

# Sustainable Kaipara Construction Waste Reduction Action Plan

Commissioned by:



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Independent Reporting:



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Report Dated: 9<sup>th</sup> February 2023 – Version 2



“The greatest  
**threat to our planet**  
is the belief that  
someone else  
will save it.”

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ROBERT SWAN

## Acknowledgements Thanks to:

Impact Consulting would like to thank all those who have contributed to this project and helped build our understanding of community needs, as well as the building sector and construction waste ecosystem. We hope this report will prove to be a valuable resource for informing next steps.



A close-up photograph of several steel reinforcement bars (rebar) laid out on a construction site. The rebar is arranged in a grid pattern, with some bars crossing each other. The background is slightly blurred, showing more rebar and some construction equipment. A teal circle with a white border is overlaid on the image, containing the text "Foundational Principles".

Foundational  
Principles

# Section 1

# Principle 1

## Waste Hierarchy

**All materials have intrinsic value. We are throwing away resources.** Preventing and reducing waste are the most efficient, environmentally preferable and cost effective ways to manage waste. As resources and materials move further down the waste hierarchy they progressively lose some of the value that has gone into producing them. Recycling via composting is perhaps the only exception. Disposal should be a last resort and may include treatment prior to disposal.



Figure 1: Impact Consulting NZ Ltd

# Principle 2

## Circular Economy

**The ultimate objective is to design out waste.**

1. In a linear economy, resources are converted into products and materials which are used and then disposed of at the end of their useful lifespan, if not before.
2. In a recycling economy, resources are reused and recycled several times. However, with every loop the base materials lose quality and value and are eventually disposed of.
3. In a circular economy, products and materials are designed for reuse, disassembly and recovery, with the objective being to retain their intrinsic value of the resources and remove the bin all together.



Figure 2 – Based on 'Conceptualising Economies and Waste' (Pierre-Francois Kaltenbach / AWMMP 2018)

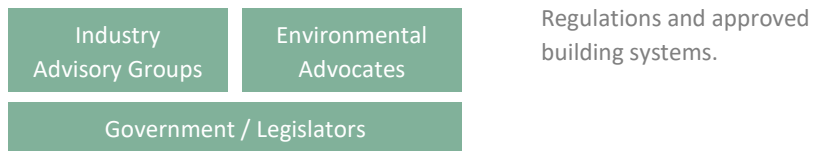
"The shift to a circular economy could reduce CO2 emissions by up to 66%"  
Dr h.c. Walter R. Stahel, Director, Product-Life Institute Geneva, source: [Zero Waste Scotland](#)

# Principle 3

## Everyone is Responsible

**Builders have a responsibility to preserve the value of the materials they work with, through reducing and diverting construction waste.** However, real change and waste prevention can't happen without buy-in from all levels of the value chain.

### National Regulation and Standards



### Building Specification



### Local Regulation



### Suppliers

### Construction



### Waste and Resource Recovery



# Principle 4

## Small Changes Add Up

The true cost of waste is estimated to be ten times the cost of disposal<sup>2</sup>. However, this is only looking at the financial cost and not the wider environmental implications.

By preventing waste before it occurs, we can:

- Reduce the environmental impact and costs of extracting more raw materials, production and transport.
- We also save on the collection, treatment and disposals costs of waste.

The true cost of waste includes:

- Cost of purchasing materials and resources
- Handling, processing and transport costs
- Management time
- Lost revenue
- Any potential liabilities

Small changes such as separating waste streams, requesting recyclable packaging from suppliers or considering the end-of-life outcomes for a building when specifying materials, can make a significant difference. Small changes add up and contribute to culture and behaviour change.

**If we fail to consider the environmental impact of end-of-life for our buildings, we are blindly creating massive issues for future generations.**

<sup>1</sup> NZ Green Building Council, [Submission to Environment Committee briefing on construction and demolition waste going to landfill](#)

<sup>2</sup> WRAP ([wrap.org.uk](http://wrap.org.uk)).





Local Context

# Section 2



# Regional Context

## Context and Regional Overview

The Kaipara District is located within Northland and sits between three other territorial authorities, namely the Far North District and Whangarei Districts to the north and Auckland City to the south.

Kaipara is a geographically extensive district, centred around the northern reaches of the Kaipara Harbour (the largest harbour in the southern hemisphere)<sup>3</sup>. The District effectively spans the entire northern freshwater catchment of the Kaipara Harbour on the west coast, plus the catchment of the Mangawhai Harbour on the east coast.

- Area:** 3,117 km<sup>2</sup>
- Main Centres:** Dargaville (pop. 5,000), Mangawhai (pop. 5,500 and growing)
- Population:** 24,100
- Households:** 9,962
- Ethnicities:** 83.3% Pākehā, 24.6% Māori, 8.3% other.
- Landscape:** The Kaipara District has large areas of fertile land. Many areas are very low-lying, with an extensive tidal river network, and would be considered at risk of sea-level rise<sup>1</sup>. It is also a relatively hilly region with all main townships geographically separated by hills.
- Road Network:** The Kaipara District has 1,572km of local roads of which 71% (or 1,119kms) are unsealed and 450kms which are sealed. Given its small population and the large geographic extent of the district, Kaipara finds it challenging to fund the maintenance and upgrading of this extensive roading network<sup>1</sup>.
- Industries:** The regional economy is founded on primary industries, particularly dairy, and supported by manufacturing<sup>1</sup>.

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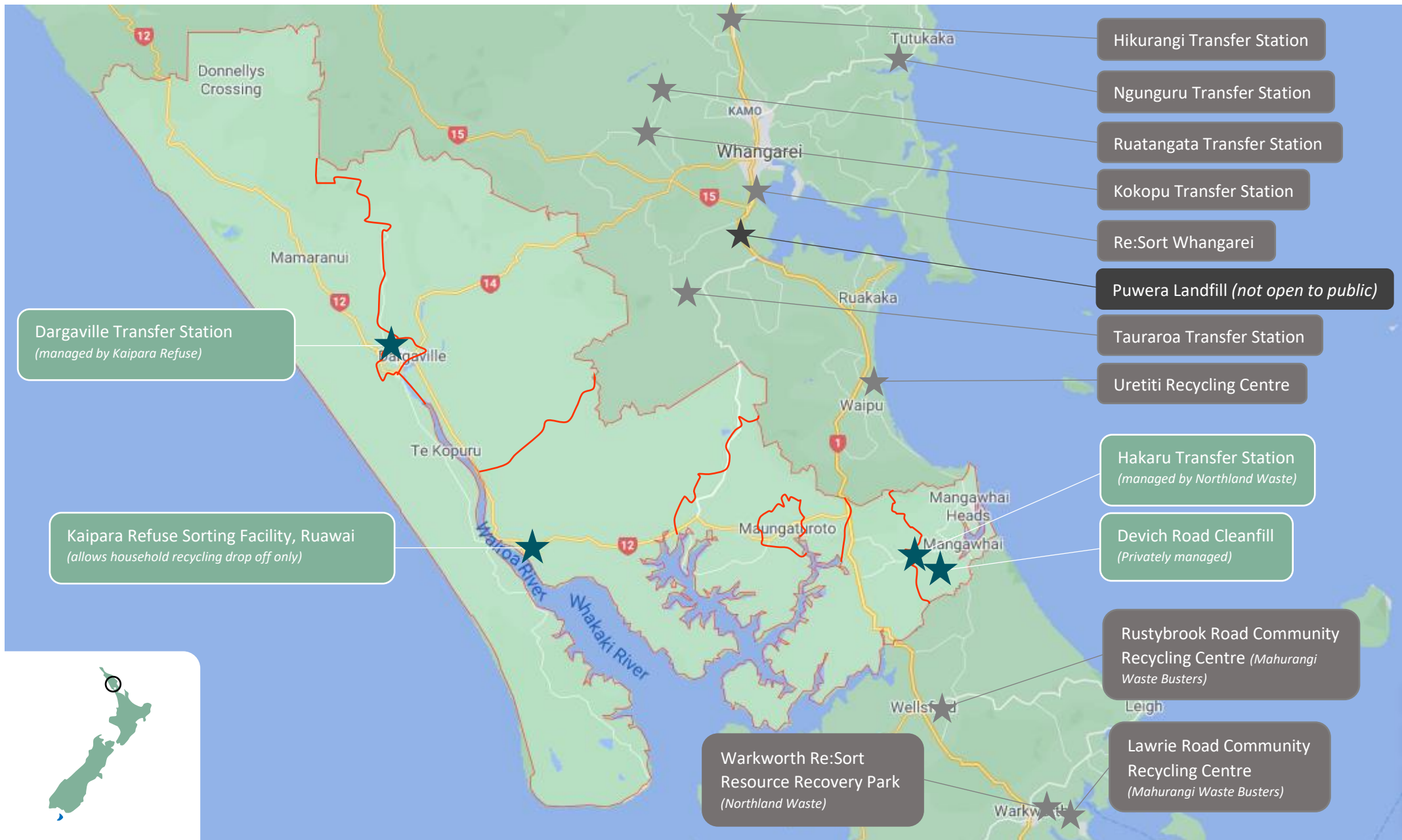
<sup>3</sup> [Kaipara, Place, People and Key Trends - Kaipara District Environmental Scan 2019](#)





