift our effort and focus towards enabling redesign, reduction and reuse.

We believe taking a circular economy approach to the waste hierarchy helps us to understand the complexity of waste and resources and enables us to prioritise; focusing efforts where the use of resources begins and follow it through its lifecycle.

Engagement

Through the development of this draft Waste Action Plan, Wellington City Council has engaged with multiple internal and external stakeholder groups. Internally, the Council's Waste Operations, Zero Waste, Mataaho Aronui – Māori Strategic Outcomes, Climate Change Response teams, Commercial Partnerships, Resource Consenting, Community Services and, Parks, Sports and Recreation have contributed input and advice on this strategy's content.

External partners and stakeholders engaged for the development of this Action Plan include representatives of Taranaki Whānui, Waste Free Welly, multiple residents' associations, EnviroWaste, Waste Management and the Council's Environmental Reference Group.

The input provided by our internal and external partners and stakeholders has been invaluable in developing the priority actions and detailed initiatives to underpin Wellington City to be a leader in minimising the use of resources and maximisation of whakamahi anō – reuse and recovery.

Our Overarching Waste Minimisation Goal, Focus, Objectives, Outcome Areas, Initiatives and Targets

In line with Wellington City Council's 2040 vision, the following goal developed in consultation with stakeholders, sets the strategic direction for this Action Plan:

Wellington City is a leader in minimising the use of resources and maximisation of whakamahi anō – reuse and recovery

Our Waste Action Plan Focus

In support of this goal, this draft Action Plan seeks to promote a holistic approach to waste minimisation planning and delivery in line with Te Ao Māori. Accordingly, the following focus areas attempt to reflect the significance of the interconnectedness and interrelationship between all living and non-living things that is essential within the Māori world view.

1. **Ōhanga āmiomio (circular economy) -** To mitigate the environmental impacts of Wellington City by reducing resources used and increasing reuse and recovery of resources
2. **Kaitiakitanga whakanaonga (product stewardship) -** To enable and partner with mana whenua, communities and businesses to reduce resource use and waste
3. **Whakahaere hūrokuroku i te para (sustainable waste management) -** Manage any remaining waste in the most sustainable way according to the principles of the pūnaha whakarōpū para (waste hierarchy)

This draft Action Plan also seeks to:

- give effect to circular economy outcomes and encourage and promote waste management and minimisation activities that support better material management such as recycling, reprocessing, and remanufacturing;
- accelerate Wellington City's zero-carbon and waste-free transition - with communities and the city economy adapting to climate change, development of low carbon infrastructure and buildings, and increased waste minimisation; and
- provide the foundation to support current and future Council waste and resource management initiatives.

Our Wellington Waste Action Plan Objectives and Priority Areas

Our draft Waste Strategy sets out four objectives as outlined in this section which set the future direction for Wellington's waste system. To give effect to these objectives, this draft Waste Action Plan sets out the Priority Areas to drive and focus efforts to ensure delivery of each objective.

The Waste Action Plan Priority Areas are listed below and are specific to each objective.

Objective 1: Products and Services Provided in Wellington are Waste Free

We aim to empower businesses, organisations and communities to avoid unnecessary resource use and design waste out.

Priority Actions

- Deliver the benefits of re-use and waste prevention through active use of Council regulations, compliance activities and enforcement
- Deliver lasting behaviour change interventions by making people understand the benefits of change and then help them make that long term change easy
- Work with partners and stakeholders to empower individuals to have courage to make a change in the world by inspiring individuals to reduce waste and live a more sustainable life
- Work with Central Government agencies to shape policy decisions that can be developed into actions that prevent waste
- Transform Wellingtonians relationship with packaging
- Work with partners and stakeholders to support the redesign of systems, including changing design and production, creating new markets for reuse and recycling and inspiring Wellingtonians to cut waste, save resources and reduce Greenhouse Gas emissions
- Encourage businesses, social enterprise and charities to create local and regional markets for waste materials

Objective 2: Waste Reduction is Made Attractive and Accessible to Wellingtonians

We aim to make it convenient for residents, businesses and consumers to recycle their waste.

Priority Actions:

- Delivery of consistent, equitable and accessible waste collections
- Manage funds and revenues to support Wellington's re-use, re-purpose and recycling capacity by creating a catalyst for other investment
- Deliver value for money waste services to Wellingtonians
- Deliver sustainable waste services to Wellingtonians
- Innovation encouraged to support delivery of Wellingtons transition to a zero-waste future
- Monitoring and evaluation of waste arisings to support effective policy making and insights
- Deliver lasting behaviour change interventions by making people understand the benefits of change and then help them make that long term change easy
- Work with Central Government agencies to inform and shape system changes
- Promote and encourage the re-use of materials for the same purpose and recover materials so that they can be re-used throughout Wellington
- Increase the amount of material that is recovered, re-used and recycled to minimise waste and reduce the amount of virgin materials used in production
- Work with partners and stakeholders to scale up interventions to support the citywide goal to be a leader in minimising the use of resources and maximisation of reuse and recovery

Objective 3: The Infrastructure and Systems to Increase Resource Circularity is Established

We aim to recover and process materials to regain value from resources.

Priority Actions:

- Support the provision of consistent, equitable and accessible kerbside waste collections for Wellingtonians
- Work together with households, producers, collectors and reprocessors to extract the maximum value possible from food that would otherwise be wasted
- Implement a kerbside organic collection and processing service to generate biofertilisers and renewable energy from organic waste
- Promote and encourage the re-use of materials for the same purpose and recover materials so that they can be re-used throughout Wellington
- Work with partners and stakeholders to scale up interventions to support the citywide goal to be a leader in minimising the use of resources and maximisation of reuse and recovery
- Create a waste ecosystem that demands and influences the right behaviours for desired outcomes
- Support the creation of markets for secondary materials

Objective 4: Waste that Cannot be Avoided, Reduced, Reused, or Recycled is Managed Safely

We aim to treat waste infrastructure built today as a finite resource and carefully manage it.

Priority Actions:

- Manage the treatment and disposal of sludge

- Provide for and manage emergency waste
- Ongoing management of the Southern landfill to support Wellington's transition to a zero waste city
- Work with partners and stakeholders to scale up interventions to recover and divert as much waste from landfill and ensure that any remaining waste is appropriately managed at Southern landfill to protect our environment

Our Waste action Plan Initiatives

The ability for this draft Action Plan to support the targeted implementation of the specific initiatives and priority areas is a critical element to successful delivery of the targets. In doing so, Wellington City Council hopes to become a leader in minimising the use of resources and maximising whakamahi anō – reuse and recovery.

The range of Initiatives include, and build on, the existing extensive Council waste and resource management work programme with the intent to not 'reinvent the wheel' but rather to incorporate and build on existing knowledge and project work.

The Initiatives are built on a strong foundation which has been expanded on to help Wellington City place more emphasis on waste prevention and behaviour change and maximising the benefits and use of materials over disposal.

For each Initiative, there are a range of ways that these can be delivered and may require further expansion in detailed project plans, including budgets, resourcing and delivery timeframes as appropriate.

Further, the range of Initiatives are not intended to be all-inclusive; some can be acted on now and others that will be implemented over a longer timeframe. With this in mind, this draft Action Plan sets out a proposed Initiative delivery duration established over five time periods (0-5 years, 5-10 years, 10+ years, 20+ years, 30+ years).

Our Wellington Waste Action Plan Targets

The ability to measure success against the priority actions is supported by a range of overarching targets that each of the four objectives collectively contribute to. The targets that apply to this draft Waste Action Plan are:

Kerbside Waste

Reduce per capita kerbside waste by **40% by 2030**

Waste to Landfill

Reduce total waste to landfill by **50% by 2030**

Greenhouse Gas Emissions

Reduce biogenic methane gas emissions by at least **30% by 2035**

Construction and Demolition Waste

Divert **50%** of construction and demolition waste from landfill **by 2030; 70% by 2035**

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Organic Waste

Divert **50-70%** of organic waste from landfill **by 2030**

The Waste Action Plan and the Zero Waste Programme

As the Waste Strategy is a key contributor to the wider direction setting of the Council's Zero Waste Programme, this Waste Action Plan sets how the Zero Waste Programme will give effect to the four objectives and work toward achieving the five targets.

To do this, the Action Plan sets out the Priority Actions to be achieved by Objective supported by a range of detailed Initiatives which the Zero Waste Programme will use to set the project delivery framework.

As such, the Action Plan is the foundation on which current and future programme delivery will be developed, implemented, monitored and achieved.

Waste Strategy Objectives	Priority Actions	Initiatives	Initiative Alignment with the Zero Waste Programme (ZWP) Business Cases	Initiative Alignment with the Zero Waste Programme (ZWP) Projects	Role Of Council	Degree of Initiative Complexity	Ease of Implementation	Initiative Priority	ZWP priority	Initiative Delivery Duration	T1 Reduce total waste to landfill by 50% by 2030	T2 Reduce per capita waste	T3 Reduce biogenic methane gas emissions	T4 Divert 50% of C&D waste from landfill	T5 Divert 50-70% of organic waste from landfill
Objective 1: Products and services provided in Wellington are waste free We aim to empower businesses, organisations and communities to avoid unnecessary resource use and design waste out	Deliver the benefits of re-use and waste prevention through active use of Council regulations, compliance activities and enforcement	Deliver waste prevention measures to control the number of products and materials used in Wellington that cannot be re-used, recycled or re-purposed		Behaviour Change Project	Provider	Low Complexity	Moderate Complexity	High	Moderate	ongoing	Moderate	High	Neutral	Neutral	Neutral
		Council regulations integrate and enforce waste minimisation in line with the waste hierarchy and the circular economy		Solid Waste Management and Minimisation Bylaw - Waste Management Plans	Provider	Low Complexity	Low Complexity	High	Moderate	0-5 years	Neutral	High	Moderate	High	High
		Develop, resource and deliver stronger Council compliance and enforcement to incentivise domestic and commercial waste minimisation behaviours		Waste Operator Bylaw Implementation	Regulator	Low Complexity	Moderate Complexity	High	High	0-5 years	Neutral	High	Neutral	High	High
	Deliver lasting behaviour change interventions by making people understand the benefits of change and then helping them make that long term change easy	Create new norms and habits by testing behavioural interventions to achieve zero waste outcomes		Behaviour Change Project	Provider	Low Complexity	Moderate Complexity	High	Moderate	0-5 years	Neutral	High	Moderate	Neutral	Moderate
	Work with partners and stakeholders to give individuals courage to make a change in the world and inspiring them to reduce waste and live a more sustainable life	Identify, implement and monitor simple and lasting internal Council waste reduction activities to accelerate the fight against climate change		Behaviour Change Project	Provider	Low Complexity	Low Complexity	High	High	0-5 years	Neutral	High	Moderate	Moderate	High
		Cooperate with our partners to develop shared waste reduction objectives		Behaviour Change Project Regional WMMP 2023-29	Partner	High Complexity	High Complexity	High	Extremely High	ongoing	Moderate	High	Neutral	Moderate	Moderate
		Work with stakeholders to recognise the difference between encouraging recycling and the more complex behaviour change needed for waste prevention		Behaviour Change Project	Facilitator	High Complexity	High Complexity	High	High	ongoing	Moderate	High	Neutral	Neutral	Moderate
	Work with Central Government agencies to shape policy decisions that can be developed into actions that prevent waste	Collaborate and work with Central Government agencies to inform the transformation of Aotearoa New Zealand's waste system by responding to consultations and inputting into initiatives including those that will support Wellingtons transition to be net zero carbon by 2050		ZWP Communications & Engagement Central Government Advocacy and Relationship Management Zero Waste Strategy	Advocate	Moderate Complexity	Moderate Complexity	Moderately High	Moderate	ongoing	Moderate	High	Moderate	Moderate	High
	Transform Wellingtonians relationship with packaging	Create opportunities for Wellingtonians to shift to re-use and refill for many everyday items by helping mainstream shopping to displace single-use packaging and encouraging business to adopt re-use behaviours	Resource Recovery Network Expansion (RRNE)	Behaviour Change Project Resource Recovery Network Expansion (Business Case)	Facilitator	High Complexity	High Complexity	Moderately High	Moderate	ongoing	Moderate	High	Neutral	Neutral	Neutral
	Work with partners and stakeholders to support the redesign of systems, including changing design and production, creating new markets for reuse and recycling and inspiring Wellingtonians to cut waste, save resources and reduce Greenhouse Gas emissions	Focus on creating a zero-carbon city by working with partners and stakeholders to design and deliver better waste outcomes and support better upfront design of products and purchasing decisions by Wellingtonians		Behaviour Change Project	Partner	High Complexity	High Complexity	Moderately High	Moderate	ongoing	High	High	Moderate	Neutral	Neutral
		Waste minimisation embedded into Council policies and procedures that can be developed into actions that prevent waste		Waste Operator Bylaw Implementation Zero Waste Strategy Regional Waste Assessment	Provider	Moderate Complexity	Moderate Complexity	High	Extremely High	0-5 years	Neutral	High	Moderate	Moderate	Moderate
	Encourage businesses, social enterprise and charities to create local and regional markets for waste materials	Encourage and foster new sustainable businesses and remanufacturing facilities to re-locate or establish within Wellington City or the wider Region to support waste sector employment and reduce the export of waste out of region and/or country		Behaviour Change Project	Facilitator	High Complexity	High Complexity	Moderately High	Moderate	ongoing	High	High	Neutral	High	Neutral
		Develop and embed sustainable procurement to achieve better environmental, economic, cultural and social outcomes (e.g., use Councils purchasing power to encourage circularity in the use of materials)		Solid Waste Management and Minimisation Bylaw - Waste Management Plans	Provider	Low Complexity	Moderate Complexity	High	High	0-5 years	Moderate	High	Neutral	High	Neutral
		Work in partnership with Central Government agencies to advocate for mechanisms to support waste reduction activities aligned with the principals of the waste hierarchy and that are connected with existing end-markets		ZWP Communications & Engagement Central Government Advocacy and Relationship Management	Advocate	High Complexity	Low Complexity	Moderately High	Moderate	ongoing	Moderate	High	Moderate	Moderate	High
		Align activities that recover waste materials with external drivers to maximise material recovery and minimise disposal to landfill		Behaviour Change Project Resource Recovery Network Expansion (Business Case) Residual Waste – SLEPO (Business Case)	Provider	Moderate Complexity	Moderate Complexity	High	Extremely High	ongoing	Moderate	High	Moderate	High	High

Waste Strategy Objectives	Priority Actions	Initiatives	Initiative Alignment with the Zero Waste Programme (ZWP) Business Cases	Initiative Alignment with the Zero Waste Programme (ZWP) Projects	Role Of Council	Degree of Initiative Complexity	Ease of Implementation	Initiative Priority	ZWP priority	Initiative Delivery Duration	T1 Reduce total waste to landfill by 50% by 2030	T2 Reduce per capita waste	T3 Reduce biogenic methane gas emissions	T4 Divert 50% of C&D waste from landfill	T5 Divert 50-70% of organic waste from landfill
Objective 2: Waste reduction is attractive and accessible to Wellingtonians We aim to make it convenient for residents, businesses and consumers to recycle their waste	Delivery of consistent, equitable and accessible waste collections	Review the cost, performance and compliance of household waste and recycling services to support Councils waste minimisation efforts and support Wellingtons transition to becoming a zero waste city	Redesigning Rubbish & Recycling Collections	Redesigning Rubbish and Recycling Collections (Business Case)	Provider	Low Complexity	High Complexity	High	Extremely High	0-5 years	Neutral	High	Neutral	Neutral	Neutral
		Investigate establishment of an inorganic collection programme for Wellington residents that maximises re-use, diverts waste from landfill and realises socio-economic benefits	Redesigning Rubbish & Recycling Collections	Behaviour Change Project Rethinking Rubbish and Recycling Collections (Business Case)	Provider	Low Complexity	Moderate Complexity	High	Moderate	0-5 years	Moderate	High	Neutral	Moderate	Neutral
		Realise the economic, environmental, social and cultural benefits of resource recovery centres in Wellington by maximising recycling rates, diverting waste from landfill and delivering a high level of satisfaction for Wellingtonians	Resource Recovery Network Expansion (RRNE)	Resource Recovery Network Expansion (Business Case) Behaviour Change Project	Partner	High Complexity	High Complexity	Moderately High	Extremely High	0-5 years	Moderate	High	Moderate	Moderate	Moderate
	Manage funds and revenues to support Wellingtons re-use, re-purpose and recycling capacity by creating a catalyst for other investment	Identify and actively seek funding to support Wellingtons transition to a zero waste future while delivering value for money waste services to Wellingtonians		MfE Funding Applications & LTP Planning	Provider	Moderate Complexity	Moderate Complexity	High	Extremely High	ongoing	Neutral	High	Neutral	Moderate	High
	Deliver value for money waste services to Wellingtonians	Provide services in line with the waste hierarchy that supports decision making to enable waste reduction	Redesigning Rubbish & Recycling Collections Resource Recovery Network Expansion (RRNE)	Organics Processing Facility (Business Case) Behaviour Change Project Rethinking Rubbish and Recycling Collections (Business Case)	Provider	Moderate Complexity	Moderate Complexity	High	High	0-5 years	High	High	Moderate	Neutral	Moderate
		Review programme expenditures and revenues to maximise efficiencies to support Wellingtons transition to a zero waste city		ZWP working with Waste Commercial & Finance Zero Waste Strategy	Provider	Low Complexity	Low Complexity	High	High	0-5 years	Neutral	High	Neutral	Neutral	Neutral
		Award Council managed public money where it can make the greatest impact		ZWP working with Waste Commercial & Waste Minimisation Zero Waste Strategy	Funder	Low Complexity	Low Complexity	Moderately High	High	ongoing	Neutral	High	Neutral	Neutral	Neutral
	Deliver sustainable waste services to Wellingtonians	Develop and embed sustainable procurement to achieve better environmental, economic, cultural and social outcomes (e.g., use Councils purchasing power to encourage circularity in the use of materials)		Solid Waste Management and Minimisation Bylaw - Waste Management Plans Zero Waste Strategy	Provider	Low Complexity	Moderate Complexity	High	High	0-5 years	High	High	Moderate	High	Moderate
	Innovation encouraged to support delivery of Wellingtons transition to a zero waste future	Carry out regular service reviews and procurement of new contracts to ensure effective competition, drive innovation and efficiency in service delivery		Section 17a Reviews	Provider	Low Complexity	Low Complexity	High	High	0-5 years	Moderate	High	Neutral	Moderate	Neutral
	Monitoring and evaluation of waste arisings to support effective policy making and insights	Build a future focussed waste ecosystem that supports individual choice and decision making		Behaviour Change Project Zero Waste Strategy	Provider	Moderate Complexity	High Complexity	High	Extremely High	0-5 years	Neutral	High	Moderate	Moderate	Moderate
		Establish impact-based targets and reporting, focusing on the waste hierarchy and supporting the transition to a circular economy in Wellington		Waste Operator Bylaw Implementation Regional Waste Assessment Regional WMMP 2023-29 Zero Waste Strategy	Provider	Low Complexity	Moderate Complexity	High	Extremely High	0-5 years	Neutral	High	Moderate	High	High
	Deliver lasting behaviour change interventions by making people understand the benefits of change and then help them make that long term change easy	Create new norms and habits by testing behavioural interventions to achieve zero waste outcomes (e.g., stakeholder engagement/surveys)		Behaviour Change Project	Provider	Moderate Complexity	Moderate Complexity	High	High	ongoing	Moderate	High	Moderate	Neutral	Moderate
	Work with Central Government agencies to inform and shape system changes	Work with Central Government agencies to inform and shape initiatives and changes needed to support businesses and Wellingtonians to manage resources efficiently and minimise waste by moving towards a more circular economy		ZWP Communications & Engagement Central Government Advocacy and Relationship Management Zero Waste Strategy	Advocate	High Complexity	Moderate Complexity	Moderately High	Low	ongoing	Moderate	High	Moderate	Moderate	Moderate
	Promote and encourage the re-use of materials for the same purpose and recover materials so that they can be re-used throughout Wellington	Establish a network of Resource Recovery Facilities in Wellington City to make it easy for residents to donate and recycle unwanted and reuseable items for re-purposing.	Resource Recovery Network Expansion (RRNE)	Resource Recovery Network Expansion (Business Case) Behaviour Change Project	Partner	Moderate Complexity	Moderate Complexity	High	Extremely High	ongoing	Moderate	High	Moderate	Neutral	Neutral
	Increase the amount of material that is recovered, re-used and recycled to minimise waste and reduce the amount of virgin materials used in production	Support Wellington businesses and social enterprises to develop new infrastructure within an existing or new supply chain to facilitate material re-use, recovery and recycling	Resource Recovery Network Expansion (Business Case) Redesigning Rubbish and Recycling Collections (Business Case) Organics Processing Facility (Business Case)	Organics Processing Facility (Business Case) Behaviour Change Project Rethinking Rubbish and Recycling Collections (Business Case)	Funder	High Complexity	High Complexity	Moderately High	Extremely High	ongoing	High	Moderate	Neutral	High	Neutral
	Work with partners and stakeholders to scale up interventions to support the citywide goal to be a leader in minimising the use of resources and maximisation of reuse and recovery	Create a zero-carbon city by working with and incentivising businesses, partners and stakeholders to deliver transformational waste outcomes for Wellington through better design and purchasing of products		Behaviour Change Project Zero Waste Strategy	Facilitator	High Complexity	High Complexity	Moderately High	Moderate	ongoing	High	Moderate	Neutral	Moderate	Neutral
		Develop waste reduction resources to make it easy and convenient for Wellingtonians to make informed waste reduction choices and support sustained zero waste behaviour change		Behaviour Change Project ZWP Communications & Engagement Plan	Provider	Moderate Complexity	Moderate Complexity	High	Extremely High	0-5 years	Moderate	High	Neutral	Neutral	Moderate
		Waste minimisation is embedded into Council policies and procedures that support system change and prevent waste		Wellington Waste Action Plan Zero Waste Strategy Behaviour Change Project Solid Waste Management and Minimisation Bylaw - Waste Management Plans	Regulator	Low Complexity	Moderate Complexity	High	Extremely High	ongoing	Moderate	High	Moderate	Neutral	High

Waste Strategy Objectives	Priority Actions	Initiatives	Initiative Alignment with the Zero Waste Programme (ZWP) Business Cases	Initiative Alignment with the Zero Waste Programme (ZWP) Projects	Role Of Council	Degree of Initiative Complexity	Ease of Implementation	Initiative Priority	ZWP priority	Initiative Delivery Duration	T1 Reduce total waste to landfill by 50% by 2030	T2 Reduce per capita waste	T3 Reduce biogenic methane gas emissions	T4 Divert 50% of C&D waste from landfill	T5 Divert 50-70% of organic waste from landfill
Objective 3: The infrastructure and systems to increase resource circularity are established We aim to recover and process materials to regain value from resources	Support the provision of consistent, equitable and accessible kerbside waste collections for Wellingtonians	Provide services in line with the waste hierarchy that support decision making to enable waste reduction (e.g., residents provided with choice to support individual and/or household waste minimisation efforts).	Redesigning Rubbish & Recycling Collections	Redesigning Rubbish and Recycling Collections (Business Case) Behaviour Change Project	Provider	Moderate Complexity	Moderate Complexity	High	High	20+ years	Moderate	High	Moderate	Neutral	Moderate
	Work together with households, producers, collectors and reprocessors to extract the maximum value possible from food that would otherwise be wasted	Support commercial businesses including the hospitality, restaurant and education sectors to divert food scrap volumes from landfill disposal	Organics Processing Facility Redesigning Rubbish & Recycling Collections	Organics Processing Facility (Business Case) Redesigning Rubbish and Recycling Collections (Business Case) Behaviour Change Project	Partner	High Complexity	High Complexity	Moderately High	Extremely High	ongoing	High	Moderate	High	Neutral	High
		Encourage and incentivise the use of processed organic material for application in Wellington (e.g., parks and gardens) to improve soil condition and health	Organics Processing Facility	Organics Processing Facility (Business Case) Behaviour Change Project	Provider	Moderate Complexity	High Complexity	Moderately High	Extremely High	ongoing	Neutral	Neutral	High	Neutral	High
	Implement a kerbside organic collection and processing service to generate biofertilisers and renewable energy from organic waste	Provide a kerbside organic collection and processing service for Wellingtonians to divert organics from landfill disposal and support Wellingtons aim to be a zero carbon city by 2050	Organics Processing Facility Redesigning Rubbish & Recycling Collections	Organics Processing Facility (Business Case) Redesigning Rubbish and Recycling Collections (Business Case)	Provider	Moderate Complexity	High Complexity	High	Extremely High	0-5 years	Moderate	High	High	Neutral	High
		Construct and commission an organics processing facility to cater for Wellingtons, and where possible, the wider regions organic volumes	Organics Processing Facility	Organics Processing Facility (Business Case)	Provider	High Complexity	High Complexity	High	Extremely High	0-5 years	Moderate	Moderate	High	Neutral	High
		Support the regeneration and fertility of Wellingtons soils by providing Wellingtonians a service to capture household and commercial food scraps and processing this material into a locally produced soil improver	Organics Processing Facility	Organics Processing Facility (Business Case)	Provider	High Complexity	High Complexity	Moderately High	Extremely High	0-5 years	Neutral	High	High	Neutral	High
		Undertake targeted organics pilot trials to represent Wellington demographics (ethnicity, income, housing type) to inform the full roll-out of the service and increase the success of the service	Organics Processing Facility	Organics Processing Facility (Business Case) Behaviour Change Project	Provider	Moderate Complexity	High Complexity	High	Extremely High	0-5 years	Neutral	Neutral	High	Neutral	High
	Promote and encourage the re-use of materials for the same purpose and recover materials so that they can be re-used throughout Wellington	Establish a network of Resource Recovery Facilities in Wellington City to increase recovery, re-use, recycling and re-purposing of unwanted items, divert waste from landfill, and deliver a high level of satisfaction for Wellingtonians	Resource Recovery Network Expansion (RRNE)	Resource Recovery Network Expansion (Business Case) Behaviour Change Project	Partner	High Complexity	Moderate Complexity	High	Extremely High	0-5 years	Moderate	High	Moderate	Moderate	Neutral
	Work with partners and stakeholders to scale up interventions to support the citywide goal to be a leader in minimising the use of resources and maximisation of reuse and recovery	Work with businesses, partners and stakeholders to facilitate the development and/or expansion of local recoverable material markets	Resource Recovery Network Expansion (RRNE)	Resource Recovery Network Expansion (Business Case) Behaviour Change Project	Partner	High Complexity	High Complexity	Moderately High	Extremely High	ongoing	High	Neutral	Neutral	Moderate	Neutral
		Work with construction and demolition (CnD) businesses to establish tangible outcomes to ensure the principles of the waste hierarchy are built into the development process, maximising the reduction and repurposing of CnD waste	Resource Recovery Park (includes Construction and Demolition)	Behaviour Change CnD Strategy	Partner	High Complexity	High Complexity	Moderately High	Extremely High	ongoing	High	Neutral	Neutral	High	Neutral
		Work with small to medium enterprises within the commercial and/or industrial sectors producing waste/materials (e.g., rubble electrical equipment, paper, cardboard, glass, metal, plastics) to provide an accessible and cost efficient service to recover and re-purpose materials	Resource Recovery Network Expansion (RRNE)	Behaviour Change Project Resource Recovery Network Expansion (Business Case) Zero Waste Strategy	Partner	High Complexity	High Complexity	Moderately High	High	ongoing	High	Neutral	Neutral	High	Neutral
	Create a waste ecosystem that demands and influences the right behaviours for desired outcomes	Deliver lasting behaviour interventions by making people and businesses understand the benefits of making a change and then help them make that long term change easy (e.g., waste minimisation collateral to support residents make informed choices, community engagement activities)		Behaviour Change Project	Provider	Moderate Complexity	Moderate Complexity	High	Extremely High	ongoing	High	High	Neutral	Moderate	Moderate
		Make it easy, convenient and attractive to incentivise Wellingtonians to actively choose the use of recovered and repurposed materials/products before purchasing new products/materials		Behaviour Change Project	Provider	Moderate Complexity	Moderate Complexity	High	High	ongoing	Moderate	High	Neutral	Moderate	Neutral
	Support the creation of markets for secondary materials	Support the establishment of advanced material recycling businesses within Wellington to produce materials for local and national manufacturing		ZWP Communications & Engagement Central Government Advocacy and Relationship Management Zero Waste Strategy	Facilitator	High Complexity	High Complexity	Moderately High	Moderate	ongoing	High	Neutral	Neutral	High	Neutral
		Council procurement strategies to include recycled content requirements where possible for purchased goods		Solid Waste Management and Minimisation Bylaw - Waste Management Plans	Provider	Moderate Complexity	Moderate Complexity	High	High	0-5 years	High	Neutral	Moderate	High	High

Waste Strategy Objectives	Priority Actions	Initiatives	Initiative Alignment with the Zero Waste Programme (ZWP) Business Cases	Initiative Alignment with the Zero Waste Programme (ZWP) Projects	Role Of Council	Degree of Initiative Complexity	Ease of Implementation	Initiative Priority	ZWP priority	Initiative Delivery Duration	T1 Reduce total waste to landfill by 50% by 2030	T2 Reduce per capita waste	T3 Reduce biogenic methane gas emissions	T4 Divert 50% of C&D waste from landfill	T5 Divert 50-70% of organic waste from landfill
Objective 4: Waste that cannot be avoided, reduced, reused, or recycled is managed safely We aim to treat waste infrastructure built today as a finite resource and carefully manage it	Manage the treatment and disposal of sludge	Remove disposal of sludge to the Southern Landfill to fast track Wellingtons waste system transition to a circular economy and zero waste future	Sludge Minimisation Facility (Business Case)	Sludge Minimisation Facility (Business Case)	Provider	Low Complexity	High Complexity	High	Extremely High	0-5 years	Neutral	Neutral	High	Neutral	Neutral
	Provide for and manage emergency waste	Establish an adaptable and agile emergency waste management plan that provides for local, regional, and where needed, national emergency waste relief		ZWP work with Resilience and levage off Waste Management Plans	Provider	Low Complexity	Low Complexity	Moderately High	Low	0-5 years	Neutral	Neutral	Neutral	Neutral	Neutral
	Ongoing management of the Southern landfill to support Wellingtons transition to a zero waste city	Wellingtons waste management and minimisation focusses on eliminating waste in a fair and equitable manner, maximise the recovery of materials and minimise disposal of waste to landfill	Residual Waste Disposal – Southern Landfill Extension Piggyback Project Resource Recovery Network	Residual Waste – SLEPO (Business Case) Resource Recovery Network Expansion (Business Case) Behaviour Change Project Zero Waste Strategy	Provider	Low Complexity	Moderate Complexity	High	Extremely High	ongoing	Neutral	High	High	Moderate	Moderate
		The Southern Landfill is recognised and accepted by Wellingtonians as an important and significant link to enable the city to transition to a circular economy	Residual Waste Disposal – Southern Landfill Extension Piggyback Project	Residual Waste – SLEPO (Business Case) Behaviour Change Project	Provider	Moderate Complexity	High Complexity	High	Moderate	0-5 years	Neutral	Neutral	Neutral	Neutral	Neutral
		Establish a post-closure landfill management approach that recognises the environmental significance of the site and which ensures ongoing care is managed safely	Residual Waste Disposal – Southern Landfill Extension Piggyback Project	Residual Waste – SLEPO (Business Case)	Provider	Low Complexity	Low Complexity	Moderately High	Low	ongoing	Neutral	Neutral	Moderate	Neutral	Neutral
	Work with partners and stakeholders to scale up interventions to recover and divert as much waste from landfill and ensure that any remaining waste is appropriately managed at Southern landfill to protect our environment	Work with businesses, partners and stakeholders to facilitate the development and/or expansion of local recoverable material markets	Residual Waste Disposal – Southern Landfill Extension Piggyback Project Resource Recovery Network	Zero Waste Strategy Residual Waste – SLEPO (Business Case) Resource Recovery Network Expansion (Business Case) Behaviour Change Project	Partner	High Complexity	High Complexity	Moderately High	Extremely High	ongoing	Moderate	Moderate	Moderate	High	High
		Develop waste reduction resources to make it more attractive and convenient for Wellingtonians to minimise the generation of waste rather than dispose of it		Behaviour Change Project ZWP Communications & Engagement Plan	Provider	Moderate Complexity	Moderate Complexity	High	Extremely High	ongoing	Neutral	High	Neutral	Neutral	Moderate

DEVELOPMENT OF THE NEW WELLINGTON REGION WMMP 2023-2029

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee is to seek a decision on the development of the new Wellington Region Waste Management and Minimisation Plan 2023-2029.

Strategic alignment with community wellbeing outcomes and priority areas

	Aligns with the following strategies and priority areas: ☒ Sustainable, natural eco city ☒ People friendly, compact, safe and accessible capital city ☐ Innovative, inclusive and creative city ☒ Dynamic and sustainable economy
Strategic alignment with priority objective areas from Long-term Plan 2021–2031	☐ Functioning, resilient and reliable three waters infrastructure ☐ Affordable, resilient and safe place to live ☐ Safe, resilient and reliable core transport infrastructure network ☐ Fit-for-purpose community, creative and cultural spaces ☒ Accelerating zero-carbon and waste-free transition ☒ Strong partnerships with mana whenua
Relevant Previous decisions	Outline relevant previous decisions that pertain to the decision being considered in this paper.
Significance	The decision is **rated high significance** in accordance with schedule 1 of the Council's Significance and Engagement Policy.

Financial considerations

☒ Nil	☐ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

Risk

☐ Low	☐ Medium	☒ High	☐ Extreme

Authors	Yvette Falloon, Regional Advisor WMMP Diljinder Uppal, Manager Zero Waste Strategy
Authoriser	Chris Mathews, Manager Waste, Water and Resilience Siobhan Procter, Chief Infrastructure Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion

That Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.
2. Agree to formally proceed with the development of a new Wellington Region Waste Management and Minimisation Plan (2023-2029)

Whakarāpopoto | Executive Summary

2. This report provides a recommendation to formally proceed with the development of a new Wellington Region Waste Management and Minimisation Plan (WMMP) for 2023-2029. This plan will replace the existing Waste Management and Minimisation Plan 2017-2023.

Takenga mai | Background

3. The Waste Management and Minimisation Plan 2017-2023 promotes effective and efficient forms of waste management and minimisation across the region, and establishes a related set of waste reduction targets. The Councils of the Wellington region are currently progressing a range of local and regional actions to support waste reduction.
4. The Waste Minimisation Act 2008 requires all Waste Management and Minimisation Plans (WMMP) to be reviewed every six years. The current Wellington Region Waste Management and Minimisation Plan is requried to be reviewed by January 2023. As the review is a statutory requirement, if timeframes are not met, waste levy payments to Council's may be withheld.
5. The current Wellington Region WMMP (2017-2023) (WMMP) aims to promote effective and efficient forms of waste management and minimisation across the region, and establishes a related set of waste reduction targets.
6. The 2017-2023 WMMP was prepared in 2017 for the eight Councils of the Wellington Region and fulfilled the requirements of Section 50 (1) (b) of the Waste Minimisation Act 2008. Section 50 (1) (b) specifies the conditions to review the WMMP and requires all territorial authorities to review their WMMP at intervals of not more than 6-years after the last review.
7. The intent of the WMMP is to provide the strategic framework for managing waste within the Wellington Region.
8. The current Wellington Region WMMP will expire in 2023, an updated WMMP is now required.
9. To support the development of the 2023-2029 WMMP, the Waste Minimisation Act 2008 sets out several statutory requirements that must be met. These include:
    - the development of a Waste Assessment as specified in Section 50 of the Act (discussed in items 17-25 below); and
    - the development of local Waste Action Plans that set out the range of actions and initiatives that will be developed by each Wellington Region terrorial authority to enact the WMMP (discussed in items 25-30 below).

10. In accordance of Section 51 of the Act, a Waste Assessment is required every 6-years and is a statutory requirement to progress with an update of the WMMP. This Waste Assessment is intended to provide the background data and information to support the development of the next Regional Waste Minimisation and Management Plan (WMMP), including the development of priority actions, objectives and targets to support the minimisation of waste and the maximisation of reuse and recovery.

11. The current 2016 Wellington Region Waste Assessment will expire in 2022. An updated draft Waste Assessment has now been completed and will inform the development of the 2023-2029 Wellington Region WMMP.

12. The Ministry for the Environment (MfE) considers that a Teritorial Authority has reviewed its WMMP if it has:
    - Completed a waste assessment in accordance with section 51 of the Waste Minimisation Act (WMA)
    - From this completed waste assessment, made a decision to continue, amend or revoke and substitue its existing WMMP under section 50(3) of the WMA

13. The draft Waste Assessment (Attachment 1) was issued to Te Whatu Ora on 18 November 2022 with a request to have formal Medical Officer of Health feedback. With this feedback the draft Waste Assessment will meet the requirements for a completed Waste Assessment under section 51 of the WMA.

14. The steps required to review and draft a new plan include: preparing a Waste Assessment (draft completed and attached to this report), and undertaking a situational review to understand progress against the current WMMP.

15. Preliminary insights from the waste assessment and the situational review highlighted the following challenges with implementation of the 2017 WMMP:
    - The region as a whole missed the mark to affect the desired reduction in waste due to factors including Covid and increasing household and sector consumption and waste behaviours.
    - Data gaps continue to be one of the main issues, with unknown volumes and sources of waste moving to, from, and beyond the region.
    - Several local Council's do not have their own landfill(s) or processing facilities. In turn, it is hard to control waste at a local Council level as the waste moves to, from, and beyond the region.
    - A lack of funding and staff resources available to implement the actions.
    - There were too many actions and not enough reporting on progress.
    - Collaboration on projects was limited between Councils, particularly as a region. For example, several Councils noted that the Wellington regional waste education was not consistent to influence the required behaviour change.
    - There has been a lack of leadership and guidance from Central Government in key areas, particularly with data capture and reporting, and management of hard to divert waste streams.

16. Wellington City Council has a total of 44 actions. The majority of which have not been fully implemented. The list of actions is attached in the appendix of this report. Below is a summary of the actions review:

Data	**A waste data framework has been partially implemented. Wellington Council is currently investigating Waste Operator Licensing to gain better data from operators and collectors.**
Engagement	Majority of engagement actions have been fully implemented. Financial support is needed to support marae and iwi groups to minimise waste and ongoing conversations are being had with Para Kore to amplify this work.
Collections	Half of the collection actions have been fully implemented. For the partially implemented actions, CBD recycling collection services are being reviewed and trials have been completed for household food and green waste collection.
Infrastructure	Majority of infrastructure actions have been partially implemented. A reason for partial implementation includes lack of a cohesive strategy to manage and reduce waste to cater for the growth of wellington.
Regulations	Actions have either been partially implemented or not started. Wellington City is working on projects to implement and improve multi-unit dwelling services, construction and demolition waste diversion, Event Waste Plans, and Waste Operator Data and Licensing.

17. Based on the waste assessment findings and the WMMP review, it is clear that the region needs to work towards a new WMMP. The current WMMP is no longer fit for purpose due to significant changes in the waste sector since it was developed. It is recommended that the WMMP is revoked and substituted with a newly developed WMMP to ensure that it is fit for purpose.
18. A formal decision must now be made by each Council in the Wellington Region to proceed with the development of a new WMMP for 2023-2029. Proof of this decision is required by 16 December 2022 in order to ensure January 2023 waste levy payments are not withheld.

Progress Update for the Development of a New Wellington Region WMMP (2023-2029)

19. The eight territorial authorities in the Wellington Region have agreed to continue working together on a review and preparing a new plan. The Regional Solid Waste and Waste Minimisation Managers Steering Group will manage the process on behalf of their Councils.
20. Elected members on the Wellington Region Waste Management and Minimisation Joint Committee will be kept informed at key points to enable decision making on a new plan. Elected members from each Council will also provide information back to their respective Councils, as each Council will be required to formally adopt the new plan.
21. The approved budget, covering the total cost over the whole-of-life of the project, exclusive of GST is up to $500,000. The budget is sourced from the Ministry for the Environment Waste Levy funds that are allocated to each Council quarterly. Each Council pays a proportion of the costs for this project based on ratio of the population of each Council district. The project is to be phased across the 2022/23 financial year.

22. Beca has been selected as the contractor to undertake the development of the WMMP. There were some delays in getting the contract signed off with Beca which has impacted some of the delivery dates and progress to date.

23. Porirua City Council (PCC) is the contract manager and will manage this project alongside Beca and the Regional Advisor. Regular updates are provided from Beca to PCC and the project is currently on track.

24. The dashboard below shows the current progress for this project.

Current Stages - Deliverables	**Due Date**	**Status**
Contract sign off	19 October 2022	Completed
Contract Start date	19 October 2022	Completed
Stage 1: Stakeholder and engagement strategy	22 November 2022	On track
Stage 2: Stakeholder engagement	26 May 2023	Planning started/on track
Stage 3: Situation report	8 December 2022	Draft delayed by one week
Stage 4: Strategic outcomes report	19 January 2023	On track
Stage 5: Co-design results report - Industry	6 April 2023	Progress will be reported on at the next Joint Committee Meeting
Stage 6: Co-design results report - NGOs	6 April 2023	
Stage 7: Options and indicative direction for WMMP report	13 April 2023	
Stage 8: Local action plans for each council	9 May 2023	Planning started/on track
Stage 9: Draft WMMP	18 May 2023	Progress will be reported on at the next Joint Committee Meeting
Stage 10: Council and consultation material	16 June 2023	
Stage 11: Final WMMP for consultation	30 June 2023	

25. The new WMMP will set the direction for the region to influence and reduce waste across the region. Individual Council Long-Term Plans (LTP) are important foundation documents for the development of the WMMP and help to set out Councils priorities, programme and projects over a 10-year period.

26. As such, the LTPs for the individual Councils in the Wellington Region is based on the outputs of the Regional Waste Assessment as well as acknowledgment of the Regional WMMP outcomes specific to the waste sector. The importance of the LTPs is to show

what Councils will seek to achieve over the 10-year period, the significance and/or importance of these activities and the expected costs to achieve the activities.

27. To support the WMMP, Wellington City Council is developing a Zero Waste Strategy with a set of priority actions part of the larger Wellington City Action Plan to reduce and divert waste.

28. The Strategy provides clear guidance and direction on moving towards a circular economy over the next 20 years, with a sharp focus on the next five years.

29. The Strategy identifies how the waste system will support the shift to a circular economy, contribute to the city's carbon emissions reduction and reduce the amount of material and resulting waste entering the city and our landfill.

30. A focus is placed on four waste types with the largest volumes, being:

- Sludge – 26.5% of waste at the Southern Landfill
- Organics – 25.5% of levied waste at the Southern Landfill
- Construction and demolition – 22.0% of waste at Southern Landfill (but 40-50% of New Zealand's waste).
- Plastics, packaging and consumables – 20.6% of waste disposed per week at the Southern Landfill.

The priority actions are contained within the Strategy. This Strategy will be delivered by the Zero Waste programme and reported in the Priority Investment Report (quarterly).

Kōrerorero | Discussion

32. In order to satisfy the requirement for the Ministry for the Environment (MfE) to continue providing waste levy payments to Wellington City Council, a formal decision is required to continue, amend or revoke and substitute the existing WMMP.

33. The current WMMP is no longer fit for purpose due to significant changes in the waste sector since it was developed. It is recommended that the WMMP is revoked and substituted with a newly developed WMMP to ensure that it is fit for purpose.

Kōwhiringa | Options

34. Revoke existing plan and substitute with a newly developed Wellington Regional WMMP – Preferred Option

35. Continue with the existing Wellington Region WMMP (2017-2023)

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

36. The new WMMP will align with:

- Tūpiki Ora Māori Strategy
- 2021-2031 Long Term Plan (LTP)
- Te Atakura

- Economic Wellbeing Strategy – He Rautaki Ōhanga Oranga

Engagement and Consultation

37. A regional approach to engagement for a new WMMP is currently being developed.

Implications for Māori

38. The Council recognises the importance of its relationship with mana whenua and Māori in both creating and delivering on the new WMMP. The WMMP development process is guided by the principles of Tūpiki Ora and embraces protecting and enhancing the mauri of resources by working towards a circular economy approach.

Financial implications

39. The approved budget, covering the total cost over the whole-of-life of the project for the region, exclusive of GST is up to $250,000. Wellington City's contribution is $100,000 (40%). The budget is sourced from the Ministry for the Environment Waste Levy funds that are allocated to each Council quarterly. Each Council in the Wellington Region will pay a proportion of the costs for this project based on ratio of the population of each Council district.

Legal considerations

40. Review of the Wellington Region Waste Management and Minimisation Plan (WMMP) is a legal requirement under the WMA (2008)

Risks and mitigations

41. The updated Wellington Region WMMP will help guide decision making in managing and minimising waste into the future. The risk of a joint plan not meeting local Council waste minimisation requirements is mitigated through the development of individual Council Waste Action Plans. These Action Plans set out how each Council will progress implementation of the WMMP including specific local requirements.

Disability and accessibility impact

42. Nil

Climate Change impact and considerations

43. The new Wellington Region WMMP will align with Aotearoa New Zealand's Emissions Reduction Plan and Te Atakura – First to Zero.

44. Climate change is a key consideration in the development of the WMMP. Transitioning to a circular economy reduces carbon emissions and will contribute positively to Wellington's zero carbon goal.

Communications Plan

45. A communications and engagement plan is currently being developed jointly with the other territorial authorities. The intention is that it will be approved and operational before consultation occurs.

Health and Safety Impact considered

46. The draft Waste Assessment (Attachment 1) was issued to Te Whatu Ora on 18 November 2022 with a request to have formal Medical Officer of Health feedback

Ngā mahinga e whai ake nei | Next actions

47. Continue to work with the other Councils of the Wellington Region to develop and new WMMP.

Attachments

Wellington Region Waste Assessment

2022

Prepared for the Council's of the Wellington Region

DRAFT

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

APPENDICES

ABBREVIATIONS AND TERMS

Abbreviation and Term	Definition
CBD	Central Business District
CDC	Carterton District Council
Cleanfill	A cleanfill (properly referred to as a Class 4 landfill) is any disposal facility that accepts only cleanfill material. This is defined as material that, when buried, will have no adverse environmental effect on people or the environment.
C&D	Construction and Demolition materials
Diverted Material	Anything that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.
Domestic Waste	Waste from domestic activity in households
ETS	Emissions Trading Scheme
GDP	Gross Domestic Product
HCC	Hutt City Council
HSWA	Health and Safety at Work Act 2015
KCDC	Kāpiti Coast District Council
Landfill	A disposal facility as defined in S.7 of the Waste Minimisation Act 2008, excluding incineration. Includes, by definition in the WMA, only those facilities that accept 'household waste'. Properly referred to as a Class 1 landfill
LGA	Local Government Act 2002
LTP	Long Term Plan
Managed Fill	A disposal site requiring a resource consent to accept well--- defined types of non-household waste (e.g., low-level contaminated soils or industrial by-products, such as sewage by-products). Properly referred to as a Class 3 landfill.
MDC	Masterton District Council
MfE	Ministry for the Environment
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
NDR	No Data Received
NZ	Aotearoa New Zealand
NZ ETS	New Zealand Emissions Trading Scheme
PCC	Porirua City Council
PPR	Public Place Recycling
Putrescible, garden, greenwaste	Plant based material and other bio---degradable material that can be recovered through composting, digestion or other similar processes.
RMA	Resource Management Act 1991
RRF	Resource Recovery Facility
RTS	Refuse Transfer Station
Service Delivery	As defined by s17A of the LGA 2002. Councils are required to review the cost---effectiveness of current arrangements for meeting the needs of communities within its district or region for good---quality local infrastructure, local public services, and performance of regulatory

Abbreviation and Term	Definition
	functions. A review under subsection (1) must consider options for the governance, funding, and delivery of infrastructure, services, and regulatory functions.
SWDC	South Wairarapa District Council
TA	Territorial Authority
UHCC	Upper Hutt City Council
Waste	Means, according to the WMA: a) Anything disposed of or discarded; b) Includes a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and c) To avoid doubt, includes any component or element of diverted material, if the component or element is disposed or discarded.
WA	Waste Assessment as defined by s51 of the Waste Minimisation Act 2008. A Waste Assessment must be completed whenever a WMMP is reviewed
WCC	Wellington City Council
WMA	Waste Minimisation Act 2008
WMES	Regional Waste Minimisation Education Strategy
WMMP	Wellington Region Waste Management and Minimisation Plan
WWTP	Wastewater Treatment Plant

1 INTRODUCTION

This Waste Assessment has been prepared for the territorial authorities of the Wellington region in accordance with the requirements of the Waste Minimisation Act 2008 (WMA). This document provides background information and data to support the constituent Councils' waste management and minimisation planning process.

1.1 Purpose of this Waste Assessment

This Waste Assessment is intended to provide the background data and information to support the development of the next Regional Waste Minimisation and Management Plan (WMMP), including the development of priority actions, objectives and targets to support the minimisation of waste and the maximisation of reuse and recovery.

As required by Part 4 Section 51 of the Waste Minimisation Act (WMA 2008) (see Section **1.2** for further detailed discussion), a waste assessment has a series of prescribed elements which must be included:

- a description of the collection, recycling, recovery, treatment, and disposal services provided within the territorial authority's district (whether by the territorial authority or otherwise)
- a forecast of future demands for collection, recycling, recovery, treatment, and disposal services within the district
- a statement of options available to meet the forecast demands of the district with an assessment of the suitability of each option
- a statement of the territorial authority's intended role in meeting the forecast demands
- a statement of the territorial authority's proposals for meeting the forecast demands, including proposals for new or replacement infrastructure
- a statement about the extent to which the proposals will:
  i. ensure that public health is adequately protected
  ii. promote effective and efficient waste management and minimisation

Further, Part 4 Section 51 of the WMA (2008) notes that a waste assessment is not required to contain any assessment in relation to individual properties. Section **1.2** below provides further information regarding the legislative context underpinning this Waste Assessment.

1.2 Scope of this Regional Waste Assessment

Territorial Authorities (TAs) are required as per the WMA (2008) to complete a review of the WMMP at least every six years (Part 4 Section 50, Item 1), with the Waste Assessment to be completed in advance of this review (Part 4 Section 50, Item 2). As reported in the 2016 Waste Assessment, while the Regional WMMP is reviewed at least every six years, the time horizon of the 2017-2023 plan takes a longer 10-year timeframe which is aligned to Councils Long Term Plans (LTPs). As such, this Waste Assessment also considers a 10-year timeframe where applicable.

Further, the focus of this Regional Waste Assessment is on the solid waste fraction that is disposed of to land (e.g., landfill), and where possible, to focus on the quantity of waste that is diverted away from disposal (e.g., recovery and reuse of resources). However, as reported in the 2016 Regional Waste Assessment, the Manatū Mō Te Taiao – Ministry for the Environment Waste Assessments and Waste Management and Minimisation

Planning guidance for Territorial Authorities suggests including liquid (e.g., biosolids) and gaseous (e.g., landfill gas capture) wastes be included in the scope of a Waste Management and Minimisation Plan (WMMP); and by association these waste types to be included within the associated waste assessment.

As such and as reported in 2016, gas from the three Class 1 landfills in the Wellington Region continue to be managed by the facility operator with gas captured according to the national environmental standard for air quality. Further, since the 2016 Regional Waste Assessment, significant developments have been made in Wellington City to remove the disposal of biosolids from the Wastewater Treatment Plant (WWTP) to the Southern Landfill.

For the purpose of this Regional Waste Assessment, solid waste will again be the focus of the report along with commentary on the changes in biosolid management.

In addition to assessing the solid waste component for the Wellington Region, this assessment also considers the effects on the environment, including that of the effect of waste activities on public health. Examples where waste activities interface with public health are listed in the 2016 assessment and are reproduced here noting all have continued relevance.

- Population health profile and characteristics
- Meeting the requirements of the Health Act 1956
- Management of putrescible wastes
- Management of nappy and sanitary wastes
- Timely collection of kerbside materials
- Locations of waste activities
- Management of spillage
- Litter and illegal dumping
- Medical waste from households and healthcare operators
- Storage and collection of waste materials
- Management of biosolids from the WWTP
- Management of hazardous waste (e.g., asbestos, e-waste)
- Management of private wastes (e.g., burning and burying)
- Management of closed landfills
- Health and safety consideration relating to collection and handling of waste materials

While the above health considerations may occur across any waste management and minimisation activity, including for example, collection of kerbside waste and illegal dumping, many can be minimised by implementing and/or developing appropriate mitigation measures, such as implementing convenient recycling drop-off locations, ensuring convenient, accessible and equitable level of service to residents and ratepayers.

1.3 Structure of this Report

This report is structured into eleven discrete sections each representing an important building block in the development of the Wellington Regional Waste Assessment, as follows:

- Section **1** – Introduction
    - Purpose and scope of the Waste Assessment

- Section **2** – Legislative Context for the Waste Assessment
    - National legislative context including additional regulations for consideration
- Section **3** – Overview of the Wellington Region
    - Overview of the current region, including demographics, economic profile, waste and resource management sector and potential future changes to the region
- Section **4** – Wellington Region Infrastructure Review
    - Overview of the waste and resource management infrastructure in the region, district and regional services as well as waste minimisation initiatives provided
- Section **5** – Situation Review
    - Overview and analysis of the current waste and resource management quantities as provided by each of the eight territorial authorities
- Section **6** – Performance Measurement
    - Overview of the performance measurement per capita based on data provided by each of the eight territorial authorities, potential diversion rates and potential diversion of waste to Class 1 landfills
- Section Error! Reference source not found. – Future Demand and Gap Analysis
    - Overview of potential regulatory changes, economic and demographic trends that may influence waste streams across the Wellington Region
- Section Error! Reference source not found. – High-Level Review of the 2017-2023 Wellington Region Waste Management and Minimisation Plan
    - Overview of the 2017-2023 Regional WMMP including key issues, WMMP actions and progress against these
- Section **0** – Statement of Options
    - Statement of options and proposals
- Section Error! Reference source not found. – Statement of Council's Intended Role
    - Overview of Council's statutory obligations and powers and overall strategic direction and role
- Section **11** – Statement of Proposals
    - Overview of the statement of extent including public health

This report brings together evidence-based information culminating with a look towards the future and the next Regional Waste Minimisation and Management Plan.

2 LEGISLATIVE CONTEXT FOR THIS WASTE ASSESSMENT

The following sections outline the national waste legislative context to set the scene for the overarching guiding legislative instruments and strategies for this Waste Assessment and that help to shape and inform the Aotearoa waste sector as well as its many activities. Following the national overview, a local planning context is provided, acknowledging the range of local Long-Term Plans (LTPs) that each of the Wellington Region Councils have developed and implemented and which help to shape how waste is managed within the respective regions.

2.1 National Legislative Context

To manage waste and assist in the transition from a linear economy to ōhanga āmiomio – circular economy, a series of central and local government legislative instruments set the expectations and requirements to enable and facilitate this process, including the establishment of the New Zealand Waste Strategy – the overarching framework for managing and minimising waste.

To give effect to the Strategy, there are several legislative Acts that provide the drivers to enable waste management and minimisation in Aotearoa New Zealand:

1. The Waste Minimisation Act 2008 (WMA 2008).
2. The Local Government Act 2002 (LGA 2002).

Both Acts have relevance for this report and are discussed further below.

2.1.1 Waste Minimisation Act (WMA 2008)

The Waste Minimisation Act 2008 (WMA 2008) was established to provide a regulatory framework to encourage the reduction in the amount of waste produced and disposed of by New Zealanders with the aim to reduce environmental effects whilst generating economic, social and cultural benefits. The purpose of the Act is to:

'Encourage waste minimisation and a decrease in waste disposal in order to:

- *Protect the environment from harm; and*
- *Provide environmental, social, economic, and cultural benefits.'*

As noted in Section 1.1, this Waste Assessment is a requirement for the next Regional WMMP. As required by the WMA (2008), territorial authorities are required to complete a review of the WMMP at least every six years (Part 4 Section 50, Item 1) with the Waste Assessment to be completed in advance of this review (Part 4 Section 50, Item 2).

The current Waste Assessment was written in 2016 with the Regional WMMP adopted in 2017. This 2022 Waste Assessment report has been prepared to meet the requirements of the WMA (2008) and will support the development of the next Regional WMMP.

In addition to the WMA (2008), there are several additional legislative Acts that provide the drivers to enable waste management and minimisation in Aotearoa New Zealand:

- The Local Government Act 2002 (LGA 2002).
- The Resource Management Act 1991 (RMA 1991).

- New Zealand Emissions Trading Scheme and the Climate Change Response Act 2002.
- Climate Change Response Act 2002 and Climate Change Response (Zero Carbon) Amendment Act 2019.

These documents are discussed briefly in the following sections with a broader description included in Appendix A.

2.1.2 Local Government Act (LGA 2002)

The Local Government Act (LGA 2002) provides the legislative framework for democratically elected local authorities to promote the social, economic, environmental and cultural well-being of communities in the present and for the future. This includes taking "appropriate account of the principles of the Treaty of Waitangi" and facilitating "participation by Māori in local authority decision making processes".

2.1.3 The Resource Management Act 1991 (RMA 1991)

The Resource Management Act (1991) (RMA) is Aotearoa New Zealand's key environmental legislative document providing the framework for the sustainable management of environmental resources (including development activities). The RMA also manages and controls the environmental impacts of waste facilities such as disposal facilities, recycling and recovery facilities and cleanfills.

2.1.4 New Zealand Emissions Trading Scheme and the Climate Change Response Act 2002

In addition to the WMA (2008), LGA (2002) and the RMA (1991), the New Zealand Emissions Trading Scheme (NZ ETS) is a key tool for ensuring Aotearoa New Zealand meets domestic and international climate change targets from a range of activities, including disposal facilities defined within the Climate Change Response Act (2002)[1] (Act). Broadly, the NZ ETS was created through the Act in recognition of Aotearoa New Zealand's obligations under the Kyoto Protocol. The importance of the NZ ETS is the application of the Act and emission targets which applies to disposal facilities including landfills.

Further, Aotearoa New Zealand has made climate change commitments[2] under the United Nations Framework Convention on Climate Change (the Convention), the Paris Agreement and the Kyoto Protocol. Aotearoa New Zealand's targets are as follows:

- To reduce greenhouse gas emissions to 30% below 2005 levels by 2030;
- An unconditional target to reduce our greenhouse gas emissions to 5% below 1990 levels by 2020;
- A conditional target to reduce New Zealand's emissions to between 10% and 20% below our 1990 levels by 2020; and
- To reduce New Zealand's emissions to 50% below 1990 levels by 2050.

2.1.5 Climate Change Response Act 2002 and Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response Act (2002) puts in place the legal framework to support Aotearoa New Zealand to meet its international obligations. Relatedly, the Climate Change Response (Zero Carbon) Amendment Act (2019) sets out the framework by which Aotearoa New Zealand can develop and implement clear climate change policies that:

[1] Climate Change Response Act 2002. Public Act 2002 No 40, Date of assent 18 November 2002. Administered by the Ministry for the Environment

[2] Our climate change targets | New Zealand Ministry of Foreign Affairs and Trade (mfat.govt.nz)

- Contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5°C above pre-industrial levels; and
- All Aotearoa New Zealand to prepare for, and adapt to, the effects of climate change.

Enactment of the Climate Change Response Act (2002) is carried out under seven regulations, with the Climate Change (Waste) Regulations 2010[3] of direct relevance to this report and Aotearoa New Zealand's commitment to reducing GHG emissions from the sector. Specifically, the Climate Change (Waste) Regulations 2010 sets out the information required and methodology to calculate emissions from operating disposal facilities. Under the Climate Change Response Act 2002, Aotearoa New Zealand is committed to reducing biogenic methane emissions by 10 per cent by 2030 and 24–47 per cent by 2050, relative to 2017 levels.

In addition to the above legislative Acts, the waste disposal levy is an additional significant influencing factor on regional waste minimisation and management initiatives, and which may present significant additional opportunities due to the increase and expansion of the levy. The Waste Disposal Levy is discussed further in Section **2.1.6** below.

2.1.6 Waste Disposal Levy

The cost of landfill disposal has also had an influence on product recovery with disparity amongst the national cost of landfill disposal resulting in disparate behaviours by the waste industry and different levels of investment throughout the country. The New Zealand Government has confirmed an increase and expansion of the national waste disposal levy to divert more material from landfill recognising the ever-increasing amount of waste ending up in Aotearoa New Zealand's landfills[4]. Consequently, increased investment in alternatives to landfill disposal is anticipated in keeping with the objectives of the WMA (2008).

The waste disposal levy was introduced under the WMA (2008) to[5]:

- Raise revenue for the promotion and achievement of waste minimisation
- Recognise that disposal imposes costs on the environment, society and the economy

The levy was also established to encourage organisations and individuals to:

- Take responsibility for the waste they create
- Find more effective and efficient waste to reduce, reuse, recycle or reprocess waste

The current waste levy is set at NZD$10/tonne (excluding GST) on all waste sent to landfill. From 01 July 2021 the levy will progressively increase starting with an increase for municipal (Class 1) landfills. As reported, disposal facility operators are required to pay the levy based on the weight of material disposed of at their facility, and they may pass this cost on to the waste producer such as households and businesses. **Table 1** below summarises the increase and expansion of the waste levy.

As reported in the waste reduction strategy, levy increases will result in significantly more revenue estimated to increase from $65 million from 01 July 2021 to $270 million from 01 July 2024. The increased revenue will create a significant opportunity for local and central government to invest in priority areas such as resource

[3] https://www.legislation.govt.nz/regulation/public/2010/0338/latest/DLM3249508.html?search=ts_regulation%40deemedreg_climate+change_resel_25_a&p=1

[4] Waste disposal levy | Ministry for the Environment

[5] About the waste disposal levy | Ministry for the Environment

recovery infrastructure and systems, research and development, innovation, community projects, public information, and tea o Māori initiatives.

Table 1 Increase and Expansion of the Waste Levy[6]

Landfill Class	Waste Types	01 July 2021	01 July 2022	01 July 2023	01 July 2024
Municipal landfill (Class 1)	Mixed municipal wastes from residential, commercial and industrial sources	$20	$30	$50	$60
Construction and demolition fill (Class 2)	Accepts solid waste from construction and demolition activities, including rubble, plasterboard, timber, and other materials	-	$20	$20	$30
Managed or controlled fill (Class 3 and 4)	One or more of: • contaminated but non-hazardous soils and other inert materials (e.g., rubble) • soils and other inert materials.	-	-	$10	$10
Total Levy Revenue, estimate ($ million)		$65	$150	$210	$270

As such, an increase in the waste disposal levy is anticipated to create more funding opportunities for waste minimisation initiatives for Aotearoa New Zealand's territorial authorities including those within the Wellington Region, noting that at present:

- Half of the levy money goes to territorial authorities to spend on promoting or achieving waste minimisation activities set out in their Waste Minimisation and Management Plans (WMMPs).
- The remaining half of the levy money (excluding administration fees) is put into the contestable Waste Minimisation Fund for waste minimisation activities in Aotearoa New Zealand.

Further, it is acknowledged that Manatū Mō Te Taiao – Ministry for the Environment have signalled potential changes under the WMA 2008 review process, including allocations of funding.

2.1.7 Other Relevant Legislative Instruments

In addition to those Acts discussed in Section **2.1.1** to Section **2.1.5**, several other legislative instruments have relevance and applicability to this Waste Assessment, including:

- Te Tiriti o Waitangi – The Treaty of Waitangi
- Litter Act 1979
- Health and Safety at Work Act (HSWA) 2015
- Ozone Layer Protection Act 1996

See Appendix A for a full description of the above listed legislative instruments. Further, this section does not preclude the addition of other legislative instruments and/or updates to existing legislation and regulations, including for example, the current Central Government initiative to update the WMA (2008) and Litter Act (1979).

[6] About the waste disposal levy | Ministry for the Environment

2.2 Wellington Region Waste Regulatory Instruments

The following sections outline the range of local waste regulatory instruments available to each of the eight territorial authorities to help manage and minimise waste.

2.2.1 Council Solid Waste Bylaws

In order to regulate and manage waste within territorial authority areas, the WMA (2008) provides for the establishment of solid waste bylaws which enable Councils to serve as local regulators.

Since the 2016 Regional Waste Assessment, each of the eight territorial authorities have undertaken, or begun, the process of reviewing their existing Solid Waste Management and Minimisation Bylaws as required under the WMA (2008). Further, the Regional Waste Management and Minimisation Plan (2017-2023) set out a key priority for the eight territorial Wellington region authorities to consider which focussed on the development of a regional bylaw or a set of regionally consistent bylaws for waste management and minimisation. As such, this has since resulted in the development of regionally consistent bylaws for the eight councils, with Upper Hutt City Council in the process of consulting on a new solid waste bylaw.

The purpose of the revised bylaws is to support the following elements and are consistent across the eight territorial Wellington region authorities:

a. The promotion and delivery of effective and efficient waste management and minimisation as required under the Waste Minimisation Act 2008;
b. The implementation of the Wellington Region Waste Management and Minimisation Plan;
c. The purpose of the Waste Minimisation Act 2008 and the goals in the New Zealand Waste Strategy 2010, being to encourage waste minimisation and a decrease in waste disposal to protect the environment from harm; and provide environmental, social, economic, and cultural benefits;
d. The regulation of waste collection, transport and disposal, including recycling, waste storage and management;
e. Controls regarding the responsibilities of customers who use approved solid waste services, and the licensing of waste collectors and waste operators;
f. The protection of the health and safety of waste collectors, waste operators and the public; and
g. The management of litter and nuisance relating to waste in public places.

Further, the Bylaws are made pursuant to section 56 of the Waste Minimisation Act 2008, sections 145 and 146 of the Local Government Act 2002, section 64 of the Heath Act 1956, and section 12 of the Litter Act 1979.

Table 2 below summarises the revoked and current solid waste management and minimisation bylaws for the Wellington region territorial authorities (in alphabetical order).

Table 2 Wellington Region Solid Waste Management and Minimisation Bylaws

Territorial Authority Solid Waste Bylaw	Revocation
Hutt City Solid Waste Management and Minimisation Bylaw 2021	Refuse Collection and Disposal Bylaw 2008.

Territorial Authority Solid Waste Bylaw	Revocation
Kāpiti Coast Solid Waste Management and Minimisation Bylaw 2021	Bylaw repeals and replaces the Kāpiti Coast District Solid Waste Bylaw 2010, and Part 7 of the General Bylaw 2010.
Porirua City Solid Waste Management and Minimisation Bylaw 2021	Bylaw repeals and replaces the Porirua City Council General Bylaw 1991 – Part 13 Solid Waste 2010.
Upper Hutt City Council (NOTE 1)	Upper Hutt City Council Solid Waste Bylaw (2005) expired in 2015.
Wairarapa Solid Waste Management and Minimisation Bylaw 2021	Bylaw repeals and replaces the Masterton and South Wairarapa District Council Solid Waste Bylaw 2012 for the Masterton and South Wairarapa District Councils. This is a new Bylaw and does not repeal or replace any existing solid waste bylaw for Carterton District Council.
Wellington Solid Waste Management and Minimisation Bylaw 2020	Bylaw repeals and replaces Part 9 (Waste Management) of the Wellington City Council Consolidated Bylaw 2008.

NOTE 1: No current solid waste bylaw in place as the previous Upper Hutt City Council Solid Waste Bylaw (2005) expired in 2015. Upper Hutt City Council (Council) is proposing a new Solid Waste Management and Minimisation Bylaw for Upper Hutt City.

2.2.2 Local Planning Context

Acknowledging the national legislative context and framework documents, this Regional Waste Assessment has been developed to support the development of the updated Regional Waste Management and Minimisation Plan, noting that both documents are foundation reports in the establishment of appropriate waste management and minimisation activities and targets within the Wellington Region.

Further, the following Council Long-Term Plans (LTP) are important foundation documents for the development of this Regional Waste Assessment and help to set out Councils priorities, programme and projects over a 10-year period. As such, the LTPs for the individual Councils in the Wellington Region is based on the outputs of the Regional Waste Assessment as well as acknowledgment of the Regional WMMP outcomes specific to the waste sector. The importance of the LTPs is to show what Councils will seek to achieve over the 10-year period, the significance and/or importance of these activities and the expected costs to achieve the activities.

As such, for Councils to provide clarity and transparency on progress against LTP activities, an Annual Plan is produced in each of the two years between LTP reviews and which set out what the council plans to do over the following 12-month period to move towards achieving the activities of the LTP; including setting out the annual budget. A key step in the Annual Plan process as for the LTP is the ability for the public to submit on the documents before they are adopted. By following this consultative approach, communities and other interested stakeholders and individuals have an active voice in helping to shape the respective Council activities.

A broad overview of the Long-Term Plans for each of the Councils in the Wellington Region and specifically those waste focussed elements are provided in Section **2.2.2.1** to Section **2.2.2.8** below (in alphabetical order).

2.2.2.1 Te Kaunihera-Ā-Rohe O Taratahi – Carterton District Council

As reported, Carterton District Council has developed a ten-year plan (Ten-Year Plan – Te Māhere Ngahurutanga 2021-2031[7]) that sets out the Council's priorities, programmes and projects for the next ten

[7] 2021-31-LTP-document-Final-signed.pdf (cdc.govt.nz)

years and shows how the activities will contribute to improving the community's well-being and achieve progress towards the community outcomes.

