Proposed Municipal Food Waste Management Submission
To
Auckland Council

Berrysmith Foundation

Creating the legacy of a healthier world
– for our people and our planet

CONTENTS

Berrysmith Foundation

INTRODUCTION

This is a submission by the Berrysmith Foundation on the Auckland Council Draft Waste Management and Minimisation Plan (Draft WMMP). The submission focuses solely on the collection of food waste, but comments on other aspects of the Draft WMMP, where they impact food waste management.

The Berrysmith Foundation strongly supports the adoption of a food waste collection system. The Foundation is committed to sustainable food production, and recycling of food waste to production via composting is a vital aspect of this. Therefore, the Foundation supports aspects of the Draft WMMP which maximise the re-use of food waste.

However, the Foundation considers that the proposed weekly collection has an unnecessarily high environmental footprint and recommends that the Council adopt the use of a composting wheeled bin for onsite food waste collection and management, and a reduced frequency in collections (a "pre-composting" system).

The Berrysmith Foundation would like the support of Auckland Council to undertake a public trial a pre-composting system, and to prepare business case and environmental assessment of the pre-composting system, and will provide further information in due course on a proposed trial.

The Foundation looks forward to ongoing discussions with Auckland Council on recycling food waste in the region.

Berrysmith Foundation

1. THE SUBMISSION

This submission is structured as follows:

- **OVERVIEW OF BERRYSMITH FOUNDATION AND ITS STRATEGIC PARTNERS**
- **THE DECISIONS REQUESTED FROM COUNCIL (SUBMISSION POINTS)**
- **BERRYSMITH FOUNDATION RECOMMENDED SYSTEM**
- **WASTE BINS AND COLLECTION REGIME**
- **BENEFITS**
- **TRIAL REQUIREMENTS**
- **ALIGNMENT WITH LEGISLATIVE REQUIREMENTS AND COUNCIL OBJECTIVES**
- **SUMMARY OF SUBMISSION AND PROPOSED NEXT STEPS**

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2. THE BERRYSMITH FOUNDATION AND STRATEGIC PARTNERS

The Berrysmith Foundation charitable trust aims to show the world - through education and demonstration - how to sustain our population by growing healthy, nutritious food with absolute minimal impact on our environment.

The Foundation's goals are for sustainable food production; researching, testing, developing and promoting growing systems that provide genuine sustainable food production.

Key to these goals is development of food production systems that do not lead to the depletion of natural resources. High quality productive soil, high in organic matter, is a key element of a sustainable food production system and the Foundation is delighted that Auckland Council is proposing to collect food waste, as this is a valuable resource, which should not be squandered through disposal to landfill.

The Foundation was established by Ashley Berrysmith of Snap Fresh Foods (formerly the NZ Fresh Cuts group of companies), a growing and processing company, with a number of consumer brands, supplying salad greens, sprouts and baby carrots to the New Zealand market. The company has a number of Auckland based market gardens and is the major suppliers of baby leaf bagged salad to Progressive Enterprises' Countdown supermarkets.

Snap Fresh Foods is renowned for its innovation and over the years has led the market with products and processes that have made a lasting and positive impact on the health of many New Zealanders. The company mission is:

To Provide Healthy, Sustainable Products and Raise the Awareness of Health and Wellbeing through innovation and by working with Committed and Aligned partners

Snap Fresh Foods and Living Earth, compost producers in the Auckland Region, are exploring the possibility of working together in undertaking commercial trials of compost for horticultural purposes, assisting in the development of an improved market for compost products in the Auckland Region.

As a leader in the development of sustainable food production, the Berrysmith Foundation has an interest

The Berrysmith Foundation is a charitable trust, whose goals are for sustainable food production

The Foundation's strategic partners include Snap Fresh Foods and Living Earth Compost

The Foundation supports the adoption of a food waste collection system but considers that the environmental footprint of the proposed weekly collection is unnecessarily high

The Foundation would like to partner with Auckland Council to trial other options for food waste collection

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in ensuring that the Auckland Region uses its food waste resource. Its role as an educator provides a link between both food and compost production, and the Foundation would like to play an ongoing role in the recycling of food waste in the Auckland Region.