## Waste Transfer Stations - Kaipara District and Surrounds

There are no operational class 1 landfill sites within the Kaipara District, with waste being transported to Puwera. The map below shows waste transfer stations open to the public. At present the majority of construction waste goes directly to Puwera Landfill via skip bins.



## Regional Population Growth Projections

### Infometrics Population Projections Report Summary<sup>4</sup>

Historically, most of Kaipara's population growth has taken place in the Mangawhai area. This pattern is expected to continue in future, particularly as further improvements to State Highway 1 reduce travel times into Auckland, thus improving the attractiveness of Mangawhai for commuting workers. The Mangawhai area is projected to more than double in population by 2051.

The population in the Dargaville urban area is expected to continue growing steadily, prompted by steady employment growth in Dargaville, as well as neighbouring rural areas prompted by the Kaipara Kai initiative. Population

growth in the Dargaville urban area predominantly takes place in the Kaipara Coastal and Maungaru areas.

Population in Ruawai-Matakohe and Otamatea areas is expected to ease slightly. Despite a slight decline in population, the number of households is still expected to increase in these areas due to decreasing household sizes.

In 2019 there were an estimated 2.37 people per household within the Kaipara district.

#### Sub-District Population

##### Sub-District Population

Infometrics medium-high projection

Statistical Area 2	2019	2051	Change 2019-
			2051
Dargaville	5,027	5,097	70
Kaipara Coastal	3,796	4,241	445
Maungaru	1,890	2,207	316
Ruawai-Matakohe	2,520	2,420	-100
Otamatea	1,785	1,544	-241
Maungaturoto	1,318	1,588	270
Kaiwaka	2,217	2,658	442
Mangawhai	1,062	2,851	1,789
Mangawhai Heads	2,186	4,704	2,518
Mangawhai Rural	2,300	5,242	2,943
<b>Total</b>	<b>24,100</b>	<b>32,552</b>	<b>8,452</b>

Figure 3 – Population Projections<sup>5</sup>

##### Sub-District Households

Infometrics medium-high projection

Statistical Area 2	2019	2051	Change
			2019-2051
Dargaville	2,034	2,138	104
Kaipara Coastal	1,538	1,871	333
Maungaru	758	1,025	267
Ruawai-Matakohe	1,049	1,122	73
Otamatea	732	752	19
Maungaturoto	502	774	272
Kaiwaka	875	1,205	331
Mangawhai	472	1,320	848
Mangawhai Heads	1,001	2,103	1,102
Mangawhai Rural	1,000	2,303	1,304
<b>Total</b>	<b>9,962</b>	<b>14,614</b>	<b>4,651</b>

Figure 4 – Kaipara District Households projections<sup>6</sup>

<sup>4</sup> [Population Projections 2018-2051 Kaipara District Council April 2020](#)

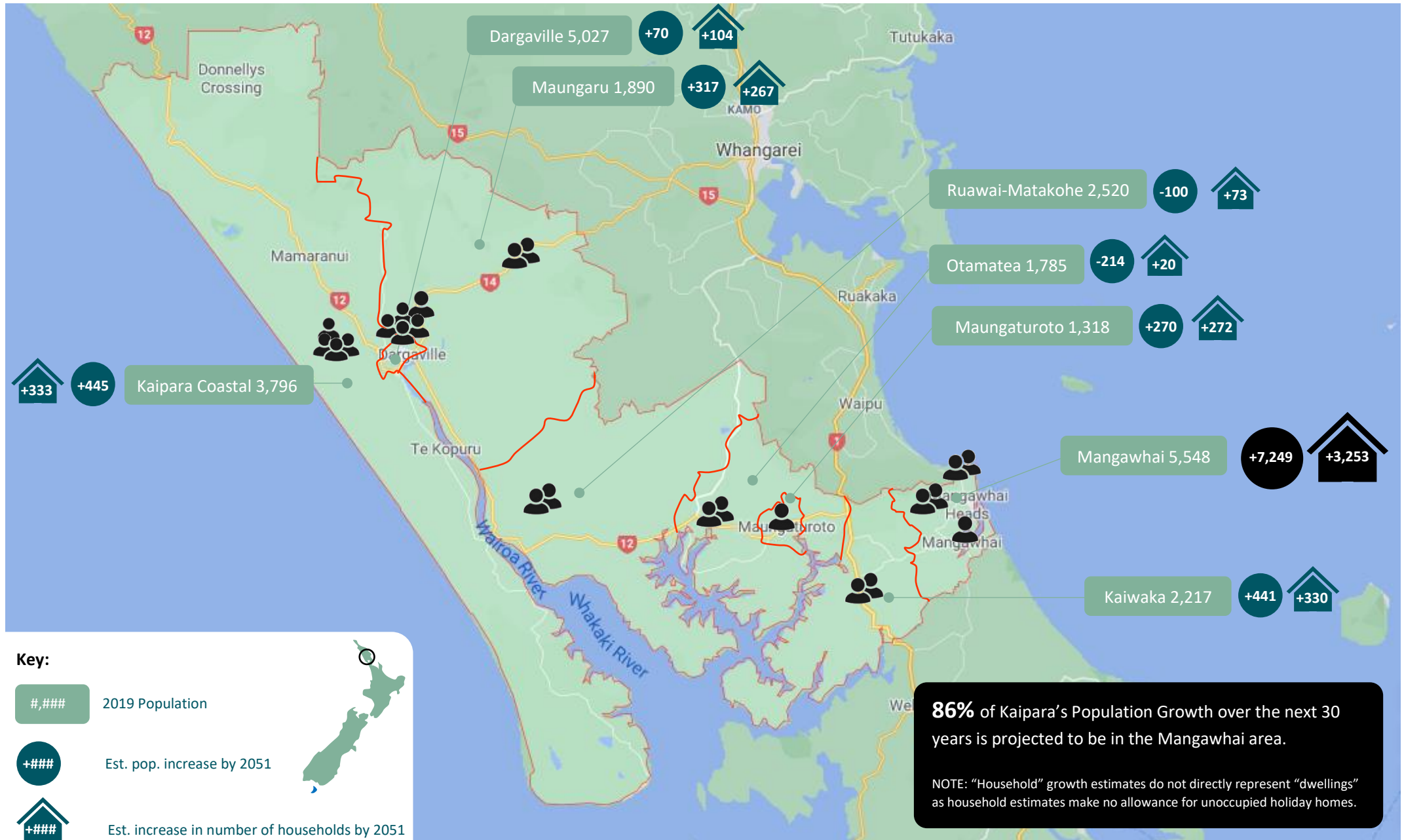
<sup>5</sup> [Population Projections 2018-2051 Kaipara District Council April 2020](#)

<sup>6</sup> [Population Projections 2018-2051 Kaipara District Council April 2020](#)



# Kaipara District - 2019 Population Geographic Distribution by Sub-district Areas + Projected Population & Growth Household Growth by 2051

Data source: [Population Projections 2018-2051 Kaipara District Council April 2020](#)



# Population Growth

## Mangawhai Population

Mangawhai has historically consisted of a small township, plus holiday homes. However, the area now has a rapidly expanding residential population. When including Mangawhai, Mangawhai Heads and Mangawhai Rural, the area currently has a population greater than Dargaville. Mangawhai's population is projected to more than double by 2051 and is anticipated to account for 86% of Kaipara's population growth over the next 30 years. As a result, this report is focused on this area of Kaipara.