To progress the Long-Term Plan, the Carterton District Councils vision focusses on 'a welcoming and vibrant community where we all enjoy living' supported by a range of community, environmental, economic, and cultural outcomes, including for example the following outcomes which influence and shape waste minimisation and management:

- An environmentally responsible community committed to reducing our carbon footprint and adapting to the impacts of climate change;
- Quality fit for purpose infrastructure and services that are cost-effective and meet future needs; and
- Te Āo Māori/ Māori aspirations and partnerships are valued and supported.

In addition to the Long-Term Plan, Carterton District Council has also adopted the Ruamāhanga Strategy – Carbon Reduction Strategy which commits the Council to the following and which will further influence waste minimisation and management activities in the district:

- Reducing gross emissions;
- Increasing the amount of greenhouse gas sequestered; and
- Reducing biogenic methane emissions by 10% below 2017 levels, in 2030.

It is also important to note here that Carterton District Council undertakes many joint operations with neighbouring councils including Masterton and South Wairarapa District Councils as well as Greater Wellington Regional Council, and in so doing undertaking joint operations such as a common waste management contract.

2.2.2.2 Te Awa Kairangi – Hutt City Council

As reported, Hutt City Council has developed a 10-year Long-Term Plan 2021-2031 (E whakatika ana i ngā mea matua: getting the basics right) to support the city's vision of "a city where everyone thrives". The key priorities for the next 10-years are as follows:

- Investing in infrastructure | Whakangao i ngā poupou hapori
- Inreasing housing supply | Hei Āhuru Mōwai mō te Katoa
- Caring for and protecting our environment | Tiaki Taiao
- Supporting an innovative, agile economy and attractive city | Taunaki Ōhanga Auaha, Tāone Whakapoapoa
- Connecting communities | Tūhono Hapori
- Financial sustainability | Whakauka Ahumoni

As reported, the 10-year plan sets out a plan to support Hutt City achieve zero carbon by 2050 by making operations more sustainable and climate friendly by for example, better manging waste disposal, reducing the amount of waste going to landfill to increase its longevity and to develop the ability to manage asbestos.

2.2.2.3 Te Kaunihera o Te Awa Kairangi ki Uta – Upper Hutt City Council

As reported, Upper Hutt City Council has developed a 10-year Long-Term Plan 2021-2031 with the following vision:

"We have an outstanding natural environment, leisure, and recreational opportunities, and we are a great place for families to live, work, and play"

As reported in the Long-Term Plan, Council is committed to taking a sustainable development approach in all activities with a key target to become a carbon neutral organisation by 2035. Further, as part of Councils sustainable work, it is required to promote effective and efficient waste management and minimisation within the city.

2.2.2.4 Me Huri Whakamuri, Ka Titiro Whakamua – Kāpiti Coast District Council

As reported, Kāpiti Coast District Council has developed a 20-year Long-Term Plan (Our plan for securing our future – Toitū Kāpiti) that focusses on the Kāpiti Coast Districts future needs, the challenges and the outcomes the Kāpiti Coast District area. The four key decisions underpinning the plan are:

1. Take a bigger role in housing
2. Rebuild Paekākāriki seawall in timber with improved beach access
3. Set up a CCO (Council-Controlled Organisation)
4. Explore whether Council may be able to have a role in the airport.

The Long-Term Plan also recognises the need to reduce emissions and to support the community to minimise waste and reduce emissions by:

- Leading by example through reducing Council's carbon emissions to be carbon neutral by 2025
- Embedding sustainable practices within Council service delivery
- Facilitating and empowering community projects and initiatives
- Educating and promoting sustainable practices in the community to see a reduction in carbon and waste
- Restoring our environment through dune restoration and native planting
- Ensuring our freshwater quality and protection through our stormwater network

2.2.2.5 Te Kaunihera Ā-Rohe O Whakaoriori – Masterton District Council

The Masterton District Council Long-Term Plan (Stepping Up Long-Term Plan 2021-31) sets out what the Council intends to achieve over a ten-year timeframe and to help achieve Councils vision: *Masterton/Whakaoriori offers the best of rural provincial living.*

As reported in the Long-Term Plan, Masterton District Council provides solid waste services to the community to contribute to the following community outcomes:

- A sustainable and healthy environment
- A thriving and resilient economy
- Efficient, safe and effective infrastructure

As per the Plan, the key waste management priorities over the next 10-years are as follows:

- Undertaking renewal work at the Nursery Road Transfer Station. $290,640 has been allowed across the 10 years of the Long-Term Plan for this.
- Undertaking landfill capping. $264,520 has been allowed across the ten years of this Long-Term Plan.
- Implementing the Solid Waste Bylaw that has been developed with Councils across the Wellington region. This bylaw is being progressed as part of the joint Waste Management and Minimisation Plan.

2.2.2.6 Porirua District Council

The Porirua City Council Long-Term Plan (Porirua – our people, our harbour, our home 2021 – 2051) sets out the 30-year plan to help achieve the vision of: our people, our harbour, our home. As reported, in June 2019, Porirua City Council declared a climate change emergency. Further, to accelerate Porirua's response to this declaration, the Council has agreed to invest an additional $6 million across years 2022/23 and 2023/24 to reduce greenhouse gas emissions from council facilities, reduce organic waste going to the landfill and accelerate the transition of Council's fleet to electric vehicles where possible.

2.2.2.7 Kia Reretahi Tātau – South Wairarapa District Council

As reported in the South Wairarapa District Council 2021-2031 ten-year Long-Term Plan (Te Pae Tawhiti), waste minimisation activities fall within the environmental wellbeing strategic driver (sustainable living, safe and secure water and soils, waste minimised, biodiversity enhanced) with the following key action areas:

- Enhancing 3 water delivery and environmental quality
- Take active measures to adapt and mitigate the impacts of climate change
- Minimise waste and provide environmentally sustainable Council services
- Empower and enable our community to drive behavioural change for the benefit of the environment

A key focus for Council as reported is on minimising waste volumes by promoting the waste management hierarchy "reduce, reuse, recycle, reprocess, treat, dispose". Further, and as reported, the Council also working with other councils in the region to look at Wairarapa-wide solutions to solid waste management.

2.2.2.8 Me Heke Ki Pōneke – Wellington City Council

Wellington City Council's 10-year Long-Term Plan 2021-2031 (Tō mātou mahere ngahuru tau) sets out the long-term strategic vision of: Wellington 2040 – an inclusive, sustainable and creative capital for people to live, work and play. This vision as reported, is supported by four community outcomes that reflect each of the four dimensions of wellbeing and are at the centre of the long-term plan:

- Environmental – a sustainable, climate friendly eco capital
- Social – a people friendly, compact, safe and accessible capital city
- Cultural – an innovative, inclusive and creative city
- Economic – a dynamic and sustainable economy

The Long-Term plan also sets out priority objectives for the first three years with priority 5 of 6 directly relevant to the management of waste:

- An accelerating zero-carbon and waste-free transition: with communities and the city economy adapting to climate change, development of low carbon infrastructure and buildings, and increased waste minimisation.

3 OVERVIEW OF THE WELLINGTON REGION

This section provides a high-level demographic and economic overview of the territorial authorities that make up the Wellington Region to provide context to the production and management of waste and resources within the region.

3.1.1 Introduction

The Wellington Region is located in the lower North Island of Aotearoa New Zealand and comprises eight territorial areas with a total resident population of approximately 547,000[8] as reported in 2021 (**Figure 1**). The region includes a diverse range of land uses including both dense city areas, suburban and rural communities, with the region's population reflective of this. As such, this diversity is also reflected in the types and quantities of waste and resources produced within each of the eight territorial areas. Further discussion of waste types and quantities can be found in Section **5**.

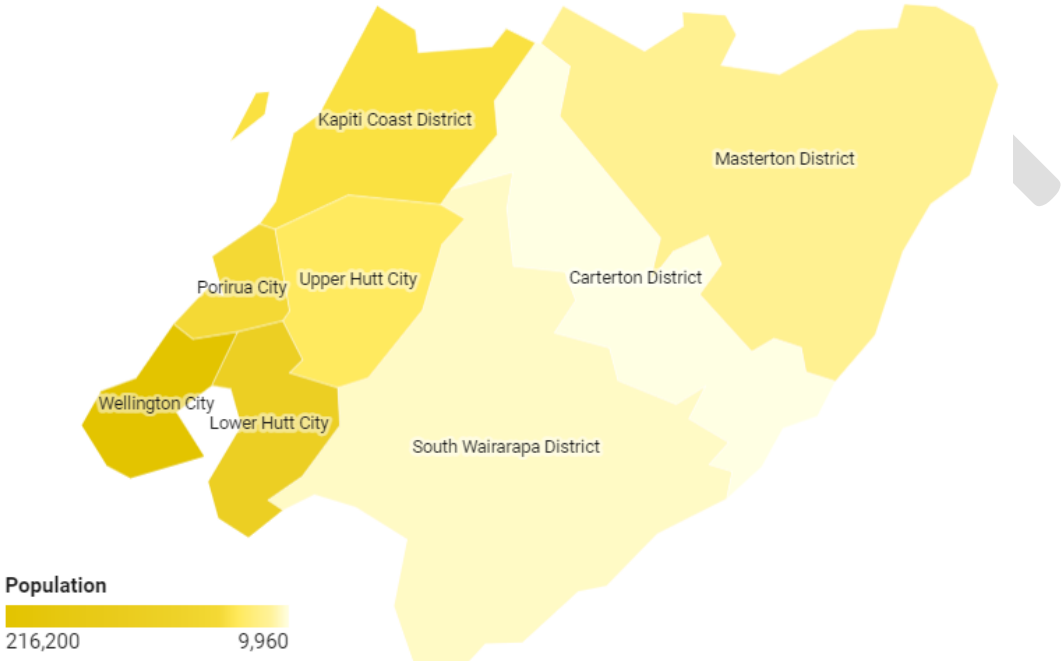


Figure 1 Wellington Region illustrating the Eight Territorial Authorities and Population Spread[9]

Additionally, **Figure 1** clearly illustrates the predominant regional population lies within the Wellington City, Lower Hutt and Porirua City areas and it is probable that due to the close proximity of these areas that residents may travel between territorial authorities for work and other activities.

3.1.2 Demographics

As noted in Section **3.1.1** above, the Wellington region has experienced steady annual growth as illustrated in **Figure 2** with the largest and most consistent increases reflected from 2014 onwards. Further, with a total resident population of approximately 547,000, the largest proportion resides in Wellington City (40%) followed by Lower Hutt (20%) and Kāpiti Coast District and Porirua City both at 11%. The remaining four authorities

[8] https://ecoprofile.infometrics.co.nz/Wellington Region/Population
[9] Stats NZ

report populations of less than 10% of the Wellington region (**Table 3**). However, of interest is the annual growth rate experience by each of the eight territorial authority areas, with the Masterton District reporting the highest annual growth rate of 2.5% between 2018 and 2020 followed by South Wairapapa District, Kāpiti Coast District and Carterton District all reporting annual growth changes at or above 2%. All remaining districts reported annual growth rates of between 1.3 and 1.8% (**Table 3**). As such, it is probable that the current population spread throughout the main centres may differ in the coming years should growth rates continue to increase across the semi-rural and rural districts and as a result the waste profiles within these districts may also change accordingly.

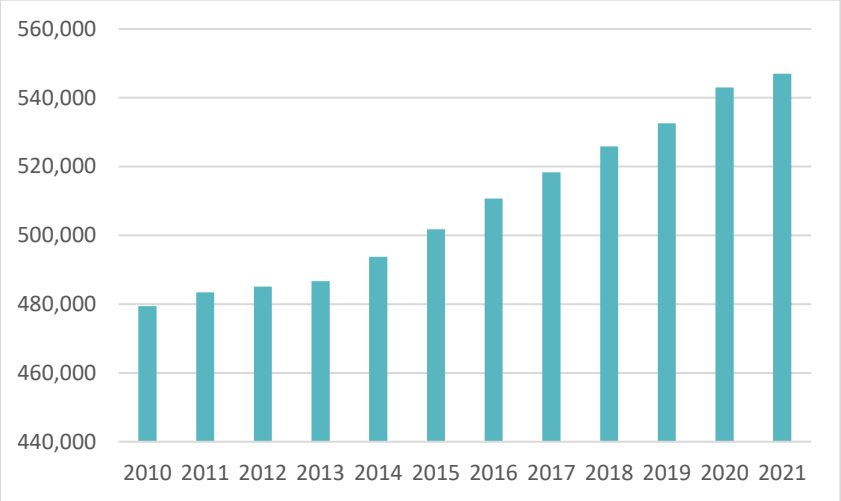


Figure 2 Total Population of the Wellington Region reported between 2010 and 2021[10]

Table 3 Wellington Region Estimated Resident Population[11]

	2018	2019	2020	2021	Average Annual Change 2018-2020		Approximate Proportion of the Wellington Region Population (%)
					Number	Percent (%)	
Kāpiti Coast District Council	55,200	56,100	57,400	58,000	1,100	2.0	11
Porirua City	58,900	59,800	61,000	61,900	1,100	1.8	11
Upper Hutt City	45,400	46,200	46,900	47,500	750	1.6	9
Lower Hutt City	108,600	109,900	112,000	112,800	1,700	1.6	20
Wellington City	211,200	212,900	216,700	217,000	2,800	1.3	40
Masterton District	26,400	26,900	27,700	28,200	660	2.5	5
Carterton District	9,510	9,660	9,890	10,050	190	2.0	2
South Wairarapa District	10,900	11,100	11,450	11,650	250	2.3	2
Total Regional Population	**526,110**	**532,560**	**543,040**	**547,100**	-	-	-

While population growth and spread throughout the region is an important factor to help understand waste flows and quantities, other factors such as age also help to provide greater clarity on the makeup of waste and

[10] https://ecoprofile.infometrics.co.nz/Wellington Region/Population/Growth
[11] Subnational population estimates: At 30 June 2021 (provisional) | Stats NZ

associated resources. Within the Wellington region, the median age as reported by Stats NZ is 37 years with **Figure 3** illustrating the spread of peoples age and sex. While age may be considered a proxy for the types and quantities of waste that may be produced within a district and/or wider region, it is only one influencing factor and cannot be considered in isolation of other factors including, accessibility to and equity of services and the impacts that seasonality and health events.

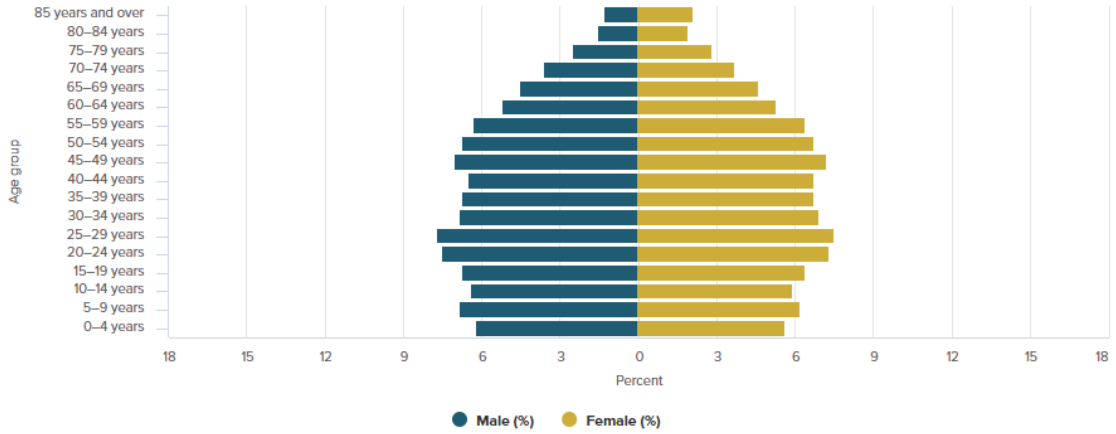
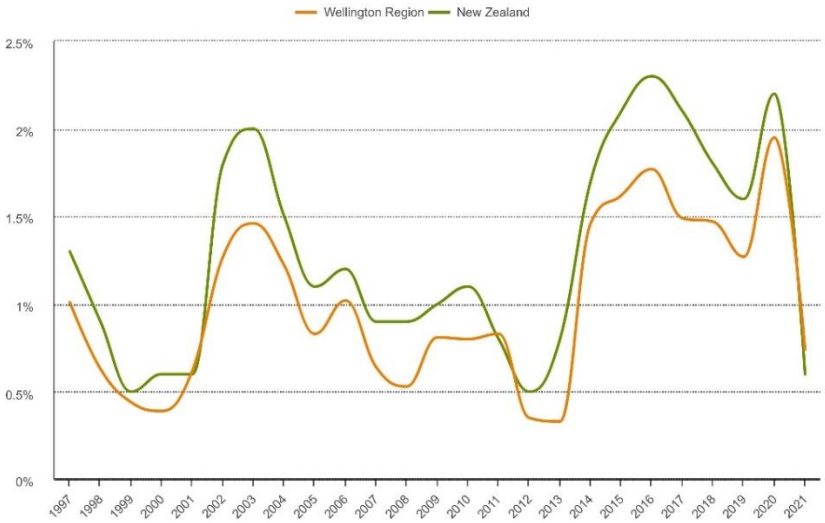


Figure 3 Age and Sex of People in the Wellington Region (2018 census Data)[12]

Further, when comparing the Wellington Region population to that of wider Aotearoa New Zealand, it is clear that population growth has declined rapidly from 2020 to 2021 (**Figure 4**). While there are a range of factors that would contribute to a decline, it is likely that reduce immigration due to COVID-19 border closures during the same period will be the main causative factor. With borders now reopening, it is plausible that population growth rate within the Wellington Region will again begin to increase and shows signs of pre-2020 rates (**Figure 4**).



[12] Place Summaries | Wellington Region | Stats NZ

Figure 4 Population Growth Rate of the Wellington Region Compared with wider New Zealand reported between 1997 and 2021[13]

Further, when looking at the population and density of residents across the region, dwelling count is an interesting factor to help understand the pressures that may be placed on households and the resulting influence this may have on household waste production. For example, the Wellington region has approximately 11% of the national number of occupied dwellings (186,225) with approximately 7% of the national number under construction (1,068), which when combined suggest that the Wellington Region population and dwelling occupancy is set to continue (**Table 4**). With this in mind and acknowledging the previous demographic information, the resultant waste quantities and types are also expected to increase proportionately. However, with an increased focus on redesign of products, behaviour change, reduction and recycling of resource initiatives both at a Central Government and Local Government levels, the amount of waste being produced and subsequently disposed of is anticipated to change accordingly. However, this change will require wider initiatives such as investment in waste and resource management infrastructure as well as supporting legislative instruments.

Table 4 Dwelling Occupancy Status in the Wellington Region Compared with New Zealand[14]

Dwelling Type	Wellington Region (count)	% of Wellington Region	New Zealand (count)	% of New Zealand
Occupied Dwelling	186,225	92%	1,664,313	89%
Unoccupied Dwelling	14,754	7%	191,649	10%
Dwelling under Construction	1,068	1%	15,972	1%
Total Private Dwellings	**202,047**	**100%**	**1,871,934**	**100%**

3.1.3 Economy

3.1.3.1 Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is an important economic indicator that measures the size of an economy. For the Wellington Region GDP in 2021 declined -0.5% to $43,623million, with a similar reduction seen throughout Aotearoa New Zealand with national GDP dropping -1.2%. **Figure 5** below illustrates the change in GDP across the Wellington Region and nationally illustrating a significant and sharp decline from late 2019/early 2020. While a range of factors are likely responsible, the occurrence of the global COVID-19 pandemic is likely to be the key contributing factor, and which continues to influence regional and national GDP levels. As such, it is important to contextualise this decline as GDP growth throughout other global countries are also showing signs of contraction and slowing of markets.

[13] https://ecoprofile.infometrics.co.nz/Wellington Region/Population/Growth
[14] Place Summaries | Wellington Region | Stats NZ

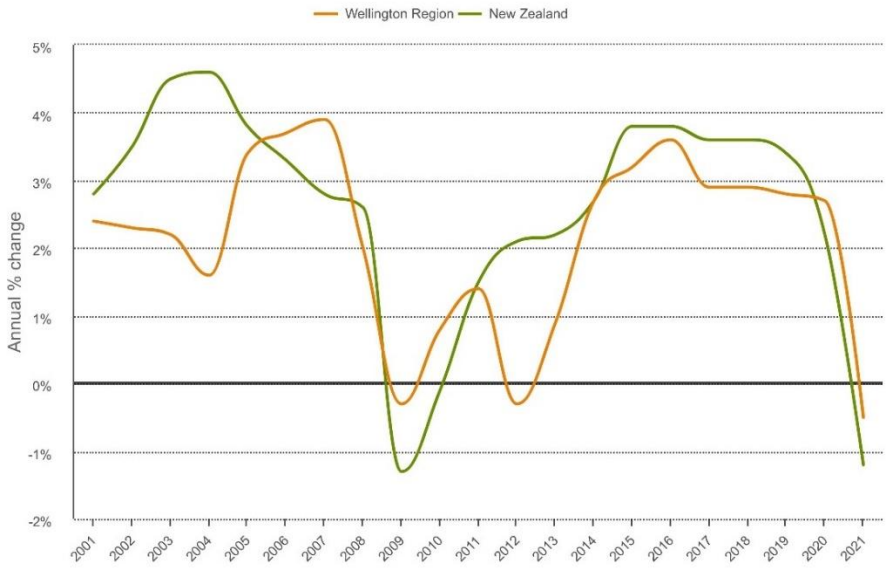


Figure 5 Gross Domestic Product Growth Reported for the Wellington Region between 2001 and 2021[15]

Further, of the key industries contributing to GDP within the Wellington region, public administration and safety (13.1%) followed by professional, scientific and technical services (12.8%) (**Figure 6**) contributed to more than $3,300million or approximately 40% of the regions GDP (**Table 5**).

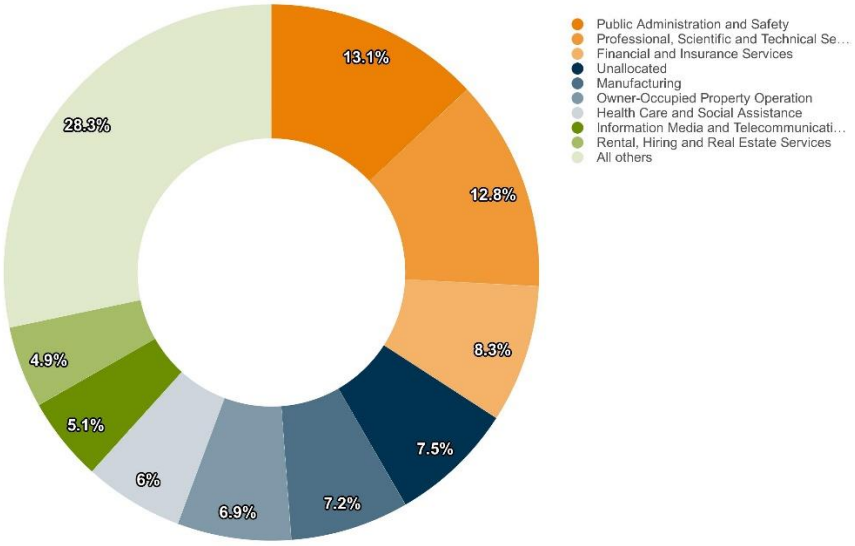


Figure 6 Proportion of Gross Domestic Product by Industry Type for the Wellington Region between 2001 and 2021[16]

[15] https://ecoprofile.infometrics.co.nz/Wellington Region/Gdp
[16] https://ecoprofile.infometrics.co.nz/Wellington Region/Gdp

Table 5 Main Industry Contributors to Gross Domestic Product within the Wellington Region[17]

Industry	Proportion of Gross Domestic Product ($million)
Public administration and safety	$1,738M
Professional, scientific and technical services	$1,577M
Financial and insurance services	$631M
Health care and social assistance	$618M
Construction	$588M
All other industries	$2,973M
Total Increase in GDP	**$8,125M**

Further, when comparing the GDP by industry types within the Wellington Region to those of New Zealand, it is clear that the Wellington Region has a much higher GDP contribution associated with the professional, scientific and technical services and public administration and safety than that of the wider New Zealand (**Figure 7**). This most likely due to the higher proportion of administrative and office-based roles within Wellington City, as the capital of Aotearoa New Zealand and comparatively less agriculture and forestry and fishing-based industries within the wider region than compared with wider Aotearoa New Zealand. As reported in the 2016 Waste Assessment Report, the type of industries comprising the Wellington Region have a direct influence on the type of waste produced and available for management. For example, the high proportion of administrative roles would suggest a waste stream comprising materials common place in office-based roles (e.g., paper, cardboard, food scraps) compared with agricultural and rural waste comprising for example, agricultural chemical containers, treated timber and livestock waste.

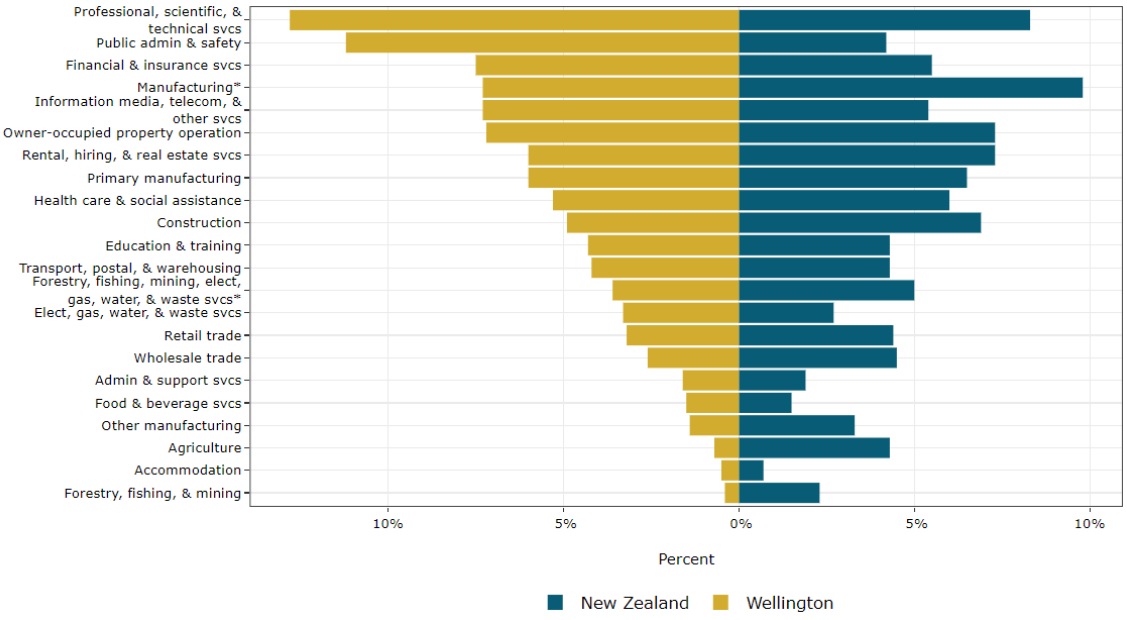


Figure 7 2020 GDP Contribution by Industry in the Wellington Region compared with New Zealand[18]

[17] https://ecoprofile.infometrics.co.nz/Wellington Region/Gdp
[18] https://ecoprofile.infometrics.co.nz/Wellington Region/Gdp/GrowthIndustries

3.1.3.2 Work and Labour Force

When looking at the composition of the Wellington Region economy, the work and labour force are two key aspects for consideration as both underpin GDP. **Figure 8** clearly shows that the Wellington Region compared to the national 2018 census data has a higher proportion of full-time employed workers (approximately 53%) and slightly fewer part-time employees (approximately 14%). However, while the 2018 census data has reported a slightly higher proportion of unemployed people (4.4%) in the Wellington Region compared with the national average of (4%), this difference can be considered minor for the purpose of this report. Taking a deeper look into the 2018 census occupations of people in the Wellington Region compared to the wider Aotearoa New Zealand, 'professionals' represent approximately 32% of the Wellington Region occupations and which is significantly above the New Zealand percentage of 23%. Managerial occupations represent the second highest percentage at approximately 17% followed by 'clerical and administrative workers' at approximately 12% and again above the national average of approximately 11% (**Figure 9**).

Acknowledging the current COVID-19 pandemic and the impacts this has had on global and local economies, Figure 10 illustrates the key industries that are currently contributing to growth in the Wellington Region. Of note, 'public administration and safety' has seen an annual growth of 9.3% with an additional 3,463 jobs established since 2020 which reported 37,075 jobs in this industry. Similarly, health care and social assistance saw an annual increase of 4.5% with an additional 1,301 jobs established since 2020 which reported 28,723 jobs. Unsurprisingly, the construction industry saw an annual growth of 3.8% with an additional 936 jobs established since 2020 numbers of 24,462 jobs; most likely attributed to the significant increase in residential and commercial construction across the industry and which has been broadly seen nationally. However, and in comparison, the accommodation and food services industry saw a contraction with -6.1% annual growth rate reported with a loss of 1,234 jobs since 2020 numbers of 20,383 jobs. Similarly, the administrative and support services and retail trade industries both saw a contraction of -4.4% (a loss of 699 jobs) and -1.4% (a loss of 329 jobs), most likely attributed to the COVID-19 pandemic affecting hospitality spend and retail sales.

Further, while the total personal income for people in the Wellington Region varied, the four main income categories were reported in the 2018 census data as (**Figure 11**):

- $70,001-$100,000 (11.2% of people; 9.6% nationally)
- $40,001-$50,000 (8.9% of people; 9.7% nationally)
- $15,001-$20,000 (8.6% of people; 9.9% nationally)
- $100,000-$150,000 (7.1% of people; 4.7% nationally)

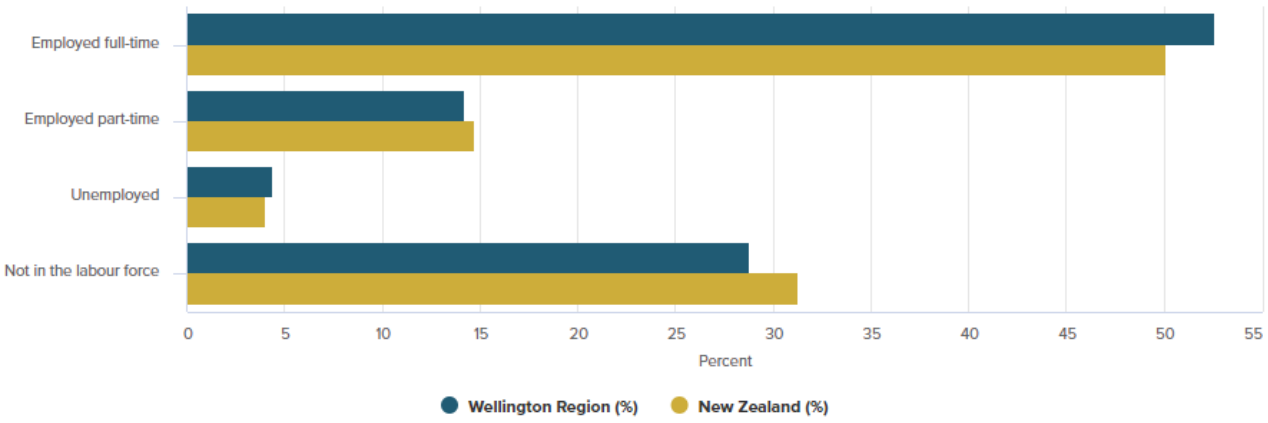


Figure 8 Work and Labour Force Status for People in the Wellington Region compared with New Zealand, 2018 Census Data[19]

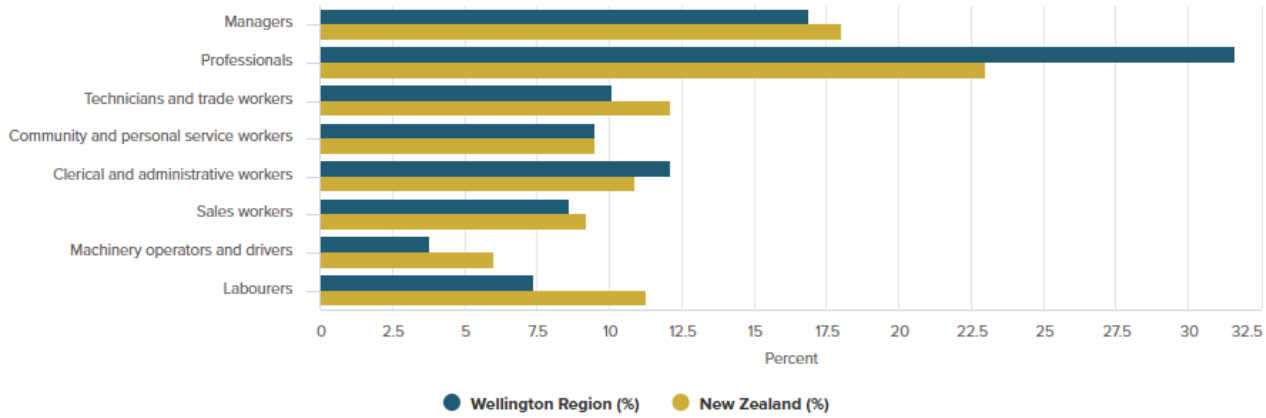


Figure 9 Occupations for People in the Wellington Region compared with New Zealand, 2018 Census Data[20]

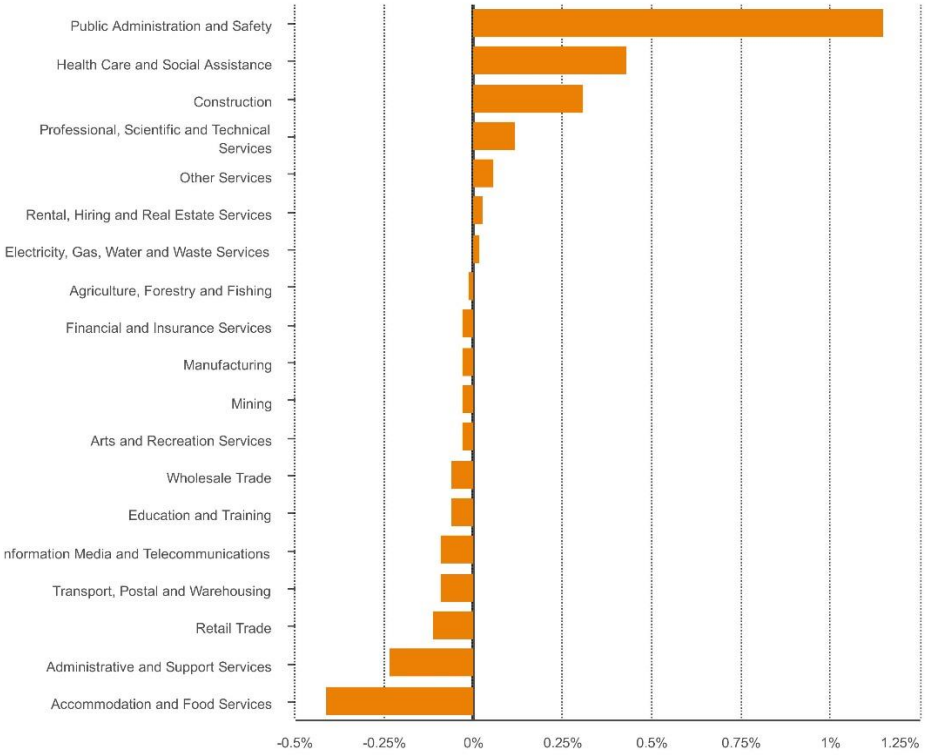


Figure 10 Key Industries by Contribution to Employment Growth in the Wellington Region between 2020 and 2021[21]

[19] Place Summaries | Wellington Region | Stats NZ
[20] Place Summaries | Wellington Region | Stats NZ
[21] https://ecoprofile.infometrics.co.nz/Wellington Region/Employment/GrowthIndustriesBroad

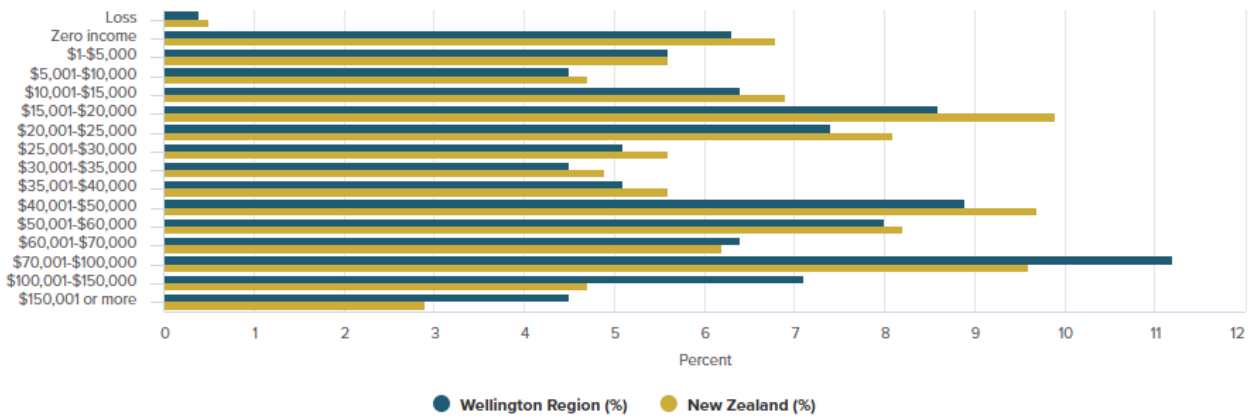


Figure 11 Total Personal Income for People in the Wellington Region compared with New Zealand, 2018 Census Data[22]

As was reported in the 2016 Waste Assessment and acknowledging the 3.8% annual growth of the construction industry, it is clear that the Wellington Region is experiencing a significant increase in the construction of new multi-unit houses with a 33.2% increase (2,091 multi-unit houses) from 2020 (1,570 multi-unit houses), and which is almost reflective of pre-COVID levels in 2019 of 47.9% (**Table 6**). Similarly, in 2021 there was a reported 5.2% increase in the number of consented houses, however when compared to previous years and excluding the 2019-2020 periods due to COVID-19, the percentage change is significantly lower than reported between 2016 to 2018. While this might signal a decline in the construction of houses due to market demand it is probable that this decline is a result of greater emphasis being placed on the construction of higher density housing; a theme seen throughout Aotearoa New Zealand.

Table 6 Annual Number and Percentage Change of New Dwellings Consented in the Wellington Region[23]

	Year ended December (Number)						Year ended December (Percentage Change from Previous Year)					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
Houses	1,233	1,432	1,595	1,540	1,487	1,565	25.6	16.1	11.4	-3.4	-3.4	5.2
Multi-Unit Houses	759	862	1,136	1,680	1,570	2,091	2.7	13.6	31.8	47.9	-6.5	33.2
TOTAL	**1,992**	**2,294**	**2,731**	**3,220**	**3,057**	**3,656**	**15.7**	**15.2**	**19.0**	**17.9**	**-5.1**	**19.6**

3.1.4 Overview of Potential Future Changes to the Region

At the time of writing, the Ministry for the Environment is working on developing several key waste and resource management initiatives along with appropriate legislation and updating several key existing legislative instruments. Acknowledging the development of several key new initiatives are not yet in place at the time of writing this waste assessment, it is expected that the below list will largely be in effect over the coming years and as such will influence and shape the waste and resource management activities carried out by each of the Councils in the Wellington Region.

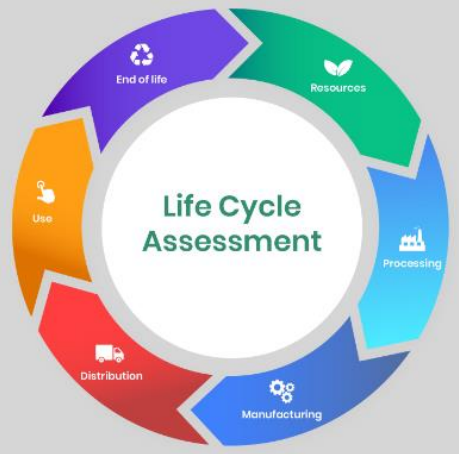
- Development of a new national waste strategy and new legislation to better regulate how we manage products and materials circulating on our economy

[22] Place Summaries | Wellington Region | Stats NZ
[23] Building consents issued: December 2021 | Stats NZ

- Development of a long-term infrastructure plan to provide a national view of the waste investment Aotearoa New Zealand needs over the next 15-years
- Standardising kerbside recycling to make it simpler and easier for people to recycle correctly
- Container return scheme to incentivise people to return their empty beverage containers for recycling in exchange for a small refundable deposit (20-cents proposed)
- Developing end-of-life solutions for the six priority products:
    - Plastic packaging
    - Tyres
    - Electrical and electronic products (e-waste including large batteries)
    - Agrichemicals and their containers
    - Refrigerants
    - Farm plastics
- Phasing out certain single-use plastic items and hard-to-recycle plastic packaging (e.g., type #3 PVC containers, type #6 polystyrene drink packaging)
- Diversion of business food scraps from landfill to reduce greenhouse gas emissions and make better use of organic material
- Reducing construction and demolition waste and move towards more circular systems for building materials used

4 WELLINGTON WASTE INFRASTRUCTURE OVERVIEW

To provide an understanding of how waste and resources are managed within the Wellington Region, this section aims to provide an overview of the range of infrastructure options available through the eight territorial authorities. Where possible, infrastructure has been aligned to the waste hierarchy to show case how individual and collective authorities currently manage waste and resources, whilst also providing an overview of the potential opportunities to maximise reuse and recovery of materials and products throughout a products lifecycle.



4.1 Overview of Wellington Region Waste Infrastructure

The following sections provide an overview of the waste and resource management infrastructure in the Wellington Region and are based on the outputs of the 2016 Regional Waste Assessment. Of note, the information has been presented to broadly align with the waste hierarchy (**Figure 12**) beginning with infrastructure that aligns with recovery and recycling of materials through to disposal; including landfilling and littering. The intent of this approach is to acknowledge the efforts within the region to recover and reuse as much material as possible to avoid disposal to landfill, thereby supporting efforts to reduce per capita waste production.

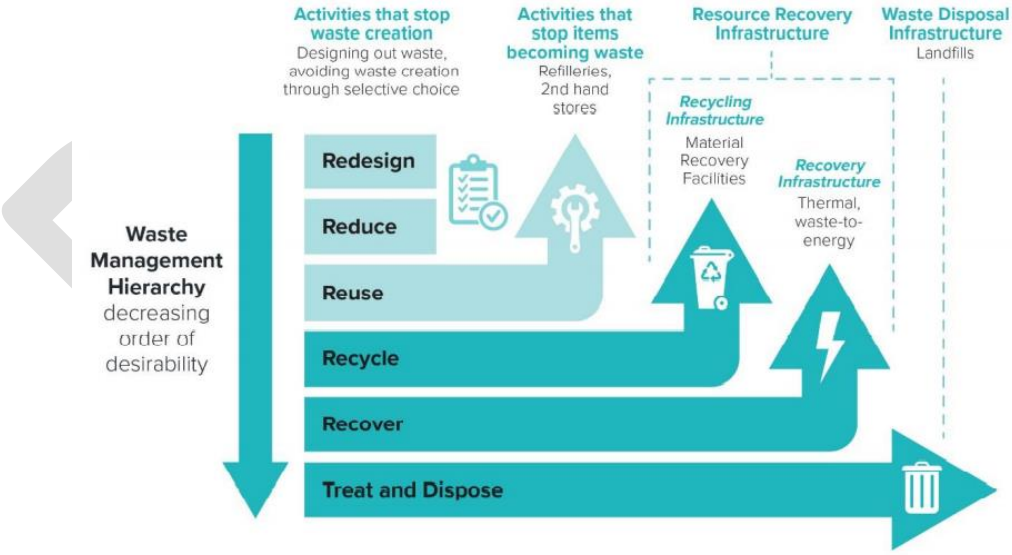


Figure 12 Waste minimisation hierarchy and resource recovery and disposal infrastructure (Te Waihanga, New Zealand Infrastructure Commission 2020, adapted from s44 Waste Minimisation Act 2008 and Auckland Council 2018)[24]

[24] New Zealand Infrastructure Commission – Te Waihanga: Sector State of Play: Resource Recovery and Waste Discussion Document

Further, it is important to note here that since the 2016 Waste Assessment Report there have been significant efforts undertaken by each of the eight territorial authorities to reduce the amount of waste produced; however the unfortunate global COVID-19 health pandemic has had significant impacts regionally and nationally resulting in reduced ability for the Wellington Region to meet the primary[25] waste reduction target of reducing total waste sent to Class 1 landfills from 600kg per person to 400kg per person by 2026. However, each territorial authority has remained committed to achieving this primary target and has where able, continued to progress initiatives, albeit at a slower rate due to the impacts COVID-19 has had across the waste and resource management sector.

As noted, the following sections are broadly aligned to the waste hierarchy and the material life-cycle as follows:

- Reuse
  - Resource Recovery Centres (Section **4.1.1**)
- Recycle and Recover
  - Recycling and Reprocessing Facilities (Section **4.1.2**)
  - Refuse Transfer Stations (Section **4.1.3**)
- Treat and Dispose
  - Landfills (Section **4.1.4**)
  - Hazardous Waste Facilities and Services (Section **4.1.5**)

Littering has been included in this report as it represents an important pathway by which materials enter the environment, thereby bypassing council managed material recovery and recycling services (e.g., kerbside recycling, public place recycling). Littering is discussed further in Section **4.1.6**.

4.1.1 Resource Recovery Centres

For clarity, a resource recovery centre is defined here as a location that primarily provides a service to the public whereby resources are collected, sorted, transported and on sold via a range of methods (e.g., resource recovery shops, social media platforms). These centres may include shops located at a transfer station and/or landfill site, community recycling centre and reuse stores. A resource recovery centre may also bulk collect materials (e.g., paper and cardboard) for collection and transportation for further processing (see Section **4.1.2** for further discussion). While this report generally focusses on the waste and resources that are controlled and/or influenced by Council activities, it is important to recognise and acknowledge the connection with other non-Council facilities such as hospice shops and other community stores as providing complementary recovery of resources.

Further, the above description also recognises the WasteMINZ Recycling & Resource Recovery Sector Group vision:

A Resource Recovery Sector Group working with the people of Aotearoa to maximise the recovery and delivery of high-quality materials for remanufacturing that aligns with a move to a circular economy, and which keep products and materials in use, at their highest level.

Across the Wellington Region, a range of public drop-off facilities and second-hand stores are managed by councils, and which accept a wide range of materials (e.g., household goods, building materials, clothing and

[25] as set out in the Regional Waste Management and Minimisation Plan (2017-2023)

textiles). These facilities include but are not limited to Wairarapa Resource Centre (Masterton), Otaihanga Resource Recovery Centre (Kāpiti Coast), 'Tip Shop' (Wellington City). Supporting these council facilities are a wide range of complementary facilities accepting a range of materials from paint (e.g., Paintwise, Resene), e-waste, used cartridges (e.g., Cartridge World), car parts (e.g., scrap metal yards, mechanics) and scrap metal (e.g., various scrap metal yards). As the continued focus on resource management and diverting resources from landfill becomes more mainstream coupled with diversification of facilities to both accept and reprocess materials, it is probable that the number, location and type of facilities that accept material will continue to grow and expand throughout the Wellington Region.

The following section further discusses the range of recycling and reprocessing facilities throughout the Wellington Region, and which represent the next stage in the management of a product and/or materials lifecycle.

4.1.2 Recycling and Reprocessing Facilities

Recycling and reprocessing facilities are many and varied throughout the Wellington Region. For clarity, these facilities relate to the collection, sorting, processing and conversion into new products but does not include the use of these materials for energy production (e.g., energy from waste facilities).

Table 7 has been adapted from the 2016 Waste Assessment and includes information of materials that are currently recycled and reprocessed within the Wellington Region. All data has been provided by each of the Councils (except Carterton where no data was available) in the Wellington Region. Further, as has been discussed in Section **4.1.1** above, the range of recycling and reprocessing facilities are also supported by a wide and diverse range of smaller supporting facilities which may undertake indirect activities that support recycling and reprocessing (e.g., dismantling).

Table 7 Details of Recycling and Reprocessing Facilities in the Wellington Region

Facility Type	Council Area	Materials	Description
Composting	Wellington	Accepts food waste and greenwaste	Capital Compost, Static pile windrow, Southern landfill
	Masterton	Accepts greenwaste	Nursery Road, Static pile windrow
	South Wairarapa	Greenwaste	Envirocomp, In-vessel
	Kāpiti	Accepts greenwaste	Composting NZ, Static pile windrow. Drop off and processing facility is in Otaihanga and there is a satellite drop off location at the Otaki RTS.
	Upper Hutt	Food waste	Mahinga Kai
CnD Waste	Wellington	Timber, metal, concrete, brick, etc	Woods Waste
Drop-Off	Wellington	Used paint	4 Paintwise paint drop off point
		Nappies	8 Envirocomp sites
		Soft plastics (plastic bags)	Various retail sites (Warehouse, New World, Pak'n'Save)
		E-Waste (drop off)	Second Treasures (Southern landfill)
	Masterton	E-waste dismantling, refurbishment and reuse	Wairarapa Resource Centre
	Kāpiti	Used paint	1 Paintwise paint drop off point and Otaihanga Reuse Shop
		Soft plastics (plastic bags)	Various retail sites (New World and Countdown supermarkets)
		E-waste (TVs, whiteware, fridges/freezers, small electronic items, batteries,	Otaihanga RRF and Otaki RTS

Facility Type	Council Area	Materials	Description
		Recycling (paper and cardboard, tins and cans, plastic containers 1, 2 and 5, glass)	Otaihanga RRF and Otaki RTS
		Child carseats (Seatsmart programme)	Otaihanga RRF
		Household hazardous	Otaihanga RRF
	Upper Hutt	Soft plastics (plastic bags)	Various retail sites (Warehouse, New World, Pak'n'Save)
		Greenwaste	Taken to CNZ in Paraparaumu
	Hutt City	Paint	Resene and Dulux outlets
		Soft plastics (plastic bags)	Following retails sites: Countdown (Petone) The Warehouse (Petone, Queensgate) New World Pak N Save (Petone)
		E-Waste	Noel Leeming (LH depot for TechCollect) Earthlink (items scrapped onsite)
	Porirua	Used paint	1 Paintwise paint drop off point
		Soft plastics (plastic bags)	Various retail sites (Warehouse, New World, Pak'n'Save)
		Tetra Pak	Earthlink, remanufacturer into saveBOARD. Drop off for recycling at Spicer Landfill
		E-Waste	Electronic waste drop-off locations: Trash Palace, Earthlink, IT Recyla, Remarkit, E-Cycle
		Green waste	Compositing New Zealand drop-off
		Used oil	Spicer landfill accepts used vehicle oil
		Car batteries	Exide Technologies, Barry & Mexted and Macauley Metals
		Printer cartridges	Drop-off cartridges for recycling at Warehouse Stationary
		Bulk recycling	Drop-off at Spicer Landfill
E-Waste Processing	Wellington	E-waste dismantling, refurbishments and reuse	ReMarkIT
	Upper Hutt	E-waste	Remarkit, Recycling for charity
Hazardous	Wellington	Free drop off of domestic hazardous wastes	Up to 20L/kg per visit, Southern landfill
	Hutt City	Hazardous and chemical wastes	Waste Management Technical Services
	Porirua	Hazardous quarantine and medical waste	Broken Hill Rd, Porirua
Other Organic	Wellington	Food rescue	Kaibosh and Kiwi Community Assistance
Plastics Reprocessing	Porirua	Polystyrene	Poly Palace, Remanufacture into panel insulation products
Re-Use Stores	Wellington	Building materials	No.8 Recyclers
		Household items	Second Treasures (Southern landfill)
		Cartridges	Cartridge World
		Car parts	Various
	Masterton	Building materials	Renovators Ltd, Rummages
		Household items	Wairarapa Resource Centre
	Kāpiti	Household items	Otaihanaga RRC and various second-hand stores
		Building materials	Kāpiti Building Recyclers Ltd, Ace Building Recycle Barn
		Cartridges	Cartridge World, Second Image
		Car parts	Various
	Upper Hutt	Building materials	Recyclers, James Henry Joinery

Facility Type	Council Area	Materials	Description
		Cartridges	Cartridge World
		Car parts	Hillside auto wreckers
	Hutt City	Building materials	Various
		Household items	Earthlink Op shops Second-hand good retailers
		Cartridges	Cartridge World
		Car parts	Various
	Porirua	Building materials	The Building Recyclers
		Household items	Trash Palace, Free for all, various charity stores eg St Vincent De Paul Op Shop, Salvation Army
		Cartridges	Cartridge World
		Clothing	Save Mart
		Car parts	Various
Scrap Metal	Wellington	Ferrous and non-ferrous	Wellington Scrap Metals
	Masterton	Ferrous and non-ferrous	Wairarapa Scrap Metal Ltd
	Kāpiti	Ferrous and non-ferrous	Remaka Metal Recyclers Ltd
	Upper Hutt	Ferrous and non-ferrous	Upper Hutt Metals
	Hutt City	Ferrous and non-ferrous	Macaulay Metals Ingot Scrap Metals Sims Pacific General Metal Recyclers Total Recycling Ltd
	Porirua	Ferrous and non-ferrous	Drop-off sites: AKB Ingot Scrap Metals, Wellington Scrap Metals, Macauley Metals
Rendering	Wellington	Animal by-products form meat processing	Taylor Preston Ltd

4.1.3 Refuse Transfer Stations

As reported in the 2016 Waste Assessment Report, recycling collectors and the public have access to twelve refuse transfer stations throughout the Wellington Region (**Table 8**). It is important to note here that the Waikanae Greenwaste and Recycling Centre is no longer available as this facility closed in July 2022. For clarity, refuse transfer stations are commonly commercial operations with limited public access, and serve as a point of disposal, consolidation and sorting before materials are transported to either landfill for final disposal, or to alternative recovery pathways (e.g., additional recycling, reuse, repurposing). It is worth noting here that commercial operators may also refer to a transfer station as a resource recovery park or resource drop-off centre to highlight the industries transition to providing modern facilities that accommodate a wider range of services.

The twelve facilities are also supported by the three regional landfills which also accept a wide range of materials for drop-off, including greenwaste and recyclable items. **Table 8** has been adapted from the 2016 Assessment to ensure consistency.

Table 8 Refuse Transfer Stations within the Wellington Region and Resources Accepted

Refuse Transfer Station	Owner / Operator	Hours of Access	Materials Accepted
Seaview Recycle and Transfer Station (Hutt City)	Waste Management (NZ) Ltd	Monday – Saturday 7.30am - 5.00pm Sunday and Public Holidays 8.30am - 4.30pm	Refuse Recycling Greenwaste

Refuse Transfer Station	Owner / Operator	Hours of Access	Materials Accepted
Otaihanga Resource Recovery Facility (Kāpiti Coast)	Kāpiti Coast District Council / Midwest Disposals Ltd	Monday to Saturday 8.00am – 5.00pm Sunday and Public Holidays 9.00am – 5.00pm	Refuse Recycling Greenwaste
Waikanae Greenwaste and Recycling Centre (Kāpiti Coast)	**Facility Closed as at 15 July 2022**		
Ōtaki Refuse Transfer Station (Kāpiti Coast)	Kāpiti Coast District Council / EnviroWaste Services Ltd	Monday to Saturday 8.00am – 5.00pm Sunday and Public Holidays 9.00am – 5.00pm	Refuse Recycling Greenwaste
Martinborough Transfer Station (South Wairarapa District)	South Wairarapa District Council / Wairarapa Environmental	Wednesday: 10.00am – 4.00pm Saturday: 10.00am – 4.00pm Sunday: 10.00am – 4.00pm Agricultural recycling only from 1.00pm – 3.00pm on the third Wednesday of each month	Refuse Recycling Greenwaste E-waste (free of charge)
Greytown Recycling Station (South Wairarapa District)	South Wairarapa District Council / Wairarapa Environmental	Tuesday: 1.00pm – 3.30pm Saturday: 10.00am – 12.00pm Sunday: 10.00am – 1.00pm	Recycling Greenwaste
Featherston Recycling Station (South Wairarapa District)	South Wairarapa District Council / Wairarapa Environmental	Thursday: 11.00am – 3.00pm Saturday: 11.00am – 3.00pm Sunday: 11.00am – 3.00pm	Recycling Greenwaste
Pirinoa Recycling Station (South Wairarapa District)	South Wairarapa District Council / Wairarapa Environmental	Wednesday: 1.00pm – 3.00pm Saturday: 10.00am – 12.00pm Sunday (May to August): 3.00pm – 5.00pm Sunday (September to April): 4.00pm – 6.00pm	Recycling Greenwaste
Castlepoint (Masterton District)	Masterton District Council / Wairarapa Environmental	Wednesday: 9.00am–12.00pm Sunday: 11.00am–3.00pm	Refuse Recycling Greenwaste
Riversdale (Masterton District)	Masterton District Council / Wairarapa Environmental	Wednesday and Sunday: 1:30pm–4:30pm Sundays in December, January and February: 1:30pm–7:30pm	Refuse Recycling Greenwaste
Masterton (Masterton District)	Masterton District Council / Wairarapa Environmental	Monday-Friday: 7:30am–4:30pm Saturday: 8:30am–4:30pm Sunday and Public holidays: 10am–4pm ANZAC Day: 1pm–4:30pm	Refuse Recycling Greenwaste

Refuse Transfer Station	Owner / Operator	Hours of Access	Materials Accepted
		Closed on Christmas Day, New Year's Day and Good Friday	
Dalefield Road Transfer Station (Carterton District)		Tuesday-Friday: 9.00am – 11.00am Saturday: 9am–12pm Sunday: 1:30pm–4:30pm	Refuse Recycling Greenwaste
Woods Waste (Ngaio, Wellington)	Woods Waste	No public access	Refuse Recycling

4.1.4 Landfills

This section provides an overview of the types of landfills operating throughout the Wellington Region and which accept a range of materials for disposal. In general, and as reported by Manatū Mō Te Taiao – Ministry for the Environment, landfills are facilities for the final controlled disposal of waste in or onto land. Under the Resource Management Act 1991, landfills must have consent conditions which are appropriate to the material they accept (e.g., municipal solid waste, construction and demolition, hazardous waste). The information contained in the following sections reflects that provided in the 2016 Waste Assessment and includes updates and additional components where appropriate.

4.1.4.1 Class 1 Landfills

There are three Class 1 landfill disposal facilities in the Wellington Region (all located on the western boundary of the region) which accept municipal solid waste from around the region (**Figure 13**). **Table 9** details the three landfills including the approximate annual tonnage accepted, consent expiry and capacity and current advertised general waste gate fees.

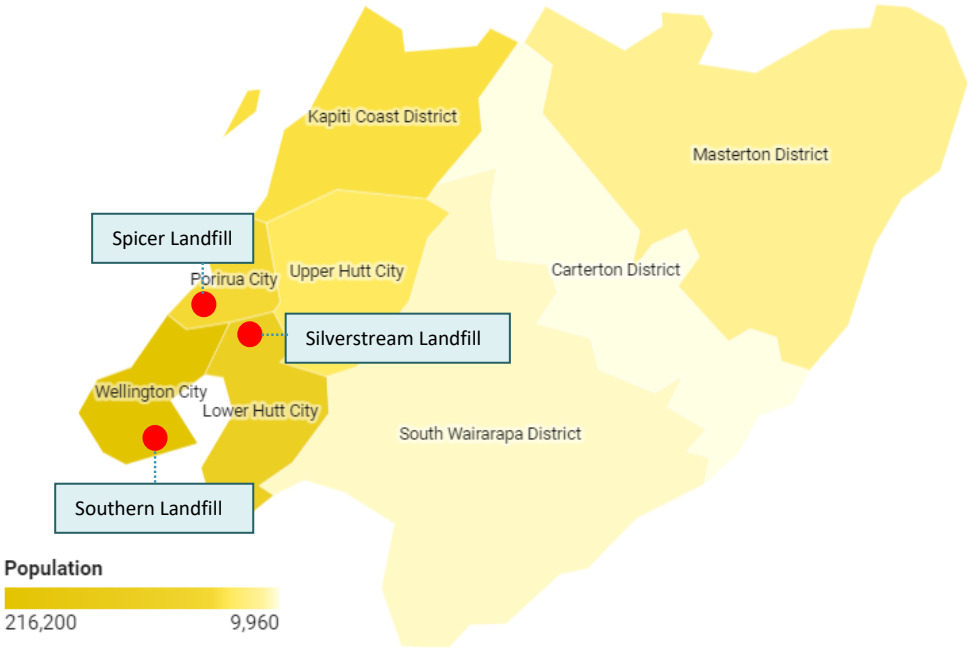


Figure 13 Approximate Location of the Three Wellington Region Landfills

Table 9 Class 1 Landfills in the Wellington Region

Disposal Facility	Location	Approximate Annual Tonnage Accepted	Consent Expiry	Advertised General Waste Gate Fee
Southern Landfill	Wellington	100,000	Current cell capacity to approximately 2026 Valley capacity for 100yrs	Domestic vehicles $245.50 per tonne Commercial $196.07 per tonne[26]
Bonny Glen landfill (Mid West Disposals)	Rangitikei District (outside of region)	Up to 250,000	Consented to 2050	$166.19
Levin landfill (Horowhenua DC)	Horowhenua District (outside of region)	30,000	Consented to 2037	$163.50
Silverstream	Hutt City	141,000	Consented to 2055	All vehicles $189.75 per tonne[27]
Spicer Landfill	Porirua	45,000	Consented to 2030, capacity to 2045	Domestic $27.50 - $73.00 (per vehicle or per trailer) Commercial $189.97 per tonne [28]

While the region has good access to a range of landfills, including landfill capacity to service a growing regional population, the geography of the region and the location of the landfills means that districts including Masterton, Carterton and South Wairarapa must transport waste material long distances. Further, weather events and seasonality (e.g., winter weather road closures) also influence the accessibility of the roading network and therefore the ability to transport waste when required. **Table 10** below reports [29] the approximate travel distances from each region to the three regional landfills.

Table 10 Approximate Travel Distances to the Three Region Based Landfills

Territorial Authority	Southern Landfill	Spicers Landfill	Silverstream Landfill
Carterton District Council	91	85	61
Hutt City Council	24	29	12
Kāpiti Coast District Council	64	42	52
Masterton District Council	106	100	76
Porirua City Council	28	5	25
South Wairarapa District Council	88	82	60
Upper Hutt City Council	41	35	11
Wellington City Council	8	24	28

[26] Southern Landfill, Tip Shop and Recycle Centre - Landfill charges - Wellington City Council – data provided Wellington City Council

[27] Landfill location and charges, and litter penalties | Hutt City Council

[28] Spicer Landfill hours and fees - Porirua City

[29] Extracted from the 2016 Regional Waste Assessment Report

As reported in the 2016 Regional Waste Assessment, this report also acknowledges that Bonny Glen landfill and Horowhenua landfill both located outside of the Wellington Region that accept waste from Kāpiti Coast District Council.

4.1.4.2 Closed Landfills

As reported in the 2016 Waste Assessment the following description remains current:

'Most closed landfills in the Wellington region have become open space areas and are used as sports fields or passive recreation reserves. In many cases, the extent of the fill in the closed landfill is not known with any degree of accuracy. There are approximately eighty closed landfill sites in the Wellington region, of which thirty-three are within Wellington City Council area.'

4.1.4.3 Cleanfills (Class 2-4 Landfills)

Within the Wellington Region, the Class 2-4 landfills are reported to directly compete with Class 1 landfills. The difference between these landfills grades is based on the cost of disposal with the Class 2-4 landfills generally less expensive than Class 1 landfills. **Table 11** below summarises the range of Class 2-4 landfills present within the Wellington Region including the approximate consent timeframes.

Table 11 Class 2-4 Landfills in the Wellington Region

Facility Name	Landfill Class	Approximate Consent Expiry
Carterton Transfer Station (Dalefield Road, Carterton District)	4	No Data Provided
T&T Landfill (Happy Valley, Owhiro Bay, Wellington)	4	June 2049
C&D Landfill (Happy Valley, Owhiro Bay, Wellington)	2	June 2026
Masterton Landfill (Nursery Road, Masterton District)	4	September 2045
Colonial Knobb Farm Holdings Ltd (Broken Hill Road, Porirua City)	4	September 2039
Higgins Quarry (Kāpiti Coast District)	4	February 2049

4.1.5 Hazardous Waste Facilities and Services

Hazardous Waste is any waste that is defined as follows:

- Contains hazardous substances at sufficient concentrations to exceed the minimum degrees of hazard specified by Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 under the Hazardous Substances and New Organism Act 1996, or
- Meets the definition for infectious substances included in the Land Transport Rule: Dangerous Goods 2005 and NZ Standard 5433: 2007 – Transport of Dangerous Goods on Land, or
- Meets the definition for radioactive material included in the Radiation Protection Act 1965 and Regulations 1982.

Examples of hazardous waste include but are not limited to:

- Corrosives (acids and alkaline)

- Explosives and fireworks
- Flammable liquids (e.g., fuels, paints and solvents)
- Flammable gases and aerosols (e.g., LPG and spray cans)
- Flammable solids (e.g., sodium metal, sulphur, silicon powder)
- Oxidising materials (chlorine, iodine, hypochlorite-bleach, peroxides)
- Toxics (cleaning fluids, pesticides and other garden chemicals).

As reported by the Manatū Mō Te Taiao – Ministry for the Environment, the lack of formal record keeping and reporting on waste flows in the past has led to limited information on hazardous waste throughout Aotearoa New Zealand. Additionally, as a large proportion of hazardous waste is reported to be managed by private waste operators, much of this data is commercially sensitive and not shared by the operators. This has led to paucity of information and a subsequent incomplete picture of hazardous waste volumes.

Further, it is acknowledged that local authority trade waste bylaws control a large proportion of New Zealand's hazardous wastes, of which as much as 70–85% are liquid and discharged to municipal wastewater treatment systems. As reported by the Manatū Mō Te Taiao – Ministry for the Environment, in 2004, solid hazardous waste was estimated to account for 11% of waste disposed of in landfills. About one-quarter of this waste is rendered inert (stabilised) at waste treatment facilities before disposal.

Table 12 provides a summary of Council known hazardous waste operators from across the Wellington region (excluding Carterton District Council, Masterton District Council and South Wairarapa District Council where no data was available).

Table 12 Hazardous Waste Operators from across the Wellington Region

Hazardous Waste Operator	Location
Dawson Waste Services	Owhiro Bay, Wellington
Waste Petroleum Combustion (Oil Recovery)	Throughout North Island
Waste Management Technical Services	Seaview
Enviropaints Ltd	Ōtaki, Kāpiti Coast
Waste Management technical services	Silverstream Landfill
Upcycle, Domestic Battery collection	Auckland
Silverstream Landfill: - house + garden chemicals - leftover oil + petrol + diesel - batteries - paint - gas bottles	Reynolds Back Drive, Stokes Valley, Lower Hutt
Various Retailers/Service Providers : - pharmacies (medication, sharps etc) - paint retailers - dive shops (gas bottles) - lighting outlets (fluorescent light bulbs)	Hutt City
Envirowaste (NZ) incorporating ChemWaste. Offer a hazardous waste collection and transport service (request is made online)	127R Gracefield Road, Gracefield, Lower Hutt 5010 (NOTE: Hutt City is unsure if this is the location where the hazardous waste is managed from)
Waste Management (NZ) Offer a hazardous waste collection service (request is made online)	97/99 Port Road, Seaview, Lower Hutt 5010 (NOTRE: Hutt City is unsure if this is the location where the hazardous waste is managed from)
InterWaste Services	Broken Hill Rd, Porirua
Clear Air Asbestos Management Limited	Gracefield, Lower Hutt

Hazardous Waste Operator	Location
Legacy Contracting Limited	35 Broken Hill Road, Porirua
Intergroup Limited	Gracefield, Lower Hutt
T G Civil Limited	Aotea, Porirua

4.1.6 Waste Disposed of to the Environment

4.1.6.1 Environmental Litter

Acknowledging the current processes offered by each of the Councils to manage and minimise waste disposal and maximise resource recovery, littering of materials and products is acknowledged as a significant environmental risk. Littering also represents the loss of potentially valuable resources from the material life cycle.

To reduce the amount of litter entering the environment, public place recycling (PPR) has been offered in locations around the Wellington Region (e.g., Wellington City) and nationally as part of a joint initiative between Love NZ/Be a Tidy Kiwi and delivered by the Packaging Forum. The scheme provided dedicated bins for the collection of general rubbish, glass and mixed recyclables with an aim to reduce the amount of materials going to landfill (**Figure 14**).

Figure 14 Public Place Recycling Bins

Case Study – Wellington City Public Place Recycling

In 2018[30][31] Wellington City Council implemented the PPR bins at eight locations around the Central Business District (CBD) and ran the trial until mid-July 2021 after which time the trial stopped and the bins were removed. While approximately 36 tonnes per annum of recycling was captured and diverted from landfill the cost to service the bins, including processing were reported to be over $6,500 per tonne which was ten times the cost per tonne for kerbside recycling. In comparison, Wellington's kerbside recycling collections divert approximately 11,200 tonnes per year from landfill.

While cost of servicing the scheme was an important consideration in stopping the trial, other factors including Central Government initiatives such as the imminent pending decision on implementing a Aotearoa New Zealand Container Return Scheme is anticipated to have a significant effect on how the public view and value

[30] News and information - Public Place Recycling trial ends, stations to be removed - Wellington City Council
[31] Reducing your waste - Public Place Recycling project - Wellington City Council

recyclables. Specifically, by placing a value (e.g., proposed 20-cents) on items that are commonly littered (i.e., single-use beverage containers), it is anticipated that people will want to redeem the container and therefore avoid littering and the need for widespread PPR bins.

