

Friday, 2 December 2022

Te Hui o Te Kaunihera ā-Rohe o Heretaunga

Hastings District Council

Joint Waste Futures Project Steering Committee Meeting

Kaupapataka

Open Attachments Under Separate Cover

Te Rā Hui:
Meeting date: **Friday, 2 December 2022**

Te Wā:
Time: **10.30am**

Te Wāhi:
Venue: **Council Chamber
Ground Floor
Civic Administration Building
Lyndon Road East
Hastings**

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TE KAUNIHERA Ā-ROHE O HERETAUNGA

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WM01

Application ID	WM01
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Application Forms

Waste Minimisation Large Project Fund Application Form

Organisation Name_1	Taikura Rudolf Steiner School
Project Contact Position	Teacher of Humanities
Organisation type	Educational
Please provide a description of your group/organisation	Our kura's Vision Statement is, "To help each and every student progress towards becoming free, responsible and caring individuals able to impart purpose and direction to their own lives and as citizens able to contribute in manifold and unique ways to human society". We provide Special Character education for kindergarten through to Year 13. Steiner/Waldorf Schools are founded on the Anthroposophical understanding of each human being as a being of body, soul, and spirit in a gradual and purposeful process of development. Steiner/Waldorf Education has the healthy development of the individual child as its central impulse. The curriculum aims to support and enhance the healthiest possible development for each student.
How long has your organisation been in operation	More than 3 years
Project Title	Towards Zero Waste Taikura
Brief Project Description	<p>Our goal for this project is to keep as much of our waste out of the landfill as possible. We have zero-waste aspirations, and this step is an important first step in that direction.</p> <p>We aim to install a colour-coded bin system throughout our school, kindergartens and Taikura House. We share Taikura House with Ngāti Kahungunu Iwi Incorporated, Te Kura/NZ Correspondence School and Ngā Whenua Rāhui. The colour-coded system will be consistent throughout Taikura's buildings so that it is easy to use and habit-forming. We will use bilingual signage.</p> <p>We have worked out how many of each type of bin we need install to collect all waste from inside our buildings (we will address bins for outdoors in a future project). We have chosen Method Recycling's 20 Litre recycling bins because they are manufactured in Aotearoa from mostly recycled plastics and they can be recycled at the end of their life.</p> <p>Our school's management and staff have agreed to implement a roster system of kaimahi (i.e. ākonga from each class) to empty and sort the bins daily once they are installed.</p> <p>Our application has two levels of funding request; the first level is just</p>

	for our school and kindergartens, and the second level includes our Taikura House neighbours. Therefore there are two quotes attached.
Which the following priority funding are	Recycling, Resource Recovery, Behaviour Change
Start date	16/01/2023
End date	06/04/2023
Where will project take place	505 Nelson Street North, 414 Nelson Street North, 304 Fitzgerald Ave
what brought about the idea for this project	<p>In our kura we have a project in place called the Zero Carbon School Project (ZCSP). The vision for this project is for our kura to be a) carbon neutral by 2025 and, ideally, b) net zero carbon by 2030.</p> <p>A couple of years ago a group of Year 9 Practical Ecology students calculated our school's baseline annual carbon footprint; from this we identified our 'emissions hotspots' and then developed a Carbon Reduction Action Plan (CRAP Plan). We have also calculated a second year's carbon footprint. We established a Zero Carbon School team of High School students to drive the project. Our Board of Trustees developed and adopted a Zero Carbon School Guideline, which guides the school towards our carbon goals and assists in making decisions that may impact on our carbon footprint and also other aligned environmental concerns.</p> <p>Our CRAP plan is a series of steps we need to take to reduce the carbon emissions of our school. Waste-to-landfill accounted for 16% of our school's carbon emissions in our baseline year's carbon footprint and 11% of our emissions in 2021 (we think that this drop was only because of COVID-lockdowns), so one of our CRAP Plan steps is to establish and run a recycling system throughout our school so that most of our waste is diverted from the landfill.</p> <p>A colour-coded bin system will reduce the school's waste to landfill. If we can reduce these emissions then we are on the way to becoming carbon neutral. Since 16% (or even 11%) of the emissions is such a large portion of our total emissions, tackling this emissions source first gives us visible results that what we are doing is worth it, and it also helps motivate future students to help bring our emissions down.</p> <p>Making sure that only unrecyclable materials go to landfill is also important due to the fact that materials in landfills take years and years to break down, and landfills are toxic to the surrounding environments and waterways. We want to do our bit to reduce the waste to Oamaru landfill.</p> <p>Having a user-friendly bin system in a school setting is also necessary as it helps teach both students and staff about separating their rubbish into unrecyclable, recyclable and compost, and it gives them skills to take home. We want to normalise responsible behaviour in regards to resources.</p>

Expected Outcomes	<p>1) A colour-coded bin system will be installed throughout the school and kindergartens in Term 1 of 2023. 2) Kaiako and ākonga will be trained in managing the recycling system.</p> <p>3) The bins will be emptied and sorted each day by ākonga from Y2-13.</p> <p>4) Our waste-to-landfill will be significantly reduced: For example, from the High School and admin areas alone, we would expect to reduce our organic waste-to-landfill by about 545kg per year (this was 30% of the total waste) and we would expect to divert about 900kg of recyclables (this was 49% of our total waste).</p> <p>5) Our carbon emissions from the waste-to-landfill emissions category will be significantly reduced. Based on the waste audit that we did last term, 78% of our waste that goes to landfill should not be going to landfill. In our baseline year, 9.45 Tonnes of CO₂ -equivalent gases was emitted by our waste-to-landfill, which was 16% of our total emissions. We would therefore expect to see this emissions category drop by at least 60% in response to an effective and well-managed recycling system.</p> <p>6) We will see behaviour change and a shift in awareness regarding resources as a result of this project, due to the education and training involved in using and managing the system.</p> <p>7) There will be lots more compost to use in our beautiful school grounds from the resource recovery of our organic waste, which will add to the material that students make and use in gardening lessons.</p>
What are you going to do	<p>1) Secure funding for an effective, consistent recycling system of bins.</p> <p>2) Purchase and install bins.</p> <p>3) Educate all staff, ākonga and cleaners on using the bin system correctly.</p> <p>4) Kaiako and ZCS team will design and set up the roster system of kaimahi to empty the binds daily at 2.50pm.</p> <p>5) ZCS team will train the kaimahi to collect and empty the bins correctly.</p> <p>6) Wider community engagement and education will be done through our school's Grapevine, website, community assemblies, and at the Fete.</p> <p>7) Use waste audits to measure the impact of the system.</p>
One goals Hastings District Councils joint Waste M	<p>This project will result in new waste minimisation activity in our kura because at the moment we have no recycling system.</p> <p>Our project aligns with Goal One of the WMMP ('Reduce, recover and recycle more waste in order to contribute to the New Zealand Waste Strategy goal: "Reducing the harmful effects of waste") and its Objectives One and Two regarding organics and recyclables. When our new recycling system is up and running, we will be doing our part towards Council's target of a 30% decrease in organics to Omarunui landfill, which is the same as the proportion of organics in our waste audit. We will be able to divert our common recyclables away from the landfill as well, which was 49% by weight in our High School waste audit, which will contribute to Council's target of 20% of common recyclables diverted from Omarunui landfill.</p> <p>Our project aligns with Goal Three of the WMMP ('Improve community awareness on waste and recovery trends and knowledge around</p>

	<p>resource recovery and diversion potential') and its Objective Two regarding education and improved community awareness. There will be teaching and learning about resources, resource recovery, waste minimisation and taking responsibility as an ongoing part of making sure our new system works effectively. Experience with this system during their school years will ensure that recycling and waste minimisation is normalised.</p> <p>Our project aligns with the WMMP's Goal Four, Objective Four ('To remove barriers to recycling and consider subsidies and/or incentives, recognising that such moves encourage behavioural change') because at the moment a lack of infrastructure is a massive barrier to responsible behaviour regarding our school's waste.</p>
Beneficiaries	<p>The school community will benefit from this project by exposure to and experience of an effective resource recovery system. All ākonga will be responsible for emptying and sorting the bins at some stage in their school life because of the kaimahi roster system. Resource recovery will be normalised for the school community. Whānau will benefit by ākonga bringing this behaviour and values home.</p> <p>Our school roll is made up of 311 students from Years 1-13, plus another 52 in our kindergartens. We have 63 staff. A conservative estimate, with each child's or staff member's household consisting of three people, would mean that this project would reach about people. Then there's our Taikura House tenants: Ngati Kahungunu Iwi Inc have 16 staff. Te Kura have 28 staff and 100 students. Ngā Whenua Rāhui have ten staff using their space.</p> <p>Achieving this Waste Minimisation project will be a big step in the school's Zero Carbon School Project journey. It will be the first tangible, physical step in reducing our school's carbon emissions. Our ZCSP story is a precious and valuable one because we are the first school in Aotearoa (that we know of) that ākonga have worked to calculate the carbon footprint, developed a Carbon Reduction Plan and lobbied their Board to develop a Zero Carbon vision. (The Ministry of Education is featuring us in an upcoming Carbon Reduction publication) Taking action to reduce a significant portion (16%) of our emissions would add to the value in role-modelling this important work for other schools.</p> <p>The environment will benefit from the diversion of our waste away from the landfill. Materials in landfills take years and years to break down and are toxic to the surrounding land and waterways, so we need to reduce the amount of waste-to-landfill as much as possible. Landfills also produce methane, a greenhouse gas, and although methane is collected at Omarunui, there must be some leakage because our carbon footprint calculator takes into account whether it is collected from your landfill or not, we still emitted 9.45 Tonnes of CO2 from our waste-to-landfill.</p>
Estimated number of people the project will benefit	1215

Label_1	<p>1) Waste audits: We have recently done a preliminary waste audit of the High School, but we still need to do our Lower school and kindergartens, and our Taikura House neighbours if they will be covered by the funding for this project. We will conduct audits after the system is up and running to see how much difference we have made.</p> <p>2) We will see from the Waste Management invoices how many skips have been removed each month and how many recycling wheelie bins have been emptied.</p> <p>3) Our carbon footprint calculations will measure the impact on our waste-to-landfill emissions category.</p> <p>4) The ZCS team will check in regularly with the kaimahi to see if they encounter any problems that need ironing out in our system.</p>
Any further information about your project	
Which materials in waste stream does you	Food waste, Green waste, Cans, Glass *(see below), Paper, Plastic *(see below)
If targeting glass or plastic what type	
Which other organisations will be involved in the project if applicable	<p>Hastings District Council (Zoë Yandell came and helped us conduct a waste audit, and has also been a wonderful advisor. We hope to have financial support from the Council's Waste Minimisation Fund).</p> <p>Crest Cleaners (They clean our school. There will be bins in some areas that they will be responsible for emptying).</p> <p>Environment Centre Hawke's Bay (9 Practical Ecology visited the Centre to learn about recycling and resource recovery in the Bay. We will take our soft plastics and some other recyclables there when we are set up to do so, and until such a time as we can send them to a recycler ourselves.</p> <p>Ngati Kahungunu Iwi Incorporated ? Te Kura ? Ngaa Whenua Raahui</p>
Total Project Cost	17,972.40
Total Amount Requested	17,972.40

Assessment Forms

Staff Assessment Form

Form Name	Staff Assessment Form
Date Created	25/11/2022 12:05:26 PM
Date Submitted	2022-11-25T12:07:55
Person Created Form	Sam Gibbons
Person Last Modified Form	Sam Gibbons

Person Submitted Form	Sam Gibbons
Form Status	Submitted
Form Version in Report	2 of 2
Conflict of Interest	I DO NOT have a conflict of interest
Confidentiality	I agree
applicant organisation	The applicant is eligible for funding from our program, The amount sought from us is appropriate, Quotes are provided according to our rules
Comments_1	
Eligibility Checklist	Yes
How does this application meet the WMMP	<p>GOAL ONE- REDUCE, RECOVER AND RECYCLE MORE WASTE IN ORDER TO CONTRIBUTE TO THE NEW ZEALAND WASTE STRATEGY GOAL: "REDUCING THE HARMFUL EFFECTS OF WASTE".</p> <p>Objective 1: To reduce total amount of waste to landfill per person in Napier and Hastings, particularly with regard to organic waste e.g. green waste and food waste.</p> <p>Objective 2: To increase recovery (identification and removal of items) destined for landfill that can be reused, recovered or recycled.</p> <p>GOAL THREE- IMPROVE COMMUNITY AWARENESS ON WASTE AND RECOVERY TRENDS AND KNOWLEDGE AROUND RESOURCE RECOVERY AND DIVERSION POTENTIAL.</p> <p>Objective 2: To educate and improve community awareness on all products that can be reused or recycled, the ways that can be done, including trends and all opportunities to minimise waste.</p>
Project Stage 1 Assessment Recommendation	No
Recommendation Comments	<p>It is recommended that this project should be declined.</p> <p>Although the project does align with Goals of the WMMP the impact of the waste diversion and education is limited to those attending the school.</p> <p>Projects are also assessed based on where they tackle waste in the Waste Hierarchy and given that the projects focus is on recycling, which is lower down the waste hierarchy, came out lower in our scoring.</p>

WM04

Application ID	WM04
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Application Forms

Waste Minimisation Large Project Fund Application Form

Organisation Name_1	Re-New NZ 2021 Limited
Project Contact Position	Owner Director
Organisation type	Business
Please provide a description of your group/organisation	Re-New NZ 2021 Limited upcycles items otherwise destined for landfill, and organises manages and promotes markets for other upcyclers and sustainable business.
How long has your organisation been in o	1 - 2 years
Project Title	Re-New Community Workshop
Brief Project Description	<p>I am working towards renting a space and creating a community workshop for upcyclers and creators of sustainable products to work and to sell the items they create. A place to give people and products a second chance at a new beginning. It will be a space for people who have no space to work, or who want to create a new direction for themselves.</p> <p>It's a place to help people who might not have any other opportunities, to gain a freedom they may not otherwise have, to earn and learn, and share skills, experience and knowledge, and nurture the real "Can Do Kiwi" attitude, and make a positive difference to themselves, their futures, families, communities and the environment.</p>
Which the following priority funding are	Reduction, Reuse, Recycling, Resource Recovery, Behaviour Change, Other: Social change
Start date	28/10/2022
End date	01/04/2023
Where will project take place	Hastings, wherever I can find a suitable workshop space to set up.
what brought about the idea for this project	<p>Realising that many people, like myself, have talents, skills, abilities and drive to do something special, but no space to do it in. And no way to sell what we do, without going to a cost that, often, makes it not a viable financial option to try.</p> <p>We need a space that we can work, safely, with access to the right tools and equipment, and help as needed, and a place, onsite, that we can sell through, and earn an income that can create a better future for us, our families and communities, while helping to shape a new way of seeing and thinking about our immediate environment.</p>
Expected Outcomes	<p>Saving items from landfill and helping people see 'old' in a new way.</p> <p>People will learn to reuse, repair, restore, repurpose and recycle rather</p>

	<p>than replace what they have as it ages or gets damaged.</p> <p>People with backgrounds that may see them struggle to find work, but have talents/skills/qualifications will have a chance to take a new positive direction, and make a positive difference to the world around them. People who have qualifications but no experience, can gain experience and show what they can do, and perhaps help others do better to be better.</p> <p>We will change peoples thinking, and doing, by doing and showing. And we will change lives for the better, by giving them a chance to do better and earn a living at it.</p>
What are you going to do	<p>I have already created a business, with all that entails, including the bills, and have started gathering a following as well as building a community of upcyclers, creators and repairers, and am actively promoting them and Re-New.</p> <p>All of this is happening through my Re-New website, where I have a directory of likeminded people and businesses. This is resulting in new connections with established organisations, such as the charity Re-Source HB, who provide us with items and materials we can upcycle and reuse, both for Re-New, and for Re-Source, who the pass repaired items on to people in need, and Cranford Hospice Shop, who provide us with otherwise waste materials from clothing donations.</p> <p>Re-New will be a community of people that can restore or repurpose items destined for landfill, for sale, or commission, in a safe, well equipped workshop space, while I, with help, will manage and market their products and items, in our dedicated retail outlet, as well as continuing the seasonal markets, as events for marketing and promotions.</p> <p>We will partner with other second hand shops to take items they cannot sell, and use them within our workshops, to make new items or recycle for other purposes.</p> <p>We will collect discarded packaging materials from other business to reduce our requirements for new packaging, and reduce their waste output.</p> <p>We will connect with Corrections to offer opportunities to convicted persons looking for a new start and with education providers to offer places for students and graduates to work, and potentially earn accreditation towards study, as well as experience towards their chosen career paths. And, perhaps, redirect a few in ways they hadn't considered, but suit them better.</p> <p>We will invite retired people, and people still in active work, to come and share their knowledge and skills with our members and with the general public to help promote our ideals of repair, restore, repurpose, recycle and re-new.</p> <p>We will actively promote and offer learning opportunities for people who have never had the opportunity to so much as learn to sew a button on, let alone use a power drill, within our facilities.</p> <p>We will change the way people see the environment around them, as well as the way they see themselves, by giving them a new way to see. To do. To be.</p>

One goals Hastings District Councils joint Waste M	My thought and plans align exactly with these HDC goals. They couldn't be more aligned as that is exactly what I am trying to achieve, verbatim.
Beneficiaries	All of the Hastings district, both the community and environment, will benefit from this workshop, twofold, in that people will have a new way to earn, and save money by not replacing something that can be saved; and a new way to save the environment they live in, by having items they may have, in the past, just thrown out, given a new lease of life, through repair, either by themselves, or affordably, through our workshop, which will save environmental resources for being wasted producing new items people don't need. This is for everyone. Even those who can, financially, afford to replace their everything. They will benefit from having a new place to spend their money, buying uniquely created items, and incidentally supporting a better world.
Estimated number of people the project will benefit	5000
Label_1	My entire business model is based on reducing waste from others. As such, we will measure it by recording what we bring in and how it is used/utilised to be sent out again as a new product. And how many people use our workshop and/or retail area, to create and/or sell their sustainable products.
Any further information about your project	Re-New have just been accepted as signatories of the TerraCarta of The former Prince of Wales' Sustainable Markets Initiative. The Terra Carta provides a roadmap to 2030 for businesses to move towards an ambitious and sustainable future; one that will harness the power of Nature combined with the transformative power, innovation and resources of the private sector. The global business proposition outlines Ten Articles and comprises of nearly 100 actions for business as the basis of a recovery plan that puts Nature, People and Planet at the heart of global value creation.
Which materials in waste stream does you	Commercial waste, Household waste, Reusable items/materials, Construction and demolition waste, Electronic waste, Tyres, Green waste, Cans, Glass *(see below), Paper, Plastic *(see below), Other: Driftwood, sea glass, stones and other natural products that do not require doing any damage to the environment
If targeting glass or plastic what type	All types of glass and plastics
Which other organisations will be involved in the project if applicable	Any who believe in, and practice, sustainable business or product creation, and waste minimisation.
Total Project Cost	50,500.00
Total Amount Requested	20,000.00

Assessment Forms

Staff Assessment Form

Form Name	Staff Assessment Form
Date Created	25/11/2022 1:40:15 PM
Date Submitted	2022-11-25T13:48:33
Person Created Form	Sam Gibbons
Person Last Modified Form	Sam Gibbons
Person Submitted Form	Sam Gibbons
Form Status	Submitted
Form Version in Report	2 of 2
Conflict of Interest	I DO NOT have a conflict of interest
Confidentiality	I agree
applicant organisation	The applicant is eligible for funding from our program, The amount sought from us is appropriate, Quotes are provided according to our rules
Comments_1	Applicant detailed in their letter where the estimated rental cost of a space has come from.
Eligibility Checklist	Yes
How does this application meet the WMMP	<p>GOAL ONE - REDUCE, RECOVER AND RECYCLE MORE WASTE IN ORDER TO CONTRIBUTE TO THE NEW ZEALAND WASTE STRATEGY GOAL: "REDUCING THE HARMFUL EFFECTS OF WASTE".</p> <p>Objective 1: To reduce total amount of waste to landfill per person in Napier and Hastings, particularly with regard to organic waste e.g. green waste and food waste.</p> <p>Objective 2: To increase recovery (identification and removal of items) destined for landfill that can be reused, recovered or recycled.</p> <p>Action 6N: Support and facilitate local community driven initiatives including trials and pilots.</p> <p>GOAL THREE - IMPROVE COMMUNITY AWARENESS ON WASTE AND RECOVERY TRENDS AND KNOWLEDGE AROUND RESOURCE RECOVERY AND DIVERSION POTENTIAL.</p> <p>Objective 2: To educate and improve community awareness on all products that can be reused or recycled, the ways that can be done, including trends and all opportunities to minimise waste.</p> <p>GOAL FOUR- UTILISE INNOVATIVE AND COST EFFECTIVE WASTE MANAGEMENT AND MINIMISATION APPROACHES.</p>

Project Stage 1 Assessment Recommendation	Yes
Recommendation Comments	<p>It is recommended that this project receives the full \$20,000 as that will help pay for the first 6 months rent, to give Re-New time to establish itself and become self funding.</p> <p>The project aligns with many of the WMMPs Goals and Objectives. There is currently nothing like this in Hastings that tackles reducing waste whilst up-skilling members of our community. It focuses on waste diversion, repair and upcycling all processes of waste management that sit high up in the Waste Hierarchy.</p> <p>A big part of moving forward, beyond just recycling, is really fostering a community that cares about reducing waste and has the skills to do so. There has been a big skills loss in fixing and repair with the introduction of cheap clothes, and furniture. But these items often don't last long and contribute to the throw away society we find ourselves in. Aside from the skills loss a barrier to repair can be the cost of equipment and space in which to do so, another element this project aims to tackle.</p> <p>Beyond the waste diversion the project offers great opportunity socially and economically. It has great potential to impact many members of the community through skills sharing, job creation and the ability to buy locally crafted items.</p>

WM05

Application ID	WM05
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Application Forms

Waste Minimisation Large Project Fund Application Form

Organisation Name_1	House of Science
Project Contact Position	Hawke's Bay Branch Manager
Organisation type	Charitable Trust
Please provide a description of your group/organisation	House of Science is a charitable trust which designs and develops science resource kits for use in primary and intermediate schools. National and international research shows our students are failing science and the trend is getting worse. Not only does this limit future career options, but the skills science teaches you, such as critical thinking and good decision-making, ensure you can be active, informed participants in your community. The Hawke's Bay branch has its own library of resource kits. Member schools book the kit they want, it's delivered, collected and cleaned and restocked by a team of volunteers under the guidance of the branch manager. The kits include a bilingual teacher manual and student activity cards and all the equipment you need to teach a whole class five to eight activities/experiments on a given topic. There are 40 different topics in the library (circular economy, water analysis, climate change etc.) and each branch is required to seek sponsorship to get the kits for their library.
How long has your organisation been in operation	More than 3 years
Project Title	House of Science Hawke's Bay 'What do you think?' science resource kit
Brief Project Description	In July this year, we received funding from the Waste Minimisation small grants fund for our "A Load of Rubbish kit", which teaches students about the 6Rs. This kit is very popular with schools. Our newest kit, "What do you think?" supplements the learning the students have gained from "A Load of Rubbish". It teaches critical thinking and good decision-making, skills students need to apply the knowledge they've gained from "A Load of Rubbish" in a wider context, particularly around our impact on the environment. It has an activity about beach debris and the impact on wildlife. It teaches them to think critically about the information they see and hear e.g. on social media, helping them to make better decisions in a wider environmental context than the "A Load of Rubbish" kit.
Which the following priority funding are	Reduction, Reuse, Recycling, Resource Recovery, Behaviour Change, Other: The kit teaches students critical thinking and good decision-making skills.
Start date	16/01/2023