## Mangawhai Population Projections 2019-2051<sup>7</sup>

The Mangawhai figures used include Mangawhai Village, Mangawhai Heads and Mangawhai Rural, see page 11 for a more detailed breakdown.

Mangawhai*	2019	2051	Change
Population	5,548	12,797	<b>+7,249</b>
Households	2,473	5,726	<b>+3,253</b>
People Per Household	2.24	2.23	-0.01

Figure 5

<sup>7</sup> [Population Projections 2018-2051 Kaipara District Council April 2020](#)

# Housing Growth

## 2018 Census SA2 Occupied / Unoccupied Mangawhai Dwellings<sup>8</sup>

The table below shows total occupied and unoccupied dwellings in the Mangawhai area based on 2018 Census counts. As the population increases it has been assumed for the purposes of projections, that the number of unoccupied holiday homes in Mangawhai Heads will decrease to levels more comparative to Mangawhai and Mangawhai Rural.

2018 Dwellings	Occupied	Unoccupied	Total	% Unoccupied
Mangawhai	396	153	549	28%
Mangawhai Heads	876	1,053	1,929	55%
Mangawhai Rural	825	291	1,116	26%
<b>Total Dwellings</b>	<b>2,097</b>	<b>1,497</b>	<b>3,594</b>	<b>Total Dwellings 2018</b>

Figure 6

## Mangawhai Area Housing Growth Projections

Based on available population growth projections and household occupancy data, it is estimated that there will be an increase of between 2,145 and 3,695 dwellings in the Mangawhai area by 2051. For the purposes of this report, we have used a mid-point estimate of **3,474 new dwellings** (between projections 2 and 3 below).

Three New Dwelling Growth Estimates	New Dwellings
Population Estimates 2051 <i>12,797 ÷ 2.23 people per household = approximately 5,739 dwellings – 3,594 existing dwellings in 2018 = 2,145 new dwellings. No allowance for unoccupied.</i>	<b>2,145</b>
No change to current + Household Growth to 2051 <i>Assumes no change to existing dwelling occupancy + 3,253 new households = approximately 3,253 new dwellings. No allowance for new unoccupied dwellings.</i>	<b>3,253</b>
Population Estimates 2051 + 27% unoccupied <i>12,797 ÷ 2.23 people per household = a minimum of 5,739 dwellings + 27% unoccupied = 7,289 dwellings – 3,594 existing in 2018 = 3,695 new dwellings.</i>	<b>3,695</b>

Figure 7

<sup>8</sup> [Statistics NZ, Change in occupied and unoccupied dwellings between the 2013 and 2018 Census](#), SA2 data sourced from the respective map area graphs





# Mangawhai Area Projected Growth by 2051



New  
Residents



3,253 Extra  
Households



Additional  
Dwellings

# Te ao Maori

## Local Context

Mangawhai takes its name from the Ngati Whatua Chief Te Whai, who retired to Manga-Te-Whai, the place of Te Whai where the streams meet. Mangawhai or “Stream of the Stingray” relates to the evil that will be returned if anyone should harm the stingrays within the harbour.

The Mangawhai area has a complex past and is the site of a significant conflict between Nga Puhi and Ngati Whatua around 1807, after which the area was declared tapu for many years.<sup>9</sup>

## Environmental Perspectives

The whakatauki “Ko ahau te taiao, ko te taiao, ko ahau”, which translates to “I am the environment, and the environment is me” is often used to illustrate the ecosystem based, interconnected world view of Māori culture. This whakatauki is attributed to Ngāti Wai and Ngāti Whatua<sup>10</sup> and actually says more than ‘we are connected to the environment’ but also acknowledges that ‘the ecosystem defines my quality of life’ and highlights the intrinsic need to protect it.

## The korero to date

In te ao Māori all things begin with relationship. Sustainable Kaipara are a small group of passionate locals who are dedicated to protecting te taiao for future generations. This is strongly aligned with te ao Māori values and kaupapa. In alignment with their long-term dedication to this cause, Sustainable Kaipara are working to build authentic relationship and partnership with local iwi, rather than tokenistic consultation. This takes time and is still in progress.

“Ko ahau te taiao  
ko te taiao  
ko ahau”

WHAKATAUKI

<sup>9</sup> [Mangawhai Central History](#)

<sup>10</sup> [Indigenous Māori knowledge and perspectives of ecosystems – Harmsworth G & Awatere S 2013.](#)





Scale of the  
challenge

# Section 3

# Construction Sector Impact

## Construction Waste

In 2018 the World Bank ranked NZ as the 10<sup>th</sup> most wasteful country in the world per capita<sup>11</sup>.

- Construction and demolition waste makes up 33% of class 1 landfill waste in NZ (rubble and concrete 20.1%, timber 12.6%). In addition, potentially hazardous wastes make up an additional 21.5% and includes a wide range of materials such as asbestos and lead paint.<sup>12</sup>
- Construction and demolition waste is estimated to make up 50% of all waste generated in NZ, including 80% of all cleanfill waste<sup>13</sup>.
- Residential construction makes up 88% off building activity in NZ by number, 71% by floor area and 75% by the value<sup>14</sup>.

## Sector Environmental Impact<sup>15</sup>

It is important to note that the construction sector's environmental impact extends beyond construction waste. Buildings are long lived (setting emissions patterns for the future) and also drive emissions in other sectors.

In 2018, the building and construction sector was responsible for 7.4 Mt CO<sub>2</sub>-e of emissions. This represents 15% of domestic greenhouse gas (GHG) emissions when excluding biogenic methane (9.4% when including).

In addition, the building and construction sector was responsible for an extra 2.9 Mt CO<sub>2</sub>-e of emissions that occurred outside Aotearoa, largely from the production of imported construction materials and products. This is roughly 1.2 times the emissions embodied within the construction, deconstruction processes and materials locally.

<sup>11</sup> RNZ Article, [waste minimisation efforts slow to take hold](#), July 2021

<sup>12</sup> [Ministry for Environment, Waste Estimates](#)

<sup>13</sup> [BRANZ Sustainable Building](#)

50%

of all landfill waste in NZ, is attributed to Construction and Demolition.

15%

of NZ's greenhouse gas emissions are from building and construction.

10%

from building heating and operation.

5%

from construction, deconstruction and materials used.

x2

For every tonne of embodied CO<sub>2</sub>-e related to construction, deconstruction and materials generated in NZ, 1.2 times this amount is produced off-shore in the production and transport of materials. More than doubling the environmental impact of construction.

<sup>14</sup> [Āmiomio Aotearoa: Preliminary Materials Flow Analysis for NZ's Building Construction Sector](#)

<sup>15</sup> [Aotearoa Emission Reduction Plan, Chapter 12, Ministry for the Environment, 16 May 2022](#)



# Construction Waste

- In 2019 the median size of new stand-alone houses consented in New Zealand was 180m<sup>2</sup>. The median floor area for multi-unit houses was 96m<sup>2</sup>.<sup>16</sup>
- It is estimated that on average every new build residential home in NZ produces around 4.5 tonnes of waste. This equates to around 25kg of waste per m<sup>2</sup> of new build floor area. Every residential demolition is estimated to add an additional 26 tonnes of waste.<sup>17</sup>
- BRANZ and REBRI figures are commonly quoted with regard to the proportion of materials in new build skips. By weight these are:
  - Timber (20%), plasterboard (13%), packaging (5%), metal (5%) and other (45%).<sup>18</sup>
  - However, these figures are actually from a 2009 Target Sustainability House Build Project commissioned by Christchurch City Council, which looked at eight new build homes<sup>19</sup>. Most material lists, as above, neglect to include the remaining (12%) which relates to brick and concrete (2% by volume). This was due to the fact that the new builds in the 2009 study were primarily brick and timber homes.
  - It is from this study that the commonly quoted 4.5 tonnes of waste per new build comes from, based on the average total waste produced over the eight homes<sup>20</sup>. On average the builders participating in this study successfully diverted 73% of waste from landfill.

