Far North District Council

Waste Assessment - Final Draft

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Contents

Executive Summary 1

1 Introduction 3

1.1 Background 3

1.2 Document and accuracy 4

1.2 Key terms and acronyms 5

2 Legislative and Strategic Context 7

2.1 New Zealand Waste Strategy 7

2.2 Key legislation 7

2.3 National advocacy 8

2.4 National factors 8

2.4.1 China's National Sword Policy 8

2.4.2 Waste levy and ETS 8

2.4.3 Waste legislation review 9

2.4.4 Standardise kerbside collections 9

2.4.5 Establishment of a Container Return Scheme 9

2.4.6 Investment in diversion infrastructure 10

2.4.7 Resource Management Act (RMA) reform 10

2.4.8 Phasing out single use plastic 10

2.4.9 Local Government Reform 10

2.5 FNDC strategic plans and regulation 10

2.6 Regional factors 12

3 Existing Recycling and Waste Facilities and Services 13

3.1 FNDC provided facilities and services 13

3.2 Future plans for FNDC facilities and services 15

3.3 Non-council facilities and services 16

3.3.2 Private material processing facilities 17

3.3.3 Product stewardship/take back schemes 17

3.4 FNDC's waste education and promotion programmes 19

4 Waste data 20

4.1 Far North District catchment 20

4.2 Data assumptions and accuracy 21

4.3 Progress against the 2017 WMMP target 21

4.4 Total known waste in Far North District 22
4.4.1 Trends in total waste tonnes 22
4.4.2 Sources of waste to landfill 24
4.4.3 Kerbside waste to landfill composition 24
4.4.4 Total waste to landfill composition 27
4.4.4 Illegal Dumping 27
4.4.5 Waste from out of district 28
4.5 Composition of diverted materials 28
4.6 Diversion potential 28
5 Future Growth and Demand for Waste Services 31
5.1 Demographics/population change 31
5.2 Commercial and industrial economic activity 32
5.3 Land use changes 33
5.4 Waste from other areas 33
5.5 Community expectation and consumer behaviour 33
5.6 Natural and man-made disasters 34
5.7 Projected waste tonnages 34
5.7.1 Residential tonnes 34
5.7.2 Non-residential tonnes 35
5.7.3 Total projected tonnes to landfill 35
6 FNDC Future Planning Framework 38
6.1 Vision and goals 38
6.2 Guiding principles 39
6.3 Far North specific issues 39
7 Options Assessment (Statement of Proposals) 41
Appendix A Letter from Medical Officer of Health 52
Appendix B Legislation 54
The Waste Minimisation Act (WMA) 2008 54
Climate Change Response Act 2002 and amendments 54
The Local Government Act 2002 (LGA 2002) 54
The Resource Management Act 1991 (RMA) 55
Other legislation 55
Appendix C FNDC Progress towards 2017 action plan 58

Executive Summary

This Waste Assessment has been prepared in February 2023 in accordance with the requirements of the Waste Minimisation Act 2008 (WMA). Under the WMA, the Far North District Council (FNDC) has a statutory responsibility to promote effective and efficient waste management and minimisation within the Far North district.

FNDC's current Waste Management and Minimisation Plan (WMMP) was adopted in 2017. This Waste Assessment establishes the planning foundations for FNDC's potential 2023 review of its WMMP and describes the waste situation, the vision, goals and objectives of the district and develops options for meeting future demand and addressing issues.

Two of FNDC's main solid waste service delivery contracts are due to expire in September 2024, and a Section 17A Review of the services was completed in September 2022 in preparation for the procurement of the replacement contracts. This assessment includes the Section 17A review recommendations for the effective delivery of services within the Far North district and documents the formal waste assessment process to ensure the full solid waste activity has been considered.

The Waste Assessment has been reviewed by the Medical Officer of Health to ensure that public health is adequately protected in the future. Their feedback is included in Appendix A.

This document was prepared using information gathered from a variety of sources. Every effort has been made to provide a complete and accurate assessment, in some cases data has been estimated or there are data gaps (which are noted where applicable).

As well as the WMA, this Waste Assessment considers a number of other Acts and amendments and a range of national, regional and local strategies, policies and projects. The central government has announced changes over the next 1 to 5 years including further increases in the Waste Disposal Levy, the government's Emissions Reduction Plan and the standardisation of kerbside services (including the need for a council-run kerbside collection service by 2027 and a food scraps collection service by 2030). Due to these factors outside of local government control, FNDC sees the benefit in aligning their waste plans with the Ministry for the Environment's newly released *Te rautaki para | Waste strategy* and anticipated supporting regulations and legislation. Note that a central government announcement regarding the introduction of a Container Return Scheme (CRS) was made in March 2023, deferring the scheme indefinitely, meaning these containers will continue to feature in household waste for the foreseeable future.

The demand for infrastructure and services to divert waste from landfill is anticipated to increase over the next 10 years. This is not due so much to growth in waste and population, but in response to the central government requirements, increased landfill disposal costs and changing customer expectations.

Existing diverted material infrastructure needs to be improved to meet diversion demand, either within the district or in neighbouring districts. The increase in the Waste Disposal Levy presents an opportunity for regional investment to support the development of diversion facilities.

Far North District Specific Issues

Having reviewed progress against the current WMMP actions and considering the change in waste quantities since the current WMMP was developed, the following FNDC specific issues have been identified and are not addressed by the current WMMP:

- Ease of access to adequate recycling facilities and services to support increased diversion of recyclables
- Addressing increasing waste to landfill per capita
- Addressing the inappropriate dumping, burning and burying of waste outside the waste management regime
- Addressing the lack of visibility in effectiveness of residential recycling
- Addressing the high volume of organic waste going to landfill
- Addressing the high volume of C&D waste going to landfill
- Addressing the cost and volume uncertainty due to legislation change

Options assessment

FNDC has considered options for addressing the district-specific issues and assessed these in terms of diversion potential, cost and ease of implementation. The options are grouped into the following categories:

- Influence – change behaviour through waste minimisation programmes and advocate for national change;
- Regulate – enforce diversion and behaviour change; and
- Service – provide facilities and services to increase diversion.

FNDC's waste focus is on reducing volume to landfill and increasing the quantity of waste that is reduced, reused and recycled. Waste minimisation education will support proposed service delivery changes and additional investment. The current waste service contracts expire in 2024 and this presents the best timing to introduce any change to Refuse Transfer Station (RTS) or Community Recycling Centre (CRC) operations and to consider the potential introduction of kerbside collection services and what impact that would have on the RTS/CRC network. A review of the existing bylaw is not currently planned to take place until further announcements from central government have been made, providing more certainty if bylaw changes are required.

The options discussed in this Waste Assessment and the required actions and timeframes for delivery may be identified in a draft WMMP, should FNDC choose to update their current WMMP.

1 Introduction

1.1 Background

Territorial authorities are legally required to conduct a Waste Assessment (WA) and consider it in the review and preparation of their Waste Management and Minimisation Plans (WMMP). The Waste Management Act 2008 (WMA) (s44) also requires that a Waste Assessment be notified with the draft WMMP for public consultation. This process is required at intervals of no less than every six years. FNDC's current WMMP was adopted in 2017.

This Waste Assessment will inform FNDC's 2023 review of its WMMP and is consistent with FNDC's 2021-31 Long Term Plan in the overall strategic importance of minimising waste to landfill and improving sustainability within the district. The LTP also signals the extension of the network of refuse service centres to areas of the District where services are not easily accessed.

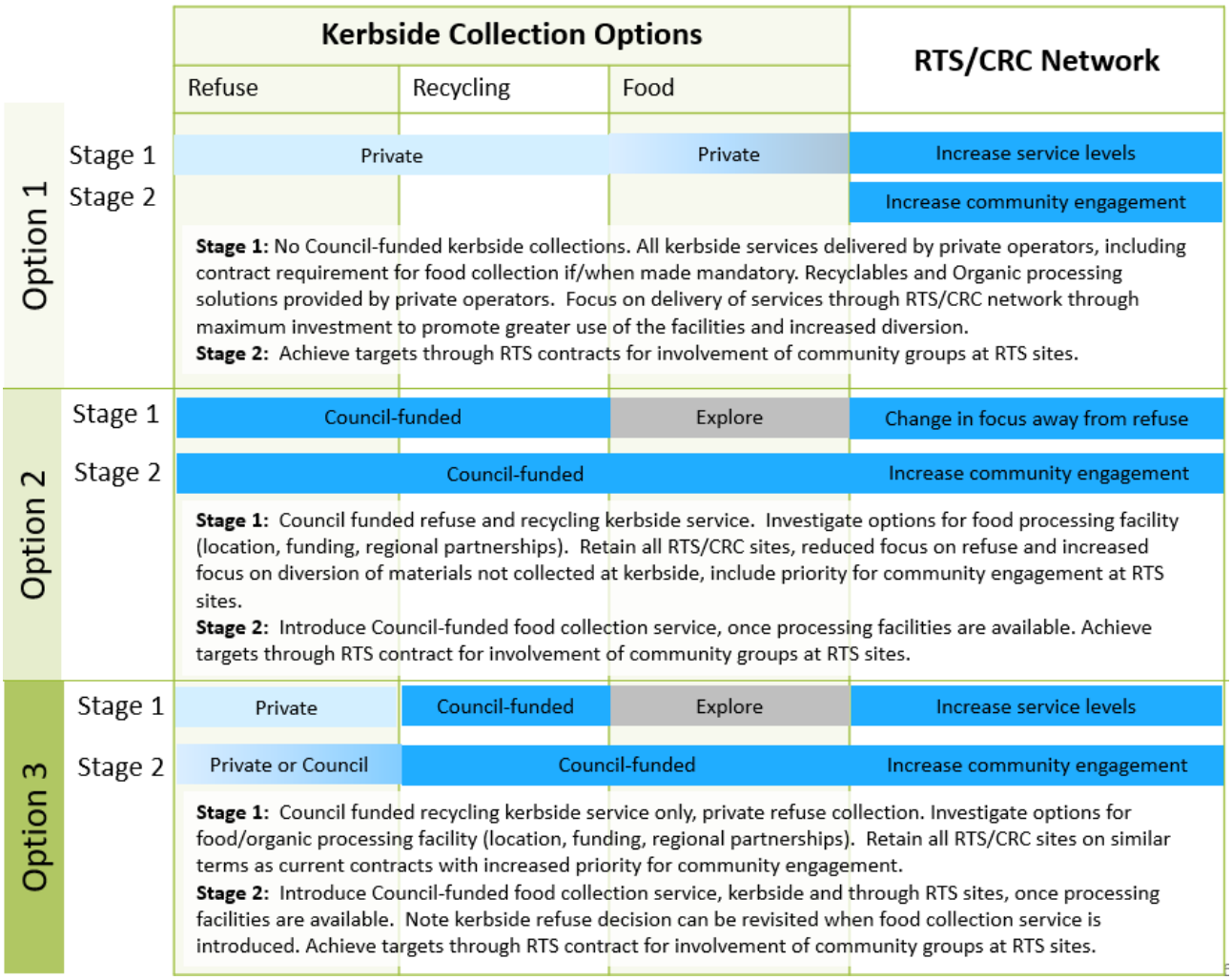
There is significant national legislation underway that is anticipated to impact how the service is delivered. This Waste Assessment incorporates the elements of this national legislation where appropriate. As a result, several of the options considered as part of this assessment would represent a change to the level of service described in the LTP, requiring consultation with the community prior to being adopted.

FNDC has prepared this Waste Assessment as prescribed in Section 51 of the WMA and provides details of:

- existing collection, recycling, recovery, treatment and disposal services provided in Far North
- current waste quantities, composition, and flows
- identified waste issues
- forecast future demand
- FNDC's role in meeting the forecast future demand
- an assessment of options to address the district's identified waste issues
- proposals for meeting forecast demands.

Two of FNDC's main solid waste service delivery contracts are due to expire in September 2024, and a Section 17A Review of the services covered by these contracts was completed in September 2022 in preparation for the procurement of the replacement contracts. Due to the expiry date of the existing contracts, the procurement exercise is continuing in parallel with this Waste Assessment, with alignment between the projects being monitored by FNDC. The recommendations from the Section 17A Review include several options, pending the outcome of FNDC's strategic decisions around their WMMP and community consultation. These options include:

Figure 1 Recommended options from Service Delivery Review



This Waste Assessment includes the Section 17A Review recommended options for the effective delivery of services within the Far North district and documents the formal waste assessment process to ensure the full solid waste activity has been considered.

1.2 Document and accuracy

This document was prepared using information gathered in February 2023 from a variety of sources including data managed by FNDC, the most recent Solid Waste Analysis Protocol report (SWAP, *Audit of Kerbside Rubbish and Survey of RTS Waste in Far North District,* Sunshine Yates Consulting), and the 2017 WMMP.

The data presented in this assessment does not represent all the waste and diverted materials generated in the district. Data regarding the total tonnes to landfill and total diverted tonnes has been supplied by the two largest waste service providers in the district, noting these are the same two companies that deliver FNDC's main solid waste contracts. These values do not include waste that does not make it into the waste management regime, such as:

- Waste that is burnt, buried or otherwise disposed of in farms and rural areas.
- Organic waste that is disposed of through home composting, worm farms etc.

As these same companies operate FNDC's RTS/CRC sites, and provide private kerbside and commercial collection services, the tonnes reported are only at the amalgamated level. I.e. the total diverted tonnes is reported, but how much is collected through the RTS sites, from kerbside collections and commercial operations separately is unknown.

No breakdown of tonnes by material type was available from the private and commercial sector and Sunshine Yates Consulting in their SWAP report, states that national average compositions have been used for these sectors. The composition of private kerbside refuse bin data is based on the bins sampled during their analysis and has been assumed to represent average residential refuse composition disposed of through RTS sites as well.

It is acknowledged a Waste Assessment is only a snapshot in time of the data collected for the purposes of future waste planning. Every effort has been made to provide a complete and accurate assessment. In some cases, data has been estimated or there are data gaps such as the volume and composition. Details regarding any limiting factors in preparing the Waste Assessment that are deemed to have materially impacted on the completeness or accuracy of the data, forecasts, estimates or options assessment have been noted where appropriate.

The information contained in this Waste Assessment was considered appropriate when giving regard to:

- the significance of the information
- the costs of, and difficulty in, obtaining the information
- the extent of FNDC's resources
- the possibility FNDC may be directed under the Health Act 1956 to provide the services referred to in that Act.

1.2 Key terms and acronyms

Table 1 Key terms and acronyms

Key Term/Acronym	Definition
Cleanfill	A cleanfill is any facility that accepts only cleanfill material
Cleanfill material	Inert materials disposed of, into or onto land, at a consented cleanfill, that when buried will have no adverse effect on people or the environment. Materials typically include construction and demolition (C&D) waste such as concrete, uncontaminated soil and rock.
CRC	Community Recycling Centre
Diverted material	Discarded materials such as materials collected for recycling, composting or other recovered or treated materials that are diverted from landfill
Domestic waste	Solid waste from households
ETS	Emissions Trading Scheme
Far North District Council	Far North District Council (FNDC)
Landfill	A disposal facility as defined in s7 of the Waste Minimisation Act 2008, excluding incineration
LGA	Local Government Act 2003
LTP	Long Term Plan
MfE	The Ministry for the Environment
MRF	Material Recovery Facility

Key Term/Acronym	Definition
NES	National Environmental Standards
NZWS	New Zealand Waste Strategy
NRSWWG	Northland Regional Solid Waste Working Group
Organics	Discarded compostable materials that are organic in origin and appropriate to be used as feedstock for composting, and includes garden waste and food waste
Puwera	Puwera Landfill in Whangarei
RMA	Resource Management Act 1991
RRC	Resource Recovery Centre
RTS	Refuse Transfer Station
SWAP	Solid Waste Analysis Protocol (SWAP). Ministry for the Environment-led baseline programme to provide solid waste composition information
Waste	Waste means waste disposed of to landfill and 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 to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of to landfill
Waste Assessment	As defined by Section 51 of the Waste Minimisation Act 2008
WMA	Waste Minimisation Act 2008
WMMP	A Waste Management and Minimisation Plan as defined in Section 43 of the Waste Minimisation Act 2008

2 Legislative and Strategic Context

This chapter contains a short summary of the legislative and strategic context within which FNDC will develop their Waste Assessment and WMMP.

2.1 New Zealand Waste Strategy

Waste management and minimisation in New Zealand is underpinned by the Government's New Zealand Waste Strategy (NZWS). This has recently been reviewed and an updated strategy titled "*Te rautaki para | Waste strategy*" was released by the Ministry for the Environment in March 2023.

The new strategy sets out the long-term policy priorities for waste management and minimisation over the next 30 years. The vision is described as:

"By 2050, Aotearoa New Zealand is a low-emissions, low-waste society, built upon a circular economy.

We cherish our inseparable connection with the natural environment and look after the planet's finite resources with care and responsibility."

The strategy includes the guiding principles, three implementation phases and the goals and targets within each phase in order to achieve the vision. The strategy recognises the role of local government in delivering waste services as:

- Using the strategy to develop waste management and minimisation plans
- Working with other councils on new, or expanded, facilities and services
- Supporting local community groups and non-governmental organisations to reduce waste
- Linking with national behaviour-change programmes
- Factoring waste management infrastructure and services into planning and consenting processes
- Identifying and managing vulnerable landfills and other contaminated sites

The strategy also recognises the need for an increase in the level of good quality data available to decision makers as a key starting point.

The regulatory and legislative changes to support the NZWS have not yet been announced, but the newly updated waste strategy gives good indications of what legislative changes are expected for both residential waste and the wider waste industry. A first action and investment plan is currently being developed by the Government to provide further detail on the delivery of the strategy.

2.2 Key legislation

The legal framework for waste management and minimisation in New Zealand is found in the combination of several Acts of Parliament. These Acts provide the legislative imperative and tools to support progress toward the high-level direction outlined in the NZWS so careful attention is given to these in developing the Waste Assessment. The Acts that drive waste management and minimisation planning are:

- Waste Minimisation Act 2008
- Climate Change Response Act 2002
- Climate Change Response (Emissions Trading Reform) Amendment Act 2020 that updates the NZ Emissions Trading Scheme
- The Climate Change Response (Zero Carbon) Amendment Act 2019
- Local Government Act 2002
- Resource Management Act 1991 (as well as District and Regional Plans and consents)

- Hazardous Substances and New Organisms Act 1996
- Health Act 1956
- Litter Act 1979
- Health and Safety at Work Act 2015

Appendix B provides further information on this primary legislation.

2.3 National advocacy

Many waste minimisation initiatives are more suitably implemented at a national level, e.g. product stewardship schemes for problematic waste streams (e.g. e-waste, tyres) and container deposit legislation. Work here is needed with the national bodies, such as WasteMINZ and MfE, to encourage ongoing support for and the implementation of national waste minimisation activities through a coordinated advocacy approach to government and industry.

2.4 National factors

Several national and global changes over recent years have impacted FNDC's waste services. While the impact of these strategic considerations is in some cases not yet determined, including the independence between them, it is likely councils will be required to modify waste practices in response to the proposed changes, climate change and consequential impacts on council budgets.

2.4.1 China's National Sword Policy

Early in 2018, China's National Sword Policy imposed tighter restrictions on the import of certain recyclables, primarily mixed paper and mixed plastic. China was the largest importer of recyclables. The commodity price for recyclables globally – particularly for metal and plastics – was therefore impacted.