Further, Wellington City Council also recognises and encourages reusable options for reducing single-use packaging waste as well as encouraging Wellingtonians to make smart choices about what is consumed. Additionally, the Council also recognised that future funding was better focussed on waste reduction initiatives which align with the waste hierarchy.

For this Waste Assessment, the process of littering has been included here to recognise that not all materials are correctly disposed of using council and/or commercially operated services. A such, illustrating the loss of materials (e.g., household recyclable items) via environmental littering helps to provide further clarity on the efficacy of council provided services. However, it is important to note that not all littered material can be collected via council services. Further discussion regarding environmental litter within the Wellington Region can be found in Section Error! Reference source not found..

4.1.6.2 Rural Waste Disposal

In 2020, the Manatū Mō Te Taiao – Ministry for the Environment made farm plastics, and agrichemicals and their containers priority products under the Waste Minimisation Act (2008). Farm plastics and agrichemicals along with four other products were prioritised as part of a wider plan to reduce the amount of rubbish ending up in landfills or the environment. By prioritising the products, a product stewardship scheme will be required to provide a 'cradle to grave' approach to minimising the environmental impacts of these products and their packaging. The six priority products are as follows:

- Agrichemicals and their containers
- Farm plastics
- Plastic packaging
- Tyres
- Electrical and electronic products (e-waste including large batteries)
- Refrigerants

The Agrecovery Foundation[32] is currently working with the the Manatū Mō Te Taiao – Ministry for the Environment to make the transition from a voluntary product stewardship scheme to a regulated scheme. The revised scheme includes identifying ways to improve access to recycling services and optimising packaging design for reuse or recyclability. The regulated scheme includes all agrichemicals and their containers, up to and including 1L, or equivalent packaging for dry goods that are used for:

- any horticulture, agricultural and livestock production, including veterinary medicines;
- industrial, utility, infrastructure and recreational pest and weed control;
- forestry;
- household pest and weed control operations; and
- similar activities conducted or contracted by local and central government authorities.

[32] Agrecovery | Priority Products

As reported by the Agrecovery Foundation, this includes but is not limited to all substances that require registration under the Agricultural Compounds and Veterinary Medicines Act 1997, whether current or expired, and their containers (packaging), which are considered hazardous until they have been triple-rinsed.

While rural waste is not a consistent waste stream throughout the Wellington Region, local authorities such as South Wairarapa, Carterton and Masterton are likely to be influenced by this waste stream due to the inclusion of rural and farming communities within their boundaries. However, the collection of rural waste data is significantly limited throughout Aotearoa New Zealand and so any discussion of rural waste in this Waste Assessment should be treated with caution and not relied upon.

4.2 Overview of Waste Services in the Wellington Region

The following sections provide an overview of the range of waste services provided by Councils within the Wellington Region. The intent of this section is to highlight the current services and to help inform future opportunities.

This section also discusses the importance of behaviour change, stakeholder engagement and Mana Whenua partnership initiatives occurring throughout the region, and which underpin and help shape the range of waste services provided in the districts. Behaviour change initiatives are also critically important to facilitate and support placing more emphasis on waste prevention and maximising the benefits and use of materials over disposal.

4.2.1 Council Waste Services

The following sections have been separated into kerbside Council provided services to provide clarity on the range of services offered within the Wellington Region, specifically:

- Recycling
- Refuse
- Organics

Commentary on service changes since the 2016 Regional Waste Assessment has been included where appropriate.

4.2.1.1 Kerbside Recycling

A review of Council provided recycling services has been summarised in **Table 13** with discussion of key items below. At present, all Councils provide a rates funded kerbside recycling service using either bins or bags, except for Kāpiti Coast District Council where private commercial collection arrangements are in place and Upper Hutt City Council. Upper Hutt City Council provides free drop-off to the Upper Hutt Recycling Station or private commercial collection arrangements.

A review of kerbside recycling provided by each of the eight local authorities identified a change in the type of plastics which are now collected and recycled. Specifically, where plastic grades 1-7 were collected and reported in the 2016 Regional Waste Assessment, these have now reduced to either 1 and 2 only, or 1, 2 and 5.

Additionally, while there was difference in collection timing and bin sizes, there was general consistency across the eight Councils in the range of materials collected, particularly with glass commonly collected separately and via crates. Of note, the current Central Government initiative to standardise kerbside collections is

expected to influence the provision of Council kerbside recycling service, including potential service contract amendments.

Table 13 Summary of Kerbside Recycling Services and Current Charges

Local Authority	Type of Kerbside Collection Service	Materials Accepted	Cost	Collection Contractor
Carterton District Council	140L bin (fortnightly, alternating weeks with bins) Crate (glass only) (fortnightly, alternating weeks with bins)	Bins – plastics 1 and 2, tins, paper and cardboard, cans Crates – glass only	$100,878 per annum kerbside collection service. $64.89 per tonne for processing recyclables	EarthCare
Hutt City Council	120L or 240L bin (fortnightly, alternating weeks with crates) Crate (glass only) (fortnightly, alternating weeks with bins)	Bins – paper and cardboard, tins and cans, plastic containers 1, 2 and 5 Crates – glass only	$111 per year	Waste Management NZ Ltd
Kāpiti Coast District Council	No Council funded service – private commercial contractors only	Bins – paper and cardboard, tins and cans, plastic containers 1, 2 and 5, glass	Not applicable	EnviroWaste (also trading as Clean Green and Budget Waste) Low Cost Bins Lucy's Bins Organic Wealth Pae Cycle Waste Management (previously trading as Transpacific)
Masterton District Council	140L bin (fortnightly, alternating weeks with bins) Crate (glass only) (fortnightly, alternating weeks with bins)	Bins – paper and cardboard, tins and cans, plastic containers 1, 2 and 5 Crates – glass only	$270,671 per annum kerbside collection service. $64.89 per tonne for processing recyclables	EarthCare
Porirua City Council	240L bin (mixed recycling) (fortnightly) 140L bin for glass (every four weeks)	Bins – paper and cardboard, tins and cans, plastic containers 1 and 2 Crates – glass only	$57 per property per annum	Waste Management NZ Ltd
South Wairarapa District Council	140L bin (fortnightly, alternating weeks with bins) Crate (glass only) (fortnightly, alternating weeks with bins)	Bins – paper and cardboard, tins and cans, plastic containers 1, 2 and 5 Crates – glass only	$171,250 (urban) and $98,925 (rural) per annum kerbside collection service.	EarthCare

Local Authority	Type of Kerbside Collection Service	Materials Accepted	Cost	Collection Contractor
			$64.89 per tonne for processing recyclables	
Upper Hutt City Council	Free drop-off to Upper Hutt Recycling Station OR Private bin service	Bins – paper and cardboard, tins and cans, plastic containers 1, 2 and 5 (caps off), glass, Tetra Pak	$300,000	Private bin service – Low-Cost Bins, Waste Management
Wellington City Council	User pays bags (fortnightly) 45L crate (glass only) (fortnightly) 140L bins (allocated properties only) (fortnightly)	Paper and cardboard, tins and cans, plastics, glass	Homes in the city centre – 10 bag pack for $3.10 (5 for glass 5 for general recycling) Homes outside the city centre – 26 bag pack for $13 Glass crate $15	Suburban – EnviroWatse CBD – Fulton Hogan

4.2.1.2 Kerbside Refuse

A review of Council provided recycling services has been summarised in **Table 14** with discussion of key items below. Across the eight Councils, household refuse is collected and managed via one of three mechanisms:

- Rates funded
  - Carterton District Council, Hutt City Council, Masterton District Council, Porirua City Council and South Wairarapa District Council
- User pays
  - Upper Hutt City Council, Wellington City Council
- Private commercial collection
  - Kāpiti Coast District Council

Generally, household refuse is collected via either bins or bags with an associated service cost.

Table 14 Summary of Kerbside Refuse Services and Current Charges

Local Authority	Type of Kerbside Collection Service	Cost	Collection Contractor
Carterton District Council	Rubbish bags (weekly)	$2.80 per bag and includes the cost of collection and disposal	EarthCare
Hutt City Council	80L bin (weekly) 120L bin (weekly) 240L bin (weekly)	$105 per year $148 per year $296 per year	Waste Management NZ Ltd
Kāpiti Coast District Council	No Council funded service – commercial contractors only	Not applicable	EnviroWaste (also trading as Clean Green and Budget Waste) Low Cost Bins Lucy's Bins

Local Authority	Type of Kerbside Collection Service	Cost	Collection Contractor
			Waste Management (previously trading as Transpacific) Kapiti Skips Wood Waste Interwaste
Masterton District Council	Rubbish bags (weekly)	$3.20 per bag or 5 bag pack for $16	EarthCare
Porirua City Council	70L Council bags (weekly)	$3.50 per bag or 10 bag pack for $35	Civic Group
South Wairarapa District Council	Rubbish bags (weekly)	$3.00 per bag, includes collection and disposal	EarthCare
Upper Hutt City Council	User pays bags (weekly)	Bag cost set by retailers	Waste Management
Wellington City Council	User pays 70L bags (weekly)	$3.29 per bag or 5 bag pack for $16.45	Suburban – EnviroWaste CBD – Fulton Hogan

4.2.1.3 Kerbside Organics

Of the eight Councils in the Wellington Region, Hutt City Council is the single local authority that currently provides residents with an option to collect organics from kerbside. This four-weekly service uses a 240L bin at a cost of $101[33] per year. While no other council offers a Council funded service, all support residents and ratepayers to collect and separate organics (i.e., greenwaste and food scraps) and home compost, where able.

It is also acknowledged that Central Government is proposing to transform recycling in Aotearoa New Zealand. To achieve this, the Manatū Mō Te Taiao – Ministry for the Environment has recently closed consultation on a proposal this includes three key areas to transform recycling:

- Part 1: Te Kaupapa whahahoki ipu – Container Return Scheme
- Part 2: Te hangarua paeara ā-kāinga – Improvements to kerbside recycling
- Part 3: Te whakawehe i ngā para kai ā-pakihi – Separation of business food waste

Within Part 2 (Te hangarua paeara ā-kāinga – Improvements to kerbside recycling), it is proposed that all councils provide a kerbside food scraps collection to urban households[34]. The intent of this approach is to divert more food scraps from landfill, reducing emissions[35] and recycling nutrients back to the soil.

Further, Part 3 (Te whakawehe i ngā para kai ā-pakihi – Separation of business food waste) focusses on the diversion of food scraps from businesses, acknowledging that an estimated 25% or more of all food waste sent to landfill comes from businesses. As noted by the Manatū Mō Te Taiao – Ministry for the Environment this equates to approximately 75,000 tonnes today (2022) rising to an estimated 100,000 tonnes by 2030. To reduce business food waste sent to landfill, the Government is proposing that all businesses should separate food waste from their general waste. Businesses would then choose what they do with their food scraps with

[33] Rubbish, recycling and garden waste bins | Hutt City Council

[34] Households in towns with more than 1,000 residents

[35] More than 300,000 tonnes of food scraps are sent to New Zealand landfills every year, rotting and producing methane, a potent greenhouse gas. Food scraps are estimated to contribute 22% of New Zealand's emissions from landfills that accept general household and business waste Kerbside-recycling-Snapshot-of-the-consultation.pdf (environment.govt.nz)

some potentially being used as stock food or turned into compost or digestate. In addition, Part 3 encourages businesses to also look for opportunities to further reduce their food waste by donating edible food or explore opportunities for upcycled food products[36].

It is probable that should the Part 2 and Part 3 food waste components be implemented by the Manatū Mō Te Taiao – Ministry for the Environment, that these will have a flow on effect to all territorial authorities. This will likely result in the need for territorial authorities to collect and process organic materials (i.e., greenwaste and food scraps) from households. As such, it is probable that one or more additional Wellington Region councils will have implemented a kerbside organics service before the next Regional Waste Assessment. Additionally, Part 3 may present opportunities for territorial authorities to provide opportunities (e.g., collection, processing, end-market relationships) to their local businesses.

Case Study – Para Kai Miramar Peninsula Trial

In September 2020, Wellington City Council initiated a 12-month Para Kai Trial comprising a weekly kerbside food scrap collection service and household home composting. The intent of the trial was to understand how much food scraps could be diverted from landfill through kerbside collections and home composting. The trial was carried out on the Miramar Peninsula and representative of Wellington's demographics, socioeconomics, and topography. Of the trial participants, 500 households trialled a weekly kerbside food scrap collection service with another 450 households trialling a home composting system in either a worm farm, compost bin or bokashi system.

Of the food scraps collected from kerbside, approximately 33,000kg was diverted from landfill with an average food scrap reduction per household of approximately 40%. In comparison, approximately 13,000kg of food scraps was diverted from landfill using the range of home composting systems; an average food scrap reduction per household of approximately 16%. Key findings[37] reported through the trial survey indicated that a kerbside collection service is the most effective method for diverting food scraps from landfill with home composting systems also supporting diversion of food scraps from landfill. Further, from a willingness to participate perspective, at least four out of five respondents across both the kerbside collection and home composting groups indicated they would continue to use the service if the trial continued. Overall, it was reported[38] that people found the kerbside food scrap collection service a more convenient method than home composting systems due to the flexibility in the types of food scraps accepted. As such, the level of interest and willingness from residents to continue collecting food scraps suggests that a city-wide roll-out of a food scraps collection service complemented by ongoing home composting methods would support Wellington City Councils Te Atakura – First to Zero greenhouse gas emission reduction initiatives.

[36] Separation-of-business-food-waste-Snapshot-of-the-consultation.pdf (environment.govt.nz)
[37] Para Kai Trial Phase One Survey Topline Report (wellington.govt.nz)
[38] 2022-04-27-agenda-inf-final.pdf (wellington.govt.nz)

Case Study – Porirua and Hutt City Councils Business Case for Organic Waste Facility and Collections

Both Porirua and Hutt City Councils are currently (commissioned in 2022[39]) undertaking a business case to understand the options available to manage food scraps in both cities. Acknowledging that both Councils receive approximately 90,000 tonnes per annum of organic waste at Spicer and Silverstream landfills, the intent of the project is to inform options to manage business and household food scraps in both districts. While the outcomes of this project are not available at the time of writing, this project may provide valuable insights for other neighbouring authorities should they also seek to investigate a kerbside food scrap collection service.

4.2.2 Waste Minimisation and Behaviour Change Initiatives

Focused and relevant behaviour change initiatives developed in partnerships with Mana Whenua and supported by stakeholder engagement are critical elements to support Council waste minimisation goals and objectives. Effective behaviour change supports the development and implementation of initiatives focussed on a reduced waste future for the Wellington Region, whilst supporting stakeholders to envisage opportunities to minimise waste, save money and have a benefit to the wider environment. Further, partnership with Mana Whenua is a critical component to ensure culturally appropriate outcomes and considerations support goals in minimising use of resources and maximising reuse and recovery. Additionally, engagement with stakeholders including but not limited to community organisations, resident and ratepayer associations has the benefit of establishing strong relationships to support the effective implementation of Councils Local Action Plans. By establishing and maintaining these partnerships and relationships, development and implementation of Local Action Plans will inevitably benefit from access to the breadth and depth of external knowledge and resources. It also recognises that Council may have limited capacity and capability to undertake all projects and so acknowledges the opportunity to partner and work with external individuals and/or organisations that may be better suited to deliver on projects.

Across the eight Wellington Region Councils, waste minimisation and behaviour change activities (e.g., education campaigns) are often provided via Council websites and direct engagement with stakeholders (e.g., schools, community organisations). As reported in the 2016 Waste Assessment Report, these activities generally focus on reduction, reusability, recyclability of resources, such as:

- Steps to reduce household food scraps (e.g., meal planning, home composting)
- Event waste minimisation and management planning
- Educational video series
- Opportunities to maintain and repair products or borrow, rent, share items
- Provision of information (e.g., weblinks, downloadable brochures)
- Options to reuse items to give item another life

Table 15 provides a high-level summary of the range of waste minimisation and behaviour change initiatives across the Wellington Region Councils. It is worth noting that while **Table 15** focusses on Council initiatives there are a range of external initiatives operated by, for example, community, social enterprise, Mana Whenua and businesses that collectively contribute the Regions broader waste minimisation efforts.

[39] GETS | Porirua City Council - Organic Waste Facility and Collections

Table 15 Waste Minimisation and Behaviour Change Initiatives of the Wellington Region

Council	Education Institutions	Community	Businesses
Carterton District Council	EnviroSchools Ruamāhanga Strategy – Climate Change Strategy and Action Plan and website information Website information and links to supporting organisations	Website information and links to supporting organisations Climate Change Strategy and Action Plan and website information	Climate Change Strategy and Action Plan and website information Website information and links to supporting organisations
Hutt City Council	EnviroSchools Website information and links to supporting organisations	Website information and links to supporting organisations	Website information and links to supporting organisations
Kāpiti Coast District Council	EnviroSchools Zero Waste Education Programme Waste Levy Grants Website information and links to supporting organisations	Website information and links to supporting organisations Waste Levy Grants	Waste Levy Grants Website information and links to supporting organisations
Masterton District Council	EnviroSchools Online Wasted Video Series Website information and links to supporting organisations	Website information and links to supporting organisations Online Wasted Video Series Love Food hate Waste NZ campaign	Love Food hate Waste NZ campaign Online Wasted Video Series Website information and links to supporting organisations
Porirua City Council	EnviroSchools Love Food hate Waste NZ campaign Waste Free Living Compost Classroom programme Website information and links to supporting organisations	Website information and links to supporting organisations Love Food hate Waste NZ campaign Waste Free Living Event waste management	Love Food hate Waste NZ campaign Waste Free Living Recycling Soft Plastics Working with Shopping Villages (Recycling Rewards Programme) Event waste management Website information and links to supporting organisations
South Wairarapa District Council	EnviroSchools Love Food hate Waste NZ campaign Website information and links to supporting organisations	Website information and links to supporting organisations Love Food hate Waste NZ campaign	Love Food hate Waste NZ campaign Wairecycle – kerbside recycling and rubbish collection information for businesses and commercial customers Agricultural container recycling information

Council	Education Institutions	Community	Businesses
Upper Hutt City Council	EnviroSchools Battery recycling trial Website information and links to supporting organisations	Website information and links to supporting organisations Battery recycling trial	Battery recycling trial Website information and links to supporting organisations
Wellington City Council	EnviroSchools Website information and links to supporting organisations Event waste management Capital compost community grants Zero waste education for schools	WasteFree Welly Sustainability Trust Event waste minimisation support Home composting support Landfill tours Website information and links to supporting organisations Para Kai Miramar Peninsula Trial Event waste management Household battery recycling	Workprogramme working alongside businesses to provide waste minimisation material Website information and links to supporting organisations Event waste management Business waste audit supporting links and information Information to reduce food waste

4.2.3 Joint Solid Waste Initiatives and Services

Acknowledging the breadth and depth of local Council initiatives to minimise waste and maximise reuse and recovery of resources, this section further explores the range of current joint solid waste initiatives and services provided across the Region (see Section **4.2.3.1**). This section also looks ahead to the future and explores the potential joint opportunities that may be available in recognition of current Central Government transforming recycling initiatives, including (see Section **4.2.3.2**):

- Waste sector emission reductions
- Container Return Scheme
- Improvement to kerbside recycling
    - Collection of a standardised set of materials in kerbside recycling and food scrap collections
    - All councils to provide a kerbside food scraps collection service to urban households
    - Require reporting for both council and private kerbside collections
    - Set councils a minimum baseline performance and a high achieving target for kerbside diversion
    - Consideration given to collecting glass or cardboard and paper separately
    - All councils provide a kerbside recycling collection to urban households
- Separation of business food waste
    - Require all businesses to collect food scraps separately from other waste materials

4.2.3.1 Current Joint Initiatives

In addition to individual Council initiatives, the 2017-2023 Regional Waste Management and Minimisation Plan includes a set of regional actions that are shared between the eight Councils. **Table 16** summarises these actions and provides an indication of their individual status. It is also important to note that several major global events (i.e., China National Sword, COVID-19 global health pandemic) have had a significant impact on individual and collective Council ability to progress development and implementation of initiatives. Recognising these external factors is important context in understanding the status of the suite of regional

actions. However, all Councils in the Wellington Region have been progressing initiatives and preparing for the potential Central Government Transforming Recycling initiatives that will inevitably influence and shape waste and resource management throughout the Region.

Table 16 Summary of Wellington Region Actions[40]

Regional Actions	Description	Status Summary
Develop and implement a regional bylaw, or a suite of regionally consistent bylaws	Set standards and gather data so they can plan and manage waste better	Individual and joint bylaws have been developed (see Section **2.2.1**)
Implement Waste Data Framework	Consistent, high-quality data will help us track our progress.	Development of a waste licensing framework is currently underway.
Regional engagement	More consistent regional communications and education around waste services and waste minimisation will help households and communities to be inspired and supported so they can play their part.	A Wellington regional Waste Committee has been established with sharing of knowledge and opportunities. Collective sharing of and knowledge exchange between Councils to maximise opportunities.
Optimise collection systems	Work to improve collections so that they maximise diversion and are cost effective to communities.	Ongoing individual Council work programmes to assess value for money and effectiveness for ratepayers as well as monitoring the potential developments regarding Central Government Transforming Recycling initiatives.
Resource recovery network	Make sure the Wellington Region has the facilities to divert more material like construction and demolition waste, food and/or biosolids, and other organic waste.	Individual Councils are progressing initiatives to investigate the range of waste streams including opportunities for regional collaboration focussed on organics processing and recovery of resources.
Beneficial use of biosolids	This is a large waste stream that, if we divert it, will make a big contribution to our regional targets.	Wellington City Council has made significant progress towards developing the Sludge Minimisation project with the aim to have a solution in place by 2026.
Shared governance and service delivery	Potential to join together as a Region to deliver higher levels of service more efficiently.	Recognising the Joint Regional Steering Committee, progress is being made in identifying and potentially delivering joint services to maximise opportunities. Ongoing collaboration will be a key focus of the steering group moving forward recognising the potentially significant developments proposed by Central Government.
Resourcing for regional actions	Make sure the Region has the means to deliver on what we set out in the plan.	Resourcing to support local action plans is a key consideration to ensure delivery of projects and initiatives and may also require new and innovative opportunities including partnering with Mana Whenua, community, and business organisations in recognition of the breadth and depth of available knowledge.

[40] Regional Waste Management and Minimisation Plan 2017-2023

Regional Actions	Description	Status Summary
Collaborate and lobby	Work with other local government organisations, NGOs and other key stakeholders on undertaking research, lobbying and actions on various waste management issues such as (but not limited to) product stewardship, electronic waste, tyres, plastic bags, etc.	Where possible the Wellington Region Councils collaborate, with more opportunities to progress these relationships potentially available once Central Government confirms direction on several transforming recycling initiatives (e.g., Container Return Scheme).

Several additional joint initiatives are discussed in more detail below.

Wellington Region Waste Minimisation Education Strategy

The development of the Wellington Region Waste Minimisation Education Strategy (WMES) was an output of the 2017-2023 Wellington Region Waste Management and Minimisation Plan. As reported[41], the WMES seeks to provide a consistent Region education strategy for each Council to engage communities and businesses in a cohesive and constructive way, helping people to better understand the benefits of adopting a waste minimisation culture. Through greater understanding and instilling the motivation to change current waste related behaviours, benefits to the region's population include reducing the waste of valuable resources, improving our region's economic efficiency (saving money), and reducing our impacts on the environment. The WMES also states, identifying a preferred methodology for undertaking future regional actions related to each target waste stream. By focussing on target waste streams, as identified in the WMMP, through initiatives that successfully engage communities and stakeholders, behaviour change outcomes that yield economic, environmental, social and cultural benefits to all can be achieved.

Recognising the WMES and the strategic guidance provided for within the strategy, each council in the Wellington Region has their own unique waste minimisation and behaviour change initiatives which reflect the diverse communities within each district. As such, for the WMES to be effective is to ensure there is sufficient flexibility to reflect the uniqueness of the Wellington districts. It also reflects the need to cater for a range of audiences, rather than require a 'one size fits all' approach to behaviour change and waste minimisation activities.

Wellington Regional Event Waste Reduction Guide

Recognising the opportunity to minimise waste from events as well as connect with and help educate the public on waste minimisation initiatives, the Wellington Regional Event Waste Reduction Guide[42] was developed. All eight Wellington Region Councils have endorsed this Guide which helps event organisers to minimise waste from the earliest planning stages by setting out clear and accessible steps to support event waste minimisation. These steps include:

- How to become a waste minimisation hero
- Understanding how to reduce, reuse and recycle
    - In public areas

[41] Wellington Region Strategy (swdc.govt.nz)
[42] Reducing waste at your event (mstn.govt.nz)

    - At back of house
    - During set up/pack down
    - Developing a site plan
- Appointing an on-site waste operations manager
- Engaging stakeholders
- Sharing your message pre-event, during event and post-event
- Writing a waste-free event plan

As such, the Guide provides Wellington Region Councils with consistent and clear foundation information with which event organisers can access and implement across the region. This then supports a streamlined approach to undertaking event waste minimisation activities across the region.

Wellington Regional Event Packaging Guidelines

As with the Wellington Regional Event Waste Reduction Guide, the eight Wellington Region Councils have also endorsed the Event Packaging Guidelines [43]. The Packaging Guidelines provide event organisers, stallholders and food and beverage vendors information to reduce waste generated through their products and services by providing a range of alternative options, including:

- Compostable food packaging materials
- Setting out which materials can be accepted for recycling at events (e.g., plastic grades 1 and 2, tins and cans, glass bottles and jars, cardboard and paper)

The guidelines also set out what products and materials should be avoided, including:

- Avoiding the use of bioplastics (e.g., compostable coffee cups and lids)
- Avoiding compostable/biodegradable/corn-starch bags
- Use of branding that uses non-toxic inks
- Setting out products that cannot be recycled or composted (e.g., paper or cardboard lined with plastic, foil or wax, compostable/plant based 'hard' plastics, aluminium foil)

As such, the Regional Event Packaging Guidelines provides the important consistency of messaging and transparency of which products should be used and avoided. Of note, with the rapidly evolving range of packaging products available on the market, these guidelines will likely require revision at specific time intervals to ensure information is accurate, up-to-date and reflects any new and or emerging products that could be used and/or should be avoided at events.

[43] Regional-Event-Packaging-Guidelines-1.pdf (mstn.govt.nz)

4.2.3.2 *Future Joint Initiative Opportunities*

There are currently a range of Central Government initiatives underway that are anticipated to influence and shape waste minimisation and resource recovery initiatives in the Wellington Region. The following list provides a high-level indication of potential future joint opportunities including a brief description:

- Container return scheme
  - Consideration given to accessible locations for residents and ratepayers to return eligible scheme containers.
- Organics processing
  - Consideration given to a single regional facility or a network of facilities to support a range of providers and build-in system resilience.
- Resource Recovery / Zero Waste Network
  - Consideration given to establishing a network of resource recovery centres that focus on circular economy principles and promoting the repair, recovery and reuse of materials.
- Construction and Demolition waste collection and reuse network
  - Consideration given to the large quantities of construction and demolition waste that could be recycled and/or repurposed.
- Plastic processing and remanufacturing
  - The Government is planning to phase out certain hard-to-recycle plastics and six single use items between 2022 to 2025. Acknowledging the current global market constraints for Aotearoa New Zealand's recycled materials an opportunity to establish and/or invest in local manufacturing, processing technologies and/or upgrades to Council owned facilities may present regional collaborative opportunities.
- Central Government Advocacy
  - Collective regional advocacy to Central Government to inform and shape legislative instruments before being issued for consultation and provide a collective regional voice on submissions.

Further investigation will be needed to determine the exact opportunity and the how each could be progressed at a regional level.

4.2.4 Waste Minimisation and Other Council Services

As the effects of human consumption on the environment, specifically climate change is acknowledged and strategies developed to focus on minimising impacts, strategies to minimise waste disposal and associated emissions are now recognised as key areas for consideration. As such, many Councils are now developing or have implemented respective climate change strategies which include goals and targets to reduce emissions from key contributing sectors such as transport and waste. Examples of such strategies in place within the Wellington Region are included in **Table 17**.

Table 17 Wellington Region Council Climate Change Strategies

Council	Strategy	Focus
Carterton and South Wairarapa District Councils	Ruamāhanga Climate Change Strategy	During the period 2020 – 2030, Carterton and South Wairarapa District Councils aim to: • Reduce their gross greenhouse gas emissions; • Increase the reservoirs, therefore the amount of greenhouse gas sequestered every year; • Reduce biogenic methane by 10% below 2017 levels.

Council	Strategy	Focus
Hutt City Council	Lower Hutt Climate Action Pathway Te Ara Whakamua o Te Awa Kairangi ki Tai, entitled 'Our race against time Ka whati te tai, ka pao te tōrea	As a community accelerate efforts to halve Lower Hutt's direct emissions by 2030 and reach net zero by 2050. Lower Hutt's main source of greenhouse gas emissions are transport, stationary energy and waste. Industry and agriculture are minor sources of emissions.
Kāpiti Coast District Council	Climate Emergency Action Framework	The vision at the heart of the Climate Emergency Action Framework is a thriving, vibrant and strong Kāpiti that has reduced its carbon footprint significantly, transitioned to a low-carbon future, and prepared for challenges and opportunities that come from responding to the climate crisis.
Masterton District Council	Climate Action Plan (in development)	Council established a climate change Focus Group to help draft a set of proposed actions for the district's Climate Action Plan. Eight climate change themes were consulted on, including 'Waste and Circular Economy – how we reduce our consumption and repurpose old items'.
Porirua City Council	Rautaki o Te Ao Hurihuri Climate Change Strategy	Focus areas are: 1. Mitigation: A zero-carbon Council 2. Adaptation: A resilient city 3. Transition: A low-carbon future
Upper Hutt City Council	Sustainability Strategy 2020 and Our Sustainability Plan 2021-2024	Focus on Sustainability Goals: • Carbon reduction – Council will be a carbon neutral organisation by 2035 • Natural environment – we will prioritise protecting and enhancing our natural environment. • Resilient and inclusive community – our community will be resilient, adaptable and inclusive. • Waste – we will reduce waste.
Wellington City Council	Te Atakura – First to Zero	Council has committed to ensuring Wellington is a net zero emission city by 2050, with a commitment to making the most significant cuts (43%) in the next 10 years.

Further, the implementation of such strategies set clear targets and expectations for each of the eight Councils as well as having clear influence on the development of tailored and appropriate waste minimisation and management activities. While each Council is responsible for developing their own individual local waste action plan in accordance with the Wellington Region Waste Management and Minimisation Plan, each plan considers wider strategic targets including climate change targets. Additionally, the Wellington Region Waste Management and Minimisation Plan sets out the agreed regional targets which may also consider appropriate targets to meet local and nationally agreed climate change emission targets.

4.2.5 Council Service Funding

Table 18 provides a summary of the respective Council expenditure and income related to Council provided waste services. All data presented has been provided by the respective TA authority.

Table 18 Summary of 2020/21 Annual Reports

Council	Expenditure ($000)				Income ($000)				
	Landfill/RTS	Collections	Other	Total	User Charges	General Rates	Targeted Rates	Levy and Other	Total
Carterton	NDR	NDR	NDR	**NDR**	NDR	NDR	NDR	NDR	**NDR**
Hutt City	$15,474	NDR	$173,508	**$188,982**	$19,319	$75,160	$38,844	$91,556	**$205,560**
Kāpiti	$273,670	$660	$182,001	**$456,331**	NDR	$20,550	$443,352	$302,607	**$766,509**

Council	Expenditure ($000)				Income ($000)				
	Landfill/RTS	Collections	Other	Total	User Charges	General Rates	Targeted Rates	Levy and Other	Total
Masterton	$3,084	$317	$1,607	**$5,008**	$3,690	NDR	$1,064	$254	**$5,008**
Porirua	NDR	NDR	NDR	**NDR**	$10,833	$1,960	$1,102	$369	**$14,264**
South Wairarapa	$721	$741	$389	**$1,852**	$514	$580	$722	$57	**$1,874**
Upper Hutt	$20,000 UHCC proportion of Hazardous waste collections	$312,630 Recycling Station	$105,970 Levy spend, including Hazardous Waste	**$398,600**	NDR	$450,000 Recycling Station Rates	NDR	$243,152 Levy Received	**$783,152**
Wellington	$8,902	$11,410	$3,332	**$3,332**	$28,511	N/D	N/D	$1,121	**$29,632**

NDR = No Data Received

The data provided by each of the Wellington TAs summarises the ways in which Council services are funded. Expenditure ranged from $*** in ****Council to $**** in **** Council. No data was provided by Carterton District Council with no expenditure data provided by Porirua City Council (**Table 18**). Acknowledging the incomplete data sets, **Table 18** broadly shows that Kāpiti Coast District Council, Upper Hutt City Council and Wellington City Council all receive considerably more income compared with expenditure.

4.2.6 Current Joint Solid Waste Initiatives and Services across the Wellington Region

The following list summarises the range of shared services Councils currently work together on and include those also reported within the 2016 Waste Assessment:

- Landfill ownership and management – Wellington and Porirua have joint ownership of Spicers landfill
- Facility usage – Hutt and Upper Hutt– agreement for usage of Silverstream landfill, all Councils in the Wairarapa use Masterton's Nursery Road Resource Recovery Centre
- Bulk haulage – the Wairarapa councils have a joint agreement for haulage of waste to landfill
- Waste management and minimisation planning – all the Councils of the region are participating in the development of the waste assessment and joint WMMP
- Investigation of a regional network of resource recovery centres
- Solid waste bylaws – individual Councils are progressing solid waste bylaw updates recognising the regional connection
- Porirua and Hutt City Councils are progressing an investigation into a joint organics processing option which may also have regional opportunities
- Waste operator licensing
- Joint initiative between Porirua City Council and Hutt City Council to investigate organic processing options. The options analysis also includes Wellington City Council.
- Promoting and supporting waste minimisation at events – development of regional guides on 'reducing waste at your event' and 'event packaging guidelines'.
- Optimisation of regional communications – regional officers meet regularly and collaborate where appropriate.
- Wellington Regional Waste Education Strategy – ensure systems and resources are in place to support implementation.

4.2.7 Assessment of Council Services

4.2.7.1 Collection Services

Collection services vary across the Wellington Region which recognise the different Council jurisdiction needs. As reported in the 2016 Waste Assessment commentary was included regarding the potential substantial benefit of greater standardisation and adoption of industry practice (e.g., moving to two stream recyclable collection with glass collected separately) and move towards smaller bin sizes for refuse. This would be complemented with greater options for people to divert materials from disposal, for example, donation to recycling centres. However, any modification to Council services will require either a contract renewal or amendment and will also need to consider and account for all health and safety matters as per the Health and Safety at Work Act 2015.

Further, in early 2022, the government consulted the public on improvements to household kerbside recycling in recognition that large amounts of recyclable material are lost to landfill, long-term plan to reduce waste, litter and emissions and increase resource recovery and to transform our systems to build a more circular future for Aotearoa New Zealand. The government also consulted on two other proposals, namely a container return scheme for single-use beverage containers and separation of food scraps from general waste for all businesses. Supporting these three proposals was recognition that globally many countries have already progressed on this journey and so Aotearoa New Zealand as a global citizen is also now faced with ensuring foundations are established to ensure a low-emission future by establishing best-practice recycling systems and improving national recycling rates.

Acknowledging the three government proposals, each will bring significant changes to the way in which Councils of the Wellington region provide services to their residents and ratepayers. For example, standardised kerbside collections will require Councils to collect a standard set of materials in household kerbside recycling across all of Aotearoa New Zealand as well as providing all urban households with a food scraps collection. To reduce confusion and improve the quality and quantity of collected material, the government proposes to standardise collections to include glass bottles and jars, paper and cardboard, plastics 1, 2 and 5 and aluminium, steel tins and cans. Similarly, government has proposed that all Councils provide a weekly kerbside food scrap collection using a 23L bin and which may be presented at the same time as either the recycling and rubbish collections. Further, the requirement to implement a kerbside food scrap collection will also require Councils to consider the end-fate of the material and therefore the type of processing required. This might include composting and/or anaerobic digestion which in turn will provide valuable nutrients and energy which can be returned to the soils or be used in other activities (i.e., energy). Ultimately, government intends this proposal to keep food scraps out of landfill and to support an overall reduction in nationwide emissions.

Similarly, the proposal to implement a container return scheme intends to reduce litter, landfilling and stockpiling, and to increase recovery and recycling rates by incentivising people to recycle beverage

containers. Further, the proposal to include all single-use 3L or smaller beverage containers (i.e., metal, glass, plastic, liquid paper board) is expected to have a significant impact on kerbside recycling rates. This will likely result in fewer containers being presented for kerbside collection. However it is important to note here that containers not included in a container return scheme will continue to require collection however the type of material will be dependent on the final landing of the governments standardised kerbside collection proposal.

Where Councils currently do not provide kerbside collection services the standardised kerbside collection and food scrap collection proposal could present a challenge and may eventually require Councils to provide one or more services.

4.2.7.2 Other Services

As reported in 2016, the provision of other waste services across the Wellington Region Councils is variable. Most Councils have school environmental education programmes and there are a variety of services available to provide advice and support to the community and businesses in some areas. Further, all Councils provide litter and illegal dumping clean up, with public place recycling services not consistent throughout the region.

4.2.8 Assessment of Non-Council Services

To minimise repetition, a list of non-council waste and recycling providers that operate within the Wellington Region are summarised in **Table 7**. These providers provide services in, for example, composting, CnD waste management, drop-off facilities (e.g., used paint, soft plastics, e-waste dismantling), e-waste processing, hazardous waste management, plastic reprocessing, re-use stores and scrap metal recyclers.

As reported in 2016, the three landfills in the region are Council---controlled, the operation of two of these are contracted to the large waste companies: Waste Management NZ Ltd and EnviroWaste Services Ltd, with the third managed by another significant national landfill operator, HG Leach.

Of particular concern to Councils in the Wellington Region and similarly across wider Aotearoa New Zealand is the increasing proportion of the kerbside refuse market that is controlled by private waste operators and influence this has on councils progressing and subsequently meeting their respective waste minimisation outcomes. While commercial operators provide a valuable service to regions with limited to no council provided kerbside collection, care must be taken to minimise any potential perverse outcomes that may result in greater volumes of waste collected via private operators.

Further, while there are a range of commercial operators servicing the Wellington Region, there are still areas of the market that would benefit from greater investment, therefore providing off-take for diverted and recovered materials:

- Construction and demolition material recovery
- Organic waste processing
- Recycling and reprocessing of a range of materials – e.g., plastics, recoverable materials

5 SITUATION REVIEW

5.1 Overview

The intent of this section is to provide an overview of the waste flows within the Wellington Region.

The information included in this section has been presented to broadly align with the waste hierarchy with waste quantities and composition presented as bulleted below. Where data was available, quantity, and composition of waste disposed via environmental pathways have been included to provide a holistic view of waste flows.

- Resource Recovery
- Recycling and Reprocessing
- Refuse Transfer Stations
- Residual Waste Management

5.2 Waste Quantities

5.2.1 Class 1 Landfill Quantities

The tonnes per annum of waste disposed of to Class 1 Landfills from across the Wellington Region has been estimated from data provided by seven of the eight Wellington Councils.

The analysis is based on the following:

- All data was provided by Wellington City Council, Masterton District Council, South Wairarapa District Council, Kāpiti Coast District Council, Hutt City Council, Carterton District Council and Porirua City Council. No data was available for Upper Hutt City Council.
- Hutt City Council provided data has been extrapolated from the 2014 and 2022 SWAP Report.
- Levied waste figures are calculated using the data provided by each of the Councils. In some cases, the levied waste data sum exceeds the aggregated total of general, special and sludge waste resulting in a higher total waste to Class 1 sum.
- Total waste to Class 1 landfills in the Wellington Region is a sum of the levied waste and cleanfill data for each of the Council provided data points.
- For comparison, the tonnage for 2014/15 extracted from the previous waste assessment is also shown.

The estimates from the past six financial years 2016/17 to 2021/22 are presented in **Table 19**. As reported in the previous waste assessment, tonnages for separate waste streams, based on the activity sources of the waste materials. The levied waste by disposal facility is presented in **Table 20**.

Table 19 Waste to Class 1 Landfill in the Wellington Region

Class 1 Landfill (tonnes/annum)	Year						
	2014/15[8]	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General[1]	252,536	215,325	218,761	215,980	222,059	233,955	165,390
Special[1]	17,717	23,822	27,715	33,935	42,722	38,385	6,625

Class 1 Landfill (tonnes/annum)	Year 2014/15[8]	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Sludge[1]	31,823	26,768	27,391	27,249	25,523	31,188	25,441
TOTAL[2]	-	**265,915**	**273,867**	**277,164**	**290,304**	**303,529**	**197,456**
Levied Waste[3]	**302,076**	**411,264**	**432,116**	**430,110**	**440,720**	**449,655**	**302,586**
Levied Waste minus TOTAL[4]	-	**145,348**	**158,249**	**152,946**	**150,416**	**146,126**	**105,130**
Cleanfill[5]	24,942	98,743	118,838	81,616	92,817	116,540	68,159
TOTAL[6]	**327,018**	**510,006**	**550,954**	**511,725**	**533,537**	**566,195**	**370,746**
TOTAL/Levied Waste[7]	-	**63%**	**64%**	**66%**	**68%**	**65%**	**65%**

[1]Excludes Masterton District Council, South Wairarapa District Council, Kāpiti Coast District Council and Carterton District Council data

[2]Total General, Special, Sludge

[3]Total Levied Waste as provided by Councils

[4]Difference between Levied Waste data provided by Councils versus sum total of General, Special, Sludge

[5]Excludes Masterton District Council, South Wairarapa District Council and Carterton District Council data

[6]This total is based on Levied Waste and Cleanfill

[7]Based on data provided by the Council and the difference between the Total waste data and Levied Waste data ranged between 63% and 68% leaving a difference of between 32% and 37% that is not accounted for

[8]2016 Waste Assessment data

The four categories of waste clearly show an increase in tonnage over the first five-year period (i.e., 2016/17-2020/21) then a decrease in 2021/22. While COVID-19 activities may be a contributing factor the paucity of data available is also likely a contributing factor to this lower total tonnage. As such, the 2020/21 tonnage is expected to be more representative of the current situation – noting though that COVID-19 is acknowledged as having had a significant influence on the waste sector during this time period. Broadly, general waste (i.e., construction and demolition, domestic kerbside, industrial/commercial, landscaping and residential waste) has remained relatively consistent over the period with some moderate fluctuations across the time period. Interestingly, 2020/21 shows a decrease in general waste reported from across the Wellington Region and may in part be due to the effects of COVID-19 on waste disposal behaviours along with Council access to specific waste tonnage data.

Special waste showed a similar trend with again a significant reduction in 2020/21, increasing again in 2021/22. Tonnages of sludge remained relatively consistent over the six-year period. However, total levied waste showed a marked increase between 2016/17 and 2019/20 which is likely due to the provided Council data exceeding the aggregated total of general, special and sludge waste (see above bullet notes).

Further, cleanfill tonnages fluctuated between 2017/18 and 2021/22 likely due to increasing construction demand across the region before tonnages significantly reduced in 2020/21. Overall, the total waste to Class 1 landfills in the Wellington Region has increased significantly between 2016/17 to 2020/21 before reducing significantly in 2021/22 (370,746tonnes) to reflect the 2014/15 tonnage (327,018tonnes). However, caution should be taken when interpreting this data given several Council aggregate data (i.e., general, special, sludge) exceeds the aggregated total. It is recommended that the Regional Wellington Waste Minimisation and Management Plan (WMMP) provide mechanisms to support the reporting of data via contracts and other activities. Further, based on data provided by the Councils and the difference between the total waste data and levied waste data ranged between 63% and 68% leaving a difference of between 32% and 37% that is not accounted for.

Table 20 Levied Waste from the Wellington Region – by Class 1 Landfill

Levied Waste to Class 1 Landfill (tonnes/annum)	Year						
	2014/15	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Bonny Glen and Levin	45,214	43,231.67	40,747.56	38,723.43	34,285.03	38,730.47	40,789.18
Silverstream	125,885	123,824	121,519	125,226	129,839	153,537.32	143,464.32
Southern	81,492	93,642	102,470	95,414	97,745	89,288	85,223
Spicer	49,485	55,269.20	63,131.79	73,434.90	79,563.21	79,488.40	89,765.15
Wainuiomata	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Total	**302,076**	**315,966.87**	**327,868.35**	**332,798.33**	**341,432.24**	**361,044.19**	**359,241.65**

NDR – no data received

More detailed data on the quantity of waste disposed of at the individual Class 1 landfills and transfer stations in Wellington region is provided in Appendix C.

5.2.2 Cleanfill (Class 2-4 Landfills) Quantities

It is acknowledged that in addition to Class 1 landfills, there are Class 2-4 landfills that accept waste. However, from the information provided by the Councils of the Wellington Region, there is little to no available data to determine the quantities of waste disposed of to these landfills. As such, determining the quantities disposed of across Wellington is not possible and estimating the quantities would lead to significant errors in the total waste disposal calculations. As such and in recognition of the paucity of information, the disposal quantities to Class 2-4 landfills cannot be included in this waste assessment. It is recommended that the Wellington Region Waste Management and Minimisation Plan provide mechanisms for and options for Councils to obtain this information in preparation for the next assessment.

5.2.3 Summary of Waste Disposed of to Land

Taking the information provided in the preceding sections and acknowledging no data can be provided for Class 2-4 landfills, **Table 21** provides a summary of the waste disposed of across the Wellington Region. Broadly, from the data provided by the Wellington Region Councils (noting Masterton District Council, South Wairarapa District Council, Kāpiti Coast District Council and Carterton District Council did not provide completed data), it is estimated that a total of 370,745tonnes of solid waste were disposed of to landfill in the Wellington Region in 2021/22; equating to approximately 480kg per person. Further, noting the lack of Class 2-4 landfill tonnages and the risks associated with estimating regional tonnages from minimal data sets, these tonnages have not been included in this assessment. It is recommended that the Wellington Region Waste Management and Minimisation Plan provide mechanisms to enable councils to collect this data in order to support a comprehensive assessment for the next waste assessment.

Table 21 Waste Disposed to Land – 2021/22

Waste Disposed of to Land in the Wellington Region 2021/22	Tonnes 2021/22	% of Total	Tonnes/Capita/Annum
Levied Waste to Class 1 Landfills			
General[1]	165,390	45%	0.302
Special[1]	6,625	2%	0.012
Sludge[1]	25,441	7%	0.047
TOTAL[2]	**197,456**	**53%**	**0.361**
Levied Waste[3]	**302,586**	-	-
Levied Waste minus TOTAL[4]	**105,130**	-	-
Non-Levied Waste to Class 1 Landfills			

Waste Disposed of to Land in the Wellington Region 2021/22	Tonnes 2021/22	% of Total	Tonnes/Capita/Annum
Cleanfill[5]	68,159	18%	0.125
Waste to Class 2-4 Landfills			
All Waste	ND	ND	ND
TOTAL[6]	**370,745**	**72%**	**0.485**
TOTAL[(3)]**/Levied Waste**[7]	**65%**	**-**	**-**

*No available data

[1]Excludes Masterton District Council, South Wairarapa District Council, Kāpiti Coast District Council and Carterton District Council data

[2]Total General, Special, Sludge

[3]Total Levied Waste as provided by Councils

[4]Difference between Levied Waste data provided by Councils versus sum total of General, Special, Sludge

[5]Excludes Masterton District Council, South Wairarapa District Council and Carterton District Council data

[6]This total is based on Levied Waste and Cleanfill

[7]Based on data provided by the Councils and the difference between the total waste data provided by council and levied waste data provided was 65% leaving a difference of 35% that is not accounted for.

5.2.4 Composition of Waste to Class 1 Landfills

This section presents the composition of waste disposed of at Class 1 landfills in the Wellington Region during the 2021/22 financial year. For comparison with the previous waste assessment, the 12 primary classifications used in the Solid Waste Analysis Protocol (SWAP) are used. All data has been provided by each of the Tas and represents their best estimate of volumes. **Table 22** summarises the composition of levied waste sent to Class 1 landfills in the Wellington Region.

The composition has been calculated as follows:

- All data was provided by Wellington City Council, Masterton District Council, Kāpiti Coast District Council, Hutt City Council, and Porirua City Council. No data was available for Upper Hutt City Council, Carterton District Council and South Wairarapa District Council.
- Porirua City Council data is based on the composition of levied waste reported in their 2020 SWAP data with tonnage data obtained from Council records. All figures are based on estimates.
- Kāpiti Coast District Council data is extracted from a SWAP survey conducted at a transfer station and therefore does not include the biosolids/sludge proportion sent directly from the wastewater treatment plant to Silverstream landfill.
- Hutt City Council data is extracted directly from their 2022 SWAP report which considers; (1) that all potentially hazardous waste is epical waste, (2) classifies rubble as cleanfill, new plasterboard and other – as such, the cleanfill component has been removed and consequently the percentages for Hutt City Council will not equate to 100%.
- Resource recovery tonnages are presented for Wellington City Council only. This additional category represents and opportunity for future assessment to calculate the Wellington Region initiatives supporting resource recovery.

The primary composition of levied waste to Class 1 landfills in the Wellington Region for 2021/22 are summarised in **Table 22** for general waste – excluding special waste and cleanfill (**Figure 15**), and general waste and special waste – excluding cleanfill (**Figure 16**). Further detailed breakdown is included in Appendix C.

Broadly, organic material represented the largest proportion (approximately 32%) of the waste disposed to Class 1 landfills, followed by timber (approximately 20%) and rubber (approximately 12%). Combined these

three waste streams represented approximately 60% of the total waste being disposed of to Class 1 landfills. Paper (approximately 8%) and plastic (approximately 9%) also represented significant waste streams and which may present an opportunity to increase recyclable capture rates. Compared to the previous waste assessment, the organic waste stream has remained relatively consistent, however there has been a reduction in plastics from the previous approximate 13% to a current approximate 8%. This may be representative of greater plastic recycling capture rates and individual awareness of recycling (e.g., Council supported behaviour change initiatives).

Further, as discussed above, it is recommended that the Regional Wellington Waste Minimisation and Management Plan (WMMP) provide mechanisms to support improved recyclable capture rates from across the Wellington Region.

Table 22 Composition of Levied Waste to Class 1 Landfills in the Wellington Region

Composition of Levied Waste to Class 1 Landfill 2021/22	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	Tonnes 2021/22	% of Total	Tonnes 2021/22	% of Total
Paper	18,087	8	15,827	8
Plastic	20,526	9	17,504	9
Organic	72,251	33	62,938	32
Ferrous Metal	5,837	3	5,206	3
Glass	2,189	1	1,940	1
Textiles	6,129	3	5,362	3
Sanitary	11,302	5	9,629	5
Rubble	10,240	5	8,599	4
Timber	44,293	20	41,246	21
Rubber	28,997	13	25,155	13
Potentially Hazardous	2,142	1	1,721	1
Resource Recovery	14	0.01	14	0.01
Total	**222,006**	**100%**	**195,143**	**100%**

Figure 15 Composition of Waste to Class 1 Landfills in the Wellington Region – General Waste – Excludes Special Waste and Cleanfill

Figure 16 Composition of Waste to Class 1 Landfills in the Wellington Region – General Waste and Special Waste – Excludes Cleanfill

5.2.5 Activity Source of Waste

This section provides a summary of the levied waste disposed of to Class 1 landfills in the Wellington Region. The composition is again presented using the seven 'activity sources' as presented in the previous waste assessment and as specified in the New Zealand Waste Data Framework.

The activity source of waste to Class 1 landfills has been calculated as follows:

- All data was provided by Wellington City Council, Kāpiti Coast District Council, Hutt City Council, and Porirua City Council. No data was available for Upper Hutt City Council, Carterton District Council, South Wairarapa District Council and Masterton District Council.
- Hutt City Council data is extracted from their 2022 SWAP report with data extrapolated to provide the respective activity source tonnages. As such, Hutt City Council note there may be discrepancies in the total tonnages for the area and which will be reflected in the overall regional totals.
- Data presented is for the 2021/22 year.
- Kai to Compost and Resource recovery activity sources are presented for Wellington City Council only. These additional categories represent an opportunity for future assessments to calculate the Wellington Region initiatives supporting resource recovery.

Table 23 summarises the activity source of waste disposed of to Class 1 landfills in the Wellington Region, specifically received from those Councils where data was available.

Table 23 Activity Source of Waste to Class 1 Landfills in the Wellington Region

Activity Source of Levied Waste to Class 1 Landfills in Wellington	General Waste – Excludes Special Waste		General Waste and Special Waste – Excludes Cleanfill	
	Tonnes 2021/22	% of Total	2021/22 Tonnes	% of Total
Construction and demolition	23,586	8%	18,575	6%
Domestic kerbside	47,668	17%	33,192	11%
Industrial/ commercial/ institutional	130,981	46%	125,135	42%
Landscaping	11,563	4%	10,728	4%
Residential	55,203	19%	53,533	18%
Specials	14,578	5%	53,235	18%
Kai to compost(commercial)	1,201	0.4%	1,201	0.4%
Resource recovery	105	0.04%	105	0.04%
TOTAL	**284,885**	**100%**	**295,704**	**100%**

Industrial/commercial/institutional waste was reported to be the largest source of levied waste disposed of the Class 1 landfills in the Wellington Region (approximately 42%), likely due to the nation-wide increasing trend in construction related activities (e.g., housing). This was followed by residential waste (approximately 18%) and domestic waste (approximately 11%). In comparison to the previous waste assessment, the total tonnage of both general waste – excluding special waste showed a moderate increase of approximately 32,000 tonnes and a moderate decrease in general waste and special waste – excluding cleanfill of approximately 6,000 tonnes.

5.2.6 Diverted Materials

With increasing focus on reducing, reusing, recycling, and recovering products and materials, territorial local authorities are continuing to provide resource recovery activities for ratepayers and residents, whilst also investigating new opportunities to reduce the amount of waste disposed to landfill.

The establishment of resource recovery centres/network/hubs and/or facilities and efficient Material Recovery Facilities (MRFs) has become increasingly important. For clarity and consistency, resource recovery centres/network/hubs and/or facilities is hereafter referred to as a Resource Recovery Facility (RRF). An RRF is defined as a facility that caters to the reuse, recovery and resale of products and materials. Similarly, for clarity, a MRF is referred to here as a facility that accepts (e.g., kerbside recycling), separates and prepares single-stream recycling materials to be sold to end buyers.

Materials collected at a RRF varies from household items, organic waste, electronics through to hazardous items (e.g., paints) and recyclable containers (i.e., those items commonly collected in kerbside recycling collections – glass, aluminium/tin, paper and cardboard, plastic grades 1, 2 and 5). Similarly, a MRF will commonly accept kerbside recycled materials (e.g., plastic grades 1, 2 and 5, glass, aluminium) with sorting (e.g., optical sorters, trommels, magnets) to prepare single stream recycling materials. It is worth noting here that since the previous waste assessment report was published, several Councils have made changes to their kerbside recycling collections by reconfiguring the materials accepted to improve consistency of collections across the region. This is also in line with the Central Government proposal to standardise national kerbside recycling.

This section provides a summary of available information to highlight the significant efforts the Wellington Region has placed into reduction and recycling activities; two of the highest elements of the waste hierarchy. It is also important to highlight here that while this section presents a summary of Council information, there are a myriad of organisations operating throughout the region, all which support recovery and reuse of products and materials. These organisations include, but are not limited to:

- Sustainability Trust
- WasteFree Welly
- KaiCycle
- Hospice NZ
- Salvation Army Opportunity Shops
- Scrap metal yards
- E-waste recyclers
- Organic waste recyclers
- Construction and demolition waste recyclers

Available data for private organisations was limited and so the quantities of recovered resources cannot be accurately determined in view of the broader waste flows. However, where data was available for recovery of Council managed resources this has been presented in the following sections to illustrate the composition and relative quantities.

Case Study – Southern Landfill Tip Shop and Recycle Centre[44]

As part of Wellington City Councils initiatives to reduce and reuse materials and divert waste away from landfill disposal, the Tip Shop and Recycle Centre provides the public with a convenient and accessible opportunity to engage with Councils waste minimisation efforts. The Tip Shop, located at the Southern Landfill provides the public an opportunity to drop-off and donate unwanted items rather than throwing these items out. Additionally, the shop offers visitors an opportunity to buy a range of collected items, including, but not limited to:

- Clothing
- Books
- Toys
- Household items
- Building and gardening materials
- Electronics
- Tools
- Sporting equipment

[44] Southern Landfill, Tip Shop and Recycle Centre - Tip Shop and Recycle Centre - Wellington City Council

While most items are accepted free of charge, items such a TVs and computer monitors incur a small charge to support activities including electrical checks.

Additionally, the Recycling Centre enables the collection of glass bottles and jars, paper and cardboard, plastic packaging (i.e., numbers 1, 2 and 5 only), aluminium cans and tins in dedicated recycling bins which are then collected and recycled separately.

Other supporting activities at the site include the opportunity for the public to purchase water tanks and Capital Compost garden products, as well as bottle recycling crates and Council rubbish bags.

Case Study – Trash Palace[45]

As part of Porirua City Councils initiatives to reduce and reuse materials and divert waste away from landfill disposal, Trash Palace located at Spicer Landfill provides the public with an opportunity to drop-off and donate items for resale or recycling. Trash Palace accepts a range of items, generally free of charge, including but not limited to:

- Clothing
- Books
- Toys
- Whiteware (charges may apply)
- Building and gardening materials
- Electronics (charges may apply)
- Scrap metal
- Car batteries

Additionally, Trash Palace also operates a Building Recycling Centre focussing on the collection and resale of a range of building materials including:

- Doors
- Windows
- Bathroom and laundry materials
- Bricks

5.2.6.1 Resource Recovery Quantities

To understand the potential diversion quantities of recovered and repurposed materials, access to consistent and complete data is needed. However, in many cases, recovery centres/network/hubs and/or facilities record data in terms of sales and not volumes. As such quantity cannot always be used as a measure of potential diversion from such facilities. Generally, there is inconsistent resource recovery initiatives across the Wellington Region combined with inconsistencies in the types of materials recovered. Where information was available from the region, this has been summarised below. Importantly, while there is no current standard

[45] Welcome to the iconic Trash Palace in Porirua, New Zealand - Trash Palace

resource recovery network or materials collected from throughout the Wellington Region, significant efforts have been made by the respective districts to address this with plans in place (e.g., Climate Change Strategies) to recover and reuse more materials before they are disposed of to landfill.

Porirua City Council estimated that the total diversion from Trash Palace during the period July 2021 to June 2022 was approximately 797 tonnes[46]. Unfortunately, while no categories were recorded to provide greater detail on the tonnage split, the types of materials accepted by the facility provide the best indication of the tonnage makeup. In comparison, the quantity of materials diverted from the Southern Landfill Tip Shop was not available at the time of writing, however Wellington City Council is in the process of determining how this information can best be captured going forward. However, given this limitation for the Tip Shop, data is available for the recycling tonnages collected at the Tip Shop and Recycling Centre.

Additionally, the percentage of materials that could be diverted from landfill provides another lens of potential diversion quantities. For example, the Wellington City Council Solid Waste Analysis Protocol (SWAP) (2018) indicated that:

- approximately 12% (72 tonnes/week) of the combined kerbside waste stream could have been recycled through Council's kerbside recycling collection or at a drop-off facility; and
- approximately 55% (322 tonnes/week) of organic materials could have been composted.

As such, a total of approximately 67% (394 tonnes/week) of kerbside waste could be diverted from landfill disposal by either recycling or organic processing.

Further, data provided by Kāpiti Coast District Council report approximately 460 tonnes of recovered materials (car tyres, whiteware, scrap metal and clothing) was diverted from landfill disposal during the 2020/21 period. An additional 1,011 individual items of TV's (592 units) and fridges/freezers (419 units) were also reported by Kāpiti Coast District Council to have been diverted from landfill disposal. Although no other data was available for the preceding years, this represents a significant reduction in the amount of waste Kāpiti Coast District Council sends to landfill. It also suggests that over the coming years this amount, and the types of materials diverted from landfill will continue to increase, thereby supporting ongoing waste minimisation efforts, reduced per capita waste generation and contribute to lower emissions from waste disposal.

Alongside the above Council examples, Upper Hutt City Council is also progressing resource recovery initiatives with the collection of car seat (53 sets during July 2021-April 2022) and collecting approximately 360kg (August 2021-April 2022) of batteries as part of the Upcycle battery collection programme.

As summarised in **Table 24**, and where data was available, the combined volumes of drop-off recycling/bulk recycling and kerbside recycling tonnages from Upper Hutt City Council and Wellington City Council have remained relatively stable since 2016/17 with minor fluctuations in annual volumes recorded. In comparison, Kāpiti Coast District Council has shown reduced volumes. Of note has been the effects of a changing global recyclable material market and the global health pandemic, both events having had significant impacts on Aotearoa New Zealand's local and domestic waste markets. For example, anecdotal evidence suggests that the stay-at-home orders during the COVID-19 Level 4 health response resulted in increased online shopping both for groceries and other items which resulted in greater levels of packaging received at the household and therefore presented to kerbside recycling. Similarly, the volumes of household residual waste were also

[46] Information provided by Porirua City Council

reported to increase as more people worked from home (and are continuing to do so) and as a result present more residual waste to kerbside refuse collections.

Table 24 Combined Drop-Off Recycling/Bulk Recycling Station and Kerbside Recycling Tonnages[47]

Council	Tonnes per Annum					
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Carterton District Council	NDR	NDR	NDR	NDR	NDR	417.4
Hutt City Council	NDR	NDR	NDR	NDR	NDR	1,414.4
Kāpiti Coast District Council[48]	4,525.6	4,987.5	4,608.9	3,228.5	2,700.5	N/D
Masterton District Council	NDR	NDR	NDR	NDR	NDR	1,589.2
Porirua City Council	NDR	NDR	NDR	NDR	NDR	2,452.5
South Wairarapa District Council	NDR	NDR	NDR	NDR	NDR	1,443.8
Upper Hutt City Council	827.4	1,245.3	1,558.7	1,301.8	1,419.9	1,601.5
Wellington City Council	18,077.6	18,098.5	19,676.6	17,597.5	18,024.4	17,179.3

NDR: No data received

5.2.6.2 Kerbside Recycling and Drop-Off Facilities

The tonnage data for kerbside recycling and drop-off facilities in the Wellington Region is summarised in **Table 25** below.

The following points relate to **Table 25** below:

- All data was provided by Wellington City Council, Kāpiti Coast District Council, Hutt City Council, Porirua City Council, Upper Hutt City Council, Carterton District Council, South Wairarapa District Council and Masterton District Council.
- Kāpiti Coast District Council drop-off recycling data was not collected and reported prior to 2019/20. Kerbside recycling provided data represents operating collectors and is noted to not provide an accurate reflection of recycling activities carried out during the 2016-2019 period. As recycling drop-off at the transfer station is free, tonnages are not captured and recorded. Recycling data has been calculated from total recycling sent for sorting at OJI (total out) minus the reported tonnage of the recycling collected. This only includes drop off of 'kerbside recyclable material' and not other recoverable drop off items (e.g., whiteware, TVs, child carseats, etc).
- Hutt City Council data reported for 2019/20 and 2020/21 are impacted by COVID-19 – recycling was diverted to landfill, average contamination for drop-off facilities for this period was 25.08%, contamination has been included in all figures, drop-off facilities ceased in 2021 due to the high levels of contamination. Hutt City Council is unsure why a sudden decrease in kerbside recycling occurred in 2021/22.
- Porirua City Council data only includes weights from kerbside collection and the bulk recycling station at Spicer Landfill. It does not include diverted material from Trash Palace.

Broadly, kerbside recycling and drop-off waste tonnages consistently increased from 2016/17 to 2019/20 but then showed signs of a decreasing trend during 2020/21 and 2021/22 (**Table 25**). However, while this may be

[47] Data provided by each of the Councils and/or supplemented with data from relevant SWAP surveys

[48] For the 16/17 – 19/20-year Kāpiti Coast District Council was counting the recycling out of both transfer stations. However, they are consolidated at the larger facility before being sent away for sorting. The 20/21 data reflects this better understanding and explains the drop in recycling total in comparison to previous years. 20/21 is a clearer representation to what is happening in the district.

a result of COVID-19, it is unclear whether this trend will continue. Further, with the potential implementation of a New Zealand Container Return Scheme, it is likely that the kerbside recycling tonnages will decrease due to the change in quantities presented for collection.

Table 25 Kerbside Recycling and Drop-Off Facilities in the Wellington Region

Tonnes/annum	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Kerbside Recycling	21,672	21,926	21,865	23,727	24,027	17,792
Drop-Off Facilities	7,784	8,299	8,814	9,309	7,828	7,943
Total	**29,456**	**30,225**	**30,678**	**33,035**	**31,855**	**25,735**

5.2.6.3 Composition of Kerbside Recycling

The tonnage data for the composition of kerbside recycling across the Wellington Region is summarised in **Table 26** below.

The following points relate to **Table 26** below:

- All data was provided by Wellington City Council, Hutt City Council, Porirua City Council and Upper Hutt City Council. No data was available from Masterton District Council, South Wairarapa District Council, Carterton District Council and Kāpiti Coast District Council.
- Wellington City Council tonnage data includes kerbside and drop off recycling.
- Upper Hutt City Council provided aggregated data for plastic containers 1,2, 5, aluminium cans and steel cans therefore for consistency all other council provided data has been aggregated to reflect this.
- Upper Hutt City Council data (except glass) has been extracted from the 2022 Lower Hutt kerbside audit. Glass was estimated based on glass comprising 39% of all Lower Hutt recycled material (39% taken from Auckland City Council https://ourauckland.aucklandcouncil.govt.nz/news/2021/01/recycling-right-in-2021/. The percentages provided are adjusted percentages that take into account the estimated glass figure; the 2022 kerbside audit estimated contamination of 11.9% or 8.56%. Scoop testing audits completed by the OJI MRF consistently place contamination between 17.9% and 19.7%.
- Porirua City Council data are based on a scoop test from OJI Fibre Solutions and Council glass tonnages from 2021/22.

Broadly, **Table 26** shows that mixed paper (38%, 6,767 tonnes/annum) and glass bottles and jars (37%, 6,502 tonnes/annum) represented the two largest kerbside recyclable streams, followed by the aggregated category of plastic containers (1,2,5), aluminium and steel can at 15% (2,641 tonnes/annum). Lastly, contamination in 2021/22 was reported at 10% (1,769 tonnes/annum) and increase of 5.4% or 561 tonnes/annum.

Table 26 Composition of Kerbside Recycling in the Wellington Region

Composition of Kerbside Recycling – 2021/22	Tonnes/Annum	% of Total
Mixed Paper	6,767	38%
Glass Bottles and Jars	6,502	37%
Plastic Containers 1, 2, 5, aluminium cans, steel cans	2,641	15%
Contamination	1,769	10%
Total	**17,679**	**100%**

5.2.7 Commercially Collected Diverted Materials

The availability to commercially collected diverted materials from across the Wellington Region was limited with only Wellington City Council and Kāpiti Coast District Council providing data. It is though acknowledged that across the Wellington Region commercially collected materials may include concrete, clothing and textiles and e-waste, however, tonnage data for these waste streams was not available or accessible at the time of this assessment. It is recommended that the Regional Wellington WMMP provides for Councils to obtain this data to help inform knowledge of material diversion.

Availability of commercially collected diverted materials was scarce across the Wellington Region with only Wellington City Council and Kāpiti Coast District Council able to provide data. Of note, Kāpiti Coast District Council reported that commercially collected data is difficult to separate as often as these can be mixed into a residential collection (depending on the size of the business). The data presented by Kāpiti Coast District Council should be used with caution as it is unlikely to provide a comprehensive indication of commercial tonnages. It is recommended that the Regional Wellington WMMP provides for Councils to obtain this data to help inform knowledge of material diversion. No further commentary on commercially collected diverted materials for the remaining Council areas is included here.

With the limited available data, approximately 1,130 tonnes/annum comprising cardboard/paper/containers and scrap metal was diverted in 2021/22 from across Wellington and Kāpiti (**Table 27**). However, this number is likely to underestimate what is actually diverted in these Council areas. Additionally, while the remaining six councils were not able to access data, it is expected that actual commercially collected diverted tonnage is significant. As reported above, it is recommended that the Regional Wellington WMMP provides for Councils to obtain this data to help inform knowledge of material diversion.

Table 27 Commercially-Collected Diverted Materials in the Wellington Region

Diverted Materials, excluding Council and Private Domestic Kerbside Recycling Collections	Tonnes/Annum 2021/22
Cardboard/paper/containers	600
Scrap metal	529.7
Total	**1,129.7**

5.2.8 Diversion of Organic Material

Across the Wellington Region, greenwaste (including wood waste) and food waste are the two primary organic material streams collected and diverted. Compared with the previous waste assessment, no data was available to provide clarity on the tonnes per annum of meat waste diverted and as such is excluded from **Table 28** below. As reported in the previous assessment, greenwaste is collected on a commercial basis from residential properties and separately at transfer stations and landfills. Across the Wellington Region greenwaste is processed by a range of commercial operators including Capital Compost (Wellington), Nursery Road (Masterton), Envirocomp (South Wairarapa) and Composting NZ (Kāpiti Coast).