For further information, refer to http://www.berrysmith.org/about-us/what-we-do_2.htm

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3. SUBMISSION POINTS

The Berrysmith Foundation strongly supports Auckland Council's proposal to provide a separate food waste collection, to divert this material from landfill and to process it into compost.

Therefore, from the draft Waste Minimisation and Management Plan, the Foundation requests that the Council adopts both a food waste collection system as well as the actions required to support its maximum uptake, including:

- A target reduction of kerbside waste to landfill of a minimum of 30% by 2018
- Intensive campaigns for home composting (or worm farms or bokashi) to support this as the ideal approach to managing food waste
- A food waste collection system as an option for all urban Auckland Ratepayers, but no pick up of green waste or garden waste (to continue to support existing contracts as well as onsite disposal)
- A waste management funding structure which encourages food waste separation, including a user pays system for general waste as well as volume restrictions (with options to cater for various family sizes)
- Ensuring adequate funding for both education and compliance requirements, particularly during transition of services
- Targeting families and communities most in need of waste management assistance including those with large families and low incomes
- Placing restrictions of food waste going to landfill from kerbside collection (by bylaw or similar)
- Licensing private waste collectors to ensure waste minimisation standards are supported, including diversion of food waste from landfill
- Lobbying government for a ban on food waste disposal to landfill, and to require industry to have same responsibilities as Council for waste reduction
- Further economic modelling of food waste management, and include in this modelling of an in-bin composting system, as described in further detail below

The Foundation requests that the Council adopts both a food waste collection system as well as the actions required to support its maximum uptake

The Foundation seeks changes to the proposed system, to improve operational efficiency, and minimise environmental and economic cost

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- Funding of a trial collection service to help understand consumer behaviour in relation to food waste collection, so that education, communication and social marketing campaigns can be effectively targeted.

The Foundation requests the following amendments and extensions to the proposed food waste collection system:

- Provide residents with an in-bin composting system (as described in more detail below)
- Pick up pre-composted food waste on a longer cycle instead of the weekly pick-ups proposed; this cycle might be 12 weekly depending on results of trials
- Provide residents with kitchen caddy, a source of compostable bin liners (to avoid contamination of waste stream with plastic bags) and source of carbon based mix material to facilitate collection rates as well as pre-treatment and storage of compost
- Ensure contracts for food waste collection actively support Council's targets and preferred approach to food waste disposal (i.e. home composting), and that educational efforts are aligned
- Enable and support local food waste composting efforts, such as those in local parks, providing managed facilities for those who do not have space available for composting
- Ensure that contracts require providers to demonstrate not only the ability to meet environmental criteria, but also to demonstrate innovation and continual improvement

4. PROPOSED FOOD WASTE MANAGEMENT SYSTEM

The food waste collection and treatment system recommended by the Berrysmith Foundation comprises the following elements:

- A household wheeled bin designed for aerobic composting, with a kitchen caddy, composting liners for the caddy, and carbon based material for addition to the caddy or bin to ensure aerobic composting is achieved
- A reduced pick up cycle of pre-composted material (timeframe subject to trials and could be 12 weeks and up to six months)
- Disposal of partially composted material to a composting plant for finishing

The Foundation notes that the Council organic waste assessments did not identify the wheeled bin composting system as an option for increasing times between collections and pre-treating material; Bokashi is mentioned in brief, but is not explored in detail. Aerobic composting bin systems are available internationally and Council needs to consider this option for management of the future food waste collection.

There are a number of options available for both collection and storage of food waste, which need to be explored in more detail, and trialled, to ensure the approach is optimal for achieving necessary behaviour change. The basic system is detailed below, and options identified.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

To become the most liveable eco-city in the world, Auckland must explore and adopt innovative solutions for turning its waste into resources

A pre-composting system offers a more cost effective, environmentally friendly, and efficient solution to food waste management

A pre-composting system comprises an aerobic bin for kerbside collection, a kitchen collection bin, addition of carbon material and an extended collection