Nationally, the consequences of China's National Sword Policy have affected recycling collection and processing contracts with significant cost escalations. Alternative markets are hard to find and have been overwhelmed. Local processing alternatives are developing, but do not yet meet demand.

The Government's response – led by the MfE – to China's National Sword Policy has included phasing out single use plastic bags. Further initiatives are discussed below.

2.4.2 Waste levy and ETS

The Government is progressively increasing both the levy rate and the scope of the landfills to which the levy applies. The levy on class 1 and 2 landfills is currently $30/tonne and class 1 landfills will progressively increase to $60/tonne from 1 July 2024. From 1 July 2023, class 3 and 4 landfills will be levied at $10/tonne.

Higher disposal costs will make investment proposals for diversion services and infrastructure more viable. There is likely to be greater demand for diversion services as disposal costs increase due to the levy increases. With current legislation, there will also be more money available from the Government to fund waste projects at a national level, through the Waste Minimisation Fund, and WMMPs will become an important tool for demonstrating councils are delivering on wate minimisation projects.

Participation in the New Zealand ETS is mandatory for organisations that operate a landfill. New Zealand emission units (NZUs) may be purchased at a price between the upper and lower price controls through an auction process, or, on the secondary market without price controls.

The financial impact is less certain than the Waste Disposal Levy changes, as it depends on gas capture at the landfill and the price at which the landfill was able to purchase units. As an indication, the June 2022

auction price was $76 per unit, compared to $41.70 per unit in June 2021. With the ETS cost increases coming on top of levy increases, the ETS changes further encourage investment in diversion services and infrastructure.

ETS increases are also expected to see other costs such as fuel to increase over time as well.

The Climate Change Response (Zero Carbon) Amendment Act 2019 includes a target to reduce methane emissions by 24 to 47% below 2017 levels by 2050, with an interim target of 10% by 2030. Similarly, it set a target of reducing net emissions for all other greenhouse gases to zero by 2050.

The amendment to the Act also established emissions budgets. It also required Government to develop and implement policies for climate change adaptation and mitigation and establish the Climate Change Commission. The Commission first provided its first advice to Government in June 2021 and consultation on the first Emissions Reduction Plan took place in November 2021. Removal of organic waste from landfills was signalled as an action item within the Emissions Reduction Plan.

This will impact our asset portfolios including solid waste, particularly with increasing ETS costs and transport used to collect and cart to landfills.

2.4.3 Waste legislation review

The Government's waste legislation review is currently underway. This includes the Waste Minimisation Act 2008 and Litter Act 1979 provisions. Funding models for waste services may be impacted by any changes to sharing the Waste Disposal Levy. This is related to the recent release of the *Te rautaki para | Waste strategy* described in Section 2.1.

2.4.4 Standardise kerbside collections

The Ministry for the Environment released information regarding the standardisation of household recycling and food scraps collections in March 2023, following engagement with industry and the public.

Key facts from the announcement relating to Far North's waste services are:

- A council-run kerbside recycling collection must be in place by 2027 for areas of 1,000 people or more, collecting the same standard set of materials as elsewhere in the country.
- A food scraps kerbside collection must be in place by 2023 for areas of 1,000 people or more.
- Minimum standards for the diversion of household kerbside waste from landfill (recognising that the timing of a food scraps collection will impact each council's ability to meet these standards):
    - 30 per cent by July 2026
    - 40 per cent by July 2028
    - 50 per cent by July 2030

The regulatory tools to enforce these changes are expected to be released later in 2023, and will continue to be supported by the new waste legislation mentioned in Section 2.4.3.

2.4.5 Establishment of a Container Return Scheme

The establishment of a CRS has been signalled for some time, and in early 2022 the Ministry for the Environment consulted on establishing a CRS (alongside kerbside standardisation). In March 2023, MfE announced the CRS was being deferred indefinitely.

Once introduced, a CRS will not end recycling collection services, nor will it negate the need to separate glass from other recyclables. However, the mix and quantities of material in the recycling bins (glass and mixed recycling streams) will be impacted.

Generally, the focus of the CRS is on beverage containers and only up to a certain size. Glass, plastic and

metal beverage containers will reduce but there will still be glass jars, plastic containers, tins and other non-beverage glass, metal and plastic packaging that cannot be deposited through CRS. Paper and cardboard are not part of the CRS.

With the CRS now being deferred, these materials can be expected to feature in the existing waste streams.

2.4.6 Investment in diversion infrastructure

The Government has announced $120 million of funding through the Climate Emergency Response Fund (CERF) and the Waste Minimisation Fund waste levy investment. Specifically, this fund will support food scraps kerbside collections, new or expanded organics waste processing capacity, and new or expanded resource recovery infrastructure. This funding is available until June 2024.

2.4.7 Resource Management Act (RMA) reform

The Government is in the process of repealing the current RMA and replacing it with three proposed new acts. The updates are intended to give greater effect to Te Titiri and provide greater climate change adaptation ability.

Introduction of the new acts is expected to occur during 2022/23, with implementation following in 2023/24. Consent applications will continue to be processed under the RMA until the new planning framework is in place, with transition provisions available. The planning framework may be more complicated during the transition period but consents will still be able to be granted.

2.4.8 Phasing out single use plastic

The Government has announced a ban on 'hard to recycle' plastics and established a Plastic innovation Fund to assist with the change. Stage 1 includes all PVC food and beverage packaging; some polystyrene food and beverage packaging; and all oxo-degradable plastic products. Overall, this initiative is likely to have minimal, if not positive impact, on councils as removing these packaging types will improve the quality of plastics collected through solid waste services as contamination reduces.

2.4.9 Local Government Reform

In April 2021 a Review into the Future for Local Government was announced. The review seeks to achieve: a resilient and sustainable local government system; public trust/confidence in local authorities; effective partnerships between mana whenua, and central and local government; and a local government system that actively embodies the Treaty partnership. A final report to the Minister is expected in 2023, after which any changes would need to be implemented. The impact of the review will be further reaching than FNDC's waste activity but a watching brief should be maintained over the review.

2.5 FNDC strategic plans and regulation

2.5.1 Alignment with the national strategy

Central government policy is being reviewed, which could have significant effects on Council's waste minimisation and management practices. If the National factors mentioned in Section 2.4 proceed, it is possible that FNDC's current WMMP will not be aligned to the future changes – which will likely place new responsibilities on council services and resources.

2.5.2 Long Term Plan

FNDC's vision within its Long Term Plan 2021-2031 (LTP) is to create a district of sustainable prosperity and well-being.

Central to this is the LTP mission, FNDC's strategic priorities are:

- Better asset management
- Address affordability
- Enable sustainable economic development
- Adapt to climate change
- Protect our water supply
- Deepen our sense of place and connection.

In relation to the environment and solid waste, FNDC's LTP sets out the following community outcomes:

- A wisely managed and treasured environment that recognises the role of tangata whenua as kaitiaki
- Communities that are healthy, safe, connected and sustainable
- Proud, vibrant communities

2.5.3 Far North 2100

Adopted by FNDC in November 2021, Far North 2100 captures the long term vision for FNDC, beyond the LTP horizon. It forms the blueprint for the future direction of the district.

There are five 'drivers of change' in the vision:

1. Putting the wellbeing of the communities and people first.
2. Promoting resilient economic growth for sustainable prosperity.
3. Active response to climate change.
4. Connecting people, businesses and places.
5. Protect the natural environment for future generations.

More specifically in the waste context, these drivers mean the importance for opportunities not just for local employment, but also for the development of local skills and for growth in local businesses.

2.5.4 Solid Waste Bylaw

The WMA requires councils to review their waste bylaws at least every ten years and FNDC's was last reviewed in April 2021. However, waste-related bylaws must not be inconsistent with a council's WMMP which is reviewed every six years. Should the WMMP be reviewed in 2023, FNDC must ensure that the waste bylaw remains fit for purpose.

2.5.5 Regulatory functions

In addition to waste facility assets and the provision of services, the Council also has responsibilities and powers as a regulator and statutory obligations placed upon them by the WMA.

The Council operates in the role of regulator with respect to:

- management of litter and illegal dumping under the Litter Act 1979
- trade waste requirements
- nuisance-related bylaws

Education programmes that are targeted may have the most impact on achieving the above vision. Making it easy for residents and businesses to do the right thing can be enhanced through the provision of fit for purpose services and facilities at accessible locations. Clear messaging, signage and directions are also instrumental in changing behaviours and encouraging residents and businesses in the Far North to minimise waste to landfill.

2.6 Regional factors

All Northland region councils face similar challenges with adapting to new national waste strategies. Solid waste management is an area that has been identified through Northland Forward Together as having potential for regional improvement through increased regional cooperation and communication, leading to the recent formation of the Northland Regional Solid Waste Working Group consisting of Kaipara District Council (KDC), Whangarei District Council (WDC), Far North District Council (FNDC) and Northland Regional Council (NRC).

The purpose of the working group is to provide leadership and facilitate collaboration between its members in order to encourage and promote effective and efficient waste management and minimisation within the Northland region. A number of initial and long-term potential collaboration opportunities have been identified, but current contract expiry dates do not align well across existing services. The introduction of new services will not have the same restrictions and is discussed by the Section 17A service review. The working group's immediate focus is on relationship building and information sharing at this stage.

Whangarei District Council provides a rates funded kerbside recycling service to residents using a crate system, and operates a refuse service using pre paid bags. In Kaipara District, both recycling and refuse kerbside collections are provided privately. Neither council provides a kerbside food scraps collection service.

A significant portion of refuse from the region goes to Puwera landfill, opened in 2010 and owned by a public / private partnership between Whangarei District Council and Northland Waste.

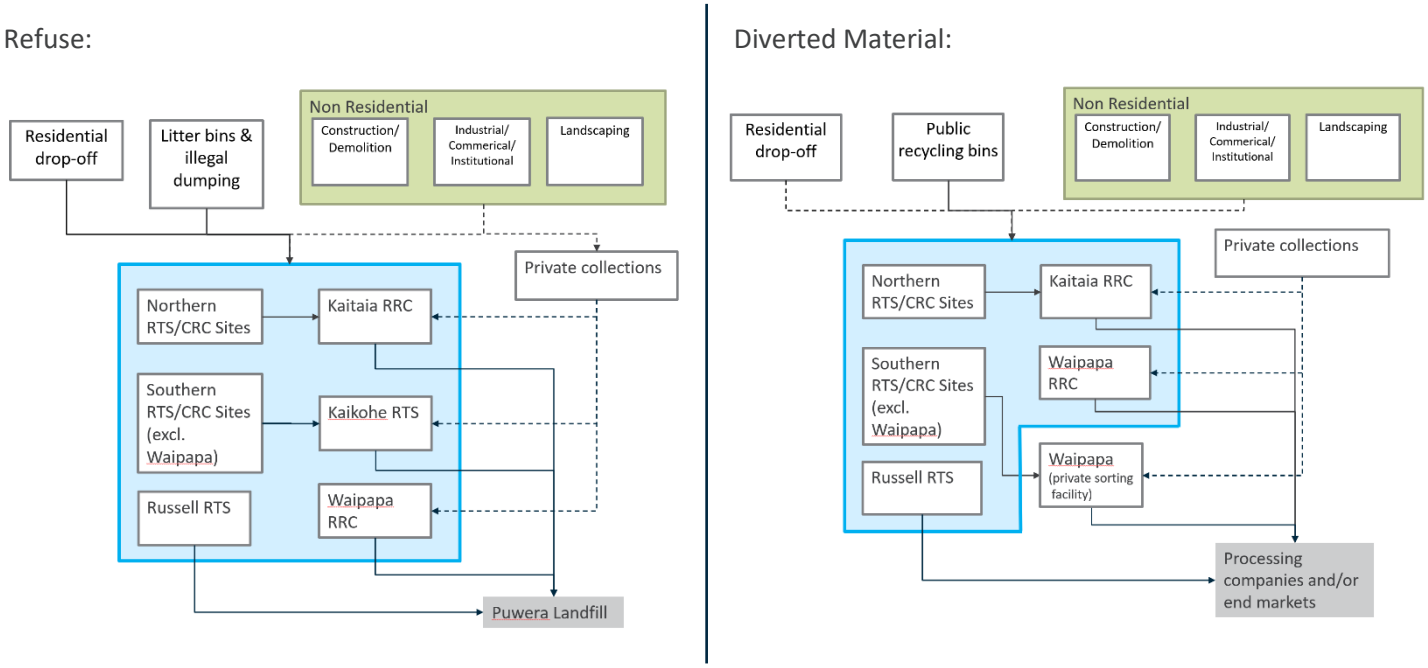
There is no Materials Recovery Facility (MRF) in the Northland region, with most material either source-separated or manually sorted at consolidation facilities. Some partially sorted material from Whangarei is taken to the Auckland Council MRF in Onehunga.

3 Existing Recycling and Waste Facilities and Services

This chapter includes a summary of information regarding waste management and minimisation services and facilities provided within the district for reduction, re-use, recycling, recovery, treatment, and disposal. This includes FNDC services as well as private and commercial services, where known and applicable.

Figure 2 illustrates the source and destination of waste and diverted material in the district. This situation will remain until October 2024, when the current contracts expire.

Figure 2 - Source and destination of refuse and diverted material in Far North District



Note that in these diagrams, solid lines represent waste streams with tonnes known or reported to FNDC, while dashed lines represent waste streams with tonnes unknown to FNDC. In both cases, the total volumes and tonnages going to landfill and to processing companies or end markets is known, but the relative contributions coming from drop-offs and collection services, residential and non-residential, is largely unknown.

3.1 FNDC provided facilities and services

As of February 2023, FNDC provides the following facilities and services:

Facilities

- Residential and small business drop off facilities across a network of 16 refuse transfer stations with various opening hours depending on their location and the time of year. Refuse and greenwaste is charged by volume, tyres and ewaste are charged according to FNDC's current fees and charges for the item being disposed of, and all domestic recycling is accepted free of charge. Domestic quantities of oil and hazardous waste are also accepted free of charge. The RTS sites are staffed and accept refuse, recycling and a variety of other materials depending on the class of the site:
    - Class 1 and 2 sites are equipped to receive a wider range of divertible materials such as e-waste, tyres, batteries, engine oil, household hazardous wastes, whiteware and scrap metal, car bodies and green waste.

      Typical opening hours for these sites are:

- Class 1 = 09:00am – 05:00pm Sat & Sun, 07:30am – 05:00pm Mon to Fri.
- Class 2 = 09:00am – 01:00pm Sat & Sun, 07:30am – 01:00pm Mon, Wed & Fri.
- All Class 2 sites have additional hours during summer season from 20 Dec to 13 Feb, when they are also open Tues and Thurs, 7.30am to 1pm.
- Whatuwhiwhi and Russell only are open 9.00-5.00pm Sat/Sun in January.

- Class 3 sites are equipped to receive bagged rubbish, domestic recycling and batteries. Note that five of the 16 RTS sites are Class 3.

  Typical opening hours vary from site to site, but Class 3 sites are open 2-3 days per week for 3-5 hours at a time.

- Two resource recovery centres at Kaitaia and Waipapa.
  - The Kaitaia site is owned by FNDC and also allows public drop off of refuse and recycling and is a consolidation point for refuse and recycling collected in the Northern area of the district. A re-use shop and a "Men's Shed" also operate out of the Kaitaia RRC for the repair and resale of items recovered from waste. The site contains a weighbridge.
  - The Waipapa site is leased by a contractor from a third party and is operated under contract to FNDC as part of FNDC's waste collection network to allow public access. The site contains a weighbridge.
- The Russell Landfill closed in August 2021 and a Council-owned RTS and recycling centre is operating on the site for the resource recovery of waste and recycling from the Russell area.
- The Kaikohe RTS is privately owned and operated but contracted to FNDC as part of the RTS/CRC network to allow public access. The site contains a weigh bridge and serves as a consolidation site for material from other sites and collections in the area.
- Most RTS sites are owned by FNDC, except for Ahipara, Houhora, Te Kao which are leased by FNDC, Waipapa RRC and Kaikohe RTS (both are leased from a third party by the contractors). Ownership of the Taipa RTS site has not been established.
- Residential and small business drop off recycling at 11 Community Recycling Centres across the district for free. These sites accept plastics, glass, food and aluminium tins, paper, and cardboard generally in domestic quantities only. A seasonal recycling centre also operates at Ōpua from Christmas through to the end of January each year. Typically these sites are unstaffed, except for the newest site in Waitangi.

Services

- FNDC subsidises kerbside collections in limited areas around Te Hapua, Horeke, Mangamuka Bridge, Mangakahia Rd, Matawaia and Towai by paying the area contractor to deliver a recycling service and ensuring provision of a refuse service, while residents purchase pre-paid refuse bags for collection.
- Emptying of public place refuse bins is currently part of the scope of the Litter and Town Maintenance contract. There are approximately 480 bins throughout the district.
- Public place recycling bins are relatively new and their servicing is not included in the Litter and Town Maintenance contract. They are currently serviced under separate minor contracts with the two major contractors in their respective areas and essentially carried out as dayworks.
- The Northland Regional Council operates a barge service in the Bay of Islands over the summer

period to provide additional services to the increased boat and camping population over summer. FNDC supports this service by funding the transport cost of recyclables to the depot.

Illegal dumping

- Illegal dumping or fly tipping of rubbish occurs in remote areas, recreational areas, abandoned properties and on roadsides. These are typically picked up by the Litter and Town Maintenance contractor and taken to an RTS.
- Rubbish found dumped outside the RTSs when they are closed is cleared by the contractor operating the site and disposal costs are paid for by FNDC. This has cost $78k per year on average for the previous three financial years and is trending upwards, with a budget of $89.7k in 2022/23.

Landfills

- There are an unknown number of historic closed landfills around the district that FNDC has inherited responsibility for from previous county councils, and these are not currently being actively managed. There are also three closed landfills within the District that currently require ongoing management at Ahipara, Kaikohe and Whangae.
- Ahipara is the largest closed landfill and requires active management. It has a leachate pumping system going directly to the inlet works of the wastewater treatment plant. The control system telemetry sends information regarding the leachate pumping system direct to the WWTP operator (contractor, not FNDC).

Education

- Waste minimisation promotion and education (funded through general rates and Waste Levy funds) is delivered through a dedicated contract, as well as staffed RTS sites assisting with educating the public on how to drop-off waste for maximum diversion.

3.2 Future plans for FNDC facilities and services

FNDC is aware that in the Southern contract area, the council does not own or lease a suitable site for refuse consolidation and recycling sorting. Both existing contractors have leased sites privately in order to deliver their private kerbside services, which are also utilised under the Council contracts. When considering implementing a rates-funded kerbside recycling service this may be a barrier to entry to other parties taking part in the tender process. FNDC has previously considered purchasing land and building an RRC in the South, to ensure ongoing service provision and increased competition for the Southern contract.

The Section 17A Review discussed the pros and cons of investing in an organics processing facility for servicing FNDC's food or food and green waste. A significant percentage of commercial food waste would also be required in order for a facility to be economic. There are advantages to contributing to a regional facility, but if land were purchased in the South for a RRC, consideration of whether to include an organics processing facility would be a logical part of the feasibility study.

As previously mentioned, the Section 17A Review also discussed implementing a kerbside collection for either recycling, or recycling and refuse. A further option discussed in the review is for FNDC to implement a rates funded kerbside recycling service first, and to delay making a decision about a kerbside refuse service until a food scraps collection service has been introduced. This is highly dependent on the direction set by central government regarding the standardisation of kerbside collections and the diversion of food scraps away from landfill, and the funding available to implement these initiatives.