Additionally, Kaibosh and Kiwi Community Assistance in Wellington also collect and redistribute rescued food throughout the Wellington community. It is recommended that the Regional Wellington WMMP provides for Councils to obtain comprehensive organic material diversion data to help inform knowledge of organic diversion across the region. This information will also help to support Council led or a regional approach to organic management whilst supporting initiatives, for example, food rescue and community outreach where needed.

Table 28 summarises the diversion of greenwaste and food waste from across the Wellington Region. Broadly, the largest proportion comprised greenwaste (including wood waste) followed by recovered food waste. Interestingly, the tonnes per annum for all categories were significantly greater than compared with the previous waste assessment. In summary, there was an increase of 12,249 tonnes/annum greenwaste and food waste diverted from landfill.

Table 28 Diversion of Greenwaste and Food Waste in the Wellington Region

Organic Waste Diversion – 2021/22	Tonnes per Annum – 2015	Tonnes per Annum – 2021/22
Greenwaste and wood waste	19,785	32,729
Food waste – composted	1,121	5,387
Food waste – recovered	200	20,239.44
TOTAL	**46,106**	**58,355**

6 PERFORMANCE MEASUREMENT

6.1 Overview

For consistency and to support comparisons the following sections have been aligned with the previous 2016 waste assessment. Information has been extracted from the previous waste assessment where appropriate. The data presented in this section has been provided, where available, by each of the eight Wellington Councils.

6.1.1 Per Capita Waste to Class 1 Landfill

As reported in the 2016 waste assessment, The total quantity of waste disposed of at Class 1 landfills in a given area is related to a number of factors, including:

- The size and levels of affluence of the population
- The extent and nature of waste collection and disposal activities and services
- The extent and nature of resource recovery activities and services
- The level and types of economic activity
- The relationship between the costs of landfill disposal and the value of recovered materials
- The availability and cost of disposal alternatives, such as Class 2---4 landfills
- Seasonal fluctuations in population (including tourism).

To ensure consistency with the previous waste assessment, the Statistics NZ population estimate and the Class 1 landfill waste data from Section **3**, the per capita per annum waste to landfill in 2021/22 from the Wellington region has been calculated (**Table 29**).

Table 29 Waste Disposal per Capital across the Wellington Region

Calculation of Per Capita Waste to Class 1 Landfills in the Wellington Region –2021/22	
Population Estimate (Stats NZ 2021/22 Estimate)	547,100
Total Waste to Class 1 Landfill (Tonnes 2021/22)	302,586
Tonnes/Capita/Annum of Waste to Class 1 Landfills	**0.553**

In summary, in 2021/22, approximately 0.553 tonnes of levied waste was disposed of at Class 1 landfills for each person in the Wellington region.

As noted in the previous waste assessment, the movement of waste across territorial authority boundaries makes it difficult to estimate per capita waste disposal rates for the individual Council across the region. Similarly, the access to accurate and specific data is often complex and challenging for each Council and as a result the above tonnes per capita per annum figures should be considered with caution.

Further, the following assumptions apply and have been extracted for consistency from the previous waste assessment:

- All waste from Upper Hutt City and Hutt City is disposed of at Silverstream landfill
- All waste from Wellington City and Porirua City is disposed of at Southern landfill and Spicer landfill
- All waste from Kāpiti Coast District is disposed of at the transfer stations in the district
- All waste from Carterton, Masterton, and South Wairarapa Districts is disposed of at the transfer stations in the districts

As such, based on these assumptions, which as reported previously are known not to be entirely accurate, per capita disposal rates for the four waste catchments are provided in **Table 30** below. The estimates include special wastes but exclude unlevied cleanfill materials.

Table 30 Waste Disposal per Capita – by Waste Catchment (2020/21 and 2021/22)

Calculation of per Capita Waste to Class 1 Landfills	Kāpiti Coast District	Wellington and Porirua	Hutt City	Wairarapa
2020/21				
Population (Stats NZ 2020/21 Estimate)	57,400	277,700	112,000	49,040
Total Levy Paid Waste to Class 1 Landfills (Tonnes 2020/21)	28,034	163,071	151,344	17,918
Tonnes/Capita/Annum of Waste to Class 1 Landfill	**0.488**	**0.587**	**1.351**	**0.365**
2021/22				
Population (Stats NZ 2021/22 Estimate)	58,000	278,900	112,800	49,900
Total Levy Paid Waste to Class 1 Landfills (Tonnes 2021/22)	27,839	168,733	NDR	20,791
Tonnes/Capita/Annum of Waste to Class 1 Landfill	**0.480**	**0.605**	**-**	**0.417**

Note: Upper Hutt City is excluded from the calculation as no data was available.
NDR: No data received

From the available data provided in 2020/21, the rate of waste per capita disposed of to Class 1 landfills was greatest from Hutt City (noting Upper Hutt is excluded as there was no available data) followed by Wellington and Porirua (0.587 tonnes/capita/annum), Kāpiti Coast District (0.488 tonnes/capita/annum) and lastly the Wairarapa catchment (0.365 tonnes/capita/annum). As reported in the previous assessment, the low disposal rate from the Wairarapa catchment is likely associated with a lower level of industrial and commercial activity and a higher proportion of rural properties. Further, it is expected that a substantial proportion of waste produced in the Wairarapa catchment is disposed of on-site or on-farm.

Further, the following is extracted from the 2016 waste assessment and remains current:

"The high disposal rate from Upper Hutt City and Hutt City could be associated with higher levels of industrial and commercial activity than in the other areas. Additionally, waste from other areas is understood to be transported to Silverstream landfill for disposal. Anecdotally, it is understood that some kerbside refuse from Kāpiti Coast District is disposed of at Silverstream landfill. As the major waste collectors' depots are all in Hutt City, it is likely that collection vehicles often dispose of their final load of waste at Silverstream landfill. Quantitative information on any other cross---boundary movements of waste to Silverstream is not available."

6.1.2 Per Capita Domestic Kerbside Refuse to Class 1 Landfills

The following description is extracted from the 2016 waste assessment and remains largely current for this assessment:

"The quantity of domestic kerbside refuse disposed of per capita per annum has been found to vary considerably between different areas. There are several reasons for this variation.

Kerbside refuse services are used primarily by residential properties, with small---scale commercial businesses comprising a relatively small proportion of collections (typically on the order of 5---10%). In districts where more businesses use kerbside wheelie bin collection services --- which can be related to the scale of commercial

enterprises and the services offered by private waste collectors - - the per capita quantity of kerbside refuse can be higher. There is relatively little data in most areas on the proportion of businesses that use kerbside collection services, so it is not usually possible to provide data solely on residential use of kerbside services.

The type of service provided by the local territorial authority has a considerable effect on the per capita quantity of kerbside refuse. Councils that provide wheelie bins (particularly 240---litre wheelie bins) or rates---funded bag collections generally have higher per capita collection rates than councils that provide user---pays bags. The effect of rates--- funded bag collections is reduced in those areas where the council limits the number of bags that can be set out on a weekly basis.

Evidence indicates that the most important factor determining the per capita quantity of kerbside refuse is the proportion of households that use private wheelie bin collection services. Households that use private wheelie bins, particularly larger, 240---litre wheelie bins, tend to set out greater quantities of refuse than households that use refuse bags. As a result, in general terms the higher the proportion of households that use private wheelie bins in a given area, the greater the per capita quantity of kerbside refuse generated.

Other options that are available to households for the disposal of household refuse include burning, burying, or delivery direct to a disposal facility. The effect of these on per capita disposal rates varies between areas, with residents of rural areas being more likely to use one of these options."

Further, the 2021/22 disposal rate of domestic kerbside refuse for the Wellington region[49] has been calculated to be approximately 88 kg per capita per annum. It is stressed that this figure is an estimate using the data provided by three of the eight councils in the Wellington Region, specifically, Kāpiti Coast District Council, Hutt City Council and Porirua City Council. It is recommended that the Wellington Regional WMMP provides measures to support the collation and recording of specific data categories to support future detailed calculations. Further, to provide a more accurate estimate, it is recommended that each council complete SWAP surveys to allow kerbside quantities to be quantified and provide mechanisms for council to collect data that that is controlled by private waste collectors.

6.1.3 Per Capita Kerbside Recycling

The per capita recycling rates for the Wellington Region are summarised in **Table 31** below. It is noted that kerbside recycling rates have decreased compared with the previous waste assessment. Broadly, the per capita rate of kerbside recycling in the Wellington Region has remained relatively stable between 2016/17 to 2020/21, with a marked decrease in 2021/22. The main outcome of this was noted by Hutt City Council where a sudden decrease in kerbside recyclables was reported but the reason for this was unknown. At present, during 2021/22 approximately 33kg of kerbside recycling is collected for every resident across the Wellington Region. For comparison, the 2014/15 data presented in the previous waste assessment is shown.

Table 31 Per Capita Kerbside Recycling – Kg/Capita/Annum

Kerbside recycling	2014/15	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Kerbside recycling	26,375	21,672	21,926	21,865	23,727	24,027	17,792
Population	496,900	501,800	510,700	518,300	532,600	543,000	547,000
Kg/Capita/Annum	**53**	**43**	**43**	**42**	**45**	**44**	**33**

[49] noting Masterton District Council, South Wairarapa District Council, Upper Hutt City Council and Carterton District Council are excluded from the calculation as no data was available

The per capita recycling rates for the individual territorial authorities are summarised in **Table 32** below.

Table 32 Per Capita kerbside recycling – Kg/Capita/Annum – By Area

Kerbside Recycling Includes Council and private Collections – Kg/Capita/Annum	2018/19	2019/20	2020/21	2021/22
Carterton	68	75	63	81
Hutt	74	69	51	32
Kāpiti Coast	NDR	58	67	63
Masterton	185	188	178	206
Porirua	49	54	55	40
South Wairarapa	115	115	107	120
Upper Hutt	34	28	30	34
Wellington	54	50	50	46
Regional Average	**72**	**80**	**75**	**78**

Note: Includes kerbside recycling and drop-off facility data
NDR: No data received

As reported in 2016, there are several factors that should be considered noting the range of per capita recycling rates between the councils:

- The number of households in each area served by kerbside recycling collections has not been taken into account in the calculations
- Residents of rural areas, both those with kerbside recycling and those without, may be more likely to use drop-off facilities than residents of urban areas because of the convenience factor
- Many residents of Carterton District may use Masterton transfer station for their recycling drop-off
- COVID-19 has impacted recycling rates across the Wellington Region during the 2019/20 and 2020/21 periods
- Kāpiti Coast did not collect drop-off facility tonnages prior to 2019/20

6.1.4 Recovered Materials

Section **5.2.1** presented the composition of waste disposed of at Class 1 landfills from across the Wellington Region (noting several councils did not provide completed data sets). Further, Section **5.2.6** the diversion from landfill disposal of several waste materials was summarised. As completed the 2016, by combining the two data sets, a high-level mass balance for these materials can be estimated (noting current data limitations provided by each of the Councils) and diversion rates estimated for each. **Table 33** provides a summary of this data with Appendix C providing full data. Caution should be taken when interpreting this data due to the limited data provided by the councils. It is anticipated that the below tonnages will underestimate the actual potential diversion volumes and so it is recommended that the next Wellington Region Waste Management and Minimisation Plan provide mechanisms for councils to report on and collect data to inform the diversion rate by material type.

Table 33 Recovered Materials – 2020/21-2021/22

Diversion Rates of Selected Recoverable Materials	Mixed Paper and Containers	Scrap Metal	Greenwaste and Wood Waste[3]	Food Waste
Kerbside Recycling Collections[1]	17,679	0	0	0

Diversion Rates of Selected Recoverable Materials	Mixed Paper and Containers	Scrap Metal	Greenwaste and Wood Waste[3]	Food Waste
Commercial recycling Collections[2]	600	530	0	0
Composted	0	0	32,729	5,387
Food Waste Recovered	0	0	0	20,239.44
Subtotal	**18,279**	**530**	**32,729**	**25,626**
Class 1 Landfill (potential recoverable component)	19,629	15,474	24,105	28,033

[1]excludes Masterton District Council, South Wairarapa District Council, Kāpiti Coast District Council, Carterton District Council

[2]includes single data set provided by Wellington City Council (scrap metal) and Kāpiti Coast District Council (mixed paper and containers) only. No data was provided by all other councils.

[3]excludes Carterton District Council and Upper Hutt City Council. South Wairarapa District Council noted volumes are processed off site and not weighed.

[4]excludes Upper Hutt City Council, Carterton District Council, Masterton District Council, South Wairarapa District Council, Wellington City Council, Porirua City Council, Kāpiti Coast District Council

6.1.5 Potentially Recoverable Materials from Class 1 Landfills in the Wellington Region

An estimate of the composition of waste disposed of to Class 1 landfills in the Wellington Region has been provided in Section **5.2.5**. As produced in the 2016 waste assessment, the twelve primary categories recommended by the SWAP have been used. The diversion potential of waste disposed of to Class 1 landfills is summarised in **Table 34** below. It is also noted, that recovering 100% of all waste materials from the waste stream is not possible and so a proportion of materials will inevitably be disposed of to landfill or another pathway, acknowledging that in some cases new markets will need to be developed. The diversion estimates presented in **Table 34** below as such represent a best estimate rather than an actual figure. The figures do though provide some indication of the potential opportunities to recover waste materials. As with the primary composition presented in **Table 22**, the diversion potential is presented for both general waste – excluding special waste and non-levy paid cleanfill – and general waste and special waste combined – excluding non-levy paid cleanfill.

Table 34 Potentially Recoverable Materials of Levied Waste to Class 1 Landfills

Diversion Potential of Levied Waste to Class 1 Landfills in the Wellington Region		General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
Primary Category	Secondary Category	Tonnes 2021/22	% of Total	Tonnes 2021/22	% of Total
Paper	Recyclable	13,201	7%	12,083	6%
Plastics	Recyclable	4,183	2%	1,872	0.9%
Putrescibles	Kitchen/Food	28,033	15%	23,742	12%
Putrescibles	Greenwaste	24,105	13%	14,300	7%
Ferrous Metals	All	14,222	7%	3,942	2%
Non-Ferrous Metals	All	1,253	0.7%	1,004	0.5%
Glass	Recyclable	2,245	1%	1,716	0.9%
Textiles	Clothing/Textiles	557	0.9%	2,142	1%
Rubble	Cleanfill	40,619	21%	38,335	19%
Rubble	Plasterboard	771	0.4%	520	0.3%
Timber	Untreated/Unpainted	334	0.2%	-	-
Potentially Hazardous		2,744	1%	22,590	11%
TOTAL DIVERTABLE POTENTIAL		**132,267**	**69%**	**122,246**	**61%**

Broadly, more than 60% of both waste streams could be diverted from landfill disposal. As reported in 2016, the top three largest divertible components are cleanfill (20.7%) followed by kitchen/food waste (14.3%) and greenwaste (12.3%). Paper recyclables also appear as an opportunity for greater diversion with 6.7% potentially divertible from landfill. A similar trend is again reported in 2021/22 (**Table 34**). It is also worth noting here that Councils within the Wellington Region are progressing great initiatives to significantly reduce the quantities of organics being disposed of to Class 1 landfill, including investigating local and regional approaches to the processing of organic material. It is also worth noting that the Ministry for the Environment is too proposing to require no further disposal of organic material to Class 1 landfills which if enacted, would result in all councils implementing some mechanism to collect and divert and process organic material from their territorial area.

7 FUTURE DEMAND AND GAP ANALYSIS

The intent of this section is to provide an overview of the future demand for waste and resource management services acknowledging the wide range of factors that are expected to contribute to this. The key factors discussed in this section include:

- Future population of the Wellington Region
- Economic activity and waste management
- Changes in Lifestyle and Consumption
- Changes in Waste Management Approaches

The ability to have awareness of the key challenges and opportunities will support the Councils of the Wellington Region to prepare for upcoming changes and ensure residents and ratepayers are brought along on the journey.

7.1 Future Population of the Wellington Region

Population projections[50] for the Councils within the Wellington Region are summarised in **Table 35** below. Broadly, the forecasted population growth from across the Wellington Region show increases between 31% (Wellington City) and 57% (Carterton District) across the range of TAs. This information is important for each TA to support estimating future demand on existing waste services and forecasting any additional infrastructure construction and/or upgrades to existing facilities and services. Of particular note, is the projected population growth in the Carterton District which is forecasted to grow from a population of approximately 9,547 in 2018 to 13,016 in 2038 and further to 14,968 in 2051. As such, understanding the relative projected growth will support important decisions to be made and planning undertaken to cater for this increased growth.

Table 35 Forecasted Population Growth Rates from across the Wellington Region

Area	2018	2028	2038	2048	2051	Percentage change between 2018-2051 for the 50th percentile
Carterton District	9,547	11,324	13,016	14,606	14,968	57%
Masterton District	26,400	31,644	36,054	39,635	41,012	55%
South Wairarapa District	10,939	12,992	14,782	16,320	16,830	54%
Kapiti Coast District	55,127	64,198	72,956	80,793	83,288	51%
Porirua City	58,852	67,646	75,402	83,308	85,854	46%
Upper Hutt City	45,368	52,442	58,598	63,736	65,751	45%
Lower Hutt City	108,557	122,288	135,553	148,466	152,786	41%
Wellington City	211,222	228,392	247,692	268,114	276,472	31%
Total Forecasted Regional Population	**526,012**	**590,926**	**654,053**	**714,978**	**736,961**	-

[50] Population forecast 2020 to 2051 (sensepartners.nz)

Further, based on the Statistics New Zealand population projections for 2018-2048, the following high, medium, and low population projections are reported for the Wellington Region (**Figure 17**, **Table 36**).

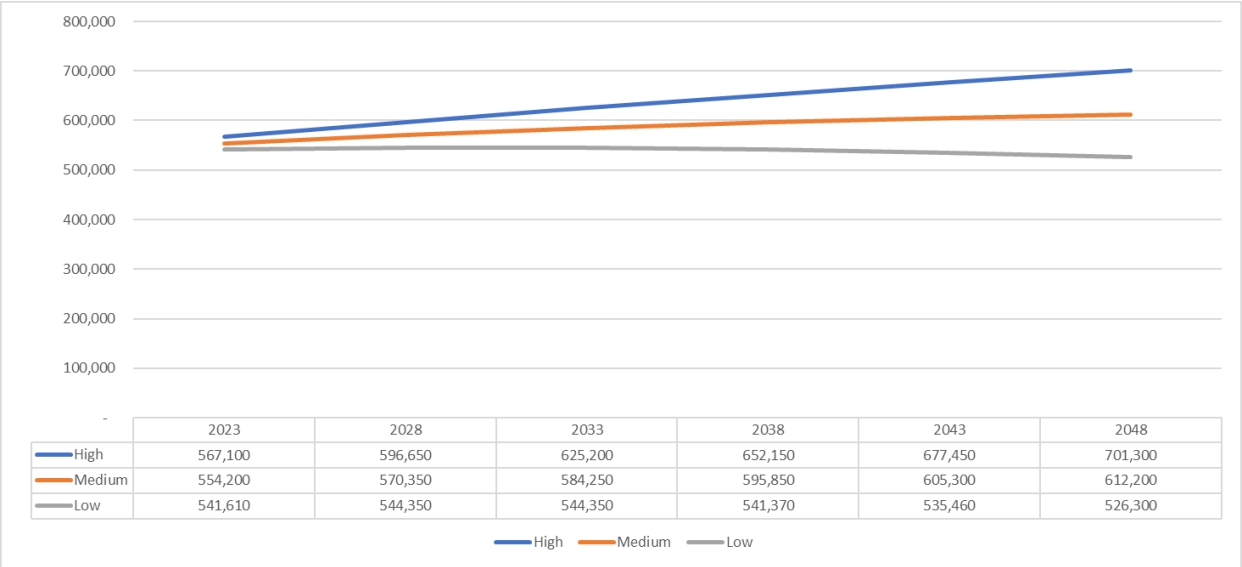


Figure 17 **Forecasted Wellington Region Population Projection between 2023 and 2048**

Table 36 **Forecasted Change in the Wellington Region Population**

	Population Change	Average Annual Change (%)
High	134,200	0.950%
Medium	58,000	0.475%
Low	15,310	-0.025%

Forecasting population within the Wellington Region is an important step in understanding the likely demand on waste services into the future. It provides an indication of the likely investment required to support current and future waste infrastructure to ensure residents and ratepayers are provided with value for money, accessible and convenient services that support the regions' goal to significantly reduced waste disposal to landfill.

As reported in the previous waste assessment, the 'medium' population growth estimate has been selected to provide an estimate for future increased demand for waste services.

7.2 Economic Activity and Waste Management

As reported by the OECD, total kilograms waste/capita has remained relatively stable and below the 550kg/capita (**Figure 18**). However, New Zealand has shown an increasing trend of waste production per capita from approximately 740kg/capita in 2017 to approximately 781kg/capita in 2018; an increase of 41kg/capita. Further, New Zealand has shown continual increases in waste generated per capita from 2012 onwards (**Figure 18**). It is also reasonable to conclude that as New Zealand's population continues to grow, the waste generated per capita will also increase if the current status quo of waste minimisation and management activities remains the same. However, it is recognised that greater effort at a national and local level is needed to reduce the amount of wate produced per capita and so significant efforts are being made by TAs to develop and implement greater recovery of resources (e.g., diverting organics from landfill disposal), establish a wider

network of recovery facilities (e.g., resource recovery centres) and improved service provision (e.g., cost effective and convenient ratepayer services).

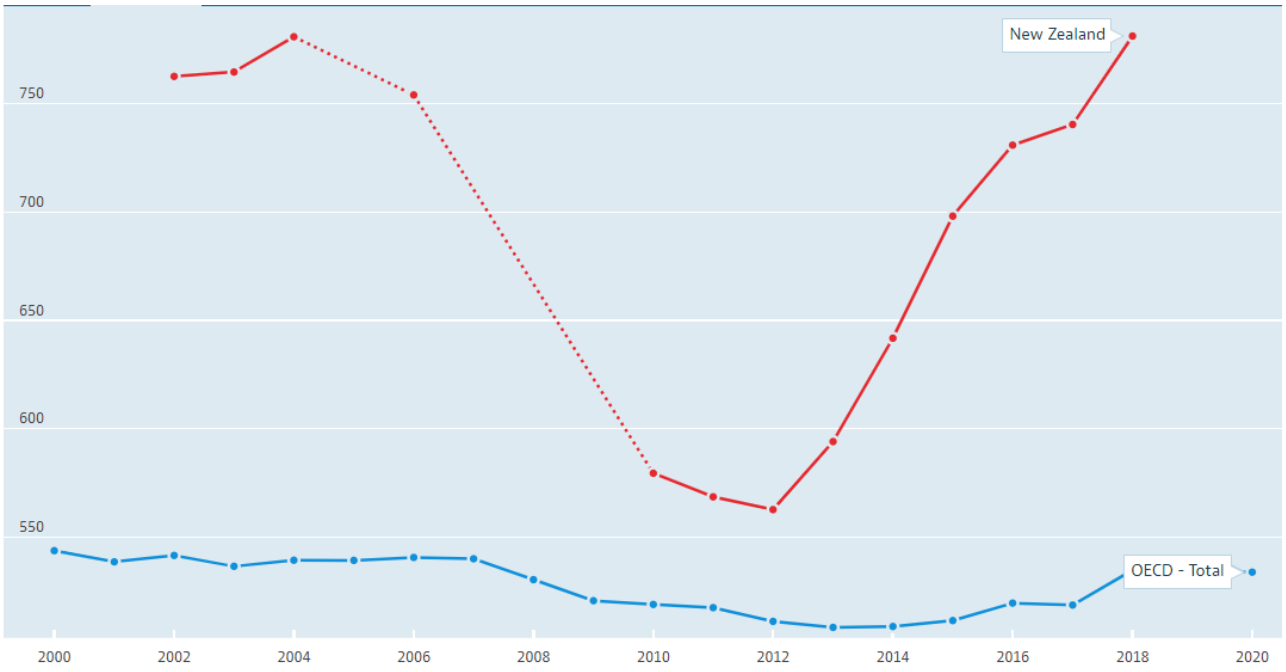


Figure 18 OECD Municipal Waste Compared with New Zealand Total Kilograms/Capita[51]

7.3 Changes in Lifestyle and Consumption

As noted in the previous waste assessment and which remains current, community expectations relating to recycling and waste minimisation are anticipated to lead to increased demand for recycling and material recovery services.

Further, central Government has also recognised the importance of providing mechanisms to support greater recovery of resources before they are disposed to landfill. In this regard, central government is beginning to transition the New Zealand economy from a linear (take-make-dispose) to a more circular economy where resources and materials are kept in circulation for longer. To support this transition, initiatives such as the proposed Container Return Scheme are set to disrupt the current waste system by placing more responsibility on beverage producers for the products they produce. As such, each single-use beverage container will have a deposit applied to it which will support individual behaviour change by placing a value on each single-use beverage container. The intent of this approach is to incentivise individuals and reduce the amount of single-use beverage containers being littered to our environment.

Further, while these are standalone initiatives, they are part of a much wider and holistic approach to minimising waste.

[51] Waste - Municipal waste - OECD Data

7.4 Changes in Waste Management Approaches

As noted in the previous waste assessment, there are a range of drivers and mechanisms to manage waste, and which will continually evolve and adapt to a changing economy. The following list provides a high-level summary of these and where applicable reflects those reported in the previous assessment:

- Statutory requirement in the Waste Minimisation Act 2008 to encourage waste minimisation and decrease waste disposal – with a specific duty for TAs to promote effective and efficient waste management and minimisation and to consider the waste hierarchy in formulating their WMMPs.
- Requirement in the New Zealand Waste Strategy 2010 to reduce harm from waste and increase the efficiency of resource use
- Increased cost of landfill. Landfill costs have risen in the past due to higher environmental standards under the RMA, introduction of the Waste Disposal Levy (currently $20 per tonne and set to progressively increase over the next couple of years up to $60tonne from 01 July 2024) and the New Zealand Emissions Trading Scheme. While these have not been strong drivers to date, there remains the potential for their values to be increased and to incentivise diversion from landfill.
- Collection systems. More convenient systems encourage more material recovery. Conversely, more convenient recycling systems with more capacity help drive an increase in the amount of recycling recovered.
- Waste industry capabilities. As the nature of the waste sector continues to evolve, the waste industry is changing to reflect a greater emphasis on recovery and is developing models and ways of working that will help enable effective waste minimisation in cost-effective ways.
- Local policy drivers, including actions and targets in the WMMP, bylaws, and licensing.
- Recycling and recovered materials markets. Recovery of materials from the waste stream for recycling and reuse is dependent on the recovered materials having an economic value.

7.5 Summary of Demand Factors and Future Projections

The above summary information suggests that as population continues to grow in Aotearoa New Zealand so to will the per capita waste generated if the status quo continues. However, with greater focus on minimising disposal of waste to landfill and increasing the recovery of resources along with ensuring materials and products are kept in circulation for a long as possible, it is anticipated that the per capita waste produced will either stabilise or begin to reduce over time. However, it must also be acknowledged that Aotearoa New Zealand is a global citizen and as such is also at the influence of overseas markets for recycled products and materials. As such, there is potential for greater investment onshore to process materials such as plastics into higher value products compared with exporting offshore for processing.

Further, it is expected that several waste streams will be significantly impacted upon over the coming years. Most notably, construction and demolition waste is expected to continue to increase due to housing and construction demand, and volumes of organics set to decrease from landfill disposal with the Ministry for the Environment proposal to remove organics from Class 1 landfills. Similarly, volumes of kerbside recycling are expected to be impacted over the coming years with the potential implementation of a Container Return Scheme. This scheme is expected to reduce the volume of kerbside recyclables presented for collection noting that individuals and households will be encouraged to separately collect eligible containers for the appropriate refund. Similarly, many New Zealand jurisdictions are progressing the development of resource recovery centres, either individual or networked, to provide communities with a location to drop-off unwanted items

for repurposing, or products (e.g., greenwaste) for collection and processing. Combined, these efforts are expected to support the goal to reduce waste disposed to landfill and to ultimately ensure materials and products are kept in circulation for as long as possible (i.e., circular economy).

7.5.1 Projections of Future Demand

Total waste and recovered material quantities in the Wellington Region have been estimated to grow slowly between 2021/22 and 2030/31; a similar outcome to that reported in the previous waste assessment (**Figure 19**). To ensure consistency with the previous assessment, it has again been assumed that kerbside refuse, and all recyclables (kerbside and dropoff) will grow inline with the medium average annual population change (0.475%) with all other waste types (construction and demolition (excluding special waste and cleanfill), greenwaste, food waste and general waste (excluding special waste and cleanfill)) will grow at a rate of 2% per annum in line with GDP.

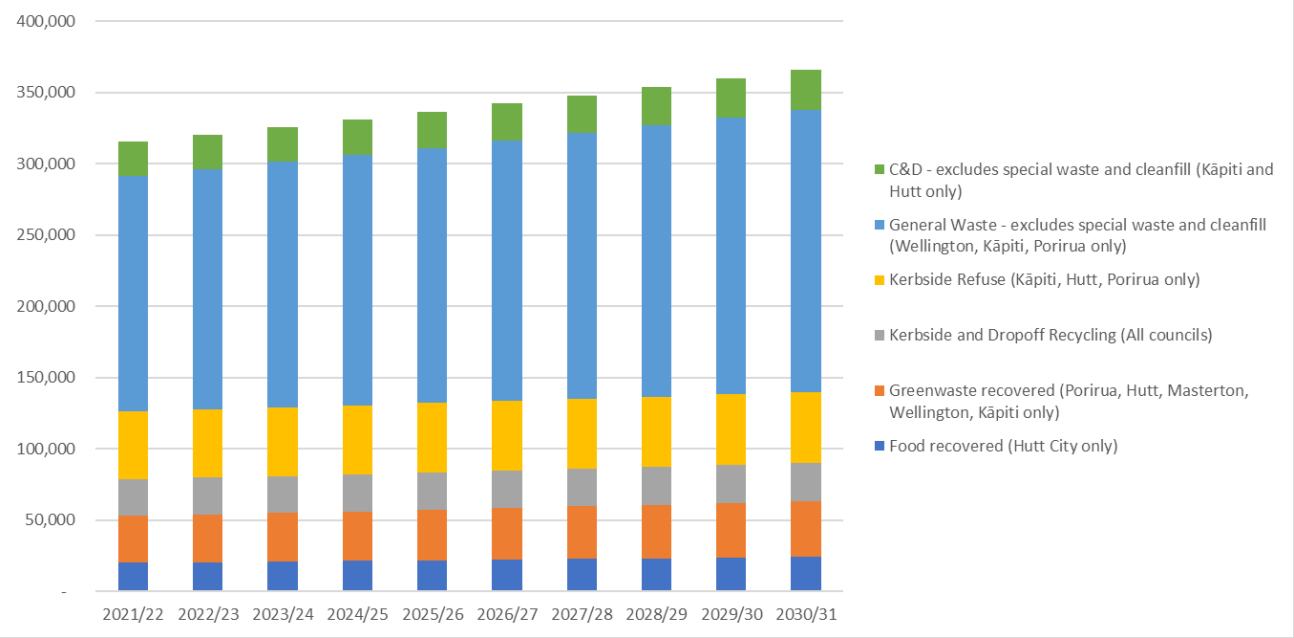


Figure 19 Mid-Level Population Projection (no change in systems or drivers)

In addition, understanding the projected number of additional households across the Wellington Region provides an indication on the demand for future waste services. **Figure 20** below indicates that household numbers (medium projected level – StatsNZ) will steadily increase in Wellington City with moderate to static growth in the remaining districts. This trend was also reported in the previous assessment albeit with higher projected household numbers.

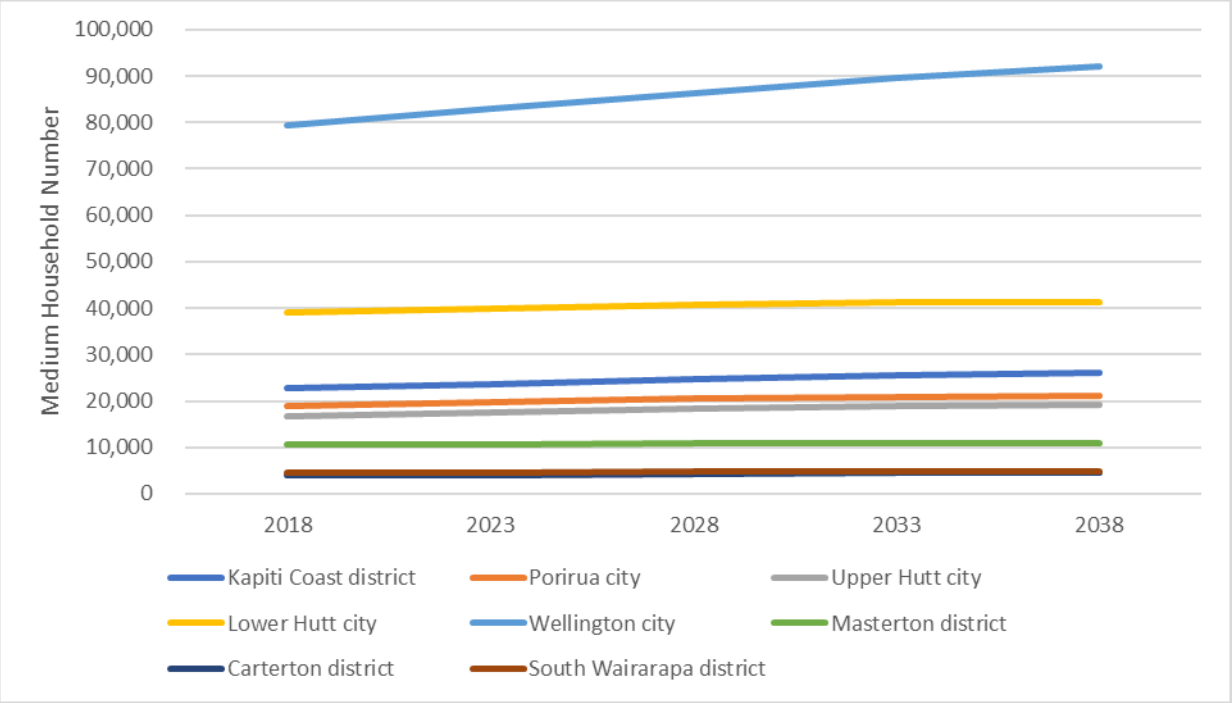


Figure 20 Medium Number of Household Projection across the Wellington Region[52]

7.6 Future Demand Gap Analysis

As reported in the 2016 waste assessment, the aim of waste planning is to achieve effective and efficient waste management and minimisation. From this waste assessment the following gaps have been identified. It is recommended that the Wellington Region WMMP acknowledges the below list, and where possible makes recommendations and/or suggested mechanisms to support improved waste management and minimisation throughout the Wellington Region.

- Data quality and management of data
- Access to commercial operator data where private services provided (i.e., contractual requirement)
- Cleanfill numbers and tonnages
- Council market share of kerbside refuse and recycling collections
- The amount of kerbside recycling per capita is relatively low compared with the previous waste assessment
- Low diversion rate of organics, including both greenwaste and food waste
- Councils operate a range of different funding and management models, which is a barrier to greater collaboration. Despite this, there is potential for greater joint working in Council service delivery (e.g., more consistent approach to kerbside services)
- Information about the amount and type of waste that is going to unregulated disposal (farm pits, cleanfill and burning) is unavailable at present
- Recycling performance declining

[52] Subnational family and household projections: 2013(base)–2038 | Stats NZ

- Preparation for the proposed Container Return Scheme and implications on kerbside recycling collections as well as contractual relationships with Material Recovery Facilities
- Diversification of the current resource recovery sites throughout the Wellington Region and opportunities to provide a coordinated network

7.6.1 Waste Streams

The following priority waste streams could be targeted to further reduce waste disposed of to landfill. Where relevant, information has been extracted from the 2016 waste assessment and further expanded where required.

- Kerbside recyclables (i.e., single-use beverage containers) in line with the proposed Container Return Scheme
- Reuseable goods including but not limited to whiteware, clothing, household items
- More kerbside recyclables both from domestic and commercial properties
- Organic waste, particularly food waste both from domestic and commercial properties
- Industrial and commercial plastic is a significant part of the waste stream which may be able to be recycled
- Farm waste is a relatively unknown quantity and increased awareness of the problems associated with improper disposal may drive demand for better services
- Construction and demolition waste in particular timber is a significant part of the waste stream which may be able to be recovered
- E-waste collection and processing capacity in the district, while better than many areas, has room for improvement
- Biosolids
- Waste tyres may not be a large proportion of the waste stream, however the effectiveness of the management of this waste stream is unknown
- Investment in infrastructure will be required to manage increased quantities of waste diverted from landfill disposal

7.6.2 Hazardous Waste

As reported in 2016 and included here potentially hazardous household wastes such as paint, oil, and chemicals are collected at transfer stations. There is a need to review the provision of these services at the transfer stations to ensure proper storage and management procedures are followed, so as to protect the health of workers, the public and the environment.

For clarity, the below list is included from the 2016 waste assessment given the ongoing relevancy to the current assessment.

- Reviewing management procedures of hazardous wastes at transfer stations
- Undertaking more detailed monitoring and reporting of hazardous waste types and quantities, including medical waste
- Improving public information about correct procedures for managing hazardous wastes, including medical waste and asbestos
- Continuing to introduce waste bylaw licensing. This will improve information on hazardous waste movements and enable enforcement of standards

7.6.3 Hazardous Waste

As reported in 2016, some commonly used products that contain asbestos include roof tiles, wall claddings, fencing, vinyl floor coverings, sprayed fire protection, decorative ceilings, roofing membranes, adhesives and paints. The most likely point of exposure is during building or demolition work. All three Class 1 landfills in the region are consented to take asbestos and operators must comply with consent conditions and operational Health and Safety requirements.

7.6.4 Medical Waste

The Pharmacy Practice Handbook[53] states:

"Members of the public should be encouraged to return unused and expired medicines to their local pharmacy for disposal. Medicines, and devices such as diabetic needles and syringes, should not be disposed of as part of normal household refuse because of the potential for misuse and because municipal waste disposal in landfills is not the disposal method of choice for many pharmaceutical types. Handling and disposal should comply with the guidelines in NZ Standard 4304:2002 – Management of Healthcare Waste."

As reported in 2016 and relevant for this assessment, medical waste removal and disposal are currently adequately catered for in the region in respect of institutional wastes. Sources of medical waste from households have no special provision.

7.6.5 E-Waste

The Ministry for the Environment declared in July 2020 six priority products[54] for regulated product stewardship. Included in this list is e-waste (electrical and electronic products – including large batteries). A national product stewardship scheme is currently in development to manage the nations e-waste with submission of a final recommendations report due to be issued to the Ministry for the Environment in November 2022. At present, the scheme manager application(s) for priority product ste4wardship scheme accreditation, including asking for regulations to be enacted to support the scheme is set for 2023[55].

Currently, there are a limited number of collection points in the region at the transfer stations and resource recovery facilities and there is no consistent region wide approach to e-waste management. This is consistent with the previous 2016 waste assessment.

[53] Disposal of unwanted medicines | New Zealand Pharmacy Network (wordpress.com)
[54] Regulated product stewardship | Ministry for the Environment
[55] E-Waste Product Stewardship – New Zealand - TechCollect

8 HIGH-LEVEL REVIEW OF THE 2017-2023 WELLINGTON REGION WASTE MANAGEMENT AND MINIMISATION PLAN

8.1 High-Level Review of the 2017-2023 Regional Waste Management and Minimisation Plan

An initial review of the 2017-2023 Wellington Region WMMP was undertaken to inform the current Waste Assessment, and to help identify potential improvements to the effectiveness of a new WMMP. The key points emerging from the initial review are noted below. For consistency, the following sections follow that of the previous waste assessment.

8.1.1 Data

The data contained in the 2016 waste assessment and the 2017-2023 Wellington Region WMMP provided a good basis using the data that was available at the time. The data was of variable quality, with gaps leading to problematic extrapolations being made and applied to the Wellington Region. Further, there was limited data regarding rural wastes, privately managed waste disposal sites and quantities of materials that were recovered from across the Wellington Region.

8.1.2 Key Issues

The 2016 waste assessment and 2017-2023 Wellington Region WMMP rightfully identified many of the key issues facing the region. For clarity, these have been summarised in the below list:

- Poor data quality and availability of data
- Lack of data to illustrate the problem of environmental litter and illegal dumping
- Lack of data for the Wellington region rural waste sector
- Lack of comprehensive litter data for the Wellington Region
- Lack of commercial sector data and availability of commercial operator data where kerbside services are provided

8.1.3 Issues not Addressed

The following list summarises several items that were not covered in the previous 2017-2023 WMMP or which have since emerged:

- Recycling rates
    - The previous and current waste assessment are reporting the quantities of materials being recycled by households is relatively low across the region and is showing continued decline.
    - The potential implementation of a Container Return Scheme is expected to have a significant impact on the volumes of kerbside recyclable material being presented for kerbside collection.
    - The potential implementation of standardised kerbside collections across Aotearoa New Zealand is a key focus for the Ministry for the Environment.
    - The potential implementation of kerbside food scraps collections to urban households.
- Recovery of construction and demolition materials
    - The previous and current waste assessment are reporting the current low level of infrastructure available to recover construction and demolition materials, including for example, concrete, brick, wood, plasterboard.

8.1.4 New and In Development Guidance

At the time of writing, the Ministry for the Environment is working on developing several key waste and resource management initiatives along with appropriate legislation and updating several key existing legislative instruments. Acknowledging the development of several key new initiatives are not yet in place at the time of writing this waste assessment, consideration of these has been integrated into the analysis where relevant and appropriate. It is anticipated that the below list will largely be in effect at the time of the next Regional Waste Assessment.

- Development of a new national waste strategy and new legislation to better regulate how we manage products and materials circulating on our economy
- Development of a long-term infrastructure plan to provide a national view of the waste investment Aotearoa New Zealand needs over the next 15-years
- Standardising kerbside recycling to make it simpler and easier for people to recycle correctly
- Container return scheme to incentivise people to return their empty beverage containers for recycling in exchange for a small refundable deposit (20-cents proposed)
- Developing end-of-life solutions for the six priority products:
    - Plastic packaging
    - Tyres
    - Electrical and electronic products (e-waste including large batteries)
    - Agrichemicals and their containers
    - Refrigerants
    - Farm plastics
- Phasing out certain single-use plastic items and hard-to-recycle plastic packaging (e.g., type #3 PVC containers, type #6 polystyrene drink packaging)
- Diversion of business food scraps from landfill to reduce greenhouse gas emissions and make better use of organic material
- Reducing construction and demolition waste and move towards more circular systems for building materials used

8.1.5 2017-2023 WMMP Wellington Region Actions

The 2017-2023 WMMP proposed nine regional actions as summarised in **Table 37** below. The intent of the regional actions was to set out the key areas that the councils would collectively carry out or support to deliver on the WMMP.

Table 37 2017-2023 Summary of Regional Actions

Regional Action	What it will do
Develop and implement a regional bylaw, or a suite of regionally consistent bylaws	This will help councils set standards and gather data so they can plan and manage waste better.
Implement Waste Data Framework	Consistent, high-quality data will help track progress.
Regional engagement	More consistent regional communications and education around waste services and waste minimisation will help households and communities to be inspired and supported so they can play their part.
Optimise collection systems	We will work to improve collections so that they maximise diversion and are cost effective to communities.

Regional Action	What it will do
Resource recovery network	This will make sure we have the facilities to divert more material like construction and demolition waste, food and/or biosolids, and other organic waste.
Beneficial use of biosolids	This is a large waste stream that, if we divert it, will make a big contribution to our regional targets.
Shared governance and service delivery	There is potential to join together to deliver higher levels of service more efficiently.
Resourcing for regional actions	This will make sure we have the means to deliver on what we set out in the plan.
Collaborate and lobby	We can work with other local government organisations, NGOs and other key stakeholders on undertaking research, lobbying and actions on various waste management issues such as (but not limited to) product stewardship, electronic waste, tyres, plastic bags, etc.

In addition to the nine regional WMMP actions, each of the Wellington region Councils produce individual or collective Local Action Plans that set out how each will deliver on the WMMP while ensuring that they meet the needs and concerns of their own communities.

8.1.6 2017-2023 WMMP Implementation Plan

To support and guide the development and implementation of the 2017-2023 WMMP, the Wellington Region WMMP Joint Governance Committee was established. This committee is currently made up of elected members from each Council and is responsible for overseeing the development and implementation of the regional WMMP. Oversight of regional level actions is undertaken by the WMMP Joint Governance Committee, with implementation of the actions managed through the Regional Officer Steering Group and when funding is available and/or approved. Additionally, and in acknowledgment of the significance of the WMMP to the region, a regional WMMP planner role was established with each Council providing funding support through their respective Annual and Long-Term Plans. As noted in the 2017-2023 WMMP, a range of indicative metrics for each of the nine regional actions was developed, however the context-appropriate metrics were noted to be developed and agreed as part of the individual Council implementation plans. No detailed implementation plan, including responsibility, resources or delivery timeframes were included in the 2027-2023 WMMP. This information may be included within the individual Council implementation plans that was not available for inclusion in this waste assessment.

8.1.7 2017-2023 WMMP Progress to Date

Potentially as a result of the last two points, limited progress has been made on implementing the actions contained in the 2011 WMMP. Only four of the 19 actions have been taken forward, with only the education strategy having so far been completed. Work on a regional solid waste bylaw is in progress, there has been some progress on biosolids investigation, and development of a subsequent WMMP is underway.

9 STATEMENT OF OPTIONS

This section sets out the key issues raised in this waste assessment (Section **9.1**) and the range of options for further Council consideration to address the key matters (Section 9.2). For clarity, the list of options provides a high-level review of the strategic importance of each option, the potential impact on current and future demand for waste services in the region and Councils anticipated role in implementing the option. The range of options follows the structure of the previous assessment as follows:

- Regulation
- Measuring and Monitoring
- Communication and Education
- Collection Service
- Infrastructure
- Leadership and Management

It is recommended that further detailed investigations be carried out on each of the following options before any are selected and/or implemented. The intent for this is to ensure that a full and comprehensive investigation is undertaken to underpin any decision making.

9.1 Key Issues to be Addressed by the Next Wellington Region Waste Management and Minimisation Plan

The key matters addressed in this waste assessment that have the greatest effect on the eight Councils ability to meet their statutory obligations are included in the below bulleted list. The list has been extracted and amended from the previous waste assessment as many of the key issues remain relevant to the current assessment:

- Data quality and management of data
    - A lack of data, particularly on the activities of the private waste and recycling sector, limits Councils' ability to effectively manage waste in the region. This constrains ability to plan for and respond to future demand
- Disposal of unknown quantities of waste to Class 2-4 landfills
    - While the data on Class 2-4 landfills that is available to the Councils is very limited, it is likely that considerable quantities of recoverable materials are disposed of to these facilities.
- Suboptimal overall recycling performance.
    - The Wellington region has a below average level of recycling performance compared to other centres in NZ.
- Recycling performance static/declining.
    - Not only is recycling performance weak overall, but data suggests it is static or declining in most areas.
- Sewage sludge/biosolids management.
    - The primary disposal pathway for biosolids is landfill. Where this material has high moisture content it can create landfill management issues. It also represents a high fraction of organic waste that could potentially be recovered for beneficial use.
- Low diversion rate on organics.

- While a reasonable fraction of garden waste is composted, there is very little diversion of food scraps and there is further room to capture and process more garden waste and food scraps (i.e., either combined [food and green waste] or separately as food only and green only). Food and green waste represent the largest fractions of material being landfilled and so this is potentially the biggest opportunity to improve diversion and reduce landfill greenhouse emissions emitted from decomposing organic material.

- Councils operate a range of different funding and management models.
  - Perhaps the greatest barrier to enhanced collaboration is that waste is managed in divergent ways among the constituent councils and each council responds primarily to the particular drivers within their area. Differing ownership of assets, service delivery expectations, and rates funding levels all create differing imperatives.
- Unrealised potential for greater joint working in Council service delivery.
  - The locally focused approach to waste management has resulted in a range of systems, many of which have evolved over time, and are not necessarily configured to deliver optimum results in terms of cost and waste minimisation performance. There are likely to be gains from a more consistent approach that utilises best practice (e.g. more consistent approach to kerbside services).

9.2 Options

9.2.1 Regulation

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Maintain existing bylaw regimes	• Maintaining bylaw status quo would have limited positive effect on any of the key issues.	*Social/Cultural:* uneven understanding of the waste flows in the district *Environmental*: variable ability to guard against environmental degradation through illegal disposal, variable ability to require environmental performance standards are met (e.g. recyclable material is separated) *Economic:* No change to current systems. *Health*. Limited ability to monitor and enforce actions of current providers and ensure public health is protected	A lack of data and controls on private operators limits Councils' ability to effectively manage waste in the region. This constrains ability to plan for and respond to future demand	Councils would implement and enforce existing bylaws; monitoring and reporting on waste quantities and outcomes. Minor changes will be required to align with the National Waste Data Framework.
Review Solid Waste Bylaws	• Data quality and management of data • Disposal of unknown quantities of waste to Class 2-4 landfills • Suboptimal overall recycling performance • Recycling performance static/ declining	*Social/Cultural:* better understanding of the waste flows in the district, wider range of services offered to residents *Environmental:* would increase diversion from landfill and information about disposal practices and could potentially	Improved bylaws would, as a minimum, require reporting of waste material quantities. Collecting waste data is imperative to planning how to increase waste minimisation across Council provided services and commercial waste streams The bylaw could also	Councils would develop and enforce the bylaws; monitoring and reporting on waste quantities and outcomes The solid waste bylaw Should not be an unreasonable hindrance on private business seeking to take advantage of opportunities to take part in

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
	• Low diversion rate on organics	guard against environmental degradation through illegal disposal *Economic:* increase cost for operators; additional resources will be required to monitor and enforce the regulatory system *Health*. Greater monitoring of providers to ensure no adverse health risks occur	be used to require minimum performance standards. This could be a key mechanism for addressing waste streams currently controlled by the private sector and how they provide their collection services. Requiring provision of a recycling collection to all customers and preventing the use of large bins for refuse collection, could decrease the amount of waste sent to landfill. The amount of recyclables requiring processing would increase.	waste minimisation and waste management activities. This includes how waste, recovery, diversion, recyclables, and disposal is defined within the document. In considering a licensing approach, the Councils should seek to liaise with the other outer regional initiatives. Consistency across regions would help reduce unnecessary administrative burden for private operators, and unintended consequences such as less well---regulated areas becoming a target for undesirable practices, such as clean filling, and poorly managed waste facilities.

9.2.2 Measuring and Monitoring

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Status Quo	• Maintaining data status quo would not have a positive effect on any of the key issues	*Social/Cultural:* uneven understanding of the waste flows in the district in particular in respect of recovered material and material to other than Class 1 disposal facilities	A lack reliable information to monitor and plan for waste management in the region	Councils currently gather data on waste streams they manage or facilities or services they own as well as information supplied by the private sector through licensing or similar

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		Environmental: Limited ability to monitor and report on environmental outcomes *Economic:* Limited understanding of waste flows restricts ability to identify waste recovery opportunities and creates risk around waste facility and service planning which increases costs. *Health*. Lack of data on potentially harmful wastes and their management		
Implement National Waste Data Framework	• Data quality and management of data	*Social/Cultural:* improved knowledge of waste flows and better information available to the public on waste and recovery performance *Environmental*: Improved ability to monitor and manage waste collection and disposal information and make appropriate planning and management decisions *Economic:* improved understanding of waste flows resulting in better targeted waste and recovery services and facilities.	The Waste Data Framework would enhance the ability to share and collate information improving overall knowledge of waste flows. It currently only covers material to disposal however.	Councils would implement the Waste Data Framework by putting standard protocols in place for the gathering and collation of data. This would enable sharing and consolidation of data at a regional level

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		Health. Potential for improved data on hazardous and harmful wastes		
Audit waste stream at transfer stations and kerbside every 4-6 years and before and after significant service changes and monitoring of waste flows through contract for	• Data quality and management of data	*Social/Cultural*: Identifying material streams for recovery could lead to job creation *Environmental*: Ability to identify materials and waste streams for potential recovery and reduction *Economic*: Ability to identify materials and waste streams for potential recovery and reduction, giving rise to new business opportunities and reduction of disposal costs *Health*. Potential for improved data on hazardous and harmful wastes	Would not impact on the status quo prediction of demand directly, but would assist in identifying recovery opportunities which could impact facility provision	Councils would maintain existing service arrangements Minor changes would be required to align with the National Waste Data Framework
Increase monitoring to gather more information in strategic areas, such as commercial waste composition; waste management in rural areas; cleanfill, construction and demolition waste. Audit cleanfill waste streams wherever possible to understand composition of waste.	• Data quality and management of data • Disposal of unknown quantities of waste to Class 2-4 landfills	*Social/cultural:* could raise awareness of waste management in areas where currently very little is known; enable greater monitoring of providers to ensure no adverse health effects occur. Identifying material streams for recovery could lead to job creation. *Environmental*: increased ability to identify additional/altered services to	Analysis of available data has shown that there are gaps in knowledge and understanding of waste streams. Availability of more data, and tailoring of services accordingly, could increase demand for recycling services and reduce waste to landfill.	Councils could initiate and oversee research, studies and audits; and feed results into future iterations of waste assessments and WMMP. Councils may need to develop bylaw and licensing systems to gather more data.

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		increase diversion of waste from landfill. *Economic*: there may be additional costs for new programmes put in place. Ability to identify materials and waste streams for potential recovery and reduction, giving rise to new business opportunities and reduction of disposal costs. *Health*. Potential for improved data on hazardous and harmful wastes		

9.2.3 Communication and Education

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Continue existing education programmes	• Suboptimal overall recycling performance • Recycling performance static/declining	*Social/Cultural*: community will be aware of options, engaged in the waste management process, and take a level of ownership of waste issues. *Environmental:* education programmes aim to establish and support positive behaviours that reduce environmental impact. *Economic:* currently funded. *Health*. Public informed of health risks of waste materials	Awareness of waste issues and behaviour would not change significantly from current situation.	Councils would continue to fund and coordinate a wide range of education programmes.

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		and appropriate disposal pathways		
Extend existing communication programme to focus on current and additional target audiences (e.g., low users)	• Suboptimal overall recycling performance • Recycling performance static/declining	*Social/cultural:* community will be more aware of options and more engaged in the waste management process, taking a higher level of ownership of the issue. *Environmental:* education programmes would seek to establish, support and extend positive behaviours that reduce environmental impact. *Economic:* could potentially be funded through waste levy funding. *Health*. Information regarding health risks of waste materials and appropriate disposal pathways would reach a wider audience. More vulnerable sectors of the public informed of health risks related to waste management. Messages better targeted to audiences needs	Expanding the target audience may improve results in increased recycling and decreased unwanted behaviour such as landfilling and other land disposal.	Councils would fund and/or coordinate education programmes.
Extend existing communication programmes to support any new rates---funded services provided by the Councils (e.g., food scrap or food and greenwaste collections)	• Suboptimal overall recycling performance • Recycling performance static/declining	*Social/cultural:* community will be more aware of options and more engaged in the waste management process, taking a higher level of ownership of the issue. Information	Depending on the new rates-funded services that are provided, this could potentially contribute to a significant reduction in demand for landfill, and an increase in	Councils would fund and coordinate education programmes.

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		regarding health risks of waste materials and appropriate disposal pathways would reach a wider audience *Environmental:* education programmes would seek to establish, support and extend positive behaviours that reduce environmental impact *Economic:* could initially be funded through waste levy funding when new services are introduced; subsequent communications would be rates---funded *Health*. Information regarding health risks of relevant waste materials and appropriate management targeted to audiences needs	demand for recycling services and processing. Education alone will not support behaviour change. Pathways need to be provided for residents and businesses to take action on education messages.	
Regional co-ordination and delivery of waste education programmes	• Data quality and management of data • Suboptimal overall recycling performance • Recycling performance static/declining	*Social/cultural:* More consistent messaging and better leverage on education spend assisting community to be more aware of options and more engaged in the waste management process. *Environmental:* Enhanced ability to establish positive behaviours that reduce environmental impact.	The data suggests there is significant potential to reduce, reuse and recycle more waste. Communities should reduce their reliance on residual waste collections and demand for recycling services will increase.	Regional coordination and delivery would be undertaken on behalf of Councils (through a jointly funded position or structure). Local needs could be met by working more closely with specific councils and the community

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		Economic: consider funding through waste levy funds. *Health*. Information regarding health risks of relevant waste materials and appropriate management able to be targeted to audiences needs		

9.2.4 Collection Service

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Status Quo. Different types of collection services and mechanisms for provision are continued throughout the region	• Maintaining collections status quo would have a limited positive effect on any of the key issues	*Social/Cultural:* Council and the collection contractor have a responsibility to mitigate the risks associated with kerbside bag collections. Private operators do not necessarily always provide the appropriate levels of service, for example, at peak times. *Environmental:* no new impacts. *Economic:* no new impacts. *Health*. Vulnerable sectors of the community may chose not to access waste services due to cost. In some areas there is limited capacity to reduce costs through recycling	Not expected to impact on the status quo prediction of demand.	Each Council's role is varied depending on their service provision configuration.
Councils seek to standardise collection systems (noting MfEs proposed standardised	• Data quality and management of data	*Social/Cultural:* The impacts will vary depending on the configurations of services that	The impacts will vary depending on the configurations of services	Currently each Council's role is varied depending on their service provision configuration.

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
kerbside collection methodology) and methodologies and procure shared services where there are clear strategic advantages	• Declining Council kerbside refuse market share • Suboptimal overall recycling performance • Recycling performance static/declining • Councils operate a range of different funding and management models • Unrealised potential for greater joint working in Council service delivery	are implemented. In general, council and the collection contractor have a responsibility to mitigate the risks associated with kerbside bag collections. Private operators do not necessarily always provide the appropriate levels of service, for example, at peak times. *Environmental:* The impacts will vary depending On the configurations of services that are implemented. It could be expected that standardising of services would lead to overall improved levels of service provision including recycling *Economic:* The impacts will vary depending on the configurations of services that are implemented. Shared services should lead to more economically efficient outcomes and reduce total costs to the community. *Health*. The impacts will vary depending on the configurations of services that are implemented. Vulnerable sectors of the community may chose not to access waste services due to cost. Where	that are implemented. It could be expected that standardising of services would lead to overall improved levels of diversion due to wider participation in recycling and the ability to present more consistent messages to the community	Varying roles would be expected to continue but each councils role could change – for example if one council takes a lead role in contract management for a shared service. Councils will need to consider shared service arrangements as part of their S17A reviews and this should inform future procurement programmes

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		there is limited capacity to reduce costs through recycling this could be mitigated through improved service provision		
Public sector exits collection service provision and licenses private sector operators to provide services to nominated service levels	• Data quality and management of data • Disposal of unknown quantities of waste to Class 2-4 landfills • Declining Council kerbside refuse market share • Suboptimal overall recycling performance • Recycling performance static/declining	*Social/Cultural:* Private operators do not necessarily always provide the appropriate levels of service, for example, at peak times, or in more remote/less economic areas. *Environmental:* Potential for increased waste to disposal/less recycling if the licensing regime does not contain appropriate measures. *Economic:* Rates would reduce for households but private user pays charges would increase for households. *Health*. Vulnerable sectors of the community may chose not to access waste services due to cost.	Could impact on the status quo prediction of demand slightly if private provision leads to increased disposal (e.g., through larger waste containers.) or reduced recycling (e.g. through reduced levels of service)	Councils would (individually or collectively) have responsibility for licensing operators, and monitoring and enforcing license provisions. Provisions could include supply of data, restrictions on container size, requirement to provide recyclables collections etc. A number of councils are currently faced with declining market share (particularly for waste collection services). This option acknowledges this reality and sees councils withdrawing from competition with private services
The Councils in the region provide kerbside food scrap or food scrap and greenwaste collection services funded through rates.	• Data quality and management of data • Suboptimal overall • Recycling performance • Recycling performance static/declining	*Social/Cultural:* residents would be provided with an increased range of services. Collection services would not be provided to rural dwellings (these may or may not have access to private providers). *Environmental:* Food	This is likely have a significant impact on the amount of waste diverted; reducing the future demand for landfill, and increasing the future demand for organic waste processing. A facility/facilities	Councils would provide food waste kerbside collection services through a contract or other type of service agreement. Councils would manage and monitor service provision and

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
	• Low diversion rate on organics • Councils operate a range of different funding and management models • Unrealised potential for greater joint working in Council service delivery	scraps (or food scraps and greenwaste) to landfill would be reduced which would lessen the environmental impact from landfills. *Economic:* residents would pay for the collections through rates, By providing an organic waste collection service, rubbish collection costs can be reduced (through container size and/or frequency of collection). *Health*. Households would be able to manage organic wastes safely through a regular collection	would be required to process the collected organic waste. In the Wellington Region landfill pricing is an important variable/driver to consider in the business case for any new service or the regionalisation of existing services	collect full data on the collection service. Additional resource may be required to manage this new service. Councils would need to recover costs for this service through rates; either general rate or a targeted rate charged to those residents that are eligible for the service.
The Councils are required to provide a standardised recycling service across the region as a result of the MfE standardised kerbside collection proposal. This would not necessarily entail procuring a single service provider but adoption of an agreed methodology which will be used as the basis for procurement of the service by Councils either on their own or in shared service arrangements	• Data quality and management of data • Suboptimal overall recycling performance • Recycling performance static/declining • Councils operate a range of different funding and management models • Unrealised potential for greater joint working in Council service delivery	*Social/Cultural:* residents would be provided with a more standardised range of services *Environmental:* Recycling rates could be expected to improve due to wider participation in recycling and the ability to present more consistent messages to the community. *Economic:* residents would pay for the collections through rates, by providing improved recycling services, rubbish collection costs can be reduced (through container size and/or frequency of collection).	The impacts will vary depending on the configurations of services that are implemented. It could be expected that standardising of services would lead to overall improved levels of diversion due to wider participation in recycling and the ability to present more consistent messages to the community	Currently each Council's role is varied depending on their service provision configuration. Varying roles would be expected to continue but each council's role could change – for example if one council takes a lead role in contract management for a shared service. Councils that do not currently provide a rates funded recycling service would need to enter into a contract management role (or have this done on their behalf by a shared service partner council)

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		Health. More households would be able to manage recyclables through a consistent collection		Councils will need to consider recycling service provision including shared service arrangements as part of their S17A reviews and this should inform future procurement programmes
The Councils in the region provide full kerbside collection services funded through rates. This service would enable recycling, organic waste and rubbish to be collected.	• Data quality and management of data • Declining Council kerbside refuse market share • Suboptimal overall recycling performance • Recycling performance static/declining • Low diversion rate on organics • Unrealised potential for greater joint working in Council service delivery	*Social/Cultural:* residents would be provided with a much wider range of services. Communication would be based on a consistent system, resulting in a community that is more aware of options and engaged in the waste management process. Collection services would not be provided to rural dwellings (these may or may not have access to private providers). *Environmental:* the new services would provide for positive behaviours that reduce environmental impact. Vehicle movements around the region would be reduced. *Economic:* residents would pay for all collections through rates; however most residents would no longer need to pay a private collector for services. A small number of households might	This would likely have a significant impact on the amount of waste diverted; reducing the future demand for landfill significantly and reducing reliance on recycling drop—off points; and increasing the future demand for recycling and organic waste services and processing. Improvements to recycling processing facility/ies may be required, and a facility/facilities would be required to process the collected organic waste.	Councils would provide three kerbside collection services, through a contract or other type of service agreement. Councils would manage and monitor service provision and collect full data on the collection service. Additional resource may be required to manage this new service, which could be managed through a CCO, joint business unit or in-house. Councils would need to recover costs for this service through rates; either general rate or a targeted rate charged to those residents that are eligible for the service.

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
		experience an increase in rates but not receive the service; unless the service is funded through a targeted rate. There would be an impact on the private sector as their customer base would be significantly reduced (there is the potential for some operators to go out of business); however there would conversely be the opportunity to provide services on behalf of the Councils. *Health*. Vulnerable sectors of the community would have access waste and recovery services. Households would be able to manage organic wastes safely through a regular collection		
Wairarapa and Kāpiti councils provide farm waste and recycling collection services targeted at improving management of farm wastes. The exact nature of the services would need to be determined but could encompass on property on demand collections using skips/hiab bins or similar to accommodate large quantities	• Data quality and management of data • Disposal of unknown quantities of waste to Class 2-4 landfills • Suboptimal overall recycling performance • Recycling performance static/declining • Unrealised potential for greater joint working in Council service delivery	*Social/Cultural:* All sectors of the community would be catered for. *Environmental:* Rural waste is an issue that is receiving increasing attention, with particular concern around management of hazardous wastes. Provision of appropriate services could substantially improve local soil and groundwater quality.	Most rural waste does not enter the formal waste management system, and so uptake of a service would increase demand for recycling and disposal capacity.	Councils would provide a facilitation role for the service and would look to link with and leverage from any work being done nationally and regionally on farm waste services. There is potential for this initiative to be supported by RMA rules and objectives in the Regional Plan

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
and reduce the frequency of collection		*Economic:* It is proposed that the service would be user pays or part user pays. Farms are commercial enterprises and from that perspective should have the same expectations on them for managing their wastes. It would mean additional costs for farms some of whom would not be willing to pay, and whom would view traditional on farm means of disposal (burn or bury) as preferable. *Health*. Hazardous wastes would be better managed and reduce risks of entry of these substances into the environment through land air and water contamination.		

9.2.5 Infrastructure

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Status Quo: Council owned Class 1 landfills and transfer stations. Council and private Class 2-4 disposal facilities Private recyclable processing	• Maintaining infrastructure status quo would not have a positive effect on any of the key issues.	*Social/Cultural:* No change. Variable access to facilities for communities. Variable reuse opportunities. *Environmental:* No change. Organics, C&D waste still going to disposal	Would not impact significantly on the status quo prediction of demand for materials	Councils owning landfills and facilities would continue to manage/oversee these

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Private organic waste processing		*Economic:* Economic impacts will vary across the region. Landfills can be valuable assets for the community and reduce the rates burden from waste management. *Health*. Health impacts are managed through ensuring consent conditions are adhered to.		
A Resource Recovery Network is developed including for example, a network of 'community recycling centres' (building on and adding to existing transfer stations, establishing new standalone facilities or partnering with organisations)	• Data quality and management of data • Suboptimal overall recycling performance • Recycling performance static/declining • Sewage sludge/biosolids management • Low diversion rate on organics • Unrealised potential for greater joint working in Council service delivery	*Social/Cultural:* enhanced services enabling separation of materials and access to low-cost used goods. *Environmental:* improvement to waste recovery depending on exactly which expanded/additional services are introduced. *Economic:* Councils will need to invest funding in improving existing facilities and extending the network. *Health*. Enhanced services enabling separation of materials such as hazardous waste would facilitate appropriate disposal and reduce health impacts.	Would have an impact on demand for landfill and would increase demand for recycling/recovery services and processing facilities.	Councils' key role would be in overseeing and planning the development and implementation of the network. Councils could fund any new facility(s) in a variety of ways: capital funding (potentially partly through waste levy funds) could be provided; or it could be developed through a BOOT contract or similar. The application of funding should ideally recognise the wider value of initiatives, including potential social and economic benefits. Councils would provide capital funding (potentially partly through waste levy funds) to significantly upgrade and

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
				improve the current RRP and drop-off facilities. This could be done through a direct service arrangement, or by sub-leasing space to the private or community sectors.
Organic waste processing facility developed to manage food scraps.	• Low diversion rate on organics • Unrealised potential for greater joint working in Council service delivery	*Environmental:* improved management of landfills through removal of and food waste. Improved landfill life. Potential for beneficial use of organic wastes to improve soil health *Economic:* Capital and operations implications from development of a facility *Health*. Health impacts are managed through ensuring consent conditions are adhered to and national and international guidelines on the application of compost and digestate to land are followed.	Would result in reduced demand for landfill and would increase demand for recovery processing facilities.	Councils would oversee the development of a processing facility, but the technical specifications and management could be contracted out. Councils could fund the new facility(s) in a variety of ways: capital funding (potentially partly through waste levy funds) could be provided; or it could be developed through a BOOT contract or similar

9.2.6 Leadership and Management

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
Collaborate with private sector and community groups to investigate opportunities to	• Suboptimal overall recycling performance	*Social/Cultural:* potential for downstream job creation. *Environmental:* potential	Councils use contractors to provide a range of cost-effective waste management	Councils to lead and facilitate. Councils to recognise the importance of diversity in the

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
enhance economic development through waste minimisation.		enhancement through waste minimisation. *Economic:* could result in benefits for the local economy. *Health*. Health impacts dependent on the nature of the collaboration.	services. There are other waste minimisation activities such as reuse shops that are marginally cost effective in strictly commercial sense but provide a great opportunity for a social enterprise/charitable community group. Having all sectors working together can provide mutual benefits for all.	mix of scales of economy and localised solutions. Councils to support a mix of economic models to target best fit solutions depending on the situation.
Councils enter into shared service or joint procurement arrangements where there is mutual benefit	• Data quality and management of data • Declining Council • Kerbside refuse market share • Suboptimal overall recycling performance • Recycling performance static/declining • Councils operate a range of different funding and management models • Unrealised potential for greater joint working in Council service delivery	*Social/Cultural*: some improved consistency in approach. *Environmental:* impacts depend on the implementation of collaborative strategies and projects. *Economic:* shared services could reduce costs and enable access to better quality services. *Health*. Enhanced services enabling separation of materials such as hazardous waste would facilitate appropriate disposal and reduce health impacts.	No significant impact on status quo forecast of future demand. The Wairarapa councils currently have a shared service contract, there may be opportunity for other areas or if a new service is introduced (e.g., food scrap collection)	Councils make a joint formal approach to neighbouring authorities to form collaborative partnerships on various strategic or operational projects, particularly those already highlighted as collaborative opportunities in the Waste Assessment. Where services are to be shared there will a need to align service provision and contract dates
Lobby for enhanced product stewardship programmes	• Data quality and management of data • Suboptimal overall recycling performance	*Social/Cultural:* product take back will require behaviour change; potentially better management of hazardous materials.	Product stewardship is specifically enabled in the WMA. Fully enacting this principle will help ensure true costs of products are reflected.	Continue to promote current schemes and support the implementation of proposed schemes including the container return scheme, as

Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Council's Role
	• Recycling performance static/declining	*Environmental:* improved resource efficiency. *Economic:* potential for producer pays schemes.		well as tyres and e-waste currently in development.