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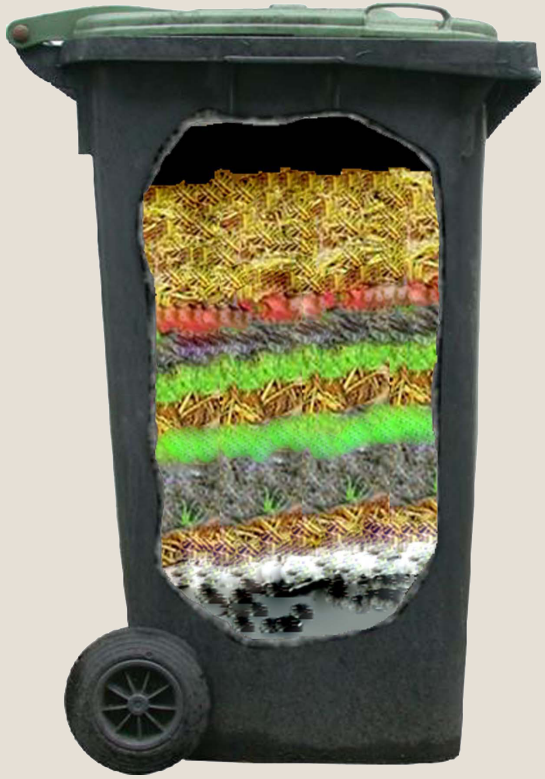
4.1 PRE-COMPOSTING SYSTEM

4.1.1 Wheeled composting bins

The proposed bin is a 120-140 litre composting wheeled bin, such as that designed by Sulo or ssi-Schaefer. These bins are a standard part of the range provided by these companies and are formed from injection moulded plastic. The look very similar to the Council's existing wheeled bin stock. They include air vents and a base plate, which allows for the material to remain aerated, aiding break down of material and moisture loss.

The bins range in size and the ideal capacity is to be determined. However, a smaller capacity bin is recommended to avoid its use for garden waste material and to allow for handling over a 12 week period.

The image below provides an indicative view of a compost wheelie bin, showing layers of material.



For further information on wheeled composting bins refer:

http://media.ssi-schaefer.de/fileadmin/ssi/documents/navigationsbaum/abfalltechnik/produkte/2_rad/englisch/compostainer_00_b_en.pdf

http://www.mediasuite.com.au/cms/sulo/control/upFiles/Sulo_SOCS_Bin.pdf

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

A number of commercial options, suited to mechanical pick-up, are available for wheeled aerobic compost bins

Aeration increases moisture loss, reducing volume and weight of material and starting the breakdown of material to compost

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4.1.2 Kitchen Collection

The collection system proposes to offer each household a kitchen caddy with compostable bin liners, to support maximum rates of diversion of food waste. According to the back ground studies prepared for the Auckland Waste Assessment report, the option which provides for the highest rates of diversion includes both a caddy and liners.

A trial undertaken by Christchurch City Council, prior to the establishment of its organics collection system, found that the frequency of plastic bag contamination fell once each household was provided with BioFilm bags. That trial found that the most common reasons given for preferring the BioFilm bags and green ventilated kitchen bins were: no smell, no mess, fly proof, no condensation or smelly liquid in the bottom of the bin, no need to clean the bin each time it was emptied, the bin looks better in the kitchen, the bin was easier to use, and the kerbside bin was cleaner #1

Kitchen bin liners are to encourage use, and to avoid cross contamination of the waste stream with plastic bags; to avoid perceived 'mess' households are likely to introduce plastic bags to the food waste stream. Council needs to make available approved bin liners, which are clearly distinguishable as such. These could be supplied direct to households, or made available via retail outlets.

The kitchen caddy can either be in the form of a sealed caddy (with or without a liner) or a vented unit (which requires a liner) that allows for moisture loss. Using the breathable system the water content of kitchen scraps can be reduced by around 20% in 14 day period, reducing weights for collection.

Options need to be explored to determine which system results in the greatest diversion rates, as well as the number of bags required by households and the best way to distribute them.

#1 Department of Environment and Conservation NSW (2007) Co-collection of Domestic Food Waste and Garden Organics: The Australian Experience, Department of Environment and Conservation NSW

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Studies indicate that maximum food waste collection rates are achieved when the collection system is clean and convenient

Vented kitchen caddies and breathable liners reduce moisture content. Drier material is less prone to odour, weighs less and is easier to handle.