All existing services will be reviewed as part of the WMMP if it is updated. Early community consultation has been undertaken January – March 2023 regarding the community's attitude towards current service levels.

Activities not currently provided by the FNDC some of which may be considered in the future include:

- Kerbside collection of recycling and/or refuse material
- Organic waste collection services, either food only, green only or a combined service
- Expansion of resource recovery facilities, including a FNDC-owned RRC in the Southern area.

3.3 Non-council facilities and services

3.3.1 Private collection and receival facilities

The extent of private and commercial services is not known. Currently, some of the waste services in the Far North provided by the private sector include:

Services

- Private kerbside collections for refuse offer a range of bin and bag options, with weekly collections, either on a subscription basis (bins) or pay as you go (bags). There is no limit to the number of bags that can be picked up each week. Refuse is taken to the nearest consolidation site prior to transport to landfill.
- Similarly with kerbside recycling collections, residents can select between crates or pre-paid bag options. With the recycling crate, there are further options between a weekly subscription service, or a pre-paid tag attached to the crate for ad-hoc collection. Recycling is taken to the nearest consolidation site for manual sorting into material types and distribution to end markets.
- Residents can opt in to either, both or none of the refuse or recycling kerbside services separately. There is a high degree of flexibility and choice for residents, with two operators in Southern urban areas for refuse.
- Residents who live outside the kerbside collection areas can purchase pre-paid refuse and recycling bags and leave the bags inside the kerbside collection area for pick up. This has been formalised into nominated 'collection points' to allow for better management of these sites.
- Northland Waste offer a private green waste residential service consisting of a 240L bin collected once a month. According to Northland Waste's website, the green waste collected is mulched and used as compost or topsoil for soil rehabilitation and sediment control. It is not know how widely this service is offered across the region or how many households have engaged the service.
- Waste Management offer a 9m³ garden waste skip bin on a 7-day hire basis.
- Subscription recycling collection services for larger business needs are provided by Northland Wate and Waste Management.
- Skip bin and jumbo bag services for general and garden waste, sludge, construction and demolition waste.
- Northland Waste is offering a new service to commercial customers for the diversion of clean wood waste away from landfill called Re:fuel. According to their website, the wood is to be used as a carbon neutral biofuel by local businesses.

Facilities

- At Waipapa, there are two private consolidation sites for the private collection serives in the area:
    - One operates as a RRC under contract to FNDC (included in Section 3.1) and also acts as a consolidation facility for the contractor's kerbside and commercial collections in the area.
    - One is leased and operated solely as a recycling processing site with no public drop off, for

the consolidation and sorting of recyclables collected privately both kerbside and commercially in the area.

- Puwera landfill in Whangarei currently receives all refuse from the district. This landfill is a private partnership between Whangarei District Council and Northland Waste and contains a full gas capture system to minimise production of greenhouse gases and with the potential to create electricity. The landfill opened in 2010 and is expected to provide sufficient volume for refuse disposal for the Northland Region beyond the consented 35 year period.
- Golden Bay Cement located in Whangarei have limited capacity to accept treated timber for burning in their cement producing process. Treated timber is a difficult material to divert. In the 2022 calendar year, approximately 1,000T of treated timber from Far North was accepted at Golden Bay Cement.
- Aside from the FNDC reuse shops, other private organisations in the district offer the re-use of waste or diverted materials such as the St Johns and Salvation Army opportunity shops. Further options exist in neighbouring districts. In addition to physical stores there are also online options such as TradeMe and Facebook Marketplace.

The private collection of kerbside rubbish adds a certain amount of complexity to understanding the total residential volumes collected.

3.3.2 Private material processing facilities

There are limited diverted material processing facilities in the Far North District, and all material sorting is currently caried out either by hand, or sorted at source at the RTS/CRC sites. FNDC's neighbouring districts, both Whangarei and Kaipara, do not currently have material recovery facilities and rely on hand sorting of materials either at source or at the point of consolidation. The closest material recovery facility to FNDC is located in Auckland.

There is a possibility that an organics processing facility may be constructed at the site of Puwera landfill to service the region and allow for the kerbside collection of food waste.

3.3.3 Product stewardship/take back schemes

A summary list of known product stewardship schemes operating in New Zealand is outlined in Table 2.

Table 2 Known existing product stewardship schemes in New Zealand

Product Stewardship Scheme	Service/Key waste stream
Agrecovery	Provides NZ farmers and growers with programmes for container recycling, drum recovery and collection of unwanted and/or expired chemicals.
Dell New Zealand	Take-back of Dell branded computer equipment.
Envirocon	Waste concrete (including potentially harmful liquids) is diverted from landfill and upcycled into value-added precast concrete products for the Interbloc Modular Wall System.
Exide Technologies	Take-back vehicle batteries.
Fiji Xerox Zero Landfill Scheme	Fuji Xerox remanufacture, reuse and/or recycle used equipment such as printers, photocopiers and printing consumables. Parts that cannot be reused are recycled.
Fonterra Milk in Schools recycling programme	Milk cartons (including straw and straw wrapper) are collected from schools participating in the programme. They are broken down into components (paper, aluminium foil and plastic) and recycled into roof tiles, books and paper.
Glass Packaging Forum	The forum connects businesses that sell glass-packaged consumer goods with those

Product Stewardship Scheme	Service/Key waste stream
	that collect and recycle glass. This helps to improve the quality and quantity of glass recycled. The aim is zero container glass to landfill.
HP New Zealand	Take-back of HP/Compaq branded computer equipment.
Interface ReEntry Programme	The scheme recycles used Interface carpet tiles into new carpet tiles and other products. PVC backed carpet tiles beyond their usable life are sent back to the original manufacturer in the US where they are stripped and remanufactured.
Plasback	Plasback collects and recycles agricultural plastics such as bale and silage wrap, and crop bags. The silage plastic is recycled into Tuffboard, a plywood replacement sheet that has many uses on farms.
Refrigerant recovery scheme	The Trust for the Destruction of Synthetic Refrigerants, also known as RECOVERY collects and responsibly disposes of refrigerants used in the refrigeration and air conditioning industries.
Resene Paintwise	Take-back of Resene branded paint and paint receptacles. User pays for non-Resene branded paint and paint receptacles.
RE:Mobile	The programme offers e-waste recycling for mobile phones and accessories. Unwanted mobile phones still in working order are sold for refurbishment and resale overseas while others are recycled. Proceeds from the scheme are donated to Sustainable Coastlines, an organisation which plants trees along waterways to restore habitats for native animals, reduce sediment and improve water quality.
Recovery Oil Saves the Environment (ROSE)	The used-oil recovery programme enables users, oil producers and regulators to responsibly collect, transport, use and dispose of used oil.
Soft Plastic Recycling Scheme	Soft plastic packaging is collected from participating stores and delivered to two NZ processors – Future Post in Waiuku and Second Life Plastics in Levin. The soft plastics are made into new products such as plastic fence posts, cable covers & garden edging.
Sharp Comprehensive Recycling and Waste Reduction Scheme	Sharp New Zealand aims to reuse and recycle 100% of its packaging materials, electronic products, equipment and obsolete and used parts.

There are several other commercial organisations that will accept waste materials for recycling, though recycling is not their main function. For example, Hearing Aid batteries can be recycled through Pharmacies and EIS freely accepts residential eco-bulbs for recycling.

3.3.4 Recovery from organic waste

The WMA defines recovery generally as the extraction of materials or energy from waste or diverted material for further use or processing, and this includes making waste or diverted material into compost. A summary of known organic waste operators is provided below in Table 3.

Table 3 Organic waste operators

Name/Operator	Type	Key service / waste stream	Location
Waipapa Landscape Supplies	Green waste	Mulching and green waste collection point	Waipapa
Golden Bay Cement	Timber	Capable of burning treated and untreated timber in kilns as part of cement producing process.	Whangarei
Small community enterprise	Green waste	Local mulching and small scale composting for use on community gardens	Non-specific

Note there are currently no facilities to process large quantities of food waste in the Northland region.

3.4 FNDC's waste education and promotion programmes

FNDC has a contract specifically targeting the Education and Promotion of Waste Minimisation and Sustainability Practices within the Far North District. This has been delivered by Community Business and Environment Centre (CBEC) since 2015. This operates as a fixed price contract, though activities under the contract are also supported through MfE funding, Pare Kore and other sources, so the fixed price does not reflect the true value of the services delivered under the contract.

In the 2022/23 year, the following programmes have been delivered by CBEC with the purpose of delivering community benefits and working towards zero waste:

- Schools
    - 385 zero waste lessons to approximately 4600 students.
    - Conducted 8 formal Waste Wise Audits (restricted due to COVID) and performed waste checks and system evaluations in all 27 Waste Wise Schools.
    - Supported schools with 8 compost hub installations (thanks to funding from the Compost Connection) and 5 Maara Kai, as well as installing recycling systems (thanks to EcoStar funding and Para Kore).
- Business
    - Supported 195 businesses to reduce waste in the FNDC region. (50 funded by FNDC, 145 funded by EcoStar, an MFE project)
    - Helped 14 events reduce waste. With an average of 80% diversion from landfill by using compost hubs.
    - Ran a zero waste market in Kaitaia and are in the process of funding four mobile Wash not Waste stations in FNDC to reduce waste at events. (Funded by Para Kore and Te Pokapu Tiaki Taiao).
- Para Kore
    - Have engaged with 18 Marae, 6 Iwi enterprises, and 8 Kura as well as 4 Kohanga reo offering Rawa Maori, Whakapapa of Waste and waste reduction systems.
- Other
    - Conducted 195 EcoStar Audits
    - 16 Community clean ups last year, engaging 450 volunteers. (thanks to funding from FNDC and 2 events funded by Para Kore)
    - 110 workshops to 580 attendees on a range of topics including Rongoa, upcycling, climate action, seed saving and resource conservation. (15% of these workshops are funded by FNDC, the balance is funded under MFE or Para Kore)
    - Community Compost Connection (funded by MFE)
        - Delivered 34 compost workshops last year in the FNDC region, with 486 participants; 84% of participants purchased compost systems utilising the 70% discount, receiving eight weeks mentoring offered in this program. Households that took part in this program report a reduction of 289 litres of compostable waste going to landfill a week, as well as an increase in their recycling rate.
        - Installed seven **community compost hubs** which divert an average of 500 litres of waste each a week resulting in 162 tonnes of compostable waste being diverted from landfill last year.

4 Waste data

It is important for FNDC to understand the quantity and composition of waste coming through its facilities and services so that it can identify opportunities to reduce waste to landfill and measure progress against targeted improvements. This section contains a summary of the available data for waste collected, recycled, and disposed of in the Far North District. This includes data from a number of sources, mostly for the period June 2017 to June 2022 and during the Sunshine Yates Consulting sampling conducted over four days: 14 – 17 November 2022 (Monday – Thursday) for the kerbside collections and visual surveys over six days (five week days and one weekend day) between 18 November and 4 December 2022 at each of Kaitaia, Kaikohe and Waipapa RTS sites used for consolidation.

The information forms the basis for future demand (as set out in Chapter 5).

4.1 Far North District catchment

The Far North District is located in the Northern region and is the most northern territorial local authority in New Zealand and shares borders with the Whangarei and Kaipara Districts. The Far North District comprises of three wards, Te Hiku in the north, Kaikohe/Hokianga in the west, Bay of Islands/Whangaroa in the east. It has a land area of 669,251 hectares.

The main population centres are Kaitaia (6,340) in the North and Kaikohe (4,900) and Kerikeri (8,060)[1] in the South.

The Far North is a holiday destination, which leads to a fluctuating population over summer. Summer populations often far exceed winter populations, especially in coastal areas. In some areas, such as Doubtless Bay, the local population doubles over the summer months.

According to the 2018 census, Far North District had a population of 65,250 and as of June 2022, the estimated population has risen to 73,800[2]. Population growth in the Far North has fluctuated in the 2000s and 2010s, at times lagging Northland and New Zealand overall, with strong growth between 2-3% in the mid-2010s, falling to 1.8% under Covid-19 border restrictions.

The district's economy is quite varied, with the largest contributor to local GDP coming from the Agriculture, Forestry and Fishing industries (12.4% in 2022), with Rental, Hiring and Real Estate Services being the second largest contributor at 9.5% of local GDP[3]. The construction industry is likely to remain constant as demand for new houses and infrastructure remains constant.

For solid waste, the district is currently split into the North and South region. There are separate contracts for the management and operation of FNDC's RTS and CRC sites, one for each region, and a standalone contract for the management and operation of the Russell RRC site.

FNDC does not operate a kerbside collection service, however both contractors who operate FNDC's facilities also provide private kerbside refuse and recycling direct to customers in urban areas and connecting roads. In the Southern area, both contractors offer private kerbside services, and in the Northern area, only one private service is available. It is unknown exactly what percentage of the rating base has access to these services, or what percentage have engaged the private kerbside services.

[1] Population figures are estimates from Stats NZ as of June 2022.
[2] From Stats NZ website.
[3] Data from: https://ecoprofile.infometrics.co.nz/far%20north%20district/

4.2 Data assumptions and accuracy

To obtain a better understanding of waste data within the district and how it compares to other districts, a per capita figure has been used as the first guide. This is the total amount of known waste collected divided by the total number of people in a defined area. It is an indicator of average "waste" production or recyclables diverted on a per person basis but is not directly equivalent to the amount of waste an individual throws away each year, as much of the waste is produced from commercial sources or indeed is coming from out of district.

The June 2022 estimated population (73,800) is used for the basis of the calculations.

A number of data gaps were evident in the data available:

- Total diverted tonnes include recycling collected kerbside, commercially collected recycling and all materials diverted at RTS/CRC sites. The residential/commercial split and the kerbside/RTS split are unknown with any degree of accuracy.
- The tonnes of refuse collected kerbside is not known to FNDC but the tonnes per week has been estimated in the SWAP analysis based on the trucks arriving at the consolidation sites from kerbside collections.
- The SWAP analysis collects a large amount of data about a specific period of time. In this case, the SWAP was conducted over November, which is a relatively busy time of year in the Far North. Total waste volumes observed over this period were higher than the long term average reported to FNDC. Relative volumes between different waste streams are assumed to be reasonably accurate in the SWAP results.
- The number of households regularly utilising a kerbside refuse and/or recycling service is not known to FNDC and difficult to estimate. Operators may be able to estimate the number of households with subscription services, but this does not mean they use the service every week, and does not account for the households utilising the prepaid bag and tag options.
- Tonnages from commercial and industrial operations, construction and demolition sources disposed of at RTS sites are not able to be separated from total tonnes
- Tonnages from private commercial collections are not known to FNDC
- Unregulated disposal (e.g. farm pits and burning) is not able to be measured and it is not known what volume/tonnages of waste are disposed of through these means
- Volume of organic waste being processed privately through home composting or pig farms, or through private collection services is not able to be measured
- There is little information available about end markets as the contractors/operators do not report these to Council.

4.3 Progress against the 2017 WMMP target

4.3.1 Total waste to landfill

The target set in the 2017 WMMP refers to the total waste per capita sent to landfill. This includes all waste from all sources, so it includes both residential and non-residential sources.

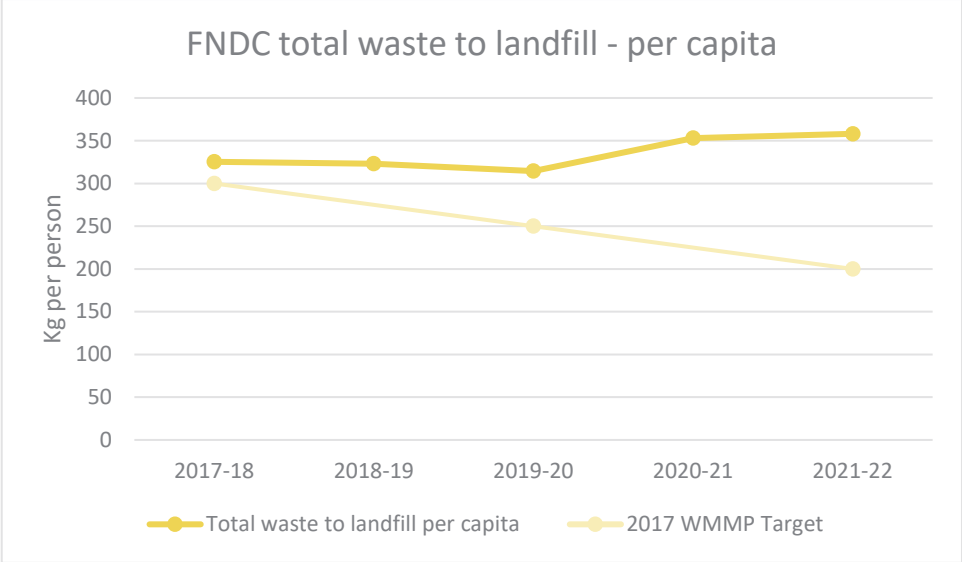
"Council has set preliminary waste reduction targets as follows:

- *By 30 June 2017 waste to landfill will be 300 kg per head of population*
- *By 30 June 2020 waste to landfill will be 250 kg per head of population*

- *By 30 June 2023 waste to landfill will be 200 kg per head of population."*

The figure below shows actual performance against this target. As shown, the targeted waste per capita decreases over the 2017-2023 period, while the actual total waste to landfill decreases slightly between 2017/18 to 2019/20 and then increases from 2019/20 to 2021/22. The total tonnes to landfill per capita is higher in 2021/22 than it was at the beginning of the WMMP period in 2017. Note that FNDC's population has steadily increased over this period, discussed further in Section 5.

Figure 3 Waste to landfill per capita



It is noted that a target of 200 kg per capita was a significant decrease from the 2017/18 tonnes, representing a 37.5% reduction in waste to landfill. It is also noted that the target of 200 kg per capital was also set in the 2011 WMMP, to be achieved by 2017.