10 STATEMENT OF COUNCILS INTENDED ROLE

10.1 Statutory Obligations and Powers

As reported in the previous waste assessment, Councils have several statutory obligations and powers in respect of the planning and provision of waste services. For clarity these have been reproduced below:

- Under the WMA each Council "must promote effective and efficient waste management and minimisation within its district" (s 42). The WMA requires Tas to develop and adopt a Waste Management and Minimisation Plan (WMMP)
- The WMA also requires TAs to have regard to the New Zealand Waste Strategy 2010 (noting this strategy is as at 2022 currently being reviewed by the Ministry for the Environment). The Strategy has two high levels goals: 'Reducing the harmful effects of waste' and 'Improving the efficiency of resource use'. These goals must be taken into consideration in the development of the Councils' waste strategy.
- Under the Local Government Act 2002 (LGA) the Councils must consult the public about their plans for managing waste
- Under the Resource Management Act 1991 (RMA), TA responsibility includes controlling the effects of land---use activities that have the potential to create adverse effects on the natural and physical resources of their district. Facilities involved in the disposal, treatment or use of waste or recoverable materials may carry this potential. Permitted, controlled, discretionary, non-complying and prohibited activities and their controls are specified within district planning documents, thereby defining further land---use---related resource consent requirements for waste- -related facilities.
- Under the Litter Act 1979 Tas have powers to make bylaws, issue infringement notices, and require the clean---up of litter from land.
- The Health Act 1956. Health Act provisions for the removal of refuse by local authorities have been repealed by local government legislation. The Public Health Bill is currently progressing through Parliament. It is a major legislative reform reviewing and updating the Health Act 1956, but it contains similar provisions for sanitary services to those currently contained in the Health Act 1956.
- The Hazardous Substances and New Organisms Act 1996 (the HSNO Act). The HSNO Act provides minimum national standards that may apply to the disposal of a hazardous substance. However, under the RMA a regional council or TA may set more stringent controls relating to the use of land for storing, using, disposing of or transporting hazardous substances.
- Under current legislation and the new Health and Safety at Work Act the Council has a duty to ensure that its contractors are operating in a safe manner

10.2 Overall Strategic Direction and Role

The overall strategic direction and role is presented in the Wellington Region Waste Management and Minimisation Plan.

11 STATEMENT OF PROPOSALS

Based on the options identified in this Waste Assessment and the Councils' intended role in meeting forecast demand a range of proposals are put forward. Actions and timeframes for delivery of these proposals will be identified in the next Waste Management and Minimisation Plan, currently in development. It is expected that the implementation of these proposals will meet forecast demand for services as well as support the Councils' goals and objectives for waste management and minimisation. These goals and objectives will be confirmed as part of the development and adoption of the Waste Management and Minimisation Plan.

11.1 Statement of Extent

In accordance with section 51 (f), a Waste Assessment must include a statement about the extent to which the proposals will (i) ensure that public health is adequately protected, (ii) promote effective and efficient waste management and minimisation.

11.1.1 Protection of Public Health

The Health Act 1956 requires the Councils to ensure the provision of waste services adequately protects public health. The Waste Assessment has identified potential public health issues associated with each of the options, and appropriate initiatives to manage these risks would be a part of any implementation programme.

As reported in the previous waste assessment and in respect of Council provided waste and recycling services, public health issues will be able to be addressed through setting appropriate performance standards for waste service contracts and ensuring performance is monitored and reported on, and that there are appropriate structures within the contracts for addressing issues that arise. Privately provided services will be regulated through local bylaws. Further, uncontrolled disposal of waste, for example in rural areas and in cleanfills, will be regulated through local and regional bylaws.

Subject to any further issues identified by the Medical Officer of Health, the proposals are expected to adequately protect public health.

11.1.2 Effective and Efficient Waste Management and Minimisation

The Waste Assessment has investigated current and future quantities of waste and diverted material and outlines the Councils' role in meeting the forecast demand for services.

It is considered that the process of forecasting has been robust, and that each Council's intended role in meeting these demands is appropriate in the context of the overall statutory planning framework for each Council.

Therefore, it is considered that the proposals would promote effective and efficient waste management and minimisation.

APPENDICES

APPENDIX A

Aotearoa New Zealand Waste Management and Minimisation Legislative Instruments

Local Government Act 2002 (LGA 2002)

The Local Government Act (2002) provides the legislative framework for democratically elected local authorities to promote the social, economic, environmental and cultural well-being of communities in the present and for the future. This includes taking "appropriate account of the principles of the Treaty of Waitangi" and facilitating "participation by Māori in local authority decision making processes". The Act also gives effect to any schemes (including kaitiakitanga whakanaonga – product stewardship schemes) accredited through the WMA, including any bylaws defined within the Local Government Act 2002.

Resource Management Act 1991 (RMA 1991)

The Resource Management Act (1991) (RMA) is Aotearoa New Zealand's key environmental legislative document providing the framework for the sustainable management of environmental resources (including development activities). The RMA also manages and controls the environmental impacts of waste facilities such as disposal facilities, recycling and recovery facilities and cleanfills.

Section 31 of the RMA sets out the functions of territorial authorities to give effect to the RMA, including to control the actual or potential effects of land-use activities on the taiao – environment within the district. All exercising functions under the RMA need to take into account the principles of Te Tiriti o Waitangi – the Treaty of Waitangi and recognize and provide for matters of national significance, including Māori and their cultural relationship to their taonga (including land, water, sacred sites and so forth).

New Zealand Emissions Trading Scheme (NZTS) and the Climate Change Response Act 2002

The importance of the NZ ETS is the application of the Climate Change Response Act (2002)[56] (Act) and emission targets which applies to disposal facilities including landfills:

Disposal facility means any facility, including a landfill –

(a) At which waste is disposed; and

(b) At which the waste disposed includes waste from a household that is not entirely from construction, renovation, or demolition of a house; and

(c) That operates, at least in part, as a business to dispose of waste; but

(d) Does not include a facility, or any part of a facility, at which waste is combusted for the purpose of generating electricity or industrial heat

Dispose, in relation to waste –

(a) Means-

[56] Climate Change Response Act 2002. Public Act 2002 No 40, Date of assent 18 November 2002. Administered by the Ministry for the Environment

(i) The final or more than short-term deposit of waste into or onto land set apart for that purpose; or

(ii) The incineration of waste by deliberately burning the waste to destroy it; but

(b) Does not include any deposit of biosolids for rehabilitation or other beneficial purposes.

The 2050 target as set by the Act is described as:

Part 1B Emission reduction, Subpart 1 – 2050 target

(1) The target for emissions reduction (the 2050 target) requires that –

(a) Net accounting emissions of greenhouse gases in a calendar year, other than biogenic methane, are zero by the calendar year beginning on 1 January 2050 and for each subsequent year; and

(b) Emissions of biogenic methane in a calendar year –

(i) Are 10% less than 2017 emissions by the calendar year beginning on 1 January 2030; and

(ii) Are 24% to 47% less than 2017 emissions by the calendar year beginning on 1 January 2050 and for each subsequent calendar year.

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

(3) 2017 emissions means the emissions of biogenic methane for the calendar year beginning on 1 January 2017.

As reported by the New Zealand Environmental Protection Authority – Te Mana Rauhī Taiao, if a landfill site is currently subject to the waste disposal levy, then its operator is also a mandatory participant of the NZ ETS. However, other types of waste related facilities including cleanfills and/or sewage treatment facilities are not currently included in the NZ ETS scheme. For example, remote disposal facilities are exempt from the NZ ETS as per the Climate Change (General Exemptions) Order 2009[57] (Clause 12A). It is important to note that the NZ ETS notes waste disposal facilities are only responsible for methane emissions from their facilities and not responsible for other greenhouse gas emissions (e.g., carbon dioxide from waste decomposition) associated with landfills or other methods of waste disposal.

In terms of waste operator obligations under the NZ ETS, operators are required to record information about the gross tonnage of waste entering their landfill facility in a year and submit this as part of their annual emissions return. As noted by the New Zealand Environmental Protection Authority – Te Mana Rauhī Taiao, this figure is then multiplied by an emissions factor that estimates the methane emissions per tonne of waste to give a total emissions figure. Once the return is completed, the operator is required to surrender emissions units corresponding to the amount of emissions reported to the NZ ETS.

[57] Climate Change (General Exemptions) Order 2009 (SR 2009/370)

Other Relevant Legislative Instruments

Legislation	Description
Litter Act 1979	The Litter Act 1979 was established to facilitate abatement and control of litter with Keep New Zealand Beautiful Incorporated appointed as the body primarily responsible for the promotion of litter control in Aotearoa New Zealand. The Act enables local authorities to enforce the provisions of the Act through measures such as litter control officers with powers to issue infringement fines to *"any individual or body corporate who deposits any litter or, having deposited any litter, leaves it:* *a) In or on a public place; or* *b) In or on private land without the consent of its occupier."* Litter as defined by the Act includes *"any refuse, rubbish, animal remains, glass, metal, garbage, debris, dirt, filth, rubble, ballast, stones, earth, or waste matter, or any other thing of a like nature."*
Health and Safety at Work Act (HSWA) 2015	The Health and Safety at Work Act 2015 (HSWA) is Aotearoa New Zealand's key work health and safety legislation including regulations under the Act. The aim of the HSWA is to provide a framework to protect the safety of all workers and workplaces together with regulations under the HSWA. The HSWA includes mechanisms to protect workers and other persons from harm, provide for resolution of workplace health and safety issues, and promote health and safety education. The HSWA includes provisions for a range of roles, including the Person Conducting a Business or Undertaking (PCBU) that may have a primary duty of care, including, for example, workers and contractors operating in the waste sector and associated businesses.
Ozone Layer Protection Act 1996	The Ozone Layer Protection Act 1996 was established to fulfil Aotearoa New Zealand's commitments under the Montreal Protocol on substances that deplete the ozone layer. The Act relates to the waste management sector by setting the broad controls and requirements for any ozone depleting substances.

Te Tiriti o Waitangi – The Treaty of Waitangi signed in 1840 is Aotearoa New Zealand's founding document with New Zealand's system of government strongly influenced by Te Tiriti o Waitangi. While Te Tiriti o Waitangi is between the Crown and Māori, Local Government New Zealand (LGNZ) imposes certain obligations on local government to reflect Treaty obligations as well as via several other legislative documents (e.g., LGA 2002 and RMA 1991). A key obligation is to provide an opportunity for Māori to contribute to the decision-making processes of a local authority, including decisions and consultation supporting waste minimisation and management initiatives.

APPENDIX B

Medical Officer of Health Statement

APPENDIX C

Supporting Data

Waste to Class 1 Landfills – by Facility

Wellington City Council – Southern Landfill	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	68,093	68,255	64,422	60,117	64,008	63,683
Special	10,414	18,486	14,961	22,524	8,108	5,757
Sludge	14,467	14,849	15,154	14,463	15,846	14,578
Levied Waste	93,642	102,470	95,414	97,745	89,288	85,223
Cleanfill	3,364	1,012	1,024	1,164	1,261	1,117

Masterton District Council	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	NDR	NDR	NDR	NDR	NDR	NDR
Special	NDR	NDR	NDR	NDR	NDR	NDR
Sludge	NDR	NDR	NDR	NDR	NDR	NDR
Levied Waste	13,049.59	14,139.97	14,260.94	11,535.73	14,418.24	17,160.21
Cleanfill	NDR	NDR	NDR	NDR	NDR	NDR

South Wairarapa District Council	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	NDR	NDR	NDR	NDR	NDR	NDR
Special	NDR	NDR	NDR	NDR	NDR	NDR
Sludge	NDR	NDR	NDR	NDR	NDR	NDR
Levied Waste	2,218.08	2,219.59	2,669.49	1,825.30	1,982.23	2,044.97
Cleanfill	NDR	NDR	NDR	NDR	NDR	NDR

Kāpiti Coast District Council	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	27,964	24,388	25,720	26,455	28,034	27,839
Special	NDR	NDR	NDR	NDR	NDR	NDR
Sludge	NDR	NDR	NDR	NDR	2193.32	2089.32
Levied Waste	27,964	24,388	25,720	26,455	28,034	27,839
Cleanfill	29,148	21,151	3,710	1,862	2,624	2,707

Hutt City Council	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	71729	71173	64517	68621	76515	NDR
Special	13020	8725	18470	19097	29668	NDR
Sludge	4959	4859	4412	4995	5373	NDR
Levied Waste	123824	121519	125226	129839	151344	NDR
Cleanfill	1,411.59	2,770.63	4,282.73	5,920.66	8,626.61	NDR
TOTAL	123,824.00	121,519.00	125,226.00	129,839.00	151,344.00	NDR

Hutt City Council Note: No specific cleanfill data is collected from Silverstream Landfill. However, a 2014 and 2022 SWAP Report (undertaken by Waste Not Consulting Ltd) determined that cleanfill was 1.5% and 7.2% of total waste to the Silverstream Landfill respectively. The cleanfill figures have been by (a) calculating the difference in cleanfill percentages between the two SWAPs, (b) dividing the difference between the number of annual periods to find an approximate annual increase, (c) adding the approximate annual increase to each annual period. Please also note that because Lower Hutt does not have a separate cleanfill facility, clean fill is considered 'general waste' and therefore levied as it entered the Landfill. In this table, cleanfill figures have not been included in the levied waste figures. To get the actual total amount of levied waste, the cleanfill tonnages need to be added to the levied waste figures in the table.

Carterton District Council	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	NDR	NDR	NDR	NDR	NDR	NDR
Special	NDR	NDR	NDR	NDR	NDR	NDR
Sludge	NDR	NDR	NDR	NDR	NDR	NDR
Levied Waste	1,654.74	1,777.68	1,897.35	1,542.81	1,517.20	1,586.14
Cleanfill	NDR	NDR	NDR	NDR	NDR	NDR
TOTAL	1,654.74	1,777.68	1,897.35	1,542.81	1,517.20	1,586.14

Porirua City Council	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
General	47,539.20	54,944.79	1,320.90	66,866.21	65,398.40	73,867.83
Special	388.00	504.00	504.00	1,101.00	609.00	868.40
Sludge	7,342.00	7,683.00	7,683.00	6,065.00	7,776.00	8,773.92
Levied Waste	55,269.20	63,131.79	69,507.90	74,032.21	73,783.40	83,510.15
Cleanfill	64,819.00	93,904.00	72,599.00	83,870.00	104,028.64	64,335.43
TOTAL	120,088.20	157,035.79	142,106.90	157,902.21	177,812.04	147,845.58

Porirua City Council Note: The figures reflect the tonnage that has been deposited into Spicer Landfill, irrespective of the source. Porirua City Council is unable to determine where the waste originated from.

Composition of Levied Waste to Class 1 Landfills – 2021/22

Wellington City Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Paper	0.0%	0	0.0%	0
Plastic	0.0%	0	0.0%	0
Organic	93.0%	5,716.00	93.0%	5,716.00
Ferrous metal	6.6%	406.00	6.6%	406.00
Glass	0.0%	0	0.0%	0
Textiles	0.0%	0	0.0%	0
Sanitary	0.0%	0	0.0%	0
Rubble	0.0%	0	0.0%	0
Timber	0.0%	0	0.0%	0
Rubber	0.0%	0	0.0%	0
Potentially hazardous	0.2%	12.00	0.2%	12.00
Resource recovery	0.2%	14.00	0.2%	14.00
TOTAL	**100.0%**	**6,148.00**	**100.0%**	**6,148.00**

Masterton District Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Paper	10	1,716.02	10	1,716.02
Plastic	5	858.01	5	858.01
Organic	35	6,006.07	35	6,006.07
Ferrous metal	5	858.01	5	858.01
Glass	10	1,716.02	10	1,716.02
Textiles	10	1,716.02	10	1,716.02
Sanitary	5	858.01	5	858.01
Rubble	5	858.01	5	858.01
Timber	10	1,716.02	10	1,716.02
Rubber	4	686.41	4	686.41
Potentially hazardous	1	171.60	1	173.60 (includes 2 tonnes per year of grease fats)
Resource recovery	10	1,716.02	10	1,716.02
TOTAL	100	858.01	100	858.01

Kāpiti Coast District Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Paper	8.3%	2,311	NDR	NDR
Plastic	11.0%	3,062	NDR	NDR
Organic	34.3%	9,549	NDR	NDR
Ferrous metal	2.3%	640	NDR	NDR
Non-Ferrous Metal	0.9%	251	NDR	NDR
Glass	2.8%	779	NDR	NDR
Textiles	6.1%	1,698	NDR	NDR
Sanitary	6.0%	1,670	NDR	NDR
Rubble	12.3%	3,424	NDR	NDR
Timber	14.0%	3,897	NDR	NDR
Rubber	0.9%	251	NDR	NDR
Potentially hazardous	1.1%	306	NDR	NDR
Resource recovery	**100%**	**27,840**	-	-
TOTAL	8.3%	2,311	NDR	NDR

Hutt City Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Paper	7.5	9,776.00	7.5	9,776.00
Plastic	10.2	13,208.00	10.2	13,208.00
Organic	23.8	30,888.00	23.8	30,888.00
Ferrous metal	2.4	3,120.00	2.4	3,120.00
Non-Ferrous Metal	NDR	NDR	NDR	NDR
Glass	2	2,600.00	2	2,600.00
Textiles	5.1	6,604.00	5.1	6,604.00
Sanitary	4	5,200.00	4	5,200.00
Rubble	5.5	7,020.00	5.5	7,020.00
Timber	15.2	19,760.00	15.2	19,760.00
Rubber	1.2	1,560.00	1.2	1,560.00
Potentially hazardous	NDR	NDR	15.5	20,124.00
Resource recovery	NDR	NDR	NDR	NDR
TOTAL	**76.9%**	**99,736.00**	**92.4%**	**119,860.00**

Porirua City Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Paper	5.8	4,284.33	5.8	4,334.70
Plastic	4.6	3,397.92	4.6	3,437.87
Organic	27.2	20,092.05	27.2	20,328.25
Ferrous metal	1.1	812.55	1.1	822.10
Non-Ferrous Metal	0.3	221.60	0.3	224.21
Glass	1.4	1,034.15	1.4	1,046.31
Textiles	2.9	2,142.17	2.9	2,167.35
Sanitary	3.4	2,511.51	3.4	2,541.03
Rubble	43.5	32,132.51	43.5	32,510.26
Timber	6.3	4,653.67	6.3	4,708.38
Rubber	0.2	147.74	0.2	149.47
Potentially hazardous	3.3	2,437.64	3.3	2,466.30
Resource recovery	NDR	NDR	NDR	NDR
TOTAL	**100%**	**73,867.83**	**100%**	**74,736.23**

No data received from Upper Hutt City Council, Carterton District Council, South Wairarapa District Council

Activity Source of Waste to Class 1 Landfills – 2021/22

Wellington City Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Construction & demolition	0%	NDR	0%	NDR
Domestic kerbside	0%	NDR	0%	NDR
Industrial/ commercial/ institutional	64.8%	54,788	60.6%	54,788
Landscaping	1.6%	1,324	1.5%	1,324
Residential	14.9%	12,610	14.0%	12,610
Specials	17.2%	14,578	22.5%	20,335
Kai to compost(commercial)	1.4%	1,201.00	1.3%	1,201.00
Resource recovery	0.1%	105	0.1%	105
TOTAL	**100%**	**84,606**	**100%**	**90,363**

Kāpiti Coast District Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Construction & demolition	18%	5,011	NDR	NDR
Domestic kerbside	52%	14,476	NDR	NDR
Industrial/ commercial/ institutional	21%	5,846	NDR	NDR
Landscaping	3%	835	NDR	NDR
Residential	6%	1,670	NDR	NDR
Specials	N/D	N/D	NDR	NDR
TOTAL	**100%**	**27,839**	**NDR**	**NDR**

Hutt City Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Construction & demolition	16.58%	18,574.92	16.58%	18,574.92
Domestic kerbside	24%	31,250.00	24%	31,250.00
Industrial/ commercial/ institutional	30.96%	38,067.7856	30.96%	38,067.7856
Landscaping	7.08%	5,353.2561	7.08%	5,353.2561
Residential	4.38%	2,297.0001	4.38%	2,297.0001
Specials	NDR	NDR	18.00%	23,088.00
TOTAL	**83%**	**95,542.96**	**101%**	**118,630.96**

Porirua City Council	General Waste – Excludes Special Waste and Cleanfill		General Waste and Special Waste – Excludes Cleanfill	
	% of Total	Tonnes 2021/22	% of Total	Tonnes 2021/22
Construction & demolition	NDR	NDR	NDR	NDR
Domestic kerbside	2.50%	1,942.48	2.20%	1,942.48
Industrial/ commercial/ institutional	42.00%	32,279.47	37.20%	32,279.47
Landscaping	5.30%	4,050.78	4.70%	4,050.78
Residential	50.20%	38,625.64	44.50%	38,625.64
Specials	NDR	NDR	11.30%	9,811.62
TOTAL	**100%**	**76,898.37**	**100%**	**86,709.99**

No data received from Masterton District Council, Upper Hutt City Council, Carterton District Council, South Wairarapa District Council

Kerbside Recycling and Drop-Off Facilities

Wellington City Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	10,371	10,616	10,857	9,992	10,176	9,454
Drop-Off Facilities	813	506	524	687	592	559
TOTAL	**11,184**	**11,122**	**11,381**	**10,679**	**10,768**	**10,013**

Masterton District Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	1,552	1,507	1,488	1,470	1,307	1,392
Drop-Off Facilities	2,845	3,122	3,394	3,599	3,620	4,417
TOTAL	**4,397**	**4,629**	**4,883**	**5,069**	**4,928**	**5,809**

South Wairarapa District Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	650.7	705.5	694.5	643.3	618.9	586.6
Drop-Off Facilities	436.3	474.9	559.2	638.5	611.7	814.7
TOTAL	**1,086.92**	**1,180.32**	**1,253.77**	**1,281.79**	**1,230.66**	**1,401.31**

Kāpiti Coast District Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	503	366	605	2,940	3,392	3,251
Drop-Off Facilities	NDR	NDR	NDR	289	429	391
TOTAL	**NDR**	**NDR**	**NDR**	**3,228**	**3,821**	**3,642**

Upper Hutt City Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	713.94	884.20	974.02	663.04	642.48	719.35
Drop-Off Facilities	113.46	361.13	584.63	638.76	777.51	882.16
TOTAL	**827.40**	**1,245.33**	**1,558.65**	**1,301.80**	**1,419.99**	**1,601.50**

Hutt City Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	5,293.53	5,537.83	5,377.86	4,947.17	4,550.10	3,608.1
Drop-Off Facilities	2,440.83	2,567.28	2,678.46	2,592.14	1,173.48	NDR
TOTAL	**7,734.36**	**8,105.11**	**8,056.32**	**7,539.31**	**5,723.58**	**3,608.1**

Hutt City Council Note: (1) Periods 2019/2020 and 2020/2021 impacted by Covid 19 – all recycling diverted to landfill. (2) Average Contamination for Drop-Off Facilities for this period was 25.08%. (3) Note: contamination has been included in all figures. (4) Drop-Off facilities ceased in 2021 due to the high levels of contamination. (5) Uncertainty regarding sudden decrease in kerbside recycling 2021/22 year.

Carterton District Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	454.88	489.93	473.09	438.27	419.39	389.21
Drop-Off Facilities	323.11	245.65	172.90	285.18	202.95	426.22
TOTAL	**777.99**	**735.58**	**645.99**	**723.45**	**622.34**	**815.43**

Porirua City Council Tonnes/annum	Year 2016/17	Year 2017/18	Year 2018/19	Year 2019/20	Year 2020/21	Year 2021/22
Kerbside Recycling	2,133.00	1,820.00	2,000.00	2,633.00	2,921.00	2,000.00
Drop-Off Facilities	813.00	1,022.00	900.00	579.00	421.00	453.00
TOTAL	**2,946.00**	**2,842.00**	**2,900.00**	**3,213.00**	**3,342.00**	**2,453.00**

Porirua City Council Note: This only includes weights from kerbside collection and the bulk recycling station at Spicer Landfill. It does not include diverted materials from Trash Palace.

Diverted Materials to Kerbside Recycling and Drop-Off Facilities – by area

Kerbside recycling includes council and private collections – tonnes per annum	2016/17	2017/18	2018/19	20219/20	2020/21	2021/22
Carterton	777.99	735.58	645.99	723.45	622.34	815.43
Hutt	7,734.35	8,105.11	8,056.32	7,539.31	5,723.58	3,608.10
Kapiti Coast	5,118.00	5,560.00	5,173.00	3,824.00	4,535.00	4,027.00
Masterton	8,462.71	8,634.90	9,464.82	9,080.37	9,042.01	9,990.33
Porirua	2,133.00	1,820.00	2,000.00	2,633.00	2,921.00	2,000.00
South Wairarapa	1,086.92	1,180.32	1,253.77	1,281.79	1,230.66	1,401.31
Upper Hutt	827.40	1,245.33	1,558.65	1,301.80	1,419.99	1,601.50
Wellington	11,184.00	11,122.00	11,381.00	10,679.00	10,768.00	10,013.00

Diverted Materials to Drop-Off Facilities – by area

Recycling drop-off- excludes private drop-off facilities – tonnes per annum	2016/17	2017/18	2018/19	20219/20	2020/21	2021/22
Carterton	323.11	245.65	172.90	285.18	202.95	426.22
Hutt	2,440.83	2,567.28	2,678.46	2,592.14	1,173.48	348.19

Recycling drop-off- excludes private drop-off facilities – tonnes per annum	2016/17	2017/18	2018/19	20219/20	2020/21	2021/22
Kapiti Coast	592.00	572.00	564.00	884.00	1,143.00	776.00
Masterton	6,910.55	7,128.23	7,976.46	7,610.25	7,734.52	8,598.66
Porirua	813.00	1,022.00	900.00	597.00	421.00	453.00
South Wairarapa	436.26	474.86	559.23	638.53	611.71	814.68
Upper Hutt	113.46	361.13	584.63	638.76	777.51	882.16
Wellington	813.00	506.00	524.00	687.00	592.00	559.00

Composition of Waste to Class 1 Landfills from across the Wellington Region

Composition of Levied Waste to Class 1 Landfill 2021/22		General Waste – Excludes Special Waste and Cleandfill		General Waste and Special Waste – Excludes Cleandfill	
		Tonnes 2021/22	% of Total	Tonnes 2021/22	% of Total
Paper	Recyclable	13,201	6.88%	12083	6.0%
	Non-recyclable	2,780	1.45%	2028	1.0%
	Subtotal	**15,981**		**14,111**	
Plastics	Recyclable	4,183	2.18%	1872	0.9%
	Non-recyclable	12,062	6.29%	11700	5.8%
	Subtotal	**16,245**		**13,572**	
Putrescibles	Kitchen/food	28,033	14.61%	23,742	11.8%
	Comp. G'waste	24,105	12.57%	14,300	7.1%
	Non-comp G'waste	5,290	2.76%	1,560	0.8%
	Multi/other	12,135	6.33%	11,614	5.8%
	Subtotal	**69,563**		**51,216**	
Ferrous Metals	Primarily ferrous	12,144	6.33%	2226.1	1.1%
	Multi/other	2,078	1.08%	1716	0.9%
	Subtotal	**14,222**		**3,942**	
Non-ferrous metal	**Subtotal**	**1,253**	0.65%	**1004.21**	0.5%
Textiles	Clothing/textiles	557	0.29%		0.0%
	Multimaterial/other	1,141	0.59%		
	Subtotal	**1,698**		**2142.17**	1.1%
Glass	Recyclable	2,245	1.17%	1,716	0.9%
	Glass multi/other	1,083	0.56%	832	0.4%
	Subtotal	**3,328**		**2,548**	
Sanitary	**Subtotal**	**9,382**	4.89%	**7,741**	3.9%
Rubble	Cleanfill	40,619	21.18%	38,335	19.1%
	Plasterboard	771	0.40%	520	0.3%
	Multi/other	11,716	6.11%	10,087	5.0%
	Subtotal	**53,106**		**48,942**	
Timber	Cleanfill	139	0.07%		0.0%
	Plasterboard	334	0.17%		0.0%

Composition of Levied Waste to Class 1 Landfill 2021/22		General Waste – Excludes Special Waste and Cleandfill		General Waste and Special Waste – Excludes Cleandfill	
		Tonnes 2021/22	% of Total	Tonnes 2021/22	% of Total
	Multi/other	3,424	1.79%		0.0%
	Subtotal	**3,897**		**32510.26**	16.2%
Rubber	**Subtotal**	**399**	0.21%	**149.47**	0.1%
Pot hazard	**Subtotal**	**2,744**	1.43%	**22590.3**	11.3%
TOTAL		**191,816**	**100%**	**200,469**	**100%**

*excluding Carterton District Council, South Wairarapa District Council, Upper Hutt City Council, Masterton District Council

Diverted Materials to Kerbside Recycling and Drop-Off Facilities – by Area

Kerbside recycling includes council and private collections – tonnes per annum	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Carterton	777.99	735.58	645.99	723.45	622.34	815.43
Hutt	7,734.35	8,105.11	8,056.32	7,539.31	5,723.58	3,608.10
Kapiti Coast	5,118.00	5,560.00	5,173.00	3,824.00	4,535.00	4,027.00
Masterton	8,462.71	8,634.90	9,464.82	9,080.37	9,042.01	9,990.33
Porirua	2,133.00	1,820.00	2,000.00	2,633.00	2,921.00	2,000.00
South Wairarapa	1,086.92	1,180.32	1,253.77	1,281.79	1,230.66	1,401.31
Upper Hutt	827.40	1,245.33	1,558.65	1,301.80	1,419.99	1,601.50
Wellington	11,184.00	11,122.00	11,381.00	10,679.00	10,768.00	10,013.00

Note: Kapiti Coast District Council data includes collected and dropped off recycling plus other materials dropped off for recovery (e.g., whiteware, e-waste, scrap metal, clothing, child carseats, etc). Excludes items that are count only (e.g., gas bottles, fridge/freezer, TVs, oil litres). Masterton District Council data includes compost and total recyclables only

Diverted Materials to Drop-Off Facilities – by Area

Recycling drop-off- excludes private drop-off facilities – tonnes per annum	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Carterton	323.11	245.65	172.90	285.18	202.95	426.22
Hutt	2,440.83	2,567.28	2,678.46	2,592.14	1,173.48	348.19
Kapiti Coast	592.00	572.00	564.00	884.00	1,143.00	776.00
Masterton	6,910.55	7,128.23	7,976.46	7,610.25	7,734.52	8,598.66
Porirua	813.00	1,022.00	900.00	597.00	421.00	453.00
South Wairarapa	436.26	474.86	559.23	638.53	611.71	814.68
Upper Hutt	113.46	361.13	584.63	638.76	777.51	882.16
Wellington	813.00	506.00	524.00	687.00	592.00	559.00

Note: Hutt City Council data includes (1) Periods 2019/2020 and 2020/2021 impacted by Covid 19 – all recycling diverted to landfill. (2) Average Contamination for Drop-Off Facilities for this period was 25.08%. (3) Note: contamination has been included in all figures. (4) Drop-Off facilities ceased in 2021 due to the high levels of contamination – the figure is the collected tonnage prior to drop-off facilities being removed. Masterton District Council data is less kerbside recycling (see above table).

Private Service Providers (NDR = No data received)

General Classification	Masterton	South Wairarapa	Kapiti	Upper Hutt	Hutt City	Carterton	Porirua	Wellington
Diverted Materials Collection	EarthCare	EarthCare	Envirowaste	Waste Management	Envirowaste	EarthCare	Residential PCC	NDR
			Low Cost Bins	Low Cost Bins	JJ's Waste and Recycling		Commercial Waste Management, Envirowaste, Low cost, Daily Waste, Daily karts, Woods waste, JJ waste, Reclaim	
			Lucy's Bins		Waste Management			
			Waste Management					
Organics Collection	Bin operators	NDR	Organic Wealth – Food to Farm (food scraps)	Mahinga Kai – Food Waste	Waste Management NZ	NDR	Waste Management	NDR
			Pae Cycle (food scraps)	Low Cost Bins – Green Waste			Envirowaste	
			Low Cost Bins (garden waste)	Waste Management – Green Waste				
			Waste Management (garden waste)					
Waste Collection	EarthCare	EarthCare	Envirowaste	Waste Management	Waste Management	EarthCare	All of the above	NDR
			Low Cost Bins	Low Cost Bins	Lo Cost Bins			
			Lucy's Bins	EnviroWaste	JJ's Waste and Recycling			
			Waste Management		Envirowaste			
			Kapiti Skips					
			Wood Waste					
			Interwaste					

Transfer Station Detail (NDR = No data received)

	Refuse per tonne	Green	Metal	Polystyrene	Wood	Inert	Tyres	TVs	Hazardous / Special	Recyclables	Reuse
Seaview Recycle & Transfer Station (Hutt City)	$228.85	$151.80	Not collected	2222.76	228.85	228.85	$55.69 each or $8567.69 per tonne	$30.19 each or $2,415.2 per tonne	Not collected	Not collected	Not collected
Otaihanga Resource Recovery Facility (Kāpiti Coast)	$228	Charged by m3	At same rate as general waste	$5,500	At same rate as general waste	-	$8 per tyre	$25 per item	$50 per unit (household chemicals)	Free	Free
Waikanae Greenwaste and Recycling Centre (Kāpiti Coast)	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR
Ōtaki Refuse Transfer Station (Kāpiti Coast)	$239	$100 per tonne	Free	$5,500	Free if during Zero waste otaki opening hours, otherwise at general rate	-	$8 per tyre	$25 per item	Not accepted	Free	-
Martinborough Transfer Station (South Wairarapa District)	$200.00	From $5.50	No Charge	NDR	NDR	NDR	$555.00 per tonne	NDR	NDR	No Charge	NDR
Greytown Recycling Station (South	NDR	From $5.50	No Charge	NDR	NDR	NDR	NDR	NDR	NDR	No Charge	NDR

	Refuse per tonne	Green	Metal	Polystyrene	Wood	Inert	Tyres	TVs	Hazardous / Special	Recyclables	Reuse
Wairarapa District)											
Featherston Recycling Station (South Wairarapa District)	NDR	From $5.50	No Charge	NDR	NDR	NDR	NDR	NDR	NDR	No Charge	NDR
Pirinoa Recycling Station (South Wairarapa District)	NDR	From $5.50	N/A	NDR	NDR	NDR	NDR	NDR	NDR	No Charge	NDR
Castlepoint (Masterton District)	$255 per tonne	$78 per tonne or from $6.50 per load	N/D	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR
Riversdale (Masterton District)	$255 per tonne	$78 per tonne or from $6.50 per load	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR
Nursery Road Transfer Station (Masterton)	$220 per tonne	$64 per tonne or from $5.90 per load	NDR	NDR	NDR	NDR	$610 per tonne (more than 4 tyres) or from $4.40 per tyre	E-waste no charge	$220 per tonne	No charge	NDR
Dalefield Road Transfer Station (Carterton District)	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR
Woods Waste (Ngaio, Wellington City)	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR

	Refuse per tonne	Green	Metal	Polystyrene	Wood	Inert	Tyres	TVs	Hazardous / Special	Recyclables	Reuse
Southern Landfill	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR
Spicers landfill	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR
Silverstream landfill	$189.75	$126.50	$189.75	$530.00	$189.75	$189.75	$530.00	$189.75	$270.25	$189.75	$189.75

Wellington City Waste Management and Minimisation Actions 2017-2022

KEY:

Fully Implemented **Partially Implemented** **In Development/Not Started**

Title	Description	Implementation Status
Working with schools	Provide support services to schools wishing to explore the effects of waste and waste reduction opportunities.	
Support for recycling in schools and early learning centres	The council will provide funding support for recycling in schools and early learning centres, where this is linked with waste minimisation education activities	
Promoting and supporting waste minimisation at events	Promoting and supporting waste minimisation at events and festivals.	
Promote and support the reduction and diversion of organic waste	Continue to support and promote organics waste reduction and diversion programmes.	
Promote, educate and support residents to minimise waste	Support and educate residents to promote and undertake waste minimisation by the provision of information, services and events.	
Optimise regional communications	Work collaboratively with the WMMP partner councils on waste-related communications.	

Title	Description	Implementation Status
Wellington Regional Waste Education Strategy	Ensure systems and resources are in place for implementing the Regional Waste Education Strategy and, if necessary, review the strategy.	
Household recycling collection	Continue to deliver and optimise the household recycling service.	
Household waste collection	Continue to deliver and optimise household waste collection service that supports increased diversion and a cost-effective service for households.	
Recovery of energy from landfill gas	Support landfill gas electricity generation and optimisation of capture systems to assist the council in meeting its ETS responsibilities.	
Closed landfills	Continue to manage closed landfills to ensure relevant environmental and safety standards are met and in accordance with all relevant policies and plans.	
Provide grants for community and business development Projects	Provide contestable grants for stakeholder groups and individuals to develop waste minimisation initiatives.	
Advocacy and lobbying	WCC will continue to advocate and lobby for progressive waste management and minimisation policy and support actions in order to deliver on the goals and objectives of the WMA and the WMMP.	
Innovation and technology	Investigate, support and promote innovation and technology that enables or enhances increased diversion and reduced waste.	
Reducing junk mail	Investigate, support and implement initiatives to reduce junk mail.	

Title	Description	Implementation Status
Bylaw development, implementation and enforcement	Ensure systems and resources are available for implementing, monitoring and enforcing the Wellington Consolidated Bylaw Part 9: Waste Management, the future Regional Waste Bylaw and any other waste-related bylaws.	
Building Waste Management Facilities	Work with key internal and external stakeholders to ensure multi-unit residential and commercial buildings include allocated space for waste management including appropriate facilities that move potentially wasted resources up the hierarchy.	
Implement Waste Data Framework	Collect and manage data in accordance with the National Waste Data Framework, as well as conducting SWAP surveys and other measures to improve data availability and management.	
Support marae and iwi groups to minimise waste	Support iwi and marae to promote and undertake waste minimisation by the provision of information, services and events.	
CBD recycling collection	Continue to deliver and optimise CBD recycling and waste services and support increased diversion of other wastes given the special needs of apartment and multi-unit development residents.	
Household food and/or green waste collection	Investigate and recommend options for a household food and/or green waste collection service or other alternatives that deliver similar outcomes.	
Biosolids	Collaborate with Wellington Water and other stakeholders to investigate options that would divert biosolids mainly from the Southern Landfill.	
Resource recovery centre	Operate the resource recovery centre at the Southern Landfill. Identify and implement opportunities for improvements that increase diversion, supporting the region's resource recovery network at the Southern Landfill.	

Title	Description	Implementation Status
Compost operation	Operate and make capacity improvements to an organics processing plant.	
Transfer station (waste drop-off facility)	Operate and make capacity improvements to the transfer station.	
Waste education centre	Research and develop options for an effective waste education facility at the Southern Landfill (or elsewhere) that meets the needs of the community and council.	
Public place recycling	Work with relevant stakeholders to design and submit for approval an efficient and cost-effective public place recycling system that maximises material recovery.	
Signage at waste/ recycling facilities	Provide clear and consistent signs at landfills and transfer stations to show correct disposal, compost, re-use and recycling facilities.	
Support community groups and the business sector	Provide support to businesses and community groups to develop waste minimisation initiatives and opportunities.	
Industry-based reuse	Support business sector stakeholders wishing to reuse materials.	
Behaviour change	Lead, deliver, support and promote change initiatives that shift stakeholder behaviour and waste management practices up the waste hierarchy.	
Collaborate with private sector and community to work with local groups and waste companies	Work with local groups to investigate opportunities to enhance economic development through waste minimisation.	

Title	Description	Implementation Status
Funding options	Explore and where feasible implement new funding models for waste management and minimisation activities.	
Shared Services	As appropriate, investigate shared service options for potential regional, sub regional and super regional scaled waste management and minimisation initiatives.	
WCC internal waste minimisation	Council leadership through waste minimisation initiatives that reduce waste and increase diversion at WCC facilities	
Waste levy funding from MfE	Investigate and support applications for contestable waste levy funding from MfE for both council and community waste reduction and minimisation initiatives.	
Managing hazardous waste	Investigate options for domestic hazardous waste tracking and safe disposal.	
Resilient waste management systems	In conjunction with the wider work on the resilience of the Wellington region include through our communication and educational channels, how to deal with waste in an emergency as well as undertaking further analysis on the resiliency of our waste systems in Wellington City	
Limiting adverse environmental impacts	Promote the reduction of adverse environmental impacts from waste management and disposal within the city.	
Landfill capacity review	Work in collaboration with other councils to review landfill capacity with potential for closure of one landfill regionally, in the future.	
Investigation of additional regulatory measures	Investigate additional regulatory measures, including for example licensing options, single use plastic bags.	

Title	Description	Implementation Status
Investigate and implement polystyrene recycling options	Consider options for recycling and/or reprocessing of polystyrene. Consider business case for a polystyrene drop-off service at Southern Landfill.	
Actively enforce, control and reduce littering and illegal dumping.	Ensure systems and resources are in place for actively enforcing, controlling and reducing littering and illegal dumping.	
Procurement policy	Investigate the option for WCC construction and demolition procurement activities to include the requirement for waste minimisation and management plans.	

2021/22 CAPITAL CARRY-FORWARD AND CAPITAL PROGRAMME RESCHEDULING

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee outlines the underspend in the 2021/22 capital programme, the resulting carry-forward being requested and reprogramming of the capital programme to reflect deliverability given current market conditions.

Strategic alignment with community wellbeing outcomes and priority areas

	Aligns with the following strategies and priority areas: ☐ Sustainable, natural eco city ☐ People friendly, compact, safe and accessible capital city ☐ Innovative, inclusive and creative city ☐ Dynamic and sustainable economy
Strategic alignment with priority objective areas from Long-term Plan 2021–2031	☐ Functioning, resilient and reliable three waters infrastructure ☐ Affordable, resilient and safe place to live ☐ Safe, resilient and reliable core transport infrastructure network ☐ Fit-for-purpose community, creative and cultural spaces ☐ Accelerating zero-carbon and waste-free transition ☐ Strong partnerships with mana whenua
Relevant Previous decisions	Outline relevant previous decisions that pertain to the decision being considered in this paper.
Significance	The decision is **rated medium significance** in accordance with schedule 1 of the Council's Significance and Engagement Policy.

Financial considerations

☐ Nil	☒ Budgetary provision in Annual Plan / Long-term Plan	☒ Unbudgeted $X

Risk

☒ Low	☐ Medium	☐ High	☐ Extreme

Authors	Deirdre Reidy, Manager, Finance Business Partnering James Peyper, Finance Business Partner
Authoriser	Sara Hay, Chief Financial Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion

That Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information
2. Note the capital programme underspend for 2021/22, as reported in the draft Annual Report, was $65.1 million
3. Agree to carry-forward prior year underspends as detailed in the "Carry-forward" ledger of appendix 1 – "Recommended Capital Plan"
4. Note that the requested carry-forward value is $52.2 million, not all underspends are required to be carried forward
5. Agree to reprogramme the 2022/23 Annual Plan and future years' budgets as detailed in the "Plan Change" ledger of appendix 1 – "Recommended Capital Plan"
6. Note that it is intended that 99.3% of the current budget will still be delivered within the remainder of the Long-term Plan period
7. Recommend to Council – Te Kaunihera o Pōneke to agree budget changes as detailed in the "Budget Changes" ledger of appendix 1 – "Recommended Capital Plan"

Whakarāpopoto | Executive Summary

2. This report requests that the Committee agree changes to the capital programme for the current financial year (2022/23) and consequently to the remaining year of the current Long-term Plan (2021-31). It also requests that the Committee recommend some minor budget increases to Council for agreement.

Takenga mai | Background

3. The draft Annual Report for 2021/22 shows an underspend in capital budget of $65.1 million. This underspend primarily relates to projects that did not progress in the timeframe originally expected, but which need to maintain their original budget in order to complete the project.
4. This report details the requirement to retain those underspends and carry them forward into current and future year budgets. It also outlines the impact that continuing with those projects has on the delivery timeline for the current financial years plan and beyond.

Kōrerorero | Discussion

5. Council's capital programme delivery has increased significantly in recent years. The current Long-term Plan (LTP) includes a notable increase in planned capital expenditure. Council has successfully delivered higher year-on-year capital spend increases, with spend in 2021/22 being 68% higher than that of 2018/19 (year 1 of the respective LTPs).

6. Over the course of the pandemic, delivering on this programme has become increasingly difficult given the well documented constraints in the construction and labour markets. Despite this, the actual capital spend in 2021/22 of $289 million was the highest annual spend to-date for Council.
7. However, this still represented an underspend to budget of $65.1 million (18%). This underspend largely related to “inflight” projects which require these unspent budgets to progress or complete the projects.
8. Officer budgetary delegations relate to the financial year in which the budget is approved for and so to continue to progress projects using prior year underspends additional approval must be sought from Committee.
9. The Committee is requested to approve carry-forward from this underspend totalling $52 million. Adding this to the 2022/23 Annual Plan capital budget would result in a programme for the current financial year of $464 million, 61% higher than 2021/22 actual spend.
10. While Council continues to deliver an increasing capital programme annually, a 61% year-on-year increase is unachievable, particularly given the current market constraints.
11. Council needs to set an ambitious but achievable delivery budget. Officers responsible for each activity have reviewed and analysed all projects in the current plan, including the carry-forward requests, and planned a more realistic delivery timeline for each. This has resulted in a requested change to capital budget across the remainder of this Long-term Plan.
12. This proposed reprogramming still results in a budget that has a material uplift in year-on-year spend for the current financial year (29%) and it shows that substantially all (99.3%) of the plan will be delivered within the 2021-31 Long-term Plan term to 2031. The total expected delivery for the nine years remaining is $2.8 billion.

Kōwhiringa | Options

13. Approve the requested carry-forward, capital reprogramming and recommend budget changes as per officer recommendations.

    This option allows the organisation to continue capital projects which had originally planned to spend more in 2021/22. Continuing these projects in line with the original (prior year) budget aligns with the priorities set for Council through the 2021-31 Long-term Plan, however progressing these projects in the current year does place pressure on the 2022/23 Annual Plan capital programme which already had a significant uplift in it. Therefore, agreeing the reprogramming of current and future years’ capital programme provides a delivery target that is ambitious but achievable.

    Recommending the requested budget changes to Council will allow the organisation to deliver and finalise projects as expected.

14. Do not approve the requested carry-forward, capital reprogramming or recommend budget changes as per officer recommendations.

    In relation to the carry-forward amount this option would leave several key projects with insufficient budget for completion and a potential inability to fulfil contractual obligations. Not agreeing to reprogramme the capital spend will likely result in a significant underspend in the current financial year, given construction market constraints and capacity within existing internal teams to manage additional projects.

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

15. Council's capital programme is outlined in the Long-term Plan and subsequent Annual Plans. Many of the projects within the overall capital programme are integral to other Council strategies such as Paneke Pōneke and Te Atakura.

Engagement and Consultation

16. Council consulted, through a Special Consultative Procedure, on the 2021-31 Long-term Plan which included the capital programme. Subsequent engagement with the community has taken place for various projects within the plan, including through traffic resolutions and project specific engagement such as the recent play area renewals engagement.

Implications for Māori

17. The Tūpiki Ora action plan has connection to the capital programme.

Financial implications

18. The financial implications of stated recommendations have been discussed throughout this paper. Capital expenditure directly impacts operating expenditure through depreciation and interest. When preparing an Annual Plan, depreciation and interest impacts are based on the capital programme and can have a significant impact on proposed rates increases.

Legal considerations

19. Council's capital programme is consulted on and agreed through the Long-term Plan in line with the requirements of the Local Government Act 2002. Reprogramming of this capital expenditure, within the overall original budget, is delegated to the Kōrau Tōtōpū | Long-term Plan, Finance, and Performance Committee through the Terms of Reference and Delegations of Wellington City Council.

Risks and mitigations

20. If this Committee resolves not to recommend the carry-forward of requested prior year underspends there is a significant risk that "in-flight" projects will not be completed. This could have both reputational risk to Council and legal risk if contractual obligations with suppliers cannot be fulfilled.

21. If this Committee resolves not to recommend the reprogramming of the capital spend, there is a high probability that the current financial year programme will show be a material underspend. Maintaining the current programme may create unrealistic expectations for the community on delivery timeframes resulting in reputational risk if undeliverable.

Disability and accessibility impact

22. Not applicable to these recommendations, however each capital project will consider the impacts on accessibility that disabled people / people with access needs could experience in relation to that project.

Climate Change impact and considerations

23. The capital programme directly supports the goals in Te Atakura through specific capital spend such as electrification of Council fleet. In addition, each capital project is expected to consider climate change implications.

Communications Plan

24. Changes agreed to the programme will be reflected in any 2023/24 Annual Plan consultation and engagement processes.

Health and Safety Impact considered

25. Not applicable to these recommendations.

Ngā mahinga e whai ake nei | Next actions

26. Implement recommendations resolved by this Committee.

Attachments

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
				Carry-forward	41,857,826	9,054,135	1,057,410	(129,467)	81,353	81,353	81,353	81,353	81,353	52,246,668
				Annual Plan	421,921,320	420,975,743	409,767,741	340,748,362	280,392,639	236,272,498	239,861,969	223,829,812	214,812,083	2,788,582,167
				Plan Change	(91,711,998)	3,775,111	(3,999,363)	18,251,724	23,381,139	27,649,913	(1,497,949)	(1,497,949)	6,929,403	(18,719,970)
				Budget Changes	1,606,120	2,250,000	600,000							4,456,120
Summarised Total					**373,673,268**	**436,054,989**	**407,425,787**	**358,870,618**	**303,855,131**	**264,003,764**	**238,445,372**	**222,413,216**	**221,822,839**	**2,826,564,985**

Strategy Code	Strategy Description	Activity	Activity Description	Ledger	Sum of 2022/23	Sum of 2023/24	Sum of 2024/25	Sum of 2025/26	Sum of 2026/27	Sum of 2027/28	Sum of 2028/29	Sum of 2029/30	Sum of 2030/31	9 Year Total
1.1.1	**City Governance and Engagement**	2000	**Committee & Council Processes**	Carry Forward	-									-
				Budget	134,168	-	-	143,678	-	-	-	-	-	277,846
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Committee & Council Processes Total		***134,168***	***-***	***-***	***143,678***	***-***	***-***	***-***	***-***	***-***	***277,846***
1.1.1 Total					**134,168**	**-**	**-**	**143,678**	**-**	**-**	**-**	**-**	**-**	**277,846**
1.1.4	**Climate insights and engagement**	2143	**EV Fleet Transformation**	Carry Forward	160,238									160,238
				Budget	919,019	878,848	883,191	453,254	654,677	27,143	417,995	24,971	217,140	4,476,238
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			EV Fleet Transformation Total		***1,079,257***	***878,848***	***883,191***	***453,254***	***654,677***	***27,143***	***417,995***	***24,971***	***217,140***	***4,636,476***
		2144	**Public EV Chargers**	Carry Forward	-			(210,820)						(210,820)
				Budget	684,508	684,508	684,508	684,508	-	-	-	-	-	2,738,032
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Public EV Chargers Total		***684,508***	***684,508***	***684,508***	***473,688***	***-***	***-***	***-***	***-***	***-***	***2,527,212***
		2145	**Car sharing enhancement**	Carry Forward	-									-
				Budget	51,700	51,700	51,700	51,700	-	-	-	-	-	206,800
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Car sharing enhancement Total		***51,700***	***51,700***	***51,700***	***51,700***	***-***	***-***	***-***	***-***	***-***	***206,800***
1.1.4 Total					**1,815,465**	**1,615,056**	**1,619,399**	**978,642**	**654,677**	**27,143**	**417,995**	**24,971**	**217,140**	**7,370,488**
2.1.1	**Local Parks and Open Spaces**	2001	**Property Purchases - Reserves**	Carry Forward	-									-
				Budget	1,540,500	1,462,610	7,266,890	-	-	-	-	-	-	10,270,000
				Plan Change	3,081,000	-	(3,081,000)	-	-	-	-	-	-	-
				Budget Changes	-									-
			Property Purchases - Reserves Total		***4,621,500***	***1,462,610***	***4,185,890***	***-***	***-***	***-***	***-***	***-***	***-***	***10,270,000***
		2003	**Parks Infrastructure**	Carry Forward	1,110,282									1,110,282
				Budget	661,878	616,010	626,187	676,550	687,036	706,373	690,469	811,366	680,195	6,156,064
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Parks Infrastructure Total		***1,772,160***	***616,010***	***626,187***	***676,550***	***687,036***	***706,373***	***690,469***	***811,366***	***680,195***	***7,266,346***
		2004	**Parks Buildings**	Carry Forward	252,843									252,843
				Budget	750,858	498,828	537,324	507,021	516,057	521,996	527,958	527,958	517,472	4,905,473
				Plan Change	(288,036)	288,036	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Parks Buildings Total		***715,665***	***786,864***	***537,324***	***507,021***	***516,057***	***521,996***	***527,958***	***527,958***	***517,472***	***5,158,316***
		2005	**Plimmer Bequest Project**	Carry Forward	-									-
				Budget	-	781,815	380,680	380,680	-	-	-	-	2,111,690	3,654,866
				Plan Change	-	(500,000)	500,000	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Plimmer Bequest Project Total		***-***	***281,815***	***880,680***	***380,680***	***-***	***-***	***-***	***-***	***2,111,690***	***3,654,866***
2.1.1 Total					**7,109,325**	**3,147,299**	**6,230,081**	**1,564,252**	**1,203,093**	**1,228,368**	**1,218,428**	**1,339,324**	**3,309,358**	**26,349,528**
2.1.2	**Botanical Gardens**	2006	**Botanic Garden**	Carry Forward	238,716									238,716
				Budget	1,341,851	1,648,367	4,092,136	5,425,730	1,494,576	1,468,723	1,460,027	1,453,476	875,794	19,260,681
				Plan Change	(400,000)	300,000	100,000	-	-	-	-	-	-	0
				Budget Changes	-									-
			Botanic Garden Total		***1,180,567***	***1,948,367***	***4,192,136***	***5,425,730***	***1,494,576***	***1,468,723***	***1,460,027***	***1,453,476***	***875,794***	***19,499,397***
2.1.2 Total					**1,180,567**	**1,948,367**	**4,192,136**	**5,425,730**	**1,494,576**	**1,468,723**	**1,460,027**	**1,453,476**	**875,794**	**19,499,397**
2.1.3	**Beaches and Coast Operations**	2007	**Coastal - upgrades**	Carry Forward	327,525									327,525
				Budget	70,193	74,694	70,500	70,500	70,500	70,500	70,500	70,500	70,500	638,387
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Coastal - upgrades Total		***397,718***	***74,694***	***70,500***	***70,500***	***70,500***	***70,500***	***70,500***	***70,500***	***70,500***	***965,912***
		2008	**Coastal**	Carry Forward	279,502									279,502
				Budget	331,270	685,476	396,738	300,502	465,811	725,663	556,269	341,101	275,513	4,078,343
				Plan Change	885,000	(498,000)	(249,000)	(138,000)	-	-	-	-	-	(0)
				Budget Changes	-									-
			Coastal Total		***1,495,772***	***187,476***	***147,738***	***162,502***	***465,811***	***725,663***	***556,269***	***341,101***	***275,513***	***4,357,845***
2.1.3 Total					**1,893,491**	**262,170**	**218,238**	**233,002**	**536,311**	**796,163**	**626,769**	**411,601**	**346,013**	**5,323,757**
2.1.5	**Town belts**	2009	**Town Belt & Reserves**	Carry Forward	29,917									29,917
				Budget	596,017	3,113,891	460,526	463,311	464,174	1,632,552	558,953	469,417	409,648	8,168,489
				Plan Change	-	150,000	-	-	-	-	-	-	-	150,000
				Budget Changes	-									-
			Town Belt & Reserves Total		***625,934***	***3,263,891***	***460,526***	***463,311***	***464,174***	***1,632,552***	***558,953***	***469,417***	***409,648***	***8,348,406***
2.1.5 Total					**625,934**	**3,263,891**	**460,526**	**463,311**	**464,174**	**1,632,552**	**558,953**	**469,417**	**409,648**	**8,348,406**
2.1.7	**Walkways**	2010	**Walkways renewals**	Carry Forward	-									-
				Budget	1,257,573	646,335	698,739	698,739	698,739	1,733,957	693,496	693,496	698,739	7,819,812
				Plan Change	(169,000)	169,000	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Walkways renewals Total		***1,088,573***	***815,335***	***698,739***	***698,739***	***698,739***	***1,733,957***	***693,496***	***693,496***	***698,739***	***7,819,812***

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
2.1.7 Total					**1,088,573**	**815,335**	**698,739**	**698,739**	**698,739**	**1,733,957**	**693,496**	**693,496**	**698,739**	**7,819,812**
2.2.1	**Waste minimisation, disposal and recycling management**	2011	**Southern Landfill Improvement**	Carry Forward	-									-
				Budget	4,350,753	11,338,989	8,285,737	5,191,524	5,277,857	5,333,600	9,547,096	10,660,669	5,571,625	65,557,851
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Southern Landfill Improvement Total		***4,350,753***	***11,338,989***	***8,285,737***	***5,191,524***	***5,277,857***	***5,333,600***	***9,547,096***	***10,660,669***	***5,571,625***	***65,557,851***
2.2.1 Total					**4,350,753**	**11,338,989**	**8,285,737**	**5,191,524**	**5,277,857**	**5,333,600**	**9,547,096**	**10,660,669**	**5,571,625**	**65,557,851**
2.3.1	**Water Network**	2013	**Water - Network renewals**	Carry Forward	-									-
				Budget	8,349,717	9,843,677	11,779,762	14,754,002	15,333,250	10,995,975	11,282,970	11,589,909	11,786,473	105,715,734
				Plan Change	(2,942,000)	2,942,000	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Water - Network renewals Total		***5,407,717***	***12,785,677***	***11,779,762***	***14,754,002***	***15,333,250***	***10,995,975***	***11,282,970***	***11,589,909***	***11,786,473***	***105,715,734***
		2016	**Water - Network upgrades**	Carry Forward	-									-
				Budget	1,851,857	6,425,202	1,786,752	1,507,572	1,574,575	6,890,162	8,949,394	8,260,378	2,974,942	40,220,834
				Plan Change	(487,006)	487,006	-	-	-	-	-	-	-	0
				Budget Changes	-									-
			Water - Network upgrades Total		***1,364,851***	***6,912,207***	***1,786,752***	***1,507,572***	***1,574,575***	***6,890,162***	***8,949,394***	***8,260,378***	***2,974,942***	***40,220,834***
		2019	**Water - Reservoir renewals**	Carry Forward	-									-
				Budget	876,257	4,191,836	4,125,644	4,447,017	4,303,624	4,836,769	4,917,828	4,699,525	4,801,686	37,200,185
				Plan Change	(771,048)	771,048	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Water - Reservoir renewals Total		***105,208***	***4,962,884***	***4,125,644***	***4,447,017***	***4,303,624***	***4,836,769***	***4,917,828***	***4,699,525***	***4,801,686***	***37,200,185***
		2020	**Water - Reservoir upgrades**	Carry Forward	-									-
				Budget	14,739,571	1,168,821	652,053	375,218	375,218	375,218	404,811	363,939	394,426	18,849,274
				Plan Change	(474,800)	1,585,553	-	-	-	-	-	-	-	1,110,752
				Budget Changes	-									-
			Water - Reservoir upgrades Total		***14,264,771***	***2,754,374***	***652,053***	***375,218***	***375,218***	***375,218***	***404,811***	***363,939***	***394,426***	***19,960,027***
2.3.1 Total					**21,142,547**	**27,415,142**	**18,344,210**	**21,083,809**	**21,586,667**	**23,098,124**	**25,555,003**	**24,913,750**	**19,957,527**	**203,096,779**
2.4.1	**Sewage collection and disposal network**	2023	**Wastewater - Network renewals**	Carry Forward	-									-
				Budget	13,885,322	13,399,694	15,596,427	16,396,676	17,138,458	18,333,869	19,392,851	19,641,044	19,159,549	152,943,890
				Plan Change	(3,961,003)	3,961,003	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Wastewater - Network renewals Total		***9,924,319***	***17,360,697***	***15,596,427***	***16,396,676***	***17,138,458***	***18,333,869***	***19,392,851***	***19,641,044***	***19,159,549***	***152,943,890***
		2024	**Wastewater - Network upgrades**	Carry Forward	-									-
				Budget	17,504,199	11,040,768	725,868	1,920,758	14,232,596	4,726,188	6,345,432	16,323,048	35,902,548	108,721,406
				Plan Change	(459,074)	4,948,798	-	-	-	-	-	-	-	4,489,725
				Budget Changes	-									-
			Wastewater - Network upgrades Total		***17,045,126***	***15,989,566***	***725,868***	***1,920,758***	***14,232,596***	***4,726,188***	***6,345,432***	***16,323,048***	***35,902,548***	***113,211,131***
2.4.1 Total					**26,969,445**	**33,350,263**	**16,322,295**	**18,317,434**	**31,371,055**	**23,060,057**	**25,738,283**	**35,964,092**	**55,062,097**	**266,155,021**
2.4.2	**Sewage treatment**	2146	**Sludge Minimisation**	Carry Forward	6,851,048									6,851,048
				Budget	22,662,729	-	-	-	-	-	-	-	-	22,662,729
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Sludge Minimisation Total		***29,513,777***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***29,513,777***
2.4.2 Total					**29,513,777**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**29,513,777**
2.5.1	**Stormwater management**	2028	**Stormwater - Network upgrades**	Carry Forward	-									-
				Budget	3,733,642	4,355,655	5,168,180	5,192,748	2,400,948	558,360	558,360	2,903,472	2,512,620	27,383,984
				Plan Change	(2,946,662)	2,946,662	-	-	-	-	-	-	-	0
				Budget Changes	-									-
			Stormwater - Network upgrades Total		***786,980***	***7,302,316***	***5,168,180***	***5,192,748***	***2,400,948***	***558,360***	***558,360***	***2,903,472***	***2,512,620***	***27,383,984***
		2029	**Stormwater - Network renewals**	Carry Forward	-									-
				Budget	4,011,604	4,102,544	4,326,301	4,518,954	4,570,443	4,888,521	4,993,111	5,100,426	5,200,913	41,712,818
				Plan Change	(2,909,604)	2,909,604	-	-	-	-	-	-	-	0
				Budget Changes	-									-
			Stormwater - Network renewals Total		***1,102,000***	***7,012,148***	***4,326,301***	***4,518,954***	***4,570,443***	***4,888,521***	***4,993,111***	***5,100,426***	***5,200,913***	***41,712,818***
2.5.1 Total					**1,888,980**	**14,314,464**	**9,494,481**	**9,711,702**	**6,971,391**	**5,446,881**	**5,551,471**	**8,003,898**	**7,713,533**	**69,096,803**
2.6.1	**Conservation visitor attractions**	2033	**Zoo renewals**	Carry Forward	-									-
				Budget	1,245,926	1,246,984	1,228,908	1,264,382	1,291,128	1,343,305	1,372,427	1,344,200	1,344,200	11,681,461
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Zoo renewals Total		***1,245,926***	***1,246,984***	***1,228,908***	***1,264,382***	***1,291,128***	***1,343,305***	***1,372,427***	***1,344,200***	***1,344,200***	***11,681,461***
		2034	**Zoo upgrades**	Carry Forward	436,911									436,911
				Budget	1,000,000	-	-	-	-	-	-	-	-	1,000,000
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Zoo upgrades Total		***1,436,911***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***1,436,911***
2.6.1 Total					**2,682,837**	**1,246,984**	**1,228,908**	**1,264,382**	**1,291,128**	**1,343,305**	**1,372,427**	**1,344,200**	**1,344,200**	**13,118,371**
3.1.1	**WREDA and Venues**	2036	**Venues Upgrades**	Carry Forward	-	220,356								220,356
				Budget	2,050,000	2,730,000	2,050,000	15,375,000	3,075,000	3,075,000	3,075,000	3,075,000	6,150,000	40,655,000
				Plan Change	(1,550,000)	1,550,000	-	-	-	-	-	-	-	0
				Budget Changes	-									-
			Venues Upgrades Total		***500,000***	***4,500,356***	***2,050,000***	***15,375,000***	***3,075,000***	***3,075,000***	***3,075,000***	***3,075,000***	***6,150,000***	***40,875,356***
3.1.1 Total					**500,000**	**4,500,356**	**2,050,000**	**15,375,000**	**3,075,000**	**3,075,000**	**3,075,000**	**3,075,000**	**6,150,000**	**40,875,356**
3.1.2	**Wellington Convention Centre**	2035	**Wellington Venues renewals**	Carry Forward	997,045									997,045
				Budget	7,790,755	1,917,196	2,501,806	1,902,637	2,307,668	2,248,467	2,282,689	2,224,225	2,336,067	25,511,511
				Plan Change	(5,035,146)	-	1,135,146	3,900,000	-	-	-	-	-	(0)
				Budget Changes	-									-
			Wellington Venues renewals Total		***3,752,654***	***1,917,196***	***3,636,952***	***5,802,637***	***2,307,668***	***2,248,467***	***2,282,689***	***2,224,225***	***2,336,067***	***26,508,556***