End date	11/12/2023
Where will project take place	Our kits are used by primary and intermediate schools throughout Hawke's Bay.
what brought about the idea for this project	<p>The foundation of the New Zealand science curriculum in primary and intermediate schools is the Nature of Science strand. Through it, students learn what science is and how scientists work. They develop the critical thinking and informed decision-making skills, attitudes and values to build a foundation for understanding the world. Underneath this strand there are four contextual strands - living world, physical world, material world and planet earth and beyond. Our "A Load of Rubbish" kit relates to material world and planet earth and beyond.</p> <p>Our two existing Nature of Science kits (Puzzle Box and Mystery Box) are 5 years old, so it was time to update them. This new kit has been designed to enable teachers to see the science capabilities in action. Thinking is a fundamental skill in science and this kit encourages students to think like scientists in a variety of contexts. Science can often be magical and mysterious. Students of all ages will enjoy trying to explain how a mystery tube works, where the rubber band in the 'splink' is located and why a rattle back insists on only spinning one way. They'll meet a range of exciting and colourful critters preserved in resin and get to have a closer look at how easy it is to miss what is going on around us. This kit also explores some serious environmental issues and leads students to observe, formulate explanations and ask questions about the impact human activity has on the natural world and its resources.</p>
Expected Outcomes	House of Science have the vision of every child in New Zealand being scientifically literate. We achieve this through providing teachers with bi-lingual science resource kits, empowering them to teach science with confidence. Feedback from our member school indicates we are achieving this outcome, and students love using our kits. Our kits are fully aligned with the NZ curriculum and the hands-on nature of them means every child can enjoy doing science. This is helping to create a wider variety of careers for children as they're exposed to opportunities they may not otherwise have been exposed to.
What are you going to do	The kit will be available to all Hawke's Bay member schools from January 2023. The kit will teach students critical thinking skills and how to make better, informed decisions. They'll learn not to believe everything they see and hear (particularly on social media), but how to evaluate the information, and check the facts with reputable organisations before making decisions. They'll also learn to apply their critical thinking and good decision-making skills to a broad range of issues and situations.
One goal Hastings District Councils joint Waste M	This kit supplements the learning in the "A Load of Rubbish" kit. It will enable students to use critical thinking and good decision-making skills to expand their knowledge of waste minimisation and resource utilisation beyond what is covered in "A Load of Rubbish", and become aware of the wider environmental impact of the human race. They'll share this knowledge with their whanau and wider community.
Beneficiaries	The kit will be available to all our member schools, currently that means around 5,500 students in Hawke's Bay will have access to the kit. This

	number will increase as more schools join up next year. As the kit is also produced in te reo Maori, Kura Kaupapa Maori also use them.
Estimated number of people the project will benefit	5500
Label_1	This is an education project, so will not be focused on measuring the reduction in waste. It's goal is to improve scientific literacy and consequently change behaviour.
Any further information about your project	
Which materials in waste stream does you	Household waste, Reusable items/materials, Electronic waste, Food waste, Green waste, Cans, Glass *(see below), Paper, Plastic *(see below), Other: litter
If targeting glass or plastic what type	Likely to be those used in the home and at school.
Which other organisations will be involved in the project if applicable	We have many sponsors of the Hawke's Bay branch, mostly sponsoring kits. A complete list can be found on the Hawke's Bay page of our website. We currently have 20 active volunteers and are supported by the Hawke's Bay Branch of the Royal Society.
Total Project Cost	2,500.00
Total Amount Requested	2,500.00

Assessment Forms

Staff Assessment Form

Form Name	Staff Assessment Form
Date Created	28/11/2022 8:10:27 AM
Date Submitted	2022-11-28T08:12:14
Person Created Form	Sam Gibbons
Person Last Modified Form	Sam Gibbons
Person Submitted Form	Sam Gibbons
Form Status	Submitted
Form Version in Report	2 of 2
Conflict of Interest	I DO NOT have a conflict of interest
Confidentiality	I agree
applicant organisation	The applicant is eligible for funding from our program, The amount sought from us is appropriate, Quotes are provided according to our rules
Comments_1	
Eligibility Checklist	Yes

How does this application meet the WMMP	This application does not tie strongly to the WMMP.
Project Stage 1 Assessment Recommendation	No
Recommendation Comments	It is recommend that this project be declined as the application does not link in directly with realising the goals of the WMMP.

WM07

Application ID	WM07
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Application Forms

Waste Minimisation Large Project Fund Application Form

Organisation Name_1	Hawke's Bay Farmers' Market Incorporated (HBFM)
Project Contact Position	Chairperson- HBFM
Organisation type	Incorporated society
Please provide a description of your group/organisation	The HBFM has two markets a week, one in Hastings on Sundays at the Tomoana Showgrounds and the other in Napier on Saturdays in Clive Square
How long has your organisation been in operation	More than 3 years
Project Title	HBFM Waste Minimisation Project
Brief Project Description	We would like to reduce the amount of waste from our market going to landfill. We would also like to highlight other ways that our customers can help in reducing their rubbish.
Which of the following priority funding areas	Reduction, Recycling, Behaviour Change
Start date	01/12/2022
End date	30/11/2024
Where will project take place	Hastings Farmers' market
What brought about the idea for this project	The Hawke's Bay Farmers' market has always been committed to waste reduction in its markets. In 2019 we were diverting 95 percent of our waste away from landfill. We had Waste Warriors sorting the rubbish in the Hastings market, we were recycling, and directing what was compostable to Biorich. By 2020 Biorich no longer accepted certain products, which meant a larger proportion of our waste had to go into landfill. As well, Covid 19, disrupted the management of waste disposal and now in 2022 we have all our waste going to landfill. Post Covid, the HBFM is still plastic free and is committed to rethinking how it can minimise its waste going forward.
Expected Outcomes	There are many outcomes from this project the HBFM hope to achieve: <ul style="list-style-type: none"> - Reduce customer waste, - Direct as much as possible customer waste away from landfill. - Compost and recycle relevant rubbish. - Minimise Stallholder waste. - Educate customers.

	The HBFM hopes this project will be sustainable and remain ongoing for many years to come.
What are you going to do	<p>The HBFM would like to offer workshops/events to stallholders to bring them up to date waste minimisation and waste management and showcase packaging products. This will get their buy in and ensure they are offering their product/ produce in the best possible in the best possible way and reduce waste.</p> <p>We would like to investigate an alternative source that could take our food waste and compostable packaging. This would need staffing.</p> <p>We would also like to offer the Environment's Centre new wash station in our Hastings market for the longest possible time. It would be a great asset to those customers and stallholders that would like the opportunity to use washable plates, cups and cutlery. It would also encourage those who want to reduce their waste to take up the opportunity. (\$5000 plus)</p>
One goals Hastings District Councils joint Waste M	<p>With the WMMP help the HBFM will be able to get back on track with its own waste minimisation plans. Thousands of people visit its markets each year and with our projects we can support the community by valuing our resources and recycling and reducing the amount of waste and rubbish produced every weekend.</p> <p>The workshops and wash station will inform, educate and prevent unnecessary waste and promote the recycling and reusing. Finding another source to take our food/compostable waste going to landfill will protect our resources and repurpose what could be a useful product.</p>
Beneficiaries	<p>The HBFM are committed to building a community and customers who value our commitment to waste minimisation and recycling. We hope this project will be able to change customer behaviour and educate them on the benefits of waste reduction.</p> <p>There will be less rubbish and waste going to landfill.</p>
Estimated number of people the project will benefit	50000
Label_1	<p>We will be able to measure the reduction of waste at the end of each market from the amount of rubbish in the bins.</p> <p>The impact will be measured by customer and stallholder feedback.</p>
Any further information about your project	
Which materials in waste stream does you	Food waste, Paper, Other: Coffee Cups
If targeting glass or plastic what type	
Which other organisations will be involved in the project if applicable	
Total Project Cost	10,500.00
Total Amount Requested	10,500.00

Assessment Forms

Staff Assessment Form

Form Name	Staff Assessment Form
Date Created	24/11/2022 1:10:16 PM
Date Submitted	2022-11-25T12:25:50
Person Created Form	Sam Gibbons
Person Last Modified Form	Sam Gibbons
Person Submitted Form	Sam Gibbons
Form Status	Submitted
Form Version in Report	1 of 1
Conflict of Interest	I DO NOT have a conflict of interest
Confidentiality	I agree
applicant organisation	The applicant is eligible for funding from our program, The amount sought from us is appropriate
Comments_1	
Eligibility Checklist	Yes
How does this application meet the WMMP	GOAL ONE REDUCE, RECOVER AND RECYCLE MORE WASTE IN ORDER TO CONTRIBUTE TO THE NEW ZEALAND WASTE STRATEGY GOAL: "REDUCING THE HARMFUL EFFECTS OF WASTE". Objective 1: To reduce total amount of waste to landfill per person in Napier and Hastings, particularly with regard to organic waste e.g. green waste and food waste.
Project Stage 1 Assessment Recommendation	No
Recommendation Comments	We recommend that this application is declined. Unfortunately there were no quotes provided please see attached letter from the HBFM Committee. In regards to the wash station, at this stage it is still not clear how it will work at the market and what the costs of it being there are. The farmers market have been advised to approach us when they have more details around how the wash trailer will operate at the market. As for the request for funding people to come in and talk about packaging options we are happy to come in and talk to vendors about packaging for free.

WM08

Application ID	WM08
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Application Forms

Waste Minimisation Large Project Fund Application Form

Organisation Name_1	Havelock North Wanderers Associated Football Club
Project Contact Position	Board member.
Organisation type	Community Group
Please provide a description of your group/organisation	Havelock North Wanderers Associated Football Club is a community football club. We have football programmes for all ages - children through to adults.
How long has your organisation been in operation	More than 3 years
Project Title	Upcycling our kitchen.
Brief Project Description	We have a kitchen that is not fit for purpose. Around 2 years ago we planned to use a board member's secondhand kitchen unit and bench. We have been storing this at the club for this long and have kept it out of landfill. In the last year we have developed a partnership with Re-Source and have worked with them when we fixed out summer league nets rather than replacing them (this kept these out of landfill). We have recently purchased a secondhand fridge for our kitchen - again keeping this out of the landfill. If we could get your support with funding we will be able to hire skilled builders to replace our old kitchen, and put in the kitchen we have been storing. We will also then work with Re-Source to get any parts that can be repaired and recycled to another home fit for their new purpose. We also want to install solar power and already have a strong culture of recycling bottles and cans from the bar.
Which the following priority funding are	Reduction, Reuse, Recycling, Resource Recovery
Start date	28/02/2023
End date	01/04/2023
Where will project take place	Havelock North Wanderers club rooms - Guthrie park.
What brought about the idea for this project	We attended the funding road show and this fund was discussed. We were already planning to do this kitchen upcycle and have already been storing the old kitchen unit - but without funding our plan has stalled. The idea came as the board member couldn't face seeing good materials go to landfill.
Expected Outcomes	Keeping two old kitchen units out of landfill. Supporting another charity - Re-Source by giving them materials.

What are you going to do	Once we have funding approved we will get builders on board who share the same values as us for recycling. We will be guided by their timeframes but hope to have this completed before the winter season.
One goals Hastings District Councils joint Waste M	<p>We have already partnered with Re-Source for smaller projects. With this project our plan is to partner with them again - their main focus is waste minimization - so we will promote them to our members and increase awareness about what they do.</p> <p>As for our club and what we will do - we will keep two kitchen units out of landfill by spending more time and by upcycling as much as possible.</p>
Beneficiaries	Our club will have the lounge back!! The kitchen unit sitting in there for the last 2 years has been a major inconvenience so having room back will mean it can be restored as a treatment room. Also we will have a better kitchen for feeding our senior players after matches.
Estimated number of people the project will benefit	500
Label_1	The size of how much ends up in landfill after the project is finished. We could also count the cost of storing a kitchen unit like this for the last 2 years and include that.
Any further information about your project	
Which materials in waste stream does you	Construction and demolition waste
If targeting glass or plastic what type	
Which other organisations will be involved in the project if applicable	We aim to partner with Re-Source.
Total Project Cost	20,000.00
Total Amount Requested	20,000.00

Assessment Forms

Staff Assessment Form

Form Name	Staff Assessment Form
Date Created	24/11/2022 12:38:46 PM
Date Submitted	2022-11-25T12:48:01
Person Created Form	Sam Gibbons
Person Last Modified Form	Sam Gibbons
Person Submitted Form	Sam Gibbons
Form Status	Submitted

Form Version in Report	2 of 2
Conflict of Interest	I DO NOT have a conflict of interest
Confidentiality	I agree
applicant organisation	The applicant is eligible for funding from our program, The amount sought from us is appropriate
Comments_1	Quotes for the work were not provided.
Eligibility Checklist	Yes
Hows does this application meet the WMMP	<p>GOAL ONE - REDUCE, RECOVER AND RECYCLE MORE WASTE IN ORDER TO CONTRIBUTE TO THE NEW ZEALAND WASTE STRATEGY GOAL: "REDUCING THE HARMFUL EFFECTS OF WASTE".</p> <p>Objective 1: To reduce total amount of waste to landfill per person in Napier and Hastings, particularly with regard to organic waste e.g. green waste and food waste.</p> <p>Objective 2: To increase recovery (identification and removal of items) destined for landfill that can be reused, recovered or recycled.</p>
Project Stage 1 Assessment Recommendation	No
Recommendation Comments	<p>This project is not recommended for funding.</p> <p>The project will have minimal impact in terms of waste diversion and people reached.</p>

Letter from Hawkes Bay Farmers Market

To Whom it may concern,

Due to the HBFM being under resourced for time and staff I have been unable to get any quotes to you on time. For this I do apologise. The HBFM relies on its committee, who all volunteer their own time to oversee the governance, compliance and running of the markets.

Since we lost Biorich and are still coping with the impact of Covid, our waste management programme has been 'parked' for want of a better term, for the moment. The committee and many stallholders would like to see change and our waste become a priority once again. Given the opportunity of funding would allow the markets to focus on our waste management ahead of time.

I have been to see Emma, Lisa and Togia at the Environment Centre to ask for a quote for the \$8000. They are writing one but it is unavailable, so far, by today. Emma did say that it would cost approximately \$250-300 every market. That is just an estimate of running the wash station, we would need volunteers to staff it.

Talking through how the waste station would work in our market, the task is huge and slightly overwhelming. It would only benefit 25 percent of stallholders directly, as they are our food-to-go and coffee suppliers.

Supplementary information from Re-New

8 November, 2022

RE-NEW WORKSHOP PLAN

THE DREAM

The Re-New Workshop will be a workshop where people like us, with space or equipment limitations, can come and work, individually, or together, creating and recreating, upcycling and recycling, and be able to have their products sold through the full retail area, where all aspects of retailing, including marketing and shipping will be managed, on their behalf.

This will be a community collective people can join, through an application process. Non-members will also be allowed to utilise the facilities on a limited, paid basis.

This will be a workshop with a dedicated retail space. Each person who utilises the workshop will be able to have their works sold through the retail area and will be able to set their own prices, and get to keep their earnings, less any applicable taxes etc they will be required to pay (I may include accountancy services to deal with all of that too).

Eventually I intend to be able to offer free classes for people to learn to fix things and create things, as well as selling assembled kits for basic things, at a reasonable price, people can do for themselves, and learn a new skill. And I plan to develop partnerships with education providers, to give students an opportunity to earn credits towards study qualifications. This will incur an educational funding fee, either through the Ministry of Education, Department of Labour, Ministry of Social Development/WINZ or the education providers, or in some instances, through Department of Corrections, to provide opportunities for persons released from prison, or otherwise headed for prison.

I'd also like to be able to have lists of contacts with skills/experience/qualifications that can be utilised outside the workshop, such as having carpenters or labourers or handy people or gardeners etc, that clients will be able to book for jobs that are too small for big companies. Re-New will act as an agent of sorts, being the booking office for independent workers, who will charge their own rates. We will also offer an invoicing service for the people who do the work, and will add an administration fee to their invoices.

These people may be between job hammer-hands or, retired or unemployed builders/carpenters or mechanics/electricians or skilled but unqualified workers, or qualified but inexperienced students/graduates. They will be people with something to offer, and time to offer it.

Re-New is a place where people who need a second chance, or just want to do something to keep busy, or earn some extra money, can come together and share space, time, skills, experience and opportunities. And maybe, just maybe have a fresh start, or create a fresh start for someone else.

The markets will continue, as events, and help promote the community as a whole, and the members as individuals.

It's a whole thing. When I dream, I dream big.

Of course, there is more to it, but I think you get the idea behind the dream.

Income

1. The workshop will be open to members of the community collective who wish to use it, for a monthly, or annual, fee, similar to a club. Annual fees will be at a slightly discounted rate, to the monthly fee. Non-members of the community collective will be able to pay a daily fee, of +/- \$30 to use the workshop, and have the opportunity to have their works sold through the retail area.
2. A fee will be added onto the price of the items sold through the retail outlet, rather than a commission taken from the work. The fee will be set on a scale, based on the price of the works. Items under \$200, will have a fee of 10% on top. Items \$200.01-\$2000.00 will have 15% added. \$2000.01+ will have 20% added. The retail area will also be open to non-members, and the general public, to sell through, under the same fee structure.
3. The contractors administrations fee will be a flat fee of \$45 for the booking, plus \$15 per each client initiated contact, prior to final invoice. The contact fee may be waved depending on the circumstances. Each contractor will be required to have their own health and safety compliance certificates and insurances, copies of which Re-New will keep, and comply with Re-New standards of behaviour, and all legal requirements per their works. i.e no work to be carried out that requires certification the contractor does not currently have. Re-New may help with acquiring the necessary documentation.
4. The Re-New Sustainable Markets will also generate income, as they grow, and become a familiar event. They currently earn enough to break even, but will prove to be profitable. Th income from which will also go back into the business.

Location and space required

I have found 3 possible locations, with the required workshop area large enough for 8 work bays, an area suitable for a retail area, separate from the workshop, and an office/smoko area, with toilet facilities.

- 1) 820 Karamu Rd, Mayfair, Hastings
- 2) 207 Ellison Rd, Central Hastings
- 3) 121 Stonycroft St, Camberly, Hastings

The average rent for these properties is currently \$42,000.00 per annum. The \$21,000.00 I have stated as the rent, is for 6 months, by which time I expect to be earning enough to support the workshop, and myself.

Funding

Other than the Waste Minimisation Grant, I am seeking funding through crowdfunding, via a Givealittle page <https://givealittle.co.nz/cause/re-new-nz> I am also selling my car, and soliciting funds from family and friends, and entering all competitions for small business start-up packages, such as the ANZ, BNZ and TSB small business competitions, as well as selling anything and everything of value, I can lay my hands on. As a new business, with no credit history, I sadly cannot access loans or overdrafts to help with the setup and start-up costs, and have depleted my savings.

This is a business opportunity I know can work, if I can get it established. Unfortunately, that requires capital I no longer have, so it will take longer to establish, without help.

This is where you come in. Go on. You know you want to. You can see it too.



Hawke's Bay Solid Waste Surveys

Prepared for
Hastings District Council and
Napier City Council
June 2022

Document quality control

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WASTE NOT CONSULTING

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HAWKE'S BAY SOLID WASTE SURVEYS - 2022

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1 Introduction

The Waste Minimisation Act 2008 requires territorial authorities to promote effective and efficient waste management and minimisation within their districts. As part of fulfilling these responsibilities, Hastings District Council and Napier City Council (the Councils) provide a range of waste management and minimisation services to their residents. These services include kerbside rubbish and recycling collections and the ownership of refuse transfer stations and Ōmarunui Landfill.

Section 43 of the Act requires territorial authorities to adopt a waste management and minimisation plan (WMMP) that provides objectives, policies, and methods for achieving effective and efficient waste management and minimisation. In accordance with these requirements, in 2018 the Councils adopted a new WMMP, *Joint Waste Management and Minimisation Plan 2018-2024*.

The 2018 WMMP recognises the importance of waste data, and includes a goal "to improve information on waste generation and movements in Napier and Hastings". One of the actions in the WMMP that will achieve this goal is to "Continue to undertake a solid waste survey of waste in Hastings District and Napier City at least every three years".

This report provides the results of a solid waste survey undertaken in 2022. The results of the 2022 solid waste survey will be included in the Councils' mandatory six-year review of the 2018 WMMP. Previously, solid waste surveys were contracted to Waste Not Consulting in 2007, 2009, 2012, 2016, and 2019.

For the 2022 solid waste survey, nine days of visual surveying were conducted at disposal facilities, with three days of surveying each at Redclyffe Refuse Transfer Station (RTS), Henderson Road RTS, and Ōmarunui Landfill. These visual surveys were augmented with a five-day sort-and-weigh audit that analysed the composition of the Councils' kerbside 120-litre rubbish wheelie bins from Hastings and Napier. The kerbside rubbish audit also included the contents of privately collected 240-litre wheelie bins, as it had in 2016 and 2019.

This report is structured as follows:

- Section 1.1 describes waste management services currently available in Hawke's Bay
- Section 2 provides the methodologies that were used for the kerbside rubbish audit and visual surveys at the transfer stations and landfill
- Section 3 presents the results of the kerbside rubbish audit of Hastings District Council's kerbside 120-litre rubbish wheelie bin collection and the visual survey of waste being disposed of at Henderson Road RTS
- Section 4 presents the results of the kerbside rubbish audit of Napier City Council's kerbside 120-litre rubbish wheelie bin collection and the visual survey of waste being disposed of at Redclyffe RTS
- Section 5 presents the results of the kerbside rubbish audit of privately collected 240-litre wheelie bins
- Section 6 presents the results of the visual survey at Ōmarunui Landfill
- Section 7 includes several waste metrics and compares the results of the 2022 solid waste survey with previous surveys.



1.1 Waste management services in Hawke's Bay

1.1.1 Services for the residential sector

Both Hastings District and Napier City Councils provide kerbside rubbish collections for urban residential and some commercial properties. Both Councils also operate refuse transfer stations for use by the public and commercial waste collectors. The Councils jointly own and manage Ōmarunui Landfill.

Both Napier City Council and Hastings District Council fund a weekly kerbside rubbish collection through a targeted rate. Both Councils provide residents with a 120-litre wheelie bin for the rubbish collection, which is collected weekly. The Hastings collection services are contracted to JJ's Waste & Recycling Ltd and the Napier collection services are contracted to Waste Management New Zealand.

Both Councils provide a kerbside recycling service for residential properties. The services are based on each residential property being allowed to set out three official recycling crates per week, the contents of which must be separated by material type. The collection services are contracted to Smart Environmental Ltd.

Kerbside collections of domestic rubbish and greenwaste, using wheelie bins, are available throughout the region from private waste operators, on a user-pays subscription basis. Different sizes of wheelie bins are available for residential use, ranging from 80-litres to 240-litres.

For occasional removal of large quantities of waste, residents have the option of using the services of a large number of private waste operators. Some of the waste operators provide gantry bins, of various sizes, for the householder to load themselves.

1.1.2 Services for the commercial sector

Hastings District Council operates a twice-weekly collection of 120-litre rubbish wheelie bins from the central business areas of Hastings and Havelock North. Napier City Council also operates a commercial 120-litre wheelie bin collection in Napier business districts between two and four times per week, depending on the area. Neither Council collects kerbside rubbish from industrial areas.

Outside of the central business districts, the Councils' kerbside recycling collection services are available to those businesses that are rated for the Council's kerbside rubbish collection services. For businesses that are not eligible for the Council service or that generate large quantities of recycling, recycling collections are available from private service providers.

Most trade waste generated by the commercial sector is removed by private waste operators or transported to a disposal facility by the business itself. Private waste operators offer a wide range of collection systems to meet the requirements of each business. Wheelie bins, front-loader bins, gantry skips, and hook bins are all available.

Commercial waste collected by private waste operators is disposed of at one of the three main waste disposal facilities - Henderson Road RTS, Redclyffe RTS, or directly to Ōmarunui Landfill.



1.1.3 Waste disposal facilities

There are three refuse transfer stations operating in the region. Henderson Road and Blackbridge RTS are owned by Hastings District Council. Henderson Road is the main transfer station for Hastings, and accepts both domestic and commercial waste seven days per week. Most of the Hastings kerbside rubbish collection is taken directly to Ōmarunui Landfill, but a small proportion is disposed of at Henderson Road RTS for inspection by staff or when the landfill is closed.

Henderson Road RTS

All waste loads at Henderson Rd RTS are weighed and charges are based on the weight of waste disposed of. General rubbish is charged at a rate of \$295.55/tonne and greenwaste at a rate of \$117.30/tonne as of 1 July 2022.