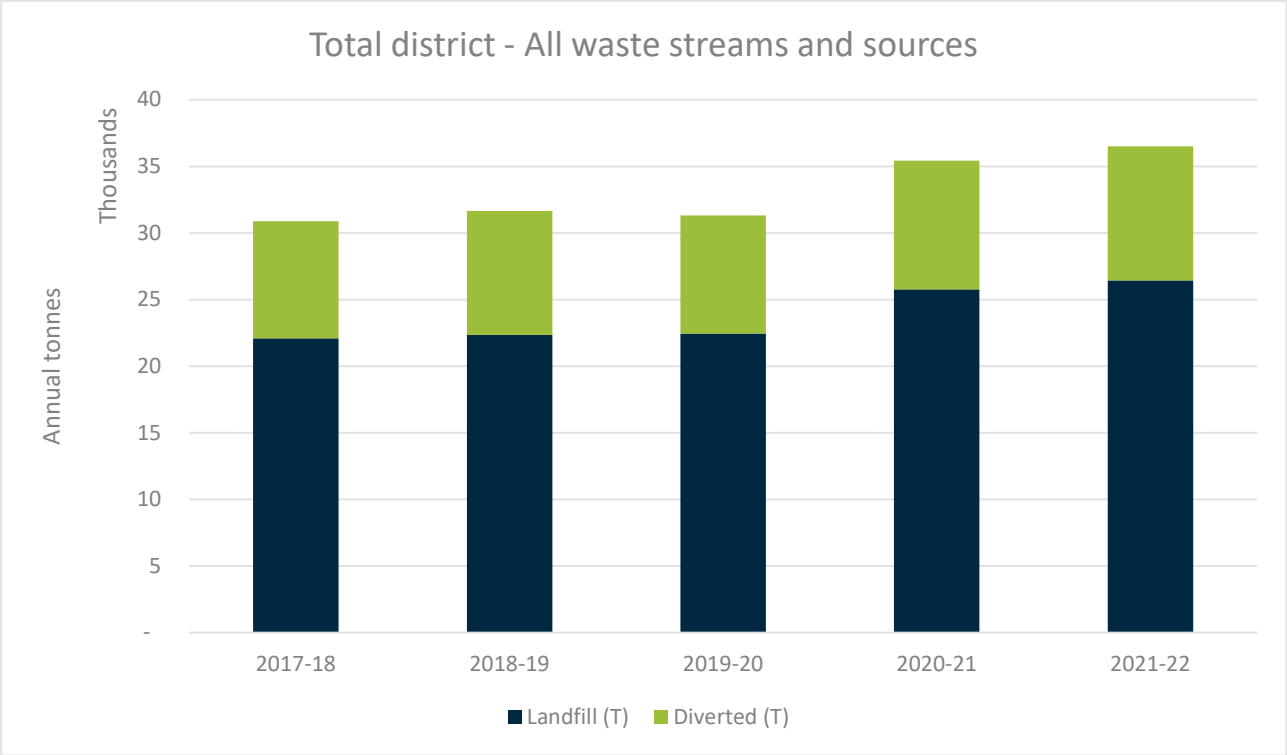
Waste per capita for FNDC is average compared to other councils in New Zealand of a similar nature, i.e. with a large rural community. In general, areas with significant rural populations have lower waste per capita figures than councils that are mostly urban because rural property owners may make their own arrangements for waste disposal when a kerbside service is not necessarily available to them. So, while the waste per capita is low overall, there is anecdotal evidence that alternatives are being used to deal with on-farm waste such as farm landfills, offal pits or burning waste. This waste would be more responsibly disposed of through the proper waste channels, which would see an increase in the landfill tonnes per capita but result in better environmental outcomes.

4.4 Total known waste in Far North District

4.4.1 Trends in total waste tonnes

For this Waste Assessment, the amount of diverted material and the solid waste disposed have been combined to provide a baseline of the total amount of material discarded in Far North. Data from farm landfills, home composting, and private landfills is not available. This also does not include waste that is reused. All waste collected in the Far North district is taken to Puwera Landfill. The waste to landfill amounts are shown in Figure 2 above (on a per capita basis) and Figure 4 below (on a total tonnes basis – blue bars). The data includes all waste streams and sources where waste is collected within the district, i.e. it includes commercial, industrial and residential, both kerbside and through the RTS/CRC network.

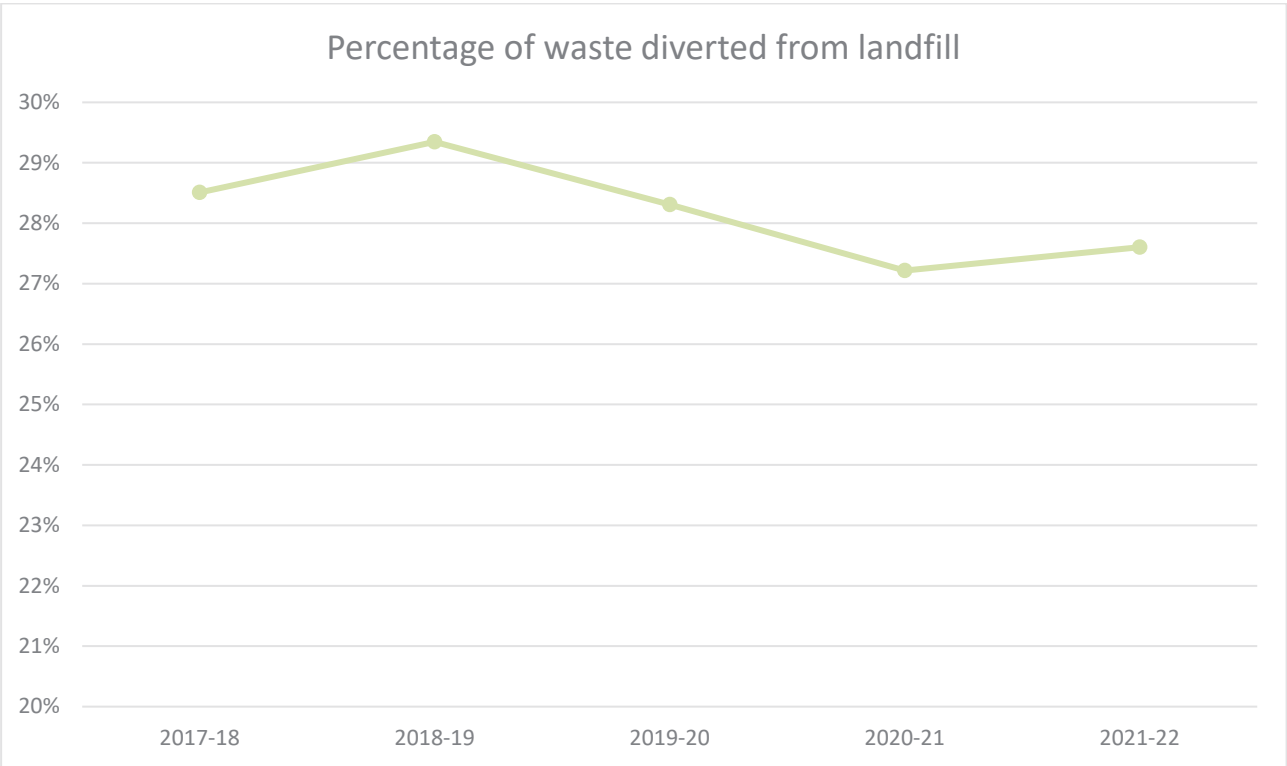
Figure 4 Total waste generated in Far North District



This shows the overall waste tonnages in the district were fairly consistent between 2017/18 and 2019/20, even though the district's population was growing, but between 2019/20 and 2021/22 there has been an upward trend in both total tonnes generated in the district and tonnes to landfill.

Based on the same information, but presented as a percentage of the total tonnes of waste diverted from landfill is shown below.

Figure 5 Percentage of waste diverted from landfill - all waste streams

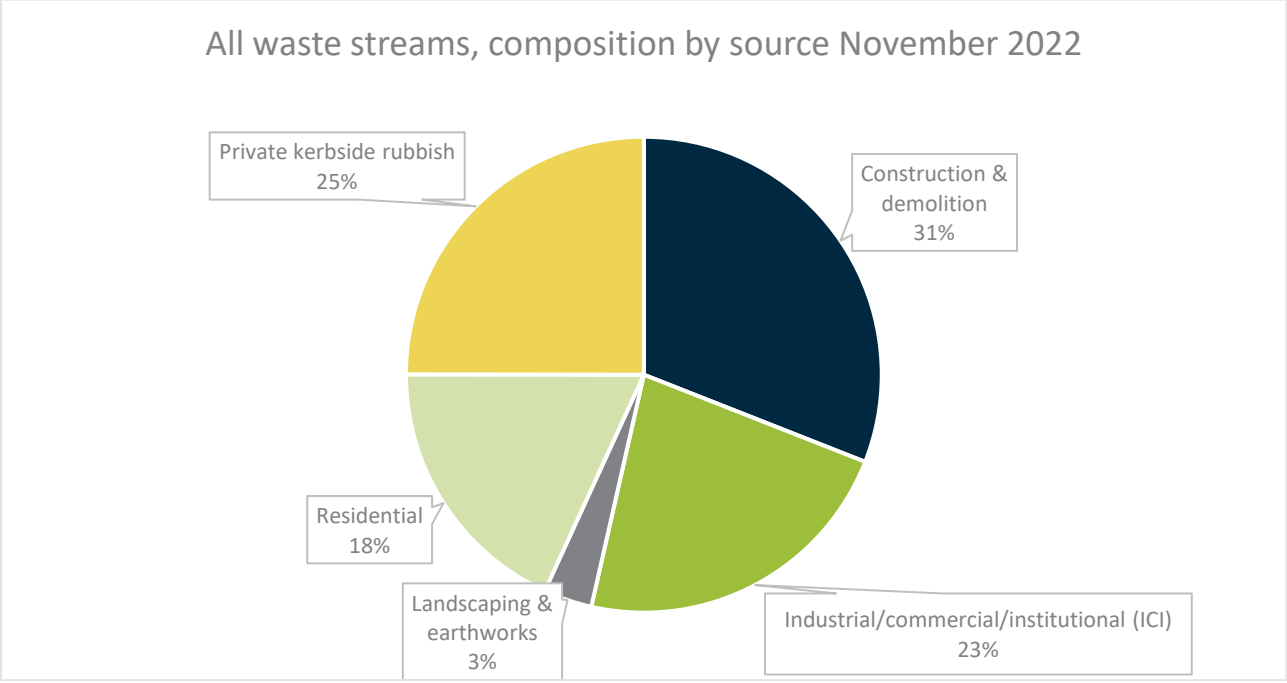


This figure shows that the percentage of waste being diverted from landfill has been slowly decreasing since 2018/19, which coincides with the introduction of China's National Sword Policy (discussed in Section 2.4.1). Note that in the period preceeding the development of the 2017 WMMP, the total diverted material was between 28%-31% of the total waste generated.

4.4.2 Sources of waste to landfill

Over the period the consolidation RTS sites were observed for the SWAP analysis, the sources of waste coming into the sites destined for landfill is shown in the diagram below. Note that trucks carrying recyclable material were not recorded in the SWAP analysis.

Figure 6 Observed contributions of waste to landfill



This data is limited to a snap shot in time but shows the largest contributing waste source by tonnes is construction and demolition. The combined residential and private kerbside rubbish (assumed to be mostly residential but may include some small businesses) is 43%, while non-residential sources of waste account for 57% of all tonnes to landfill.

4.4.3 Kerbside waste to landfill composition

An analysis of the composition of kerbside waste to landfill in the Far North District was completed as part of the SWAP analysis. Samples were collected from Ahipara, Taipa/Coopers Beach, Kaikohe and Kerikeri. There are many factors that influence the composition and quantity residential waste. Samples were selected within each area from as wide a geographic area as possible.

Samples included a selection of bags, 120L bins and 240L bins. Assumptions of the average weekly kerbside refuse generation are difficult as not all households put out bags or bins every week. It is also unknown which of the households used in the sample actively participate in recycling, either through a kerbside service or their local RTS/CRC site.

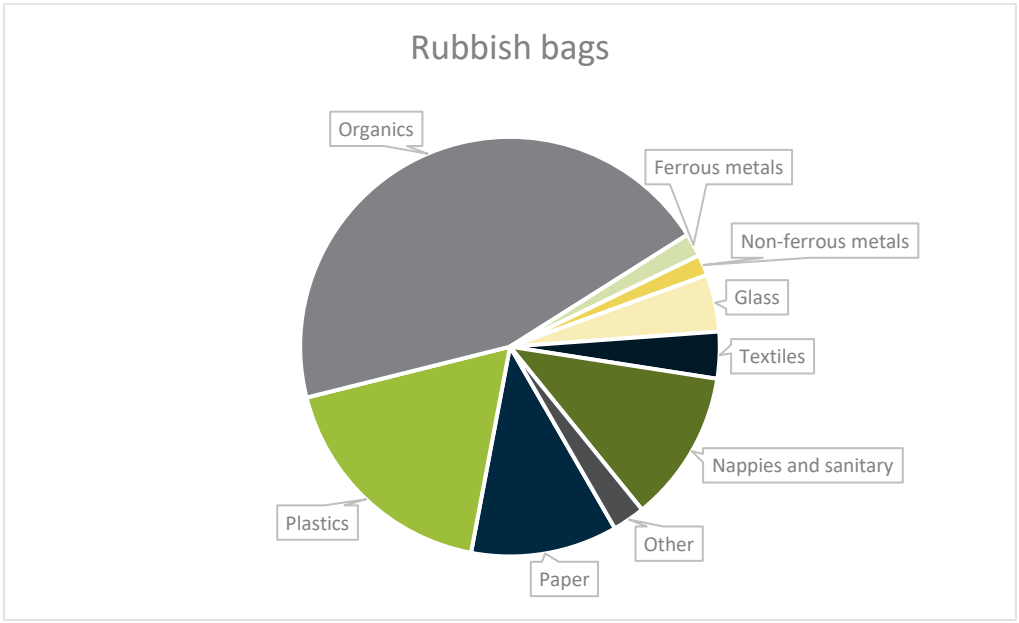
Figure 7 illustrates the kerbside primary composition of waste destined for landfill from each of the three receptacles. Organics was the largest component in all receptacle sizes, comprising 42.1% of the total weight, with 36% being food scraps alone. It was noted that the 240L bins contained an unusually small

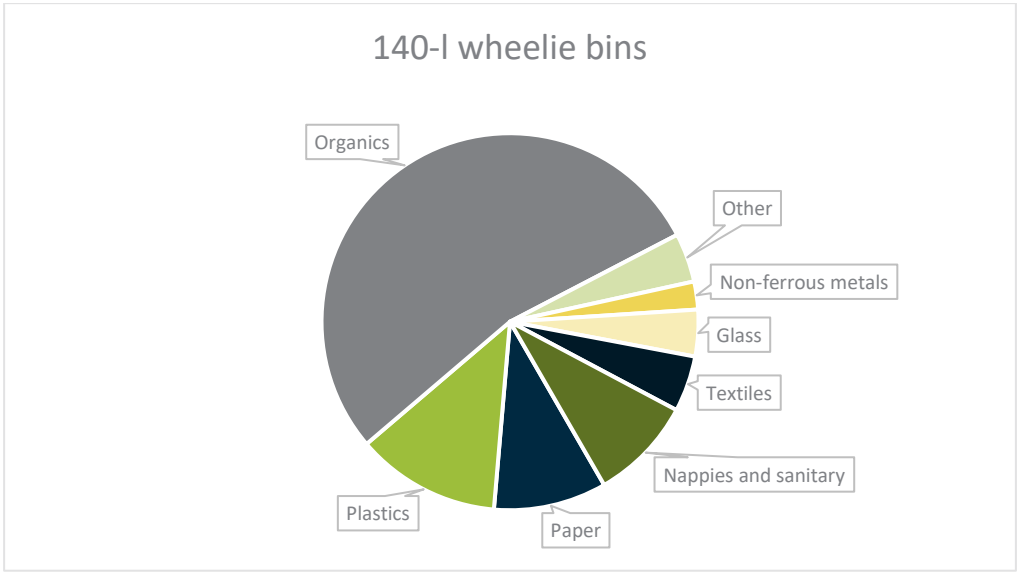
percentage of green waste typically seen in the larger size bins.

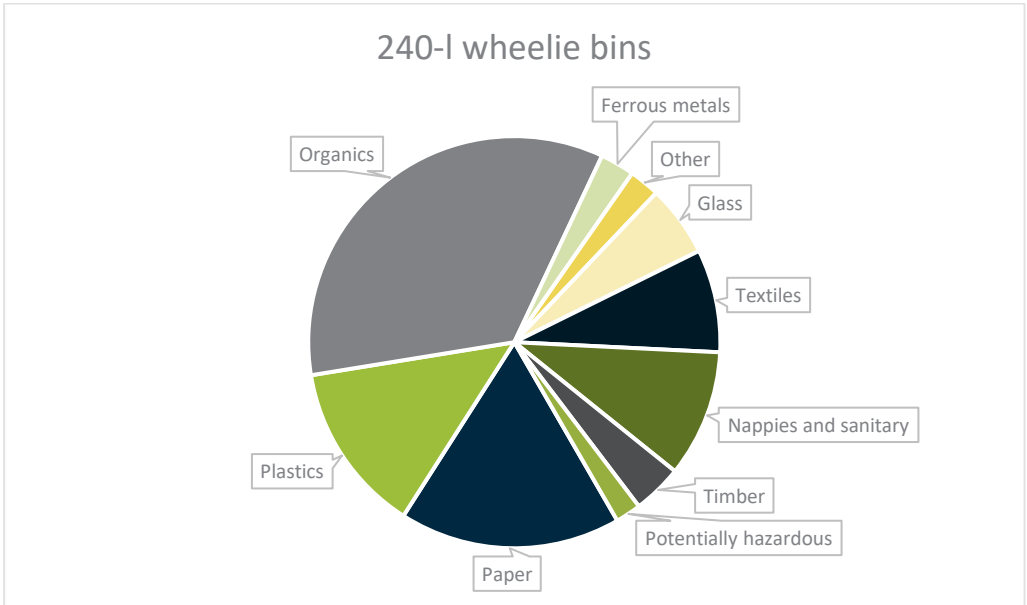
The second largest component in all receptacles was plastics, followed by paper. These categories included both divertible and non-divertible materials. The proportion of divertible material is discussed in Section 4.6.

Materials contributing less than 1.5% of the refuse volume in each receptacles have been combined into the 'Other' category for clarity.

Figure 7 Composition of kerbside refuse receptacles







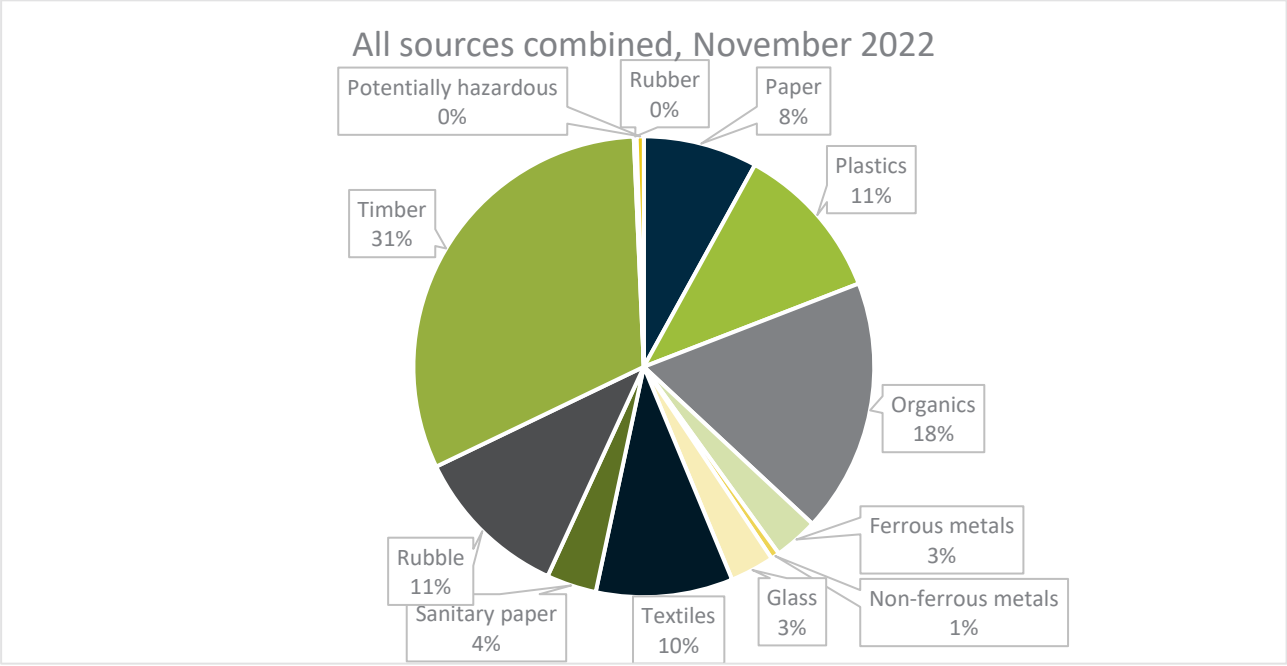
Source: SWAP reported prepared for Far North District Council in January 2023 by Sunshine Yates Consulting

4.4.4 Total waste to landfill composition

Based on the data available from the SWAP analysis, the composition of the total waste to landfill has been estimated. Key assumptions to note about this data are:

- Composition of residential refuse is based on the kerbside compositions shown above, and the estimated percentage of household using each receptacle type as reported by the operators.
- Composition of the non-residential waste streams were not separately analysed and are based on averages from other studies.