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
3.1.2 Total					**3,752,654**	**1,917,196**	**3,636,952**	**5,802,637**	**2,307,668**	**2,248,467**	**2,282,689**	**2,224,225**	**2,336,067**	**26,508,556**
4.1.1	**Galleries and museums (WMT)**	2038	**Gallery & Museum Upgrades**	Carry Forward	180,530									180,530
				Budget	2,481,325	12,284,267	5,632,125	1,067,625	-	-	-	-	-	21,465,342
				Plan Change	(1,514,825)	(12,074,267)	(4,005,300)	11,175,642	5,520,125	898,625	-	-	-	-
				Budget Changes	-									-
			Gallery & Museum Upgrades Total		***1,147,030***	***210,000***	***1,626,825***	***12,243,267***	***5,520,125***	***898,625***	***-***	***-***	***-***	***21,645,872***
4.1.1 Total					**1,147,030**	**210,000**	**1,626,825**	**12,243,267**	**5,520,125**	**898,625**	**-**	**-**	**-**	**21,645,872**
4.1.2	**Visitor attractions (Te Papa/Carter Observatory)**	2129	**Wellington Convention & Exhibition Centre (WCEC)**	Carry Forward	(4,089,274)									(4,089,274)
				Budget	29,338,719	157,767	-	-	-	-	-	-	-	29,496,486
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	750,000									750,000
			Wellington Convention & Exhibition Centre (WCEC) Total		***25,999,445***	***157,767***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***26,157,212***
4.1.2 Total					**25,999,445**	**157,767**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**26,157,212**
4.1.4	**Cultural grants**	2041	**Te ara o nga tupuna - Maori heritage trails**	Carry Forward	144,740									144,740
				Budget	968,000	-	-	-	-	-	-	-	-	968,000
				Plan Change	(730,240)	730,240	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Te ara o nga tupuna - Maori heritage trails Total		***382,500***	***730,240***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***1,112,740***
4.1.4 Total					**382,500**	**730,240**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,112,740**
4.1.5	**Access and support for community arts**	2042	**Arts Installation**	Carry Forward	144,323	10,454								154,777
				Budget	66,929	68,459	69,943	2,057	2,057	2,057	2,057	2,057	2,057	217,676
				Plan Change	(66,929)	84,743	(5,470)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	0
				Budget Changes	-									-
			Arts Installation Total		***144,323***	***163,656***	***64,473***	***-***	***-***	***-***	***-***	***-***	***-***	***372,452***
4.1.5 Total					**144,323**	**163,656**	**64,473**	**-**	**-**	**-**	**-**	**-**	**-**	**372,452**
5.1.1	**Swimming Pools**	2043	**Aquatic Facility upgrades**	Carry Forward	-									-
				Budget	-	8,129,700	-	-	-	-	-	-	-	8,129,700
				Plan Change	300,000	(3,300,000)	3,000,000	-	-	-	-	-	-	-
				Budget Changes	-									-
			Aquatic Facility upgrades Total		***300,000***	***4,829,700***	***3,000,000***	***-***	***-***	***-***	***-***	***-***	***-***	***8,129,700***
		2044	**Aquatic Facility renewals**	Carry Forward	1,310,078									1,310,078
				Budget	5,160,493	2,036,516	961,541	1,995,277	2,002,794	1,983,202	2,295,696	2,305,316	2,306,365	21,047,199
				Plan Change	(2,080,130)	-	2,080,130	-	-	-	-	-	-	-
				Budget Changes	-									-
			Aquatic Facility renewals Total		***4,390,440***	***2,036,516***	***3,041,671***	***1,995,277***	***2,002,794***	***1,983,202***	***2,295,696***	***2,305,316***	***2,306,365***	***22,357,277***
5.1.1 Total					**4,690,440**	**6,866,216**	**6,041,671**	**1,995,277**	**2,002,794**	**1,983,202**	**2,295,696**	**2,305,316**	**2,306,365**	**30,486,977**
5.1.2	**Sportsfields**	2045	**Sportsfields upgrades**	Carry Forward	-									-
				Budget	2,441,258	771,720	3,848,663	3,857,162	3,881,063	532,105	532,105	532,105	532,105	16,928,285
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Sportsfields upgrades Total		***2,441,258***	***771,720***	***3,848,663***	***3,857,162***	***3,881,063***	***532,105***	***532,105***	***532,105***	***532,105***	***16,928,285***
		2046	**Synthetic Turf Sportsfields renewals**	Carry Forward	-									-
				Budget	2,952,217	1,315,135	771,819	-	-	624,971	1,045,256	1,535,024	907,864	9,152,286
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Synthetic Turf Sportsfields renewals Total		***2,952,217***	***1,315,135***	***771,819***	***-***	***-***	***624,971***	***1,045,256***	***1,535,024***	***907,864***	***9,152,286***
		2047	**Synthetic Turf Sportsfields upgrades**	Carry Forward	-									-
				Budget	-	-	-	-	2,378,601	-	-	-	-	2,378,601
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Synthetic Turf Sportsfields upgrades Total		***-***	***-***	***-***	***-***	***2,378,601***	***-***	***-***	***-***	***-***	***2,378,601***
5.1.2 Total					**5,393,475**	**2,086,855**	**4,620,482**	**3,857,162**	**6,259,664**	**1,157,076**	**1,577,361**	**2,067,128**	**1,439,969**	**28,459,172**
5.1.4	**Recreation Centres**	2048	**Recreation Centre Renewal**	Carry Forward	195,000	57,834								252,834
				Budget	1,087,797	132,694	3,486,523	190,311	184,255	149,855	284,629	288,823	285,677	6,090,565
				Plan Change	(866,711)	711,711	(3,237,000)	-	3,392,000	-	-	-	-	-
				Budget Changes	-									-
			Recreation Centre Renewal Total		***416,086***	***902,239***	***249,523***	***190,311***	***3,576,255***	***149,855***	***284,629***	***288,823***	***285,677***	***6,343,399***
		2049	**ASB Sports Centre**	Carry Forward	274,134									274,134
				Budget	974,750	141,039	682,180	147,183	710,813	146,684	169,136	174,390	179,139	3,325,314
				Plan Change	(250,000)	250,000	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			ASB Sports Centre Total		***998,883***	***391,039***	***682,180***	***147,183***	***710,813***	***146,684***	***169,136***	***174,390***	***179,139***	***3,599,448***
5.1.4 Total					**1,414,969**	**1,293,279**	**931,704**	**337,495**	**4,287,069**	**296,538**	**453,765**	**463,213**	**464,816**	**9,942,847**
5.1.5	**Recreation partnerships**	2050	**Basin Reserve**	Carry Forward	(496,345)	(329,721)	(256,750)							(1,082,815)
				Budget	1,920,345	1,497,356	634,375	437,784	437,784	771,559	437,784	437,784	437,784	7,012,557
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Basin Reserve Total		***1,424,000***	***1,167,636***	***377,625***	***437,784***	***437,784***	***771,559***	***437,784***	***437,784***	***437,784***	***5,929,741***
5.1.5 Total					**1,424,000**	**1,167,636**	**377,625**	**437,784**	**437,784**	**771,559**	**437,784**	**437,784**	**437,784**	**5,929,741**
5.1.6	**Playgrounds**	2051	**Playgrounds renewals & upgrades**	Carry Forward	36,409									36,409
				Budget	3,317,417	4,280,703	5,608,073	1,405,857	1,888,069	1,226,098	1,472,353	1,476,547	1,472,353	22,147,470
				Plan Change	(300,000)	(1,400,000)	1,700,000	-	-	-	-	-	-	-
				Budget Changes	-									-
			Playgrounds renewals & upgrades Total		***3,053,826***	***2,880,703***	***7,308,073***	***1,405,857***	***1,888,069***	***1,226,098***	***1,472,353***	***1,476,547***	***1,472,353***	***22,183,879***
5.1.6 Total					**3,053,826**	**2,880,703**	**7,308,073**	**1,405,857**	**1,888,069**	**1,226,098**	**1,472,353**	**1,476,547**	**1,472,353**	**22,183,879**
5.1.7	**Marinas**	2052	**Evans Bay Marina - Renewals**	Carry Forward	-	198,844								198,844
				Budget	435,211	394,398	272,002	621,116	225,453	230,696	214,511	212,414	636,237	3,242,038
				Plan Change	-	-	-	-	-	-	-	-	-	-

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
				Budget Changes	-									-
			Evans Bay Marina - Renewals Total		***435,211***	***593,242***	***272,002***	***621,116***	***225,453***	***230,696***	***214,511***	***212,414***	***636,237***	***3,440,882***
		2053	**Clyde Quay Marina - Upgrade**	Carry Forward	226,158	23,000								249,158
				Budget	71,461	67,339	69,415	226,069	111,864	118,011	142,874	142,874	343,158	1,293,065
				Plan Change	200,000	-	-	(200,000)	-	-	-	-	-	(0)
				Budget Changes	-									-
			Clyde Quay Marina - Upgrade Total		***497,618***	***90,339***	***69,415***	***26,069***	***111,864***	***118,011***	***142,874***	***142,874***	***343,158***	***1,542,223***
5.1.7 Total					**932,829**	**683,581**	**341,417**	**647,185**	**337,317**	**348,707**	**357,385**	**355,288**	**979,395**	**4,983,105**
5.2.1	**Libraries**	2054	**Library Materials Upgrade**	Carry Forward	-									-
				Budget	2,201,838	3,312,819	3,986,220	2,814,586	2,430,398	2,430,398	2,430,398	2,430,398	2,430,398	24,467,452
				Plan Change	(301,838)	-	-	301,838	-	-	-	-	-	0
				Budget Changes	-									-
			Library Materials Upgrade Total		***1,900,000***	***3,312,819***	***3,986,220***	***3,116,424***	***2,430,398***	***2,430,398***	***2,430,398***	***2,430,398***	***2,430,398***	***24,467,452***
		2055	**Library Computer and Systems Replacement**	Carry Forward	-	153,003								153,003
				Budget	157,952	222,798	729,391	190,463	3,070,922	93,455	93,455	93,455	93,455	4,745,345
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Library Computer and Systems Replacement Total		***157,952***	***375,801***	***729,391***	***190,463***	***3,070,922***	***93,455***	***93,455***	***93,455***	***93,455***	***4,898,349***
		2056	**Central Library - Upgrades and Renewals**	Carry Forward	-		19,096							19,096
				Budget	19,609	19,631	19,631	19,631	19,631	19,631	19,631	19,631	19,631	176,654
				Plan Change	(19,609)	(19,631)	39,240	-	-	-	-	-	-	-
				Budget Changes	-									-
			Central Library - Upgrades and Renewals Total		***-***	***-***	***77,966***	***19,631***	***19,631***	***19,631***	***19,631***	***19,631***	***19,631***	***195,750***
		2058	**Branch Library - Renewals**	Carry Forward	481,710									481,710
				Budget	908,987	660,661	368,313	376,412	376,908	377,441	355,744	355,744	355,744	4,135,954
				Plan Change	(213,500)	213,500	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Branch Library - Renewals Total		***1,177,197***	***874,161***	***368,313***	***376,412***	***376,908***	***377,441***	***355,744***	***355,744***	***355,744***	***4,617,664***
5.2.1 Total					**3,235,149**	**4,562,781**	**5,161,889**	**3,702,929**	**5,897,858**	**2,920,925**	**2,899,228**	**2,899,228**	**2,899,228**	**34,179,214**
5.2.5	**Housing**	2059	**Housing upgrades**	Carry Forward	2,062,125									2,062,125
				Budget	5,487,764	5,518,932	2,147,615	-	-	-	-	-	-	13,154,312
				Plan Change	(4,168,028)	(1,518,932)	(1,078,546)	-	-	-	-	-	-	(6,765,507)
				Budget Changes	-									-
			Housing upgrades Total		***3,381,861***	***4,000,000***	***1,069,069***	***-***	***-***	***-***	***-***	***-***	***-***	***8,450,930***
		2060	**Housing renewals**	Carry Forward	3,072,581									3,072,581
				Budget	20,960,893	31,431,415	48,902,928	44,101,239	54,580,463	66,538,750	62,980,874	39,686,372	15,363,374	384,546,307
				Plan Change	(15,291,547)	(13,431,415)	(23,971,996)	16,467,541	15,988,317	11,461,250	(1,795,140)	(1,795,140)	6,732,213	(5,635,916)
				Budget Changes	-									-
			Housing renewals Total		***8,741,927***	***18,000,000***	***24,930,931***	***60,568,780***	***70,568,780***	***78,000,000***	***61,185,735***	***37,891,232***	***22,095,587***	***381,982,972***
5.2.5 Total					**12,123,788**	**22,000,000**	**26,000,000**	**60,568,780**	**70,568,780**	**78,000,000**	**61,185,735**	**37,891,232**	**22,095,587**	**390,433,902**
5.2.6	**Community centres and halls**	2061	**Community Centres and Halls - Upgrades and Renewals**	Carry Forward	2,911,736	600,000								3,511,736
				Budget	5,565,558	292,044	86,297	86,948	86,964	86,981	86,981	86,981	86,981	6,465,735
				Plan Change	(1,743,682)	1,743,248	(69)	(719)	(736)	(753)	(753)	(753)	(753)	(4,969)
				Budget Changes	596,120									596,120
			Community Centres and Halls - Upgrades and Renewals Total		***7,329,732***	***2,635,291***	***86,228***	***86,228***	***86,228***	***86,228***	***86,228***	***86,228***	***86,228***	***10,568,623***
5.2.6 Total					**7,329,732**	**2,635,291**	**86,228**	**86,228**	**86,228**	**86,228**	**86,228**	**86,228**	**86,228**	**10,568,623**
5.3.1	**Burials and Cremations**	2062	**Burial & Cremations**	Carry Forward	265,230									265,230
				Budget	401,816	1,589,335	2,644,264	2,644,831	489,583	452,008	497,094	505,682	521,610	9,746,223
				Plan Change	-	(1,027,000)	(1,027,000)	-	2,054,000	-	-	-	-	-
				Budget Changes	-									-
			Burial & Cremations Total		***667,046***	***562,335***	***1,617,264***	***2,644,831***	***2,543,583***	***452,008***	***497,094***	***505,682***	***521,610***	***10,011,453***
5.3.1 Total					**667,046**	**562,335**	**1,617,264**	**2,644,831**	**2,543,583**	**452,008**	**497,094**	**505,682**	**521,610**	**10,011,453**
5.3.2	**Public Toilets**	2063	**Public Convenience and pavilions**	Carry Forward	560,405									560,405
				Budget	2,871,572	1,346,917	1,305,617	1,415,313	1,680,470	1,692,187	1,378,898	1,378,898	1,378,898	14,448,768
				Plan Change	(1,498,352)	400,000	1,098,352	-	-	-	-	-	-	-
				Budget Changes	-									-
			Public Convenience and pavilions Total		***1,933,625***	***1,746,917***	***2,403,969***	***1,415,313***	***1,680,470***	***1,692,187***	***1,378,898***	***1,378,898***	***1,378,898***	***15,009,173***
5.3.2 Total					**1,933,625**	**1,746,917**	**2,403,969**	**1,415,313**	**1,680,470**	**1,692,187**	**1,378,898**	**1,378,898**	**1,378,898**	**15,009,173**
5.3.4	**City Safety**	2064	**Safety Initiatives**	Carry Forward	197,555									197,555
				Budget	1,734,727	1,736,648	119,864	119,864	119,864	119,864	119,864	119,864	119,864	4,310,423
				Plan Change	(573,732)	573,732	-	-	-	-	-	-	-	0
				Budget Changes	-									-
			Safety Initiatives Total		***1,358,550***	***2,310,380***	***119,864***	***119,864***	***119,864***	***119,864***	***119,864***	***119,864***	***119,864***	***4,507,978***
5.3.4 Total					**1,358,550**	**2,310,380**	**119,864**	**119,864**	**119,864**	**119,864**	**119,864**	**119,864**	**119,864**	**4,507,978**
5.3.5	**WREMO**	2065	**Emergency Management renewals**	Carry Forward	-									-
				Budget	82,211	82,211	82,211	82,211	82,211	82,211	82,211	82,211	82,211	739,902
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Emergency Management renewals Total		***82,211***	***82,211***	***82,211***	***82,211***	***82,211***	***82,211***	***82,211***	***82,211***	***82,211***	***739,902***
5.3.5 Total					**82,211**	**82,211**	**82,211**	**82,211**	**82,211**	**82,211**	**82,211**	**82,211**	**82,211**	**739,902**
6.1.2	**Waterfront development**	2067	**Wgtn Waterfront Development**	Carry Forward	4,403,824									4,403,824
				Budget	2,557,956	-	6,204,394	-	-	-	-	-	-	8,762,350
				Plan Change	(778,353)	-	-	-	-	-	-	-	-	(778,353)
				Budget Changes	-									-
			Wgtn Waterfront Development Total		***6,183,427***	***-***	***6,204,394***	***-***	***-***	***-***	***-***	***-***	***-***	***12,387,821***
		2068	**Waterfront Renewals**	Carry Forward	1,279,724		850,655							2,130,379
				Budget	6,172,195	5,508,552	1,220,382	1,169,032	1,169,032	1,173,227	1,173,227	1,173,227	1,163,789	19,922,663
				Plan Change	(4,985,300)	(1,954,700)	6,940,000	-	-	-	-	-	-	-

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
				Budget Changes	-									-
			Waterfront Renewals Total		***2,466,619***	***3,553,852***	***9,011,037***	***1,169,032***	***1,169,032***	***1,173,227***	***1,173,227***	***1,173,227***	***1,163,789***	***22,053,042***
6.1.2 Total					**8,650,047**	**3,553,852**	**15,215,430**	**1,169,032**	**1,169,032**	**1,173,227**	**1,173,227**	**1,173,227**	**1,163,789**	**34,440,863**
6.1.3	**Public spaces and centres development**	2070	**Central City Framework**	Carry Forward	1,911,192	41,568								1,952,760
				Budget	4,457,571	43,459	514,359	933,375	308,959	308,959	308,959	308,959	308,959	7,493,559
				Plan Change	(3,128,392)	1,397,409	2,355,399	(624,416)	-	-	-	-	-	-
				Budget Changes	260,000	2,250,000	600,000							3,110,000
			Central City Framework Total		***3,500,371***	***3,732,437***	***3,469,758***	***308,959***	***308,959***	***308,959***	***308,959***	***308,959***	***308,959***	***12,556,319***
		2073	**Suburban Centres upgrades**	Carry Forward	1,234,206	2,860	81,353	81,353	81,353	81,353	81,353	81,353	81,353	1,806,537
				Budget	1,862,840	8,109	8,109	8,109	8,109	8,109	8,109	8,109	8,109	1,927,709
				Plan Change	(1,862,840)	1,862,840	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Suburban Centres upgrades Total		***1,234,206***	***1,873,808***	***89,462***	***89,462***	***89,462***	***89,462***	***89,462***	***89,462***	***89,462***	***3,734,245***
		2074	**Minor CBD Enhancements**	Carry Forward	36,221									36,221
				Budget	49,062	49,333	49,291	49,247	49,203	49,160	51,553	51,553	51,553	449,954
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Minor CBD Enhancements Total		***85,283***	***49,333***	***49,291***	***49,247***	***49,203***	***49,160***	***51,553***	***51,553***	***51,553***	***486,175***
		2137	**Build Wellington Developments**	Carry Forward	-									-
				Budget	-	2,451,178	-	-	-	-	-	-	-	2,451,178
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Build Wellington Developments Total		***-***	***2,451,178***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***2,451,178***
6.1.3 Total					**4,819,859**	**8,106,755**	**3,608,510**	**447,668**	**447,624**	**447,580**	**449,973**	**449,973**	**449,973**	**19,227,917**
6.1.5	**Housing Development**	2136	**Housing Investment Programme**	Carry Forward	862,554	875,183	363,056							2,100,793
				Budget	8,206,652	2,250,942	2,250,942	2,184,658	2,184,658	2,184,658	2,184,658	2,184,658	2,184,658	25,816,486
				Plan Change	(4,924,933)	1,276,934	1,889,005	-	-	-	-	-	-	(1,758,994)
				Budget Changes	-									-
			Housing Investment Programme Total		***4,144,272***	***4,403,059***	***4,503,003***	***2,184,658***	***2,184,658***	***2,184,658***	***2,184,658***	***2,184,658***	***2,184,658***	***26,158,285***
6.1.5 Total					**4,144,272**	**4,403,059**	**4,503,003**	**2,184,658**	**2,184,658**	**2,184,658**	**2,184,658**	**2,184,658**	**2,184,658**	**26,158,285**
6.2.3	**Earthquake risk mitigation – built environment**	2076	**Earthquake Risk Mitigation**	Carry Forward	(56,779)									(56,779)
				Budget	33,257,914	46,309,273	13,100,003	-	-	-	-	-	-	92,667,190
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Earthquake Risk Mitigation Total		***33,201,135***	***46,309,273***	***13,100,003***	***-***	***-***	***-***	***-***	***-***	***-***	***92,610,411***
6.2.3 Total					**33,201,135**	**46,309,273**	**13,100,003**	**-**	**-**	**-**	**-**	**-**	**-**	**92,610,411**
7.1.2	**Vehicle network**	2077	**Wall, Bridge & Tunnel Renewals**	Carry Forward	-									-
				Budget	8,787,477	5,179,097	4,159,195	4,457,223	4,457,223	4,457,223	4,457,222	4,457,222	4,457,222	44,869,106
				Plan Change	(3,876,183)	(1,000,001)	-	200,000	200,000	200,000	200,000	200,000	100,000	(3,776,183)
				Budget Changes	-									-
			Wall, Bridge & Tunnel Renewals Total		***4,911,294***	***4,179,097***	***4,159,195***	***4,657,223***	***4,657,223***	***4,657,223***	***4,657,223***	***4,657,223***	***4,557,223***	***41,092,923***
		2078	**Asphalt & Other Seal Renewals**	Carry Forward	-									-
				Budget	1,381,592	922,331	1,014,477	1,034,747	1,055,422	1,160,868	1,184,066	1,207,727	1,231,863	10,193,092
				Plan Change	(300,000)	300,000	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Asphalt & Other Seal Renewals Total		***1,081,592***	***1,222,331***	***1,014,477***	***1,034,747***	***1,055,422***	***1,160,868***	***1,184,066***	***1,207,727***	***1,231,863***	***10,193,092***
		2079	**Chipseal Renewals**	Carry Forward	-									-
				Budget	5,352,857	5,272,840	5,799,925	5,915,879	6,034,152	6,637,344	6,770,046	6,905,402	7,043,466	55,731,910
				Plan Change	(2,500,000)	1,500,000	-	-	-	-	-	-	-	(1,000,000)
				Budget Changes	-									-
			Chipseal Renewals Total		***2,852,857***	***6,772,840***	***5,799,925***	***5,915,879***	***6,034,152***	***6,637,344***	***6,770,046***	***6,905,402***	***7,043,466***	***54,731,910***
		2080	**Preseal Preparations**	Carry Forward	-									-
				Budget	4,012,332	4,021,009	4,025,599	4,025,797	4,030,329	4,032,819	4,032,817	4,032,817	4,032,817	36,246,336
				Plan Change	(1,000,000)	-	-	-	100,000	100,000	100,000	100,000	100,000	(500,000)
				Budget Changes	-									-
			Preseal Preparations Total		***3,012,332***	***4,021,009***	***4,025,599***	***4,025,797***	***4,130,329***	***4,132,819***	***4,132,817***	***4,132,817***	***4,132,817***	***35,746,336***
		2081	**Shape & Camber Correction**	Carry Forward	-									-
				Budget	3,245,957	2,175,191	2,390,201	2,437,498	2,485,741	2,731,780	2,785,908	2,841,119	2,897,435	23,990,831
				Plan Change	(500,000)	-	-	-	-	-	-	-	-	(500,000)
				Budget Changes	-									-
			Shape & Camber Correction Total		***2,745,957***	***2,175,191***	***2,390,201***	***2,437,498***	***2,485,741***	***2,731,780***	***2,785,908***	***2,841,119***	***2,897,435***	***23,490,831***
		2082	**Drainage Renewals**	Carry Forward	-									-
				Budget	285,249	285,667	286,092	541,243	541,243	541,243	541,243	541,243	541,243	4,104,463
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Drainage Renewals Total		***285,249***	***285,667***	***286,092***	***541,243***	***541,243***	***541,243***	***541,243***	***541,243***	***541,243***	***4,104,463***
		2083	**Wall Upgrades**	Carry Forward	500,000									500,000
				Budget	3,401,260	3,404,067	3,681,049	2,853,480	1,538,100	986,157	986,156	986,156	986,156	18,822,581
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Wall Upgrades Total		***3,901,260***	***3,404,067***	***3,681,049***	***2,853,480***	***1,538,100***	***986,157***	***986,156***	***986,156***	***986,156***	***19,322,581***
		2084	**Service Lane & Road Boundary Upgrades**	Carry Forward	-									-
				Budget	1,055,080	59,794	59,794	59,794	59,794	59,794	59,794	59,794	59,794	1,533,430
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Service Lane & Road Boundary Upgrades Total		***1,055,080***	***59,794***	***59,794***	***59,794***	***59,794***	***59,794***	***59,794***	***59,794***	***59,794***	***1,533,430***
		2085	**Tunnel & Bridge Upgrades**	Carry Forward	600,000									600,000
				Budget	1,600,604	1,604,987	1,606,276	1,273,221	1,273,221	1,273,222	1,273,221	1,273,221	1,273,221	12,451,193

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Tunnel & Bridge Upgrades Total		***2,200,604***	***1,604,987***	***1,606,276***	***1,273,221***	***1,273,221***	***1,273,222***	***1,273,221***	***1,273,221***	***1,273,221***	***13,051,193***
		2086	**Kerb & Channels Renewals**	Carry Forward	-									-
				Budget	1,979,200	1,986,614	2,597,796	2,062,146	2,103,614	2,102,454	2,076,049	2,084,432	2,084,432	19,076,739
				Plan Change	(300,000)	300,000	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Kerb & Channels Renewals Total		***1,679,200***	***2,286,614***	***2,597,796***	***2,062,146***	***2,103,614***	***2,102,454***	***2,076,049***	***2,084,432***	***2,084,432***	***19,076,739***
		2087	**New Roads**	Carry Forward	-									-
				Budget	-	-	5,160,000	5,325,583	5,519,432	5,380,777	5,767,855	2,825,949	5,382,050	35,361,645
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			New Roads Total		***-***	***-***	***5,160,000***	***5,325,583***	***5,519,432***	***5,380,777***	***5,767,855***	***2,825,949***	***5,382,050***	***35,361,645***
		2088	**Emergency Route Walls Upgrades**	Carry Forward	-									-
				Budget	4,348,266	648,592	2,394,547	505,987	1,228,387	1,228,388	1,433,951	1,433,951	1,433,951	14,656,020
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Emergency Route Walls Upgrades Total		***4,348,266***	***648,592***	***2,394,547***	***505,987***	***1,228,387***	***1,228,388***	***1,433,951***	***1,433,951***	***1,433,951***	***14,656,020***
		2089	**Roading Capacity Upgrades**	Carry Forward	-									-
				Budget	2,007,894	1,107,194	2,805,489	2,489,492	1,896,005	1,294,881	1,294,881	1,294,881	1,294,881	15,485,599
				Plan Change	(2,007,894)	(1,107,194)	2,007,894	1,107,194	-	-	-	-	-	-
				Budget Changes	-									-
			Roading Capacity Upgrades Total		***-***	***-***	***4,813,383***	***3,596,686***	***1,896,005***	***1,294,881***	***1,294,881***	***1,294,881***	***1,294,881***	***15,485,599***
		2090	**Roading Rebuild**	Carry Forward	-									-
				Budget	1,862,905	1,863,772	1,864,031	1,864,416	1,866,473	1,866,718	1,865,590	1,865,948	1,865,948	16,785,800
				Plan Change	(800,000)	800,000	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Roading Rebuild Total		***1,062,905***	***2,663,772***	***1,864,031***	***1,864,416***	***1,866,473***	***1,866,718***	***1,865,590***	***1,865,948***	***1,865,948***	***16,785,800***
		2091	**Port & Ferry Access Upgrades**	Carry Forward	-									-
				Budget	-	-	5,519,432	2,373,356	3,311,659	-	-	-	-	11,204,446
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Port & Ferry Access Upgrades Total		***-***	***-***	***5,519,432***	***2,373,356***	***3,311,659***	***-***	***-***	***-***	***-***	***11,204,446***
7.1.2 Total					**29,136,595**	**29,323,961**	**45,371,794**	**38,527,055**	**37,700,794**	**34,053,667**	**34,828,799**	**32,109,864**	**34,784,478**	**315,837,008**
7.1.3	**Cycle network**	2094	**Cycling Network Renewals**	Carry Forward	157,784	3,406,081								3,563,865
				Budget	26,483,178	39,711,612	34,055,757	18,597,816	18,598,367	18,598,921	18,468,838	16,447,771	16,079,629	207,041,890
				Plan Change	(12,327,588)	(13,450,653)	(1,829,756)	23,164,654	4,443,342	-	-	-	-	(0)
				Budget Changes	-									-
			Cycling Network Renewals Total		***14,313,374***	***29,667,040***	***32,226,001***	***41,762,471***	***23,041,709***	***18,598,921***	***18,468,838***	***16,447,771***	***16,079,629***	***210,605,754***
7.1.3 Total					**14,313,374**	**29,667,040**	**32,226,001**	**41,762,471**	**23,041,709**	**18,598,921**	**18,468,838**	**16,447,771**	**16,079,629**	**210,605,754**
7.1.4	**Passenger transport network**	2095	**Bus Priority Planning**	Carry Forward	-									-
				Budget	296,723	301,449	302,957	302,957	302,957	302,958	302,957	302,957	302,957	2,718,872
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Bus Priority Planning Total		***296,723***	***301,449***	***302,957***	***302,957***	***302,957***	***302,958***	***302,957***	***302,957***	***302,957***	***2,718,872***
7.1.4 Total					**296,723**	**301,449**	**302,957**	**302,957**	**302,957**	**302,958**	**302,957**	**302,957**	**302,957**	**2,718,872**
7.1.5	**Pedestrian network**	2096	**Footpaths Structures Renewals & Upgrades**	Carry Forward	56,000									56,000
				Budget	331,290	332,022	1,440,946	506,192	506,192	506,192	506,192	506,192	506,192	5,141,410
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Footpaths Structures Renewals & Upgrades Total		***387,290***	***332,022***	***1,440,946***	***506,192***	***506,192***	***506,192***	***506,192***	***506,192***	***506,192***	***5,197,410***
		2097	**Footpaths Renewals**	Carry Forward	-									-
				Budget	4,342,332	4,326,952	4,639,867	4,672,912	4,675,286	4,677,745	4,677,744	4,677,744	4,677,744	41,368,325
				Plan Change	(1,000,000)	1,000,000	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Footpaths Renewals Total		***3,342,332***	***5,326,952***	***4,639,867***	***4,672,912***	***4,675,286***	***4,677,745***	***4,677,744***	***4,677,744***	***4,677,744***	***41,368,325***
		2098	**Footpaths Upgrades**	Carry Forward	500,000									500,000
				Budget	3,619,848	3,912,730	3,915,205	4,037,170	4,037,296	4,037,428	4,037,426	4,037,426	4,037,426	35,671,956
				Plan Change	(909,848)	-	-	-	-	-	-	-	-	(909,848)
				Budget Changes	-									-
			Footpaths Upgrades Total		***3,210,000***	***3,912,730***	***3,915,205***	***4,037,170***	***4,037,296***	***4,037,428***	***4,037,426***	***4,037,426***	***4,037,426***	***35,262,108***
		2099	**Street Furniture Renewals**	Carry Forward	-									-
				Budget	196,658	197,858	197,643	223,112	223,314	223,524	223,524	223,524	223,524	1,932,679
				Plan Change	(20,000)	-	-	-	-	-	-	-	-	(20,000)
				Budget Changes	-									-
			Street Furniture Renewals Total		***176,658***	***197,858***	***197,643***	***223,112***	***223,314***	***223,524***	***223,524***	***223,524***	***223,524***	***1,912,679***
		2100	**Pedestrian Network Accessways**	Carry Forward	-									-
				Budget	268,776	265,583	317,393	273,243	273,243	273,243	273,243	273,243	273,243	2,491,209
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Pedestrian Network Accessways Total		***268,776***	***265,583***	***317,393***	***273,243***	***273,243***	***273,243***	***273,243***	***273,243***	***273,243***	***2,491,209***
7.1.5 Total					**7,385,056**	**10,035,145**	**10,511,054**	**9,712,628**	**9,715,331**	**9,718,132**	**9,718,128**	**9,718,129**	**9,718,129**	**86,231,731**
7.1.6	**Network-wide control and management**	2101	**Traffic & Street Signs Renewals**	Carry Forward	-									-
				Budget	1,251,337	1,253,965	1,255,505	1,256,447	1,257,422	1,258,429	1,258,428	1,258,428	1,258,428	11,308,387
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Traffic & Street Signs Renewals Total		***1,251,337***	***1,253,965***	***1,255,505***	***1,256,447***	***1,257,422***	***1,258,429***	***1,258,428***	***1,258,428***	***1,258,428***	***11,308,387***
		2102	**Traffic Signals Renewals**	Carry Forward	600,000									600,000

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
				Budget	1,077,694	983,090	984,657	984,657	984,657	984,658	984,656	984,656	984,656	8,953,382
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Traffic Signals Renewals Total		***1,677,694***	***983,090***	***984,657***	***984,657***	***984,657***	***984,658***	***984,656***	***984,656***	***984,656***	***9,553,382***
7.1.6 Total					**2,929,030**	**2,237,055**	**2,240,162**	**2,241,104**	**2,242,079**	**2,243,086**	**2,243,085**	**2,243,085**	**2,243,085**	**20,861,770**
7.1.7	**Road safety**	2103	**Street Lights Renewals & Upgrades**	Carry Forward	-									-
				Budget	3,454,058	1,396,682	1,351,196	1,351,309	1,351,309	1,351,310	1,351,308	1,351,308	1,351,308	14,309,790
				Plan Change	(120,000)	-	-	-	-	-	-	-	-	(120,000)
				Budget Changes	-									-
			Street Lights Renewals & Upgrades Total		***3,334,058***	***1,396,682***	***1,351,196***	***1,351,309***	***1,351,309***	***1,351,310***	***1,351,308***	***1,351,308***	***1,351,308***	***14,189,790***
		2104	**Rural Road Upgrades**	Carry Forward	-									-
				Budget	356,242	117,950	117,950	117,950	117,950	117,950	117,950	117,950	117,950	1,299,844
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Rural Road Upgrades Total		***356,242***	***117,950***	***117,950***	***117,950***	***117,950***	***117,950***	***117,950***	***117,950***	***117,950***	***1,299,844***
		2105	**Minor Works Upgrades**	Carry Forward	-									-
				Budget	5,014,785	5,554,514	3,587,497	3,730,647	3,746,847	4,618,104	4,618,099	4,618,099	4,618,099	40,106,691
				Plan Change	(1,365,931)	-	-	-	-	-	-	-	-	(1,365,931)
				Budget Changes	-									-
			Minor Works Upgrades Total		***3,648,854***	***5,554,514***	***3,587,497***	***3,730,647***	***3,746,847***	***4,618,104***	***4,618,099***	***4,618,099***	***4,618,099***	***38,740,760***
		2106	**Fences & Guardrails Renewals**	Carry Forward	-									-
				Budget	899,872	764,102	758,037	764,394	764,680	764,977	764,976	764,976	764,976	7,010,990
				Plan Change	(220,000)	-	-	-	-	-	-	-	-	(220,000)
				Budget Changes	-									-
			Fences & Guardrails Renewals Total		***679,872***	***764,102***	***758,037***	***764,394***	***764,680***	***764,977***	***764,976***	***764,976***	***764,976***	***6,790,990***
		2107	**Speed Management Upgrades**	Carry Forward	-									-
				Budget	457,768	7,082,863	1,129,281	997,973	372,713	375,860	375,858	375,858	375,858	11,544,032
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Speed Management Upgrades Total		***457,768***	***7,082,863***	***1,129,281***	***997,973***	***372,713***	***375,860***	***375,858***	***375,858***	***375,858***	***11,544,032***
7.1.7 Total					**8,476,794**	**14,916,111**	**6,943,961**	**6,962,274**	**6,353,500**	**7,228,201**	**7,228,192**	**7,228,192**	**7,228,192**	**72,565,416**
7.1.8	**Lets Get Wellington Moving**	2141	**LGWM - City Streets**	Carry Forward	700,000									700,000
				Budget	5,063,522	15,149,181	36,561,867	45,276,569	37,520,161	-	-	-	-	139,571,301
				Plan Change	(4,812,711)	(7,604,428)	(11,326,689)	(24,363,860)	(8,685,161)	14,992,849	-	-	-	(41,800,000)
				Budget Changes	-									-
			LGWM - City Streets Total		***950,811***	***7,544,753***	***25,235,178***	***20,912,710***	***28,835,000***	***14,992,849***	***-***	***-***	***-***	***98,471,300***
		2142	**LGWM - Early Delivery**	Carry Forward	2,031,091									2,031,091
				Budget	15,598,442	20,740,520	14,277,289	-	-	-	-	-	-	50,616,251
				Plan Change	(3,580,344)	7,528,181	12,487,533	25,364,630	-	-	-	-	-	41,800,000
				Budget Changes	-									-
			LGWM - Early Delivery Total		***14,049,189***	***28,268,701***	***26,764,822***	***25,364,630***	***-***	***-***	***-***	***-***	***-***	***94,447,342***
7.1.8 Total					**15,000,000**	**35,813,453**	**52,000,000**	**46,277,340**	**28,835,000**	**14,992,849**	**-**	**-**	**-**	**192,918,643**
7.2.1	**Parking**	2108	**Parking Asset renewals**	Carry Forward	-	1,512,238								1,512,238
				Budget	2,271,809	1,135,685	516,000	770,904	1,390,104	977,304	722,400	928,800	770,904	9,483,910
				Plan Change	78,632	(78,632)	-	-	-	-	-	-	-	(0)
				Budget Changes	-									-
			Parking Asset renewals Total		***2,350,441***	***2,569,291***	***516,000***	***770,904***	***1,390,104***	***977,304***	***722,400***	***928,800***	***770,904***	***10,996,148***
		2109	**Parking Upgrades**	Carry Forward	-									-
				Budget	189,747	194,349	197,987	201,152	204,430	207,822	207,821	207,821	207,821	1,818,952
				Plan Change	(14,747)	-	-	-	-	-	-	-	-	(14,747)
				Budget Changes	-									-
			Parking Upgrades Total		***175,000***	***194,349***	***197,987***	***201,152***	***204,430***	***207,822***	***207,821***	***207,821***	***207,821***	***1,804,205***
7.2.1 Total					**2,525,441**	**2,763,640**	**713,987**	**972,056**	**1,594,534**	**1,185,126**	**930,221**	**1,136,621**	**978,725**	**12,800,352**
10.1.1	**Organisational**	2111	**Capital Replacement Fund**	Carry Forward	641,054									641,054
				Budget	3,386,508	3,386,508	3,386,508	4,411,508	4,411,508	4,411,508	4,411,508	4,411,508	4,411,508	36,628,570
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Capital Replacement Fund Total		***4,027,562***	***3,386,508***	***3,386,508***	***4,411,508***	***4,411,508***	***4,411,508***	***4,411,508***	***4,411,508***	***4,411,508***	***37,269,624***
		2112	**Information Management**	Carry Forward	1,967,453									1,967,453
				Budget	4,215,747	854,166	116,818	358,797	-	-	128,264	358,797	-	6,032,589
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Information Management Total		***6,183,200***	***854,166***	***116,818***	***358,797***	***-***	***-***	***128,264***	***358,797***	***-***	***8,000,042***
		2114	**ICT Infrastructure**	Carry Forward	-									-
				Budget	822,104	3,008,003	3,026,880	733,527	733,530	2,168,121	2,168,124	733,536	733,536	14,127,361
				Plan Change	700,000	(800,000)	(700,000)	-	-	-	-	-	-	(800,000)
				Budget Changes	-									-
			ICT Infrastructure Total		***1,522,104***	***2,208,003***	***2,326,880***	***733,527***	***733,530***	***2,168,121***	***2,168,124***	***733,536***	***733,536***	***13,327,361***
		2116	**Strategic Initiatives**	Carry Forward	50,000									50,000
				Budget	51,250	-	-	-	-	-	-	-	-	51,250
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Strategic Initiatives Total		***101,250***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***101,250***
		2118	**Health & Safety - Legislation Compliance**	Carry Forward	382,277									382,277
				Budget	359,546	359,546	359,546	359,546	359,546	359,546	359,546	359,546	359,546	3,235,918
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Health & Safety - Legislation Compliance Total		***741,824***	***359,546***	***359,546***	***359,546***	***359,546***	***359,546***	***359,546***	***359,546***	***359,546***	***3,618,195***

Strategy Code	Strategy Description	Project	Project Description	Ledger	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	9 Year Total
		2119	**Civic Property renewals**	Carry Forward	1,100,000									1,100,000
				Budget	587,288	590,024	590,609	591,204	546,055	546,673	546,673	546,673	546,673	5,091,872
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Civic Property renewals Total		***1,687,288***	***590,024***	***590,609***	***591,204***	***546,055***	***546,673***	***546,673***	***546,673***	***546,673***	***6,191,872***
		2120	**Commercial Properties renewals**	Carry Forward	2,175,000									2,175,000
				Budget	7,157,671	429,868	713,734	568,041	580,561	2,093,086	593,086	593,086	593,056	13,322,189
				Plan Change	(6,000,000)	6,000,000	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Commercial Properties renewals Total		***3,332,671***	***6,429,868***	***713,734***	***568,041***	***580,561***	***2,093,086***	***593,086***	***593,086***	***593,056***	***15,497,189***
		2121	**Community & Childcare Facility renewals**	Carry Forward	178,821									178,821
				Budget	1,991,352	1,042,332	256,371	608,340	500,540	510,844	510,844	510,844	510,844	6,442,313
				Plan Change	(500,000)	250,000	250,000	-	-	-	-	-	-	0
				Budget Changes	-									-
			Community & Childcare Facility renewals Total		***1,670,173***	***1,292,332***	***506,371***	***608,340***	***500,540***	***510,844***	***510,844***	***510,844***	***510,844***	***6,621,134***
		2126	**Business Unit Support**	Carry Forward	-									-
				Budget	4,100,000	4,100,000	477,747	477,747	477,747	477,747	477,747	477,747	477,747	11,544,231
				Plan Change	-	-	-	-	-	-	-	-	-	-
				Budget Changes	-									-
			Business Unit Support Total		***4,100,000***	***4,100,000***	***477,747***	***477,747***	***477,747***	***477,747***	***477,747***	***477,747***	***477,747***	***11,544,231***
		2128	**Civic Campus Resilience and Improvements**	Carry Forward	2,386,284	2,282,434								4,668,719
				Budget	16,920,311	55,729,358	70,983,253	61,757,078	2,878,691	-	-	-	-	208,268,691
				Plan Change	21,261,967	13,537,685	8,929,764	(41,100,724)	(2,628,691)	-	-	-	-	0
				Budget Changes	-									-
			Civic Campus Resilience and Improvements Total		***40,568,562***	***71,549,477***	***79,913,017***	***20,656,354***	***250,000***	***-***	***-***	***-***	***-***	***212,937,409***
		2133	**Quarry Renewals & Upgrades**	Carry Forward	-									-
				Budget	10,627,822	1,851,057	60,714	60,714	60,714	60,714	60,714	60,714	60,714	12,903,875
				Plan Change	(8,371,032)	71,032	2,000,000	3,000,000	3,000,000	-	-	-	-	(300,000)
				Budget Changes	-									-
			Quarry Renewals & Upgrades Total		***2,256,790***	***1,922,089***	***2,060,714***	***3,060,714***	***3,060,714***	***60,714***	***60,714***	***60,714***	***60,714***	***12,603,875***
		2140	**Security**	Carry Forward	-									-
				Budget	642,060	656,820	671,580	687,570	703,560	719,550	719,550	719,550	719,550	6,239,790
				Plan Change	0	-	-	-	-	-	-	-	-	0
				Budget Changes	-									-
			Security Total		***642,060***	***656,820***	***671,580***	***687,570***	***703,560***	***719,550***	***719,550***	***719,550***	***719,550***	***6,239,790***
10.1.1 Total					**66,833,484**	**93,348,835**	**91,123,524**	**32,513,348**	**11,623,761**	**11,347,789**	**9,976,057**	**8,772,001**	**8,413,175**	**333,951,973**
Revised Plan					**373,673,268**	**436,054,989**	**407,425,787**	**358,870,618**	**303,855,131**	**264,003,764**	**238,445,372**	**222,413,216**	**221,822,839**	**2,826,564,985**

VERY HIGH CRITICAL ASSETS REPORT

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee articulates the conclusions of the condition assessment of the city's Very High Critical Assets (VHCA).

Strategic alignment with community wellbeing outcomes and priority areas

	Aligns with the following strategies and priority areas: ☐ Sustainable, natural eco city ☐ People friendly, compact, safe and accessible capital city ☐ Innovative, inclusive and creative city ☒ Dynamic and sustainable economy
Strategic alignment with priority objective areas from Long-term Plan 2021–2031	☒ Functioning, resilient and reliable three waters infrastructure ☐ Affordable, resilient and safe place to live ☐ Safe, resilient and reliable core transport infrastructure network ☐ Fit-for-purpose community, creative and cultural spaces ☐ Accelerating zero-carbon and waste-free transition ☐ Strong partnerships with mana whenua
Relevant Previous decisions	Not Applicable

Financial considerations

☒ Nil	☐ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

2. The Very High Critical Assets (VHCA) condition assessment programme was funded from the Government's Three Waters Stimulus Funding Programme ($3.4M) and dirctlt from Wellington City Council ($1.7M), forming a wider programe to assess the condition of selected VHCA assets.

Risk

☒ Low	☐ Medium	☐ High	☐ Extreme

3. The presentation is a summary of the VHCA programme and results that are being fed into the next 30 year infrastructure investment strategy. While there is now a much better understanding of the condition of these assets, and the risk of unplanned failure has lessened, it is not possible to fully eliminate risk.

4. The VHCA progrmme represents approximately 8% of the pipes, 30% of the pumpstations, and all of the city's water supply reservoirs. The Highly Critical Assets (HCA) programme represents 35% - 40% of the pipe asset base, and this work is continuing.

Authors	Chris Mathews, Manager Waste, Water and Resilience Rebecca Adams, Chief Advisor to CIO
Authoriser	Siobhan Procter, Chief Infrastructure Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.

Whakarāpopoto | Executive Summary

5. Wellington Water has completed an exercise to identify and assess the condition of the Wellington City Council's Very High Critical Assets (VHCA).
6. Assets with a VHCA rating have significant consequences of service failure that would be unacceptable to large numbers of people or high levels of contamination in Wellington's harbour and waterways.
7. The purpose of the Very High Criticality Asset (VHCA) condition assessment project was to identify VHCA assets and assess the condition of selected wastewater, stormwater and drinking pipes, pumpstations, reservoirs, and water treatment plants throughout the greater Wellington region.
8. The VHCA programme has significantly advanced knowledge of Wellington City's assets and enables an evidence-based approach to asset maintenance and future programmes of asset renewals.
9. Wellington Water are presenting on the VHCA programme, results and how this evidence-based approach feeds into the 10 year and 30-year infrastructure investment programmes.

Takenga mai | Background

10. Understanding which assets have an elevated criticality and are in poorest condition allows Wellington Water to advise councils where resources should be prioritised so that overall risk of service interruption is managed to an acceptable level.
11. Between December 2019 and January 2020, multiple incidents occurred in Very High criticality assets that had significant customer impact.
12. In mid-2020, the government announced a funding package to provide immediate post-COVID-19 stimulus to local authorities to, in part, facilitate the maintenance and improvement of three waters infrastructure.
13. With a combination of Government Three Waters Stimulus Funding ($3.4M) and Wellington City Council funding ($1.7M), Wellington Water completed a wide-ranging condition assessment programme.
14. The work programme was based on a criticality framework which identified highly critical assets and prioritise asset condition assessments. The framework was based around three criteria: safety, environmental factors, and network resilience. This framework was also used to measure the likely impact on delivery of Wellington Water's service goals.
15. Asset condition was graded on a scale from 1-5, with a score of 5 denoting very poor condition and in need of urgent investigation, replacement and/or maintenance.
16. The condition assessment was wide ranging and covered the following VHCA assets for Wellington City (WCC):
    a. 189km (approx 8%) of total WCC pipes
    b. 49 (or 100%) of the above-ground water supply reservoirs (buried reservoirs will be reported on separately)

c. 35 (or 30%) of the WCC pump stations

d. A targeted selection of 35 wastewater treatment plant assets

Kōrerorero | Discussion

17. Wellington Water is presenting to the committee on the VHCA programme, the results and next steps.

18. Discussion will be provided for in the kōrero with Welington Water's technical leads, presenting the papers to the Environment and Infrastructure Committee.

Ngā mahinga e whai ake nei | Next actions

19. Assets identified as in poor (Condition 4) or very-poor condition (Condition 5) have been earmarked for follow up inspections, immediate maintenance, repair, or renewal as appropriate.

20. Assets in good to moderate condition (Conditions 1 to 3) are programmed for future assessments and in some cases are now included in the 10 year and 30 year infrastructure investment plans.

Attachments

Results of the Condition Assessment Programme for the Very High Criticality Assets (VHCA)

For Wellington City Council

Presented by Wellington Water

8 December 2022

Background

- Mayoral Taskforce: Three Waters, confirmed the need for condition assessment of critical assets
- Historically low level of funding for asset condition assessment
- Historical and current challenges with the quality of the asset register
- The Government Stimulus programme enabled a comprehensive condition assessment programme to be kick started

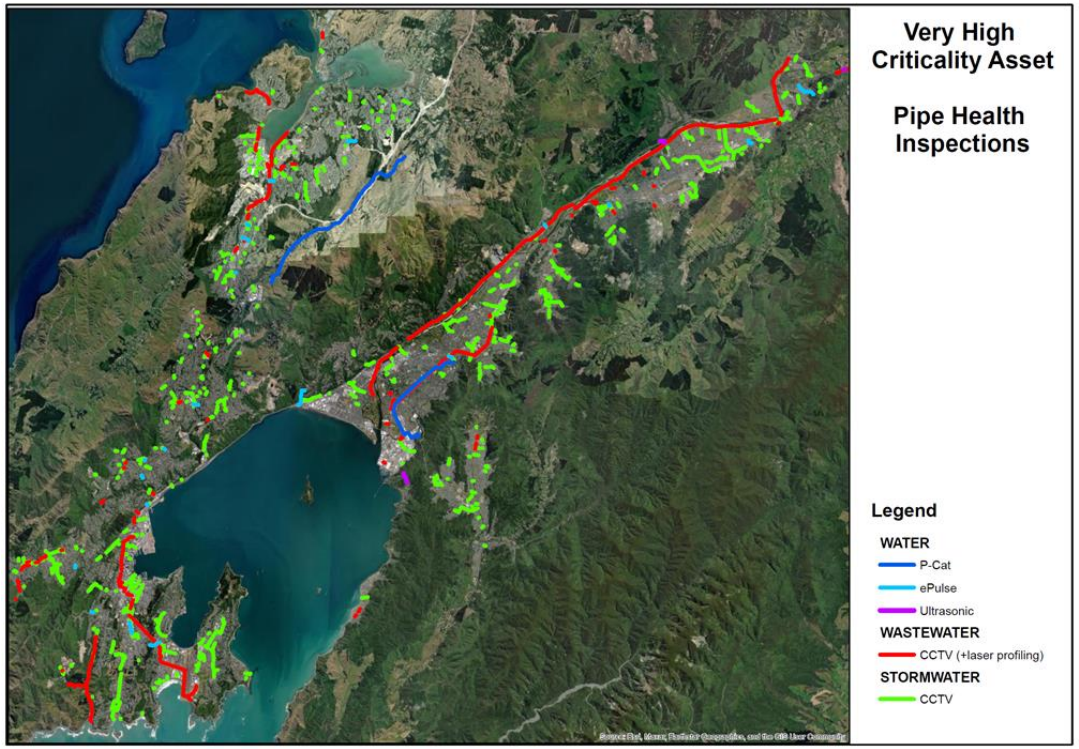
VHCA Programme and key outcomes

- It has identified high risk assets and will inform future maintenance, urgent repair, or replacement work, providing more accurate cost forecasts for asset planning purposes
- The new and emerging technologies used, and lessons learnt from investigating CBD pipes - expensive to assess - will benefit WCC and the wider industry in the future
- The study of reservoirs is the first of its type in NZ and generated interest from other councils nationwide, who are considering adopting this approach
- WWL will be able to plan long-term investment with more assurance

Figure 4b. Failed pipe sample shortly after recovery showing blowout and cracking. The yellow marks indicate the approximate position of the main cracks.

VHCA programme

- To identify and assess the condition of selected wastewater, stormwater and drinking pipes, pumpstations, reservoirs, and water treatment plants throughout the greater Wellington region
- These assets were selected based on the likely impacts their failure would have on the wider community and the environment



Our approach

- A criticality framework was adopted based around the three outcomes of:
  - public health & safety
  - environmental
  - economic resilience
- Criticality measures the importance of an assets ability to the delivery of the above outcomes
- Condition assessments were completed for the most critical assets (Very Highly Critical Assets)
- Asset condition was graded 1-5
- Assessment method varied for each type of asset

Condition grade scoring

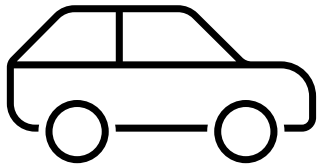
Condition Grade	Description	Definition (simplified)
1	Very good	As new
2	Good	Some defects – minor impact
3	Moderate	Some defects – some impact of performance
4	Poor	Significant defect – if they worsen could lead to failure
5	Very poor	Failure is imminent or has occurred

Assessment Method

- Reservoirs – visual
- Pump stations – visual (caveats for complex assets)
- Pipes – mix of desktop and physical inspection
- WWTP – detailed/complex testing

Why condition assessment is important - 1

Car analogy



Asset chosen to meet level of service requirement

Warrant of Fitness (WoF) = condition assessment

New

Assess/WoF

WoF

WoF

WoF

Repairs

Renew asset

VHCA and HCA

VHCA/HCA condition boundary - below this and it fails to meet level of service requirements

Breakdown but fixable

VLCA and LCA

Poorer condition = Higher likelihood of failure

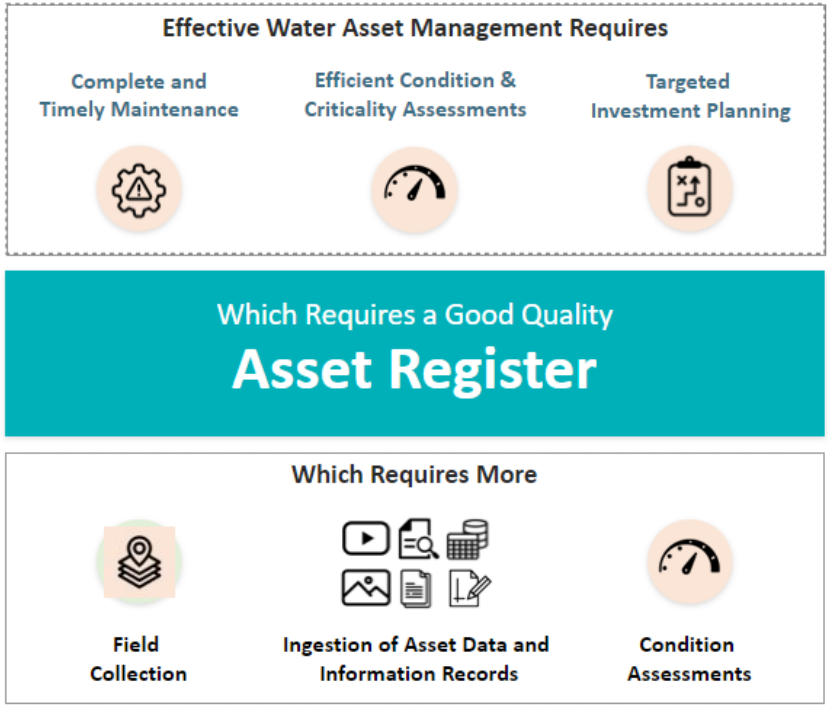
Uneconomic to repair

Asset Condition

Time

Why condition assessment is important - 2

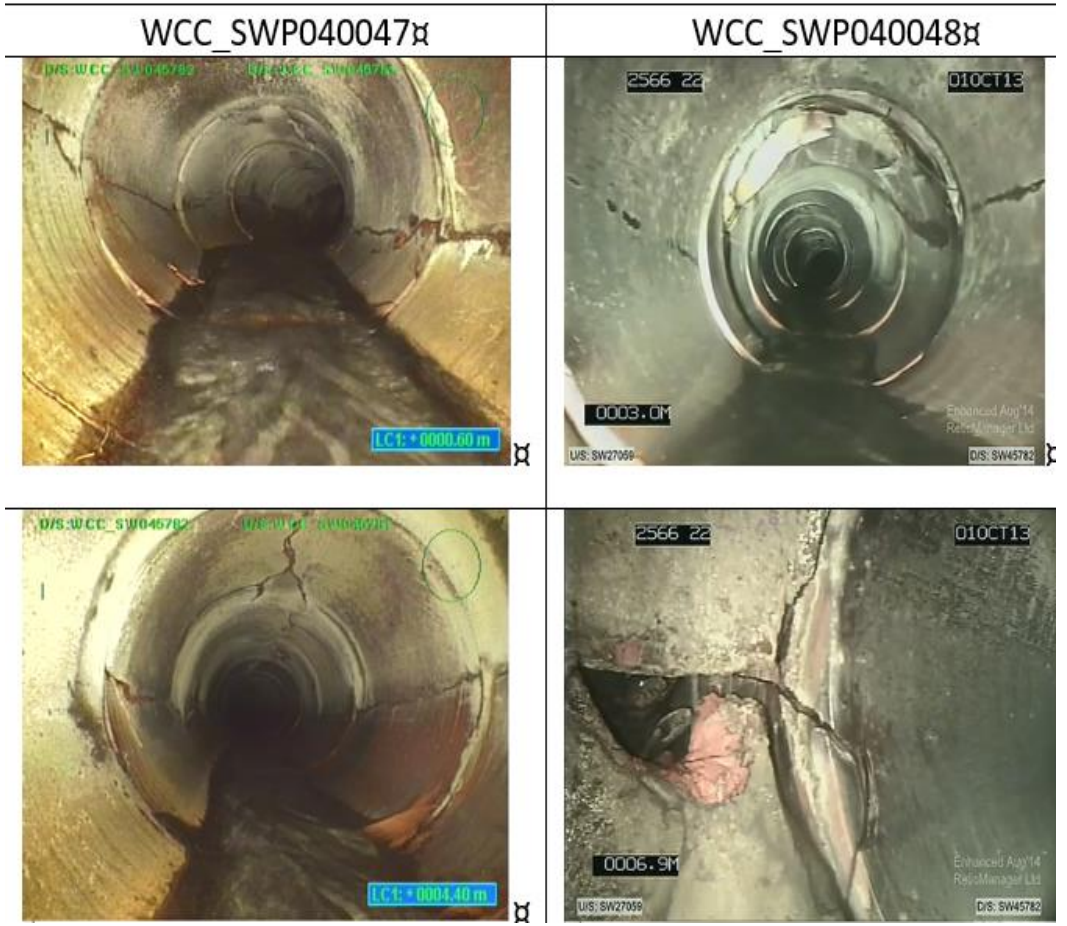
- Assesses the likelihood of failure
- Condition assessment:
  - Assesses fitness to meet required level of service
  - Improves efficiency
  - Identifying areas for repair or upgrading
  - Extends the service life
  - Moves away from using age as the only predictor of failure
  - Evidence to defer and/or accelerate renewals
  - Improves the asset register
  - Safeguards reliability and safety
  - Reduces downtime
  - Minimises expensive emergency repairs
- Criticality and condition = Risk to service delivery



What we did

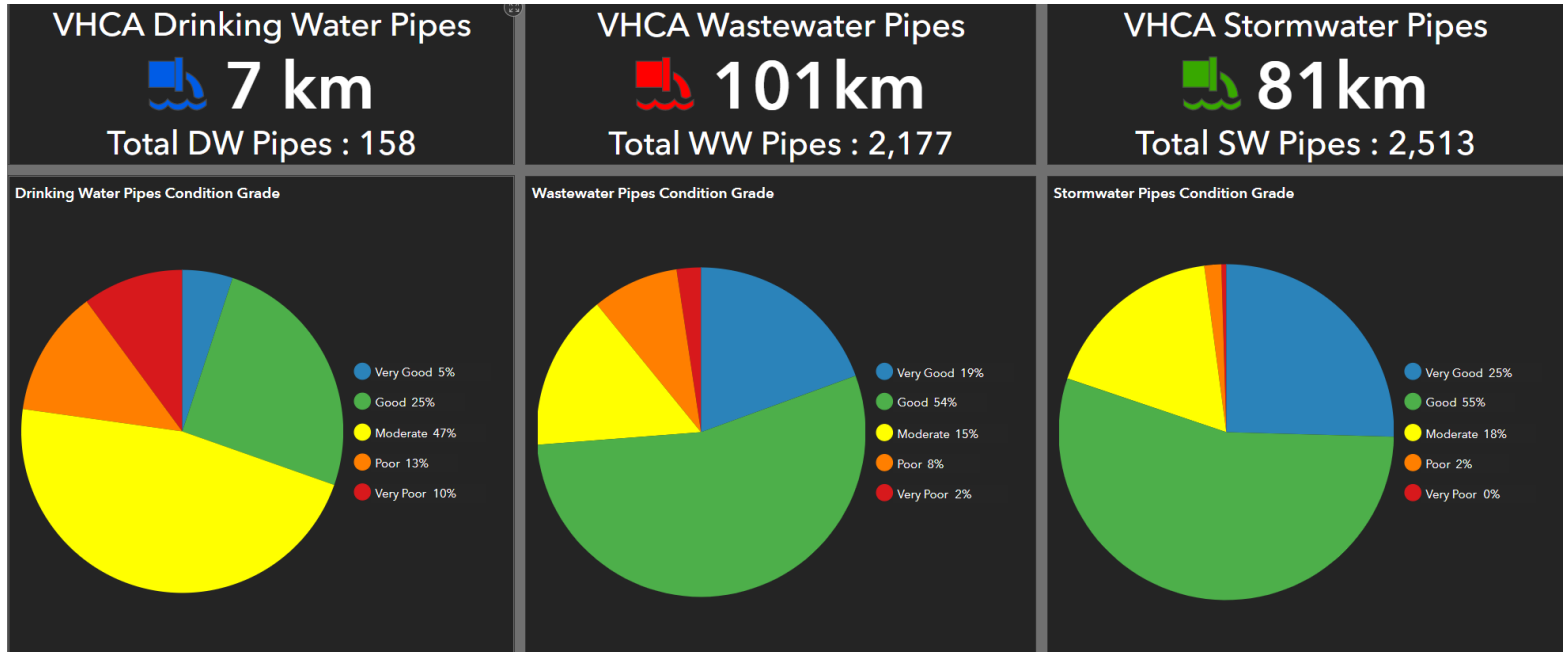
WCC overview

- Largest ever condition assessment program undertaken
- 189km (about 8%) of total WCC pipes
- 48 (or 100%) of the above ground reservoirs (buried reservoirs will be reported on separately)
- 35 (or 30%) of the WCC pump stations
- A targeted selection of 35 wastewater treatment plant assets



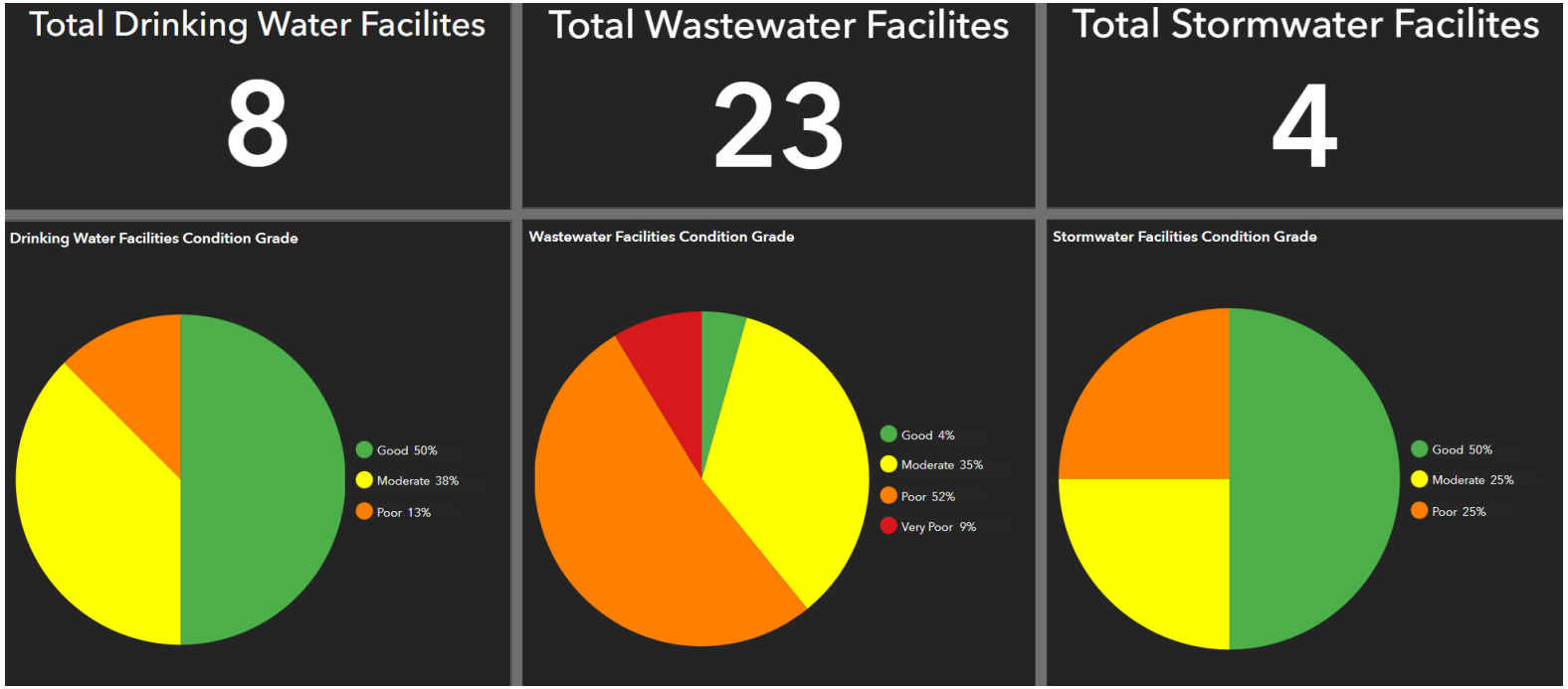
What we found - Pipes

- Good alignment between desktop and physical assessments
- Good condition pipes can have renewal deferred
- About 3-4% of the pipes in a very poor condition
- Design briefs for assets that need renewing are in development
- Critical CBD waste water pipes excluded from assessment programme but renewal already underway



What we found - Pumpstations

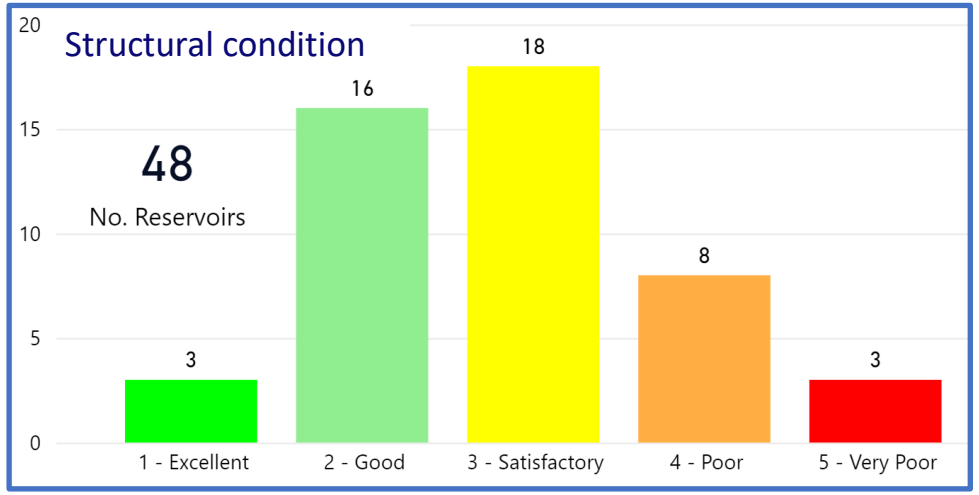
- Visual inspection process used
- About 50% of the pumpstations were rated* as being in poor or very poor condition but further assessment is needed to identify specific risk areas
- Work plan to rectify faults is underway
- Pump testing to be reinitiated

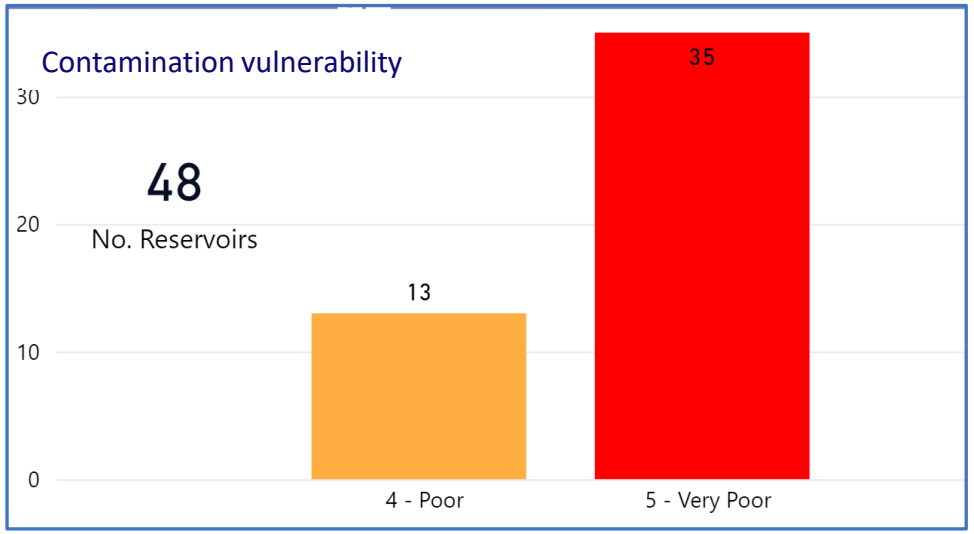


* The method for assessing pump stations means that the rating assigned reflects the part of the asset that is in the poorest condition.

What we found - Reservoirs

- Relatively few structural issues identified
- Relatively minor interventions recommended to address the identified contamination risks
- Work required is generally straightforward and low cost
- Actions underway include:
  - Recoated 7 roofs
  - 3 emptied and cleaned
  - Safety barriers installed



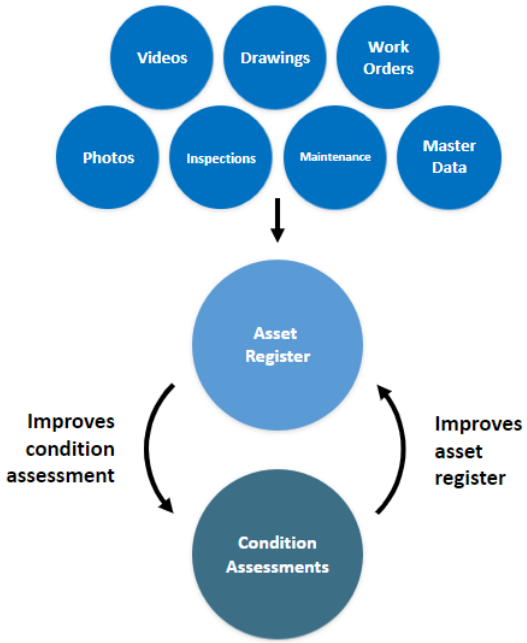


Summary

- We better understand the condition of WCC assets, including having more robust evidence for renewals planning - not just age based
- There is a strong correlation between desktop assessment of pipe condition and physical inspections, leading to a more cost effective and targeted condition assessment programme
- Some assets require more sophisticated assessment than achieved in VHCA programme
- Ongoing condition assessment is important in prioritising the pipe renewals programme given the backlog that exists
- A good asset register information supports condition assessment activities and vice versa
- Further funding of condition assessment activities could be considered

WCC Pipe renewal (age based)	Length
Age based backlog	406km (15%)
From 2024-2053	830km (30%)
After 2053	1510km

Renewal Rate	Length (km/year)
WCC required rate (for 30 yrs)	40
Regionally achieved rate (2021)	15
WCC achieved rate (2021)	5



End & Questions?