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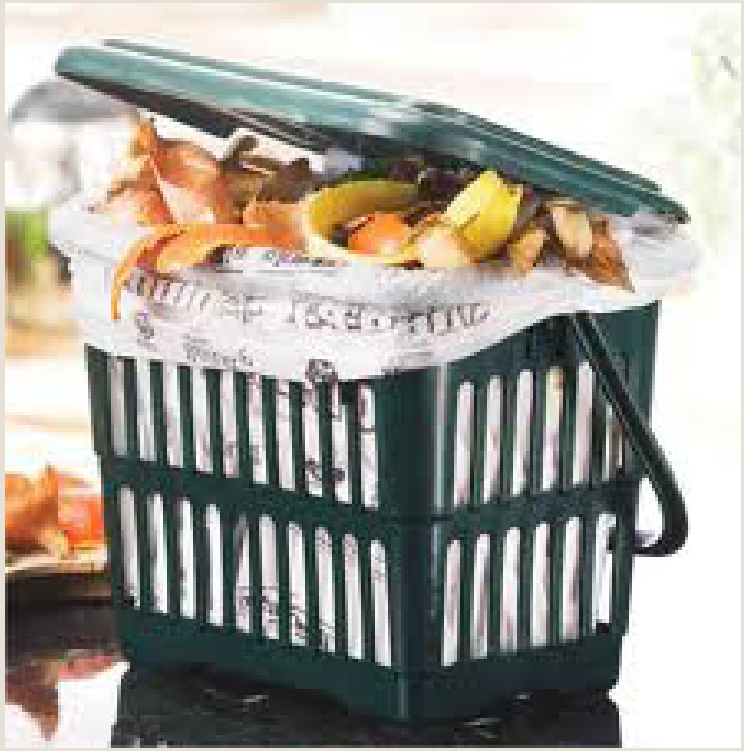
The image below is of the vented kitchen caddy with breathable liner, which is recommended for achieving maximum diversion rates.



http://www.biobags.co.uk/products/foodwaste.htm

http://friendlypak.co.nz.spwd.net.nz/shop/viewproduct.aspx?ID=14#maxair

http://www.mediasuite.com.au/cms/sulo/control/upFiles/Cardia_Kitchen_Bag_Flyer_website.pdf

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

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4.1.3 Carbon material

To create suitable conditions for pre-treatment of food waste material, and to minimise the potential for odour generation (due to anaerobic conditions), households would be provided with high carbon dry matter to add to the collection receptacle. This provides an aeration medium to ensure aerobic (and odourless) conditions are maintained.

The amount of material to be added will be determined to ensure correct aeration and the stage at which it will be added (i.e. in the kitchen caddy or in the main receptacle would be determined based on house hold behaviour, as well as the type of collection system used in the kitchen).

How this material will be made available to households will also need to be worked through; this may be by request or via retail outlets as well as an allocation made during bin collection.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

High carbon dry material, supplied to households and added to food waste bins, provides aeration to begin composting process and to avoid odour generation

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4.1.4 Collection regime

A household collection timetable of every 12 weeks is proposed, with bin capacity to allow for 24 weeks material storage. Over this period much of the material in the bins will be composted, with only the faction nearer the top of the bin requiring further composting treatment.

Background studies to the waste plans appear to follow overseas models where weekly pick up of food waste only is considered the 'best' model for processing efficiency. However, this model is most efficient for processing of food waste by anaerobic digestion; a process that is not likely to be cost effective in Auckland. Therefore, weekly pick up becomes less suitable due to collection logistics and the availability of treatment locations.

A more frequent collection regime for food waste than for general waste is shown to improve diversion rates. However, background studies do not appear to consider the impact of diversion when direct versus indirect costs for collection, as are proposed in Auckland, are applied. Therefore, it is possible that a similar or less frequent collection cycle can result in increased diversion when combined with pricing incentives. This is particularly the case when issues associated with management of the bin system are taken into account.