Figure 8 Composition of total waste to landfill



This figure shows the anticipated high tonnages of treated timber from construction and demolition activity. It is not know how much of this waste stream is currently being diverted to the treated timber option in Section 3.3.2.

The figure also shows a very high organic component, mainly food scraps, contributed approximately evenly between the residential and commercial sectors.

4.4.4 Illegal Dumping

Illegal dumping is collected in various forms across the district. Illegal dumping is difficult to measure definitively but is considered important to include separately in this Waste Assessment. The volume of various forms of illegal dumping collected and reported to FNDC over a 12 month period is listed below, though this is an underestimation of the total volume as not all illegal dumping collected is recorded:

- 325m³ /year collected from bags being placed beside public litter bins
- 303m³ /year collected from waste dispose of in bush or off road settings (not including loose litter)
- 156m³ /year collected under the Town Maintenance Contract as part of other activities
- 170m³/ year collected by kerbside service operators due to incorrect use of kerbside collection points (e.g. refuse not placed in pre-paid bags, refuse placed out on incorrect days)
- 148m³ /year collected by kerbside service operators not at kerbside collection points. (By agreement with FNDC, the operators pick up other refuse as they complete their collection route even if it is not in one of their bins/bags.)

- 249m³ /year collected by SeaCleaners from the marine environment.
- 0.5m³ /year collected during community clean-ups.
- **Total = 1,351.5m³ /year.**

Collection and disposal of this waste has averaged a cost of $116k per year over the last three years.

Note this is waste (either knowingly or unknowingly) being disposed of incorrectly that is collected by others and disposed of in the proper waste management regime. Volumes of illegal dumping, burning and burying that are not collected are unknown.

4.4.5 Waste from out of district

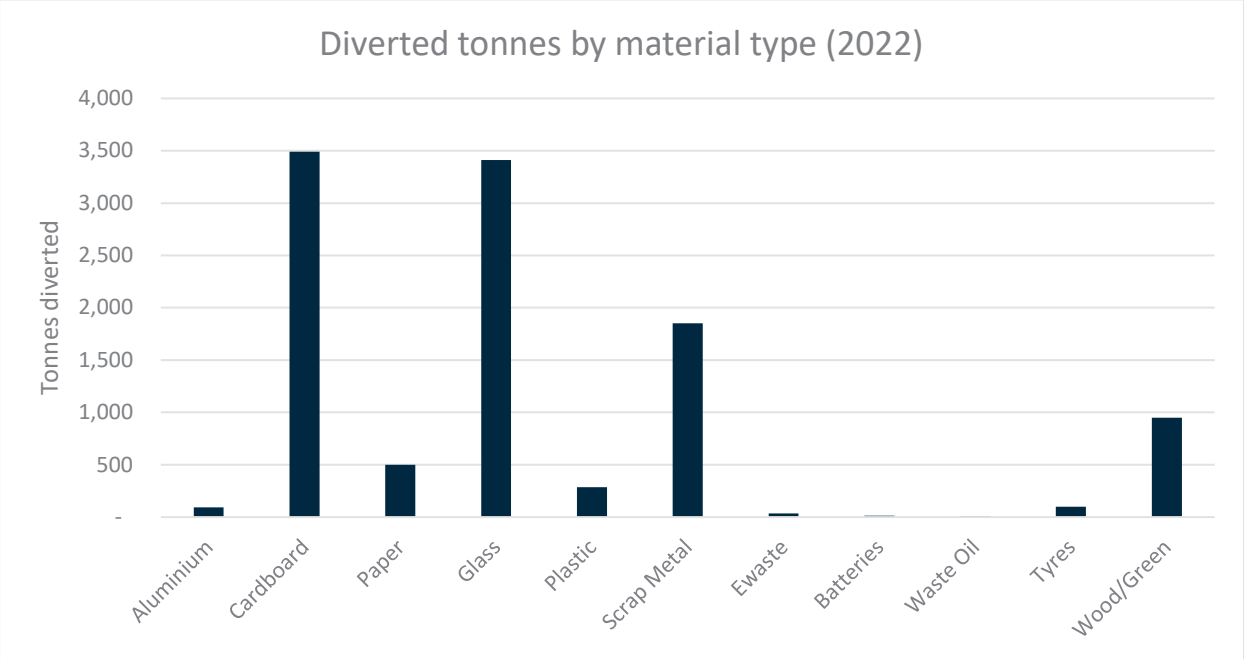
There is no evidence to suggest that waste generated outside the district is being brought into the Far North for disposal. There is no operating landfill in the Far North so disposal fees are unlikely to be cheaper than taking waste straight to the landfill. Geographically, Puwera landfill is more centrally located to the other districts within the Northland region.

Potentially residents who live near the council boundaries may find it convenient to use FNDC's RTS/CRCs if there is one nearby, but these volumes/tonnes are expected to be negligible.

4.5 Composition of diverted materials

The material type of diverted tonnes is reported monthly by the North/South contractors. During the 2022 year, the total tonnes of each material diverted is shown below. Note that this includes all sources, both residential and non-residential.

Figure 9 Diverted tonnes by material type (2022)



4.6 Diversion potential

In the 2022/23 SWAP analysis, the following estimates were made of divertible material.

In kerbside refuse, per pickup:

Table 4 Kerbside divertible potential

	Rubbish bags	140-l wheelie bins	240-l wheelie bins
Recyclable materials			
Recyclable paper	7.8%	6.6%	11.0%
Recyclable plastics - #1, 2 and 5	4.7%	2.9%	5.2%
Steel cans	1.1%	0.9%	1.3%
Aluminium cans	0.7%	0.8%	0.6%
Glass - Bottles/jars	3.8%	3.4%	4.8%
Subtotal	**18.1%**	**14.6%**	**22.9%**
Compostable materials			
Food waste	37.9%	37.5%	32.9%
Greenwaste	4.8%	13.4%	0.5%
Subtotal	**42.7%**	**50.9%**	**33.4%**
Total divertible			
Weight of divertible materials	4.70 kg	6.96 kg	10.19 kg
Divertible materials as % of total	60.8%	65.4%	56.3%

Note here that this is based on the limited data obtained from the samples taken during the SWAP analysis and should be considered an estimate only.

The compostable material compromised kitchen waste and a small amount of green waste. Kitchen waste is food preparation waste, left-over food waste, both perished goods and wasted food, which would have been fit for consumption. Green waste, or garden matter, was mostly prunings and leaves. There is currently little infrastructure to recover kitchen waste – it is not collected at the RTS. If kitchen waste is are currently diverted, this is managed privately by households and industry through composting, pig farms, worm farms, bokashi systems or alternatives.

Plastic was the second highest component of kerbside rubbish sampled. However only a small amount of this was material that could be recycled. The remaining plastics are hard plastics, plastics bags and film that is not collected through private kerbside recycling and the RTS/CRC sites.

Extrapolating this data this results in an average of 1.96 kg recyclables and 4.06kg of compostable materials disposed of to landfill per household refuse collection. Assuming refuse disposed of through the RTS sites has a similar composition, this equates to 1,467T of recyclables and 3,035T of compostable materials per year currently going to landfill.

For the general waste collected through the RTS network:

Table 5 Diversion potential in general waste

Diversion potential - General waste	% of total
Recyclable and recoverable materials	
Paper - Recyclable	1.20%
Paper - Cardboard	4.30%
Plastic - Recyclable	0.20%
Ferrous metals	0.80%
Non-ferrous metals	0.30%
Glass - Recyclable	0.40%
Textiles - Clothing	1.70%
Rubble - Cleanfill	1.20%

Timber - Reusable	2.10%
Subtotal	**12.10%**
Compostable materials	
Organics - Kitchen waste	3.30%
Organics - Compostable greenwaste	2.60%
Rubble - New plasterboard	5.40%
Timber - Untreated/unpainted	4.00%
Subtotal	**15.30%**
TOTAL - Potentially divertible	**27.40%**

Note that these figures exclude any further capacity for the diversion of treated timber, as it is understood that the facility capable of accepting treated timber is at capacity.

There is less divertible material in the general waste overall, only 27% compared to 56%-65% of the residential waste.

5 Future Growth and Demand for Waste Services

The future demand for waste services will be influenced by several key drivers including:

- demographic change, e.g. population, household changes
- change in commercial and industrial activity/economic conditions, including increases or decreases in tourism
- land use changes
- changes in waste from outside the area
- consumption patterns and product quality
- the occurrence of natural disaster events
- national policy and legislation, e.g. product stewardship schemes, waste levy changes, ETS changes
- impact of waste minimisation behaviour change programmes
- community expectation

In taking the above demand drivers into account it is noted that there will be continued pressure on existing waste management and minimisation infrastructure and services. While there is adequate landfill disposal capacity in the medium to long term future, it is in FNDC's best interests to improve diversion and minimisation of waste.

5.1 Demographics/population change

A key factor affecting future demand is population growth. The following data has been sourced via Statistics New Zealand data and Infometrics projections prepared for FNDC. The Far North population has grown by an average of 2.2% over the last nine years.

Under the medium scenario, population growth in the Far North is projected to average 0.7% per annum over the 2024-34 period but be front loaded rather than linear over this period. This results in a projected population of 80,200 in 2034. Beyond this, growth is projected to taper off between 2035-2050 generating slow growth up to a peak population of 83,200 in 2049 under the medium growth scenario.[4]

Population growth projections are directly tied to employment opportunities and shifts in industry trends within the district. Most significantly, this includes an expectation that growth in employment opportunities in the future will be largely in service-related industries, and therefore located in or near current population centres. These industries include public administrations, professional and scientific services, health care, accommodation and food services and education.

A shift in rural areas away from cattle and dairy farming and towards forestry is being driven by policy settings for agriculture and forestry and assumed to continue, particularly by the Emissions Trading Scheme and the National Policy Statement for Freshwater Management. Both of these are assumed to encourage forestry over dairy and cattle farming in the future. In general, forestry offers less employment opportunities than farming, seen by lower employment in cattle and livestock farming between 2012 and 2021. Horticulture provides employment opportunities and is expected to continue growing through to at least 2031, and this growth is also expected to located close to the district's main centres.

Local growth trends also include:

[4] Report titled Far North District population projections, May 2022 by Infometrics

- Population growth is expected to be centred around Kaikohe, Kerikeri and Kaitaia, with the largest growth occurring the Kerikeri/Waipapa area.
- Population increase over the last ten years has been from people moving into the area rather than an increase in the birth rate. This is influenced by national immigration settings which have been volatile.
- Net migration is predicted to be strongest in the 45-54 year old age group, and the most negative in the 15-24 year old age group.
- The 65+ year old age group has been the fastest growing age group over the last two decades and is predicted to continue to as the fastest growing age group over the next two decades, with an estimated 24,300 people by 2041 (c. 30% of the population).
- The number of dwellings in the Far North was 30,200 in 2018 and based on a medium projection, is expected to reach 35,800 in 2034, before peaking at 36,600 in 2046.[3]

The anticipated increase in population is not expected to impact on demand for waste services significantly in the next ten years, with an aging population who are generally more waste conscious. Overall, the average age in the district is projected to move from 41 years old in 2021, to 44 yeas old in 2031, and 46 years old in 2041.[3]

5.2 Commercial and industrial economic activity

Industrial activity and economic conditions as measured by the Gross Domestic Product (GDP) also has a large determinative effect on the volume of waste produced. In 2022, the FNDC GDP represented 0.8% of New Zealand's GDP. Key points include:

- From 2012–22, Far North's economy grew 35% or an average of 3% per year, which is in line with nationwide GDP growth over the same time period, though the annual variations in FNDC's GDP growth compared to the national GDP growth are up to 1.7% apart. I.e. The average growth over the past 10 years is aligned with the national growth, but each individual year's growth is quite different.
- GDP in the Far North District measured $2.982 million in the year to March 2022, up 4.5% from a year earlier. New Zealand's GDP increased by 5.3% over the same period.
- The 2012–22 increase was primarily driven by construction, retail trade, agriculture, and professional services. Agriculture, forestry and fishing is the largest industry by contribution to GDP, but actually decreased 2% from 2021 to 2022.

Table 6 Growth industries 2012-22

Industry	GDP		% point contribution to growth	Annual Growth
	2012	2022		
Construction	126	221	0.37%	5.80%
Retail Trade	134	218	0.33%	5.00%
Agriculture, Forestry and Fishing	294	370	0.30%	2.30%
Professional, Scientific and Technical Services	79	151	0.29%	6.80%
Rental, Hiring and Real Estate Services	222	284	0.24%	2.50%
Manufacturing	159	210	0.20%	2.80%

- For the year ending September 2022, there has been a 1% increase in the number of new dwellings consented from the previous year, 402 overall.

Though construction has grown in the Far North over the last decade, demand for construction going forward is projected to taper off in line with the reduction in population growth.

As discussed in the previous section, future economic growth is expected to come from forestry, horticulture and service-based industries. Moderate growth in GDP is expected to continue at 1.7% per annum through to 2030, then fall to 1.3% per annum through to 2050.

5.3 Land use changes

The district continues to have a strong agriculture industry, though with increasing forestry and horticulture, and decreasing cattle farming activities, which if it continues, will see a reduction in livestock and farming waste and an increase in plant based waste. However, this is expected to be a long-term trend so farm waste continues to be a consideration in the medium term.

The Mid North water scheme currently underway is designed to support increased horticulture industry around the Kaikohe region.

At the time of the previous Waste Assessment, the number of new dwellings was predicted to increase faster than the population, indicating a high number of holidays homes being built in the area and a seasonal population. Current projections anticipate that new dwellings will grow in line with the population, meaning the existing holiday home stock will remain, but seasonal peaks are not anticipated to become more pronounced.

5.4 Waste from other areas

There is no anticipated increase in the amount of waste received from other areas.

5.5 Community expectation and consumer behaviour

If waste minimisation objectives continue to be important to the community, demand will continue for ready access to suitable facilities for recycling and processing of divertible materials. This demand may extend to include other materials and may include more services provided kerbside to an increasingly urban population. There may be increasing pressure on existing resource recovery centres to expand their capacity and, if these objectives are to be met, there is likely to be a need for refuse transfer stations not currently providing recovery services to improve their operations.

In the 2020 Colmar Brunton Better Futures report, the build-up of plastic in the environment, and too much waste/rubbish generated were ranked two of the top concerns for New Zealanders. FNDC's Community Surveys between 2018-2022 show consistently high satisfaction ratings for the Community Recycling Centres (80%-85%) and similar ratings for the Refuse Transfer Stations (77%-84%), however satisfaction with the overall refuse and recycling disposal services sits between 67%-73%. This could suggest that while the community is satisfied with the RTS/CRC sites, the overall service could better meet their needs.

FNDC is currently running an early community consultation programme to help understand community views on solid waste services. With population increase over the last twenty years being from people moving into the area, it may be that community expectations of Council are to provide comprehensive waste services particularly if they have migrated from areas with higher levels of service.

5.6 Natural and man-made disasters

Natural and man-made disasters apply a different pressure upon waste services and other inter-related services. The earthquakes in Christchurch, the Covid-19 pandemic, and cyclone Gabrielle re-emphasise the need for future proofing and planning. Lessons can be learnt from these events to assist in preparing for future events in the Far North.

5.7 Projected waste tonnages

Waste volumes tend to vary with both population and economic activity. There is little information available in the Far North about the relative tonnes produced from residential and non-residential sources.

This projection is based on the division from the SWAP analysis, and the limitations of the SWAP data as being over a very limited time period must be considered. Where applicable national averages based on data from other areas have been used as supplementary data and for the purpose of comparisons.

5.7.1 Residential tonnes

Future residential waste is directly related to population growth. This projection is based on the following information:

- Residential waste to landfill observed during the SWAP, combining kerbside refuse and RTS Residential waste averaged 449 kg/household/year. This compares well with the national average of 446 kg/household/year (noting the SWAP was undertaken at a time when many holiday homes would have been occupied, and the number of households reasonably high).
- Across all receptacle types, kerbside refuse contained on average 19% recyclables per set out and 42% compostable materials. This projection assumes a similar composition for the RTS Residential waste. This is a higher than average percentage of recyclables (12%), and a lower than average percentage of compostables (50%).
- Total residential recycling tonnes in the Far North are not separable from other activities, so 250kg/household/year has been used as a national average for recycling generation and 197 kg/household/year as expected diverted recycling.
- Councils elsewhere that have implemented a kerbside organic collection, typically see a 65% reduction in the tonnes of compostables in kerbside refuse collections. In FNDC, this has been applied to the food scraps tonnages only.

The above figures and assumptions lead to the following projections for residential waste generation.

Table 7 Projected residential waste generation

	2022	2034	2049
Total refuse tonnes	5,070	5,497	5,620
Total recycling tonnes	7,240	7,850	8,025
Total organic tonnes	5,460	5,920	6,052
Total residential tonnes generated	17,770	19,267	19,697

This equates to a total waste generation per household of 618 kg/household/year, compared to a national average of 680 kg/household year.

From this waste generated, the potential tonnes to landfill are:

Table 8 Projected residential waste to landfill

	2022	2034	2049
Do nothing:			
Current - Total to landfill (T/annum)	11,430	12,393	12,670
Targets based on national averages:			
Tonnes to landfill with increased recycling diversion (T/annum)	10,793	11,703	12,670
Tonnes to landfill with increased organics diversion (T/annum)	8,687	9,419	9,629
Tonnes to landfill with both increased recycling and organics diversion (T/annum)	8,050	8,728	8,923

5.7.2 Non-residential tonnes

Non-residential tonnes can be linked to forecast economic activity. In this case, forecast GDP has been used to estimate future trends in non-residential waste generations.

- Total tonnes and compositions are largely based on the SWAP analysis and recognition of the small window of information needs to be considered.
- Total recycling and organic tonnes have not been estimated, only the divertible disposed of to landfill.
- Targets are estimated based on a 50% reduction in landfill disposal of divertible material.