Figure 4b. Failed pipe sample shortly after recovery showing blowout and cracking. The yellow marks indicate the approximate position of the main cracks.

WW Cast Iron Rising Main - 2017

Pipe work in good state

Missing sealant

Wellington Water

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

VHCA Programme Report

Very High Criticality Asset Condition Assessment

Wellington City Council

Our water, our future.

Document Details

Version control

Version	Date	Author	Changes
1.0	November 2022	John Scott	Final
0.5	October 2022	John Scott	Some minor edits
0.4	29 September 2022	John Scott	Reviewed by Rob Blakemore – issued as draft for WCC Comment
0.3	September 2022	John Scott/Vicki Wogan	Revisions including technical editing
0.2	August/September 2022	John Scott	Second draft for internal review.
0.1	August 2022	John Scott	Initial draft for internal review.

Reviewed by

Name	Rob Blakemore, Chief Advisor Service Planning
Signature	
Date	29 November 2022

Document approved by

Name	Julie Alexander – Group Manager Network Strategy & Planning
Signature	
Date	29 November 2022

Table of Contents

Wellington City VHCA Programme Executive Summary

The executive summary provides an overview of the Very High Criticality assessment programme completed between June 2020 and July 2022. More detail is contained in the full report that follows.

Background

Wellington Water inherited condition data from its asset owners that was of variable quality. Data was held on multiple systems, in different formats and utilising variable metadata standards.

Up until 2020 the total regional operational budgets for condition assessment was approximately $500,000 per year.

Asset management plans showed a backlog and imminent bow wave for pipe renewals based on assumed age. There was an imperative need to validate these pipe asset lives – particularly for very high criticality pipe assets – to manage the risk of high consequence asset failure.

Between December 2019 and January 2020, multiple incidents occurred in Very High Criticality Assets that had significant customer impact. As a result of these events operational funding for condition assessment was increased but still insufficient to make a material change to understanding asset condition on a wide scale.

In mid-2020, the government announced a funding package to provide immediate post-COVID-19 stimulus to local authorities to, in part, facilitate the maintenance and improvement of three waters infrastructure.

Approximately $10M of the $47.3M stimulus grant was allocated to the (VHCA) condition assessment programme.

Project Purpose

The purpose of the Very High Criticality Asset (VHCA) condition assessment project was to identify VHCA assets and assess the condition of selected wastewater, stormwater and drinking pipes, pumpstations, reservoirs, and water treatment plants throughout the greater Wellington region.

These assets were selected based on the likely impacts their failure would have on the wider community and the environment. The premise is, if failure were to occur, there would be 'unacceptable consequences to service delivery' and that prudent asset management underpinned by long-term investment should be a priority.

While there is always risk of assets failing unexpectedly, the VHCA programme has significantly improved our understanding of the condition of assets assessed. It has identified high risk assets and will inform future maintenance, urgent repair, or replacement work, providing more accurate cost forecasts for asset planning purposes.

Knowing in advance assets are in poor condition and prone to failure is particularly beneficial and advantageous in terms of minimising customer impacts.

What we did

Wellington Water adopted a criticality framework to identify highly critical assets and prioritise asset condition assessments. It was based around three criteria: safety, environmental factors, and network resilience. This framework was also adopted to measure the likely impact on delivery of Wellington Water's service goals.

Asset condition was graded on a scale from 1-5. Those assets at grade 1 would be typically appraised as being in *very good condition*, and not requiring further action in the immediate future. Otherwise,

a score of 5 equated to *very poor condition* and in need of urgent investigation, replacement and/or maintenance.

The criticality assessment considered the worst possible failure mode for each asset and considered factors such as redundancy/contingency, severity of impact and time to restore service.

During December 2020 and July 2022, Wellington Water collected data on asset condition using a variety of equipment, techniques, and tools depending on the asset type. This was undertaken in two ways:

- For pipes, a desktop assessment was first applied, on when the asset was installed, the material, whether it's pressurised and traced the asset's health history where possible
- Priorities were then set for physical inspections using CCTV cameras, laser profiling, drones, and other visual technology
- For other asset types, a visual assessment was adopted working to established guidelines.

Overall, by July 2022 across the greater Wellington region, Wellington Water completed assessments and/or inspections on:

- 600 water treatment plant component assets - which is about 6% of these overall assets
- 120 wastewater treatment plant component assets were selected for detailed investigation
- 139 reservoirs - once the remaining two are complete this accounts for 100% of the reservoirs
- 84 pump stations - about 25% of all the pump stations
- 470 km of the 'three waters' pipes - which is about 8% of all the pipes (excluding laterals).

Much was achieved during the project, but it was impacted by Covid 19 in terms of available expertise and resources, and other logistical challenges.

What we found

The VHCA programme has reconfirmed that some critical assets are both at or nearing the end of their service life. The more complex assets associated with water treatment plants and pumpstations, require further investigative work to confirm their overall status.

Pipes

The pipe data collected and analysed is considered 'nationally significant' and will greatly inform future work planning both locally and nationally. This data will be assimilated into the asset management database and be published on the Wellington Water website.

The inspection and testing of pressure pipes, while small in sample to gravity pipes, is understood to be the largest undertaken in Australasia. The new and emerging technologies used, and lessons learnt, will benefit the wider industry as pressure pipes are very difficult and expensive to assess.

There was a strong correlation between desktop studies and physical inspections following the completion of VHCA investigations. This favourable outcome means the approach used for desktop analysis can also be applied to prioritise assets for inspection.

Approximately 300 km of pipes were assessed through peer reviewed desktop studies. The remaining 170km of pipes were assessed by field inspections. There were four different pipe types analysed during the VHCA inspections.

Gravity wastewater pipes confirmed as being in *very poor condition* are already embedded in the capital works programme for repair, replacement, or upgrade.

The analysis on the state of pressurised water and wastewater pipes was significantly impacted by Covid-19 and is incomplete. Further physical investigations of these assets will be programmed to enable greater understanding on risks and potential failure. This does have implications for

addressing condition 4 or 5 pipes for renewal other than what is in the current capital works programme.

Reservoirs

This is the first study of its type on reservoirs in New Zealand and has generated interest from other councils nationwide, who are considering adopting this approach. The remedial work required to fix reservoirs above ground, is generally straightforward and in many cases inexpensive, although the large number of reservoirs means the aggregated remediation costs for all councils is likely to be substantive.

Older reservoirs tend to score poorly as they were designed to different (lower) standards and have deteriorated with age.

The reservoirs were scored on the following criteria:

- Structural condition (largely visually based but with some testing of the roofs)
- Health and Safety (visual assessment)
- Contamination risks (visual)

It is important to clarify that reservoirs even with a rating of 4-5 had generally minor defects and can be remedied through minor repairs, such as sealant repairs or in fewer instances, the fixing of reservoir roofs.

The works required has been costed, with the expectation it will be remedied through current capital works programme or maintenance budgets.

Pumpstations

Wellington Water successfully completed visual inspections on 100 percent of the pumpstations identified in the VHCA programme. The methodology relied heavily on the Water New Zealand Visual Assessment Guide for above ground assets.

While visual assessment is standard approach for pumpstations, these types of inspections have limitations regarding complex rotary and electrical assets.

Pumpstations were scored on the following aspects:

- Operational
- Health and safety
- Overall condition

Given the complexity and multiple functions pumpstations operate under, a high number returned a *poor or very poor* grade typically based on condition of an individual component - this scoring may overstate risks and distort the overall performance of the pumpstation - but does provide a useful guide to where effort needs to be prioritised.

A poor score for a pump or switchboard would normally mean more detailed investigations are required to confirm the level of remediation of these assets.

There is approximately $20 million dollars earmarked for renewals of pumpstations over the next two years. A capital works programme is in development to address many of the poor condition assets.

Wastewater Treatment Plants

There are four metropolitan wastewater treatment plants, at Moa Point, Western, Seaview and Porirua. The South Wairarapa wastewater treatment plants were not part of the VHCA programme as they are subject to current resource consent and likely eventual upgrade.

Wastewater treatment plants were a late addition to the VHCA programme. Wellington Water's treatment plant operator Veolia had previously undertaken visual assessments of assets as part of their contractual obligations, though this method for condition scoring was not suitable for all assets and VHCA scope.

Following inclusion into the VHCA programme, and workshops with Veolia, 120 assets were identified for closer analysis to provide a more robust assessment of asset condition.

Currently, there is only one condition 5 asset that has been identified at the Seaview Wastewater Treatment Plant. Veolia has recently completed an asset management report which will determine future maintenance and renewal programmes. The expectation is many of these VHCA issues can be resolved by renewal projects in the FY22/23 and FY23/24 Capital Works Programme.

Wellington City Council VHCA overview

The percentage of each assets identified as VHCA in the Wellington City region is summarised below:

- 189km which is about 8% of total pipes
- 65 or 100% of the reservoirs
- 35 or 28% of the pump stations
- 60 wastewater treatment plant assets were selected for detailed investigation.

Pipe Network

About 189km of pipes have had a condition assessment grade and a confidence grade assigned to them. The programme physically investigated approximately 80km of Wellington City Council pipes. A further 10km were added to the programme following prior inspections.

The VHCA programme has found about 4% of the pipe network is in very poor condition and these will be put into the capital works programme.

This work has validated the need for ongoing condition assessment.

Biggest Risks

Wellington Airport, the Moa Point Interceptor and Eastern Interceptor (gravity wastewater)

Sections of the Eastern Trunk Wastewater Main near the Wellington Airport/Moa Point are identified as being in *very poor* condition. This work has been accelerated into the Capital Works Programme and passed to the Major Projects Team for further investigation and remedial action.

Wellington CBD (CI) pipes (wastewater pipes)

All cast iron (CI) rising main pipes in Wellington CBD, (except the Waring Taylor Street CBD rising main) were taken out of the inspection scope for the VHCA programme being at the end of their serviceable lives. Many these CI pipes assets are part of a five-year renewal programme starting with the Taranaki Pumpstation upgrade project which is underway.

Ngauranga Gorge (gravity stormwater pipes)

The condition of many gravity pipes in the Ngauranga Gorge are reported to be in *good to very good condition.* The one pipe identified as being in *very poor condition* has already been actioned into the stormwater pipe renewal programme.

Other VHCA Findings

The VHCA programme has identified at least 13 defective pipes in the Wellington City Council zone which are being prioritised for remedial work. These data have been collated into a risk register and action plan.

Wastewater Treatment Plants

The VHCA programme has identified a number of assets that need refurbishment or renewal and these are being incorporated into the asset management plan currently under development by Veolia (the plant operator). The planning includes increased budget allowances for asset condition assessment and monitoring particularly for assets experiencing high wear rates.

Reservoirs

Wellington City Council has 48 above ground or partially buried reservoirs of which studies have been completed. While many of these reservoirs scored poorly, remedial work will significantly improve the condition score and this work is generally straightforward and low cost.

The expectation is this work can be undertaken through current capital works programme budgets or maintenance budgets. VHCA investigations into 17 buried reservoirs will be complete and reported on by early December.

Pumpstations

The Wellington City Council pumpstations are assessed to be in a *moderate to poor condition*. Those identified as in *a poor or very poor* condition generally have only one or two items that require remediation and these will be targeted first for improvement.

There is a significant CBD wastewater pumpstation upgrade underway, and this will address a number of the identified VHCA issues. There is also about $4 million dollars in budget allocated for WCC pumpstation renewals in the FY22/23 and 23/24 capital delivery plan.

Next steps

- Gravity wastewater pipes in *very poor condition* have been appointed to various stages of the Capital Works Programme.
- Reservoir remedial works are scoped and ready to be implemented. Wellington Water has recently undertaken repair work to seven reservoirs in the Wellington City Council zone.
- Pumpstations identified with only one *'poor' or 'very poor'* component to be programmed for remedial work.
- Wastewater treatment plants are subject to an asset management plan update which will outline future maintenance and renewal programme requirements.
- Prepare investment cases for *very poor condition* stormwater pipes not currently in the Capital Works Programme.
- Investigate other VHCA assets not inspected as part of the stimulus funded programme.
- Identify Highly Criticality Assets (HCA) and develop a condition assessment programme for these assets.
- All VHCA data to be assimilated into a central database and be published.
- Provide the Department of Internal Affairs (DIA) the VHCA database for integration into the Entity C Asset Management Plans - assigning priorities and urgency.

Other Recommendations

- Based on current VHCA findings we estimate about $1.5 million dollars (excluding contingency) is required to resolve vulnerability issues with Wellington City Council's 48 above ground reservoirs. This is expected to be addressed within the existing capital works funding envelope.
- For those reservoirs with a condition score of 5, it is strongly recommended this work is addressed within the next two years or sooner.

- It is recommended operational condition assessment and maintenance budgets are increased to enable the balance of the highest risk and priority VHCA and highly critical assets (predominately pipes) to be assessed.
- Further investment is allocated to improving the asset data records and management so as to facilitate ongoing asset condition assessment.
- Identify where assessment of pumpstations and wastewater treatment plant assets would benefit from specialised assessment techniques beyond visual assessment.

1. Introduction

1.1. About this report

This report summarises the background, implementation and findings of Very High Critical Asset Condition Assessment programme (subsequently termed the VHCA programme) conducted by Wellington Water Ltd for three waters assets across the Wellington region, between end 2020 until 30 June 2022.

This report has been prepared for Wellington City Council (WCC) to provide assurance about the VHCA programme. It presents findings for WCC assets in the context of overall results for the region.

A similar report has been prepared for each shareholder council.

This report comments on:

a. actions undertaken to address some of the issues identified;
b. the insights from the programme
c. future actions planned what are the next steps.

1.2. Background and origins of VHCA programme

This section describes the background to, and rationale for, the Very High Critical Asset (VHCA) work programme.

1.3. Historical context

The condition assessment data available to Wellington Water since inception in 2014 has been patchy and inconsistent. WWL inherited data that had been obtained in an ad hoc manner e.g. often in response to an operational problem or reactive investigation. Data was held on multiple systems, in different formats and utilizing variable metadata standards.

Our first Strategic Asset Management Plan (2018). identified the need to develop a consistent regional approach to asset condition assessment and data collection to support both investment planning and intervention activities.

Immediately prior to the start of the VHCA programme, the total regional operational budget for condition assessment was approximately $500,000 per year. Given the budget constraint, time and effort was devoted to ensuring a consistent approach to link any available condition data to individual asset attributes and intervention data. However there remains a lot of work to do to ensure all condition assessment outputs are collated and connected to the asset register.

Consequently, renewals planning has been based on the limited data available and assumed asset life based on experience elsewhere.

Nevertheless, it was clear that planning confidence would remain low unless there was an injection of operational funding for pro-active condition assessment.

In addition, asset management plans showed a backlog and imminent bow wave for pipe renewals on the basis of assumed age. There was an imperative need to validate these pipe asset lives – particularly for high and very high criticality pipe assets.

1.4. Recent context

Between December 2019 and January 2020, a series of incidents occurred in Very High criticality assets under Wellington Water's management, including:

- collapse of a wastewater adit on the corner of Dixon St and Willis St in Wellington, which caused significant disruption within the CBD.

- a significant leak within the Mt Albert Tunnel in Wellington, which is responsible for transport of sludge between Moa Pt WWTP and the Landfill. This resulted in months of trucking sludge between Moa Pt and the landfill while the pipeline was repaired.

These incidents confirmed the need for a better understanding of the condition of the region's critical assets.

1.5. WCC Task Force

In response to these failures the Mayor of Wellington initiated a Mayoral Task Force in February 2020, which recognized an urgent need to understand more about critical water assets. The Task Force report released in late 2020 made a number of recommendations including:

1. With urgency, task and fund WWL to implement a plan for the inspection of critical assets across the three waters network within three years, in order to inform future investments.
2. Task and fund WWL to prioritise increased renewals investment on those critical assets identified as needing maintenance and repair during the condition assessment programme.
3. Task and fund WWL to continue to improve its asset maintenance systems and processes, and asset data collection and management.
4. Substantially increase the level of funding in the WCC 2021/31 LTP for capital funding for renewals (possibly by ringfencing funds collected for water asset depreciation), operational funding for planned maintenance, and operational funding for reactive maintenance.

Source: Extract from Task Force Report (late 2020).

As a result of these recommendations Wellington City increased operational funding for asset condition assessment by $500,000. In addition, Wellington Water had already commenced a programme of asset condition assessment in mid-2020, initially scoping the work and appointing consultants, and starting significant condition assessment work in late 2020.

1.6. Stimulus Funding Package

On 8 July 2020, the government announced a funding package of $761 million to provide immediate post-COVID-19 stimulus to local authorities to:

- maintain and improve three waters infrastructure
- support reform of local government water services delivery arrangements
- support operation of the new national water services regulatory agency, Taumata Arowai.

In October 2020 councils and DIA signed delivery plans agreeing to allocation of $47.3m in Three Waters Stimulus Funding between the Wellington region's councils, and across nine workstreams.

1.7. VHCA programme origins

Approximately $10M of the $47.3M stimulus grant was allocated to the VHCA condition assessment programme. Additionally, some opex funding earmarked for condition assessment was also utilised in order to maximise the opportunity and cover as many pipe assets as possible.

As a result of this funding injection, a project team was assembled, and work progressed to both identify VHCA assets and score their condition.

Stimulus funding began being drawn down in November 2020 and terminated on 30 June 2022.

1.8. Recent developments

Other significant failures have occurred across the region concurrent with the VHCA programme and these have validated the need for proactive condition assessment of critical assets. These have included:

a. significant pipe failures related to poor pipe condition. e.g., the Paremata wastewater main (July 2020)
b. bursting of the cast iron rising main in Wellington CBD Victoria Street (August 2022)
c. maintenance issues with fluoride equipment leading to the independent enquiry into fluoride treatment, reported on in July 2022.
d. a significant contamination intrusive event at the SWDC Boar Bush reservoir requiring it to be temporarily taken out of service
e. leaks developed in the sole drinking water supply line for Greytown at its Tauherenikau River crossing.

In addition to the above, WWL presented to WCC on the risks associated to the 3 Waters network via the Active Risk Dashboard forum (Quarter 4 2021/2022) this included commentary on the risks associated with critical asset failure.

2. Selection of assets

2.1. Introduction

This section describes how assets were selected for the VHCA programme. The first step is to understand which are the most critical assets, and then to assess the condition of the most critical.

Asset criticality Is a measure of the relative importance of an asset's expected capability to deliver the services expected from it

Wellington Water has developed a tool to help assess criticality – that is the asset criticality framework, refer references. The framework provides a systemic structure and consistent mechanism which enables us to:

a. assign importance to individual water network assets
b. determine the relative risk of significant assets failing in normal everyday service
c. aid decision making for Network Control functions
d. respond operationally by prioritisation reactive work orders and/or incidents associated with the asset.
e. measure the consequence of an asset failing to deliver its expected contribution towards Wellington Water service goals
f. determine maintenance methodology and spares strategy applied to an asset
g. inform investment planning including priority for asset renewals

2.2. Overall selection of assets

The first focus was to identify very high criticality assets (VHCA).

It is important to note that there was a constraint of both time and the allocation of stimulus funding which would have limited the degree of physical inspections that were carried out on the pipes, had not time been a constraint.

These were identified using the Asset Criticality Framework as a reference and using different means and sources. The actual identification used different processes depending on the asset class. These included:

- workshops - utilising expertise from both current and former employees and consultants,
- reviewing maintenance/repair records
- analysing specialist studies including existing condition assessment reports
- reviewing asset drawings, operations and maintenance manuals and programmes.

The process followed is outlined as follows:

- Identify the asset to be assessed
- Determine the worst possible failure mode
- Review the service goals to decide whether the failure mode would cause disruption to the service goal
- Assess each factor against the service goal
- Perform assessment against four criticality ratings to get a total score
- Repeat until all relevant service goals are assessed.

2.3. Asset selection by asset class

Selection criteria varied for each asset class as described below.

2.3.1. Three waters pipes

Predictive analytics and modelling were used to score the impact of the worst possible failure mode of each pipe asset on service outcomes. Those rated above a determined score threshold were selected as very high criticality assets.

Factors influencing pipe selection were:

- Size, which broadly measured the population serviced,
- Location, whether underneath a major road carriageway or near a sensitive receiving environment
- Redundancy, whether service could be maintained through other parts of the network, and
- Repair timeframe, whether there was a method available to restore service within a short timeframe.

2.3.2. Three waters pump stations

In a similar fashion to pipes, the impact of a significant outage of a pump station on the service outcomes was measured. A score threshold was used to select pump stations as very high criticality assets.

Factors influencing pump station selection included:

- Wet well storage for wastewater pump stations, measuring time until overflow and corresponding environmental impacts
- Power output, broadly measuring the population served
- The presence of redundancy within the network or within the pump station itself, whether service could be maintained using other assets in the event of a significant failure
- Presence of sufficient reservoir storage to cover an outage.

2.3.3. Reservoirs

Failure mode analysis of reservoirs concluded that all reservoirs should be included as high criticality assets. The reasoning for this was the potential impact of failure through contamination of any reservoir was above the “very high” threshold as defined by the criticality framework.

2.3.4. Water treatment plant assets

For the water treatment plants, as there was no formalised asset condition assessment system in place, it was decided to do a largely visual based approach to collect condition data on as many assets as possible.

2.3.5. Wastewater treatment plant assets (WWTP)

WWTP VHC assets for the Veolia operated metropolitan plants were a late addition to the VHCA programme and followed a different process because a formal visual based condition assessment of WWTP assets was part of Veolia’s scope of regular contracted services. When stimulus funding was

made available for WWTP condition assessment WWL and Veolia staff jointly assessed how to maximise it and agreed to undertake detailed analysis of assets that could not be assessed visually with a high confidence.

Asset selection was based on:

a. Criticality of the asset to the operation of the plant
b. Risk profile of the asset during a potential failure
c. Whether a specialist assessment was required to confidently assess condition of the assets.

2.3.6. Summary of assets selected

The table below indicates the numbers of VHCA assets identified by asset class compared to the total number of assets in the class:

Table: Total assets by class and VHCA assets identified

Asset class	Number / kilometres identified as VHCA	Total assets in the class for all councils
Water treatment plants[1, 2]	600	GWRC = 9,500[4] SWDC = 480[4]
Wastewater treatment plants[3, 4]	120	3000 (approx.)
Reservoirs[6]	139	139
Pumpstations	85	315
Pipes: • Gravity SW = 163km • Gravity WW = 151km • Pressure WW = 79km • Drinking water = 77km	471	6,000[5]
All VHCA	1371	Not applicable

Notes:

1. Initially fluoride assets were not included in the VHCA programme unless there was a risk of overdosing. This was later changed. The fluoride assets have been assessed separately to the VHCA work programme and not discussed herein.
2. Gear Island Chlorine assets (about 25) were a late addition to VHCA programme scope.
3. Only selected WWTP assets which were known to benefit from in depth investigation were assessed, VHCA assets have not been specifically identified.
4. Not all WTP and WWTP assets have individual asset IDs.
5. Estimated total length of moderate, high, and very highly critical pipes based largely on pipe diameter as a proxy for importance.
6. The Track Reservoir has recently been decommissioned.

Table: Breakdown of VHCA assets by council

Council	Water Treatment (No.)	Wastewater Treatment (No.)	Reservoirs (No.) Above ground/ Buried	Pumpstations (No.)	Pipes (kilometres, km)
Wellington	N.A	60	65 (48 / 17)	35	- 7km DW[1] - 106km WW[1] - 81km SW[1]
Upper Hutt (excl. HVJV)	N.A		16	7	- 1km DW - 2km WW - 24km SW
Hutt (incl. HVJV)	N.A.	43	25 (24 / 1)	25	- 1km DW - 94km WW - 45km SW
Porirua	N.A	17	17 (13 / 4)	8	- 5km DW - 31km WW - 15km SW
Greater Wellington	474	N.A.	9	10	- 49km DW
South Wairarapa District	127	N.A.	7	0	- 14km DW - 5km WW - 0km SW

Notes:

1. Definitions: DW = drinking water, SW = stormwater, WW = wastewater (both pressure and gravity)
2. The SWDC WWTPs were not included in the VHCA programme scope
3. Selected WCC, UHCC, HCC and PCC WWTP assets only included in the VHCA programme scope.

3. Condition assessment methodology

3.1. Introduction

This section describes the methodology and approach used to assess the condition for each asset class.

Methodology varied depending on a number of factors including:

- the asset type
- failure mode
- funding

- asset location
- asset specific factors e.g., whether pipes were pressure or gravity
- availability of equipment and expertise (relevant in a Covid impacted environment)
- availability of condition assessment guidance and standards.

The key factors to consider for condition assessment, were:

a. criticality of the asset – scored in five steps from very high through to very low
b. assessed condition of the asset – normally scored in five steps between 1 (very good) through to 5 (very poor)
c. confidence in the condition assessment – scored in four steps from A (high) to D (low).

The rest of this section describes the methodology used to assess condition of assets in each asset class.

3.2. Pipes

ProjectMax conducted the work on the pipeline assets. Their full report: "Very High Critical Pipeline Assets – Updated Interim Health Report June 2022" (dated July 2022) is available on request.

3.2.1. Scope

Table: Health assessments completed for Very High Critical Assets – Pipes:

Type of Pipe	Length of VHCA Pipes (km) with health assessments
Gravity Stormwater Assets	162.9
Gravity Wastewater Assets	151.2
Pressure Wastewater Assets	79.4
Drinking Water Assets	77.4
Total Identified VHCA pipes (approx.)	471

3.2.2. Methodology

The original intention was to physically inspect all VHCA pipe assets, however it soon became apparent that would not be possible for a variety of reasons including:

- constraints on both the magnitude and timing of the stimulus funding, the broad scope of the programme and number of VHCA assets across a number of asset classes
- constraints on staff and equipment availability largely due to covid lockdowns but also related to industry capacity limits;
- productivity of pipe CCTV inspection equipment was lower than anticipated
- constraints on laser profile data processing capability
- the need to upskill the industry to assess pipe condition against the new 4th edition of the Pipe Inspection Manual

Note: In addition, newer assets were excluded as their inspection would add limited value.

For the above reasons the health assessments completed are based on multiple sources of information, as follows. The flow of assessment enabled a narrowing down to identify the assets that needed field inspection:

- Desk top assessment referring to current and historical records
- Workshop based assessments pooling input from internal and external peers, and data from other similar pipe assets
- Predicted assessments - based on data from the workshops.

Further information about each stage is described below.

3.2.3. Historical data

Where historical inspection data was available, and often collected for other purposes, it was re included in the dataset for asset condition assessment if of sufficient quality. This information became available in as staged manner, as it was located in various databases, extracted from WWL project files or provided by contractors.

It is noted that gaps in asset data, which is a legacy issue, made it difficult to quickly identify data and information needed to support planning and desktop assessment activities.

3.2.4. Inspection & assessment of assets

Condition scoring of pipe assets was undertaken in several phases as outlined below.

3.2.5. Workshop based assessment of assets

The first objective was to develop an interim health assessment. Workshops were held as a first step to inform the interim health assessment. This was also referred to as a “provisional”, “desktop” or “peer-to-peer” health assessment.

Assessments were held throughout the programme to assign:

a. a provisional condition and performance grading, of the uninspected VHC assets (to assist in assigning priority for field inspections and formal assessment).
b. a likely condition and performance grading in the event an inspection of the asset was not possible or deemed (based on known condition) to not require further inspections to be completed.

This was achieved through gathering all available information and existing knowledge and putting this together with the experience of key people.

For this purpose, workshops were held (June 2021) to collect historical failure and condition data on the trunk (water and wastewater) assets which together with other data generated though extrapolation of condition of pipe asset cohorts from across New Zealand and historical condition data in Wellington.

This information formed the basis of the Interim Health Assessment Report which was generated at the end of June 2021.

This interim information was used in this health assessment where no further and more specific information concerning the assets was available from the inspection and assessment process.

3.2.6. Predicted assessment of assets

A prediction of the condition of the asset was then based on:

- expected deterioration for gravity pipelines,
- remaining expected life for pressure pipelines.

The expected life of the VHC assets were defined as the commonly accepted life used for valuation purposes. Remaining expected life represents the difference between the expected life of the asset and its current age.

The following methodology hierarchy was applied to the collected information:

a. Where a preliminary or final health assessment has been completed based on an inspection this was used to determine the asset condition.

Where this was not available:

b. The condition was determined from information gathered from to the peer-to-peer workshops.

Where no asset condition information was determined from the workshops then:

c. The condition was estimated through prediction using a defined set of rules based on condition deterioration curves or remaining expected life of the assets.

3.2.7. Field inspection assessment methodology

Once preliminary assessments were done this gave guidance to where field assessments would be best focused. The field processes used are outlined below**.**

Gravity (unpressurised pipe) assets

- Internal CCTV, Sonar and Laser profiling[1] technology inspections were undertaken.
- information gathered in the field was subject to QA checks
- Condition of each asset was determined based on the general process outlined in the New Zealand Gravity Pipe Inspection Manual (4th. Edition).
- All condition grades provided from the gravity VHCA programme that are associated with completed CCTV inspections (including historical inspections) have been determined from an assessment of all information available. In cases where there was concern about the structural grades, more detailed review and analysis was undertaken.

Pressure pipes

Several techniques were deployed to determine the remaining wall thickness of pipes. The current pipe wall thickness was compared with the wall thickness at the time of construction to predict the time until failure.

Measurement of transient or surge pressures was also carried out to determine changes to the factor of safety and hence vulnerability to failure caused by these pressures. An assessment of the condition (relative to a failure condition) was then made.

For both Gravity and Pressure pipes a 1-5 scale, with 5 indicating an imminent failure condition, was used to grade the structural condition. Similarly, a 1-5 scale was used to grade the service or performance condition, i.e., the ability to deliver the service. This is based on the International Infrastructure Management Manual (IIMM) definition.

[1] Laser profiling was undertaken on most gravity wastewater pipes (except EW pipe materials) and on Brick, steel culvert and plastic gravity stormwater pipes. Sonar profiling was only undertaken in conjunction with laser profiling in pipes larger than 450mm diameter). Note: Due to time and budget constraints the requirement for profiling removed late in the programming reducing the number of qualifying assets were not profiled.

Table Number of new and historic Pipe inspections collected and/or assessed during the VCHA programme.

Asset Type	Total VHCA Length (km)	Total Newly Inspected Length (km)[1,2]	Total Historically Inspected Length (km)
Gravity Stormwater	162.9	83.1	18.8
Gravity Wastewater	151.2	65.2	5.3
Pressure Wastewater	79.4	16.3	0.0
Drinking Water	77.4	0.0	0.0
Total	470.9	164.6	24.1

Notes:

1. As of July 2022
2. The table above does not include any inspections for approximately 30 kms of pipe that are still under assessment.

3.2.8. Prediction assessment methodology

Use here was made of the results from the inspections and assessments carried out as part of this programme. In addition to this, this was also supported by deterioration history of similar pipeline assets recorded elsewhere in the New Zealand.

3.2.9. Condition grading definition and confidence grading

By the conclusion of the programme each asset had been assigned a 'current' structural and service condition grade, and each assessment was assigned a confidence grade that was determined by quality of the data used to make the determination.

In general terms assessments informed by inspection data had a high confidence grading, compared to those assessments supported by only extrapolated or predicted data which had a lower confidence grading. A summary of the confidence grades is shown below.

Table: Confidence grades for condition assessment grades

Confidence Grade	General Meaning (simplified)[1]
A	Highly Reliable - Close inspection of the asset and manual testing or operational data available to confirm performance
B	Reliable - Close inspection of the asset, asset operating or operator confirmation of recent operation. - Distant inspection of the asset in operation with operational data to confirm performance

Confidence Grade	General Meaning (simplified)[1]
C	Uncertain - Close inspection of the asset but not in operation and limited information about performance available. - Distant inspection of the asset in operation with limited information about performance available
D	Very Uncertain - Asset requires specialist inspection - Distant inspection of asset not in operation and no recent performance data available

Notes:

1. Refer ProjectMax report for detailed descriptions and information sources which can be provided upon request, refer references.

3.3. Pumpstations and water treatment plants

3.3.1. Condition grade

The assessment methodology for the inspections for both pumpstations and water treatment plant (WTP) assets was largely the same and was based on the Water New Zealand Visual Assessment for Utility Assets 2008 guideline, (refer references). Each asset was inspected and graded based on the table below from the document.

3.3.2. Condition grade

The assessment methodology for the inspections for both pumpstations and water treatment plant assets was largely the same and was based on the Water New Zealand Visual Assessment for Utility Assets 2008 guideline. Each asset was inspected and graded as shown below.

Table: Visual assessment grades for pump stations and water treatment plant

Grade	Classification	Action	Description	Timescale for longer life assets[1]	Timescale for shorter life assets[2]
1	Very Good	No action required	New or near new condition Some wear or discolouration but no evidence of damage. Can include repaired assets where the repair is as good as the original.	No action needed within 20 years	No action needed within 10 years
2	Good	Monitor to see if there are changes	Deterioration or minor damage that may affect performance.	Some action needed within 20 years	Some action needed within 10 years

Grade	Classification	Action	Description	Timescale for longer life assets[1]	Timescale for shorter life assets[2]
			Includes most repaired assets.		
3	Moderate	Consider specialist assessment	Clearly needs some attention but is still working. Structure in need of repair. Includes repaired where the repair is deteriorated.	Some action needed within 10 years	Some action needed within 3 years
4	Poor	Get specialist assessment or repair	Either not working or is working poorly because of damage or deterioration. Condition or structure is poor or structural integrity in question.	Action needed within 3 years	Action needed within one year
5	Very Poor	Replace or repair	Needs urgent attention.	Action required within one year	Action needed immediately

Notes:

1. Longer life assets are defined by Water NZ as those with a design life of 50 or more years, for this project a life of more than 25 years was considered longer life.
2. Shorter life assets are defined by Water NZ as those with a design life less than 20 years, for this project this was extended to a 25-year life.

Some WTP assets were unable to be inspected (labelled as "Not Inspected") during the site visits for various reasons, e.g. In confined spaces, at height, and some assets logged on the P&ID drawings had been removed from the plant.

Due to the limitations of visual inspections, some assets required further inspection, including all not inspected assets, to fully determine their condition. Where possible these additional inspections have been carried out, but a number of assets still require further inspection. As they could not be further assessed as part of the VHCA investigation, these assets will be included in the future ongoing condition assessment work.

Specialist services providers were used for electrical visual inspections (Stewart Electrical), thermography (Schneider Electric), and for ultrasonic testing of representative samples of major process piping (Detection Services).

3.3.3. Condition confidence

Along with the condition grade, a confidence score is also included to show the how reliable we consider the condition grade to be. The confidence grading, shown in the table below, is based on the New Zealand Water and Waste Association New Zealand Infrastructure Asset Guidelines 1999 document.

Table: Confidence Grade Assigned to each Condition Grade

Confidence Grade	General Meaning
A	Highly Reliable - Close inspection of the asset and manual testing or operational data available to confirm performance
B	Reliable - Close inspection of the asset, asset operating or operator confirmation of recent operation. - Distant inspection of the asset in operation with operational data to confirm performance
C	Uncertain - Close inspection of the asset but not in operation and limited information about performance available. - Distant inspection of the asset in operation with limited information about performance available
D	Very Uncertain - Asset requires specialist inspection - Distant inspection of asset not in operation and no recent performance data available

3.3.4. Limitations to visual assessment

In addition to the above, it is important to note that visual condition grading has both strengths and some limitations, (refer references, Water New Zealand Visual Assessment for Utility Assets 2008 document for a detailed discussion on this subject).

Visual condition assessment scores have a low confidence rating when applied to rotary assets such as pumps, and complex assets such as switchboards. In these cases, more detailed analysis and testing will be required to confirm or otherwise the visual score and raise the confidence rating of this score. In addition, the visual assessment-based condition score for these types of assets is therefore better considered as a prioritisation tool for where more effort (e.g., repairs or further investigation) should be placed, rather than being an expectation that there is a risk of imminent failure of the asset.

3.4. Reservoirs

The approach to assessing condition scores of reservoirs was specifically developed for this project and is believed to be the first of its kind in New Zealand.

As a first stage our consultant prepared an assessment methodology for assessing reservoir assets against the following 3 critical failure modes:

- contamination (biological or otherwise) of a reservoir due to inwards leakage or degradation of structure (six different failure modes).
- failure of a reservoir access structure supporting the safety of an operator or person accessing the site and resulting in injury (two failure modes).
- non-seismic collapse of a reservoir structure (one failure mode).

The second stage was to visit all reservoir sites and score each reservoir against each failure mode. This data was collected in a database and later presented via a PowerBI dashboard.

It is important to note the condition assessment took a conservative view of the vulnerability of various components of reservoirs and each component was given its own score. The worst score of the most vulnerable asset was then assigned to that reservoir overall.

3.5. Wastewater Treatment Plants

Wellington Water contracts Veolia to manage the four regional wastewater treatment plants (WWTPs) at Moa Point, Western, Seaview and Porirua. The service contract with Veolia requires that assets are regularly assessed as to their condition.

Veolia had recently undertaken visual assessments of the WWTPs assets as part of their contract commitments in 2019 and 2020. The condition assessments were a joint exercise with Veolia and Wellington Water staff.

As the visual assessments were relatively recent, WWTP assets were initially not included in the VHCA programme. However, an opportunity arose to undertake more detailed investigations of selected WWTP assets and 120 assets from across the region WWTPs were chosen for more detailed analysis.

4. Findings for Region and Wellington City

This section discusses region wide results to provide context, and the asset condition results for assets owned by Wellington City Council (WCC).

4.1. Pipes

4.1.1. Region wide results

All VHCA pipes across the region were assessed via a desktop/interim assessment to estimate their condition and the results are shown in the presented below with Grade 1 being very good condition ranging through to Grade 5 being in very poor condition.

Table: June 2021 Regional interim health assessment by pipe type

Pipe Asset Type	Total VHCA Length (km)	Condition Grade				
		1	2	3	4	5
Gravity Stormwater (SW)	162.2	27%	56%	14%	2%	0%
Gravity Wastewater (GWW)	150.0	23%	50%	11%	16%	0%
Pressure Wastewater (PWW)	79.4	4%	38%	33%	11%	13%
Drinking Water (WW)	77.4	5%	24%	52%	11%	7%

Note:

1. Grade 5 SW has some grade 5 assets, but they are less than 0.5%

The confidence associated with these scores is relatively low (generally C/D) as an informed desktop model was used to develop these scores.

At the end of the VHCA programme the above table was updated to reflect about 170kms of pipe that had been physically inspected or tested and the results are presented below. This table includes a combination of interim/desktop results of low confidence and physical based inspections of high confidence.

Table: June 2022 Regional pipe health assessment findings

Asset Type	Total VHCA Length (km)	Condition Grade				
		1	2	3	4	5
Gravity Stormwater	162.9	23%	62%	12%	2%	0%
Gravity Wastewater	151.2	23%	51%	16%	9%	1%
Pressure Wastewater	79.4	4%	45%	26%	11%	13%
Drinking Water	77.4	6%	35%	39%	12%	8%

Note:

1. Grade 5 stormwater pipes have some grade 5 assets, but they are less than 0.5%

4.1.2. Conclusion

The above tables show little difference between the assessed interim pipe condition in June 2021 and the results based on physical inspections in June 2022. In fact, the interim condition assessments were slightly more conservative than those based on inspection. This means that with an improved

level of confidence gained from more data on the health of critical assets, the level of condition (and hence risk) remains largely unchanged from the interim work undertaken in June 2021. The exception is gravity wastewater which has substantially fewer poor condition (Grade 4) assets.

This is a very powerful outcome as it means that the interim/desktop assessment model, which is very cost effective and quick, provides a reliable guide to the overall condition of gravity pipe assets in the network. It suggests that a desktop/interim model could be used with confidence in the future to better target physical inspections on pipes believed to be in the poorest condition and therefore at the highest likelihood of failure. This model can also be used to provide a high-level estimate for capital budgeting purposes for a forward works programme.

4.1.3. Confidence grades

The following table provides a breakdown of the confidence grades of each of the asset classes across the region and was developed based in the methodology described.

Table: Regional - pipe condition assessment by confidence grade

Asset Type	Total VHCA Length (km)	Confidence Grade			
		A	B	C	D
Gravity Stormwater	162.9	35%	19%	43%	3%
Gravity Wastewater	151.2	30%	3%	58%	9%
Pressure Wastewater	79.4	0%	24%	27%	49%
Drinking Water	77.4	2%	6%	16%	76%

This table shows that the majority of assessments can be considered as reliable or highly reliable for the gravity stormwater assets. Results are less reliable for gravity wastewater assets. There have been significantly fewer physical inspections of pressure pipe assets to date, and so those figures are also less reliable.

Summarising the two tables above and consolidating all of the water types reveals about 4% of the network is either confirmed (based on physical inspections) or expected (based on the desktop analysis) to be in a very poor condition.

Table: Regional Summary – Condition versus confidence

	Confidence Grade	Condition Grade (km)				
		1	2	3	4	5
	A	16.4	68.8	13.4	3	1.8
	B	9.6	22.7	23.7	1.3	2.0
	C	46.8	109.1	26.5	4.3	5.0
	D	8.2	39.5	32.0	26.3	10.2
Overall (km)	470.9	81.1	240.1	95.7	34.8	19.1
% of Network		17%	51%	20%	7%	4%

4.2. Wellington City VHCA Pipe Condition

The following table, based on a high-level analysis, provides an approximation of the length of Wellington City pipes in each band of criticality (refer references).

Table: WCC pipe by criticality group

Pipe type	Criticality Group - WCC				Approx. % of VHCA pipes
	Medium	High	Very High	Totals	
Stormwater (km)	228	318	80	626	13%
Wastewater (km)[2]	718	240	101	1059	10%[1]
Drinking Water (km)	547	244	8	799	<1%
Totals	1493	802	189	2484	

Notes:

1. Wastewater rising mains in the CBD were not included in the VHCA inspection programme as there is enough evidence to confirm these cast iron pipes are beyond their useful life.
2. Includes both pressure and gravity wastewater pipes

3. Low and very low criticality assets are typically service connections and small bore pipes and are not included in the above figures.

The following table shows the VHCA pipe length for each pipe asset type by condition grade.

Table: WCC VHCA pipe - condition grade by km

Asset Type	Total VHCA Length (km)	Condition Grade				
		1	2	3	4	5
Gravity Stormwater	78.8	15.8	46.3	14.8	1.6	0.3
Gravity Wastewater	74.7	17.4	35.6	14.1	5.7	1.8
Pressure Wastewater	25.6	1.7	20.5	0.0	1.2	2.1
Drinking Water	7.5	0.1	1.6	3.8	0.9	1.1

From the above table it is noted:

a. Of the 80km of gravity stormwater assets, only 2km are in poor or very poor condition.
b. Reflecting the regional position, the VHCA gravity wastewater network is in poorer condition than the VHCA gravity stormwater network with almost 7.5km in poor or very poor condition.
c. The pressure wastewater VCHAs are in moderate condition with some in poor condition, however the assessments for Pressure Wastewater assets grades are of low confidence as Covid severely impacted on the ability to inspect these pipes and the scores above a based on the desktop assessment. The poor condition pipes will be selectively programmed for inspection in the FY 2022/23 work programme.
d. The potable water network is in relatively poor condition with over 25% of the assets assessed in poor or very poor condition but noting the high proportion of low confidence graded assets remaining (uncertain (C) or very uncertain (D)) as Covid severely impacted on the ability to inspect these pipes. The poor condition pipes will be programmed for selective inspection in the FY22-23 work programme.

The following table provides the pipe lengths for each asset type which fall into each confidence grade for the VHCA assets.

Table: WCC - pipe condition assessment by confidence grade

Asset Type	Total VHCA Length (km)	Confidence Grade			
		A	B	C	D
Gravity Stormwater	78.8	16.6	24.9	34.4	2.9
Gravity Wastewater	74.7	20.6	3.9	42.9	7.3
Pressure Wastewater	25.6	0.0	0.0	19.3	6.3

Asset Type	Total VHCA Length (km)	Confidence Grade			
		A	B	C	D
Drinking Water	7.5	0.4	1.2	0.2	5.6

4.2.1. Actions arising from assessment

a. Pipes with poor condition and high confidence need to be placed in the forward works programme immediately for repair renewal and/or replacement as appropriate
b. Pipes assessed as in a poor condition but with lower confidence should be put into the forward works programme but should have a stage gate inserted that includes pipe inspection to give more certainty as the condition and the extent of the poor condition.
c. Pipes in a moderate or better condition with higher confidence should be programmed for a reassessment at an appropriate time in the future.
d. Pipes in a moderate or better condition with low confidence can be programmed for a reassessment at an appropriate time in the future but at a closer interval than higher confidence pipes above.

4.2.2. Challenges with the pipe assessment programme

There were many lessons learnt from undertaking a pipe inspection programme of this scale which is understood to be the largest of its type undertaken in New Zealand. A summary is provided below, noting some of the issues are more relevant to gravity wastewater and stormwater pipes:

a. The programme was in itself a very complex work programme in a geographically challenging environment with several the assets in in very busy roads – this made getting access to the pipes very difficult and expensive.
b. Several constraints were put on the programme team in carrying out this work, most notably the effects of the restrictions imposed because of the COVID -19 outbreak which impacted in numerous ways including staff on sick leave or isolating, difficulties moving plant (and equipment for repairs) around the country, difficulty getting specialist expertise from other parts of NZ and Australia.
c. The level of inspection productivity across the VCHA programme was lower than anticipated due to network access, traffic management requirements and approvals and inspection contractor constraints. About 1 km/rig/week was able to be achieved if everything went well - productivity was often a lot lower than this. Once two contractors were on board commonly 4 rigs were being utilised at any one time although some rigs at times used two shifts per day to cover both night and day work.
d. It became apparent there is a strong case for a pressure pipe inspection manual (like the one available for gravity pipe inspection) which would feed into improvements to the contract specifications. The development of improved guidance would not only assist Wellington Water, but the NZ water industry at large.
e. The availability of inspection resources (people and equipment) was an issue on the VCHA programme, and this was due to the large number of inspections concurrently underway both in the region and nationally due to the Three Waters Stimulus Funding and other drivers. Nationally there are insufficient operators and wider teams with the in-depth knowledge of the 4th Edition of the Gravity Pipe Inspection manual and pressure pipe inspection techniques. The skills which are available appear to be scattered amongst competing companies. This resulted in re-work in some cases and the need for training.
f. A pipe inspection programme needs a lot of management resource from the client, consultant advisors and contractor. This was under resourced initially.

g. Timing constraints on the stimulus funding meant there was insufficient planning and network preparation time particularly for an ageing pressure pipe network. In future significant effort needs to be put into the planning of future inspections taking due regard to network operations, traffic management and inspection technology constraints. This planning would also likely result in the need for valve repair and replacement and other preparatory works so as to more easily and cost effectively accommodate access, physical inspection, and testing. This should include early engagement of network operators and road controlling authorities and inspection contractors within these planning processes.
h. Large parts of the pressure networks could not be inspected as access for the inspection equipment could not be deployed as this would require pipe shutdowns and these in some cases were not possible. This means alternative pipe condition assessment technologies need to be considered from the outset.
i. During the inspection programme it became apparent that valve exercising is not routinely carried out. There was a subsequential reluctance to change valve settings to permit the inspections as to do so may have compromised the ability of the network to fulfill its function. This was relevant to pressure pipes.
j. Out of necessity a very sophisticated pipe data management tool, was developed by our consultants to manage the pipe inspection QA, assessment, determination of confidence grades, the recommended intervention for each asset and ultimately the export of health assessment data to Wellington Water's data management systems. More investment in this tool would be a great asset for the work programme.

4.2.3. Identified risks and issues with pipes

The following comments are made about specific pipe assets.

Gravity Stormwater

Ngauranga Gorge:-Condition of the VHCA gravity pipes in Ngauranga Gorge was reported (7/03/2022) as part of the Human Health Mitigation plans for the Waitohu Stream investigation being undertaken by Stantec. The assessments identified that most of the inspected pipes were in good to very good condition. The only pipe identified as being in very poor condition was asset WCC_SWP040047, which had already been identified in Wellington Water's renewal programme.

Gravity Wastewater

Biogenic Corrosion: Accelerated deterioration due to hydrogen sulphide is a known problem and is impacting on deterioration of assets, particularly within Wellington Airport, the Moa Point Interceptor and Eastern Interceptor. The airport site has been the subject of separate discussions between WCC and airport staff in recent times.

Adits/Interceptor Connection: Wellington Water has previously assessed that 80% of connections have at least one section of pipe that is structural condition grade 4 or 5. The condition of the some VHCA connections to the interceptor remain unconfirmed at this stage and will form part of the FY22-23 forward condition assessment programme.

Pressure Wastewater

Wellington CBD CI pipes: All cast iron rising main pipes in Wellington central CBD (all the VHCA rising mains within the Pump Stations 1-7 CBD Rising Main upgrade scope, refer also Appendix C), except the Waring Taylor St CBD rising main were taken out of the inspection scope for the VHCA programme as they are known to be the end of their serviceable lives (refer Opus (2018) report in references).

4.2.4. Defects

In addition to the above, during the inspection programme several pipe defects were found and these were collated in a register. These are being added to a wider register of defects by our operations team for risk analysis and prioritisation for remediation. Some example photographs of defects found are included in Appendix C.

Table: Number of pipe defects identified

Council	Number of defects
Wellington City	13

4.2.5. Work already undertaken

The most pressing issue identified in the VHCA programme was the Moa Point and Eastern interceptor pipes. These have shown significant corrosion caused by hydrogen sulphide gas. These pipes had already been identified in the forward works programme for renewal and have been accelerated into a detailed investigation programme. These pipes have been the subject of separate briefings to both WCC and Wellington Airport.

The way forward

4.2.6. Gravity wastewater

About 1.5km of gravity wastewater pipes have been identified as being in a very poor condition with high confidence, and these have been confirmed already in various stages of the capital works renewals programme.

Table: Gravity wastewater pipes in poor condition

Pipe ID	Assessed length	Final Condition Grade	Confidence	Remedial work required
WCC_WWP017092	79.26	5	A	Recommend that the cracked and deformed section of pipe between 58.4m and 60.54m (From upstream) is repaired or replaced to reduce likelihood of failure.
WCC_WWP017954	123.67	5	A	Recommend that planning for renewal is undertaken within the short term
WCC_WWP021950	99.87	5	B	Recommend pipe is renewed. Measurement of the pipe roof should be undertaken to confirm the design assumptions and enable evaluation of other parts of the pipeline.

Pipe ID	Assessed length	Final Condition Grade	Confidence	Remedial work required
WCC_WWP011632	34.48	5	A	Recommend that planning for renewal is undertaken within the short term
WCC_WWP011631	27.65	5	A	Ditto
WCC_WWP011633	91.20	5	A	Ditto
WCC_WWP017953	111.46	5	A	Ditto
WCC_WWP019932	100.07	5	A	Ditto
WCC_WWP019931	100.30	5	A	Ditto
WCC_WWP034633	116.54	5	A	Ditto
WCC_WWP019940	43.00	5	A	Ditto
WCC_WWP021546	71.46	5	A	Ditto
WCC_WWP031008	53.30	5	A	Ditto
WCC_WWP032419	68.92	5	A	Ditto
WCC_WWP034636	120.92	5	A	Ditto
WCC_WWP039605	76.08	5	A	Ditto
WCC_WWP041539	52.52	5	A	Ditto
WCC_WWP011573	62.25	5	C	Ditto

4.2.7. Stormwater

About 0.4km of stormwater pipes have been identified as in a very poor condition with high confidence and these have been confirmed as not presently in the renewals programme and investment cases will be developed to include them in the work programme going forward. Some of these pipes have only localised defects and these may be able to be remediated under our operational budgets.

Table: Gravity stormwater pipes in a poor condition of with localised defects

Pipe ID	Assessed length (kms)	Final Condition Grade	Confidence	Remedial work required
WCC_SWP033736	46.75	5	A	Significant section of deterioration is between 14 - 22m (from US) however condition of remainder of pipe section is in moderate to poor condition so full rehabilitation is recommended.
WCC_SWP015175	90.65	5	A	Recommend that the pipe is renewed
WCC_SWP009071	49.31	5	A	Urgent repair of connection and filling of tomo/cavity. Once repair is completed the pipe structural condition would be 2.
WCC_SWP040047	31.10	5	A	Due to deformation recommend pipe is replaced and not rehabilitated
WCC_LSWP026700A	4.20	5	A	Repair broken/holed pipe invert at 2.4m from DS MH.
WCC_LSWP029133A	3.66	5	B	Repair the hole/tomo in the pipe between 2 & 4m
WCC_SWP002407	8.44	5	B	Replace the existing pipe to restore strength and profile.
WCC_SWP020801	4.21	5	B	Repairs to the hole in the invert at 5m from the downstream node is required, and completion of the CCTV inspection. However, planning to renew this pipe section should be undertaken as soon as possible.
WCC_SWP028677	8.40	5	B	Recommend that the short bend section is renewed or fully rehabilitated to renew structural integrity/durability.
WCC_SWP029111	28.81	5	B	Recommend relining of the pipe. Investigation maybe required to confirm the presence of any cavity/tomo under the pipe. Downstream node is a buried node with no access.

Pipe ID	Assessed length (kms)	Final Condition Grade	Confidence	Remedial work required
WCC_SWP001382	61.40	5	B	Re-inspect to confirm current extent of damage and confirm if the pipe has been repaired (inspection was 2012). Structural repairs and filling of tomos required within the cast-insitu sections. Cast-insitu pipe does not appear to be reinforced so would be at risk of seismic events. A specific design required to replacing internal lining and provide sufficient strength and resilience.
WCC_SWP026303	7.40	5	B	This brick pipe asset is relatively short (approx 8m long) and the section of missing bricks makes up a substantial portion of the asset. Defects identified in 2009 and repair is very urgent.

4.2.8. Current FY22/23 and FY23/24 capital works budget allocations

The VHCA programme results ran slightly behind the development of the FY22/23 and FY23/24 capital works budgets. Therefore, placeholder budget allocations were made until such time as the VHCA programme results were finalised. The table below shows current WCC budget allocations for issues identified.

Table: Capital works budget allocations for the VHCA pipe issues identified

Water type	Y2 Budget	Y3 Budget	Total
Water	350,000	2,000,000	2,350,000
Stormwater	200,000	750,000	950,000
Wastewater	500,000	3,000,000	3,500,000
Total	1,050,000	5,750,000	6,800,000

4.2.9. Opex funding allocated to pipe condition assessment

Prior to an increase in investment in the 2021 long term plan (LTP) and some additional $500,000 funding by WCC in FY21 and HCC after the Dixon St adit failure, operational funding for condition assessment amounted to approximately $500,000 per year of opex funding spread across all councils. Note WCC's condition assessment budgets historically were FY18 = $312,000, FY19 = $59,000, FY20 = $77,000 and FY21 = $604,000.

Table: WCC Asset Condition Assessment Budget for Pipes - LTP 2021-23

Y1 Budget (fully expensed)	Y2 Budget	Y3 Budget	Total
1,055,000	1,055,000	1,055,000	3,165,000

The stimulus programme enabled approximately 90km of WCC pipes to be assessed based on physical inspections. This figure includes compiling and assessing about 10km of historic information collected for other purposes and that did not overlap with the VHCA programme.

At a high level the VHCA programme has revealed we achieved about 25km of physical inspections for every $1M of funding.

4.2.10. Immediate actions

The immediate actions to be taken as a result of compilation of findings of the VHCA programme are as follows:

a. Report VHCA results and learnings to Wellington City Council (i.e. this report).
b. Prepare investment cases for very poor condition pipes not currently in the capital works programme.
c. Identify VHC assets and plan an inspection programme to inspect the assets that have a poor or very poor condition desktop rating (i.e., a lower confidence rating) and were not inspected as part of the stimulus funded programme. Our next step is to identify ways that field assessment can be completed, at least selectively, before deciding whether to renew or refurbish and include this work in current assessment programmes. Noting that in many cases there were unexpected barriers to completing the stimulus funded field work - that included accessing the pipe and isolation from service, or availability of skills and technology. These barriers may remain in many cases.
d. Identify Highly Critical Assets (HCA) and develop a condition assessment programme for these assets.
e. Review the pipe condition framework in light of the lessons learnt and data collected from the VHCA programme and use smart tools and AI to improve the confidence and volume of desktop assessments as we move to HCA.

4.2.11. Key insights - pipes

a. An important and encouraging outcome of this work has been the strong correlation between the desktop assessment and what was finally determined in the field for the gravity pipes. This will allow us to direct future field assessment to where the risks are greatest. This statement is not applicable to pressure wastewater and water pipes at this point.
b. Based on the VHCA programme results about 4% of the very high critical pipes network are estimated to be in a very poor condition and this validates the need for condition assessment.
c. Focus for immediate attention must be on the pipes graded 4 and 5. All pipes with a condition rating of 4 and 5 and with a high confidence rating will be prioritised and programmed for maintenance, refurbishment, or renewal within the current capital works programme or within the first three years of the Entity C investment plan.
d. The gravity wastewater pipes confirmed as in very poor condition are already embedded in the capital works programme, meaning they are programmed for repair, replacement, or upgrade as appropriate.
e. Cast iron pipes in the Wellington CBD are well past their useful life with a failure history and material deterioration confirmed by laboratory analysis. They need to be replaced as soon

as possible. Many of these assets were not included in the VHCA inspection programme for this reason. The Taranaki Street rising main and pumpstation project is the first part of an integrated solution to progressively replace these cast iron rising mains in the next 4-5 years via the capital works programme, refer Appendix C. Until they are replaced, there is a high risk of unplanned failure, similar to the Victoria Street failure.

f. Difficulties with field assessment of pressure pipe (water supply and wastewater rising mains) during the VHCA programme means that we do not have evidence yet to programme any condition 4 or 5 pipes for renewal other than what is in the current capital works programme.
g. Pipes graded 1,2 or 3 will mean that future condition assessments can now be programmed. No immediate intervention is needed.
h. The pipe condition data management tool developed for this project creates an opportunity to better transfer base information and pipe condition data. Currently the tool is under development and requires a number of manual interventions - more investment would streamline this process significantly.

4.2.12. Wider benefits of the VHCA pipe work programme

a. This is understood to be the largest pipe condition assessment programme undertaken in the timeframe (18 months) in NZ. Other utilities nationally have completed similar programmes but over much longer periods.
b. We now know the condition or likely condition and therefore risk associated with 470km of our highest criticality pipeline assets. This is a huge leap forward in an understanding on the state of our assets and allows risk-based decisions to be made about investment.
c. The physical inspections carried out have validated the results from the preliminary or desktop assessments which were carried out mid-way through the programme. This is a very significant outcome as it means the approach adopted in the preliminary or desktop assessments can be applied with some confidence to predict the likely condition of a far wider set of pipes e.g. (all greater Wellington HCAs and other pipes, or any urban centre's pipe network in the country for that matter) and where therefore to best invest in physical inspections to understand the scope of a renewal work programme.
d. The scope of inspection and testing of pressure pipes, while small compared to that of the gravity pipe, is likely the largest programme ever undertaken in Australasia. This part of the programme involved new and emerging technologies and the lessons learnt will be very valuable to share with the industry - as the condition of pressure pipes is very difficult and expensive to assess.
e. We now better understand what works and what doesn't and how to progress a pressure pipe programme going forward, particularly the need for detailed planning and site preparation prior to doing the testing.
f. Through physical inspection we had an insight into the scale and effect of corrosion caused by hydrogen sulphide (which contributed to the Paremata failure and the Airport poor condition pipes). We can confidently target investigations in other areas with known hydrogen sulphide problems.
g. We have built a strong business case for the value of pipeline condition assessment identifying several key assets in various stages of failure that would have had serious implications if they had failed.

4.3. Above Ground Reservoirs

4.3.1. Introduction

All 139 reservoirs in the Wellington region have been identified as VHCA assets.

There is a total of 48 above ground or partially buried reservoirs, and 17 buried reservoirs in Wellington City.

Assessment of buried reservoirs was undertaken late in the programme and has only recently been completed and the results have not yet been collated at the date of this report. The condition assessment results of the buried reservoirs will be reported on separately.

4.3.2. Condition score

The approach to assessing condition scores for reservoirs was specifically developed for this programme and is believed to be the first of its kind in New Zealand.

The reservoir condition assessment process took a conservative view of the vulnerability of the various components of a reservoir and each component was given its own score. The most vulnerable component gained the worst score, and that score was then assigned to the reservoir asset overall.

Above ground and partially buried reservoirs were assessed and were scored on three failure mode components:

1. Overall structural condition (largely visually based but with some roof testing)
2. Overall health and safety (visual assessment)
3. Overall contamination risk (visual).

Results of the assessments are summarised in the table below.

Table: Above Ground and Partially Buried Reservoirs - Condition Assessment Results

Condition Factor	Condition Score					Total
	1	2	3	4	5	
Structure	3	16	18	8	3	48
Health and safety	0	7	22	10	9	48
Contamination vulnerability	0	0	0	13	35	48

4.3.3. Confidence in condition score

Our consultant prepared a 'VHC Reservoir Visual Assessment Guideline' to outline failure mechanism criteria for each respective score based upon not only condition but also confidence in the assessment. Any failure mechanism score achieving a 1 or 5 has either been tested to demonstrate it is satisfactory, or the inspector has a very high level of confidence in the assessment rating. Generally, any works associated with a condition score of 5 have been denoted as "required works" for cost budgeting purposes. There is less confidence in failure mechanism scores ranging between 2 and 4. These assessments often require more experience and informed understanding of the reservoir structure to make an accurate assessment and there is less confidence in these assessment scores. Generally, but not always, works associated with a condition score of 4 have been recorded as "possible works" for cost budgeting purposes.

4.3.4. Work already undertaken

The following items that were identified during the VHCA inspections have been actioned:

a. Roof sealant between adjacent concrete roof panel joints had been cut at Brooklyn West and Rossaveel Heights, and water in the reservoir was visible while standing on the roof.
b. Water overflow levels required adjusting to prevent water wastage at Richmond 1.
c. A telemetry conduit has rusted out and fallen from the roof inside Chester Reservoir and has been replaced.
d. In addition, seven WCC reservoir roofs have had sealant applied to them as part of the stimulus programme at a total cost of about $400,000. These were:
    i. Bell Rd (buried reservoir so not part of this report - temporary exposed roof repairs pending reservoir replacement)
    ii. Brooklyn West
    iii. Linden
    iv. Johnsonville 1
    v. Churton Park
    vi. Wrights Hills
    vii. Maldive A
e. There is a work programme underway to install roof safety and access stair safety barriers.

The way forward

4.3.5. Current FY22/23 and FY23/24 capital works budget allocations

The VHCA programme results ran slightly behind the development of the FY22/23 and FY23/24 capital works budgets. Therefore, placeholder budget allocations were made until such time as the VHCA programme results were finalised. The table below shows current WCC budget allocations for the issues identified for reservoirs.

Table: WCC Reservoir VHCA Remedial Works Budgets

Y2 Budget	Y3 Budget	Total
500,000	750,000	1,250,000

Unlike other assets, e.g. pumpstations, the cost to remediate above ground reservoir very poor condition issues has been estimated. This information has been compiled into spreadsheets and a dashboard.

About $1.5M (excluding contingency) has been estimated to address vulnerability issues across 48 WCC above ground reservoirs. Spending will range between $300 and $400,000, or an average of approximately $40,000 per reservoir. The larger cost work is for applying PVC coating to the roof of the larger reservoirs. The “required works” which are related to Condition 5 assets are strongly recommended should be undertaken in the next 1-2 years or not sooner depending on the vulnerability being considered.

In addition to the above, about $3M of further investment (“possible works”) should be considered at the same time the VHCA vulnerabilities are addressed – these items have less confidence associated with the condition score and are best scoped and priced when the required works are undertaken.

There is a reasonable expectation that many of the reservoir contamination vulnerabilities will be able to be addressed within existing capital works programme funding envelope over the next 2- 3 years.

4.3.6. Opex funding allocated to reservoir VHCA works

Current funding for reservoir maintenance is shown below.

Table: WCC Opex Funding for Reservoirs

Description	Total (incl. Management fee)
WCC Reservoir Planned maintenance budgets OPEX	$353,000

The results of the condition assessment programme provide a strong indication that maintenance budgets need to be reviewed. We will provide advice on this during the upcoming FY23/24 annual plan discussions.

In addition, in some cases reservoir access tracks are in very poor condition and this is an operational risk. Operational funding has not been available in recent times to remediate these types of access issues.

4.3.7. Immediate actions

a. An activity brief is close to being finalised to commission our panel consultant Connect Water to lead the programme to address the very poor condition components of the above-ground reservoirs. The scope of remedial works is very well understood.

4.3.8. Key insights - reservoirs

a. The approach to assessing the condition scores of the reservoirs was specifically developed for this project and is believed to be the first of its kind in New Zealand. Other councils are starting to utilise this approach.
b. The poor scores for contamination vulnerability reflect an asset base of variable age and designs linked to standards of the day, which are now outdated.
c. It is important to note that the causes of defects that may present condition 4 or 5 ratings for reservoirs were many and varied. For example, they may include missing guardrails, missing vermin entry screens on openings, defective roof sealants, corroded concrete and steel or contamination build up on the roof.
d. While many reservoirs inspected scored very poorly on contamination criteria, many locations can be improved significantly with the replacement of aging sealants, repairs to hatch nibs and the installation of air vent and overflow mesh. These items are relatively low cost and will provide significant improvement to the assessed scores of many reservoirs.
e. Solutions will be minor in many cases (e.g., sealant repair) or significant (e.g., reservoir roof sealing) in a lesser number of cases. The works required have been costed. At this stage, it is believed that the majority of the defects identified will be remedied through current capital works programme budgets or maintenance budgets.
f. The dashboard tool developed by our consultant illustrates the power of a connected Asset Register and makes it easy to access both asset data and related information about the asset, observe trends, and plan a forward works programme. With additional funding, a similar approach could be performed across all asset types to improve the accessibility of asset data and information to those who need it.
g. The greater Wellington region has a large reservoir asset base as demonstrated in the table below with only Dunedin having broadly the same number of reservoirs per head of population as Wellington. The large number of reservoirs per head of population inevitably lifts the risks to consumers from contamination that can be introduced into water contained by these reservoirs.
h. The identification of deferred maintenance items in the VHCA programme, coupled with the high number of reservoirs, highlights the need to review the current programmed

maintenance budget in order to adequately mitigate contamination risk. An increased planned maintenance budget should include provision for regular condition assessment of the type undertaken in this programme.

Table: Reservoirs Per Head of Population Across Selected New Zealand Centres

Location	No. of Reservoirs[1] (approx.)	Approximate population (June 2021)
Greater Wellington and South Wairarapa	139	450,000
Auckland	85	1,600,000
Hamilton	8	161,000
Tauranga	18	138,000
New Plymouth	18	58,000
Christchurch	45	370,000
Dunedin	57	126,000

Notes:

1. Above ground and buried reservoirs.

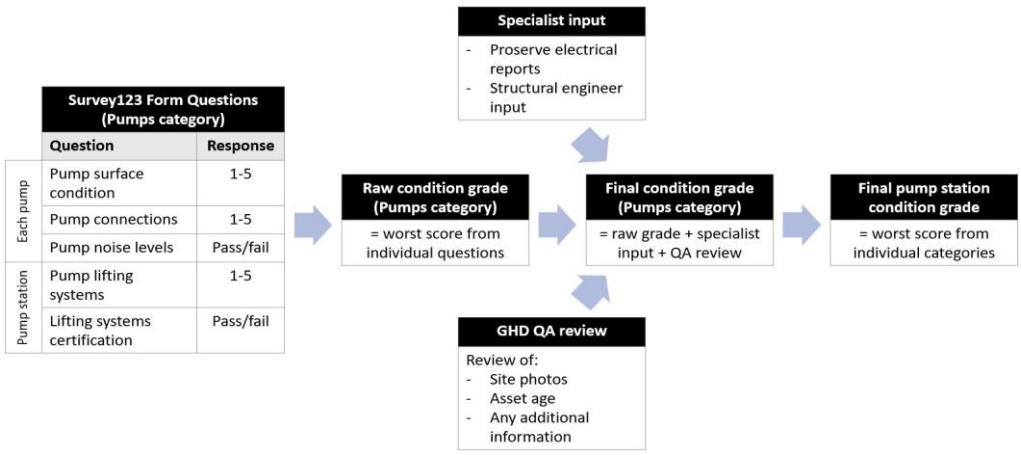
4.4. Pumpstations

4.4.1. General

The challenging aspect in this part of the programme as the assets within the pumpstation did not have an individual asset ID (child assets) in most cases. This resulted in pump station assets being grouped into categories and given a category grade, based on the poorest condition asset within that category. The overall pump station condition grade was based on the poorest condition grade of any asset within the pump station (see the figure below).

In addition to this a separate health and safety (H&S) score was assigned to components of pumpstations. Health and safety hazards were given a condition grading of 1, 3 or 5. Often the health and safety components being assessed were either present or absent and applying a more granular approach was not justified.

An overall all score was then applied to each pumpstation taking the work asset category score.



Example: Asset Category Condition Grade Process

4.4.2. Methodology

This methodology has resulted in a high number of pump stations with poor or very poor condition grades due to each pump station having one or two assets with a poor or very poor grade. Therefore, it is expected that the overall condition of pump stations will be significantly improved with a relatively small amount of work. A work programme to address the VHCA poor condition assets is being developed.