## New Build Skip Material Proportions by **Weight**

(Christchurch City Council - Target Sustainability 2009)

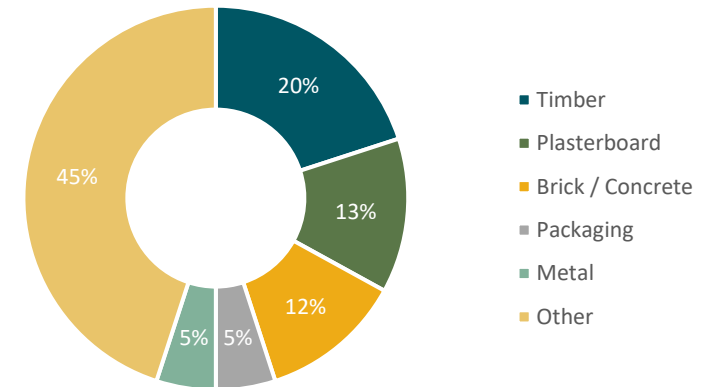


Figure 8 – Data Source [REBRI Waste Reduction Guide - Building Products](#), pg. 2

## New Build Skip Material Proportions by **Volume**

(Christchurch City Council - Target Sustainability 2009)

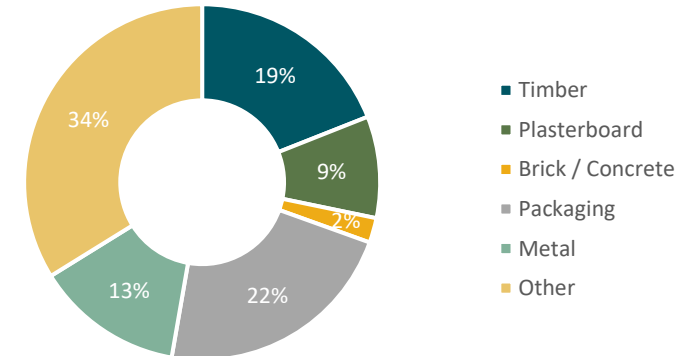


Figure 9 – Proportions from the weight graph above has been converted to volume based on [BRANZ Reducing Building Waste Volume to Weight Table](#)

<sup>16</sup> [Statistics NZ, Press Releases, New Homes 20% Smaller, 12 Feb 2020](#)

<sup>17</sup> RNZ, [The Booming Problem of Construction Waste](#), 5 July 2021

<sup>18</sup> [REBRI Waste Reduction Guide - Building Products](#), pg. 2

<sup>19</sup> [BRANZ, Building Basics - Minimising Waste](#), Second Edition 2018, pg. 57

<sup>20</sup> It must also be noted that the participating companies were named (potentially incentivising lower reporting) and rated on the percentage of waste they diverted from landfill (meaning waste would have been actively managed and monitored on site).

### Skip Bin Material Breakdown: Additional Research Required

There are studies looking at specific materials. However, based on our desktop research and discussions with a wide range of organisations working in this sector, there appear to be no up-to-date studies breaking down residential new build construction waste skip bin contents by material, volume and weight.

Ideally samples would include a wide range of building firms and construction methods, cover a full build cycle and be assessed with approval from the company, but without the knowledge of the site teams (to avoid short term behaviour change). This would give a more accurate baseline for individual companies to track progress, plus industry averages to benchmark against.

In the absence of this data, we have utilised the Christchurch Target Sustainability figures presented by REBRI in our projections, with the brick and concrete portion removed from the breakdown.

### Common Material Off-cuts and Waste Percentages

AUT research suggests that the value of wasted materials equates to approximately \$31,000 per new build<sup>21</sup>. This is often due to factors outside of builders control such as sheet sizes, off-cuts, penetrations such as windows and doors, design specification and building code fitting requirements, which for example can require tapers or limited joints. The BRANZ table below shows typical waste percentages, for common materials<sup>22</sup>.

Material	Percentage Material Lost
Fibre-cement Board	7% wasted / lost
Timber	11% wasted / lost
Plasterboard	13% wasted / lost
Particleboard	9% wasted / lost
Concrete	5% wasted / lost
Roofing	6% wasted / lost

Figure 10

<sup>21</sup> [Reducing Construction Plastic Waste to Landfill](#), Environmental Solutions Research Centre, masterbuilder.org.nz

# NZ Average Construction Waste Per Home



X4

9m<sup>3</sup> Skip Bins



4.5

Tonnes Waste



\$31K

Lost Materials

<sup>22</sup> [BRANZ, Building Basics - Minimising Waste](#), Second Edition 2018, pg. 12

# Mangawhai Construction Waste Estimated Volumes to 2051



**3,474**  
New Homes



**13,896**  
9m<sup>3</sup> Skip Bins



**15,633**  
Tonnes of Waste



**\$108M**  
Est. Value of  
Lost Materials

## Volume Estimates

### Construction Waste Total Estimate to 2051

Based on Mangawhai population growth projections to 2051 (with allowance for a similar level of holiday and short-term rental homes to presently), it is estimated that approximately 3,474 new homes will be constructed in the Mangawhai area by 2051. This scale of development will produce an estimated 15,633 tonnes of waste in the 30 years to 2051.

	New Homes	Total Waste	Skip Bins	Value of the Lost Materials <sup>23</sup>
<b>Total to 2051</b>	3,474 Homes	15,633 tonnes	13,896+	\$108M
<b>Average Per Year</b>	116 Homes	521 tonnes	463+	\$3.6M

Figure 11

### Potential Diversion

Other NZ residential construction waste diversion projects show that rates of diversion from landfill ranging from 73%<sup>24</sup> through to 90%<sup>25</sup> are achievable. Diversion of just 50% of Mangawhai's future construction waste, would save 43 elephants worth of material from landfill per year.

Potential Construction Waste Diversion Per Year		
50%	70%	90%
260 tonnes	365 tonnes	469 tonnes
X43	X60	X78

Figure 12

<sup>23</sup> [Reducing Construction Plastic 6Waste to Landfill](#), Environmental Solutions Research Centre, sourced from [www.masterbuilder.org.nz](http://www.masterbuilder.org.nz)

<sup>24</sup> [BRANZ, Building Basics - Minimising Waste](#), Second Edition 2018, pg. 57

<sup>25</sup> Onerooft Article, [End of the Skip and a 568,935 tonne problem for NZ](#), June 2022





Resource  
Streams  
~~Waste Streams~~

# Section 4

## Waste Streams

### Resource Streams

Waste streams should more accurately be called ‘material’ or ‘resource’ streams because we are throwing away materials which we have paid for, manufactured and in many cases transported from the other side of the globe. This is a lot of invested value to lose simply because we are currently failing to effectively separate and retain the value of these materials.

Simply by diverting timber, plasterboard and metal from landfill Mangawhai could reduce residential construction waste by around 40-45%. Diversion of a range of other materials is also very achievable.

### Mangawhai Construction Waste Material Estimates

The following material proportion estimates are based on those presented in REBRI material<sup>26</sup>, with brick/concrete removed<sup>27</sup>. Totals are based on 4.5 tonnes of waste per new build and converted to volume using the BRANZ construction waste weight to volume conversion chart<sup>28</sup>.

Main Materials	Total to 2051		Per Year	
	Tonnes	m <sup>3</sup>	Tonnes	m <sup>3</sup>
Timber	3,596	20,200	120	673
Plasterboard	2,345	9,853	78	328
Packaging	938	24,684	31	823
Metal	938	14,889	31	496
Other	7,817	34,740	261	1,158
<b>Total</b>	<b>15,633</b>	<b>104,365</b>	<b>521</b>	<b>3,479</b>

Figure 13

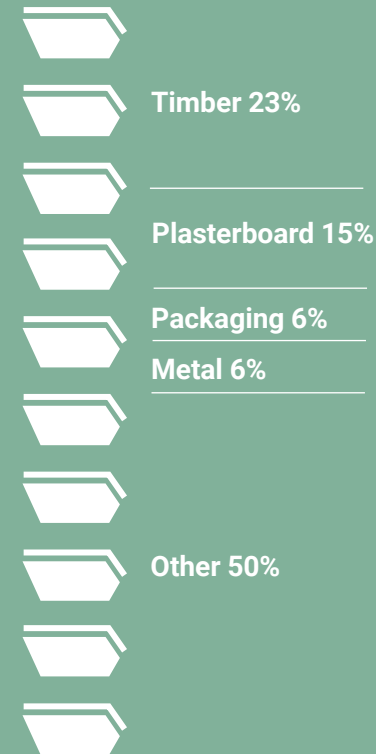
<sup>26</sup> [REBRI Waste Reduction Guide - Building Products](#), pg. 2

<sup>27</sup> Will this material representing 12% by weight it was only 2% by volume; Most skip bins do not allow brick and concrete; the majority of new builds don't include brick; most concrete waste is from surplus in the pump truck pipes when pouring the slab and either goes back with the truck or is poured onto the driveway area and broken up to be used as basecourse.