Table 9 Projected non-residential waste to landfill

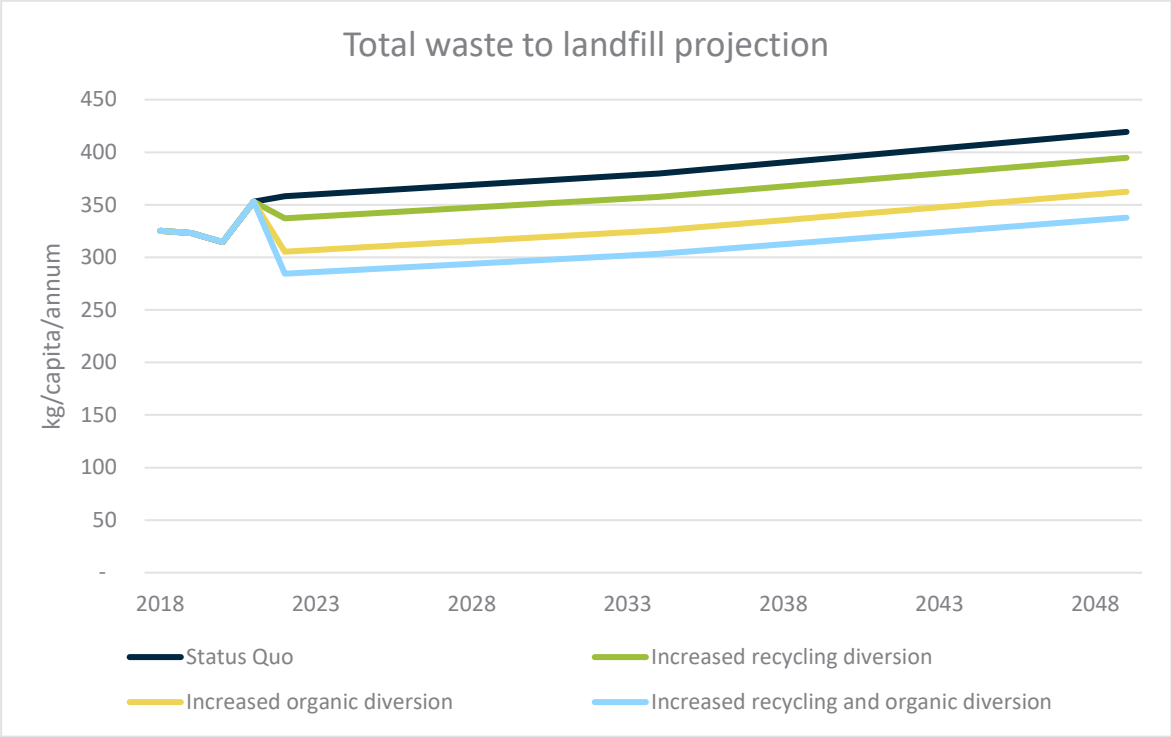
Do nothing	2022	2034	2049
Current - Total to landfill (T)	14,997	18,072	22,220
Targets based on 50% reduction of divertible volume:			
Tonnes to landfill with increased recycling diversion (T/annum)	14,089	16,978	20,876
Tonnes to landfill with increased organics diversion (T/annum)	13,849	16,689	20,520
Tonnes to landfill with both increased recycling and organics diversion (T/annum)	12,942	15,596	19,176

Note that these figures are estimates only.

5.7.3 Total projected tonnes to landfill

Combining the residential and non-residential waste projections, gives the following profile of potential tonnes to landfill.

Figure 10 Total waste to landfill projection per capita

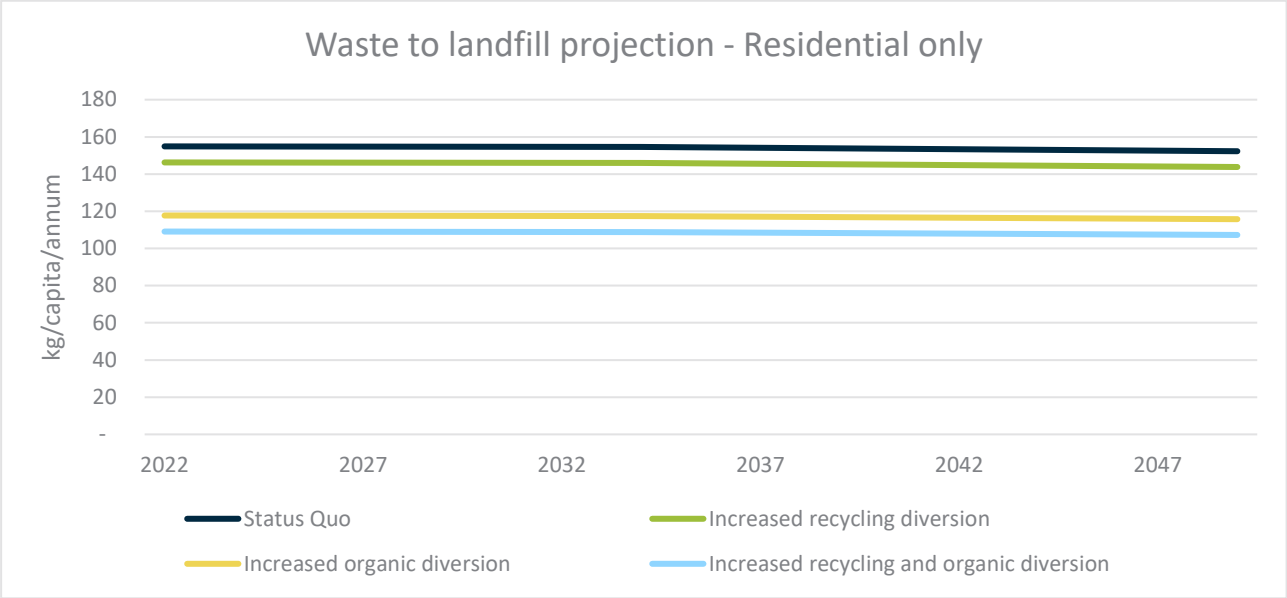


The long-term upward trend in this graph is explained by the projection that GDP growth is going to be greater than population growth over this period, resulting in an overall increase of waste per capita and emphasising the need for waste minimisation to include non-residential waste sources.

Note also, that these figures are based on the existing quantities going through the private collections and RTS/CRC network. An unknown quantity of waste currently being disposed of on private land through burning, burying or illegal dumping is not represented here. Targeting a reduction in waste disposed of inappropriately will increase the total waste to landfill for the district but will lead to positive environmental outcomes.

Without the influence of the non-residential waste, the impact on the rate of waste to landfill per capita for residential waste and the impact on targeting recycling and organic diversion services is shown below. Note these figures are indicative due to limitations of the data available.

Figure 11 Residential waste to landfill projection per capita



Introducing food scraps collection kerbside services (shown as organic) would see a decrease in waste to landfill per capita. These figures assume a 24% reduction based on successful diversion rates seen elsewhere, but a potential 42% of residential waste could be diverted.

Note that at this stage, it is difficult to compare this with the newly-released targets in MfE's March 2023 announcement regarding kerbside diversion targets, because the residential-only portion of the current diverted kg/capita/annum is not reported separately.

6 FNDC Future Planning Framework

This section considers FNDC's direction with regards to vision and targets for achieving waste reduction and for meeting the forecast demand for services.

The reason for discussing the Councils' vision and targets is to provide a sense of direction when scoping the options. It is difficult to scope what options might be needed if there is no consideration for the outcomes desired. The vision and targets discussed in this Waste Assessment have been derived from looking at the existing 2017 WMMP and the LTP.

6.1 Vision and goals

FNDC's vision within its 2021 - 2031 LTP is:

"A district of sustainable prosperity and well-being"

Central to this is the LTP mission, are six LTP strategic priorities for the District:

- Better asset management
- Address affordability
- Enable sustainable economic development
- Adapt to climate change
- Protect our water supply
- Deepen our sense of place and connection.

FNDC's vision specifically for waste management and minimisation from the existing 2017 WMMP is to:

"Waste nothing of value or use while working towards zero waste."

The District's goals for waste management and minimisation are to:

- reduce the amount of waste entering the waste stream
- reduce the amount of recyclable waste sent to final disposal
- make the best use of recoverable waste as a renewable resource
- provide financial incentives to the public to reduce residual waste
- provide a network of collection methods that balance service levels to the public with cost effectiveness
- provide for the safe and efficient disposal of residual waste
- ensure that hazardous wastes do not enter the waste stream
- recover the cost of waste management from those who produce the residual waste
- minimise the cost of waste management to Council, to the public and to the ratepayer
- ensure compliance with the Waste Minimisation Act, Resource Management Act, Local Government Act and other legislative requirements
- encourage the community to take ownership/personal responsibility for waste
- encourage the community to view waste as a resource
- provide robust regular monitoring of the District's solid waste stream.

6.2 Guiding principles

In developing options, FNDC will be guided by the following principles:

- Addressing current and future anticipated legislative requirements
- Alignment with the New Zealand Waste Strategy
- Alignment with the WMMP vision
- Recognition of Kaitiakitanga/stewardship
- Prioritisation of actions based on waste hierarchy
- Allowing for integration of technology/recycling and recovery processes
- Acknowledgement that while behaviour change is required to minimise waste, convenience influences behaviour

6.3 Far North specific issues

Progress against the previous WMMP Action Plan has been reviewed and considered with reference to the change in waste quantities and emerging events since mid-2017. The following issues are identified as needing to be addressed in the next WMMP.

1. **Ease of access to adequate recycling facilities and services to support increased diversion of recyclables**

Increased recycling requires convenient, adequate, available recycling volume. The existing WMMP promotes the target of one additional CRC per year, until all residents were within a 15 min drive of a recyclable drop-off. This was rescinded in the 2021-31 LTP. Since 2017, three new CRCs have been added, one summer site is now open all year around, and one CRC has been closed (Peria). Urban residents have the option to pay for a private kerbside 60L recycling crate, which is smaller than the recycling volume typically generated by a household. There is no MRF within the district or neighbouring councils, for the sorting of comingled recycling from MGBs.

2. **Addressing increasing waste to landfill per capita**

The total tonnes of waste disposed of to landfill was decreasing from 2017-2019 and has increased 2020-2022, both per capita and in relation to local GDP. FNDC has little influence over the quantity of waste generated as many residents and all commercial operations use private refuse services.

It is important to note that this issue seeks to address the overall increasing level of waste generation and decreasing percentage of diversion over time. It is not intended to encourage the inappropriate disposal of waste outside of landfills.

3. **Addressing the inappropriate dumping, burning and burying of waste outside the waste management regime**

FNDC faces three types of illegal dumping. At kerbside collection points and RTS/CRC sites, this can be addressed through the procurement of the North/South contracts but will require a commitment from FNDC to enforce illegal dumping infringements. The third more challenging form of illegal dumping is the waste dumped in remote areas, buried or burnt on farms that does not make it into FNDC's waste management regime. This waste can have detrimental environmental effects and is difficult to quantify.

Addressing waste disposed of inappropriately will increase overall waste values to landfill but will result in improved environmental outcomes. Issues #2 and #3 must be considered together in the setting of any per capita landfill targets.

4. **Addressing the lack of visibility in effectiveness of residential recycling**

Residential recycling occurs both through the CRC network and private kerbside collections. Under the North/South contracts, the contractors receive all revenue off the recyclables collected and report on a KPI that compares total diverted tonnes (all waste streams, all sources) to the Residential component of the waste to landfill from the combined RTS sites. This is effective at incentivising the right contractor behaviour but does not tell FNDC about the effectiveness of their recycling education channels or messages.

5. **Addressing the high volume of organic waste going to landfill**

There is a high volume of organic waste disposed through the kerbside collection services. While green waste is separated at some RTS and composted locally, there is currently no separate organic collection and processing service offered by FNDC. The removal of food scraps on a large scale from the refuse waste stream requires a purpose-built facility to avoid the potential health, odour and environmental impacts from the breakdown of organic material. Currently there are no nearby organic processing facilities that FNDC could utilise if a collection service was introduced. Organic waste to landfill is also a significant contributor to greenhouse gas generation from landfills. Diverting organics waste has significant carbon emission reduction benefits in addition to waste diversion. External funding may be available for a regional facility and at least one interested party is believed to be investigating building a private facility outside the district. This would likely be a suitable solution for food scraps collected in the South, but material from the North would be transported over a long distance.

6. **Addressing the high volume of C&D waste going to landfill**

C&D Waste is the largest contributor to landfill tonnes, and in particular treated timber. Currently FNDC has very little to do with this waste stream as commercial volumes are picked up by commercial waste companies outside of the FNDC contracts.

7. **Addressing the cost and volume uncertainty due to legislation change**

Cost and volume will be impacted by changes to the Waste Disposal Levy and ETS. FNDC will need to consider how to maintain affordability and equity in access to suitable waste disposal services. This applies to both the services currently offered, and any proposed changes to those services in the future.

Though the CRS has recently been deferred, its eventually introduction and any other project stewardship schemes may impact recycling bin composition and RTS waste composition. These in turn will impact the range and type of services offered by FNDC and the private services.

7 Options Assessment (Statement of Proposals)

This chapter considers practicable options to address future demand for waste management and minimisation services and programmes in the Far North district to address the Far North-specific issues that have been identified.

Table 10 expands on the Far North District specific issues listed in section 6.3 and presents options that FNDC could introduce to address those issues. The options cover influence, regulation, and service provision options, which are then assessed for cost and ease of implementation, and ultimately whether they are suitable options for FNDC to consider further or not.

Note that some of these options overlap with the recommendations of the Service Delivery Review and consistency with the review recommendations has been maintained.

A full list of existing actions in the 2017 WMMP is appended.

Table 10 Options for Far North District specific issues

1. Ease of access to adequate recycling facilities and services to support increased diversion of recyclables				
Approach	**Options**	**Cost/Difficulty**	**Suitable Option**	**Comments**
Influence	1.1 Continue involvement in regional discussions regarding recyclables processing (note, no immediate plans for a regional processing facility).	Low/ Low	Yes	The closest MRF is located in Auckland, which potentially limits the kerbside recycling collection receptacle options. Most mixed recycling around the country is sorted automatically by MRFs, where the Northland region rely on hand sorting of materials either at the kerbside or at a resource recovery centre, which makes crates a more feasible kerbside collection option.
Regulate	1.2 Continue to leave recyclables collections to private sector but require diversion services alongside refuse service (option excl in 17A)	Low/Medium	No	This option was excluded in the Service Delivery Review as it is difficult to enforce and does not achieve the outcomes FNDC is aiming for.
	1.3 Implement better data reporting aligned to the National Waste Data Flow standard. Require greater transparency in the quantities and types of commercial recycling collected.	Medium/ Medium	Yes	Improved data provides better understanding of total discarded volumes both domestic and commercial which helps to set realistic strategic objectives and policies. FNDC is required to hold and report against accurate and reliable data.
Service	1.4 Provide a rates-funded kerbside recycling service a far as practicable to increase the volume of recyclable waste that residents can dispose of kerbside.	Medium / High	Yes	By providing a rates-funded kerbside service, FNDC can ensure that all practicable households have access to sufficient recycling volumes. This approach also provides FNDC with direct information about the tonnes of each waste stream collected, from which parts of the district and other information useful for future decision making. This will need to be designed in consultation with the service providers to ensure high standards of separation are maintained.
	1.5 Reinstate previous goal of adding a new CRC each year into the RTS/CRC network	Medium/ High	No	Identifying appropriate sites for CRC's has proved to be difficult and one a year is a target that does not address how suitable or necessary new CRC may be. Drives investment in convenient locations, not required locations.
	1.6 Investigate options for FNDC-owned RRC in the Southern area. Both current contractors operate sorting facilities in the Kerikeri/Waipapa area, one with a public drop-off facility.	High/ High	Yes	Operations in the Southern region contract currently rely on the contractor to provide a suitable site for consolidation and recycling sorting. By providing an FNDC-owned site (such as Kaitaia in the North) FNDC may have more competitive interest in the Southern contract and will have greater long term strategic direction over waste consolidation in the future. The Service Delivery Review recommends discussing with other service providers if this is a barrier to entry into the FNDC market or not.
	1.7 Increase the number of public place recycling bins installed introduce in more town centres wherever litter bins are available.	Low/ Medium	Yes	Public place recycling bins do not typically collect large volumes of recycling compared to household and commercially generated waste. They also typically contain a much higher level of contamination and may be sent to landfill. However, they are good constant visual reminders of the expectation on residents to recycle and provides another avenue for them to do so. Public place recycling bins are currently available in Kaitaia, Kerikeri, Paihia, Kaikohe.
	1.8 Optimise the location and services provided at RTS / CRC network	Medium/ Medium	Yes	Particularly if council-funded kerbside services are introduced, the location and services required at the existing RTS/CRC sites may be quite different. Some area may be over serviced and resources can be diverted to other areas.

1. Ease of access to adequate recycling facilities and services to support increased diversion of recyclables				
	1.9 Establish recovery facilities (regional or more localised) to support the circular economy initiatives, promote product stewardship, reuse of material, local processing of different waste streams (such as bulky items, construction and demolition, rural waste).	Medium/ Medium	Yes	Lead initiatives to promote local circular economy initiatives and recycling. Continue to work with local businesses to encourage thought given to unnecessary waste. Continue to fund and promote waste education programmes that encourage waste minimisation behaviour.

2. Addressing increasing waste to landfill per capita				
Approach	**Options**	**Cost/ Difficulty**	**Suitable Option?**	**Comments**
Influence	2.1 Encourage and educate residents and businesses to use the diversion services available to reduce waste to landfill and continue to promote waste minimisation behaviour.	Low/ Low	Yes	Continue to fund and promote waste education programs that encourage waste minimisation behaviour
	2.2 FNDC will promote and support resilient end to end recycling options and local circular economy initiatives.	Low/ Low	Yes	Lead initiatives to promote local circular economy initiatives and resilience recycling. This includes any legislative changes such as the Container Deposit Scheme.
	2.3 Promote the reuse shop at to the general public.	Low/ Low	Yes	Active promotion of the reuse shop will benefit both the community groups operating the shops and reduce waste generated in the district.
	2.4 Continue to build relationships with Māori, working together with Para Kore to encourage more community buy-in for waste minimisation.	Low/ Low	Yes	Continue to support the Para Kore programme to build relationships with Māori to encourage and engender more community buy-in for waste minimisation. Currently being delivered through the Education and Minimisation contract.
	2.5 Continue to support zero waste lessons through schools through the Education and Minimisation contract.	Low/ Low	Yes	Education of the next generation and teaching a culture of waste minimisation will influence this behaviour now and into the future.
	2.6 Continue advising businesses on ways to reduce waste through the Education and Minimisation contract.	Low/ Low	Yes	Business and industry contributes more waste to landfill than residents and has less obvious diversion services available. Dedicating resources to working with businesses and assisting in the identification of local reuse and recycling options can make diversion easier for business to achieve without Council needing to provide the service. E.g. consolidated an updated registers of businesses capable of collecting or receiving common commercial waste products.
	2.7 Continue promoting and supporting the EcoStar Awards programme to educate and reward businesses for their achievement in waste reduction and increased diversion.	Low/ Low	Yes	Currently being delivered through the Education and Minimisation contract.
Regulate	2.8 Review the effectiveness of the current bylaw in supporting waste diversion and protecting the environment from harm and implement changes.	Medium/ Medium	Yes	This can be complex and time consuming to implement and would have compliance monitoring and enforcement costs that would need to be funded.
	2.9 Leave kerbside refuse to private collections, but decrease the percentage of divertible material that is allowed to be collected in refuse receptacles in the bylaw.	Low/ Medium	Yes	The current bylaw contains a limit of 20% recyclable content in receptacles used for refuse collection. Enforcement of this limit is very difficult to enforce. Reviewing the bylaw can be complex and time consuming, and if the limit were to be changed, and FNDC would need to commit to monitor and enforce for the changes to have any effect.
	2.10 Implement better data reporting aligned to the National Waste Data Flow standard. Improved data provides better understanding of total discarded volumes both domestic and commercial which helps to set realistic strategic objectives and policies.	Low/ Medium	Yes	Improved data provides better understanding of total discarded volumes both domestic and commercial which helps to set realistic strategic objectives and policies. FNDC is required to hold and report against accurate and reliable data.
	2.11 New North/South contracts are proposed to include priority for community involvement in RTS/CRC operations.	Medium / Medium	Yes	Greater community ownership of the waste produced in their local community and maximising local reuse opportunities through have more local involvement in the operation of the CRC/RTS sites was identified as a preferred option in the Service Delivery Review.
	2.12 Enforce the current bylaw regarding recyclable content in refuse	Low / Medium	Yes	As mentioned above, the current limit is 20% recyclable content in any receptacle used for the