A weekly collection regime of wet organic material, as currently proposed, will result in householders needing to clean their bins regularly to remove kitchen waste remnants. A pre-composting system with less frequent pick up results in drier material, and a reduction in wet and odorous bin residue, as well as reduced bin cleaning requirements for householders.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

A weekly collection regime results in increased environmental and economic costs, and can be avoided through the adoption of a pre-composting system

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4.1.5 Examples

Research undertaken in the preparation of this submission has found no use of pre-composting systems in the municipal collection of food waste.

The most obvious comparison to the proposed system is use of the EM (effective microorganism) Bokashi systems, which are utilised in some municipalities, and most notably in Korea and Japan, although extended collection regimes do not appear common.

In 2002 the Christchurch City Council trialled the use of a Bokashi system for kerbside collection. Waste was collected weekly, and the comparison was for waste to be collected using bio-insert bags. The Bokashi system was reported to have worked well. However, at the end of the trial the bio-insert bag option was favoured due to the fact that collection bins remained cleaner and more hygienic looking. #2 #3

A 2007 report by the New South Wales Department of Environment and Conservation reviewed food and organic waste collections in a number of jurisdictions in Australia, Europe and North America. This report includes details of the use of aerobic bins, which have been trialled in several areas including Bexley, UK and Broken Hill, Australia.

The Bexley trial concluded that the aerobic bins offered a clear performance advantage over other tested systems. The bin supplied adequate ventilation for aerobic decomposition and drying of the added organic materials while in the standard bin, anaerobic conditions were prevalent. Significantly higher rates of weight loss were observed with the bio-insert (aerobic bin) in winter, spring, and summer compared to the standard bin. Further, the contents of the bio-insert bin were less compacted, drier and more uniform than the contents of the standard bin. The better condition of organics collected in the bio-insert were considered likely to cause fewer problems for compost facility operators receiving the feedstock.

#2 http://www.zerowaste.co.nz/assets/2005ZeroWasteConferenceproceedings.pdf#page=40 accessed 25012012

#3 Department of Environment and Conservation NSW (2007) Co-collection of Domestic Food Waste and Garden Organics: The Australian Experience, Department of Environment and Conservation NSW

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

Auckland can be a leader in collection and treatment of food waste through the adoption of a municipal pre-composting system

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The trial also concluded that while a collection frequency of four weeks was feasible for green organics, if food organics was also collected, a two week collection frequency was recommended to prevent the build up of excessive leachate and odours.

The Broken Hill trial also used a bio-insert bin, and collected food waste weekly. The Council found that residents did not need to put the bins out weekly as there were no reports of odour, and waste volume was quickly reduced. A fortnightly collection regime was recommended.

The waste disposal agent, responsible for collection and treatment of the organic material, reported being impressed with the results of the Bio-insert, stating that it assisted the composting and vermiculture operations because material was delivered in an aerobic state.

The trials indicate a clear advantage of the use of an aerobic bin for collection in terms of condition of material, weight loss, and reduced odour. With the addition of carbon material, this scenario is expected to improve further and use of a pre-composting system warrants further investigation and trial.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

Other jurisdictions have trialled aerobic bins with positive results; no jurisdictions appear to have trialled pre-composting

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4.2 BENEFITS OF SYSTEM

4.2.1 Capture

International studies, referenced in the Auckland Waste Assessment, indicate that highest capture rates occur when kitchen bins, with liners, are provided, the service is for food waste only, and not for green waste, and a weekly collection is established.

A collection system perceived as 'clean' is likely to achieve higher diversion rates. Provision of kitchen bins, with liners, is considered highly likely to improve capture rates, although this needs to be confirmed through local trial.

As noted above, studies have found that participation rates are improved where systems are perceived as clean, hygienic and efficient. Householders typically collect waste in kitchen receptacles and then transfer this to larger bins, and the use of kitchen bins with liners would facilitate this with minimal mess or cleaning required.

Because anticipated food waste volumes are relatively low (less than 2.7 kg/week on average – as per Appendix F of the Waste Assessment Report) a weekly collection system runs the risk that the bin will primarily be used for green waste, impacting on existing commercial green waste collections as well as home composting/mulching efforts, and reducing capacity for food waste diversion.