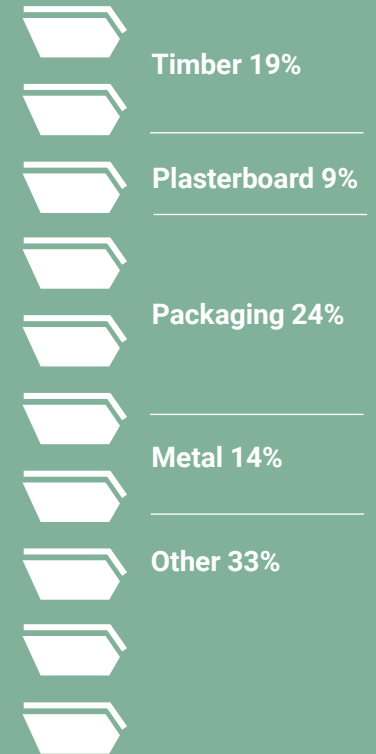
<sup>28</sup> [BRANZ Reducing Building Waste Volume to Weight Table](#)

# Construction Waste

## Materials by Weight



## Materials by Volume



**Mangawhai construction waste could be reduced by 40-45%, simply by diverting timber, plasterboard and metal from landfill.**



Survey Results

# Section 5



# What Builders said...

## Consultation and Survey Results



### Tradie Breakfast & Meetings

A Tradie Breakfast was hosted at ITM Mangawhai. This event had around 50 attendees, with over 90 comments gathered. Additional meetings were held with individual builders, including a morning tea shout on a construction site to gather additional views from a wider range of team members.



### Online Survey

An online survey was undertaken. This had a total of 62 responses, 40 of which were from builders. The remainder were from project managers, developers, subtrades, architects and engineers. Only three respondents were not directly involved in the construction sector. There were 46 respondents who work in Mangawhai and 29 of these are builders.

The survey was promoted via Facebook, a newspaper print advert, a txt message to Tradie breakfast attendees, emails to business owners and gathering responses in person at building material retailers.

# Survey Results

## Current Waste Systems

### Of 38 respondents who work in Mangawhai:

- 84% use skip bins.
- 39% use the Hakaru Transfer Station.
- 18% use Marsden Metals Tradie Bags.
- 3% get soft plastics collected.

## Skip Bins

### Of the 32 Mangawhai respondents using skips:

- 63% have a skip on site for the whole build and 37% as needed or limited time.
- 94% of skips used in Mangawhai are 9m<sup>3</sup>



### Builders in Mangawhai currently use an average of 5 skip bins per new build.

Answers ranged from 2 bins through to 20+ skips per new build, depending on the scale of the project. Many builders indicated they use at least one skip a month, in some cases bins are replaced fortnightly.

96%

Would be open to considering other options to reduce waste.

96%

Would be open to sorting waste onsite if they had Tradie Bags or similar available.

## Barriers

The following were raised as the main barriers to onsite waste separation:

1. **Time:** The extra time / labour required
2. **Mindset:** The challenge of changing mindset and ingrained behaviours
3. **Contamination:** Other builders and subcontractors using wrong bins
4. **Space:** Limited space on site
5. **Cost:** Comparative cost to existing options

While these barriers were expressed, there were also many respondents who indicated that most of the challenges were resolvable.

The following were raised as additional considerations:

- **Collection:** The timeliness of collection and bin replacement
- **Weather:** Potential impact of wind / rain
- **Size:** Bags systems potentially being too small and/or needing additional space for some materials
- **Materials:** The need to have ways to deal with additional materials

## Existing Diversion

The following graph shows existing material diversion for recycling or reuse by twenty-five builders working in the Mangawhai area.

### Existing Materials Diverted by Mangawhai Builders

(25 responses)

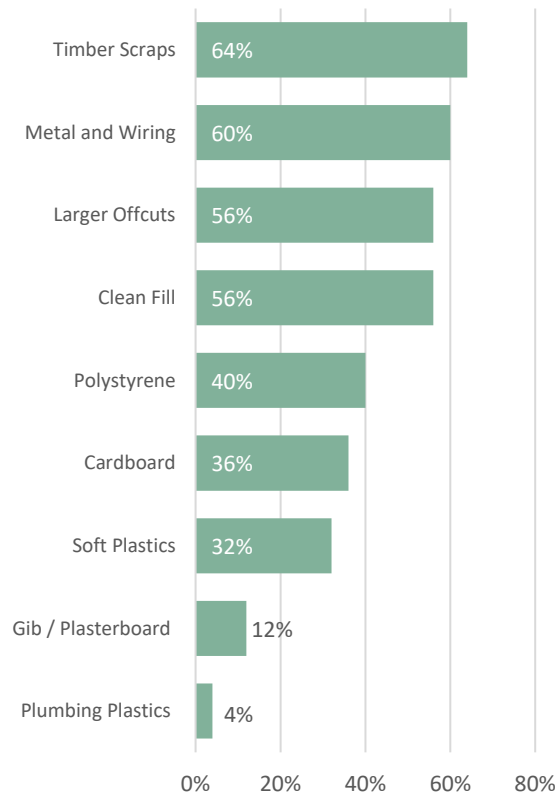


Figure 14

## Additional Support

The following graph shows the level of interest from Mangawhai based builders in additional waste diversion support and options.

### Interest in Additional Options from Mangawhai Builders

(26 responses)

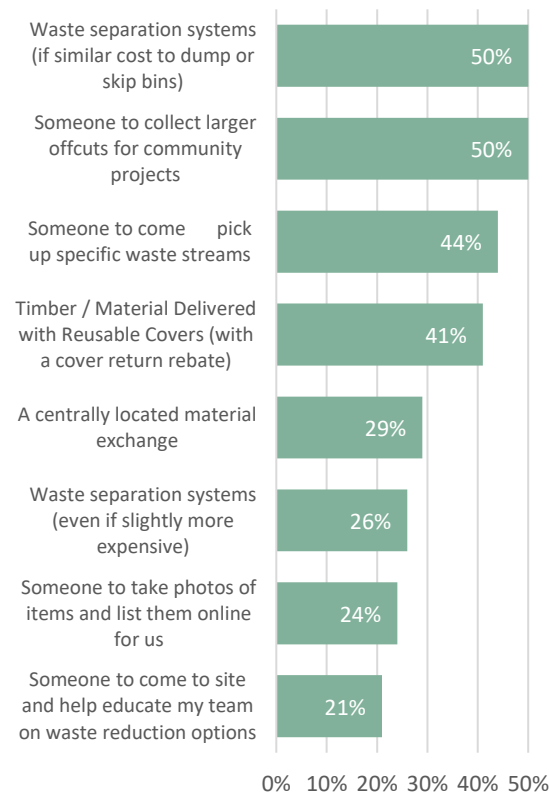


Figure 15

## Page Summary

- Responses indicate that around 60% of Mangawhai builders are already diverting timber, metal, larger offcuts and clean fill.
- Many of the respondents who currently divert timber, metal and offcuts were still interested in waste separation options. Indicating that this is still a hassle or only a portion of these waste streams are currently diverted.
- 50% of the Mangawhai builders who responded to the survey would be open to paying for the additional support options selected, 19% of respondents don't make purchasing decisions, 15% would consider it and 15% wouldn't pay.
- Someone to collect larger offcuts for community projects and to pick up specific waste streams (such as polystyrene and soft plastics) were popular options.
- There was interest in material suppliers using reusable covers with a cover return rebate.