2. Addressing increasing waste to landfill per capita				
	receptacles			collection of refuse, but this is not monitored or enforced by FNDC. It is unknown what the level of voluntary compliance is with this limit, but generally all receptacles put out for collection are collected. There is currently no methodology for monitoring and enforcing this limit, other than self-reporting by the private operators which is unlikely to be effective. Through the bylaw, FNDC attempts to set parameters for commercial behaviour that then impact on the operators relationship with their customers. This is a difficult way to decrease the amount of recyclables included in the kerbside refuse collections (average = 19%).
Service	2.13 Provide rates-funded kerbside recycling service to encourage greater diversion of recyclable materials and a kerbside food scraps service when a processing facility is available.	Medium/ High	Yes	As above for #1 – increases in diversion require easy and convenient access to a sufficient volume of waste so that it is easy for residents to do the right thing. Council-funded kerbside collections of divertible material ensure that a maximum number of households have access to the service. Food scraps is a significant portion of the existing kerbside refuse tonnages (36%) and assumed to be an equally significant portion of Residential RTS waste as well. Home disposal options for food scraps (such as composting) are not utilised by many households and so this material ends up in refuse. Equity to be considered in the cost of the additional services versus the potential benefits.
	2.14 Expand capability of RTS/CRC network to accept divertible materials that are not collected through kerbside recycling.	Medium/ Medium	Yes	This includes e-waste, tyres, whiteware/scrap metal, gas bottles, batteries and other bulky items that even households with a kerbside recycling service will need to take to a transfer station. If a council-funded kerbside recycling service is introduced, it would be anticipated that the paper/plastic/glass component of RTS materials would reduce, allowing a greater focus on these bulky non-commodity items. Collecting these materials at more sites (potentially CRCs) would increase the level of service offered in this area and potentially reduce illegal dumping of these items.
	2.15 Consider investment in waste-to-energy infrastructure	High/High	No	Waste to energy has not yet been successfully implemented elsewhere in New Zealand. The capital costs of establishing a waste to energy plant are significant. Being an early adopter in this area would be a high risk activity for FNDC.
	2.16 Optimise the layout and/or provide necessary infrastructure at RTS/CRC sites to promote diversion over disposal.	Low/ Medium	Yes	People naturally do what is easiest and most obvious to them. By optimising layouts the quality and quantity of materials diverted at RTS/CRC sites can be improved. Also, at staffed sites, ensuring all customers are engaged by a staff member to provide advice on what other divertible materials may be in their load.
	2.17 Review charging rates for different waste streams at RTS/CRC sites	Low/Low	No	Charging can be used to incentivise diversion by increasing the cost of reuse and/or decreasing the cost of divertible materials. Disposal of all commodities is already free and disposal of other divertible materials is subsidised. The cost of refuse disposal is forecast to continue to rise due to central government legislation. Additional increases to the cost of refuse disposal may make it unaffordable for some residents are increase inappropriate disposal of waste.

3. Addressing the inappropriate dumping, burning and burying of waste outside the waste management regime				
Approach	**Options**	**Cost/Difficulty**	**Suitable Option?**	**Comments**
Influence	3.1 Highlight the cost of dealing with illegal dumping to the public	Low/ Low	Yes	Across the different forms of illegal dumping, this costs c.$200k/year which is funded from general rates. Additional community support for the cost spent to clean up illegal dumping may assist people deterring friend and family members from continuing the practice.
	3.2 Education and partnering with agricultural organisations and farmers to raise awareness of environmental impacts and alternative options	Medium/Low	Yes	It is anticipated that many residents on rural properties that burn or bury their waste either do not understand the potential environmental harm they are causing their land or do not know what the alternatives are. FNDC could run a dedicated campaign to educate rural residents of the dangers of home disposal of waste and investigate how FNDC can remove the barriers to proper waste disposal. Look to adopt NZ Rural Waste Minimisation Project guidelines and work with the industry to improve farm practices. This would include providing information on disposal options from recognised good practice disposal operators.
	3.3 Continue to support community clean up days and Sea Cleaners by covering disposal costs.	Low/Low	Yes	Support community groups and national campaigns promoting community clean up days. FNDC covers the cost of disposal of all waste collected.
	3.4 Engage community groups to raise awareness about the impacts of inappropriate waste disposal	Low/Low	Yes	As above for raising awareness of the environmental impacts of improper waste disposal, FNDC can seek to partner with community groups and other organisations in raising this awareness, rather than delivering an FNDC-led education programme.
	3.5 For rural waste, ensure support of the nationwide recovery operations of the Agrecovery and Plasback initiatives.	Low/Low	Yes	Consider these national initiatives alongside any locally identified solutions for farm waste.
Regulate	3.6 Ensure that for all illegal dumping activities, where possible, infringement notices are issued or fines levied. Commitment required by FNDC to follow up monitoring with enforcement actions.	Low/ Medium	Yes	These activities are against the bylaw but are currently not monitored or enforced. FNDC can issue infringements for non-compliance with the current bylaw for greater compliance.
	3.7 Use the bylaw to place the cost and responsibility for managing kerbside collection points on the licensed operators	Low/ Medium	Yes	Strict enforcement of the bylaw would see this being totally an operator cost instead of shared, however this is unlikely to lead to better community outcomes. Current priority is on getting bags removed quickly, however this encourages poor behaviour on the part of the residents.
	3.8 Review the bylaw to ensure disposal of certain waste streams on property and burning of waste on property is prohibited.	Medium/ Medium	Yes	This can be complex and time consuming to implement and would have compliance monitoring and enforcement costs that would need to be funded.
Service	3.9 Improve North/South contract specification to incentivise RTS/CRC site operator to minimise/manage after-hours dumping at RTS/CRC sites.	Low/ Medium	Yes	This is only effective together if FNDC commits to enforcing the bylaw once evidence has been produced as contractors need certainty that FNDC will follow up. Commitment would need to be clearly communicated to contractors as they have become discouraged with FNDC's lack of enforcement in the past.
	3.10 Explore alternative solutions for farm waste that FNDC can deliver through service contracts.	Low/ Medium	Yes	Where common materials in farm waste are suited to consolidation and transport to an end user, FNDC can investigate utilising the RTS/CRC network to facilitate this consolidation. Especially if a council-funded kerbside recycling service is introduced, and subsequent volumes of commodity recyclables at RTS/CRC sites are reduced.

4. Addressing the lack of visibility in effectiveness of residential recycling				
Approach	**Options**	**Cost/Difficulty**	**Suitable Option?**	**Comments**
Influence	4.1 Encourage communication between the Education and Minimisation contractor and the (private) kerbside recycling collections for more targeted messaging around common recycling problems.	Low/ Low	Yes	FNDC can introduce targeted education campaigns and a feedback process to target specific issues or misconceptions around what can be recycled. The effectiveness of the education campaigns ideally can then be measured through the recycling collected. This will rely on a high degree of cooperation from private operators if FNDC is not operating the kerbside service.
Regulate	4.2 Improve licensing requirements to waste collectors in the district as allowed in the WMA. Improve monitoring and enforcement of the licencing process.	Low/ Low	Yes	FNDC can make provision of information a condition of operating a waste collection service in the district, and the current bylaw already has information provision requirements that are not enforced. Either enforcement of existing provisions or rewriting the provisions are alternatives should private operators continue to deliver the service. Specifically information regarding the split of volumes between commercial, kerbside and RTS collections would be useful.
	4.3 Implement better data reporting aligned to the National Waste Data Flow standard.	Low/Low	Yes	Improved data provides better understanding of total discarded volumes both domestic and commercial which helps to set realistic strategic objectives and policies. FNDC is required to hold and report against accurate and reliable data.
	4.4 Seek feedback and data on education programmes to measure outcomes as well as interactions so that the impact of education on waste/diversion behaviour can be quantified.	Low/ Medium	Yes	This goes together with the 'Influence' action above, cooperation of private operators can be regulated if required.
Service	4.5 Provide the kerbside recycling service as a rates-funded service, giving FNDC access to all data related to the service, including end markets, volumes, participation rates and common issues.	Medium/ Medium	Yes	Should FNDC provide the kerbside recycling service, there will be greater clarity on the issues being experienced in recycling service and the impact of any targeted education campaigns. The decisions about what campaigns to run and where can be made directly by FNDC and communicated to the Education and Minimisation Contractor.

5. Addressing the high volume of organic waste going to landfill				
Approach	**Options**	**Cost/Difficulty**	**Suitable Option?**	**Comment**
Influence	5.1 FNDC can support industry /community groups and key stakeholders to drive initiatives that derive the most beneficial use from receiving a range of organic material.	Low/ Low	Yes	Where local reuse options have been identified by require facilitation or logistical support to establish, FNDC can offer support and advice. Protection from the potential health and environmental impacts of the breakdown of organic material will need to be considered on a case-by-case basis.
	5.2 Continue and improve existing education programs. Continue to seek MfE funding to support the subsidisation of home composting kits and workshops.	Low/ Low	Yes	FNDC can improve education programs for residents to reduce food waste and home compost. Currently being run successfully through the Education and Minimisation contract. Investigate options for reaching a wider audience. Some concern that residents that voluntarily attend home composting workshops are those who are interested and not necessarily the wider community. Good to continue alongside other initiatives but FNDC is unlikely to divert sufficient tonnes through this activity to meet any targets or objectives that may be set by FNDC or the central government.
	5.3 Lead initiatives to promote waste reduction and separation of food waste from local businesses.	Low/ Medium	Yes	Food waste from commercial business contributes 50% of all food waste generated in the district. Consideration of how commercial food scraps may be included in any proposed organic solution is important.
	5.4 Work collaboratively with industry, customers and neighbouring councils to develop organic waste solutions at a regional level.	Medium/ Medium	Yes	FNDC can assist in the identification of suitable reuse opportunities outside of the district and investigate how they may lower barriers to industries and community groups on a regional level.
	5.5 Support the development of a regional organic processing facility with neighbouring councils	High/Medium	Yes	FNDC can be supportive and potentially contribute to the development of a regional facility. Any capital contribution would be traded off against a lower price per tonne for food scraps processed in the future. A regional facility may be located within FNDC or elsewhere in Northland. The Service Delivery Review identified benefits for a regional organic processing facility over a local FNDC-only facility, mainly due to the lower capital cost per tonne required to process at larger volumes.
Regulate	5.6 Modify the 'total diverted tonnes' KPI in the new North/South contracts to include a specific component of organic diversion as a percentage of total organic waste received and collected.	Low/ Medium	Yes	These contracts are due for renewal and the procurement process can include more detail regarding diverted volumes.
	5.7 Require commercial waste collection operators to report more detail around the tonnes of food and green waste collected separately.	Low/ Medium	Yes	Outside the contracts, this information can be regulated as a condition of providing a wate service, though this is likely to be harder to implement.
	5.8 Investigating the regulation of prohibiting disposal of organic waste to landfill.	Low/ Medium	Yes	Use a similar 'maximum organic percentage' as currently applies to recycling content in refuse receptacles. This assumes however, that an alternative for organic waste is available. Note the existing requirement for maximum recycling content is not enforced (discussed above).
Service	5.9 Construct an organic processing facility within the district.	Medium/ High	Yes	In the absence of any interest in a regional facility, the Service Delivery Review recommends that FNDC continue with investigating the feasibility of constructing an organic processing facility for FNDC-alone volumes. In this case, the commercial food waste volumes are critical to ensuring the facility received sufficient volumes to make it worthwhile. FNDC may also choose to construct a facility sufficiently large to treat food scraps from outside

5. Addressing the high volume of organic waste going to landfill				
				the district and charge others for processing tonnes of food scraps. A local market for the end market would need to be identified, capable of receiving the volume of compost the facility would produce. These facilities require careful design and planning to contain odours and minimise potential environmental and health impacts from the breakdown of organic material. Equity to be considered in the cost of the additional services versus the potential benefits.
	5.10 Partner with industry to provide organic processing solutions.	Medium/Medium	Yes	As above in 5.9, but construction of a facility together with an industry partner to reduce FNDC's risk and capital investment.
	5.11 Investigate opportunities for communities to provide localized solutions for food waste collection and processing.	Low/Medium	Yes	Identifying local reuse opportunities for food scraps is likely to only be suitable in small quantities, and not suitable for volumes collected through a kerbside service.

6. Addressing the high volume of C&D waste going to landfill				
Approach	**Options**	**Cost/Difficulty**	**Suitable Option?**	**Comment**
Influence	6.1 Adopt a proactive and collaborative approach to work with the construction and demolition industry and customers to change behaviours through education to promote waste separation, recycling of materials and beneficial reuse.	Low/Low	Yes	Facilitate discussions with industry on how C&D can reduce waste to landfill. Education around the volumes generated by C&D activities, long term impacts and viable alternatives can be driven by FNDC.
	6.2 Promote existing local and regional facilities that divert or process discarded material including local industry, business, and charitable trusts aimed at reducing C&D waste to landfill	Low/ Low	Yes	Identify common C&D waste materials and local businesses that can receive those materials.
	6.3 Educate the public about the whole-of-life impacts regarding construction material choices and encourage the reuse of materials and responsible disposal of materials where possible	Low/ Medium	Yes	Educate consumers to make informed choices when selecting contractors to perform household work and new builds.
	6.4 Promote the idea of a waste exchange where suitable materials can be reused or repurposed.	Low/ Medium	Yes	Facilitate a platform where discarded building materials can be reused or resold instead of discarded.
	6.5 Expand the Education and Minimisation contract to include C&D related businesses.	Medium/ Low	Yes	The Education and Minimisation contract currently engages with businesses through the EcoStar programme. Tailoring a waste minimisation education programme specifically for the construction industry could be an effective way of reducing waste across the industry.
Regulate	6.6 Modify the 'total diverted tonnes' KPI in the new North/South contracts to include a specific component of C&D diversion as a percentage of total C&D waste.	Low/Low	Yes	These contracts are due for renewal and the procurement process can include more detail regarding diverted volumes.
	6.7 Require the operators of the RTS sites to report more detail around the tonnes of C&D waste received and collected commercially.	Low/ Medium	Yes	Outside the contracts, this information can be regulated as a condition of providing a wate service, though this is likely to be harder to implement.
	6.8 Investigate whether waste plans can be introduced into the building or resource consent approval process, especially for projects involving demolition work.	Low/ Low	Yes	Effective when introduced elsewhere, FNDC can bring waste planning into the approval process to change the approach to waste management within construction.
Service	6.9 Extend the scope of the North/South contracts to include all waste received at the RTS sites (i.e. remove the option for commercial contracts in addition to FNDC's waste). This would allow FNDC to have price control over the gate fee charged for C&D material and open up options for reduced pricing for sorted construction material. However, it would increase FNDC's exposure to risk in the operating costs of the RTS sites.	Medium / High	No	FNDC has no interaction with waste C&D disposed of through the RTS sites currently, they are waste received outside the RTS operating contracts through private arrangements between the companies and the site operators. Should FNDC wish to consider using pricing as a mechanism to reduce C&D waste, this waste stream would need to be included in the contracts. This would place the risk and volatility of C&D volumes received on FNDC. There is a risk that any price controls would be passed along to the C&D's customer, and therefore not change disposal behaviour.

7. Addressing the cost and volume uncertainty due to legislation change				
Approach	**Options**	**Cost/Difficulty**	**Suitable Option?**	**Comment**
Influence	7.1 Continue to contribute to national and district policy development, advocate to ensure FNDC issues are addressed and are reflected in legislation changes.	Low/Low	Yes	Contribute to national and district policy development, advocate to ensure that FNDC issues are addressed and are reflected in legislative changes.
	7.2 Work collaboratively with neighbouring Councils and the Northland Regional Council	Low/Low	Yes	To effectively manage risks associated with change and uncertainty FNDC needs to continue to work collaboratively with neighbouring Councils and the Northland Regional Council to support any regional initiatives.
	7.3 Continue to support circular economy and priority product stewardship schemes	Low/Low	Yes	Lead initiatives to promote local circular economy initiatives and recycling. Continue to work with local businesses to encourage thought given to unnecessary waste. Continue to fund and promote waste education programmes that encourage waste minimisation behaviour.
Regulate	7.4 Review bylaws to make sure they are consistent with national legislation	Medium/ Low	Yes	Review the FNDC Solid Waste Bylaw and policies to ensure consistency with national guidelines and legislation. This would apply for example following the introduction of a national collection standard or container return scheme.
Service	7.5 Review services and facilities to minimise the cost impact	Low/Low	Yes	Continue to review the services that FNDC provides. As cost of landfill disposal increases, look to introduce additional diversion options to reduce cost impact (such as the proposed kerbside collection services). Provide district facilities and services that support the cost-effective diversion of material from landfill. As RTS fees increase (through ETS and Waste Levy Costs, and new standardised gate fee), it is possible that the incidence of illegal dumping will also increase, as people perceive that they cannot afford to appropriately dispose of waste. Close monitoring of illegal dumping behaviour and infringements notices issued to perpetrators is an important part of the wider process.

Appendix A Letter from Medical Officer of Health

Dear Briar

Thank you for inviting me to comment on the Far North District Council Waste Assessment, particularly with respect to health protection considerations which may impact on human health.

I have reviewed this document broadly alongside two Health Protection Officers in our Public Health Service (Ngā Tai Ora, Northland Public Health) in relation to any immediate concerns around human health, and would like to provide the following comments.

Health Protection

We respond regularly to notifiable illnesses and diseases as listed under Schedules 1 and 2 of the Health Act 1956. This list includes diseases that have the potential to arise from direct exposure to waste (particularly organic waste), or from exposure to vermin carriers of such diseases which may breed in environments harbouring waste. The list of diseases we respond to is not exhaustive but covers conditions that pose a wider risk to public health. We acknowledge that not all diseases are always diagnosed and notified, however we draw on a considerable amount of experience of investigating particularly infectious diseases across Northland.

In conclusion, we are not aware of any recent disease outbreaks or health related incidents in our region linked to household or commercial waste. We also do not believe that exposure to waste currently plays a significant role in the rate and trends observed in notified diseases at a population level, where we believe from case interview reports that other factors are more significant predictors of risk (e.g. water quality, food safety, animal exposures and wider environmental exposures). We therefore conclude that current and future proposals for waste minimisation are unlikely to pose a significant risk to public health from a health protection perspective.

<u>Areas for development</u>

One particular area of concern for us is Legionnaires' Disease, which is a serious notifiable pneumonia that can sometimes present with severe or life threatening disease in people of older age or those living with common comorbidities. In Northland, most of the Legionnaires' disease we see is associated with a particular species of legionella bacteria commonly associated with potting mixes or other soil related exposures. We would welcome further dialogue on how we can work together to help promote public health protection advice around Legionnaires' Disease as part of any joint education/awareness strategy.

We are also happy to review any potential risks from hazardous waste discarded through routine waste collections, and welcome more dialogue in this area too.

Health protection risks are likely to be greater for those who handle waste regularly as part of their occupation, where we would be happy to engage further to understand what safeguards are already in place or could be promoted more widely in the region.