Henderson Road RTS includes a resource recovery centre that accepts and sells recovered household goods and provides drop-off areas for recyclable materials and pre-paid Hastings District Council orange rubbish bags. The facility has separate disposal areas at the transfer pit for a number of recoverable materials including drop-off points for the disposal of timber, scrap metal, cleanfill, and greenwaste. The residual waste is aggregated and disposed of at Ōmarunui Landfill.

Blackbridge RTS

Blackbridge RTS is open five days per week and accepts only domestic waste. The facility is managed and operated under contract by DJ Monty Holdings Ltd, trading as Bin Hire Co. Waste from the RTS is aggregated and transported to Bin Hire's yard where recoverable materials are separated. The residual refuse is aggregated with Bin Hire's other residual waste and disposed of at Ōmarunui Landfill.

Redclyffe RTS

Redclyffe RTS is the only transfer station in Napier City and accepts both domestic and commercial waste seven days per week. The Napier City Council kerbside rubbish collection is taken directly to Ōmarunui Landfill, and does not go through the transfer station.

Redclyffe RTS is owned by Napier City Council, with RTS operation and haulage of waste to Ōmarunui Landfill being contracted to Bin Hire Co. Rubbish disposal is charged at a rate of \$320/tonne, and greenwaste at a rate of \$125/tonne as of 1 July 2022.

There are separate drop-off areas at Redclyffe RTS for greenwaste, timber, scrap metal, and cleanfill. Before the weighbridge kiosk, there is a drop-off facility that accepts glass and plastic bottles, paper/cardboard, scrap metals, and steel/aluminium cans. Staff recover timber, scrap metals, tyres, plastic containers, and hard fill from the tipping floor.

Ōmarunui Landfill

Ōmarunui Landfill is the principal waste disposal facility for Hastings and Napier regions. The Class 1 landfill is jointly owned by Napier City and Hastings District Councils. It is closed to the public, and accepts waste from the three transfer stations and the commercial sector. All vehicles are weighed and charged on a per tonne basis. The notified gate charge is \$166.75/tonne for 'municipal refuse'. A minimum charge for municipal waste is currently \$308.20/load. Some special wastes are charged at \$212.75/tonne, with a minimum charge of \$319.70/load. Other types of special wastes are charged at \$356.50/tonne as of 1 July 2022.

2 Methodologies

2.1 Audit of kerbside rubbish

The kerbside rubbish audit methodology was based on Procedure One of the Ministry for the Environment's Solid Waste Analysis Protocol 2002 (SWAP). Execution of the kerbside rubbish audit was subcontracted by Waste Not Consulting to Marty Hoffart, of Waste Watchers Ltd.

2.1.1 Classification of kerbside rubbish

Classification of the contents of both sizes of wheelie bin was into the 12 primary categories identified in the SWAP and 25 secondary categories. The categories are detailed in Appendix 7. The classifications were chosen to identify the different types of recyclable and potentially recyclable materials present in kerbside rubbish.

2.1.2 Sample size

Conducted over a five-day period, the audit was designed to include the contents of 100 x 120-litre wheelie bins each from HDC and NCC kerbside rubbish collections and 50 privately collected 240-litre wheelie bins.

2.1.3 Sampling strategy

The composition and quantity of kerbside rubbish varies according to a number of factors, including the socio-economic status and ethnicity of the householder, the nature of the housing stock, and the range of disposal and recycling services available. To obtain a representative sample of kerbside rubbish from Hastings and Napier, the sample was collected from as wide a geographic area as possible. To do this, the kerbside rubbish sample was collected in a different area of Hastings and Napier each day for five days.

The contents of each wheelie bin included in the sample were tipped into a large plastic bag for transport.

2.1.4 Audit execution

The sample collection was undertaken each morning by a Waste Watchers Ltd staff member in a ute with a cage trailer, accompanied by a runner. The collected sample was transported to Henderson Road RTS each day for sorting. A six-by-six metre marquee was erected at the transfer station for that purpose.

A team comprising the Waste Watchers supervisor and three staff was used for the sorting process. All staff had received the requisite training on the requirements of the audit process and on health and safety procedures. All personal protective equipment was provided to staff, all of whom were employees of the Councils.

The contents of 120-litre wheelie bins from Hastings and Napier and the contents of 240-litre wheelie bins were sorted separately. The 120-litre wheelie bins sorted in sampling units of four bins and the 240-litre wheelie bins were sorted in sample of two bins. Each of the bags including the contents of a single wheelie bin in the sample unit was weighed in, the weight



recorded, and then the bags were opened, the contents spread on a sorting table, and the individual items sorted into the appropriate categories.

When all of the items were sorted, the individual classifications were weighed out and the material disposed of.

2.2 Surveys of transfer stations and landfill

Visual surveying, as undertaken by Waste Not Consulting, provides information on vehicle loads of waste entering a disposal facility in terms of composition of the waste load and the activity source of the waste load - the activity that generated the waste. The composition of waste is based on the 12 primary categories (e.g. paper, plastics etc.) recommended by SWAP. Further secondary categories were decided upon in conjunction with the Councils. A description of the categories is provided in Appendix 8.

2.2.1 Visual assessment of waste composition

While each vehicle was being unloaded at a disposal facility, the surveyor assessed the relative weight of each constituent present in the load on the basis of volume and density. Absolute weights were not estimated; rather, the proportion of weight represented by each material was estimated. This data was recorded as a proportion, by weight, for each constituent present in the load.

For vehicle loads in which it was difficult to distinguish the individual constituents, a generic composition, based on previous surveys of that type of vehicle load, were used as a template for the composition and were adjusted according to the materials that were visible.

At both of the transfer stations, some recoverable materials are removed from the waste stream by facility staff. In such instances, the recovered materials were *not* recorded as being a constituent of the waste and an estimate was made of the proportion, by weight, of the load that has been recovered.

Survey data was then combined with weighbridge records of the weight of the load, and a weight for each of the individual materials was calculated. For small loads that were not weighed at a weighbridge, an estimate of the load weight was made based on known averages for the specific vehicle and load activity source.

A total of nine days of visual surveying took place, three each at Henderson Road RTS, Redclyffe RTS, and Ōmarunui Landfill. Five days of the survey were conducted from 29 May to 2 June 2022 and four days from 29 June to 2 July 2022.

The surveyor undertook visual assessments of vehicles for nine hours per day (including breaks) for three days in each facility. Except during very busy periods, the surveyor was able to gather data on all vehicles disposing of waste during the survey hours at the facility.

2.2.2 Activity sources of waste loads entering disposal facilities

During the survey, the activity source of each waste load was assessed and recorded by the surveyor at the same time as the composition was being assessed and recorded. The activity source categories in the National Waste Data Framework were used. These are defined as follows:

1. **Kerbside rubbish** - waste collected from residential and commercial premises by private and council kerbside rubbish collections
2. **Residential** - All waste originating from residential premises, other than that covered by any of the other activity source categories. For example, a person arriving with a trailer load after cleaning out the garage would classify as residential waste.
3. **Industrial/commercial/institutional (ICI)** - Waste from industrial, commercial and institutional sources (i.e. supermarkets, shops, schools, hospitals, offices). For the purposes of the protocols illegal dumping and litter should be classified under ICI.
4. **Construction and demolition (C&D)** - Waste produced directly or incidentally by the construction and demolition industries. This includes building materials such as insulation, nails, plasterboard and timber, roofing materials, as well as waste originating from site preparation, such as dredging materials, tree stumps, and rubble.
5. **Landscaping** - Waste from landscaping activity and garden maintenance (including public gardens), both domestic and commercial, as well as from earthworks activity, unless the waste contains only virgin excavated natural materials, or unless the earthworks are for purposes of construction or demolition of a structure.
6. **Special wastes** - Waste that fits into significant, identifiable waste streams, usually from a single generator. Special wastes are those that cause particular management and/or disposal problems and need special care. This includes, but is not restricted, to hazardous and medical wastes (including e-wastes). It also includes any substantial waste stream (such as biosolids, infrastructure fill or industrial waste) that significantly affects the overall composition of the waste stream, and may be markedly different from waste streams at other disposal facilities.
7. **Virgin excavated natural materials (VENM)** - Material that when discharged to the environment will not have a detectable effect relative to the background and comprising virgin excavated natural materials, such as clay, soil, and rock that are free of:
 - manufactured materials such as concrete and brick, even though these may be inert
 - combustible, putrescible, degradable, or leachable components
 - hazardous substances or materials (such as municipal solid waste) likely to create leachate by means of biological breakdown
 - any products or materials derived from hazardous waste treatment, stabilisation or disposal practices
 - materials such as medical and veterinary waste, asbestos, or radioactive substances that may present a risk to human health if excavated
 - contaminated soil and other contaminated materials
 - liquid waste.

Using the weighbridge records for each load, the data collected during the survey was analysed to quantify the proportion of the waste stream in terms of each activity source of load and the composition of the waste originating from each activity source.

At Ōmarunui Landfill, spoil from on-site excavations is used as a daily cover over the exposed waste mass. This cover material has not been considered to be a waste material, as the waste levy is not paid on this material. This cover material has **not** been included in the survey.

2.2.3 Identification of vehicle types

As loads carried by different vehicle types are not affected in similar ways by waste reduction initiatives, vehicles carrying waste were classified according to the system shown in Table 2.1. Photos and more detailed explanations of the truck types are provided in Appendix 9.

Table 2.1 - Vehicle classification system

Vehicle type	Uses
Car-sized loads	Small loads, generally from a single source, can be of either commercial or residential origin. Includes all vehicles carrying very small loads, such as a van carrying a few rubbish bags.
Trailer-sized loads - including vans, small trucks, and utes	Small-medium sized loads, usually from a single source, either commercial or residential, some may be from multiple sources (i.e. a garden contractor)
Kerbside collection compactors	Large load usually from multiple regular sources, either residential or commercial or both combined
Front-loader trucks	Large loads, usually from numerous commercial sources that are regular users
Gantry trucks	Medium-large loads, usually from a single source, may be one-off disposal for residential or commercial waste, or regularly used by a commercial waste generator. Includes Hi-Ab trucks transporting skip bins or disposable rubbish bags.
Hook truck	Large loads, usually from a single source, may be one-off loads or regularly used by a large-scale waste generator.
Other trucks - including tip, box, and flat-deck	Medium to large loads, usually commercial, may be one off - loads or regular waste generators

2.3 Assumptions made regarding data and analysis

As not all householders set out rubbish each week, it can not be assumed that the kerbside rubbish collected from each household correlates to the weekly waste generation for that household. To determine a weekly kerbside rubbish generation figure, it is necessary to know how frequently, on average, households set out kerbside rubbish.

Waste generation is seasonal in terms of both quantity and composition. This is of particular significance for greenwaste. Care must be taken when comparing audit results from different seasons of the year.

Kerbside rubbish generation and waste management behaviour may be related in an unquantified manner to the socio-economic status, property type, and ethnicity of the household. It is assumed that the sample that was collected in each area was representative of the overall population of the area.

The disposal facility audits were undertaken for three days at each of the three main facilities in the region. The two transfer stations were both surveyed for two weekdays and one day on the weekend; the landfill was surveyed for three weekdays. It has been assumed that the results of these three days of surveying are representative of the waste entering the facility over an entire week.

3 Hastings District waste streams

3.1 Hastings kerbside 120-litre wheelie bin collection

3.1.1 Sampling schedule

The sample of Hastings kerbside 120-litre wheelie bins comprised the contents of 112 bins, which weighed a total of 1,348 kg. The sample was collected from Monday 27 June to Friday 1 July 2022, which was the week following the first Matariki public holiday (Friday 24 June).

3.1.2 Primary composition of Hastings kerbside 120-litre wheelie bins

The primary composition of Hastings kerbside 120-litre rubbish wheelie bins is presented in Table 3.1 and Figure 3.1 on the following page. The secondary composition, which includes all 25 categories, is given in Appendix 1.

The contents of the average 120-litre rubbish wheelie bin weighed 12.03 kg. As not all households set out a wheelie bin for collection every week, the average bin weight can not be regarded as equivalent to the average weekly waste disposal for the household.

Table 3.1 - Primary composition of Hastings kerbside 120-litre wheelie bins - June 2022

Hastings kerbside 120-litre wheelie bins - June 2022 (margins of error for 95% confidence level)	Proportion of total	Mean wt. per 120-litre bin
Paper	8.4% (±0.7%)	1.01 kg (±0.08 kg)
Plastics	7.3% (±0.4%)	0.88 kg (±0.05 kg)
Organics	51.4% (±5.5%)	6.19 kg (±0.66 kg)
Ferrous metals	2.0% (±0.4%)	0.24 kg (±0.05 kg)
Non-ferrous metals	0.7% (±0.1%)	0.09 kg (±0.01 kg)
Glass	5.1% (±1.3%)	0.61 kg (±0.16 kg)
Textiles	5.4% (±1.2%)	0.65 kg (±0.15 kg)
Sanitary paper	12.2% (±2.0%)	1.47 kg (±0.24 kg)
Rubble	5.2% (±1.9%)	0.63 kg (±0.23 kg)
Timber	1.5% (±0.8%)	0.18 kg (±0.09 kg)
Rubber	0.1% (±0.0%)	0.01 kg (±0.01 kg)
Potentially hazardous	0.7% (±0.1%)	0.08 kg (±0.02 kg)
TOTAL	100.0%	12.03 kg (±0.66 kg)

Organic material, primarily food waste, was the largest single component of Hastings kerbside 120-litre wheelie bins, comprising 51.4% of the total weight, or 6.19 kg per wheelie bin. Sanitary paper, 12.2% of the total weight, was the second largest component and Paper, 8.4%, the third largest.

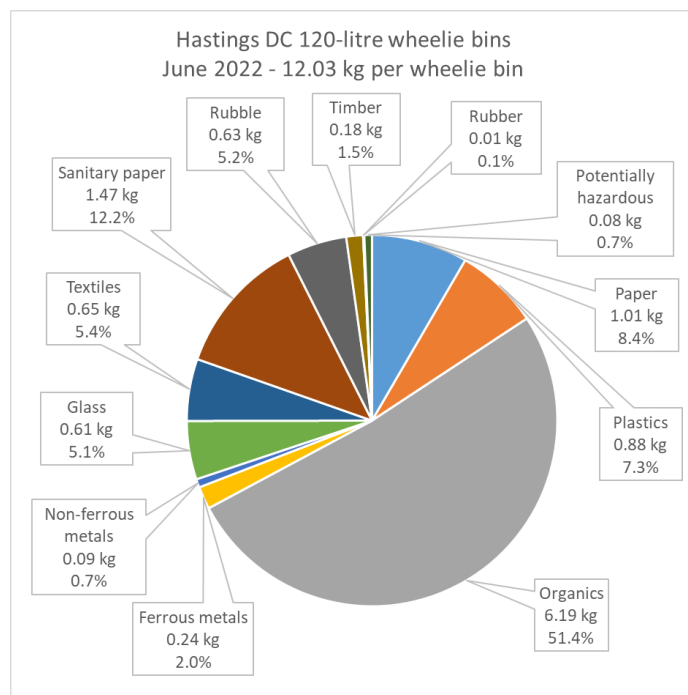


Figure 3.1 - Primary composition of Hastings kerbside rubbish 120-litre wheelie bins - June 2022

3.1.3 Distribution of kerbside 120-litre rubbish wheelie bin weights

The average Hastings 120-litre rubbish wheelie bin weight was 12.03 kg (± 0.66 kg at the 95% confidence level). The heaviest bin weighed 44.95 kg and the lightest weighed 1.71 kg. The distribution of 120-litre wheelie bin weights is shown in Figure 3.2 below.

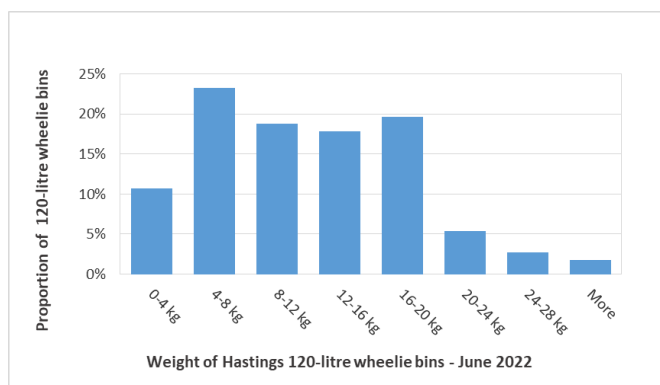


Figure 3.2 - Distribution of weights of Hastings kerbside rubbish 120-litre wheelie bins - June 2022

The contents of 34% of bins weighed less than 8 kg and the contents of 10% weighed more than 20 kg.

3.1.4 Diversion potential of Hastings kerbside 120-litre rubbish wheelie bins

A common means for local government to divert kerbside rubbish from landfill disposal is by providing systems for the collection of recyclable and compostable materials. Hastings District Council provides a kerbside recycling service to urban households in the District. While there is no Council-provided kerbside organics collection, private greenwaste collections are available and food waste and garden waste can be composted by residents.

Table 3.2 shows the proportion of Hastings kerbside 120-litre rubbish wheelie bins that could have been diverted using these methods. The table also shows the weight of materials per average wheelie bin that could have been diverted.

Table 3.2 - Diversion potential of Hastings kerbside 120-litre rubbish wheelie bins - June 2022

Hastings kerbside 120-litre wheelie bins - Diversion potential - June 2022	% of total	Kg per wheelie bin
Recyclable materials		
Paper - Recyclable	6.9%	0.83 kg
Plastics - # 1-2 containers	2.3%	0.27 kg
Ferrous metals - Steel cans	1.0%	0.11 kg
Non-ferrous metals - Aluminium cans	0.6%	0.07 kg
Glass - Bottles/jars	4.3%	0.52 kg
Subtotal	15.0%	1.81 kg
Compostable materials		
Organics - Food waste	41.7%	5.02 kg
Organics - Green waste	6.6%	0.80 kg
Subtotal	48.3%	5.82 kg
TOTAL - Potentially divertable	63.4%	7.62 kg

Of the materials in Hastings kerbside 120-litre rubbish wheelie bins, 15.0% could have been recycled through the Council kerbside recycling collection or at a RTS drop-off centre. Paper (6.9%, by weight) comprised nearly half of the recyclable materials. A further 48.3% could have been composted. In total, 63.4% of Hastings 120-litre rubbish wheelie bins could have been diverted from landfill disposal by either recycling or composting. This equates to 7.62 kg of waste in the average wheelie bin.

Other materials, such as clothing and other metals, are also recyclable but have not been included in these calculations.

3.2 Henderson Road Refuse Transfer Station

Henderson Road Refuse Transfer Station was surveyed on Thursday 2 June, Wednesday 29 June, and Saturday 2 July 2022. During this period, data was collected on 260 vehicle loads of waste. The data from vehicle loads (other than kerbside compactors) was used to determine the composition of the 'general' waste (i.e. excluding kerbside rubbish collections) disposed of at the facility. The majority of the Hastings District Council kerbside rubbish collection is disposed of at Ōmarunui Landfill. A small quantity of kerbside rubbish is disposed of at Henderson Road RTS by vehicles that have not completed their scheduled run before closing time at Ōmarunui Landfill or have been diverted to the RTS on occasion for inspection by staff.

The overall tonnage to landfill from Henderson Road RTS was taken from Ōmarunui Landfill disposal records for the periods 16 May - 10 July 2022. These records, which cover eight weeks in total, showed an average of 185 tonnes per week of waste from the transfer station was disposed of at Ōmarunui Landfill.

During the survey at Henderson Road RTS, all vehicles disposing of kerbside rubbish collections were identified and registration details recorded. Using the Henderson Road RTS weighbridge records, the total tonnage of kerbside rubbish collections was calculated. This total was deducted from the tonnage from Henderson Road RTS disposed of at Ōmarunui Landfill to determine the tonnage of general waste disposed of at the transfer station.

3.2.1 Activity source of waste loads in overall waste stream

As every vehicle load of waste was unloaded, the surveyor made an assessment of the activity source of the waste. The proportions of these are shown in Table 3.3. 'Kerbside rubbish' includes Hastings District Council and private kerbside rubbish collections and pre-paid orange bags dropped off at the resource recovery centre.

Table 3.3 - Activity sources of waste at Henderson Road RTS - 16 May - 10 July 2022

Activity sources of waste loads at Henderson Road RTS	% of loads surveyed	% of total weight	Tonnes per week
Construction & demolition (C&D)	20%	31%	57 T/week
Industrial/commercial/institutional (ICI)	15%	15%	28 T/week
Landscaping & earthworks	4%	5%	8 T/week
Residential	57%	34%	62 T/week
Subtotal - General waste	97%	85%	156 T/week
Kerbside rubbish	3%	15%	28 T/week
Special wastes	0%	0%	0 T/week
Transfer stations	0%	0%	0 T/week
TOTAL	100%	100%	185 T/week

C&D waste comprised 31% of the total waste, by weight; ICI waste, 15%, and landscaping and earthworks, 5%. Residential loads comprised more than half of all loads (57%) and represented 34% of the total weight. Kerbside rubbish collections comprised 3% of vehicle loads surveyed, but represented 15% of waste, by weight.

3.2.2 Primary composition of general and overall waste streams

The primary compositions of the general waste stream at Henderson Road RTS, which excludes kerbside rubbish (both Council and private), and the overall waste stream, which includes kerbside rubbish, are presented in Table 3.4 below and Figure 3.3 and Figure 3.4 on the following page. The secondary compositions, which include all 25 categories, are given in Appendix 3 in terms of both percentages and tonnes per week. The survey did not include material removed by transfer station staff from waste loads prior to disposal of the waste.

Table 3.4 - Primary composition of Henderson Road RTS waste - 16 May - 10 July 2022

Primary composition of waste at Henderson Road RTS	General waste (excludes kerbside rubbish collections)		Overall waste (includes kerbside rubbish collections)	
	% of total	Tonnes per week	% of total	Tonnes per week
Paper	6.3%	10 T/week	6.6%	12 T/week
Plastics	8.9%	14 T/week	8.7%	16 T/week
Organics	9.5%	15 T/week	15.9%	29 T/week
Ferrous metals	4.2%	7 T/week	3.8%	7 T/week
Non-ferrous metals	0.3%	0.5 T/week	0.4%	0.7 T/week
Glass	1.3%	2 T/week	1.9%	4 T/week
Textiles	14.2%	22 T/week	12.9%	24 T/week
Sanitary paper	1.3%	2 T/week	2.9%	5 T/week
Rubble	12.6%	20 T/week	11.5%	21 T/week
Timber	40.7%	64 T/week	34.7%	64 T/week
Rubber	0.6%	0.9 T/week	0.5%	0.9 T/week
Potentially hazardous	0.2%	0.3 T/week	0.3%	0.5 T/week
TOTAL	100.0%	156 T/week	100.0%	185 T/week

Timber was the largest component of both the general waste stream and the overall waste stream disposed of at Henderson Road RTS, comprising 40.7% of the former and 34.7% of the latter. Rubble was the second largest component of general waste, comprising 12.6% of the general waste stream. Organic material, which includes food waste and greenwaste, was the second largest component of the overall waste stream, comprising 15.9% of the total weight.