## Quotes and additional comments...

### Comments Key:

- Suggestions
- Needs
- Challenges

*Changing mindset is the biggest challenge. That and having to clean up after subcontractors.*

*Need more recycling / diversion options.*

*The less waste coming onto site the better. Most the big companies currently don't tell us how they package and deliver products. This needs to change.*

*There are a lot of systems and information out there. These just need to be used and advertised more.*

*Need to avoid just pointing the finger at builders. Also need to avoid greenwashing, such as saying something is being recycled when everyone knows it goes to the tip. If builders know it's real – they will support it.*

*Have to be extremely committed to pull off good waste diversion. Go the extra mile, keep educating and upskilling yourself, bring it up on site regularly, be on top of staff behaviour and put pressure on suppliers. It is definitely a challenge.*

*Too often, small loose, floating plastics and polystyrene are reaching our beaches... need better systems, plus sites need fencing to catch these.*

*We need more places to take certain products. Plus, better sorting at Hakaru Transfer Station.*

*Would be great to have a central exchange area where builders could take larger off cuts and the community could help themselves for free.*

*Increase manufacturer responsibility. Educate builders on options rather than legislating.*

*We need education to all trades, plus an efficient on-site recycling setup that can easily be collected, and continued improvement of the transfer station.*

*I think this issue needs to be tackled from the top down i.e. the manufacturers using less single use items. We are already very conscious of waste, as it costs us in purchase price, plus waste fees for everything we throw out.*



Action Steps

# Section 6

## Key Principles

### 1 Work with the willing

A common theme from conversations with organisations working in the waste diversion sector was to “work with the willing”.

- Start with those who care most about the issue and are open to try different approaches.
- Celebrate small wins and promote the success of those involved to build momentum.

### 2 Changes add up

As tempting as it may be to try to solve the whole problem in one go. There are multiple contributors to the issue at a number of different levels and a need to progressively make incremental changes to get buy-in.

- Behaviour change is hard to motivate and takes time to normalise. The construction sector tends to be under pressure and have a dollar value attached to time.
- Alternatives need to be easy to adopt with clear benefits and buy-in from owners and managers. Changes need to be incremental, layered and well supported.

### 3 Prevent AND divert

While sorting and diversion of construction waste as essential, it is also important to look at the bigger picture and begin to influence earlier phases of the construction process to prevent waste.

## Action Plan Components

The proposed action plan is broken into three main components. To ensure these are realistic and achievable, the action plan has been aligned with identified needs, gaps and opportunities, as well as the skill set of the Sustainable Kaipara team.



### Information and Education



### Waste Diversion Initiatives



### Collaboration and Partnerships



# Action Summary



Staff Resourcing  
0.95FTE \$68,400






Projects  
\$179,350



Facilities  
\$400,000

The following table summarises the proposed actions and ballpark investment required to reduce construction waste in Mangawhai.

 <b>Information and Education Summary</b>		Required Investment +GST
Action 1:	Concise co-branded construction waste minimisation info sheets for prospective new homeowners and builders.	\$3,000
Action 2:	A well-presented printable construction waste diversion directory; updated every 6 months.	\$2,000 + \$2,000 to cover updates over 2 years.
Action 3:	A construction waste website segment with all the information in one location.	\$3,000
 <b>Waste Diversion Initiatives Summary</b>		Required Investment +GST
Action 4:	Promotion of Tradie Bags and other available options, plus improvement support.	0.05 FTE (half a day every fortnight)
Action 5:	Support of funding applications to enable enhancement of Marsden Metals' Tradie Bags waste diversion reporting systems.	To be led by Marsden Metals
Action 6:	Funding to establish a trail for larger off cut collection, utilising platform trolley racks for storage of materials on site.	X6 Trolleys: \$6,750 Co-ordination 0.05 FTE
Action 7:	Resourcing to create targeted advocacy and education campaigns, which focus on a specific issue, material or product every 3-months.	\$30,000 budget over 2 years + 0.1 FTE x2 years (0.2 FTE)

Action 8:	Polystyrene hot cutter testing using both corded and cordless versions. Reusable timber cover trial with ITM.	x2 cutters \$2,600, timber covers \$10K, co-ordination \$5,000
Action 9:	Resourcing for Sustainable Kaipara to create momentum and celebrate success.	\$45,000 Resources + 0.1 FTE over 3 years (0.3 FTE)
 <b>Collaboration and Partnerships Summary</b>		Required Investment +GST
Action 10:	Resourcing to development of a working relationship with Mangawhai Central. Funding to gain input from environmental consultants and architects to develop a potential menu of options which would reduce environmental impact and construction waste from the overall development. Funding for legal services to support the implementation of environmentally friendly covenant or waste related building contract changes.	0.1 FTE \$40,000 options identification \$20,000 legal advice
Action 11:	Advocate for Kaipara District Council to enable establishment of a construction waste sorting facility and reuse shop at the Hakaru Transfer Station with continuity of lease.	\$10,000 legal input 0.05 FTE
Action 12:	Funding to establish a construction waste sorting facility to keep materials dry and maintain their value.	\$400,000
Action 13:	Resourcing to continue building active partnerships with iwi, businesses and community groups.	0.1FTE over 2 years (0.2 FTE)



# Information and Education

## 1. Council

From a council perspective, mandating or requiring waste minimisation plans for new builds, takes time to legislate and requires additional staffing to support the activity once implemented.

Other councils spoken to, have started with larger commercial projects. While they have a requirement for plans to be submitted, the council teams managing the process are much more orientated towards education than compliance. Their main focus being on building relationship, educating construction companies about options, and promoting local success.

Kaipara District Council team members have indicated that while the council is not currently in a position to mandate waste minimisation plans, they are keen to explore the potential to provide waste minimisation information with forms, consent materials and consent responses.

## 2. Prospective New Homeowners

People looking to build new homes rarely consider the potential waste or environmental implications. Environmentally friendly homes are often seen as those with good insulation, passive heating and solar panels. Yet the reality is that some other choices much earlier in the design process can make a significant difference. For example:

- Requesting deconstruction rather than demolition.
- A simple decision to build smaller, reduces materials, embodied energy, construction waste and operational / heating costs.
- A home with built-in flexibility, so that as family needs change the use of the home can adapt, will reduce underutilised space, enhance the community benefit from a similar amount of materials and potentially provide future income options for the homeowners.

## 3. Builders

Builders are busy. In terms of construction waste, they are often left making the best of a hand which has already been dealt to them, by homeowners, developers, architects, material suppliers and others earlier in the process.

- Builders who are motivated to reduce waste would benefit from easy to access, up-to-date information on available options.
- Builders who are less motivated need regular exposure to potential approaches and success stories from others who are making progress in this space, without being pushed. Increasing awareness from homeowners and requests for use of onsite separation systems is likely to be a greater incentive for change.

- Action 1:** Prepare concise co-branded Sustainable Kaipara / Kaipara District Council info sheets with local information for construction waste minimisation for 1) prospective new homeowners and 2) builders (based on a condensed version of the NPDC Construction Waste Reduction Guide – [link to pdf](#)).
- Action 2:** Prepare a well-presented printable construction waste diversion directory which is updated every six months.
- Action 3:** Create a construction waste segment on the Sustainable Kaipara website which has all the information in one location, including the construction waste diversion directory. Similar to the A-Z of waste but a single page which can be regularly updated by people who care about this issue and which can be linked to by Kaipara District Council.



# Waste Diversion Initiatives

## 1. Onsite Separation Systems

Onsite separation is best practice for construction waste diversion. Even in locations where co-mingled waste can be separated, onsite separation still produces much better outcomes.

With onsite separation:

- Builders are much more invested in the process, more conscious of the different waste streams being produced and can take more ownership over influencing outcomes.
- The value of materials is preserved, and contamination reduced.
- Recycling and recovery potential is improved.

At present very few builders have created their own site separation systems. Those who have either still use skips and divert as much as possible, or simply do multiple trips to Hakaru Transfer Station and try to find recycling programmes for other specific materials. A few companies in the Mangawhai area contract a retired builder to collect their waste for \$200 per cage trailer load, which he then sorts on their behalf.

Research identified two standardised systems for residential construction waste separation currently being trialled in NZ. These being:

1. Helensville Community Recycling Centre's trial which uses smaller 2m<sup>3</sup> split skips, wheelie bins and more frequent collection.
  - \$4,000+GST investment per bin with 10+ year life span
  - Can be emptied by forklift
  - Magnetic bin labels
  - Builders are currently charged a fixed fee for the project based on the rate they would pay normally for skips

2. Marsden Metals' Tradie Bags feature collapsible frames which support a range of flexi bags for onsite sorting of different materials.
  - Low cost per bag and can be delivered in a standard ute
  - Reduced truck movements (while the bags can be reused, they don't take up a whole truck to be returned to site)
  - Can be emptied by forklift
  - Bags are recyclable in Australia (not yet in NZ)
  - Additional materials are being added as end use markets are identified
  - Builders are currently charged by weight, at a flat rate which works out cheaper than using skips

These approaches both take up minimal space on site, can be collected by smaller trucks and significantly reduce the issue of fly tipping of household waste into skip bins. Both organisations plan to scale their current trials.