The scores for health and safety components were kept separate from the operation gradings as in many cases pumpstations can function for long periods with no physical operator input.

In some cases, more detailed assessments were undertaken by specialists generally for the structural and electrical asset categories, as these were considered to be the most difficult asset types to assess without specialised training and equipment.

These assessments were undertaken where visual investigations identified areas of concern. For example, a structural engineer was engaged to review photos of sites which had issues such as notable spalling or cracking of concrete walls, moisture penetration, and corrosion of supports for walkways or pipes. An electrician was engaged to inspect, test and report on selected switchboards.

The results are shown tabulated below.

Table: WCC Pumpstations - Condition Assessment Results

Condition Factor	Condition Score				
	1	2	3	4	5
Operational	0	7	12	14	2
Health and safety	9	0	22	0	3
Overall condition	0	5	13	12	5

4.4.3. Limitations of visual assessment for pump stations

Visual assessments have significant limitations when used to determine the condition of mechanical or electrical components. Pumps and valves for example may have a markedly different external and internal condition, especially if the exterior has been recoated as part of maintenance activities.

However, across the large number of pump stations included in this project, visual inspections provided useful information to assess the overall condition of the assets and a means for prioritising further investigation.

Where complex assets are given poor or very poor condition grades and have an associated low confidence associated with this grade it is appropriate further investigations are undertaken before planning or procuring replacements. Some switchboards were inspected by an electrician as part of this programme.

4.4.4. Confidence in condition score

The table below shows there is a medium to low confidence level associated with the condition scores. The assessment exercise was not able to be fully completed for three pumpstations. The lower confidence scores are associated with the visual based approach and some complex assets like pumps will need detailed investigations to raise the confidence level.

Table: WCC Pump Stations - Confidence Grades

Condition Score	Confidence Grade				Grading incomplete
	A	B	C	D	
1	-	-	-	-	-
2	-	2	4	-	1
3	-	2	7	2	1
4	-	1	10	4	1
5	-	1	-	5	

4.4.5. Work already undertaken

A number of activities have been undertaken including procurement of standby pumps and replacement switchboards.

1. A project has commenced to allocate asset ID numbers to all critical assets within pump stations.
2. Renewal works were undertaken in FY21/22 at drinking water pumpstations at:
    - Kanpur Rd, Karepa St
    - Rajkot Tce
    - Warwick Street.
3. Work has been undertaken at the wastewater pump stations at:
    - PS013 Aotea Quay (CG4 Pumps) – pumps and MCC replaced in FY20/21
    - PS011 Thorndon Quay [Sth] (CG4 Electrical) – MCC was replaced in FY20/21

- A large CBD pumpstation renewals programme is underway connecting pumpstations PS001 through to PS007 and replacing the associated cast iron pipes.

4.4.6. The way forward.

In simple terms the VHCA visual assessment results will drive one of several possible responses:

1. For a minor issue where the cause of the defect is obvious and can be easily remedied then an immediate maintenance response is triggered.
2. A poor score for a major item is used to confirm (or otherwise) what is already in the renewals programme (as developed for the 2021 LTP). If not, then a new renewal item is added to the programme.
3. It is used as a first step to prioritise further investigation e.g. undertake more detailed testing so as to get more confidence in pump station assets condition before committing to renewals where not already on an immediate renewals programme.

The following activities are planned:

a. Prepare a pump station intervention guide.
b. Prepare a spares policy for critical pumpstation items which will require budgeting for the holding costs of critical spares.
c. Implement more detailed investigations of pumps that visually appear in a poor condition. In addition, consider the business case for remote monitoring of pump performance.

4.4.7. Current capital works budget allocations

Budget allocations for WCC pumpstation capital works for the current long term plan are shown in the table below. These are for the financial years 2022/23 and 2023/4.

Table: WCC Pumpstation Capital Works Budget

Name of works	Y2 Budget (2022/23)	Y3 Budget (2023/24)
WCC Wastewater Pump Stations Planned Renewals	500,000	325,000
WCC Water Reactive Pump Station Renewals	120,000	97,000
WCC Warwick Street Pump Station Pump replacement	200,000	130,000
Huntingdon Street Watermain Renewal (from Pump Station to Mt Wakefield R	1,000,000	5,000
Pump Stations 1 - 7 Upgrades	630,000	990,000
Beacon Hill Pump Station Renewals	60,000	39,000
Montgomery Avenue Pump Station Renewals - Pumps and Electrical Panel	75,000	7,000
Totals	2,585,000	1,593,000

At this point a cost estimate has not been prepared for the issues identified for the VHCA remedial works programme. Where feasible and appropriate the above capital budgets will be used remediate the VHCA condition 5 issues identified.

4.4.8. Immediate actions

a. Develop a work programme to address VHCA very poor asset condition issues working within the existing capex and opex funding envelopes. This will include developing a cost plan to remediate the most pressing pumpstation issues.
b. There are several pump stations that only have one ‘poor’ or ‘very poor’ condition grade (4 or 5) or one pass/fail component which has been graded as inadequate. These pump stations are likely to require the least amount of work to improve the overall condition grade and reliability so are deemed to be 'low hanging fruit' for which works will be carried out as soon as possible. These will be prioritised as ‘easy wins’ while scoping work is underway for more complicated repairs and renewals. At this point the cost to address the most pressing VHCA issues has not be estimated.

4.4.9. Key insights - pumpstations

a. The way that data was collected was constrained by the lack of individual asset identifications or ‘asset tags” within some of the facilities. This has resulted in a high number of pump stations with poor or very poor condition grades due to each pump station having one or two assets with a poor or very poor grade. Therefore, it is expected that the overall condition of pump stations will be significantly improved with a relatively small amount of work.
b. Although visual assessment is a commonly used approach, it does present limitations when deciding next appropriate action. Therefore, before any major asset items, (such as pump sets) are programmed for renewal that are additional to the current capital works programme, additional investigations are required to improve the confidence of the data available.
c. There is approximately $4 million earmarked for renewals of WCC pumpstations, and we are working to develop the work programme to remediate these issues – some of which will be resolved through maintenance.
d. Covid has impacted on the availability and delivery time of equipment and there is a need to re-think how we manage spares for critical assets. A work programme is being framed up to address this issue.
e. Visual assessment can identify deferred or unidentified maintenance items. The modest amount in the opex budget for pump station planned maintenance needs to be reviewed. Detailed maintenance programmes should be documented and costed. These programmes should include provision for specialised performance and monitoring techniques that go beyond visual assessment.

4.5. Wastewater Treatment Plants (WWTP)

The VHCA programme provided the opportunity to undertaken detailed condition assessment of selected WWTP assets. A total of 35 assets were assessed and 25 were not able to have an assessment undertaken for various reasons.

There were no Condition 5 assets identified, however a number of condition 4 assets were identified that do need refurbishment or renewal in the near future as they (i.e., some pumps) are operating at low levels of efficiency.

4.5.1. Work already undertaken

a. Renewals that are considered urgent have been implemented or are already in progress.

4.5.2. Highlights and key learnings

There were some key learnings for the WWTP exercise including:

a. Visual condition assessments are not sufficient to fully assess the condition of assets in high-wear situations. It is a precursor for a more specialist investigations where assets appear to be in a poor condition. The experience was that more detailed investigations identified some critical faults not picked up by visual assessment.
b. Detailed investigations of plant with components with high-wear use enables time related trends to be identified and monitored – this in turn better enables the time to failure to be predicted and when intervention needs to occur.
c. The next round of assessments needs to be carefully planned as some assets identified were not assessed due to time constraints or conflicts in operational schedules. This includes inspecting items at the bottom of tanks, like sludge scrapers, mixers, diffusers etc. that will require planning and addressing of redundancy provisions.
d. The cost of specialist assessment of critical assets must be incorporated into the maintenance budgets.
e. All assets have specialist condition testing and inspections at regular intervals to monitor their condition and rate of wear (e.g., at 1-to-4-year intervals - more frequently for larger, critical, or older assets).
f. Standardise the approach of asset condition assessment and tailor this to the type of asset-especially those that have high component wear rates.
g. Carry out assessments of remaining assets that have not yet been assessed in the VHCA programme but have been previously identified as needing assessment

4.5.3. The way forward

a. Veolia are now considering the asset condition reports and building this information into their draft Asset Management Plan.
b. Replacement bearings have also been ordered for the Moa Point clarifiers, currently one of the three clarifiers is out of action pending a replacement to this bearing and the others are close to the end of their useful life.

5. Data Management

5.1. Historical Context

Wellington Water manages the Asset Register for each of its client councils. The Asset Register is all master data, reference data (e.g. photo, documents, videos, maintenance, performance, events), and condition data held about individual assets.

Issues with the quality of each councils Asset Register has been long-standing, not just for Wellington Water, but also for each individual council that used to manage it. Funding levels have meant Wellington Water has not had the ability to keep up with both processing new data and improving legacy data.

Improving the quality of the asset register is complex and slow given the nature of the assets, the multiple systems used to manage it, the split responsibilities between Wellington Water, Councils and Partners, and the ever-increasing inbound volumes (e.g. due to regional growth and increasing capital programme).

Known quality issues with the Asset Register have not stopped Wellington Water from conducting condition assessments, but they added effort to both planning and utilising the results of the condition assessment programme. For example:

a. Historical data and information about assets was difficult to locate (as it is often not linked to the assets it relates to), or had to then be digitised once located, resulting in time consuming planning activities and desktop assessments.
b. Many critical assets were not present in our asset management system, making it difficult to relate condition assessment results to a specific asset.
c. Many critical assets had missing attributes (e.g. install date), reducing the confidence in desktop assessments.

5.2. Stimulus funding

Stimulus funding was also used by Wellington Water to accelerate asset data processing, address data gaps, and improve quality. It was also used to consolidate condition assessment data outputs and build consolidated reporting for the VHCA programme. This work needs to continue and is an essential part of communicating the condition of our assets and using the data to make good investment decisions.

The stimulus funded VHCA programme generated a lot of data. Data management and its quality dictated a number of courses of action including on the VHCA reporting front. For example, because many assets within the pumpstations were not individually labelled which meant scoring had to be undertaken by asset class and rolled up into a single score for each pumpstation. While this is useful in terms of prioritising effort this created a negative impression as to the overall condition of the pumpstations.

5.3. Continuing work

Wellington Water is continuing to collate and connect condition assessment data and information outputs to the associated assets in the asset management system to ensure it can be utilised by all parts of Wellington Water:

a. Collation: While all the core condition assessment data results has been obtained, additional data and information generated by the programme is still being collated from external consultants involved.
b. Connection: For most of the assets inspected the process to connect condition level to the associated asset has begun, but for others there is no master data record to attach the condition assessment result to (e.g., Water Treatment Plant assets).
c. A programme of work is also underway to improve the quality and connectedness of the Asset Register as a whole. Improving the quality and accessibility of asset data and information will improve the planning and execution of condition assessment activities.
d. Progress is currently slow based on current funding and resource levels. Increasing levels of funding will accelerate our Asset Register quality improvement activities.
e. As processing volumes continue to grow and transition work increases, there is a heightened risk of Asset Register quality going backwards.

5.4. Data Lessons Learned

The data management aspects of condition assessment activities are just as important as the condition assessment itself. The results need to be linked to the relevant assets and made easily accessible to the maintenance, operations, and investment planning teams to be effectively utilised.

a. We cannot perform a condition assessment over assets we have no record of in our asset management system. A master data record is required so the condition assessment outputs can be connected to the asset.
b. Accessibility of data and information about our assets is crucial for condition assessment planning and confidence we have of desktop assessments. For example, the contractor performing CCTV inspections of in-scope pipes identified recent CCTV activities had taken place on pipes that the condition assessment programme was not aware of.
c. Condition assessment outputs need to be connected to the relevant asset record in a timely manner to allow short- and long-term intervention activities to then be tracked, traced, and reported in an efficient way.

5.5. Summary Insights

a. We cannot condition assess an asset that we have no record of. Therefore, both condition assessment and asset register improvement activities need to be funded together.
b. We can improve the confidence of condition assessment planning and desktop assessment activities by utilising existing data and information we hold about each asset. But without a clear linkage between this and the asset master data, it is time consuming to locate and utilise.
c. The efficiency and effectiveness of condition assessment planning and desktop activities was (and will continue to be) affected by the average quality of the asset register.

Appendix A – Woogle and Internet References

The following provides Wellington Water Woogle and internet links to documents used to develop this document.

Criticality Framework and VHCA Selection Documents

1. Criticality Framework is linked here: criticality framework
2. VHC Asset selection methodology documents
    a. Drinking Water pipes, pump stations and reservoirs
    b. Stormwater pipes and pump stations
    c. Wastewater pipes and pump stations
    d. Water Treatment Plants (Te Marua Example)
    e. Investigation Methodologies - Potable Water Report DRAFT
    f. Investigation Methodologies - Stormwater Report
    g. Investigation Methodologies - Wastewater Report DRAFT
    h. 2021.03.22 VHC Reservoirs - Assessment Report (Draft)
    i. PS Methodology_v4
    j. WTP site inspection methodology 20210506.pdf

Pipe Reports and data

3. Peer To Peer process is linked here: peer-to-peer
4. Interim VHCA Pipe report (June 22 edition) is linked here.
5. Final Sept 2022 Report linked here. (To be provided)
6. Report June 22 Report Appendix A spreadsheet is linked here
7. High Level Pipe criticality summary based on water type and diameter linked here.
8. The associated spreadsheet calculations is linked here.
9. Woogle link to Boar Bush Water Supply Study Report (Oct 2020) is here
10. NET email about what gravity wastewater Condition 5 pipes are already in the programme linked here.
11. WCC CBD pumpstation and rising main replacement summary documents linked here.

Reservoir Reports and data

12. Interim Reservoir Report (June 2021) is here
13. Background VHCA document here.
14. Spreadsheet summarising above ground works required here – noting some errors in the $ tables
15. Woogle link to Boar Bush Water Supply Study Report (Oct 2020) is here.
16. Reservoir strategic insights email from Connect Water linked here.
17. Reservoir complete roof seal works register linked here.
18. Final Report to be submitted in draft in early December

Pumpstation reports and Data

19. The VHCA pumpstation consultant report is linked here: VHCA PS Summary Report
20. The appendices associated with the above report are linked here: VHCA PS Condition Assessment Spreadsheet
21. The consultant's wrap up powerpoint presentation is linked here.
22. Te Marua WTP pumpstation issues status emails linked here and here.

Water Treatment Plant Reports and Data

23. The VHCA WTP final consultant's report is linked here: VHCA WTP Report v1.0

24. The associated WTP report appendices and condition scoring sheets are linked below:
    a. GWRC combined asset assessment form (this file is very big and does not include photos)
    b. Te Marua WTP (includes photos of condition 4 and 5 assets)
    c. Te Marua pumpstation layout drawing linked here
    d. Wainuiomata WTP (includes photos of condition 4 and 5 assets)
    e. Waterloo WTP (includes photos of condition 4 and 5 assets)
    f. Gear Island WTP (chlorination only)

25. GWRC VHCA issues resolution updated 20 Sept 2022 linked here.
26. SWDC VHCA WTP Issue tracking status email linked here.

Wastewater Treatment Plant Reports and Data

27. Wastewater Treatment Plant VHCA scope memo is here
28. Cardno WWTP VHCA scope of services documents linked here.
29. Link to email with attached metro WWTP asset inventories is here.
30. VHCA WWTP report recommendations email linked Carys Gully, Western and Porirua linked here.
31. VHCA Seaview Report linked here and updated report linked here.

Data documents

32. DPS revise of draft VHCA wrap up report plus some content VHCA Data Summary (for council reporting).docx
33. Data management graphics linked here. Condition Assessment Data Summary.pptx

Background documents

34. WCC Mayoral Enquiry on 3 waters linked here.
35. Fluoride Enquiry technical report is linked here and the full report linked here.

Selection of Council Communications

36. VHCA Results issued June 2021 linked here.
37. SWDC Risk Dashboard forum is linked here
38. WWC Risk Dashboard forum is linked here.

Selection of Financial Documents

39. The link to the FY22/23 and FY23/24 Capital Delivery plan linked here
40. The FY22/23 Opex Budgets is linked here.
41. Woogle link to COG operation allocations for 2022/23 is here.
42. Woogle link to email from WWL Finance on history of expenditure on condition assessment by Council is here and with more detail here
43. Close out stimulus funding report linked here and financials linked here.

GIS Links

44. The WWL VHCA dashboard is linked here: https://gis.wellingtonwater.co.nz/portal/apps/dashboards/2d3841bedc1d424a9b60d57a408ff549
45. Connect Water Reservoir Dashboard is linked here (needs a login): https://app.facilitytwin.com/
46. ProjectMax pipe dashboard is linked here (needs a login): here

Appendix B - VHCA Programme

The purpose of this Appendix is to describe how the VHCA programme was managed and is applicable to all the councils.

Background

Asset condition information is critical to the planning and prioritisation of maintenance and renewal activity. Stimulus funding gave our client councils the opportunity to significantly increase investment into understanding of the health of Very High Criticality Assets (VHCA) across the region, as well as what measures are required to ensure they continue to maintain service to the community.

To determine the programme of work and allocate fiscal stimulus funds, Wellington Water used the same strategy story which forms the backbone of our statement of intent. This ensured, despite the very ambitious deadlines (at that point 31 March 2022), that funding would be directed to the best value work without extensive analysis. This also aligned with the funding objectives to support economic recovery through job creation and maintain, increase and/or accelerate investment in core water infrastructure renewals and maintenance

Approximately $10M of the full $47M stimulus grant was allocated to the VHCA work programme. Additionally, some opex funding earmarked for condition assessment was utilised to maximise the opportunity and capture as many pipe assets as possible. The stimulus funding has now come to an end and we are now wrapping up the analysis of the VHCAs and planning for the High Criticality Assets (HCA) that will commence in 2022/23 using councils' LTP funding.

What did we spend?

The allocation of stimulus funding varied between asset class and what percentage of each VHCA asset type was contained with the district. Operation funding was also used to support condition assessment of pipes to take advantage of the economy of scale of having a contractor on board via the stimulus project. The split is shown below.

Council	Stimulus Allocation range (which depended on the type of asset - %)	Stimulus ($)	Opex FY20-21	Opex Fy21-22($)	Total ($)
WCC	31 to 46	3,408,529	500,000	$1,165,103	5,073,632

Covid significantly impacted on the pipe condition assessment programme and in particular the pipe component and as a result there was an underspend on the original allocation. What stimulus funding was not spent on WCC asset condition assessment was diverted to other parts of the WCC stimulus programme.

Asset Classes

The Asset Condition Assessments were managed in five asset classes or themes:

a. Pumpstations
b. Water treatment plant assets
c. Reservoirs and
d. Pipes (gravity and pressured; drinking water, stormwater and wastewater)
e. Wastewater treatment plant assets

How the project was delivered

Wellington Water directly employed additional permanent staff, fixed-term employees and contract staff to progress the wider stimulus programme - several of whom took up permanent roles at the end of their SFP roles. One of the staff was assigned full time to the VHCA programme.

The following resource were assigned to the different asset classes.

Asset class	Pipes	Reservoirs	Pumpstations	Water treatment Plants	Wastewater treatment plants
WWL Panel Consultant	GHD as lead project manager with specialist pipe expert ProjectMax as a subconsultant	Connect Water (a JV between WSP and Beca)	GHD	Both GHD and Connect Water were assigned different WTPs. GHD predominately looked at the SWDC WTPs	Cardno/Stantec
Lead Contractor(s) Awarded via a tender process	Intergroup for all regions, Hydrotech for WCC region only	N.A – condition assessment undertaken by consultant	N.A – condition assessment undertaken by consultant except for the involvement of an electrician in some cases.	N.A – condition assessment undertaken by consultant except for the involvement of an electrician in some cases	N.A – condition assessment undertaken by consultant.

Timeline

The following is a summary of key milestones associated with the VHCA programme.

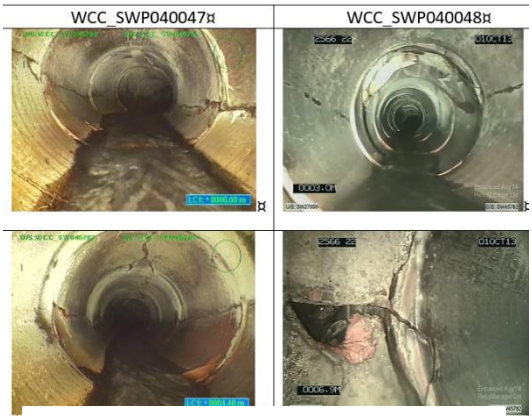
Item	Milestone	Date
1	Commencement of unified asset management systems including the Strategic Asset management plan, and other associated documents	2016
2	A collapse of a wastewater adit on the corner of Dixon St and Willis St in Wellington, which caused significant disruption within the CBD. 2020 - A significant leak within the Mt Albert Tunnel in Wellington	2019-2020
3	WCC Mayoral Task force set up (Feb 2020) and report delivered (Dec 2020)	2020
4	Commencement of planning of VHCA condition assessment programme	Mid 2020
5	Government announcement of stimulus funding	July 2020
6	Councils sign agreement with DIA for $47.3m of stimulus funding	Oct 2020
7	WWL first drawdown of stimulus funding	Nov 2020
8	VHCA field works programme commenced	Dec 2020 plant/reservoirs Feb 2021 pipes
9	Announcement on extension of stimulus funding to June 2022	Dec 2021
10	VHCA field works largely complete	April 2022
11	VHCA reports submitted	June-July 2022
12	Compilation of data	July-August 2022

Appendix C - WCC VHCA Photos

Pipes

WW CI Rising Main – sample from pipe failure Victoria St November 2017

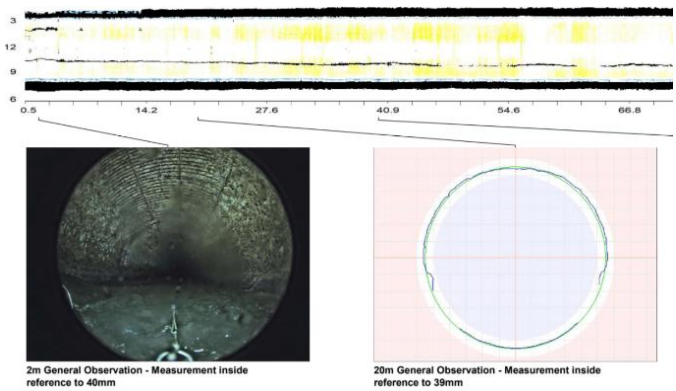
WW CI Rising Main – photo of failed piped showing longitudinal split - Victoria St July 2021



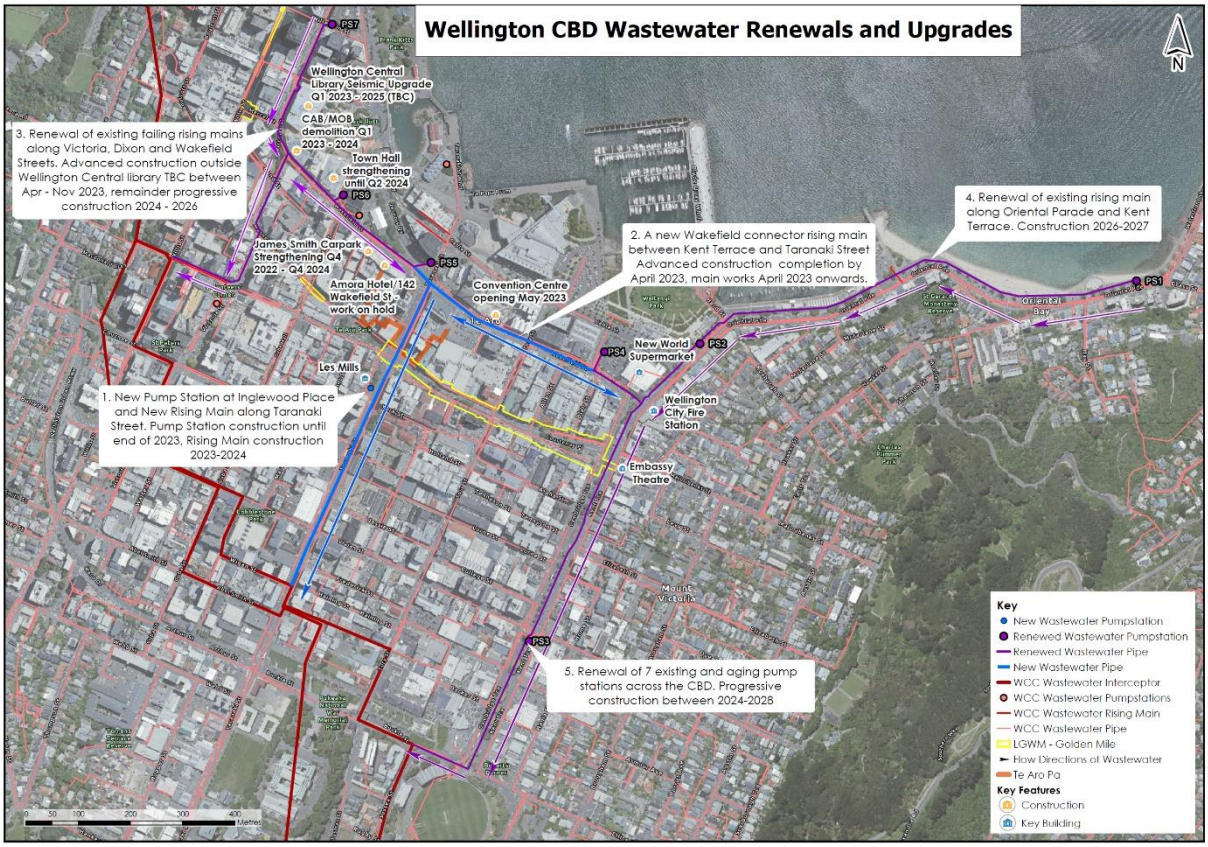
Collapsing SW Pipe Moorefield Road - WCC

Infiltration into brick line pipe - Glenmore Rd Thorndon

Missing Bricks – Hobson Street Thorndon



Interceptor near Wellington Airport– showing exposed steel reinforcing in concrete pipe



Wellington CBD Wastewater Renewals and Upgrades

Reservoirs

Missing sealant – Brooklyn West - WCC

Full perimeter handrail needed plus external staircase to be extended – Chester - WCC

Pump Stations

Significant corrosion roof beam
Wakefield St pump station - WCC

Pipe work in poor state -
Featherston St pump station (PS08) -
WCC

FORWARD PROGRAMME

Kōrero taunaki | Summary of considerations

Purpose

1. This report provides the Forward Programme for the Kōrau Tūāpapa | Environment and Infrastructure Committee for the next two meetings.

Strategic alignment with community wellbeing outcomes and priority areas

Aligns with the following strategies and priority areas:

☐ Sustainable, natural eco city
☐ People friendly, compact, safe and accessible capital city
☐ Innovative, inclusive and creative city
☐ Dynamic and sustainable economy

Strategic alignment with priority objective areas from Long-term Plan 2021–2031

☐ Functioning, resilient and reliable three waters infrastructure
☐ Affordable, resilient and safe place to live
☐ Safe, resilient and reliable core transport infrastructure network
☐ Fit-for-purpose community, creative and cultural spaces
☐ Accelerating zero-carbon and waste-free transition
☐ Strong partnerships with mana whenua

Relevant Previous decisions

Not applicable.

Financial considerations

☒ Nil	☐ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

Risk

☒ Low	☐ Medium	☐ High	☐ Extreme

Author	Leteicha Lowry, Democracy Advisor
Authoriser	Liam Hodgetts, Chief Planning Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.

Whakarāpopoto | Executive Summary

2. The Forward Programme sets out the reports planned for the Kōrau Tūāpapa | Environment and Infrastructure Committee meetings in the next two meetings that require committee consideration.
3. The Forward Programme is a working document and is subject to change on a regular basis.

Kōrerorero | Discussion

4. Thursday 2 February 2023:
   - Revocation of the Speed Limits Bylaw
   - Residual Waste – Southern Landfill Extension (Piggyback Option) Business Case
5. Thursday 16 March 2023:
   - Frank Kitts Park Development Plan

Attachments

Nil

ACTIONS TRACKING

Kōrero taunaki | Summary of considerations

Purpose

1. This report provides an update on the past actions agreed by the Kōrau Tūāpapa | Environment and Infrastructure Committee, or its equivalent, at its previous meetings.

Strategic alignment with community wellbeing outcomes and priority areas

	Aligns with the following strategies and priority areas: ☐ Sustainable, natural eco city ☐ People friendly, compact, safe and accessible capital city ☐ Innovative, inclusive and creative city ☐ Dynamic and sustainable economy
Strategic alignment with priority objective areas from Long-term Plan 2021–2031	☐ Functioning, resilient and reliable three waters infrastructure ☐ Affordable, resilient and safe place to live ☐ Safe, resilient and reliable core transport infrastructure network ☐ Fit-for-purpose community, creative and cultural spaces ☐ Accelerating zero-carbon and waste-free transition ☐ Strong partnerships with mana whenua
Relevant Previous decisions	Not applicable.

Financial considerations

☒ Nil	☐ Budgetary provision in Annual Plan / Long-term Plan	☐ Unbudgeted $X

Risk

☒ Low	☐ Medium	☐ High	☐ Extreme

Author	Leteicha Lowry, Democracy Advisor
Authoriser	Liam Hodgetts, Chief Planning Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion:

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.

Whakarāpopoto | Executive Summary

2. This report lists the dates of previous committee meetings and the items discussed at those meetings.
3. Each clause within the resolution has been considered separately and the following statuses have been assigned:
    - In progress: Resolutions with this status are currently being implemented.
    - Complete: Clauses which have been completed, either by officers subsequent to the meeting, or by the meeting itself (i.e. by receiving or noting information).
4. All actions will be included in the subsequent monthly updates but completed actions will only appear once.

Takenga mai | Background

5. At the 13 May 2021 Council meeting, the recommendations of the Wellington City Council Governance Review were endorsed and agreed to be implemented.
6. On 25 October 2022 through memorandum, the 2022-2025 committee structure chosen by Mayor Tory Whanau was advised. This included establishment of the Kōrau Tūāpapa | Environment and Infrastructure Committee.
7. The Kōrau Tūāpapa | Environment and Infrastructure Committee for the 2022-2025 triennium fulfills the functions of Pūroro Āmua | Planning and Environment Committee and Pūroro Waihanga | Infrastructure Committee of the 2019-2022 triennium.
8. The last meetings of the equivalent committees in the 2019-2022 triennium were held on the following dates:
    - Pūroro Āmua | Planning and Environment Committee – 15 September 2022
    - Pūroro Waihanga | Infrastructure Committee – 24 August 2022
9. The purpose of this report is to ensure that all resolutions are being actioned over time. It does not take the place of performance monitoring or full updates. The committee could resolve to receive a full update report on an item if it wishes.

Kōrerorero | Discussion

10. Following feedback, the status system has been changed so that resolutions either show as 'in progress' or 'complete'.
11. Of the 63 resolutions of the committees equivalent to Kōrau Tūāpapa | Environment and Infrastructure Committee at their final meetings of the 2019-2022 triennium:
    - 30 are in progress.
    - 33 are complete.
12. 100 in progress actions have been carried forward from the previous action tracking reports. 42 are still in progress.
13. Further detail is provided in Attachment One.

Attachments

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 24 June 2021	114	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	6	Agree that officers will report on the implementation of the Spatial Plan and the supporting Action Plan on an annual basis, or more regularly as required.	In progress	Progress on implementing the Spatial Plan's actions will be reported on in September. Proposed District Plan Hearings will begin February 2023
Thursday, 24 June 2021	115	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	14	Agree that Council will seek to get the agreement of Kāinga Ora to develop at least one Specified Development Project through under the Urban Development Act 2020 to facilitate more affordable and sustainable housing.	In progress	Officers are in ongoing conversations with Kāinga Ora about the potential to use the tools provided under the Urban Development Act 2020. There may be potential to use a Specified Development Project as part of the implementation of LGWM. LGWM is continuing to work with Kāinga Ora on a potential SDP. Councillors were updated on this in a LGWM workshop session on Urban Development
Thursday, 24 June 2021	116	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	15	Request officers to provide a report by September 2021 to identify underutilised sites across the city that are close to major public transport routes; including land that is: a) vacant or occupied by derelict buildings; or b) used largely or solely for car parking, or storage of cars or machinery; or c) occupied by lower quality 1-3 storey commercial buildings that do not contribute to streetscape or do not have heritage value."	Completed	Complete - reported to committee May 2022
Thursday, 24 June 2021	117	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	16	Propose measures to prioritise and significantly increase the rate of realisation of residential and mixed-use development capacity on underutilised sites over the next three, ten and 20 years.	In progress	Many Council workstreams already contribute to encouraging the development of underutilised sites and are focused on the short to medium term (next 3-10 years). The use of further measures has not been assessed at this point but could include targeted engagement with landowners and investigation of financial tools like targeted rates etc.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 24 June 2021	118	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	28	Report back to Council how to daylight more of our underground streams.	Completed	Daylighting of streams is identified in the Green Network Plan as an opportunity for greening the city and contributing to water sensitive urban design. Daylighting of the city's underground streams will be challenging and needs to be considered within a strategic, catchment-wide context. This will require working with Wellington Water, GWRC and mana whenua as part of wider catchment-scale stormwater planning to identify opportunities for daylighting. It will also need to consider climate change and flood hazard issues. This work has not been scoped but opportunities to integrate daylighting of piped streams as part of specific urban renewal/development projects will be investigated as opportunities arise.
Thursday, 24 June 2021	119	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	29	Request officers report back on the capacity to implement the National Policy Statement on Indigenous Biodiversity once it is released, as well as options for incentivising maintenance of Significant Natural Areas (SNAs), such as a rates rebate on the percentage of private land designated as a Significant Natural Area.	In progress	Consider the implications and options as part of the Backyard Taonga implementation, the District Plan review, SNA incentives development, and the Annual Plan/Long Term Plan funding processes. Awaiting finalisation of the National Policy Statement on Indigenous Biodiversity (NPS-IB) by the Ministry for the Environment.
Thursday, 24 June 2021	120	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	31	Support whenua Māori (Māori Land) exemption from national SNA designation under the National Policy Statement on Indigenous Biodiversity.	In progress	Awaiting finalisation of the National Policy Statement on Indigenous Biodiversity (NPS-IB) by the Ministry for the Environment.
Thursday, 24 June 2021	121	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	37	Request officers include provision for more vegetable/community gardens and composting systems throughout the central and inner suburbs in the Green Network plan.	Completed	Forms part of considerations in the Green Network Plan's implementation, the Sustainable Food Plan, and Waste Action Plan development.
Thursday, 24 June 2021	122	Environment and Infrastructure Committee	3.2: Approval of 30-year Spatial Plan	43	Request officers review the provision of open and green space in Johnsonville as part of the District Plan review.	In progress	Analysis of Johnsonville's open space provision has been undertaken as part of the 'Our Capital Spaces' strategy review. A qualitative assessment has been completed and a communications/ stakeholder plan is being developed.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Wednesday, 4 August 2021	123	Environment and Infrastructure Committee	2.2 Traffic and Parking Bylaw Review	15	Request officers add to the work programme to request engine braking noise monitoring by Waka Kotahi NZ Transport Agency on Brooklyn Hill Rd and Ohiro Road due to the high number and frequency of trucks that travel to and from the three landfills. Officers to commence engagement with waste operators to explore voluntary measures to reduce engine braking noise disturbance.	Completed	Officers have consulted with Waka Kotahi on the engine braking and noise monitoring as requested by the Brooklyn community (information attached). Officer advised the Residents Association for suggestion on how to engage with the local residents experiencing the problem to follow-up with the operators. Officer is awaiting on information of specific incident regarding engine braking and noise.
Wednesday, 25 August 2021	124	Environment and Infrastructure Committee	3.1 Brooklyn Road Bike Lane Trial	3	Agree that upgraded pedestrian facilities will be investigated as a part of this work.	In progress	A public consultation is planned for early 2023.
Thursday, 23 September 2021	125	Environment and Infrastructure Committee	2.2 Frank Kitts Car Park and Fale Malae	4	Direct officers to prepare a development plan and report back to Council by June 30 2022, recognising that there is an existing resource consent and commitment in Council's Long-term plan for the Garden of Beneficence (Chinese Garden).	In progress	Schedule Updates: 1 (Purpose and Principles Workshops): May- July: COMPLETE 2 (Design) July – Nov: UNDERWAY 3 Public Engagement- Planning underway for Early 2023 4 Design Refinement March/April 5 Public engagement (preferred option)- April 6 Preferred Development Plan Option- June
Thursday, 23 September 2021	126	Environment and Infrastructure Committee	2.2 Frank Kitts Car Park and Fale Malae	5	If the recommendation to demolish is agreed to then direct officers to prepare a demolition plan to be reported back to council alongside the development plan by June 2022.	In progress	Draft demolition plan is complete. Demolition plan cost and schedule will not be completed until preferred development option is agreed for Frank Kitts Park in order to inform clear demolition and construction schedule.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 September 2021	127	Environment and Infrastructure Committee	2.2 Frank Kitts Car Park and Fale Malae	6	Agree that if the Fale Malae project goes ahead on Frank Kitts Park that compensatory open green space will be created elsewhere in the central city which will be designed in line with Water Sensitive Urban Design principles and that the overall objective of the Council's planning work is to significantly increase the amount of green open space overall. Note that part of the Fale Malae will be open space.	In progress	Until final development plan is confirmed this work will not fully progress.
Thursday, 23 September 2021	128	Environment and Infrastructure Committee	2.2 Frank Kitts Car Park and Fale Malae	8	Direct officers to assist the eight businesses connected to the Frank Kitts car park with relocation.	In progress	Further to the meeting held with business owners 9 May 2022, business owners are included in the communications and engagement with updates on progress as required.
Wednesday, 27 October 2021	129	Environment and Infrastructure Committee	2.1 Let's Get Wellington Moving - Golden Mile Single Stage Business Case	4	Note that LGWM will report back to Council in Q2 2022 providing updates on cost management and engagement, and seeking approval for detailed design, funding and traffic resolutions.	Completed	An update on the 3 year delivery programme, including Golden Mile, was provided on 6 May 2022. Approval for detailed design, funding, and traffic resolutions was always intended to be brought for approval at the end of 2022/early 2023.
Wednesday, 27 October 2021	130	Environment and Infrastructure Committee	2.1 Let's Get Wellington Moving - Golden Mile Single Stage Business Case	5	Require LGWM to engage closely with the local business community on design and delivery implementation to ensure the needs of business are as best as possible met through detailed design of the project.	In progress	Golden Mile project completed six weeks engagement in August 2022. Engagement with businesses, key stakeholders and mana whenua will continue as we progress design and move into construction.
Wednesday, 27 October 2021	131	Environment and Infrastructure Committee	2.1 Let's Get Wellington Moving - Golden Mile Single Stage Business Case	7	Note the funding allocation report will need to explicitly incorporate the loss of parking revenue to Council.	In progress	Noted. This will be included with the funding application.
Wednesday, 27 October 2021	132	Environment and Infrastructure Committee	2.2 Wellington Central City Green Network Plan	4	Request officers to identify a te reo Māori name for the GNP.	Completed	This will be reported back to committee 12 May with the proposal that there is an ongoing discussion with Mana Whenua.
Wednesday, 27 October 2021	133	Environment and Infrastructure Committee	2.3 Te Whanganui-a-Tara Whaitua Implementation Programme And Te Mahere Wai O Te Kāhui Taiao	2	Note that officers will continue to work with Greater Wellington Regional Council to understand the impact of the Te Whanganui-ā-Tara Whaitua Implementation Plan and will report back on implementation to the Committee.	In progress	Report back scheduled for the 2022-25 triennium

Date	ID	Committee	Title	No.	Clause	Status	Comment
Wednesday, 10 November 2021	134	Environment and Infrastructure Committee	2.1 The Parade Upgrade - Design Options	2a	Agree to progress with a)Â Safety Improvements option integrated with the resurfacing works until LGWM MRT upgrade	Completed	The safety improvements option was progressed, presented, and (largely) approved by the P&EC during the 10 March meeting. The Committee voted to proceed with the residential improvements. Construction along the southern residential area has begun (started on April 19) and will be completed by 27 May. Construction of the northern residential area will follow. We aim to complete this by 30 June 2022.
Wednesday, 10 November 2021	135	Environment and Infrastructure Committee	2.1 The Parade Upgrade - Design Options	2i	Agree to include safety improvements and cycle facilities through the town centre in the Safety Improvements option (1-D).	Completed	During the 10 March 2022 meeting, the P&EC resolved to defer a decision on the town centre improvements in late 2022. The project team will return to the P&EC on 15 December 2022 (previously scheduled for the 8 December) for an update and decision on the town centre improvements. The proposed plan to be presented to the P&EC in December will include safety improvements and cycle facilities through the town centre.
Wednesday, 10 November 2021	136	Environment and Infrastructure Committee	2.1 The Parade Upgrade - Design Options	2iii	Request officers develop the traffic resolution to ensure that at least the existing amount and type of time limited parking remains available as close to businesses and community facilities as practical under the new scheme, in line with the Parking Policy.	Completed	A traffic resolution was developed, proposed, and approved by the P&EC on 10 March 2022. This is completed for the residential areas, and is to follow for the town centre
Wednesday, 10 November 2021	138	Environment and Infrastructure Committee	2.1 The Parade Upgrade - Design Options	2v	Note that the current Long Term Plan has up to $14m for improvements to The Parade and that this funding will remain ringfenced until formal decisions are made on Mass Rapid Transit."	Completed	Noted. No further action required."

Date	ID	Committee	Title	No.	Clause	Status	Comment
Wednesday, 10 November 2021	139	Environment and Infrastructure Committee	2.2 Fossil Fuel Free Central City	4	Agree that officers investigate options for bike libraries and e-bike schemes.	In progress	ReBicycle have received funding through the Climate and Sustainability Fund for a pilot cargo bike library and e-bike conversion scheme . A paper proposing a share e-bike trial is going to committee on December 8th. If committee approves it we will look to get the trial underway early in 2023.
Monday, 11 October 2021	140	Environment and Infrastructure Committee	2.2 Fossil Fuel Free Central City	5	Agree that officers investigate opportunities for low traffic streets in areas outside of the scope of LGWM, in line with Council's strategic vision and within current programmes of work and budgets.	In progress	There is not currently funding for additional or new projects within existing programmes. We are however looking to include low-traffic options in our in-progress projects. For example we are investigating creating public parklets on Blair and Allan St's over the summer.
Monday, 11 October 2021	141	Environment and Infrastructure Committee	2.2 Fossil Fuel Free Central City	7	Agree to open up Dixon Street (Taranaki Street - Victoria Street) as budgeted in the Pōneke Promise and agree to open up Cuba Street (Ghuznee Street - Vivian Street) to people by limiting private vehicle access, for consideration in the LTP 24-34 process.	In progress	Dixon St project is complete. Cuba St business case development is currently on hold due to resource constaints.
Monday, 11 October 2021	142	Environment and Infrastructure Committee	2.2 Fossil Fuel Free Central City	8	Support Cuba Street businesses this summer to explore possible people-centric layouts, via formal research and temporary trials such as "open street" events and trial parking arrangements.	Completed	3 Parklets have been located for 6 different businesses in the last few months and they were very well received by businesses and the public. One permanent parklet permission is also issued and currently is in place for Nolita.
Wednesday, 24 November 2021	143	Environment and Infrastructure Committee	3.1 Evans Bay Parade Stage 2 - Greta Point to Cobham Drive	3	Agree to approve the traffic resolution (Attachment 1) and proceed to detailed design and construction, but request officers to do further investigation on creating additional time-limited car parking between Rata Rd and the northern end of the dog exercise area at Cog Park.	In progress	Detail Design is yet to commence and will include "further investigation on creating additional time-limited car parking between Rata Rd and the northern end of the dog exercise area at Cog Park"
Wednesday, 24 November 2021	144	Environment and Infrastructure Committee	3.1 Evans Bay Parade Stage 2 - Greta Point to Cobham Drive	5	Note that Council officers intend to bring a paper to the Pūroro Hātepe | Regulatory Processes Committee outlining parking restrictions for the marina and public boat ramp areas. This expenditure is not included in the current budget.	In progress	Site meeting held between PSR and Parking Enforcement to develop options for parking restrictions. Site surveys to done over Summer to identify parking capacity

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 10 March 2022	145	Environment and Infrastructure Committee	2.4 TR20-22 The Parade, Island Bay - Safety Improvements	3a	Approve the following Traffic Resolution, pursuant to the provisions of the Traffic and Parking Bylaw 2021, TR20-22 The Parade, Island Bay – Safety Improvements (Option C) with traffic resolutions brought to Pūroro Āmua | Planning and Environment Committee for decision.	In progress	Implementation of the approved TR is complete. New TR's to be brought to P&E in September and December.
Thursday, 10 March 2022	146	Environment and Infrastructure Committee	2.4 TR20-22 The Parade, Island Bay - Safety Improvements	4	Agree that officers in conjunction with ward Councillors start working with the committee of the Island Bay Residents' Association to ensure that relationships are built and that local voices can be heard as any decisions are implemented.	In progress	Continued engagement with local businesses with a resulting TR for northern & southern businesses expected to be presented to September 2022 Pūroro Āmua | Planning and Environment Committee.
Thursday, 12 May 2022	149	Environment and Infrastructure Committee	2.2 Let's Get Wellington Moving - City Streets Targeted Improvements Single Stage Business Case	5	Request WCC officers to investigate options to address long-standing significant safety concerns at the Chaytor-Curtis-Raroa intersection.	In progress	The team has done a number of investigations into this intersection. A paper is being prepared to bring to the September P&E to inform Councillors of work done and recommended pathways forward.
Thursday, 12 May 2022	150	Environment and Infrastructure Committee	2.4 Wellington Central City Green Network Plan Update	2	Adopt the finalised Green Network Plan – (Attachment 1).	Completed	
Thursday, 12 May 2022	151	Environment and Infrastructure Committee	2.4 Wellington Central City Green Network Plan Update	3	Adopt the targets for delivery in the central city over the next 10 years: a. No net loss b. Double the number of trees c. Improve the greening of 20 existing public open spaces d. Deliver two new urban parks	Completed	
Thursday, 12 May 2022	152	Environment and Infrastructure Committee	2.4 Wellington Central City Green Network Plan Update	4	Adopt the Green Network Plan Implementation Framework – (pages 27- 38 of Attachment 1).	Completed	
Thursday, 12 May 2022	153	Environment and Infrastructure Committee	2.4 Wellington Central City Green Network Plan Update	5	Note that officers will continue to work with mana whenua as a part of our partnership and engagements around the Open Space and Recreation Strategy and through the LGWM Iwi Partnership Working Group to ensure that their values and aspirations are incorporated into the delivery of the Green Network Plan objectives and targets	In progress	Underway
Thursday, 12 May 2022	154	Environment and Infrastructure Committee	2.4 Wellington Central City Green Network Plan Update	6	Note that officers are developing a business case as input into the 2024/25-34 LTP.	In progress	Business case development underway

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 9 June 2022	155	Environment and Infrastructure Committee	2.2 Petition: Parking changes for residents of Te Wharepouri St	2	Request officers provide further traffic engineering solutions to enable safer exiting from Te Wharepouri Street.	Completed	Officers have consulted with the residents and have confirmed they are happy with our proposal. There is support for improving the visibility at the intersection. We will progress these via TR.
Thursday, 9 June 2022	156	Environment and Infrastructure Committee	3.2 Housing Strategy and Proactive Development Programme	2	Request officers report back on prevalence of homelessness in Wellington City including gender and ethnicity analysis and impact of COVID-19 on homelessness (2020-2022) by end of September 2022 to either Pūroro Āmua | Planning and Environment Committee or Pūroro Rangaranga | Social, Cultural and Economic Committee.	In progress	Paper scheduled for early September
Thursday, 9 June 2022	157	Environment and Infrastructure Committee	3.2 Housing Strategy and Proactive Development Programme	3	Request officers report back on the criteria of the Te Kāinga programme.	Completed	An update on the criteria of the Te Kāinga programme is provided in the Te Kāinga programme update paper, being brought to Environment and Infrastructure Committee on 8 December 2022
Thursday, 9 June 2022	158	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	2	Note that Officers have undertaken a full District Plan Review as directed by the Council on 27 June 2018 and recommend altering the District Plan as identified in the Proposed District Plan and in this Report.	Completed	
Thursday, 23 June 2022	159	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	3	Approve the Wellington City Proposed District Plan 2022 as presented to the Pūroro Āmua - Planning and Environment Committee for notification on 18 July 2022, pursuant to Schedule 1 Part 1 and Part 6 of the Resource Management Act 1991.	Completed	
Thursday, 23 June 2022	160	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	4	Note the resolution of the 13 May 2022 Pūroro Āmua - Planning and Environment Committee to split the District Plan into those matters which will follow the Intensification Streamlined Planning Process to operative status in November 2023; and those matters which will follow a Part 1, Schedule 1, Resource Management Act 1991 decision making process to operative status.	Completed	

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 June 2022	161	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	5	5) Note that the PDP gives effect to the direction set in the Our City Tomorrow – He Mahere Mokowā mō Pōneke A Spatial Plan for Wellington City 2021, and in particular provides for: a)Greater recognition of mana whenua values and the promotion of an active partnership in resource management processes. b) Upzoning to enable more housing capacity and housing choice in and around the City centre, suburban centres, and the City's train stations. c) Intensification and more mixed use within the existing urban area which supports the City's goal of becoming carbon neutral by 2050. d) Character protections in the inner suburbs focused on higher quality	Completed	
Thursday, 23 June 2022	162	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	6	Note that the Proposed District Plan gives effect to the National Policy Statement on Urban Development by implementing the intensification and qualifying matters as directed by Policies 3 and 4 of this National Policy Statement.	Completed	
Thursday, 23 June 2022	163	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	7	Note that the Proposed District Plan gives effect to the Government mandated medium density residential standards, and includes a proposed city outcomes framework.	Completed	
Thursday, 23 June 2022	164	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	8	Agree to remove the assisted (affordable) housing chapter from the notified District Plan and instead investigate the use of a targeted rate on land in identified growth areas of the city where additional height has been enabled by the PDP to fund an assisted (affordable) housing fund as part of the wider review of the Rating Policy.	In progress	There are two parts of this action: Remove assisted housing chapter - complete Investigate targeted rate - in progress. This will be considered as part of the rates review that is being undertaken and implemented as part of the 2024-34 long-term plan.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 June 2022	165	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	9	Note that the Proposed District Plan must strike the right balance between enabling more intensification, ensuring infrastructure capacity is available to service this development, and managing climate change effects and damaging high rainfall events. This will be achieved through a significant increase in three waters infrastructure investment through the Long-Term Plan, and through Proposed District Plan provisions that will require private development to actively mitigate on-site flood risks.	Completed	
Thursday, 23 June 2022	166	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	10	Note that significant natural areas on public and rural land are identified and protected in a manner consistent with the requirements of the Resource Management Act 1991, and directive policies 23 and 24 in the Regional Policy Statement (2013).	Completed	
Thursday, 23 June 2022	167	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	10b	Agree that Significant Natural Areas (SNA)s on residentially zoned properties be removed from the notified District Plan until the National Policy Statement on Biodiversity has been gazetted and a SNA incentives programme has been developed and considered by Council.	Completed	
Thursday, 23 June 2022	168	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	11	Note that Sites of Significance to Māori will follow a Part 1, Schedule 1, Resource Management Act 1991 decision making process to operative status.	Completed	
Thursday, 23 June 2022	169	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	12	Agree that a 'significant natural areas incentives programme' be considered as part of the 2023/24 Annual Plan, to assist affected landowners with the protection of these ecologically important areas.	In progress	Myfanwy Emeny may be best to comment on this one as it will be led by PSR with District Plan team support.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 June 2022	170	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	13	Note that the Kāpiti and Hutt/Melling lines meet the definition of rapid transit lines in the National Policy Statement on Urban Development, and that this requires district plans to enable building heights up to 21 metres (6 storeys) within walking catchments of rapid transit stops on these lines.	Completed	
Thursday, 23 June 2022	171	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	13b	Agree that Johnsonville Railway Line will not be included as a rapid transit line and that any stops on the line will not be identified as rapid transit stops in respect of the National Policy Statement on Urban Development, with the effect that the walking catchment areas and additional height enabled around the rail stations will no longer apply, and instead building heights and densities of urban form commensurate with the level of commercial activity and community services under Policy 3d of the NPS-UD will apply.	Completed	
Thursday, 23 June 2022	172	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	14	14) Approve the Chairperson and Deputy Chairperson of the Planning and Environment Committee and the Chief Executive to be able to make minor changes and edits, as required, to the Proposed District Plan prior to public notification.	Completed	

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 June 2022	173	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	15	~~Agree to add the following paragraph~~ on the importance of managing first flush rainfall for urban stream health to the introduction of the Three Waters chapter: "Degradation of water quality in urban freshwater ecosystems can occur when stormwater runoff from impervious surfaces is channelled directly into streams and rivers. The 'first flush' of stormwater during a rain event can include higher levels of contaminants. New development using copper or zinc building materials (two common contaminants) will need to treat these surfaces or the stormwater from these surfaces to avoid copper or zinc from entering stormwater. New development will also need to include water sensitive design methods so that development contributes to promoting	Completed	
Thursday, 23 June 2022	174	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	16	Agree to require best practice approach to water sensitive design by changing the wording of THW-P1 (iii) to "Demonstrate best practice approach to the management of stormwater quality and quantity" and THW-R4 Matters of discretion item 3. To "adoption of best practicable option for stormwater retention and treatment"	Completed	
Thursday, 23 June 2022	175	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	17	Agree that a 'grey water reuse incentives programme' be considered as part of the 2024-2034 Long Term Plan, to assist affected landowners with the retention and reuse of grey water. This will be done with Wellington Water and Greater Wellington Regional Council and give particular emphasis to Mana Whenua with respect to water reuse.	In progress	Note that this action will be an action for the Strategy and Policy Teams

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 June 2022	176	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	18	Remove standards requiring 1.5m front yard and 1m side yards in the medium density residential zones and high density residential zones for the construction, addition or alteration of buildings and structures where no more than three residential units occupy a site, so that it would be permitted for a building to be built up to the front and side boundaries of a site.	Completed	
Thursday, 23 June 2022	177	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	19	Request that officers investigate options to incentivise development on underdeveloped land as part of the wider review of the Rating Policy, including land value only rating (as recommended by the Productivity Commission) and a targeted rate on underdeveloped land in the city centre, metropolitan, local and neighbourhood centres.	In progress	Note this is an action for the Strategy and Policy Team
Thursday, 23 June 2022	178	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	20	Agree that officers report back early in the new triennium on the short stay accommodation market in Wellington provided by AirBnB and other providers, and the effectiveness of options used here in New Zealand and abroad to manage and or regulate the short stay accommodation market provided by AirBnB and other providers.	In progress	Note this is an action for the Strategy and Policy Team
Thursday, 23 June 2022	179	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	21	Instruct officers to remove the proposed heritage listing for 355 The Parade, Island Bay from the Schedule of Heritage Buildings prior to the Notification of the District Plan.	Completed	
Thursday, 23 June 2022	180	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	22	Note that officers will update the WCC website with information on how to delist a heritage building.	Completed	

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 23 June 2022	181	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	23	Agree that the walking catchments recommended by officers, in respect of the spatial plan, to be reinstated as follows: •10 mins walking catchment around City Centre Zone (CCZ) and metropolitan centres except where limited by natural hazard •10 mins walking catchment around Tawa and Kenepuru stations. •5 mins walking catchment around the other stations designated as rapid transit along the Hutt/Melling Kapiti lines.	Completed	
Thursday, 23 June 2022	182	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	24	Identify the Outer Green Belt including those areas broadly intended to be included into the OGB as Amenity Landscapes.	Completed	
Thursday, 23 June 2022	183	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	25	Approve the extension of the Thorndon Character Area to include an additional property at 290 Tinakori Road and correct a mapping error made within the Proposed District Plan.	Completed	
Thursday, 23 June 2022	184	Environment and Infrastructure Committee	2.1 Approval of Proposed District Plan for Public Notification	26	Apply 'Minimum sunlight access – public space' standards to open space zoned parks adjacent to sites zoned High Density Residential Zone instead of height in relation to boundary controls. Sunlight access must be maintained in a minimum of 70% of the area during 10am and 3pm at either of the equinoxes (i.e. 21 March or 23 September)	Completed	

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 14 October 2021	310	Environment and Infrastructure Committee	3.2 Residual Waste Disposal Options	9	Direct officers to progress two parallel work streams (in order to ensure that all reasonably practicable options are available for the Council's consideration of the issue of the disposal of residual waste beyond 2026): a. Continue to investigate and analyse further minimisation and waste disposal options and consultation requirements, reporting to Infrastructure b. Undertake the work to initiate and lodge the necessary resource consent applications to extend the Southern landfill	In progress	One of the landfill (Stage IV) has now been discounted as it was unreasonably practical due to time frame issues. Concentrate on piggy back (smaller) landfill option. a. Completed. b. Progressing -target lodgement in early 2023
Thursday, 14 October 2021	311	Environment and Infrastructure Committee	3.2 Residual Waste Disposal Options	15	Request that the consultation signals the city's intended journey to minimal waste as outlined in the roadmap. This will be based on future residual waste quantities while noting that investment decisions will need to be made via LTP	Completed	Noted.
Thursday, 14 October 2021	312	Environment and Infrastructure Committee	3.2 Residual Waste Disposal Options	18	Request officers to update on the timeline of the sludge removal project as a priority.	Completed	Ongoing until project is completed.
Thursday, 14 October 2021	313	Environment and Infrastructure Committee	3.3 Strategic Waste Review Update He Ara, He Para Iti/A Pathway, Minimal Waste	7	Agree to adopt in principle the draft Waste Minimisation Roadmap, and continue to build on the initiatives and how they will be delivered in co-design with the community.	In progress	Work with the Council's Iwi partners, and community stakeholders, to develop the actions to be included in the next WCC WMMP Action Plan is currently underway. A Councillor workshop on the outcome of the co-design propose is proposed for November 2022.
Thursday, 14 October 2021	314	Environment and Infrastructure Committee	3.3 Strategic Waste Review Update He Ara, He Para Iti/A Pathway, Minimal Waste	9	Agree that waste minimisation initiatives will be progressed in parallel with the sludge initiative so they can be quickly implemented and scaled up once the sludge constraint is removed.	In progress	A range of planning related to strategic waste projects, including the development of the new WMMP and business case development to expand Wellington City Resource Recovery network. Related project outputs will be considered by the Council throughout 2022 and 2023

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 14 October 2021	315	Environment and Infrastructure Committee	3.3 Strategic Waste Review Update He Ara, He Para Iti/A Pathway, Minimal Waste	11	Request officers to report back in six months, in order to feed into the Annual Plan, with a roadmap implementation plan for the strategic waste review which will increase the ambition around the name, initiatives, timeline, and reduction goals including ongoing co-design and collaboration with mana whenua, key stakeholders and the community. The implementation plan will include the following: • Financial implications of accelerating the strategic waste minimisation roadmap. • A strong narrative about the social, cultural, economic, and environmental benefits of the waste minimisation roadmap.	Completed	Council was updated in August 2022 on the Zero Waste Programme
Thursday, 11 November 2021	316	Environment and Infrastructure Committee	2.1 Wellington Water Limited - Community Infrastructure Resilience	2	Agree that the Council investigate the development of a proactive strategy for sale and delivery of water tanks enabling increased access at places deemed appropriate such as libraries, service centres, and weekend markets.	In progress	Deferred until early 2023
Thursday, 11 November 2021	317	Environment and Infrastructure Committee	2.2 Mayoral Taskforce Three Waters: Progress Report	4	Note comments in change in status - no longer going to committee.	Completed	Siobhan agreed with Chair and deputy Chair that this no longer needs to go to committee and will be issued as an electronic update from Siobhan - via e-mail (form of update to be determined).
Saturday, 11 December 2021	318	Environment and Infrastructure Committee	2.3 Project Jasmine - Sewage Sludge Minimisation	2	Agree to engage further with the community and in particular with: • the residential ratepayer base regarding the indicative change in the proposed levy range compared to what was included in the LTP consultation. • the commercial ratepayer base on the indicative levy	Completed	Levy engagement underway - closes 19th April
Thursday, 11 November 2021	319	Environment and Infrastructure Committee	2.3 Project Jasmine - Sewage Sludge Minimisation	5	Agree to the procurement approach specified in this report including market sounding for Early Contractor Involvement in November 2021 and release of an RFP in January 2022 (noting that commencing the procurement is not pre determinative of a final decision on the project)	Completed	The information was formally received by the committee. Market sounding has been completed, RFP for ECI was delayed until February due to the need to get other RFPs ahead of the ECI RFP. RFP has been released but deadline has been extended due to resource impact of Covid.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 11 November 2021	320	Environment and Infrastructure Committee	2.3 Project Jasmine - Sewage Sludge Minimisation	9	Note that officers will report back in early 2022 with the final business case and results from the community engagement to propose a Committee decision to proceed with the project, and the technical option, and to provide an update on the funding arrangements and on other work streams.	Completed	Business Case completion is progressing well and due for presentation to the Infrastructure Committee in Q4.
Thursday, 9 December 2021	321	Environment and Infrastructure Committee	2.3 Strategic Waste Planning Overview	7	Agree that officers will progress ongoing co-design and collaboration with mana whenua, key stakeholders and the community between February and October 2022, to refine the waste minimisation initiatives contained in the draft roadmap and to develop a new (draft) WMMP Action Plan and investment plan, with a report to Committee on the progress and outcomes in October 2022	In progress	Council was updated in August 2022 on the Zero Waste Programme
Thursday, 9 December 2021	322	Environment and Infrastructure Committee	2.3 Strategic Waste Planning Overview	8	Agree that the Council will work regionally to advance the development of the next Regional Waste Management and Minimisation Plan in 2022/2023, with a Regional WMMP currently scheduled for consultation in 2023.	In progress	
Thursday, 9 December 2021	323	Environment and Infrastructure Committee	2.2 Earthquake prone buildings programme update	7	Direct officers to report back to the Committee six monthly with an update on the programme.	Completed	Chair and CIO agreed this update will be shared through email in Aug 22
Wednesday, 23 February 2022	324	Environment and Infrastructure Committee	2.1 Wastewater Service Update	2	Officers will report back to the Pūroro Waihanga | Infrastructure Committee in August 2022 and March 2023 on progress and outcomes in respect to the implementation of the review's recommendations.	In progress	First update shared with Crs through email in Aug 22.
Wednesday, 23 March 2022	325	Environment and Infrastructure Committee	3.1 Wellington Water Limited Quarterly Report	2	Agree that the form and substance of the Quarterly Report from WWL will be agreed with WWL for future reporting.	Completed	
Wednesday, 23 March 2022	326	Environment and Infrastructure Committee	3.2 Wellington Water Limited presentation on Porirua/ North Wellington wastewater overflow consent	3	Affirm support for Ngāti Toa's position that overflows into Te Awarua-o-Porirua and all waterways are unacceptable. WWL and WCC should do whatever it takes to prevent overflows into this and other Wellington catchments.	Completed	Wellington Water received the confirmation and will consider this as part of their resource consent application and management strategy. Note, this falls within the remit of Wellington Water Limited

Date	ID	Committee	Title	No.	Clause	Status	Comment
Wednesday, 23 March 2022	327	Environment and Infrastructure Committee	3.2 Wellington Water Limited presentation on Porirua/ North Wellington wastewater overflow consent	4	Agree that Ngāti Toa Rangatira will be centrally involved in the development of the resource consent and will be invited to codesign the collaborative committee (if that is deemed the best way forward). This is consistent with the UN Declaration on the rights of indigenous people and Te Tiriti o Waitangi.	Completed	Request conveyed to Wellington Water and further note that this falls within the remit of Wellington Water Limited as the future consent holder.
Wednesday, 23 March 2022	328	Environment and Infrastructure Committee	3.2 Wellington Water Limited presentation on Porirua/ North Wellington wastewater overflow consent	5	Request consideration of the best means of involving the community in contributing to the development of the resource consent process.	Completed	Request conveyed, this falls within the remit of Wellington Water Limited who will be the consent holder.
Wednesday, 23 March 2022	329	Environment and Infrastructure Committee	3.3 Verandahs Bylaw and Public Places Bylaw review 2022	2	Agree to consult with the public and stakeholders on the draft Statement of Proposal for the proposed new Public Places Bylaw (Attachment 1) from 25 March to 29 April 2022.	Completed	Public consultation is in progress.
Wednesday, 23 March 2022	330	Environment and Infrastructure Committee	3.3 Verandahs Bylaw and Public Places Bylaw review 2022	3	Delegate to the Chief Executive and the Chair or Deputy Chair of the Pūroro Waihanga | Infrastructure Committee the authority to amend the draft Statement of Proposal to include any amendments as agreed by the Pūroro Waihanga | Infrastructure Committee at this meeting, as well as any minor consequential edits.	Completed	
Wednesday, 23 March 2022	331	Environment and Infrastructure Committee	3.4 Proposed Disposal - part of 39 Chapman Street, Johnsonville	2b	Recommend to Council that it: b. Agree to dispose of the Land to the adjoining owner at 15 Chesterton Street, Johnsonville	Completed	
Thursday, 11 August 2022	657	Environment and Infrastructure Committee	2.1 Petition: Pedestrian Crossing for Monorgan Road	1	Receive the information.	Completed	Presented and approved by Councillors on 11 August.

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 11 August 2022	658	Environment and Infrastructure Committee	2.1 Petition: Pedestrian Crossing for Monorgan Road	2	Notes that Council acknowledges the safety concerns raised by the community and understands the need for a crossing facility. Officers will start public consultation once we have a preliminary design ready. Further to the consultation and once the best design is chosen, a road safety assessment will be undertaken and then, if no additional changes will be required, a construction panelist is chosen and construction starts.	Completed	Presented and approved by Councillors on 11 August.
Thursday, 11 August 2022	659	Environment and Infrastructure Committee	3.1 Botanic Garden ki Paekākā to City bike and bus improvements - traffic resolution approval	1	Receives the information	In progress	
Thursday, 11 August 2022	660	Environment and Infrastructure Committee	3.1 Botanic Garden ki Paekākā to City bike and bus improvements - traffic resolution approval	2	Notes the submissions	In progress	
Thursday, 11 August 2022	661	Environment and Infrastructure Committee	3.1 Botanic Garden ki Paekākā to City bike and bus improvements - traffic resolution approval	3	Notes the summary of submissions, and responses to themes and design feedback shown in Attachments 1 and 2	In progress	
Thursday, 11 August 2022	662	Environment and Infrastructure Committee	3.1 Botanic Garden ki Paekākā to City bike and bus improvements - traffic resolution approval	4	Agrees to make the following changes to the traffic resolution: a) Extend bus stop 4313 on the north side of Glenmore Street 2 meters eastwards b) Relocate bus stop 5312 on the south side of Tinakori Road 5 meters westwards c) Agree to the proposed parking zone boundary alterations for Thorndon and Kelburn, in line with officers' recommendations. d) Extend the hours for the downhill shared bus and bike lane on Tinakori Road to 7am-10am Monday to Friday.	In progress	
Thursday, 11 August 2022	663	Environment and Infrastructure Committee	3.1 Botanic Garden ki Paekākā to City bike and bus improvements - traffic resolution approval	5	Adopt the traffic resolution set out in Attachment 3, incorporating the changes set out in recommendation 4	In progress	

Date	ID	Committee	Title	No.	Clause	Status	Comment
Thursday, 11 August 2022	664	Environment and Infrastructure Committee	3.2 Forward Programme	1	Receive the information.	Completed	
Thursday, 11 August 2022	665	Environment and Infrastructure Committee	3.2 Forward Programme	2	Note the following items have been added to the Forward Programme for September: 8 th September 2022 • Oral Hearings on proposed bike and bus improvements Newtown to City 15th September 2022 • Decision on proposed bike and bus improvements Newtown to City • Approach to speed management • Paper with options going forward for the Curtis/Chaytor/Raroa intersection	Completed	
Thursday, 11 August 2022	666	Environment and Infrastructure Committee	3.3 Actions Tracking	1	Receive the information.	Completed	

3. Public Excluded

Recommendation

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Pursuant to the provisions of the Local Government Official Information and Meetings Act 1987, exclude the public from the following part of the proceedings of this meeting namely:

General subject of the matter to be considered	Reasons for passing this resolution in relation to each matter	Ground(s) under section 48(1) for the passing of this resolution
3.1 Appointment of District Plan Hearings Commissioners	7(2)(a) The withholding of the information is necessary to protect the privacy of natural persons, including that of a deceased person.	s48(1)(a) That the public conduct of this item would be likely to result in the disclosure of information for which good reason for withholding would exist under Section 7.
3.2 Te Kāinga programme update	7(2)(b)(ii) The withholding of the information is necessary to protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information. 7(2)(h) The withholding of the information is necessary to enable the local authority to carry out, without prejudice or disadvantage, commercial activities. 7(2)(i) The withholding of the information is necessary to enable the local authority to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).	s48(1)(a) That the public conduct of this item would be likely to result in the disclosure of information for which good reason for withholding would exist under Section 7.

2. Note that, following the meeting, the information that can be released pertaining to the resolutions will be made publicly available for the following items:
   a. 3.1 Appointment of District Plan Hearings Commissioners
   b. 3.2 Te Kāinga programme update