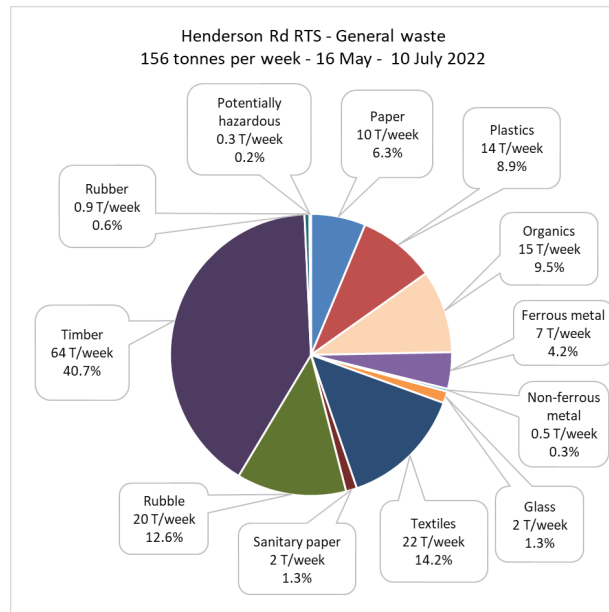


Figure 3.3 - Primary composition of Henderson Road RTS general waste -
16 May - 10 July 2022

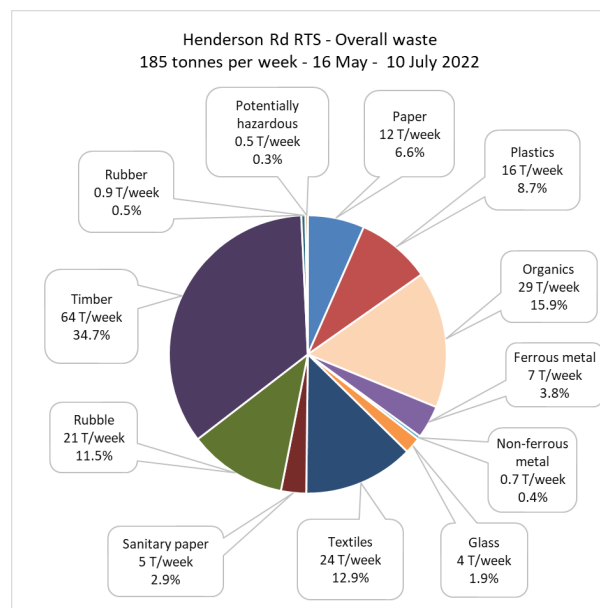


Figure 3.4 - Primary composition of Henderson Road RTS overall waste -
16 May - 10 July 2022

3.2.3 Primary composition - By activity source of waste load

The compositions of the four activity sources of waste loads that make up the general waste stream are shown in Table 3.5. Secondary compositions, including tonnes per week, are given in Appendix 3.

**Table 3.5 - Composition of Henderson Road RTS general waste -
By activity source of waste load - 16 May - 10 July 2022**

General waste at Henderson Road RTS	C&D	ICI	Landscaping	Residential
Paper	2.4%	13.8%	1.8%	7.0%
Plastics	4.4%	14.1%	3.0%	11.4%
Organics	0.8%	10.3%	39.3%	13.1%
Ferrous metals	0.9%	3.7%	0.0%	8.0%
Non-ferrous metals	0.0%	0.4%	0.0%	0.6%
Glass	0.5%	2.1%	0.0%	1.9%
Textiles	3.1%	20.5%	1.3%	23.3%
Sanitary paper	0.0%	2.3%	0.1%	2.1%
Rubble	27.2%	1.4%	19.6%	3.3%
Timber	60.6%	29.8%	33.8%	28.3%
Rubber	0.0%	1.3%	0.9%	0.7%
Potentially hazardous	0.1%	0.2%	0.0%	0.3%
TOTAL	100.0%	100.0%	100.0%	100.0%

3.2.4 Overall waste stream - By vehicle type

Table 3.6 shows the percentage of loads transported by each of the seven vehicle types described in section 2.2.3, the percentage of the total weight carried by each vehicle type, and the tonnes per week for each. The tonnes per week for compactors and gantry trucks have been taken directly from the weighbridge records. The tonnes per week for cars, other trucks, and trailers are based on the survey results.

Table 3.6 - Henderson Road RTS overall waste - by vehicle type - 16 May - 10 July 2022

Vehicle type at Henderson Road RTS	% of loads surveyed	% of weight	Tonnes/week
Car-sized loads	33%	8%	14 T/week
Compactors	3%	14%	26 T/week
Front loader	0%	0%	0 T/week
Gantry truck	7%	19%	36 T/week
Hook truck	0%	0%	1 T/week
Other truck	4%	10%	19 T/week
Trailer-sized loads	54%	48%	89 T/week
TOTAL	100.0%	100.0%	185 T/week

While 33% of all loads were car-sized, these loads represented only 8% of the total weight of waste. Fifty-four percent of the loads surveyed were trailer-sized loads, and these loads represented 48% of the total weight. Kerbside compactors transported 14% of the total weight, but represented only 3% of the loads surveyed.

3.2.5 Primary composition - By vehicle type

The compositions of the four main vehicle types transporting general waste are shown in Table 3.7. Secondary compositions are given in Appendix 3. The analysis does not include kerbside rubbish compactors, which do not transport general waste.

**Table 3.7 - Primary composition of Henderson Road RTS general waste -
By vehicle type - 16 May - 10 July 2022**

Composition by vehicle type	Car-sized loads	Gantry trucks	Other trucks	Trailer-sized loads
Paper	11.7%	7.3%	1.8%	5.9%
Plastics	17.1%	11.2%	3.6%	7.7%
Organics	28.2%	8.9%	2.7%	8.2%
Ferrous metals	5.5%	5.5%	3.1%	3.6%
Non-ferrous metals	1.1%	0.2%	0.0%	0.3%
Glass	2.8%	0.8%	0.3%	1.5%
Textiles	11.2%	9.0%	27.7%	14.1%
Sanitary paper	5.5%	0.7%	0.0%	1.1%
Rubble	2.6%	11.0%	7.5%	15.9%
Timber	12.7%	43.8%	53.4%	41.1%
Rubber	1.0%	1.3%	0.0%	0.3%
Potentially hazardous	0.6%	0.3%	0.0%	0.1%
TOTAL	100.0%	100.0%	100.0%	100.0%
Tonnes per week	14 T/week	36 T/week	19 T/week	89 T/week

3.2.6 Diversion potential

Of the 25 material classifications used in the visual survey, nine are commonly recycled or recovered in New Zealand. A further four materials are compostable. There are currently diversion options available in Hawke's Bay for most of these 13 materials. Based on these 13 materials, Table 3.8 shows the proportion of the overall waste disposed of at Henderson Road RTS that could potentially be diverted from landfill disposal. The individual material types shown are taken from Appendix 3.

Systems have been established at Henderson Road RTS for the separation and recovery of many of these recyclable and compostable materials. The facility has separate drop-off points for greenwaste, scrap metals, hardfill, timber, and other recoverable materials. Staff also manually separate recoverable materials, particularly timber, from the tipping floor.

The listed materials include food waste (which is present in ICI and residential waste). BioRich Composting Ltd is able to process food waste. New plasterboard is also able to be composted, although there is no options currently available in Hawke's Bay. Most types of timber can be used for hog fuel at Pan Pac.

**Table 3.8 - Henderson Road RTS overall waste -
Diversion potential - 16 May - 10 July 2022**

Diversion potential of overall waste at Henderson Road RTS (includes kerbside rubbish collections)	% of total	Tonnes /week
Recyclable and recoverable materials		
Paper - Recyclable	2.7%	5 T/week
Paper - Cardboard	2.7%	5 T/week
Plastic - Recyclable	0.6%	1 T/week
Ferrous metals	3.8%	7 T/week
Non-ferrous metals	0.4%	1 T/week
Glass - Recyclable	1.3%	2 T/week
Textiles - Clothing	3.7%	7 T/week
Rubble - Cleanfill	1.3%	2 T/week
Timber - Reusable	1.6%	3 T/week
Subtotal	18.1%	33 T/week
Compostable materials		
Organics - Food waste	9.5%	17 T/week
Organics - Compostable greenwaste	4.7%	9 T/week
Rubble - New plasterboard	0.3%	1 T/week
Timber - Untreated/unpainted	4.7%	9 T/week
Subtotal	19.2%	35 T/week
TOTAL - Potentially divertable	37.3%	69 T/week

Recyclable and recoverable materials comprised 18.1% of overall waste at Henderson Road RTS, or 33 tonnes/week. Compostable materials comprised 19.2% of overall waste to landfill, or 35 tonnes/week.

Overall, approximately 37.3% of overall waste, 69 tonnes/week, could have been diverted from landfill disposal. Food waste was the largest recoverable component, comprising 9.5% of the total weight.

The diversion rates presented in this section are theoretical maximums, as recovery systems are not capable of diverting 100% of a material from landfill disposal and some recovered materials may be in a condition that makes them unsuitable for diversion.

3.2.7 Divertable materials - By activity source

Waste minimisation initiatives can be directed at a specific material type, such as food waste, at a waste-generating activity, such as domestic activity, or at a combination of both, such as food waste in residential kerbside rubbish. In Table 3.9, the average weekly tonnage for the divertable materials in overall waste to landfill from Henderson Road RTS are broken down by activity source. The cells for the individual materials have been formatted from the lowest value (no shading) to the highest value (red shading).

**Table 3.9 - Overall waste to Henderson Road RTS- Divertable materials -
By activity source - 16 May - 10 July 2022**

Divertable materials - By activity source	Construction & demolition	ICI	Landscaping & earthworks	Residential	Kerbside rubbish
Paper - Recyclable	0.0 T/week	1.7 T/week	0.0 T/week	1.6 T/week	1.8 T/week
Paper - Cardboard	0.7 T/week	1.6 T/week	0.1 T/week	2.4 T/week	0.2 T/week
Plastic - Recyclable	0.0 T/week	0.2 T/week	0.0 T/week	0.2 T/week	0.8 T/week
Food waste	0.0 T/week	1.5 T/week	0.0 T/week	4.1 T/week	11.8 T/week
Compostable greenwaste	0.3 T/week	1.2 T/week	2.0 T/week	3.6 T/week	1.7 T/week
Ferrous metals	0.5 T/week	1.1 T/week	0.0 T/week	5.0 T/week	0.6 T/week
Non-ferrous metals	0.0 T/week	0.1 T/week	0.0 T/week	0.4 T/week	0.2 T/week
Glass - Recyclable	0.0 T/week	0.5 T/week	0.0 T/week	0.6 T/week	1.2 T/week
Textiles - Clothing	0.0 T/week	3.3 T/week	0.0 T/week	2.7 T/week	0.7 T/week
Rubble - Cleanfill	0.7 T/week	0.0 T/week	1.5 T/week	0.1 T/week	0.0 T/week
New plasterboard	0.4 T/week	0.0 T/week	0.0 T/week	0.2 T/week	0.0 T/week
Timber - Reusable	1.2 T/week	0.4 T/week	0.7 T/week	0.7 T/week	0.0 T/week
Timber - Untreated/unpainted	4.0 T/week	3.3 T/week	0.0 T/week	1.4 T/week	0.0 T/week
TOTAL	7.8 T/week	14.8 T/week	4.4 T/week	22.8 T/week	18.9 T/week

The largest weekly tonnage of divertable material in overall waste was food waste in kerbside rubbish (11.8 tonnes per week). Although kerbside rubbish was only 15% of waste disposed of at Henderson Road RTS (see section 3.2.1), food waste represented over 40% of kerbside rubbish (Appendix 1).

The second largest tonnage of divertable materials in overall waste at Henderson Road RTS was ferrous metal in residential waste (5.0 tonnes per week) and food waste in residential waste (4.1 tonnes per week). Although staff at Henderson Road RTS removed scrap metal from the tipping floor, they were not always able to remove the material before the loads are pushed up by the loader. Food waste in residential waste was mostly present in bagged rubbish.

4 Napier City waste streams

4.1 Napier kerbside 120-litre wheelie bin collection

4.1.1 Sampling schedule

The sample of Napier kerbside 120-litre rubbish wheelie bins comprised the contents of 112 bins with a total weight of 1,038 kg. The sample was collected from Monday 27 June to Friday 1 July 2022.

4.1.2 Primary composition of Napier kerbside 120-litre wheelie bins

The primary composition of Napier kerbside 120-litre wheelie bins is presented in Table 4.1 below and Figure 4.1 on the following page. The secondary composition, which includes all 25 categories, is given in Appendix 2.

The contents of the average 120-litre rubbish wheelie bin weighed 9.27 kg. As not all households set out a wheelie bin for collection every week, the average bin weight can not be regarded as equivalent to the average weekly waste disposal for the household.

Table 4.1 - Primary composition of Napier kerbside 120-litre wheelie bins - June 2022

Napier kerbside 120-litre wheelie bins - June 2022 (margins of error for 95% confidence level)	Proportion of total	Mean wt. per 120-litre bin
Paper	10.0% (±0.9%)	0.93 kg (±0.08 kg)
Plastics	9.6% (±0.5%)	0.89 kg (±0.05 kg)
Organics	45.9% (±3.5%)	4.25 kg (±0.33 kg)
Ferrous metals	1.5% (±0.3%)	0.14 kg (±0.03 kg)
Non-ferrous metals	1.2% (±0.3%)	0.11 kg (±0.03 kg)
Glass	3.8% (±0.8%)	0.35 kg (±0.08 kg)
Textiles	5.8% (±1.8%)	0.54 kg (±0.17 kg)
Sanitary paper	12.3% (±2.4%)	1.14 kg (±0.22 kg)
Rubble	6.7% (±3.4%)	0.62 kg (±0.32 kg)
Timber	1.0% (±0.3%)	0.10 kg (±0.03 kg)
Rubber	0.5% (±0.3%)	0.05 kg (±0.03 kg)
Potentially hazardous	1.7% (±0.6%)	0.16 kg (±0.05 kg)
TOTAL	100.0%	9.27 kg (±0.64 kg)

Organic material, primarily food waste, was the largest single component of the Napier kerbside 120-litre rubbish wheelie bin, comprising 45.9% of the total weight. Sanitary paper (12.3%) was the second largest component was paper (10.0%) was the third largest component.

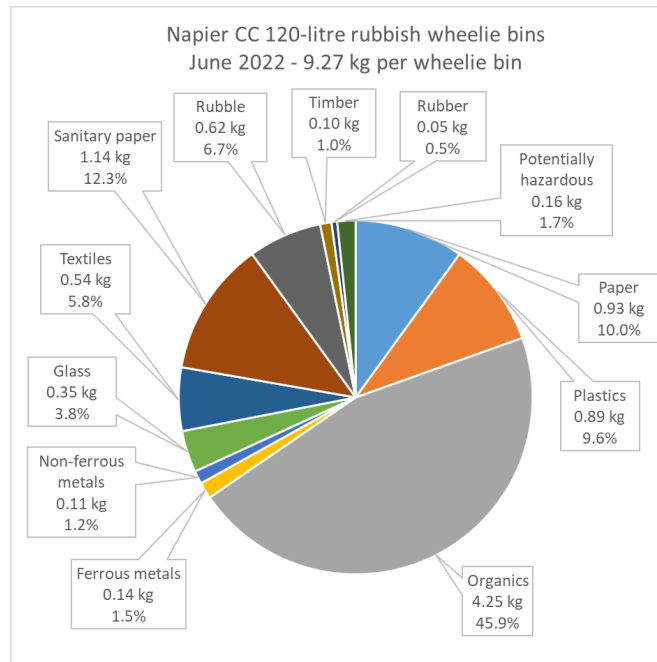


Figure 4.1 - Primary composition of Napier kerbside 120-litre wheelie bins - June 2022

4.1.3 Distribution of kerbside 120-litre wheelie bin weights

The average Napier 120-litre rubbish wheelie bin weight was 9.27 kg (± 0.64 kg at the 95% confidence level). The contents of the heaviest bin weighed 37.66 kg and the lightest weighed 0.75 kg. The distribution of 120-litre wheelie bin weights is shown Figure 4.2 below.

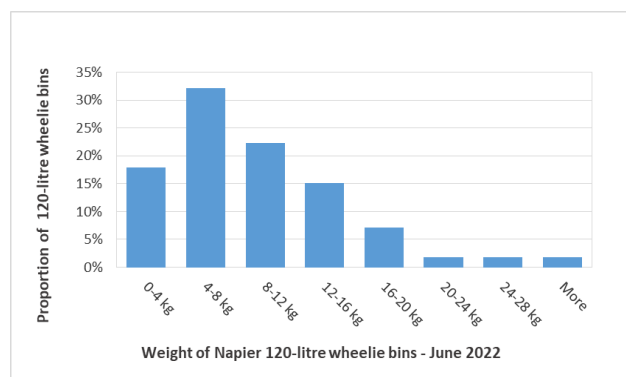


Figure 4.2 - Distribution of weights of Napier kerbside 120-litre wheelie bins - June 2022

The contents of 50% of bins weighed less than 8 kg and the contents of 5% weighed more than 20 kg.

4.1.4 Diversion potential of Napier kerbside 120-litre rubbish wheelie bins

A common means for local government to divert kerbside rubbish from landfill disposal is by providing systems for the collection of recyclable and compostable materials. Napier City Council provides a kerbside recycling service to households in the district and there is a recycling drop-off facility at Redclyffe RTS. While there is no Council-provided kerbside organics collection, private greenwaste collections are available and food waste and garden waste can be home-composted by residents.

Table 4.2 shows the percentages of materials in Napier kerbside 120-litre rubbish wheelie bins that could have been diverted using these methods. The table also shows the weight of materials per average wheelie bin that could have been diverted.

Table 4.2 - Diversion potential of Napier kerbside 120-litre rubbish wheelie bins - June 2022

Napier kerbside 120-litre wheelie bins - Diversion potential - June 2022	% of total	Kg per wheelie bin
Recyclable materials		
Paper - Recyclable	8.3%	0.77 kg
Plastics - # 1-2 containers	2.6%	0.24 kg
Ferrous metals - Steel cans	0.8%	0.08 kg
Non-ferrous metals - Aluminium cans	0.6%	0.06 kg
Glass - Bottles/jars	3.2%	0.29 kg
Subtotal	15.5%	1.44 kg
Compostable materials		
Organics - Food waste	37.0%	3.43 kg
Organics - Green waste	3.6%	0.34 kg
Subtotal	40.7%	3.77 kg
TOTAL - Potentially divertable	56.2%	5.21 kg

Of the materials in Napier kerbside 120-litre rubbish wheelie bins, 15.5% could have been recycled through the Council kerbside recycling collection or dropped off at a recycling facility. Paper (8.3%, by weight) comprised more than half of the recyclable materials.

A further 40.7% of materials, by weight, could have been composted. In total, 56.2% of Napier 120-litre rubbish wheelie bins could have been diverted from landfill disposal by either recycling or composting. This equates to 5.21 kg of waste in the average wheelie bin.

Other materials, such as clothing and other metals, are also recyclable but have not been included in these calculations.

4.2 Redclyffe Refuse Transfer Station

Redclyffe Refuse Transfer Station (RTS) was surveyed on Sunday 29 May, Tuesday 31 May, and Thursday 30 June 2022. During this period, data were collected on 269 vehicle loads of waste. The data from these vehicle loads were used to determine the composition of the overall waste disposed of at the facility. As no kerbside rubbish compactors disposed of waste at the facility during the survey, a separate breakdown of the 'general' waste stream (i.e. excluding kerbside rubbish collections) is not presented. Two compactor vehicles were included in the survey but both were disposing of litter, which is classified as ICI waste.

Average tonnage of waste to landfill from Redclyffe RTS was determined to be 115 tonnes/week, based on Ōmarunui Landfill disposal records for the period 16 May - 10 July 2022.

4.2.1 Activity sources of waste loads in overall waste stream

As every vehicle load of waste was unloaded, the surveyor assessed and recorded the activity source of the waste load. The proportion of these is shown in Table 4.3.

Table 4.3 - Activity sources of waste loads at Redclyffe RTS - 16 May - 10 July 2022

Activity source of waste load	% of loads surveyed	% of total weight	Tonnes/week
Construction & demolition	20%	36%	42 T/week
Industrial/commercial/institutional	13%	18%	21 T/week
Landscaping & earthworks	4%	6%	7 T/week
Residential	62%	39%	45 T/week
Subtotal - General waste	100%	100%	115 T/week
Kerbside rubbish collections	0%	0%	0 T/week
Special wastes	0%	0%	0 T/week
Transfer stations	0%	0%	0 T/week
TOTAL	100%	100%	115 T/week

C&D waste comprised 36% of the total weight of waste disposed of at Redclyffe RTS. Residential waste represented 39% of the total weight of waste and industrial/commercial/institutional loads comprised 18%. Landscaping represented 6% of the total weight of waste.

4.2.2 Primary composition of overall waste stream

The primary composition of the 115 tonne/week overall waste stream being disposed of from Redclyffe RTS, by proportion of total weight and tonnes per week, is presented in Table 4.4 and Figure 4.3 below. The secondary composition, which includes all 25 categories, is given in Appendix 4.

Table 4.4 - Primary composition of overall Redclyffe RTS waste - 16 May - 10 July 2022

Overall waste at Redclyffe RTS	% of total weight	Tonnes per week
Paper	7.9%	9 T/week
Plastics	11.7%	13 T/week
Organics	12.8%	15 T/week
Ferrous metals	2.8%	3 T/week
Non-ferrous metals	0.4%	0.5 T/week
Glass	1.3%	1 T/week
Textiles	16.1%	19 T/week
Sanitary paper	1.8%	2 T/week
Rubble	21.7%	25 T/week
Timber	20.9%	24 T/week
Rubber	2.4%	2.8 T/week
Potentially hazardous	0.2%	0.2 T/week
TOTAL	100.0%	115 T/week

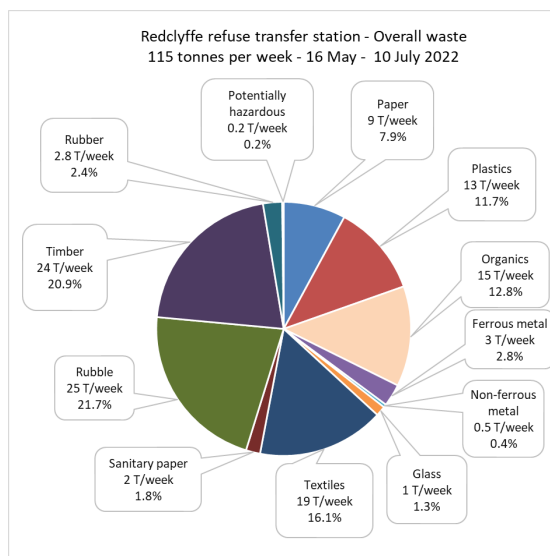


Figure 4.3 - Primary composition of overall Redclyffe RTS waste - 16 May - 10 July 2022

Rubble was the largest primary component of waste entering the Redclyffe RTS, comprising 21.7% of the total weight. Timber was the second largest component, comprising 20.9%.

4.2.3 Primary composition - By activity source of waste load

The primary compositions of the four different activity sources of waste loads disposed of at Redclyffe RTS are shown in Table 4.5. Secondary compositions are given in Appendix 4.

**Table 4.5 - Primary composition of overall Redclyffe RTS waste -
By activity source of waste load - 16 May - 10 July 2022**

Overall waste at Redclyffe RTS - by activity source	C&D	ICI	Landscaping	Residential
Paper	4.9%	15.0%	0.7%	8.5%
Plastics	7.1%	26.0%	1.4%	10.8%
Organics	1.5%	13.7%	56.1%	16.1%
Ferrous metals	1.5%	2.6%	0.2%	4.6%
Non-ferrous metals	0.0%	1.4%	0.1%	0.3%
Glass	0.0%	4.6%	0.0%	1.1%
Textiles	5.1%	11.7%	0.6%	31.0%
Sanitary paper	0.1%	4.4%	0.4%	2.4%
Rubble	50.0%	7.2%	0.5%	5.5%
Timber	29.7%	13.0%	2.9%	19.3%
Rubber	0.0%	0.2%	36.9%	0.3%
Potentially hazardous	0.1%	0.2%	0.0%	0.2%
TOTAL	100.0%	100.0%	100.0%	100.0%

4.2.4 Overall waste stream - By vehicle type

Table 4.6 shows the percentage of loads transported by each of the seven vehicle types described in section 2.2.3, the percentage of total weight carried by each vehicle type, and the tonnes per week. The tonnes per week for gantry trucks and compactors (all disposing of litter) are taken directly from weighbridge records. The weights for the other vehicle types are calculated from the survey results. No hook trucks disposed of waste at the site.

Table 4.6 - Redclyffe RTS overall waste - by vehicle type - 16 May - 10 July 2022

Vehicle types at Redclyffe RTS	% of loads surveyed	% of weight	Tonnes/week
Car-sized loads	42%	12%	14 T/week
Compactors	1%	4%	4 T/week
Front loaders	0%	0%	0 T/week
Gantry trucks	5%	23%	26 T/week
Hook trucks	0%	0%	0 T/week
Other trucks	5%	19%	22 T/week
Trailer-sized loads	47%	43%	49 T/week
TOTAL	100.0%	100.0%	115 T/week

While 42% of all loads were car-sized, these loads represented only 12% of the total weight of waste. Trailer-sized loads represented 47% of the loads surveyed and these loads represented 43% of the total weight. Gantry trucks transported 23% of the total weight.