Tradie Bags are currently available in Mangawhai. There is opportunity to enhance uptake of this system to divert some key waste streams, including timber, cardboard and metal (plaster board and plastics are being explored). Diversion of timber and metal has the potential to reduce landfill by 25% by weight and 32% by volume.

**Action 4:** Seek resourcing for Sustainable Kaipara to help promote and support the uptake of the Tradie Bags system within Mangawhai. Ensuring that new initiatives in the waste diversion space maintain a positive reputation within the industry is important. This role would include maintaining contact with builders to identify challenges early, plus seek honest feedback and improvement suggestions.



**Action 5:** Support funding applications to enable Marsden Metals to 1) upgrade the presentation of their waste diversion reports, 2) to create a dashboard system to enable builders to access these reports online, 3) to create a database which enables builders using the system to add the square metre foot print of the house they are building and then compare themselves against anonymised waste to m<sup>2</sup> ratios achieved by other builders across different categories such as regional average, renovations, top performers etc as well as by material, 4) enable builders to track and compare their own projects and set targets within the dashboard.

## 2. Material Reuse

While 56% of Mangawhai builders currently retain large off cuts for reuse in current or future projects, 70% of these same builders indicated that it would be helpful for someone to come and pick up larger off cuts for use in community projects.

Keeping these materials dry is important to preserving their value. For builders, having a tidy site is important for efficiency and site safety. This means that dry storage is often limited, and new materials are prioritised. Added to this are two additional considerations. Firstly, a usable offcut for a builder is often a lot larger than a useable off cut for a community member. Secondly, feedback from the Tradie Bag trial indicated that one potential deterrent from using the system was the need to cut up scrap materials to fit these in the bags.

There is identified scope for a collection system which diverts larger off cuts, preserves their value and eliminates the need for cutting and associated labour costs.

The key challenges are:

1. **Volumes:** There is need for a trial to test the likely uptake of a collection service and potential volumes, both as a standalone activity and in association with Tradie Bags.
2. **Materials:** There is need to test the type of materials which might fit the larger off cut category over the course of a build. This will inform the potential for resale of these materials and/or potential for reuse in community projects.
3. **Logistics:** Larger off cut materials are likely to be consolidated at a central point for reuse or sale. Volumes and required frequency of collection influence logistics and testing is needed to see if collection could be undertaken in conjunction with Tradie Bag pick or if a separate collection service would be required.

**Action 6:** Seek funding to establish a trial for larger off cut collection, utilising platform trolley racks for storage of materials on site.

*Right: Wheel trolley "Heavy Duty Sheet and Panel Platform Truck" 900kg rated, \$1,119.90+GST from [Blackwoods](#). Keeping materials dry is important to maintaining their value. It is suggested that the material reuse collection trial provides trolleys similar to the one below to participating builders to relocate offcut materials to be stored and relocated. It is anticipated that over time customised racks, which can be hoisted onto a truck for emptying maybe developed.*



### 3. Additional Materials

There are several additional materials which have potential for greater diversion in Mangawhai. However, these are currently limited by awareness and logistics or volume issues. These materials include:

- Plumbing Plastics
- Polystyrene
- Soft Plastics
- Plasterboard

In many cases companies are promoting product stewardship programmes but due to having sufficient supply of returned materials, there is limited incentive to support or encourage additional collection. This is especially true for Mangawhai which is 21km off State Highway 1.

For example:

- Plumbing plastics can be recycled BUT these currently need to be clean and delivered in skip loads to Auckland.
- Polystyrene will be accepted and can be recycled BUT this waste stream is currently being delivered to Auckland at no cost by a local building company. The collection from ITM Mangawhai equates to approximately 1-2 bags per day (2-4m<sup>3</sup>) and is growing. Recently the recycling bags have been unavailable. Despite collecting the equivalent to some Auckland suburbs Mangawhai is currently not included in any collection runs.
- Soft plastics can be collected by Kaipara Refuse for consolidation prior to being sent to Future Post BUT this service needs greater awareness among builders.
- Plasterboard can be recycled or composted BUT there is currently no facility to strip the plasterboard for composting in the local area and the new Gib factory in Tauranga is 300km away and not yet operational.

<sup>29</sup> [Expol EX1300 Hot Wire Corded Polystyrene Cutter](#)

Within the additional materials category there are a wide range of challenges which need advocacy and co-ordination from both a local and regional perspective.

**Action 7:** Seek resourcing to create targeted advocacy and education campaigns, which focus on a specific issue, material or product every 3-months. These might range from ensuring everyone knows about the recycling options for polystyrene or paint, through to gathering packaging feedback for fixings and requesting changes from suppliers. Ideally the campaigns would have a consistent format and could potentially include a short funny or relatable video (eg. A Jordan Watson – ‘how to dad’, type approach).

**Action 8:** Polystyrene hot cutter testing using both the corded versions available in NZ<sup>29</sup> and cordless cutters from the UK<sup>30</sup>. In relation to polystyrene, the challenge of containing the polystyrene beads created when cutting the material was raised a number of times as an environmental issue with consequences for rivers, harbours and aquatic life. This is particularly relevant for a coastal township with intensive development. While there are hot cutter systems available, uptake of these seems to be very limited. Testing these systems with local builders and foundation layers to identify limitations and barriers is considered environmentally important for Mangawhai.

Reusable Timber covers, with cover return rebate, trial in conjunction with Mangawhai ITM.

<sup>30</sup> [Hilltop Products – Cordless Styrobow Foam Cutter](#)

## 4. Celebrating Success

In order to motivate change, increase awareness and reduce construction waste, there is a need to celebrate success in the small steps as well as the big. It is important that regardless of how far along the journey to waste reduction and diversion people are, there are others who are relatable and one step ahead.

What this might look like:

- **Site Signage:** Signage for waste reduction programme participants, while mostly branding and recognition focussed, this could also include a check list of available initiatives such as onsite waste separation, donating larger off cuts, only using hot cutters for polystyrene etc. with a tick beside those which the company have committed to for the project. This serves to motivate the next step and informs builders, clients and the public about options.
- **Media:** Media coverage, Facebook posts and editorials about successful initiatives.
- **Awards:** Environmental awards and recognition for top performers, potentially sponsored by related products.
- **Good guys of the week:** A weekly or fortnightly morning tea shout for a building site team Facebook post and perhaps a short video focussing one small thing they have changed to reduce waste, such as having a compost bin on site or better storage of off cuts for reuse. These need to cover a wide range of activities to encourage the next step, even from companies who are resistant to larger changes.

### Action 9:

Seek resourcing for Sustainable Kaipara to create momentum and celebrate success and incremental positive changes, which encourage buy-in and bring their community on the journey.







# Collaboration & Partnerships

## 1. Developers

Developers are often seen as a necessary evil with regard to housing. However, there is potential to change that.

A large proportion of new homes in the Mangawhai area over coming years will be created as part of the Mangawhai Central Subdivision. While there is limited scope for outside parties to strongly influence the type of properties constructed, there are some potential financial incentives for developers in building smaller / higher specification homes (which may also enable a greater number of sections). Highlighting the environmental benefits of smaller, higher specification homes and encouraging additional environmental considerations as part of the development, could act as a strong selling point for the overall subdivision.

Traditionally developers have tended to place 'covenants' on land within developments projects which specify larger dwellings, minimum floor areas, certain construction materials, fencing types and specific colour schemes. While these are often framed as "protecting the quality of the subdivision", the underlying driver is a desire to maximise the value of the homes built, in order to increase the value of the remaining sections.

There is potential for Mangawhai Central to pitch itself as a market leader in terms of using these restrictions for good effect and environmental benefit, rather than solely for commercial gain. Success could help to change the way subdivisions covenants are utilised across the country.

There is also scope for the developer to include waste management and resource recovery clauses with their construction contracts, with clear incentives for implementation of these.