Other Comments

Taking health as a more holistic concept, we broadly reviewed the Waste Assessment and proposals. Some further comments for your consideration

- We found the extensive local, regional and national policy context very helpful, as we are not routinely involved in the development of local waste minimisation and management plans. We would welcome further involvement so we are able to offer more detailed or dedicated advice as needed going forward
- As highlighted the data limitations do make overall assessment of the success of any waste management and minimisation strategy difficult, and we welcome your ambitions to develop templates for data capture/reporting in line with any ministerial advice in this area. An example that may have been helpful for me would be to simplify the data presented into a 'waste hierarchy' chart or diagram, which may make it easier to more broadly see how much waste is produced and then eventually disposed to landfill. This could be done for domestic or commercial waste separately, and potentially even broken down by geography to better visualise any inequities.
- We welcome the wide range of initiatives and objectives proposed. While mentioned, equity could be outlined more broadly as a strategy objective given the wider socio-economic considerations in the Far North region.

Ngā mihi and best wishes, Ankush

I will now be on leave for 2 weeks returning week of 11th April

Dr. Ankush Mittal

Public Health Medicine Specialist/ Medical Officer of Health

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Appendix B Legislation

The Waste Minimisation Act (WMA) 2008

The enactment of the WMA in 2008 represented a change in the Government's approach to managing and minimising waste. The WMA recognises the need to focus efforts higher on the waste hierarchy in terms of reducing and recovering waste earlier in its lifecycle, shifting focus away from treatment and disposal. The purpose of the WMA (s3) is to *"encourage waste minimisation and a decrease in waste disposal in order to protect the environment from harm; and to provide environmental, social, economic and cultural benefits".*

The WMA introduced a number of useful tools such as a framework for developing accredited product stewardship schemes and the creation of a national waste disposal levy.

The Government has a waste programme to drive national waste sector improvements. Consultation is underway regarding priority products, and an increase in the Waste Disposal Levy and Emission Trading Scheme (ETS). Work is also underway to design a national Container Return Scheme and to standardise kerbside collections in conjunction with national investment plans. As of March 2023, the Container Return Scheme has been deferred and the details of the standardised kerbside collections have recently been released. The impact of these changes on future demand for waste services is discussed in Chapter 3.

While the WMA provides many benefits to local councils, it also provides a number of responsibilities. Part 4 is fully dedicated to the responsibilities of Territorial Authorities which *"must promote effective and efficient waste management and minimisation within their districts"* (s42).

Climate Change Response Act 2002 and amendments

The Climate Change Response Act 2002 and the Climate Change Response (Emissions Trading Reform) Amendment Act 2020 provide the basis for a New Zealand Greenhouse Gas Emission Trading Scheme (ETS). The Act requires landfill owners to purchase emission trading units to cover methane emissions generated from their landfill. Should any future solid waste incineration plants be constructed, the Act would also require emission trading units to be purchased to cover carbon dioxide, methane, and nitrous oxide emissions from the incineration of household waste. The impact of increased charges is covered in Chapter 3.

The Local Government Act 2002 (LGA 2002)

This Act requires Territorial Authorities to assess how well they provide collection and reduction, reuse, recycling, recovery, treatment and disposal of waste in their district, and makes Territorial Authorities responsible for the effective and efficient implementation of their WMMP.

The LGA 2002 contains various provisions that may apply to Territorial Authorities when they are preparing their WMMPs, including consultation (Part 8, sections 145-146) and bylaw provisions (Part 8, section 158). The procedure for making a bylaw and the requirement for completing a special consultative procedure, when making a bylaw, are contained in sections 155 and 156.

The LGA 2002 (Part 6, section 77) refers to legislative requirements for Territorial Authority decision-making, including consideration of the benefits and costs of different options in terms of the present and future social, economic, environmental and cultural wellbeing of the district. Schedule 10 of the Act also includes requirements for information to be included in a Long Term Plan (LTP), including summary information about their WMMP.

The Resource Management Act 1991 (RMA)

The RMA provides guidelines and regulations for the sustainable management of natural and physical resources. Although it does not specifically define 'waste', the RMA addresses waste management and minimisation activity through controls on the environmental effects of waste management and minimisation activities and facilities through national, district and local policy, standards, plans and consent procedures.

In this role, the RMA exercises considerable influence over facilities for waste disposal and recycling, recovery, treatment, and others in terms of the potential impacts of these facilities on the environment.

Under section 30 of the RMA, district councils are responsible for controlling the discharge of contaminants into or onto land, air or water. These responsibilities are addressed through district planning and discharge consent requirements. Other district council responsibilities that may be relevant to waste and recoverable materials facilities include managing the adverse effects of storing, using, disposing of, and transporting hazardous wastes; the dumping of wastes from ships, aircraft and offshore installations into the coastal marine area; and the allocation and use of water.

Under the RMA, Territorial Authority 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.

In addition, the RMA provides for the development of national policy statements and for the setting of National Environmental Standards (NES). There is now a National Policy Statement on Renewable Electricity Generation, which is defined as 'generation of electricity from solar, wind, hydro, geothermal, biomass, tidal, wave, or ocean currents resources. This is also relevant to the Waste Assessment as organic and garden waste can be defined as forms of biomass, and therefore a source of renewable electricity generation.

There is currently one enacted NES that directly influences the management of waste in New Zealand – the Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004 (the NES for Air Quality). This NES requires certain landfills (e.g. those with a capacity of more than 1 million tonnes of waste) to collect landfill gases and either flare them or use them as a source of energy. The result is increased infrastructure and operational costs for qualifying landfills, although with costs potentially offset by the harnessing of captured emissions for energy generation.

Unless exemption criteria are met, the NES for Air Quality also prohibits the lighting of fires and burning of waste at landfills, the burning of tyres, bitumen burning for road maintenance, burning coated wire or oil, and the operation of high-temperature hazardous waste incinerators. These prohibitions limit the range of waste treatment/disposal options available within New Zealand with the aim of protecting air quality.

Other legislation

The following is a summary of other legislation that is to be considered with respect to waste management and minimisation planning.

The Hazardous Substances and New Organisms Act 1996 (HSNO Act)

The HSNO Act addresses the management of substances that pose a significant risk to the environment and/or human health, from manufacture to disposal. The Act relates to waste management primarily through controls on the import or manufacture of new hazardous materials and the handling and disposal of hazardous substances.

Hazardous substances may be explosive, flammable, have the capacity to oxidise, be toxic to humans and/or the environment, corrosive, or have the ability to develop any of these properties when in contact with air or water. Depending on the amount of a hazardous substance on site, the HSNO Act sets out requirements for material storage, staff training and certification. These requirements would need to be addressed within operational and health and safety plans for waste facilities. Hazardous substances commonly managed by councils include used oil, asbestos, agrichemicals, LPG and batteries.

The HSNO Act provides minimum national standards that may apply to the disposal of a hazardous substance. However, under the RMA a district council or Territorial Authority may set more stringent controls relating to the use of land for storing, using, disposing of or transporting hazardous substances.

The Health Act 1956

The Health Act 1956 places obligations on Territorial Authorities (if required by the Minister of Health) to provide sanitary works for the collection and disposal of refuse, for the purpose of public health protection (Part 2 – Powers and duties of local authorities, s 25). It specifically identifies certain waste management practices as nuisances (s 29) and offensive trades (Third Schedule). The Health Act enables Territorial Authorities to raise loans for certain sanitary works and/or to receive government grants and subsidies, where available.

The 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 Litter Act 1979

The Litter Act provides Territorial Authorities with powers to create Litter Enforcement Officers or Litter Control Officers who have powers to issue infringement notices with fines for those who have committed a littering offence.

The Litter Act was amended on 27 June 2006. The principal amendment was to strengthen the powers of Territorial Authority infringement fees, which are now increased from the original $100 to a maximum of $400. Territorial Authorities may adopt the amended infringement notice provisions provided they pass a new resolution including the 14 days' public notification.

Councils use the Litter Act as a method for regulating litter and illegal dumping although the enforcement process is difficult and often unsuccessful. There have been very few successful prosecutions in New Zealand under the Litter Act. It is accepted that prosecuting litter offenders through the courts is not the most efficient way of dealing the litter problem as the fines imposed are not high enough to act as a deterrent and full costs are usually not recovered.

The Health and Safety at Work Act 2015 (HSWA)

The Health and Safety at Work Act 2015 sets out the principles, duties and rights in relation to workplace health and safety. The HSWA outlines health and safety responsibilities for the management of hazards in relation to employees at work. This could potentially include working with hazardous substances and in the collection and management of waste.

The HSWA requires employers to identify and manage hazards present in the workplace, provide adequate training and supervision, and supply appropriate protective equipment. Employers must take all practicable steps to ensure the safety of employees while at work, and in particular must take all practicable steps to (among other things) ensure employees are not exposed to hazards arising out of the arrangement, disposal,

organisation, processing, storage, transport or use of things in their place of work.

The HSWA places duties on any person in control of a place of work, (e.g. a principal), to ensure that people are not harmed by any hazard resulting from work activities. Those who employ contractors therefore *"have the same occupational health and safety obligations to contractors or contracted labour as they do their own employees"*. Employers therefore need to establish systems to manage the health and safety of any contractors or contracted labour.

Principals cannot contract out of their responsibilities for health and safety through contract disclaimer clauses. From discussions with council waste officers, it is believed that council staff are aware that the council is principal to the contract and that they take health and safety responsibilities seriously. At the time services are procured, many councils now require robust data and information (including health and safety) to ensure that they can make a considered choice of future collection methodology.

Urban Development and Building

Various pieces of policy and legislation in the development and construction sector will have an indirect impact on the management and impact of construction and demolition waste. The National Policy Statement on Urban Development 2020 has objectives and policy statements on sustainability, including reduction in green house gases. Amendments to the Building Act (2019) and (2021) are designed to drive product stewardship, the recording of product information and support the use of new, innovative and efficient building methods.

Other legislation

Other legislation that relates to waste management and/or reduction of harm, or improved resource efficiency from waste products includes:

- Biosecurity Act 1993
- Radiation Protection Act 1965
- Ozone Layer Protection Act 1996
- Agricultural Chemicals and Veterinary Medicines Act 1997

Appendix C FNDC Progress towards 2017 action plan

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
Campaign for the introduction of a refundable container deposit levy, mandatory produce stewardship and increasing Central Government's waste levy.	New	2017 - 2023	**Reduction, Reuse, Recycling, Recovery Improving efficiency of resource use** **Reducing harmful effects of waste**	Rates/ Waste levy	FNDC have made a submission in support of these issues in response to the Transforming Recyclables Proposals consultation by MfE in May 2022.
Continue to carry out waste audits through the Ecostar award programme to encourage all businesses including tourism to reduce, reuse, recycle and recover. Draw on industry leaders examples to support smaller businesses.	Existing	On-going	**Reduction, reuse, recycling, recovery** ***Improving efficiency of resource use*** ***Reducing harmful effects of waste***	Waste levy/rates	Continued through the Education and Minimisation contract.
Continue to fund the education contract for waste management and minimisation and support the Paper 4 Trees programme.	Existing	On-going	**Reduction** ***Improving efficiency of resource use***	Waste levy/rates	Continued support and funding.
Support Farmers industry to find solutions.	New	2017-2023	**Reduction** ***Improving efficiency of resource use***	Rates/ user charges	No specific initiatives targeted at farmers. Further work required in this area.

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
Increase education to the public using web media develop a social marketing/behaviour change programme to find the best means to motivate people to reduce, reuse, recycle and compost. Promote the bylaw which sets maximum levels of recyclables and organic waste that can be put in rubbish.	Existing	On-going	**Reduction, reuse, recycling, recovery** ***Improving efficiency of resource use***	Waste levy/rates	Online activity included in Education and Minimisation contract reaches an audience of around 8,500 per post. Further work required in this area.
Continue to support the Para Kore programme to build relationships with Maori and encourage and engender more community commitment for waste minimisation.	Existing	On-going	**Reduction, reuse, recycling, recovery** ***Improving efficiency of resource use*** ***Reducing harmful effects of waste***	Waste levy/rates	Continued through the Education and Minimisation contract.
Liaise regularly with Community by holding annual waste minimisation meetings in each ward	New	2017-2023	**Reduction, reuse, recycling, recovery** ***Improving efficiency of resource use*** ***Reducing harmful effects of waste***	Rates / Waste levy	Meetings were held in Paihia following the adoption of the 2017 WMMP but were not continued due to lack of community interest. FNDC resources better allocated elsewhere.
Continue to provide access to the Kaitaia Resource Recovery Centre reuse shop	Existing	On-going	**Reuse** ***Improving efficiency of resource use***	Rates/ user charges	Achieved.
Continue to provide residents with access to recycling and green waste disposal through the District's RTS's and 'free' recycling at community recycling centres using contracted services	Existing	On-going	**Recycling** ***Improving efficiency of resource use***	Rates/ Waste levy	Achieved.
Provide additional community recycling drop off points with on site sorting, with aim of the	New	2017 - 2023	**Recycling**	Waste levy	Since 2017 WMMP adoption FNDC have:

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
majority of the population being within 15 minutes of a drop off point. Priority 1: Waima, Waitangi, Oruaiti, Mangamuka - Priority 2: Pamapuria, Waiharara, Matawaia, Te Tii			***Improving efficiency of resource use***		- opened a staffed CRC site at Waitangi in November 2021, by reaching an agreement with Te Tii (Waitangi) B3 Trust to open its existing recycling facility at the site to the public 3 days a week. - added sites at Moerewa and Pawarenga. - Rawhiti site has been changed from seasonal to all year. Peria CRC was closed in August 2019 due to community request. This site is being maintained under the Northern contract. The KPI relating to adding one CRC per year was removed in the 2021-31 LTP due to the time involved in finding suitable locations, consulting with local communities and receiving feedback.
Provide additional recycling drop-off facilities to meet seasonal demands. Three possible further sites have been identified. Matauri Bay, Taupo Bay and Tauranga Bay.	New	2017 - 2023	**Recycling** ***Improving efficiency of resource use***	Waste levy	Not achieved.

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
Continue relationships with recyclers so that trust develops and information flows more freely.	Existing	On-going	**Recycling** ***Improving efficiency of resource use***	Rates	Ongoing.
Control strategic outcomes through licensing of recycling collectors as well as contracts for the operation of RTSs, RRCs and Landfills	Existing	On-going	**Recycling** ***Improving efficiency of resource use***	Rates/ licensing fees	Continued. The contract to operate the Russell site was re-let prior to but in anticipation of the landfill closing. Strategic outcomes were included in the contract around ongoing community involvement in the operation of the site.
Continue to reduce the quantity of rubbish-only litter bins and replace with dual recycling bins within the District to increase the amount of recycling.	Existing	On-going	**Recycling** ***Improving efficiency of resource use***	Rates/ Waste levy	Ongoing, currently Kaitaia, Kerikeri, Paihia, Kaikohe have public recycling bins.
Continue with ewaste recovery and review types of materials collected and accepted at the RTSs and expand when markets open up.	Existing	On-going	**Recycling** ***Improving efficiency of resource use***	Waste levy/user charges	Continued. Over the term of the North and South contracts there have been no significant changes in the types of ewaste collected.
Utilise saving from reducing opening hours at level 1 RTS's and fund extra Community recycling centres. Recommended closing at 4pm weekdays would net approx. $66,000.	New	2017	**Recycling** ***Improving efficiency of resource use***	Rates	Not implemented. Class 1 RTS sites still close at 5pm.
Investigate opportunities for further use of recovered Construction & Demolition waste.	New	2017 Ongoing	**Recovery** ***Improving efficiency of resource use***	Waste levy	Ongoing.
Endorse home composting, worm farms and Bokashi through education and subsidy. Apply for additional waste levy funding. $25 - $30,000	New	2018 - 2023	**Recovery**	Waste levy	Delivered under the Education and Minimisation contract through Waste Levy funding.

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
			Improving efficiency of resource use		
Look at joint development of suitable solutions with the private sector for Resource recovery centre in Waipapa/Kerikeri area. Investigate developing as a waste levy funded project. Estimate $600 - 800K.	New	2018 - 2020	**Recovery** ***Improving efficiency of resource use***	Waste levy/ Loan	In 2018 the Waipapa RRC was developed by our Southern contractor and we negotiated its inclusion in the RTS contract to include a public drop off facility. This has produced positive outcomes for the local community. As part of procuring the next site operations contracts, we are again considering the benefit of having a council-owned facility in the Southern area to provide more competition for service delivery.
Investigate options for developing the Russell landfill into a Resource recovery centre. Apply for waste levy funding. Estimate $160,000	New	2017 - 2019	**Recovery** ***Improving efficiency of resource use***	Waste levy/ Loan	Completed through the renewal of Russell operating contract.
Provide drop-off facilities for domestic hazardous waste at the RTSs.	Existing	On-going	**Treatment** ***Reducing the harmful effects of waste***	Rates	Continued. Domestic quantities of hazardous waste can be safely dropped off at all Class 1 and Class 2 RTS sites.
Continue to provide refuse disposal through the District's RTSs using contracted services.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	User charges Rates	Continued.
Continue to maintain and operate the current landfills in the District until their closure.	Existing	On-going	**Disposal**	User charges	Continued and now all landfills in the district are now closed.

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
Consolidate at Kaitaia post closure Ahipara for transport to Puwera.			***Reducing the harmful effects of waste***		Management of closed landfills is ongoing.
Continue to provide public place refuse collection facilities to meet seasonal demand.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates/ user charges	Continued.
Monitor closed landfills	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates	Continued.
Investigate long-term disposal arrangement with an out-of-district service provider.	New	2020 – 2022	**Disposal** ***Reducing the harmful effects of waste***	Rates	Currently included separately within North and South contracts. The preferred option for the replacement contracts will seek pricing for the procurement of landfill disposal separately to bulk transportation to landfill.
Support the WasteMINZ National Waste Data Framework proposal for a waste data monitoring tool.	New	2018 – 2023	**Disposal** ***Reducing the harmful effects of waste***	Rates	Achieved.
Review options for retaining a Council-owned RTS in Kaikohe. Consider re-establishing the Carey Rd site and develop further with covered area, $10K or purchase Station Rd site.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates/ Loan	Kaikohe RTS is currently leased from a third party by the contractor and operated under the South contract. This option is being considered in parallel with the option for a council-owned RRC at Waipapa.
Continue to maintain network infrastructure through renewal funding.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates/ Loan	Continued.

Action	New/ existing action	Implementation timeframe - Yr	Contribution to the NZWS Goals /Waste Hierarchy	Funding Source/10 Year Plan Provision	Progress to Date
Ensure that all illegal dumping activities are recorded and, where possible, dumped refuse is gone through for infringement notices to be issued or fines levied.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates/ Fines	Continued. Illegal dumping is recorded however infringements are seldom issued because of the difficulties in establishing the responsible party.
Highlight the cost of dealing with illegal dumping to the public.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates	Not initiated, carried forward.
Support community group litter clean-ups.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates	Continued.
Develop a regional forum (include Regional council and D.O.C) to enable shared knowledge on illegal dumping and co-operative clean ups. Expand monitoring cameras to areas where there is consistent illegal dumping.	New	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates	A regional forum was formed, trialled (Reg Council, DOC, KDC, WDC, FENZ, NZTA) for approximately 18 months. Cameras were trailed and decided not to proceed due to operational difficulties. Permanent cameras currently installed at Whatawhiwhi and Okaihau under separate FNDC initiative (both RTS/CRC sites).
Control strategic outcomes through licensing of refuse collectors as well as contracts for the operation of RTSs and Landfills. Ensure OSH requirements met.	Existing	On-going	**Disposal** ***Reducing the harmful effects of waste***	Rates/ licensing fees	Continued, with variations to the North and South contracts incorporated to address illegal dumping at bag collection points around the urban areas.