4.2.5 Primary composition - By vehicle type

The primary compositions of the four vehicle types surveyed are shown in Table 4.7. Secondary compositions are given in Appendix 4. Compactors transporting litter are excluded from this analysis.

**Table 4.7 - Primary composition of overall Redclyffe RTS waste -
By vehicle type - 16 May - 10 July 2022**

Composition by vehicle type	Car-sized loads	Gantry trucks	Other trucks	Trailer-sized loads
Paper	11.9%	8.6%	1.7%	8.2%
Plastics	16.0%	14.1%	5.0%	12.1%
Organics	25.4%	3.6%	11.2%	11.5%
Ferrous metals	3.0%	5.8%	0.5%	2.7%
Non-ferrous metals	0.6%	0.7%	0.0%	0.2%
Glass	1.6%	2.2%	0.1%	0.5%
Textiles	20.4%	11.1%	2.6%	24.0%
Sanitary paper	4.4%	0.9%	0.2%	1.4%
Rubble	8.9%	25.2%	43.1%	16.4%
Timber	6.9%	27.6%	24.0%	22.6%
Rubber	0.5%	0.1%	11.7%	0.1%
Potentially hazardous	0.5%	0.1%	0.1%	0.2%
TOTAL	100.0%	100.0%	100.0%	100.0%
Tonnes per week	14 T/week	26 T/week	22 T/week	49 T/week

4.2.6 Diversion potential

Of the 25 material classifications used in the visual survey, nine are commonly recycled or recovered in New Zealand. A further four materials are compostable. There are currently diversion options available in Hawke's Bay for most of these 13 materials. Based on these 13 materials, Table 4.8 shows the proportion of the overall waste disposed of at Redclyffe RTS that could potentially be diverted from landfill disposal. The individual material types shown are taken from Appendix 4.

Systems have been established at Redclyffe RTS for the separation and recovery of many of these recyclable and compostable materials. The facility has separate drop-off points for greenwaste, scrap metals, hardfill, timber, and other recoverable materials. Staff also manually separate recoverable materials, particularly timber, from the tipping floor.



The listed materials include food waste (which is present in ICI and residential waste). BioRich Composting Ltd is able to process food waste. New plasterboard can also be composted, although this is limited to commercial users at Bio Rich. Most types of timber can be used for hog fuel at Pan Pac.

**Table 4.8 - Redclyffe RTS overall waste -
Diversion potential - 16 May - 10 July 2022**

Diversion potential of overall waste at Redclyffe RTS	% of total	Tonnes /week
Recyclable and recoverable materials		
Paper - Recyclable	2.3%	3 T/week
Paper - Cardboard	4.0%	5 T/week
Plastic - Recyclable	0.3%	0 T/week
Ferrous metals	2.8%	3 T/week
Non-ferrous metals	0.4%	0 T/week
Glass - Recyclable	0.8%	1 T/week
Textiles - Clothing	2.5%	3 T/week
Rubble - Cleanfill	2.8%	3 T/week
Timber - Reusable	0.1%	0 T/week
Subtotal	15.9%	18 T/week
Compostable materials		
Organics - Food waste	4.1%	5 T/week
Organics - Compostable greenwaste	7.1%	8 T/week
Rubble - New plasterboard	2.6%	3 T/week
Timber - Untreated/unpainted	2.7%	3 T/week
Subtotal	16.4%	19 T/week
TOTAL - Potentially divertable	32.3%	37 T/week

Recyclable and recoverable materials comprised 15.9% of overall waste at Redclyffe RTS, or 18 tonnes/week. Compostable materials comprised 16.4% of overall waste to landfill, or 19 tonnes/week.

Overall, approximately 32.3% of overall waste, 37 tonnes/week, could have been diverted from landfill disposal. Compostable greenwaste was the largest recoverable component, comprising 7.1% of the total weight.

The diversion rates presented in this section are theoretical maximums, as recovery systems are not capable of diverting 100% of a material from landfill disposal and some recovered materials may be in a condition that makes them unsuitable for diversion.

4.2.7 Divertable materials - By activity source

Waste minimisation initiatives can be directed at a specific material type, such as food waste, at a waste-generating activity, such as domestic activity, or at a combination of both, such as food waste in residential kerbside rubbish. In Table 4.9, the average weekly tonnage for the divertable materials in overall waste to landfill from Redclyffe RTS are broken down by activity source. The cells for the individual materials have been formatted from the lowest value (no shading) to the highest value (red shading).

**Table 4.9 - Overall waste to Redclyffe RTS- Divertable materials -
By activity source - 16 May - 10 July 2022**

Divertable materials - By activity source	Construction & demolition	ICI	Landscaping & earthworks	Residential
Paper - Recyclable	0.0 T/week	1.2 T/week	0.0 T/week	1.3 T/week
Paper - Cardboard	0.9 T/week	1.5 T/week	0.0 T/week	2.2 T/week
Plastic - Recyclable	0.0 T/week	0.2 T/week	0.0 T/week	0.1 T/week
Food waste	0.2 T/week	1.8 T/week	0.1 T/week	2.7 T/week
Compostable greenwaste	0.4 T/week	1.0 T/week	3.4 T/week	3.4 T/week
Ferrous metals	0.6 T/week	0.6 T/week	0.0 T/week	2.1 T/week
Non-ferrous metals	0.0 T/week	0.3 T/week	0.0 T/week	0.1 T/week
Glass - Recyclable	0.0 T/week	0.6 T/week	0.0 T/week	0.2 T/week
Textiles - Clothing	0.2 T/week	0.2 T/week	0.0 T/week	2.4 T/week
Rubble - Cleanfill	3.0 T/week	0.0 T/week	0.0 T/week	0.1 T/week
New plasterboard	2.9 T/week	0.0 T/week	0.0 T/week	0.1 T/week
Timber - Reusable	0.0 T/week	0.0 T/week	0.0 T/week	0.0 T/week
Timber - Untreated/unpainted	2.1 T/week	0.1 T/week	0.0 T/week	0.9 T/week
TOTAL	10.5 T/week	7.6 T/week	3.5 T/week	15.7 T/week

The largest tonnages of divertable material were compostable greenwaste in both landscaping and residential waste. There were 3.4 tonnes per week of compostable greenwaste in each.

The next largest tonnages of divertable materials in overall waste at Redclyffe RTS were in C&D waste - cleanfill (3.0 tonnes per week) and new plasterboard (2.9 tonnes per week).

5 240-litre kerbside rubbish wheelie bins

5.1 Sampling schedule

The sample of privately collected kerbside rubbish wheelie bins comprised the contents of 12 x 240-litre wheelie bins, the contents of which weighed a total of 250 kg. It had been planned that a sample of 5 x 240-litre wheelie bins would be collected on each of the five days of the audit. However, the sample collection team was not able to locate sufficient bins to meet that target. It is possible that the private waste collectors were no longer collecting in the same areas as the Councils' collections each day.

Permission to sample the wheelie bins was obtained from the private waste collectors before the sampling. The contents of the wheelie bins were tipped into large plastic bags for transport to Henderson Road RTS for sorting.

5.2 Primary composition of privately collected 240-litre kerbside wheelie bins

The primary composition of kerbside rubbish from 240-litre kerbside rubbish wheelie bins is presented in Table 5.1 and Figure 5.1 on the following page. The secondary composition, which includes all 25 categories, is given in Appendix 5.

Table 5.1 - Primary composition of privately collected 240-litre kerbside wheelie bins

Privately collected 240-litre wheelie bins (margins of error for 95% confidence level)	Proportion of total	Mean wt. per wheelie bin
Paper	9.1% (±2.0%)	1.90 kg (±0.41 kg)
Plastics	8.0% (±1.4%)	1.68 kg (±0.29 kg)
Organics	60.9% (±12.4%)	12.70 kg (±2.58 kg)
Ferrous metals	1.3% (±0.6%)	0.27 kg (±0.13 kg)
Non-ferrous metals	0.9% (±0.3%)	0.19 kg (±0.06 kg)
Glass	0.7% (±0.2%)	0.15 kg (±0.04 kg)
Textiles	3.3% (±1.1%)	0.70 kg (±0.23 kg)
Sanitary paper	11.7% (±4.6%)	2.44 kg (±0.96 kg)
Rubble	2.6% (±1.9%)	0.55 kg (±0.39 kg)
Timber	0.2% (±0.1%)	0.05 kg (±0.03 kg)
Rubber	0.0% (±0.0%)	0.01 kg (±0.00 kg)
Potentially hazardous	1.1% (±0.5%)	0.23 kg (±0.11 kg)
TOTAL	100.0%	20.87 kg (±2.84 kg)

The contents of the average 240-litre kerbside rubbish wheelie bin weighed 20.87 kg. Organic material was the largest single component of kerbside rubbish from 240-litre wheelie bins, comprising 60.9% of the total weight. Nearly half of the organic waste was greenwaste. Sanitary paper was the second largest component, 11.7% of the total weight, and paper, 9.1%, was the third largest component

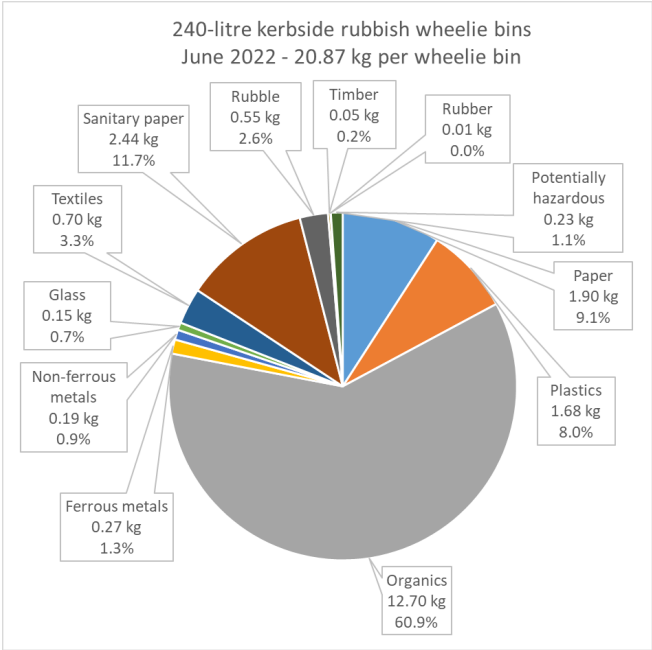


Figure 5.1 - Primary composition of 240-litre kerbside rubbish wheelie bins

5.2.1 Diversion potential of privately collected 240-litre rubbish wheelie bins

A common means for local government to divert kerbside rubbish from landfill disposal is by providing systems for the collection of recyclable and compostable materials. Both Napier City Council and Hastings District Council provide a kerbside recycling service to households and recycling drop-off facilities are available at the transfer stations. While there are no Council-provided kerbside organics collections, private greenwaste collections are available and food waste and garden waste can be home-composted by residents.

Table 4.2 shows the proportion of privately collected 240-litre rubbish wheelie bins that could have been diverted using these methods. The table also shows the weight of materials per average wheelie bin that could have been diverted.

Table 5.2 - Diversion potential of 240-litre kerbside rubbish wheelie bins - June 2022

Privately collected 240-litre wheelie bins - Diversion potential - June 2022	% of total	Kg per wheelie bin
Recyclable materials		
Paper - Recyclable	7.9%	1.65 kg
Plastics - # 1-2 containers	3.0%	0.63 kg
Ferrous metals - Steel cans	0.9%	0.19 kg
Non-ferrous metals - Aluminium cans	0.6%	0.12 kg
Glass - Bottles/jars	0.7%	0.14 kg
Subtotal	13.2%	2.75 kg
Compostable materials		
Organics - Food waste	29.4%	6.13 kg
Organics - Green waste	29.1%	6.08 kg
Subtotal	58.5%	12.21 kg
TOTAL - Potentially divertable	71.7%	14.96 kg

Of the materials in privately collected 240-litre rubbish wheelie bins, 13.2%, or 2.75 kg per bin, could have been recycled through the Councils' kerbside recycling collections or at a recycling facility. Paper (7.9%, by weight) comprised more than half of the recyclable materials. A further 58.5%, or 12.21 kg per bin, could have been composted. The compostable material was evenly split between food waste and greenwaste.

In total, 71.7% of privately collected 240-litre rubbish wheelie bins could have been diverted from landfill disposal by either recycling or composting. This equates to 14.96 kg of waste in the average 240-litre wheelie bin.

Other materials, such as clothing and other metals, are also recyclable but have not been included in these calculations.

6 Ōmarunui Landfill

6.1 Sources of levied waste to landfill

Waste entering Ōmarunui Landfill is composed of waste from two transfer stations (Henderson Road and Redclyffe), Hastings District Council kerbside rubbish collections, Napier City Council kerbside rubbish collections, private kerbside rubbish collections, and waste transported to landfill by commercial operators. Waste from Blackbridge RTS is not taken directly to the landfill as it is processed by a private waste operator prior to disposal.

The landfill was surveyed on Monday 30 May, Wednesday 1 June, and Friday 1 July 2022. Data was gathered on 174 loads of waste levy-paid residual waste, 79 of which were general or special waste. The other 96 loads were kerbside rubbish collections or from transfer stations.

Cover material that is sourced from within the landfill site and on which the waste levy is not paid, has *not* been included in this analysis.

As the compositions of the kerbside rubbish collections and waste from the two major transfer stations were determined directly by survey, the following sections initially analyse other waste that is transported directly to landfill. In the final sections, the overall levied waste stream, which includes the kerbside rubbish collections and transfer station waste, is analysed. Table 6.1 below and Figure 6.1 on the next page show the proportions of the different waste streams that were disposed of at Ōmarunui Landfill during the eight-week period 16 May - 10 July 2022 for which weighbridge data was analysed.

Table 6.1 - Sources of levied waste to Ōmarunui Landfill - 16 May - 10 July 2022

Sources of levied waste at Ōmarunui Landfill	% of total	Tonnes/week
Napier CC kerbside rubbish	10.4%	177 T/week
Hastings DC kerbside rubbish	9.3%	158 T/week
Private kerbside rubbish	13.2%	224 T/week
Redclyffe RTS	6.8%	115 T/week
Henderson Road RTS	10.9%	185 T/week
General waste direct to landfill	31.4%	533 T/week
Special waste direct to landfill	18.1%	308 T/week
TOTAL	100.0%	1,700 T/week

During the eight-week period for which the weighbridge records were analysed, an average of 1,700 tonnes per week of residual waste was disposed of at Ōmarunui Landfill. General waste disposed of directly to landfill was the single largest source of levied waste (533 T/week), comprising 31% of the total. Special wastes were the second largest source of waste, representing 18% of the total weight.

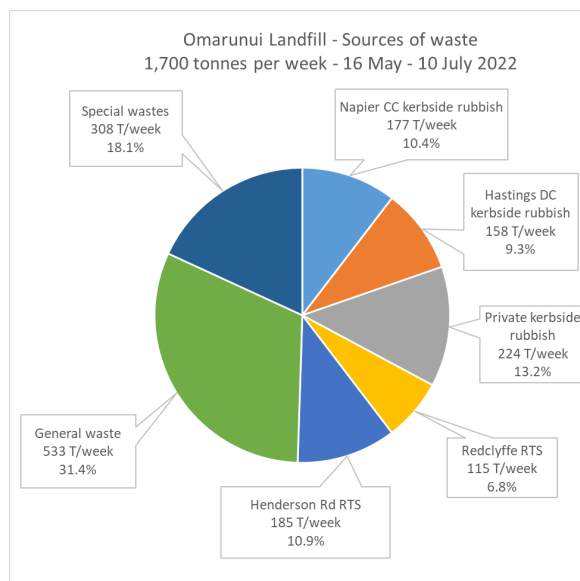


Figure 6.1 - Sources of levied waste to Ōmarunui Landfill - 16 May - 10 July 2022

6.2 General waste direct to landfill

6.2.1 Activity sources of general waste direct to landfill

The general waste stream entering Ōmarunui Landfill excludes kerbside rubbish collections (both Councils' and private), special wastes, and transfer station waste. Each load of general waste transported directly to Ōmarunui Landfill was categorised as one of four different activity sources. The proportions of the four activity sources that comprise the general waste stream are shown in Table 6.2 below.

Table 6.2 - General waste direct to landfill - By activity source - 16 May - 10 July 2022

Activity sources of general waste (excludes kerbside rubbish, special wastes, and transfer stations)	% of loads	% of weight	Tonnes/week
Construction and demolition	15%	6%	33 T/week
Industrial/commercial/institutional	85%	94%	500 T/week
Landscaping	0%	0%	0 T/week
Residential	0%	0%	0 T/week
TOTAL	100%	100%	533 T/week

Industrial/commercial/institutional waste comprised 94%, by weight, of general waste taken directly to landfill. The only other activity source of waste during the survey period was C&D waste, which comprised 6%, by weight, of general waste. There were no landscaping waste loads or loads of residential waste recorded during the survey. The compositions of C&D waste and ICI waste taken directly to Ōmarunui Landfill are provided in Appendix 6.

6.2.2 Primary composition of general waste direct to landfill

The primary composition of general waste taken directly to Ōmarunui Landfill is shown in Table 6.3 and Figure 6.2 below. The secondary composition is given in Appendix 6.

Table 6.3 - Primary composition of general waste direct to landfill - 16 May - 10 July 2022

General waste - Direct to landfill (excludes kerbside rubbish, special wastes, and transfer stations)	% of total	Tonnes per week
Paper	12.2%	65 T/week
Plastics	25.0%	133 T/week
Organics	21.8%	116 T/week
Ferrous metals	3.2%	17 T/week
Non-ferrous metals	0.8%	4.4 T/week
Glass	2.5%	13 T/week
Textiles	5.1%	27 T/week
Sanitary paper	6.5%	35 T/week
Rubble	8.0%	43 T/week
Timber	12.6%	67 T/week
Rubber	1.6%	8.3 T/week
Potentially hazardous	0.9%	4.5 T/week
TOTAL	100.0%	533 T/week

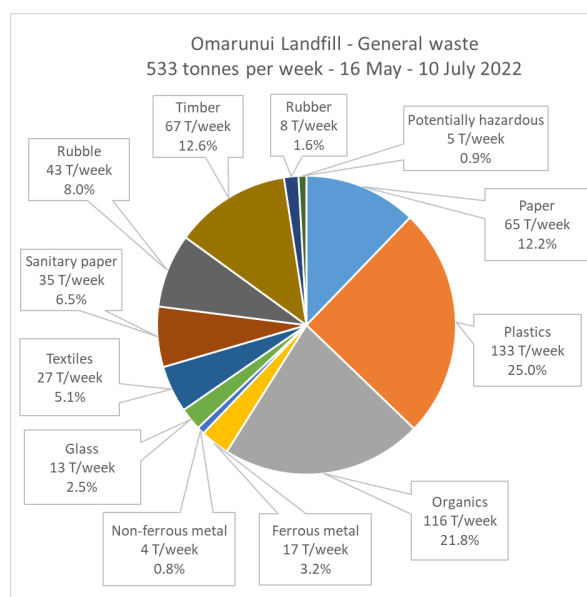


Figure 6.2 - Composition of general waste direct to Ōmarunui Landfill - 16 May - 10 July 2022



Plastics was the largest component of the general waste stream to landfill, comprising 25.0% of the total weight. Organic material was the second largest component, comprising 21.8% of the total weight.

6.3 Special wastes

The 12 product codes for special wastes recorded by the weighbridge at Ōmarunui landfill are shown in Table 6.4. Based on an assumed, homogeneous composition for each of these materials classifications, the composition of all special wastes combined has been calculated as shown in Appendix 6.

Table 6.4 - Product codes for special waste direct to landfill - 16 May - 10 July 2022

Special waste to landfill	% of total	Tonnes per week
Animal Disposal	0.0%	0.0 T/week
Asbestos	2.5%	7.8 T/week
Chemicals & Baits	0.0%	0.0 T/week
Chrome & Tannery Wastes	43.9%	135.3 T/week
Food Waste	15.1%	46.5 T/week
HDC Animal Disposal	0.0%	0.1 T/week
HDC Milliscreen	0.7%	2.2 T/week
NCC Animal Disposal	0.0%	0.1 T/week
NCC Milliscreen	1.5%	4.7 T/week
Offal - Meat Waste	7.2%	22.2 T/week
Road Sweepings	7.2%	22.2 T/week
Special Waste	21.7%	67.0 T/week
TOTAL	100.0%	308.2 T/week

As shown in Table 6.1, special wastes comprised 18.1% (308 tonnes/week) of the overall waste stream disposed of at Ōmarunui Landfill during the eight-week period analysed. As shown in the composition of special waste in Appendix 6, potentially hazardous materials comprised 64% of the special wastes and organic material, primarily cannery waste and fleshings/skins from a tannery, the other 36%. These proportions may change on a seasonal basis and other factors, such as the clearing of contaminated sites, may also affect the composition.

6.4 Overall waste stream to landfill

The composition of the overall waste stream is based on the proportions of the different waste streams given in Table 6.1. The composition for each waste source is combined in the proportions shown in that table.

Based on these assumptions, the primary composition of the overall waste stream to Ōmarunui Landfill is presented in Table 6.5 below. The secondary composition is given in Appendix 6.

Based on information provided by Hastings District Council, Ōmarunui Landfill accepted 91,903 tonnes of levied waste for the one-year period 1 July 2021 to 30 June 2022. In Table 6.5, the composition from the SWAP survey has been applied to this tonnage. The reliability of this extrapolation is uncertain, however, as it does not take seasonal variations in waste composition into account. The extrapolated results should be considered to be of an indicative nature only.

Table 6.5 - Primary composition of overall waste to Ōmarunui Landfill 16 May - 10 July 2022

Overall levied waste to Ōmarunui Landfill	% of total	Tonnes per week	Tonnes per annum (Indicative only)
Paper	8.1%	138 T/week	7,442 T/annum
Plastics	12.3%	209 T/week	11,309 T/annum
Organics	33.5%	570 T/week	30,816 T/annum
Ferrous metals	2.1%	36 T/week	1,945 T/annum
Non-ferrous metals	0.6%	10.9 T/week	587 T/annum
Glass	2.0%	34 T/week	1,860 T/annum
Textiles	5.6%	96 T/week	5,174 T/annum
Sanitary paper	6.4%	110 T/week	5,923 T/annum
Rubble	6.8%	115 T/week	6,204 T/annum
Timber	9.4%	160 T/week	8,650 T/annum
Rubber	0.8%	13.2 T/week	713 T/annum
Potentially hazardous	12.3%	208.6 T/week	11,280 T/annum
TOTAL	100.0%	1,700 T/week	91,903 T/annum

Organic material was the largest single component of the overall waste stream being disposed of at Ōmarunui Landfill, comprising 33.5% of the total weight. Plastics and potentially hazardous materials (primarily special wastes) were the second largest components, both comprising 12.3% of the total weight. The primary composition is shown in Figure 6.3 below.

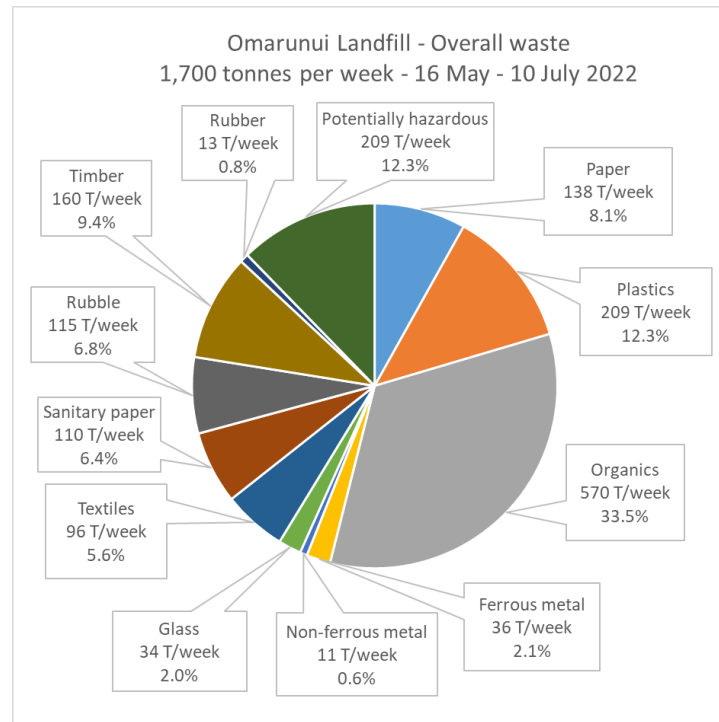


Figure 6.3 - Primary composition of overall waste to Omarunui Landfill - 16 May - 10 July 2022

6.4.1 Diversion potential

Omarunui Landfill is not consented for material recovery operations, other than the capture of landfill gas and the generation of electricity from the gas. Some tyres are stockpiled and removed from the site.