### Action 10:

To make any progress in this space Sustainable Kaipara would need have tangible value to bring to the table:

1. **Staff Resourcing:** To enable development of a working relationship with Mangawhai Central. For this to be effective there needs to be dialogue and sufficient relationship to be able to openly acknowledge the underlying tensions, while working towards some win-win outcomes.
2. **Options Funding:** Funding to gain input from environmental consultants and architects to develop a potential menu of options which would reduce environmental impact and construction waste from the overall development. These options would form the basis for discussions with Mangawhai Central around potential inclusions in a covenant OR could be offered as optional inclusions for prospective purchasers.
3. **Legal Funding:** For any proposed covenant or waste related building contract changes to be implemented there is a need for legal advice. Mangawhai Central are unlikely to invest in making these changes on their own accord. However, there would be greater willingness if the process was funded and had limited financial implications. Once established the model could potentially help improve waste management practice and environmental outcomes for other developments in NZ.

## 2. Transfer Station Improvements

The Hakaru Transfer Station contract is currently rolling over on a year-by-year basis. This approach is frustrating for Northland Waste and is limiting additional investment in the site.

While the Hakaru site is 10km out of Mangawhai it is the most logical location for a construction waste sorting facility and community reuse shop. Even if some materials were sold via a pop-up site closer to town, a dry storage facility would still be required. Northland Waste have expressed a willingness to work with other community partners. These could potentially include Sustainable Kaipara, Mahurangi Waste Busters, Mangawhai Shed or another local community group.

**Action 11:** Advocate for Kaipara District Council to enable establishment of a construction waste sorting facility and community reuse shop at the Hakaru Transfer Station. Ideally this would be run by a charitable entity, with lease provisions ensuring continuity, regardless of who holds the transfer station contract. Support the process and council staff via tracking down examples for other regions.

**Action 12:** Seek funding to establish a construction waste sorting facility to keep materials dry and maintain their value.

## 3. Local Community Partnerships

Partnership is essential to success. The following community organisations and businesses are all open to exploring opportunities and contributing to making construction waste diversion options possible for Mangawhai.

- Kaipara District Council
- Marsden Metals
- Devich Road Clean Fill
- Mangawhai Shed
- Mahurangi Waste Busters
- Finess Interiors (currently transporting polystyrene to Auckland)
- Kaipara Refuse
- Helensville Community Recycling Centre
- Northland Waste
- Mangawhai ITM

Mangawhai have potential to divert 260 tonnes of construction waste per year based on 50% diversion. With successful partnership, aspirational goals of 80-90% are entirely possible.

**Action 13:** Resource Sustainable Kaipara to continue building active partnerships with local iwi, businesses and community groups.

# Appendix 1: Mangawhai Resource Diversion Directory [PRELIMINARY DRAFT]

Category	Business	Address	Phone	Notes	Website
Aerosol Cans	Kaipara Refuse	7/9 Porritt Street, Ruawai 0530	09 439 2146		<a href="#">Kaipara Refuse</a>
Polystyrene	Mahurangi Wastebusters	142 Rustybrook Rd, Wellsford	09 945 3980		<a href="#">Mahurangi Wastebusters</a>
Cardboard	Mahurangi Wastebusters	142 Rustybrook Rd, Wellsford	09 945 3980		<a href="#">Mahurangi Wastebusters</a>
Polystyrene	ITM Mangawhai	188 Molesworth Drive, Mangawhai Heads	09 431 4163	Free	<a href="#">ITM Mangawhai</a>
Scrap Metal	Marsden Metals	482 Marsden Point Road, Ruakākā	09 433 0390	Can also be dropped to Waipu Fire Station to assist with their fundraising.	<a href="#">Marsden Metals</a>
Scrap Metal	Fred's Metal Recycling Place	3 Hood Street, Wellsford	027 343 9971		<a href="#">Fred's Place</a>
Cardboard	Northland Waste - Hakaru ReSort	620 Kaiwaka-Mangawhai Road, Hakaru	(09) 438 0802	\$5.00 per load	<a href="#">Hakaru Transfer Station</a>
Scrap Metal	Northland Waste - Hakaru ReSort	620 Kaiwaka-Mangawhai Road, Hakaru	(09) 438 0802	\$50.00 m3	<a href="#">Hakaru Transfer Station</a>
Soft Plastic	Mahurangi Wastebusters	141 Rustybrook Rd, Wellsford	09 945 3980	Free	<a href="#">Mahurangi Wastebusters</a>
Hard Plastic	Mahurangi Wastebusters	141 Rustybrook Rd, Wellsford	09 945 3980	Number 1, 2 & 5 only	<a href="#">Mahurangi Wastebusters</a>
Hard Plastic	Northland Waste - Hakaru ReSort	620 Kaiwaka-Mangawhai Road, Hakaru	(09) 438 0802	Number 1, 2 & 5 only	<a href="#">Hakaru Transfer Station</a>
Aerosol Cans	Mahurangi Wastebusters	141 Rustybrook Rd, Wellsford	09 945 3980		<a href="#">Mahurangi Wastebusters</a>
Insulation	Mahurangi Wastebusters	142 Rustybrook Rd, Wellsford	09 945 3980		<a href="#">Mahurangi Wastebusters</a>
Scrap Metal	Mahurangi Wastebusters	143 Rustybrook Rd, Wellsford	09 945 3980	Free	<a href="#">Mahurangi Wastebusters</a>
Treated Timber	Mahurangi Wastebusters	144 Rustybrook Rd, Wellsford	09 945 3980		<a href="#">Mahurangi Wastebusters</a>
Plasterboard	Mahurangi Wastebusters	145 Rustybrook Rd, Wellsford	09 945 3980		<a href="#">Mahurangi Wastebusters</a>
Treated Timber	Northland Waste - Hakaru ReSort	620 Kaiwaka-Mangawhai Road, Hakaru	09 425 8567		<a href="#">Hakaru Transfer Station</a>
Treated Timber	Marsden Metals Tradie Bags	Pickup from site	09 433 0390	\$0.35/kg	<a href="#">Marsden Metals</a>
Scrap Metal	Marsden Metals Tradie Bags	Pickup from site	09 433 0390	\$0.35/kg	<a href="#">Marsden Metals</a>
Soft Plastic	Kaipara Refuse - bags or fadges	Pickup from site	09 439 2146	\$0.80/kg (\$8 flat rate for 240L bag on frame)	<a href="#">Kaipara Refuse</a>
Plasterboard	Marsden Metals Tradie Bags	Pickup from site	09 433 0390	Not confirmed yet	<a href="#">Marsden Metals</a>
Cardboard	Marsden Metals Tradie Bags	Pickup from site	09 433 0390	\$0.35/kg	<a href="#">Marsden Metals</a>
PVC	Marsden Metals	482 Marsden Point Road, Ruakākā	09 433 0390	No set structure, but are collecting - should be coming to Tradie Bags with other plastic	<a href="#">Marsden Metals</a>



Rubble	Devich Road Cleanfill	Mayor Craig Jepson			
Untreated Timber	Reuse or Chop for firewood				
Hard Plastic	Kaipara Refuse	Pickup from site	09 439 2146	As arranged - not usually needed/wanted on building sites	<a href="#">Kaipara Refuse</a>
Insulation	Reuse, donate or sell	Hakaru ReSort, Mahurangi Wastebusters, Op Shops or Sell Online (civil share, facebook, trademe)			
Carpet	Reuse, donate or sell				
Tiles	Reuse, donate or sell				
Glass	Reuse, donate or sell				
Doors & Windows	Reuse, donate or sell				
Fixtures & Fittings	Reuse, donate or sell				
Paint	Reuse, donate or sell				Resene in Whangarei should also take it
General	Hakaru ReSort	620 Kaiwaka-Mangawhai Road, Hakaru		Hakaru pricing	<a href="#">2021 Pricelist Link</a>
Whole Buildings	Repiles and Relocatables	2471 State Highway 1 Kaiwaka	0800 767 684		<a href="#">Repiles and Relocatables</a>

**NOTE:**

*Many of the organisations listed above work with others to transport materials back to manufacturers and Auckland based recyclers. These include Plasback, Allproof Industries, Marley, Future Posts, Winstone Wallboards, commercial compost producers, Abilities, Expol and others. Some will accept materials directly depending on material type, condition, and quantity or volume.*

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