Of the 25 material classifications used in the visual survey, nine are commonly recycled or recovered in New Zealand. A further four materials are compostable. There are currently diversion options available in Hawke's Bay for most of these 13 materials. Based on these 13 materials, Table 6.6 shows the proportion of the general and overall waste streams disposed of at Omarunui Landfill that could potentially be diverted from landfill disposal. The individual material types shown are taken from Appendix 6.

Table 6.6 - Ōmarunui Landfill general and overall waste -
Diversion potential - 16 May - 10 July 2022

Diversion potential	% of total	Tonnes /week	% of total	Tonnes /week
	General waste		Overall waste	
Recyclable and recoverable materials				
Paper - Recyclable	3.6%	19 T/week	3.9%	66 T/week
Paper - Cardboard	4.4%	24 T/week	2.2%	38 T/week
Plastic - Recyclable	0.8%	4 T/week	1.4%	24 T/week
Ferrous metals	3.2%	17 T/week	2.1%	36 T/week
Non-ferrous metals	0.8%	4 T/week	0.6%	11 T/week
Glass - Recyclable	0.9%	5 T/week	1.3%	22 T/week
Textiles - Clothing	1.8%	10 T/week	1.8%	30 T/week
Rubble - Cleanfill	0.2%	1 T/week	0.4%	6 T/week
Timber - Reusable	0.7%	4 T/week	0.4%	6 T/week
Subtotal	16.4%	88 T/week	14.1%	240 T/week
Compostable materials				
Food waste	15.1%	80 T/week	20.4%	346 T/week
Compostable greenwaste	2.5%	13 T/week	6.1%	104 T/week
Rubble - New plasterboard	1.3%	7 T/week	0.6%	10 T/week
Timber - Untreated/unpainted	3.2%	17 T/week	1.7%	29 T/week
Subtotal	22.0%	117 T/week	28.8%	489 T/week
TOTAL - Potentially divertable	38.5%	205 T/week	42.9%	729 T/week

Recyclable and recoverable materials comprised 16.4% of general waste disposed of directly to Ōmarunui Landfill, and 14.1% of overall waste. Compostable materials comprised 22.0% of general waste and 28.8% of overall waste.

Approximately 38.5% of general waste, or 205 tonnes/week, could have been diverted from landfill disposal. Food waste was the largest recoverable component, comprising 15.1% of general waste, or 80 tonnes/week.

Approximately 42.9% of the overall waste stream, or 729 tonnes/week, could have been diverted from landfill disposal. Food waste was the largest recoverable component, comprising 20.4% of overall waste, or 346 tonnes/week.

The diversion rates presented in this section are theoretical maximums, as recovery systems are not capable of diverting 100% of a material from landfill disposal and some recovered materials may be in a condition that makes them unsuitable for diversion.

6.4.2 Divertable materials - By source categories

Waste minimisation initiatives can be directed at a specific material type, such as food waste, at a waste-generating activity, such as domestic activity, or at a combination of both, such as food waste in residential kerbside rubbish. In Table 6.7, the average weekly tonnage for the divertable materials in overall waste to Ōmarunui Landfill are broken down by the source categories used in Table 6.1. The analysis does not include waste from Henderson Road RTS or Redclyffe RTS. Waste from the transfer stations has been analysed in the same way in Table 3.9 and Table 4.9. In Table 6.7, the cells for the individual materials have been formatted from the lowest value (no shading) to the highest value (red shading).

**Table 6.7 - Overall waste to Ōmarunui Landfill - Divertable materials -
By source categories - 16 May - 10 July 2022**

Divertable materials - By source - Tonnes/week	C&D	ICI	Special	HDC kerbside	NCC kerbside	Private kerbside
Paper - Recyclable	0	19	0	10	13	16
Paper - Cardboard	0	24	0	1	1	2
Plastic - Recyclable	0	4	0	4	6	8
Food waste	0	80	47	66	65	66
Compostable greenwaste	0	13	0	9	6	59
Ferrous metals	1	16	0	3	3	3
Non-ferrous metals	0	4	0	1	2	2
Glass - Recyclable	0	5	0	7	6	2
Textiles - Clothing	0	10	0	4	4	3
Rubble - Cleanfill	0	1	0	0	0	0
New plasterboard	7	0	0	0	0	0
Timber - Reusable	1	3	0	0	0	0
Timber - Untreated/unpainted	2	15	0	0	0	0
TOTAL	10	195	47	106	106	160

The largest tonnage of divertable material, 80 tonnes per week, was food waste in ICI waste disposed of directly to landfill. A significant proportion of the food waste was from food processor. Special wastes also included 47 tonnes per week of food waste.

Food waste averaging 66 tonnes per week was disposed of in each of Hastings, Napier, and privately collected kerbside rubbish. Privately collected kerbside rubbish also included 59 tonnes per week of compostable greenwaste.

7 Discussion and analysis

7.1 Regional waste flows

Using data from the analyses presented in the previous sections, Figure 7.1 shows the major waste flows in Hawke's Bay. The tonnages are based on the survey results and weighbridge records from Ōmarunui Landfill, Henderson Road RTS, and Redclyffe RTS for the eight-week period in 16 May - 10 July 2022.

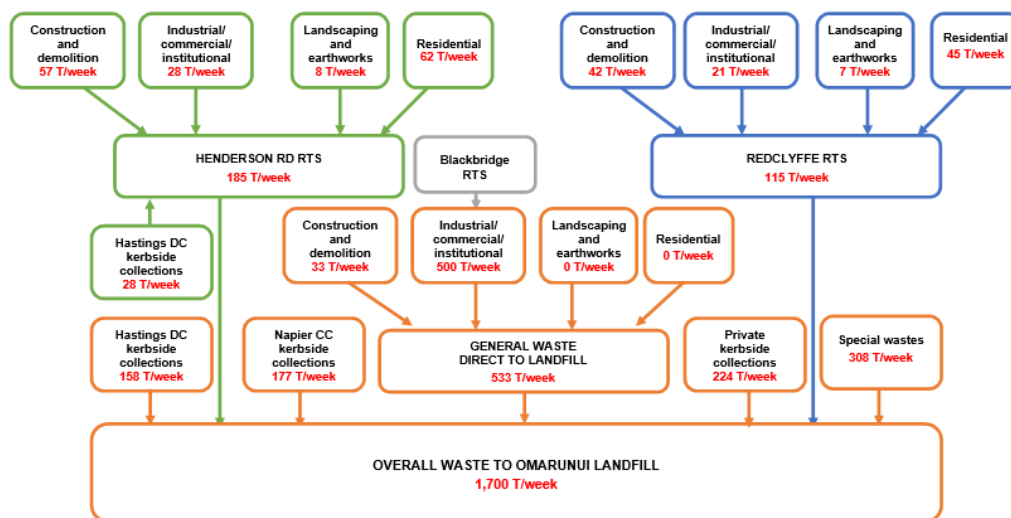


Figure 7.1 - Overall waste flows in Hawke's Bay - 16 May - 10 July 2022

7.2 Per capita disposal of kerbside rubbish

The per capita disposal of kerbside rubbish for residents of Hastings District and Napier City combined is calculated in Table 7.1. The totals for kerbside rubbish include both private and Council collections of both domestic and commercial refuse. The results from the 2022 data are compared to those from the 2019 SWAP survey.

Table 7.1 - Per capita disposal of kerbside rubbish

Per capita disposal of kerbside rubbish	2022	2019	% change
Combined population Hastings District and Napier City (Council data)	154,400	142,100	9%
<i>Hastings District Council kerbside rubbish</i>	<i>158 T/week</i>	<i>4 T/week</i>	<i>3693%</i>
<i>Napier City Council kerbside rubbish</i>	<i>177 T/week</i>	<i>128 T/week</i>	<i>38%</i>
<i>Privately collected kerbside rubbish</i>	<i>224 T/week</i>	<i>429 T/week</i>	<i>-48%</i>
Subtotal - Kerbside rubbish direct to Omarunui Landfill	558 T/week	562 T/week	-1%
Kerbside rubbish to Henderson Road RTS	26 T/week	34 T/week	-23%
Rural kerbside rubbish to Redclyffe RTS	0 T/week	6 T/week	-100%
Total kerbside rubbish per week	585 T/week	602 T/week	16%
Total kerbside rubbish per annum	30,480 tonnes	31,372 tonnes	-3%
Per capita disposal of kerbside rubbish	197 kg/capita/annum	221 kg/capita/annum	-11%

By extrapolating the weekly tonnage figures from the 2022 survey weighbridge analysis to an annual total, it is calculated that approximately 30,480 tonnes per annum of kerbside rubbish are disposed of to landfill from Hastings District and Napier City. This equates to 197 kg per person per annum for all kerbside rubbish, both residential and commercial.

Population figures provided by the Councils show the population of Napier/Hastings increased 9% between 2019 and 2021. The annual tonnage of kerbside rubbish decreased 3% between 2019 and 2022. This resulted in an 11% reduction in the per capita disposal of kerbside rubbish from 221 to 197 kg/capita/annum.

The Napier/Hastings kerbside rubbish disposal rate is compared to the disposal rates from other areas previously surveyed by Waste Not Consulting in Table 7.2.

Table 7.2 - Comparison of per capita disposal of kerbside rubbish

District and year of survey	Kg/capita/annum	Comment
Christchurch City 2011	110	Rates-funded fortnightly 140-litre wheelie bins (with weekly organic)
Hastings District/Napier City 2007	149	Rates-funded bags (2 bags h/h max) + User-pays rubbish bags + private wheelie bins
Whangarei District 2017	153	User-pays rubbish bags + private wheelie bins
Auckland Council 2016	156	User-pays rubbish bags + rates-funded wheelie bin + private wheelie bins
Bay of Plenty Region 2020	160	Various
Dunedin City 2018	187	User-pays rubbish bags + private wheelie bins
Tauranga and WBOP District 2019	192	User-pays rubbish bags + private wheelie bins
Hastings District/Napier City 2022	197	Rates-funded 120-litre wheelie bins + private wheelie bins
Hamilton City 2017	197	Rates-funded bags (2 per h/h max)
Wellington Region 2014/15	206	User-pays rubbish bags + private wheelie bins
Palmerston North 2017	201	User-pays rubbish bags + private wheelie bins
Hastings District/Napier City 2012	214	Rates-funded bags (2 bags h/h max) + User-pays rubbish bags + private wheelie bins
Hastings District/Napier City 2019	221	Rates-funded bags (2 bags h/h max) + User-pays rubbish bags + private wheelie bins
Hastings District/Napier City 2016	225	Rates-funded bags (2 bags h/h max) + User-pays rubbish bags + private wheelie bins
Hastings District/Napier City 2009	227	Rates-funded bags (2 bags h/h max) + User-pays rubbish bags + private wheelie bins
Taupo District 2017	243	User-pays rubbish bags + private wheelie bins

7.3 Per capita disposal of levied waste to landfill

The per capita disposal of levied waste to Ōmarunui Landfill by residents of Napier City and Hastings District is calculated as shown in Table 7.3 below. In the table, the 2022 per capita figure is compared to the results from the 2019 SWAP survey.

Table 7.3 - Per capita disposal of levied waste to landfill

Per capita disposal of levied waste	2022	2019	% change
Combined population Hastings and Napier	154,400	142,100	9%
Levied waste to landfill per annum	91,903 T/annum	89,455 T/annum	3%
Per capita disposal of waste to landfill	0.595 T/capita/annum	0.630 T/capita/annum	-6%



The per capita disposal of levied waste decreased 6% between 2019 and 2022, from 0.630 to 0.595 tonnes per capita per annum. The 2022 figure is compared to disposal figures from previous SWAP surveys in Hawke's Bay and from other local authorities previously surveyed by Waste Not Consulting in Table 7.4. In all cases, the tonnage figures are for all levied waste and include special wastes.

Table 7.4 - Hawke's Bay disposal rates compared to other local authorities

Overall waste to landfill including special wastes (excluding cover materials)	Tonnes per capita per annum
Waimakariri District 2017	0.325
Invercargill City 2018	0.528
Palmerston North 2017	0.545
Kāpiti Coast District 2017	0.546
Napier/Hastings 2016	0.548
Dunedin City 2018	0.554
Tauranga and WBOP District 2020	0.560
Napier/Hastings 2012	0.590
Napier/Hastings 2022	0.595
Wellington region 2016	0.608
Napier/Hastings 2019	0.630
Napier/Hastings 2009	0.652
New Zealand (to September 2020)	0.663
Taupō District 2017	0.673
Hamilton City 2017	0.718
Napier/Hastings 2007	0.810
Queenstown Lakes District 2020	0.833
Auckland region 2016	1.053

The per capita disposal rate for Napier/Hastings has varied between a high of 0.810 tonnes/capita/annum in 2007 and a low of 0.548 tonnes/capita/annum in the 2016 survey. The 2022 figure of 0.595 tonnes/capita/annum was the third lowest of the six surveys.

7.4 Comparisons to previous audit results

In July 2007, November 2009, March 2012, April 2016, May 2019, and March/April 2022, audits of Hastings and Napier waste streams were undertaken by Waste Not Consulting, using methodologies very similar to those used for the 2022 project. Comparisons between the results of the six survey programmes are presented in the following sections.

7.4.1 Activity source of waste loads at Henderson Road RTS

Table 7.5 compares the activity sources of all waste loads, by tonnes per week, disposed of at Henderson Road RTS during the six solid waste surveys.

Table 7.5 - Activity sources of waste loads - Henderson Road RTS - 2007 - 2022

Comparison of activity sources of waste loads - Tonnes/week Henderson Road RTS	2007	2009	2012	2016	2019	2022
Construction & demolition	58	52	16	41	72	57
Industrial/commercial/institutional	101	40	68	62	57	28
Kerbside rubbish collections	178	181	169	39	34	28
Landscaping & earthworks	37	29	9	9	11	8
Residential	98	52	37	45	43	62
TOTAL	473	355	299	197	217	185

Between 2007 and 2022, the weekly tonnage at Henderson Road RTS declined from 473 tonnes to 185 tonnes, a decrease of 61%. Most of the decrease is likely to be associated with the Hastings District Council kerbside collection and many commercial waste collections now being disposed of directly to Ōmarunui Landfill. C&D waste and ICI waste decreased in 2022 compared to 2019 while residential waste increased.

7.4.2 Activity source of waste loads at Redclyffe RTS

Table 7.6 compares the activity sources of waste loads, by tonnes per week, disposed of at Redclyffe RTS during the six solid waste surveys.

Table 7.6 - Activity sources of waste loads - Redclyffe RTS - 2007 - 2022

Comparison of activity sources of waste loads - Tonnes/week Redclyffe RTS	2007	2009	2012	2016	2019	2022
Construction & demolition	112	67	48	43	55	42
Industrial/commercial/institutional	82	50	27	57	42	21
Kerbside rubbish collections	0	16	3	3	6	0
Landscaping & earthworks	42	73	15	23	9	7
Residential	54	63	44	39	48	45
TOTAL	291	269	136	164	160	115

Between 2007 and 2022, the weekly tonnage of waste disposed of to landfill from Redclyffe RTS declined from 291 tonnes to 115 tonnes, a decrease of 60%.

As with Henderson Road RTS, much of the change in tonnages may be associated with pricing differentials between the disposal facilities in the region. As with Henderson Road RTS, C&D waste increased substantially in 2019 then decreased in 2022.

7.4.3 Sources of waste loads at Ōmarunui Landfill

Table 7.7 compares the sources of waste loads, by tonnes per week, disposed of at Ōmarunui Landfill during the six surveys.

Table 7.7 - Sources of waste loads - Ōmarunui Landfill - 2007 - 2022

Comparison of sources of waste loads - Tonnes/week Ōmarunui Landfill	2007	2009	2012	2016	2019	2022
Hastings kerbside collections	0	0	4	4	4	158
Napier kerbside collections	175	134	131	135	128	177
Private kerbside collections	163 ⁽¹⁾	242	239	409	429	212
Subtotal kerbside collections	338 ⁽¹⁾	376	374	549	562	558
Redclyffe RTS	292	269	136	164	160	115
Blackbridge RTS	55	30	19	19	17	0
Henderson Road RTS	473	355	299	197	217	185
General direct to landfill	646 ⁽¹⁾	441	408	446	503	533
Special direct to landfill	162	180	272	138	290	308
TOTAL	1,966	1,651	1,508	1,513	1,748	1,700

(1) Differs from figures in 2007 report

During the 2022 survey period, an average of 1,700 tonnes of waste were disposed of per week at Ōmarunui Landfill. This was a 3% decrease from 2019.

Between 2007 and 2019, there was a significant increase in the proportion of the kerbside market held by private waste collectors. This trend reversed between 2019 and 2022 with the introduction of rates-funded wheelie bin collections in both Napier and Hastings. Table 7.8 shows the market share of the Council and private waste operators from 2007 to 2022 and the per capita disposal rate of kerbside rubbish, as determined by the SWAP surveys.

Table 7.8 - Relationship between kerbside rubbish market share and per capita disposal

Market share	2007	2009	2012	2016	2019	2022
Council collections	78%	48%	51%	30%	27%	61%
Private collection	22%	52%	49%	70%	73%	39%
Kg/capita/annum	149	227	214	225	221	194

In general terms, as the share of privately collected kerbside rubbish increased, the per capita disposal rate of kerbside rubbish also increased. This is associated with the high proportion of divertable materials, particularly greenwaste, in privately collected 240-litre wheelie bins. The change to rates-funded wheelie bins corresponds to an increase in 2022 of the Councils' share of the kerbside rubbish market and a decrease in the per capita disposal rate.

7.4.4 Activity source of waste generated in Hawke's Bay

Table 7.9 compares the activity sources of waste loads, by tonnes per week, disposed of at all three transfer stations and Ōmarunui Landfill during the six solid waste surveys.

It is noted that "kerbside rubbish collections" includes both the Council and private kerbside collections from both residential and commercial properties.

Table 7.9 - Activity sources of waste loads - all facilities combined

Comparison of activity sources of waste loads - Tonnes per week - All facilities combined	2007	2009	2012	2016	2019	2022
Construction & demolition	208	164	66	100	195	132
Industrial/commercial/institutional	808	506	496	565	545	550
Kerbside rubbish collections	516	573	546	591	602	587
Landscaping & earthworks	94	106	25	33	22	16
Residential	179	122	103	86	95	107
Special waste	162	180	272	138	290	308
TOTAL	1,966	1,651	1,508	1,513	1,748	1,700

Between 2007 and 2012, the weekly tonnage of C&D waste decreased but then increased in 2016 and again in 2019. The marked decrease in 2012 could be associated with a slowdown in construction activity following the global financial crisis of 2008. C&D waste increased 95% between 2016 and 2019 but then decreased in 2022. A portion of the decrease in 2022 is associated with the recovery of timber at both Redclyffe and Henderson Road RTS.

The tonnage of ICI waste has been consistent in the three surveys since 2016.

The reduction in landscaping waste over the fifteen-year period is likely to be associated with improved greenwaste recovery facilities at the transfer stations and the increase in waste disposal charges. The quantity of landscaping waste can also be influenced by weather conditions during the survey period.

Appendix 1 - Hastings 120-litre rubbish wheelie bins

Hastings District Council Kerbside 120-litre rubbish wheelie bins June 2022 (margins of error for 95% confidence interval)		% of total	Weight per 120-litre wheelie bin
Paper	Recyclable	6.9% (±0.6%)	0.83 kg (±0.07 kg)
	Non-recyclable	1.5% (±0.2%)	0.18 kg (±0.02 kg)
	Subtotal	8.4% (±0.7%)	1.01 kg (±0.08 kg)
Plastics	# 1,2 containers	2.3% (±0.2%)	0.27 kg (±0.03 kg)
	# 5 containers	0.5% (±0.1%)	0.06 kg (±0.01 kg)
	# 3,4,6,7 containers	0.5% (±0.1%)	0.06 kg (±0.01 kg)
	Non-recyclable containers	0.9% (±0.2%)	0.10 kg (±0.02 kg)
	Plastic bags/film	2.8% (±0.2%)	0.34 kg (±0.02 kg)
	Other non-recyclable	0.4% (±0.2%)	0.04 kg (±0.02 kg)
	Subtotal	7.3% (±0.4%)	0.88 kg (±0.05 kg)
Organics	Food waste	41.7% (±4.5%)	5.02 kg (±0.54 kg)
	Greenwaste	6.6% (±2.9%)	0.80 kg (±0.35 kg)
	Organic other	3.1% (±0.7%)	0.37 kg (±0.09 kg)
	Subtotal	51.4% (±5.5%)	6.19 kg (±0.66 kg)
Ferrous metals	Steel cans	1.0% (±0.1%)	0.11 kg (±0.02 kg)
	Steel other	1.0% (±0.4%)	0.12 kg (±0.05 kg)
	Subtotal	2.0% (±0.4%)	0.24 kg (±0.05 kg)
Non ferrous metals	Aluminium cans	0.6% (±0.1%)	0.07 kg (±0.01 kg)
	Other non-ferrous	0.2% (±0.0%)	0.02 kg (±0.00 kg)
	Subtotal	0.7% (±0.1%)	0.09 kg (±0.01 kg)
Glass	Bottles/jars	4.3% (±1.1%)	0.52 kg (±0.14 kg)
	Non-recyclable	0.8% (±0.3%)	0.09 kg (±0.04 kg)
	Subtotal	5.1% (±1.3%)	0.61 kg (±0.16 kg)
Textiles	Clothing/textiles	2.6% (±0.5%)	0.31 kg (±0.06 kg)
	Multimaterial/other	2.8% (±0.9%)	0.34 kg (±0.11 kg)
	Subtotal	5.4% (±1.2%)	0.65 kg (±0.15 kg)
Sanitary paper		12.2% (±2.0%)	1.47 kg (±0.24 kg)
Rubble		5.2% (±1.9%)	0.63 kg (±0.23 kg)
Timber		1.5% (±0.8%)	0.18 kg (±0.09 kg)
Rubber		0.1% (±0.0%)	0.01 kg (±0.01 kg)
Potentially hazardous	Household	0.6% (±0.1%)	0.07 kg (±0.02 kg)
	Other	0.1% (±0.1%)	0.01 kg (±0.01 kg)
	Subtotal	0.7% (±0.1%)	0.08 kg (±0.02 kg)
TOTAL		100.0%	12.03 kg (±0.66 kg)

Appendix 2 - Napier 120-litre rubbish wheelie bins

Napier City Council Kerbside 120-litre rubbish wheelie bins June 2022 (margins of error for 95% confidence interval)		% of total	Weight per household set out
Paper	Recyclable	8.3% (±0.9%)	0.77 kg (±0.08 kg)
	Non-recyclable	1.6% (±0.2%)	0.15 kg (±0.02 kg)
	Subtotal	10.0% (±0.9%)	0.93 kg (±0.08 kg)
Plastics	# 1,2 containers	2.6% (±0.3%)	0.24 kg (±0.03 kg)
	# 5 containers	0.6% (±0.1%)	0.06 kg (±0.01 kg)
	# 3,4,6,7 containers	0.7% (±0.1%)	0.06 kg (±0.00 kg)
	Non-recyclable containers	1.7% (±0.4%)	0.16 kg (±0.04 kg)
	Plastic bags/film	3.7% (±0.2%)	0.34 kg (±0.02 kg)
	Other non-recyclable	0.3% (±0.1%)	0.03 kg (±0.01 kg)
	Subtotal	9.6% (±0.5%)	0.89 kg (±0.05 kg)
Organics	Food waste	37.0% (±2.7%)	3.43 kg (±0.25 kg)
	Greenwaste	3.6% (±1.7%)	0.34 kg (±0.15 kg)
	Multimaterial/other	5.2% (±1.6%)	0.49 kg (±0.15 kg)
	Subtotal	45.9% (±3.5%)	4.25 kg (±0.33 kg)
Ferrous metals	Steel cans	0.8% (±0.1%)	0.08 kg (±0.01 kg)
	Steel other	0.7% (±0.2%)	0.06 kg (±0.02 kg)
	Subtotal	1.5% (±0.3%)	0.14 kg (±0.03 kg)
Non-ferrous metals	Aluminium cans	0.6% (±0.1%)	0.06 kg (±0.01 kg)
	Other non-ferrous	0.6% (±0.3%)	0.06 kg (±0.03 kg)
	Subtotal	1.2% (±0.3%)	0.11 kg (±0.03 kg)
Glass	Bottles/jars	3.2% (±0.8%)	0.29 kg (±0.07 kg)
	Non-recyclable	0.7% (±0.3%)	0.06 kg (±0.02 kg)
	Subtotal	3.8% (±0.8%)	0.35 kg (±0.08 kg)
Textiles	Clothing/textiles	2.2% (±0.7%)	0.20 kg (±0.06 kg)
	Multimaterial/other	3.6% (±1.5%)	0.34 kg (±0.14 kg)
	Subtotal	5.8% (±1.8%)	0.54 kg (±0.17 kg)
Sanitary paper		12.3% (±2.4%)	1.14 kg (±0.22 kg)
Rubble		6.7% (±3.4%)	0.62 kg (±0.32 kg)
Timber		1.0% (±0.3%)	0.10 kg (±0.03 kg)
Rubber		0.5% (±0.3%)	0.05 kg (±0.03 kg)
Potentially hazardous	Household	0.9% (±0.1%)	0.09 kg (±0.01 kg)
	Other	0.7% (±0.6%)	0.07 kg (±0.05 kg)
	Subtotal	1.7% (±0.6%)	0.16 kg (±0.05 kg)
TOTAL		100.0%	9.27 kg (±0.64 kg)

Appendix 3 - Henderson Road RTS

Henderson Road RTS General and overall waste streams - 16 May - 10 July 2022		General waste (excludes kerbside rubbish collections)		Overall waste (includes kerbside rubbish collections)	
		% of total	Tonnes per week	% of total	Tonnes per week
Paper	Recyclable	2.1%	3 T/week	2.7%	5 T/week
	Cardboard	3.1%	5 T/week	2.7%	5 T/week
	Non-recyclable	1.1%	2 T/week	1.1%	2 T/week
	Subtotal	6.3%	10 T/week	6.6%	12 T/week
Plastics	Recyclable	0.2%	0 T/week	0.6%	1 T/week
	Non-recyclable	8.7%	14 T/week	8.0%	15 T/week
	Subtotal	8.9%	14 T/week	8.7%	16 T/week
Organics	Food waste	3.6%	6 T/week	9.5%	17 T/week
	Compostable greenwaste	4.5%	7 T/week	4.7%	9 T/week
	Non-compostable greenwaste	0.7%	1 T/week	0.7%	1 T/week
	Multimaterial/other	0.7%	1 T/week	1.0%	2 T/week
	Subtotal	9.5%	15 T/week	15.9%	29 T/week
Ferrous metals	Primarily ferrous	1.7%	3 T/week	1.6%	3 T/week
	Multimaterial/other	2.5%	4 T/week	2.3%	4 T/week
	Subtotal	4.2%	7 T/week	3.8%	7 T/week
Non-ferrous metals		0.3%	1 T/week	0.4%	1 T/week
Glass	Recyclable	0.7%	1 T/week	1.3%	2 T/week
	Multimaterial/other	0.6%	1 T/week	0.7%	1 T/week
	Subtotal	1.3%	2 T/week	1.9%	4 T/week
Textiles	Clothing/textiles	3.8%	6 T/week	3.7%	7 T/week
	Multimaterial/other	10.4%	16 T/week	9.2%	17 T/week
	Subtotal	14.2%	22 T/week	12.9%	24 T/week
Sanitary paper		1.3%	2 T/week	2.9%	5 T/week
Rubble	Cleanfill	1.5%	2 T/week	1.3%	2 T/week
	New plasterboard	0.4%	1 T/week	0.3%	1 T/week
	Other	10.7%	17 T/week	9.9%	18 T/week
	Subtotal	12.6%	20 T/week	11.5%	21 T/week
Timber	Reusable	1.8%	3 T/week	1.6%	3 T/week
	Unpainted & untreated	5.5%	9 T/week	4.7%	9 T/week
	Non-recoverable	33.3%	52 T/week	28.4%	52 T/week
	Subtotal	40.7%	64 T/week	34.7%	64 T/week
Rubber		0.6%	1 T/week	0.5%	1 T/week
Potentially hazardous		0.2%	0 T/week	0.3%	0 T/week
TOTAL		100.0%	156 T/week	100.0%	185 T/week

Henderson Road RTS - General waste stream - By activity source of waste load - 16 May - 10 July 2022		C&D	ICI	Landscaping	Residential
Paper	Recyclable	0.1%	6.0%	0.1%	2.5%
	Cardboard	1.2%	5.7%	1.7%	3.8%
	Non-recyclable	1.1%	2.1%	0.0%	0.7%
	Subtotal	2.4%	13.8%	1.8%	7.0%
Plastics	Recyclable	0.0%	0.6%	0.0%	0.3%
	Non-recyclable	4.4%	13.5%	3.0%	11.1%
	Subtotal	4.4%	14.1%	3.0%	11.4%
Organics	Food waste	0.0%	5.3%	0.5%	6.6%
	Compostable greenwaste	0.5%	4.1%	24.2%	5.7%
	Non-compostable greenwaste	0.3%	0.1%	7.5%	0.4%
	Organic other	0.0%	0.8%	7.2%	0.4%
	Subtotal	0.8%	10.3%	39.3%	13.1%
Ferrous metals	Primarily ferrous	0.6%	1.7%	0.0%	2.9%
	Multimaterial/other	0.2%	2.0%	0.0%	5.1%
	Subtotal	0.9%	3.7%	0.0%	8.0%
Non-ferrous metals		0.0%	0.4%	0.0%	0.6%
Glass	Recyclable	0.0%	1.7%	0.0%	1.0%
	Non-recyclable	0.5%	0.5%	0.0%	0.9%
	Subtotal	0.5%	2.1%	0.0%	1.9%
Textiles	Clothing/textiles	0.0%	11.6%	0.0%	4.4%
	Multimaterial/other	3.1%	8.9%	1.3%	18.9%
	Subtotal	3.1%	20.5%	1.3%	23.3%
Sanitary paper		0.0%	2.3%	0.1%	2.1%
Rubble	Cleanfill	1.2%	0.1%	18.0%	0.2%
	New plasterboard	0.8%	0.0%	0.0%	0.3%
	Other	25.2%	1.3%	1.6%	2.9%
	Subtotal	27.2%	1.4%	19.6%	3.3%
Timber	Reusable	2.1%	1.3%	7.9%	1.1%
	Unpainted & untreated	6.9%	11.8%	0.0%	2.2%
	Non-recoverable	51.6%	16.7%	25.9%	25.1%
	Subtotal	60.6%	29.8%	33.8%	28.3%
Rubber		0.0%	1.3%	0.9%	0.7%
Potentially hazardous		0.1%	0.2%	0.0%	0.3%
TOTAL		100.0%	100.0%	100.0%	100.0%

Henderson Road RTS - General waste stream - By activity source of waste load - 16 May - 10 July 2022		C&D	ICI	Landscaping	Residential
Paper	Recyclable	0.0 T/week	1.7 T/week	0.0 T/week	1.6 T/week
	Cardboard	0.7 T/week	1.6 T/week	0.1 T/week	2.4 T/week
	Non-recyclable	0.6 T/week	0.6 T/week	0.0 T/week	0.4 T/week
	Subtotal	1.4 T/week	3.9 T/week	0.2 T/week	4.4 T/week
Plastics	Recyclable	0.0 T/week	0.2 T/week	0.0 T/week	0.2 T/week
	Non-recyclable	2.5 T/week	3.8 T/week	0.3 T/week	6.9 T/week
	Subtotal	2.5 T/week	4.0 T/week	0.3 T/week	7.1 T/week
Organics	Food waste	0.0 T/week	1.5 T/week	0.0 T/week	4.1 T/week
	Compostable greenwaste	0.3 T/week	1.2 T/week	2.0 T/week	3.6 T/week
	Non-compostable greenwaste	0.2 T/week	0.0 T/week	0.6 T/week	0.3 T/week
	Organic other	0.0 T/week	0.2 T/week	0.6 T/week	0.2 T/week
	Subtotal	0.5 T/week	2.9 T/week	3.3 T/week	8.2 T/week
Ferrous metals	Primarily ferrous	0.4 T/week	0.5 T/week	0.0 T/week	1.8 T/week
	Multimaterial/other	0.1 T/week	0.6 T/week	0.0 T/week	3.2 T/week
	Subtotal	0.5 T/week	1.1 T/week	0.0 T/week	5.0 T/week
Non-ferrous metals		0.0 T/week	0.1 T/week	0.0 T/week	0.4 T/week
Glass	Recyclable	0.0 T/week	0.5 T/week	0.0 T/week	0.6 T/week
	Non-recyclable	0.3 T/week	0.1 T/week	0.0 T/week	0.5 T/week
	Subtotal	0.3 T/week	0.6 T/week	0.0 T/week	1.2 T/week
Textiles	Clothing/textiles	0.0 T/week	3.3 T/week	0.0 T/week	2.7 T/week
	Multimaterial/other	1.8 T/week	2.5 T/week	0.1 T/week	11.8 T/week
	Subtotal	1.8 T/week	5.8 T/week	0.1 T/week	14.5 T/week
Sanitary paper		0.0 T/week	0.7 T/week	0.0 T/week	1.3 T/week
Rubble	Cleanfill	0.7 T/week	0.0 T/week	1.5 T/week	0.1 T/week
	New plasterboard	0.4 T/week	0.0 T/week	0.0 T/week	0.2 T/week
	Other	14.4 T/week	0.4 T/week	0.1 T/week	1.8 T/week
	Subtotal	15.5 T/week	0.4 T/week	1.7 T/week	2.1 T/week
Timber	Reusable	1.2 T/week	0.4 T/week	0.7 T/week	0.7 T/week
	Unpainted & untreated	4.0 T/week	3.3 T/week	0.0 T/week	1.4 T/week
	Non-recoverable	29.5 T/week	4.7 T/week	2.2 T/week	15.7 T/week
	Subtotal	34.6 T/week	8.4 T/week	2.9 T/week	17.7 T/week
Rubber		0.0 T/week	0.4 T/week	0.1 T/week	0.4 T/week
Potentially hazardous		0.0 T/week	0.1 T/week	0.0 T/week	0.2 T/week
TOTAL		57 T/week	28 T/week	8 T/week	62 T/week



HAWKE'S BAY SOLID WASTE SURVEYS - 2022

Item 7

Henderson Road RTS - Overall waste stream - by vehicle type - 16 May - 10 July 2022		Cars	Gantry trucks	Other trucks	Trailers
Paper	Recyclable	6.0%	0.7%	0.6%	2.4%
	Cardboard	4.6%	4.2%	1.3%	2.8%
	Non-recyclable	1.1%	2.4%	0.0%	0.7%
	Subtotal	11.7%	7.3%	1.8%	5.9%
Plastics	Recyclable	0.7%	0.1%	0.0%	0.3%
	Non-recyclable	16.4%	11.1%	3.6%	7.4%
	Subtotal	17.1%	11.2%	3.6%	7.7%
Organics	Food waste	20.0%	1.7%	0.0%	2.6%
	Compostable greenwaste	7.0%	6.6%	2.7%	3.6%
	Non-compostable greenwaste	0.6%	0.0%	0.0%	1.1%
	Multimaterial/other	0.7%	0.5%	0.0%	0.9%
	Subtotal	28.2%	8.9%	2.7%	8.2%
Ferrous metals	Primarily ferrous	1.4%	2.8%	1.1%	1.4%
	Multimaterial/other	4.1%	2.7%	2.0%	2.3%
	Subtotal	5.5%	5.5%	3.1%	3.6%
Non-ferrous metals		1.1%	0.2%	0.0%	0.3%
Glass	Recyclable	1.2%	0.4%	0.0%	0.9%
	Non-recyclable	1.5%	0.4%	0.3%	0.7%
	Subtotal	2.8%	0.8%	0.3%	1.5%
Textiles	Clothing/textiles	3.9%	1.3%	20.4%	1.4%
	Multimaterial/other	7.3%	7.6%	7.2%	12.7%
	Subtotal	11.2%	9.0%	27.7%	14.1%
Sanitary paper		5.5%	0.7%	0.0%	1.1%
Rubble	Cleanfill	0.3%	0.1%	5.5%	1.4%
	New plasterboard	0.1%	0.2%	0.0%	0.6%
	Other	2.2%	10.7%	2.0%	13.9%
	Subtotal	2.6%	11.0%	7.5%	15.9%
Timber	Reusable	0.3%	1.7%	5.6%	1.4%
	Unpainted & untreated	0.7%	10.9%	14.8%	2.1%
	Non-recoverable	11.8%	31.3%	33.0%	37.7%
	Subtotal	12.7%	43.8%	53.4%	41.1%
Rubber		1.0%	1.3%	0.0%	0.3%
Potentially hazardous		0.6%	0.3%	0.0%	0.1%
TOTAL		100.0%	100.0%	100.0%	100.0%

Henderson Road RTS - Overall waste stream - by vehicle type - 16 May - 10 July 2022		Cars	Gantry trucks	Other trucks	Trailers
Paper	Recyclable	1 T/week	0 T/week	0 T/week	2 T/week
	Cardboard	1 T/week	2 T/week	0 T/week	2 T/week
	Non-recyclable	0 T/week	1 T/week	0 T/week	1 T/week
	Subtotal	2 T/week	3 T/week	0 T/week	5 T/week
Plastics	Recyclable	0 T/week	0 T/week	0 T/week	0 T/week
	Non-recyclable	2 T/week	4 T/week	1 T/week	7 T/week
	Subtotal	2 T/week	4 T/week	1 T/week	7 T/week
Organics	Food waste	3 T/week	1 T/week	0 T/week	2 T/week
	Compostable greenwaste	1 T/week	2 T/week	0 T/week	3 T/week
	Non-compostable greenwaste	0 T/week	0 T/week	0 T/week	1 T/week
	Multimaterial/other	0 T/week	0 T/week	0 T/week	1 T/week
	Subtotal	4 T/week	3 T/week	0 T/week	7 T/week
Ferrous metals	Primarily ferrous	0 T/week	1 T/week	0 T/week	1 T/week
	Multimaterial/other	1 T/week	1 T/week	0 T/week	2 T/week
	Subtotal	1 T/week	2 T/week	1 T/week	3 T/week
Non-ferrous metals		0 T/week	0 T/week	0 T/week	0 T/week
Glass	Recyclable	0 T/week	0 T/week	0 T/week	1 T/week
	Non-recyclable	0 T/week	0 T/week	0 T/week	1 T/week
	Subtotal	0 T/week	0 T/week	0 T/week	1 T/week
Textiles	Clothing/textiles	1 T/week	0 T/week	4 T/week	1 T/week
	Multimaterial/other	1 T/week	3 T/week	1 T/week	11 T/week
	Subtotal	2 T/week	3 T/week	5 T/week	13 T/week
Sanitary paper		1 T/week	0 T/week	0 T/week	1 T/week
Rubble	Cleanfill	0 T/week	0 T/week	1 T/week	1 T/week
	New plasterboard	0 T/week	0 T/week	0 T/week	1 T/week
	Other	0 T/week	4 T/week	0 T/week	12 T/week
	Subtotal	0 T/week	4 T/week	1 T/week	14 T/week
Timber	Reusable	0 T/week	1 T/week	1 T/week	1 T/week
	Unpainted & untreated	0 T/week	4 T/week	3 T/week	2 T/week
	Non-recoverable	2 T/week	11 T/week	6 T/week	34 T/week
	Subtotal	2 T/week	16 T/week	10 T/week	37 T/week
Rubber		0 T/week	0 T/week	0 T/week	0 T/week
Potentially hazardous		0 T/week	0 T/week	0 T/week	0 T/week
TOTAL		14 T/week	36 T/week	19 T/week	89 T/week

Appendix 4 - Redclyffe RTS

Redclyffe RTS - Overall waste stream - 16 May - 10 July 2022		% of total	Tonnes per week
Paper	Recyclable	2.3%	3 T/week
	Cardboard	4.0%	5 T/week
	Non-recyclable	1.6%	2 T/week
	Subtotal	7.9%	9 T/week
Plastics	Recyclable	0.3%	0 T/week
	Non-recyclable	11.4%	13 T/week
	Subtotal	11.7%	13 T/week
Organics	Food waste	4.1%	5 T/week
	Compostable greenwaste	7.1%	8 T/week
	Non-compostable greenwaste	1.4%	2 T/week
	Other organic	0.2%	0 T/week
	Subtotal	12.8%	15 T/week
Ferrous metals	Primarily ferrous	0.6%	1 T/week
	Multimaterial/other	2.3%	3 T/week
	Subtotal	2.8%	3 T/week
Non-ferrous metals		0.4%	0 T/week
Glass	Recyclable	0.8%	1 T/week
	Non-recyclable	0.5%	1 T/week
	Subtotal	1.3%	1 T/week
Textiles	Clothing/textiles	2.5%	3 T/week
	Multimaterial/other	13.6%	16 T/week
	Subtotal	16.1%	19 T/week
Sanitary paper		1.8%	2 T/week
Rubble	Cleanfill	2.8%	3 T/week
	New plasterboard	2.6%	3 T/week
	Other	16.4%	19 T/week
	Subtotal	21.7%	25 T/week
Timber	Reusable	0.1%	0 T/week
	Unpainted & untreated	2.7%	3 T/week
	Non-recoverable	18.2%	21 T/week
	Subtotal	20.9%	24 T/week
Rubber		2.4%	3 T/week
Potentially hazardous		0.2%	0 T/week
TOTAL		100.0%	115 T/week

Redclyffe RTS - General waste stream - By activity source of waste load - 16 May - 10 July 2022		C&D	ICI	Landscaping	Residential
Paper	Recyclable	0.1%	5.8%	0.3%	2.9%
	Cardboard	2.2%	7.1%	0.4%	4.8%
	Non-recyclable	2.5%	2.1%	0.1%	0.8%
	Subtotal	4.9%	15.0%	0.7%	8.5%
Plastics	Recyclable	0.0%	0.9%	0.1%	0.3%
	Non-recyclable	7.1%	25.1%	1.4%	10.6%
	Subtotal	7.1%	26.0%	1.4%	10.8%
Organics	Food waste	0.4%	8.5%	1.2%	6.0%
	Compostable greenwaste	0.9%	4.8%	47.7%	7.5%
	Non-compostable greenwaste	0.2%	0.1%	7.0%	2.3%
	Multimaterial/other	0.0%	0.2%	0.1%	0.3%
	Subtotal	1.5%	13.7%	56.1%	16.1%
Ferrous metals	Primarily ferrous	0.6%	0.4%	0.2%	0.7%
	Multimaterial/other	1.0%	2.2%	0.0%	3.8%
	Subtotal	1.5%	2.6%	0.2%	4.6%
Non-ferrous metals		0.0%	1.4%	0.1%	0.3%
Glass	Recyclable	0.0%	3.0%	0.0%	0.5%
	Non-recyclable	0.0%	1.6%	0.0%	0.6%
	Subtotal	0.0%	4.6%	0.0%	1.1%
Textiles	Clothing/textiles	0.6%	1.0%	0.0%	5.4%
	Multimaterial/other	4.5%	10.6%	0.5%	25.6%
	Subtotal	5.1%	11.7%	0.6%	31.0%
Sanitary paper		0.1%	4.4%	0.4%	2.4%
Rubble	Cleanfill	7.2%	0.2%	0.0%	0.2%
	New plasterboard	7.0%	0.0%	0.0%	0.2%
	Other	35.8%	7.0%	0.5%	5.1%
	Subtotal	50.0%	7.2%	0.5%	5.5%
Timber	Reusable	0.0%	0.1%	0.0%	0.1%
	Unpainted & untreated	5.0%	0.3%	0.0%	2.1%
	Non-recoverable	24.7%	12.7%	2.9%	17.1%
	Subtotal	29.7%	13.0%	2.9%	19.3%
Rubber		0.0%	0.2%	36.9%	0.3%
Potentially hazardous		0.1%	0.2%	0.0%	0.2%
TOTAL		100.0%	100.0%	100.0%	100.0%

Redclyffe RTS - General waste stream - By activity source of waste load - 16 May - 10 July 2022		C&D	ICI	Landscaping	Residential
Paper	Recyclable	0.0 T/week	1.2 T/week	0.0 T/week	1.3 T/week
	Cardboard	0.9 T/week	1.5 T/week	0.0 T/week	2.2 T/week
	Non-recyclable	1.1 T/week	0.5 T/week	0.0 T/week	0.3 T/week
	Subtotal	2.0 T/week	3.2 T/week	0.0 T/week	3.8 T/week
Plastics	Recyclable	0.0 T/week	0.2 T/week	0.0 T/week	0.1 T/week
	Non-recyclable	3.0 T/week	5.3 T/week	0.1 T/week	4.8 T/week
	Subtotal	3.0 T/week	5.5 T/week	0.1 T/week	4.9 T/week
Organics	Food waste	0.2 T/week	1.8 T/week	0.1 T/week	2.7 T/week
	Compostable greenwaste	0.4 T/week	1.0 T/week	3.4 T/week	3.4 T/week
	Non-compostable greenwaste	0.1 T/week	0.0 T/week	0.5 T/week	1.0 T/week
	Multimaterial/other	0.0 T/week	0.1 T/week	0.0 T/week	0.1 T/week
	Subtotal	0.6 T/week	2.9 T/week	4.0 T/week	7.2 T/week
Ferrous metals	Primarily ferrous	0.2 T/week	0.1 T/week	0.0 T/week	0.3 T/week
	Multimaterial/other	0.4 T/week	0.5 T/week	0.0 T/week	1.7 T/week
	Subtotal	0.6 T/week	0.6 T/week	0.0 T/week	2.1 T/week
Non-ferrous metals		0.0 T/week	0.3 T/week	0.0 T/week	0.1 T/week
Glass	Recyclable	0.0 T/week	0.6 T/week	0.0 T/week	0.2 T/week
	Non-recyclable	0.0 T/week	0.3 T/week	0.0 T/week	0.3 T/week
	Subtotal	0.0 T/week	1.0 T/week	0.0 T/week	0.5 T/week
Textiles	Clothing/textiles	0.2 T/week	0.2 T/week	0.0 T/week	2.4 T/week
	Multimaterial/other	1.9 T/week	2.3 T/week	0.0 T/week	11.5 T/week
	Subtotal	2.1 T/week	2.5 T/week	0.0 T/week	14.0 T/week
Sanitary paper		0.1 T/week	0.9 T/week	0.0 T/week	1.1 T/week
Rubble	Cleanfill	3.0 T/week	0.0 T/week	0.0 T/week	0.1 T/week
	New plasterboard	2.9 T/week	0.0 T/week	0.0 T/week	0.1 T/week
	Other	15.0 T/week	1.5 T/week	0.0 T/week	2.3 T/week
	Subtotal	21.0 T/week	1.5 T/week	0.0 T/week	2.5 T/week
Timber	Reusable	0.0 T/week	0.0 T/week	0.0 T/week	0.0 T/week
	Unpainted & untreated	2.1 T/week	0.1 T/week	0.0 T/week	0.9 T/week
	Non-recoverable	10.4 T/week	2.7 T/week	0.2 T/week	7.7 T/week
	Subtotal	12.5 T/week	2.8 T/week	0.2 T/week	8.7 T/week
Rubber		0.0 T/week	0.0 T/week	2.6 T/week	0.1 T/week
Potentially hazardous		0.0 T/week	0.1 T/week	0.0 T/week	0.1 T/week
TOTAL		42 T/week	21 T/week	7 T/week	45 T/week

Redclyffe RTS - Overall waste stream - by vehicle type - 16 May - 10 July 2022		Cars	Gantry trucks	Other trucks	Trailers
Paper	Recyclable	7.1%	1.7%	0.3%	1.3%
	Cardboard	3.9%	6.2%	0.9%	4.5%
	Non-recyclable	0.9%	0.7%	0.4%	2.4%
	Subtotal	11.9%	8.6%	1.7%	8.2%
Plastics	Recyclable	0.5%	0.0%	0.0%	0.1%
	Non-recyclable	15.5%	14.0%	5.0%	12.0%
	Subtotal	16.0%	14.1%	5.0%	12.1%
Organics	Food waste	15.2%	1.8%	0.4%	2.2%
	Compostable greenwaste	7.2%	1.6%	9.8%	7.1%
	Non-compostable greenwaste	2.4%	0.1%	0.9%	2.1%
	Multimaterial/other	0.6%	0.1%	0.1%	0.1%
	Subtotal	25.4%	3.6%	11.2%	11.5%
Ferrous metals	Primarily ferrous	0.6%	1.4%	0.0%	0.4%
	Multimaterial/other	2.5%	4.4%	0.4%	2.3%
	Subtotal	3.0%	5.8%	0.5%	2.7%
Non-ferrous metals		0.6%	0.7%	0.0%	0.2%
Glass	Recyclable	0.9%	0.6%	0.0%	0.3%
	Non-recyclable	0.7%	1.6%	0.0%	0.3%
	Subtotal	1.6%	2.2%	0.1%	0.5%
Textiles	Clothing/textiles	8.0%	0.6%	0.4%	2.6%
	Multimaterial/other	12.4%	10.5%	2.1%	21.4%
	Subtotal	20.4%	11.1%	2.6%	24.0%
Sanitary paper		4.4%	0.9%	0.2%	1.4%
Rubble	Cleanfill	6.2%	2.1%	0.0%	3.5%
	New plasterboard	0.4%	5.6%	4.9%	1.2%
	Other	2.3%	17.6%	38.2%	11.7%
	Subtotal	8.9%	25.2%	43.1%	16.4%
Timber	Reusable	0.1%	0.1%	0.0%	0.1%
	Unpainted & untreated	0.4%	2.0%	0.7%	4.7%
	Non-recoverable	6.4%	25.5%	23.2%	17.8%
	Subtotal	6.9%	27.6%	24.0%	22.6%
Rubber		0.5%	0.1%	11.7%	0.1%
Potentially hazardous		0.5%	0.1%	0.1%	0.2%
TOTAL		100.0%	100.0%	100.0%	100.0%

Redclyffe RTS - Overall waste stream - by vehicle type - 16 May - 10 July 2022		Cars	Gantry trucks	Other trucks	Trailers
Paper	Recyclable	1.0 T/week	0.5 T/week	0.1 T/week	0.6 T/week
	Cardboard	0.6 T/week	1.7 T/week	0.2 T/week	2.2 T/week
	Non-recyclable	0.1 T/week	0.2 T/week	0.1 T/week	1.2 T/week
	Subtotal	1.7 T/week	2.3 T/week	0.4 T/week	4.0 T/week
Plastics	Recyclable	0.1 T/week	0.0 T/week	0.0 T/week	0.1 T/week
	Non-recyclable	2.2 T/week	3.7 T/week	1.1 T/week	5.9 T/week
	Subtotal	2.3 T/week	3.7 T/week	1.1 T/week	6.0 T/week
Organics	Food waste	2.2 T/week	0.5 T/week	0.1 T/week	1.1 T/week
	Compostable greenwaste	1.0 T/week	0.4 T/week	2.1 T/week	3.5 T/week
	Non-compostable greenwaste	0.3 T/week	0.0 T/week	0.2 T/week	1.0 T/week
	Multimaterial/other	0.1 T/week	0.0 T/week	0.0 T/week	0.1 T/week
	Subtotal	3.6 T/week	0.9 T/week	2.4 T/week	5.7 T/week
Ferrous metals	Primarily ferrous	0.1 T/week	0.4 T/week	0.0 T/week	0.2 T/week
	Multimaterial/other	0.4 T/week	1.2 T/week	0.1 T/week	1.1 T/week
	Subtotal	0.4 T/week	1.5 T/week	0.1 T/week	1.3 T/week
Non-ferrous metals		0.1 T/week	0.2 T/week	0.0 T/week	0.1 T/week
Glass	Recyclable	0.1 T/week	0.2 T/week	0.0 T/week	0.1 T/week
	Non-recyclable	0.1 T/week	0.4 T/week	0.0 T/week	0.1 T/week
	Subtotal	0.2 T/week	0.6 T/week	0.0 T/week	0.3 T/week
Textiles	Clothing/textiles	1.1 T/week	0.2 T/week	0.1 T/week	1.3 T/week
	Multimaterial/other	1.8 T/week	2.8 T/week	0.5 T/week	10.5 T/week
	Subtotal	2.9 T/week	2.9 T/week	0.6 T/week	11.8 T/week
Sanitary paper		0.6 T/week	0.2 T/week	0.0 T/week	0.7 T/week
Rubble	Cleanfill	0.9 T/week	0.5 T/week	0.0 T/week	1.7 T/week
	New plasterboard	0.1 T/week	1.5 T/week	1.0 T/week	0.6 T/week
	Other	0.3 T/week	4.7 T/week	8.2 T/week	5.8 T/week
	Subtotal	1.3 T/week	6.7 T/week	9.3 T/week	8.1 T/week
Timber	Reusable	0.0 T/week	0.0 T/week	0.0 T/week	0.0 T/week
	Unpainted & untreated	0.1 T/week	0.5 T/week	0.1 T/week	2.3 T/week
	Non-recoverable	0.9 T/week	6.7 T/week	5.0 T/week	8.8 T/week
	Subtotal	1.0 T/week	7.3 T/week	5.2 T/week	11.1 T/week
Rubber		0.1 T/week	0.0 T/week	2.5 T/week	0.1 T/week
Potentially hazardous		0.1 T/week	0.0 T/week	0.0 T/week	0.1 T/week
TOTAL		14.2 T/week	26.4 T/week	21.5 T/week	49.3 T/week

Appendix 5 - 240-litre kerbside rubbish wheelie bins

Privately collected 240-litre kerbside rubbish wheelie bins - June 2022 (margins of error for 95% confidence interval)		% of total	Weight per wheelie bin
Paper	Recyclable	7.9% (±1.7%)	1.65 kg (±0.35 kg)
	Non-recyclable	1.2% (±0.3%)	0.25 kg (±0.07 kg)
	Subtotal	9.1% (±2.0%)	1.90 kg (±0.41 kg)
Plastics	# 1,2 containers	3.0% (±0.6%)	0.63 kg (±0.12 kg)
	# 5 containers	0.5% (±0.2%)	0.11 kg (±0.03 kg)
	# 3,4,6,7 containers	0.5% (±0.1%)	0.11 kg (±0.03 kg)
	Non-recyclable containers	0.6% (±0.3%)	0.12 kg (±0.06 kg)
	Plastic bags/film	3.3% (±0.8%)	0.68 kg (±0.17 kg)
	Other non-recyclable	0.1% (±0.1%)	0.03 kg (±0.02 kg)
	Subtotal	8.0% (±1.4%)	1.68 kg (±0.29 kg)
Organics	Food waste	29.4% (±9.3%)	6.13 kg (±1.95 kg)
	Greenwaste	29.1% (±14.2%)	6.08 kg (±2.96 kg)
	Multimaterial/other	2.3% (±1.7%)	0.49 kg (±0.35 kg)
	Subtotal	60.9% (±12.4%)	12.70 kg (±2.58 kg)
Ferrous metals	Steel cans	0.9% (±0.3%)	0.19 kg (±0.06 kg)
	Steel other	0.4% (±0.3%)	0.08 kg (±0.07 kg)
	Subtotal	1.3% (±0.6%)	0.27 kg (±0.13 kg)
Non ferrous metals	Aluminium cans	0.6% (±0.2%)	0.12 kg (±0.04 kg)
	Other non-ferrous	0.3% (±0.2%)	0.07 kg (±0.03 kg)
	Subtotal	0.9% (±0.3%)	0.19 kg (±0.06 kg)
Glass	Bottles/jars	0.7% (±0.2%)	0.14 kg (±0.04 kg)
	Non-recyclable	0.0% (±0.0%)	0.00 kg (±0.00 kg)
	Subtotal	0.7% (±0.2%)	0.15 kg (±0.04 kg)
Textiles	Clothing/textiles	1.5% (±0.4%)	0.31 kg (±0.08 kg)
	Multimaterial/other	1.9% (±0.8%)	0.39 kg (±0.16 kg)
	Subtotal	3.3% (±1.1%)	0.70 kg (±0.23 kg)
Sanitary paper		11.7% (±4.6%)	2.44 kg (±0.96 kg)
Rubble		2.6% (±1.9%)	0.55 kg (±0.39 kg)
Timber		0.2% (±0.1%)	0.05 kg (±0.03 kg)
Rubber		0.0% (±0.0%)	0.01 kg (±0.00 kg)
Potentially hazardous	Household	1.1% (±0.5%)	0.23 kg (±0.11 kg)
	Other	0.0% -	0.00 kg -
	Subtotal	1.1% (±0.5%)	0.23 kg (±0.11 kg)
TOTAL		100.0%	20.87 kg (±2.84 kg)

Appendix 6 - Ōmarunui Landfill

Ōmarunui Landfill - General waste direct to landfill - Excludes transfer station waste, special waste, and kerbside rubbish collections - 16 May - 10 July 2022		% of total	Tonnes per week
Paper	Recyclable	3.6%	19 T/week
	Cardboard	4.4%	24 T/week
	Non-recyclable	4.1%	22 T/week
	Subtotal	12.2%	65 T/week
Plastics	Recyclable	0.8%	4 T/week
	Non-recyclable	24.2%	129 T/week
	Subtotal	25.0%	133 T/week
Organics	Food waste	15.1%	80 T/week
	Compostable greenwaste	2.5%	13 T/week
	Non-compostable greenwaste	0.6%	3 T/week
	Organic other	3.6%	19 T/week
	Subtotal	21.8%	116 T/week
Ferrous metals	Primarily ferrous	1.2%	6 T/week
	Multimaterial/other	2.0%	10 T/week
	Subtotal	3.2%	17 T/week
Non-ferrous metals		0.8%	4 T/week
Glass	Recyclable	0.9%	5 T/week
	Non-recyclable	1.6%	8 T/week
	Subtotal	2.5%	13 T/week
Textiles	Clothing/textiles	1.8%	10 T/week
	Multimaterial/other	3.3%	17 T/week
	Subtotal	5.1%	27 T/week
Sanitary paper		6.5%	35 T/week
Rubble	Cleanfill	0.2%	1 T/week
	New plasterboard	1.3%	7 T/week
	Other	6.5%	35 T/week
	Subtotal	8.0%	43 T/week
Timber	Reusable	0.7%	4 T/week
	Unpainted & untreated	3.2%	17 T/week
	Non-recoverable	8.7%	46 T/week
	Subtotal	12.6%	67 T/week
Rubber		1.6%	8 T/week
Potentially hazardous		0.9%	5 T/week
TOTAL		100.0%	533 T/week

Ōmarunui Landfill - General and special waste direct to landfill -- By activity source of waste load - 16 May - 10 July 2022		C&D	ICI	Special waste
Paper	Recyclable	0.0%	3.9%	0.0%
	Cardboard	0.5%	4.7%	0.0%
	Non-recyclable	0.4%	4.4%	0.0%
	Subtotal	0.9%	13.0%	0.0%
Plastics	Recyclable	0.0%	0.9%	0.0%
	Non-recyclable	1.6%	25.6%	0.0%
	Subtotal	1.6%	26.5%	0.0%
Organics	Food waste	0.0%	16.1%	15.1%
	Compostable greenwaste	0.0%	2.6%	0.0%
	Non-compostable greenwaste	0.0%	0.7%	0.0%
	Organic other	0.0%	3.8%	21.0%
	Subtotal	0.0%	23.2%	36.1%
Ferrous metals	Primarily ferrous	1.5%	1.2%	0.0%
	Multimaterial/other	0.3%	2.1%	0.0%
	Subtotal	1.9%	3.3%	0.0%
Non-ferrous metals		0.0%	0.9%	0.0%
Glass	Recyclable	0.0%	1.0%	0.0%
	Non-recyclable	0.0%	1.7%	0.0%
	Subtotal	0.0%	2.6%	0.0%
Textiles	Clothing/textiles	0.0%	1.9%	0.0%
	Multimaterial/other	0.0%	3.5%	0.0%
	Subtotal	0.0%	5.4%	0.0%
Sanitary paper		0.0%	7.0%	0.0%
Rubble	Cleanfill	0.0%	0.2%	0.0%
	New plasterboard	19.9%	0.0%	0.0%
	Other	16.2%	5.9%	0.0%
	Subtotal	36.1%	6.1%	0.0%
Timber	Reusable	1.6%	0.6%	0.0%
	Unpainted & untreated	6.7%	3.0%	0.0%
	Non-recoverable	51.2%	5.9%	0.0%
	Subtotal	59.5%	9.5%	0.0%
Rubber		0.0%	1.7%	0.0%
Potentially hazardous		0.0%	0.9%	63.9%
TOTAL		100.0%	100.0%	100.0%

Ōmarunui Landfill - Overall waste to landfill - 16 May - 10 July 2022		% of total	Tonnes per week	Tonnes per annum (Indicative only)
Paper	Recyclable	3.9%	66 T/week	3,571 T/annum
	Cardboard	2.2%	38 T/week	2,040 T/annum
	Non-recyclable	2.0%	34 T/week	1,831 T/annum
	Subtotal	8.1%	138 T/week	7,442 T/annum
Plastics	Recyclable	1.4%	24 T/week	1,296 T/annum
	Non-recyclable	10.9%	185 T/week	10,014 T/annum
	Subtotal	12.3%	209 T/week	11,309 T/annum
Organics	Food waste	20.4%	346 T/week	18,725 T/annum
	Compostable greenwaste	6.1%	104 T/week	5,616 T/annum
	Non-compostable greenwaste	0.8%	14 T/week	779 T/annum
	Organic other	6.2%	105 T/week	5,696 T/annum
	Subtotal	33.5%	570 T/week	30,816 T/annum
Ferrous metals	Primarily ferrous	0.9%	15 T/week	815 T/annum
	Multimaterial/other	1.2%	21 T/week	1,130 T/annum
	Subtotal	2.1%	36 T/week	1,945 T/annum
Non-ferrous metals		0.6%	11 T/week	587 T/annum
Glass	Recyclable	1.3%	22 T/week	1,185 T/annum
	Non-recyclable	0.7%	12 T/week	675 T/annum
	Subtotal	2.0%	34 T/week	1,860 T/annum
Textiles	Clothing/textiles	1.8%	30 T/week	1,643 T/annum
	Multimaterial/other	3.8%	65 T/week	3,530 T/annum
	Subtotal	5.6%	96 T/week	5,174 T/annum
Sanitary paper		6.4%	110 T/week	5,923 T/annum
Rubble	Cleanfill	0.4%	6 T/week	348 T/annum
	Plasterboard	0.6%	10 T/week	563 T/annum
	Other	5.8%	98 T/week	5,293 T/annum
	Subtotal	6.8%	115 T/week	6,204 T/annum
Timber	Unpainted & untreated	0.4%	6 T/week	349 T/annum
	Fabricated	1.7%	29 T/week	1,561 T/annum
	Non-recoverable	7.3%	125 T/week	6,740 T/annum
	Subtotal	9.4%	160 T/week	8,650 T/annum
Rubber		0.8%	13 T/week	713 T/annum
Potentially hazardous		12.3%	209 T/week	11,280 T/annum
TOTAL		100.0%	1,700 T/week	91,903 T/annum

Appendix 7 - Kerbside rubbish classifications

Primary category	Secondary category	Definition
Paper	Recyclable paper	Paper bags, magazines, cardboard boxes, newspapers, junk mail, clean pizza boxes
	Non-recyclable paper	Food contaminated packaging, Tetra Paks, aseptic containers, paper coffee cups, receipts
Plastics	#1-2 containers	Kitchen, bathroom, and laundry containers (no lids)
	#5 containers	Ice cream and takeaway containers, 1 -litre yogurt pots, dip pottles
	#3-4-6-7 containers	Containers with #3-4-6-7 recycling logos
	Non-recyclable containers	Containers with no logo, expanded polystyrene meat trays, multi-material plastic containers, paint, engine oil and chemical containers, plastic lids
	Plastic bags/film	All soft plastics and film
	Multimaterial/ other	All other materials made of plastic
Organics	Food waste	All food waste
	Green waste	All organic garden waste
	Organic other	All other primarily organic items - includes cat tray litter, hair, vacuum cleaner bags
Ferrous metals	Steel cans	All steel cans, including aerosol cans
	Non-recyclable	All other items made primarily of ferrous metal
Non-ferrous metals	Aluminium cans	All aluminium cans, including aerosols
	Non-recyclable	All other items made primarily of non-ferrous metal
Glass	Glass bottles/jars	All bottles and jars, emptied with the lids and contents removed
	Non-recyclable	All other items made primarily of glass, includes light bulbs, drinking glasses, and window glass
Textiles	Clothing & textile	All items primarily made of a fabric, such as clothes, curtains
	Multimaterial/other	Includes shoes, backpacks, handbags, rugs
Sanitary paper		Includes disposable nappies, paper towels, tissues
Rubble, concrete		All concrete, rubble and soil
Timber		All items made primarily of timber
Rubber		All items made primarily of rubber (e.g. kitchen gloves)
Potentially hazardous	Household	Batteries, aerosol cans, medicines and cosmetics, cleaning agents
	Other	Potentially hazardous items not associated with domestic activity, such as used oil, garden chemicals.

Appendix 8 - Visual survey waste classifications

Primary category	Secondary category	Description
Paper	Recyclable	Newspapers, magazines, office paper, etc.
	Cardboard	Kraft cartons
	Non-recyclable	Multimaterials, Tetra Paks, contaminated paper
Plastics	Recyclable	Containers with recycling logo 1-2
	Non-recyclable	Other types of plastic and primarily plastic multimaterials
Organic	Kitchen/food	Food and food preparation waste
	Compostable greenwaste	Tree branches up to 400 mm, small tree stumps
	Non-compostable greenwaste	Flax, cabbage tree, palm fronds
	Other organic	Organic matter such as meat processing waste
Ferrous metals	Primarily ferrous	Items made primarily of steel
	Multimaterial/other	Ferrous items containing a sizable proportion of other materials
Nonferrous metals	Primarily nonferrous	Items made primarily of nonferrous metal
Glass	Recyclable	Bottles and jars
	Non-recyclable	Includes glass pane, CRT TVs, and computer monitors
Textiles	Clothing/textile	Items made primarily of cloth or textiles
	Multimaterial/other	Items containing some textile and other materials, such as carpets, shoes, backpacks, suitcases
Sanitary paper	None	Sanitary materials such as nappies, paper towels, feminine hygiene products
Rubble	Cleanfill	All materials suitable for cleanfill disposal
	New plasterboard	Off-cuts of new plasterboard
	Other	Other materials such as soil, ceramics, old plasterboard
Timber	Reusable	Lengths of timber and pieces of sheet suitable for reuse
	Unpainted & untreated	Unpainted and untreated lengths of timber
	Non-recoverable	Sawdust, construction and demolition debris, CCA treated wood
Rubber	None	All items made primarily of rubber such as tyres, latex foam mattresses
Potentially hazardous	None	Material with potentially toxic or ecotoxic properties or having properties requiring special disposal techniques.

Appendix 9 - Types of waste collection vehicles

FRONT-LOADER TRUCKS

"Front-loaders" are top-loading compactors that use forks mounted to the front of the vehicle to lift bins over the cab and tip the contents of the bin into the compactor unit at the rear. Front-loaders work primarily in urban areas, regularly servicing medium to large-scale industrial, commercial, and institutional customers. In general, a business using front-loader bins would be serviced at least weekly, but can be serviced several times a day for a business like a large supermarket. Front-loaders vary in size, and may carry loads from 4 to 10 tonnes. A single load may contain waste from ten to fifty customers.



The potential for the recovery of materials from waste transported by front-loaders is limited. The waste load is compacted by the truck, and the loads tend to be large and heterogeneous. This restricts significantly the potential for manually separating recoverable materials when the load is discharged on a tipping floor. There are usually not significant quantities of easily-separable materials other than cardboard packaging in front-loader refuse.

GANTRY TRUCKS

"Gantry trucks" are used to transport gantry bins (skip bins) from customers' premises to a disposal facility. Gantry truck services are used by industrial, commercial, institutional, and residential customers. Some large-scale commercial waste generators use gantry bins as their regular disposal system. Residential customers and business customers both use gantry bins for one-off large-scale refuse removal. Some commercial customers, such as hotels and supermarkets, use portable, stationary refuse compactors that are transported for disposal by gantry trucks. Gantry bins are often used for special wastes, such as sludges, asbestos, and animal by-products.



Typical gantry truck loads weigh from 0.5-3 tonnes. As most refuse transported in gantry bins is not compacted, there is often opportunity for manually recovering materials from gantry bins when discharged onto a tipping floor. Gantry bins often contain significant quantities of recoverable materials, such as timber and packaging and reusable items can be recovered intact from residential loads.

KERBSIDE COLLECTION COMPACTORS

Side-loading and rear-loading compactors are commonly used for the kerbside collection of residential and small business refuse. They can be designed to service 120-litre wheelie bin collections, wheelie bin refuse collections, or both. Side-loading compactors can be used for bag collections or fitted with hydraulic arms for emptying wheelie bins without the driver leaving the vehicle. Rear-loading compactors can also be used for bag collections or fitted with hydraulic arms for emptying bins.



As kerbside collection vehicles collect small quantities of refuse from a large number of customers and the refuse is heavily compacted, there is little opportunity for manually recovering materials from the refuse.

OTHER TRUCKS

Other truck types commonly used for the transport of waste include tip trucks, box trucks, and flat decks. Tip trucks are most commonly used for the transport of waste from landscaping, earthworks, and construction and demolition activity. Box trucks are rarely used as dedicated waste transport vehicles, but are often used for waste transport by businesses that also use them for goods pick-up and delivery. Flat decks are used for the transport of bulky waste items, or by general carriers for the disposal of stackable items, such as pallets.

Appendix 10 - Recycling criteria

What you can (and can't!) put in your crates

Paper and cardboard

Clean and flattened

Clean and flattened paper and cardboard. Large cartons can be dropped at our recycling depots or you can cut them down to fit in your crate.

Yes please!	No thank you!
Junk mail	Milk and juice cartons
Egg cartons	Takeaway coffee cups
Magazines	Packaging with food waste
Empty pizza boxes (remove all food)	Receipts
Paper	Paper with glitter
Cardboard	Pet food and potato sacks
Envelopes	
Household packaging	

TOP TIP: If you have large cartons to recycle, you can drop them off for free at your local recycling depot, or cut them down to fit in your crate.

Plastic and cans

Wash, squash, lids off.

Number 1, 2 & 5 household plastics.

Yes please	No thank you
Kitchen, bathroom and laundry plastics	Plastics number 3, 4, 6 & 7
Tin cans	Lids
Aluminium cans	Hard plastic
	Soft plastic (e.g. bags)
	Polystyrene
	Paint tubs
	Buckets and plant pots
	Chip packets and lolly wrappers

Glass

Empty, clean glass of all colours.

The recycling teams will not empty bins that weigh more than 10kgs.

Yes please	No thank you
Jars	Broken glass
Glass soft drink bottles	Window and mirror glass
Wine, beer and spirit bottles	Drinking glasses
	Glass cookware
	China and crockery
	Spectacles
	Light bulbs
	Perfume bottles

TOP TIP: Metal jar lids, metal bottle tops, aluminium screw caps and fluorescent light bulbs and tubes can be recycled at [Environment Centre Hawke's Bay](#).