A longer collection cycle will require residents to manage the volumes in their bins, which should lead to a more consistent mix of material (when carbon based material is applied), and less diversion of green waste.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

A clean and convenient system improves waste capture rates, maximising resource recovery rates

A longer collection cycle requires residents to manage storage capacity, avoiding contamination with green waste

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4.2.2 Transportation and disposal options

The most obvious benefit of this system is the reduction in transportation requirements, and the associated environmental and economic impacts.

Reduced vehicle movements result in a reduction of:

- Congestion impacts
- Transfer station and landfill waiting times
- Emissions / pollution
- Road damage
- Transfer station / landfill opening hours and nights hours
- Bulk hauling at night

Appendix F to the Waste Assessment Report (page 54 of 591), states that "Looking at broader environmental effects, such as greenhouse gas emissions, traffic congestion, and wear and tear on roads, the effects of several vehicles collecting kerbside waste from households are much greater than for a single vehicle doing the same job". Assuming the proposed collection methodology involves a separate collection vehicle, and this is considered likely based on ongoing collections of recyclable material and general waste, then a significant number of additional vehicles on the road are required with the current proposal.

Additional vehicle movements will obviously result in both direct and indirect costs to Council, associated with the issues above. Use of the composting bins, with an extended collection cycle, results in a reduced number of pick-ups and a reduction in mass and volume of material, and a reduction in associated costs.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

A quarterly food waste collection cycle results in a 92% reduction in vehicle movements

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Reduced number of pick ups

The Organics Assessment report (2009) (Appendix F of the Waste Assessment, page 92 of 470) states that a weekly pick up of material with transport to one treatment location would require at least 70 additional vehicles (at 5T capacity) on the road, and with 100 vehicle movements per day. The report goes onto to say that this is not feasible, so more than one treatment location and/or use of transfer stations would be required.

However, due to land availability, additional treatment locations are likely to be constrained, and would it is probable that they would be a significant distance from both Auckland, and potentially the market for compost. There are also expected to be constraints in gaining approvals for new sites.

Transfer stations are not considered ideal either, due to the difficulty in double-handling putrescible material.

A quarterly pick up, when compared to a weekly pick up, would achieve a 92% reduction in vehicle movements per annum. Further, pre-treated material would allow for improved double handling at transfer stations if this was necessary.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

A 35% reduction in material weight reduces food weight be carried per annum by 89,000 MT

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Reduced mass and volume of material

The use of composting bins allows for aerobic decomposition of material, and this can result in a considerable loss of weight, which further improves transportation efficiency.

Some studies have found a reduction in volume of 40%, and a 13% reduction in from water evaporation in a 14 day period. Although the Foundation recommends addition of dry carbon matter to create an improved mix, which will increase both weight and volume, the decomposition process and evaporation is considered to significantly offset this increase. A 35% reduction in both weight and total volume is not an unreasonable expectation.

Based on figures provided in the waste assessment report, a 35% reduction in material weight would result in a reduction of 89,000MT of food waste material to be carried per annum (based on 400,000 households generating 64kgs of food waste per annum).

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

Reduced vehicle movements result in significant improvements to operational efficiency and a reduction in environmental impacts

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4.2.3 Nuisance

Council, by law, has to collect waste material promptly and efficiently and must not allow material to cause 'nuisance', which is anything that is offensive and injurious to health or could encourage breeding of rats or flies (as per Health Act 1956). This has been identified in the Draft WMMP as one of the reasons for a weekly collection.

However, the proposed collection bins allow for the aerobic breakdown of material, generating high temperatures and avoiding development of unpleasant odours associated with anaerobic decomposition.

The bin also ensures that food waste is isolated from interference by animals and is generally isolated from insect pest species. The rapid aerobic breakdown of material further reduces the incident of insect pests.

4.2.4 Similarity to Council preferred management system (i.e. home composting)

The Council's preferred disposal option for food waste is for residents to create their own compost. The proposed system provides the infrastructure for residents to do this, which may further support home composting initiatives.

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

A pre-composting system, using aerobic breakdown of material, avoids the development of unpleasant odours

An aerobic wheeled bin isolates material from animals and pests

A pre-composting system provides households with the infrastructure to create their own compost

Berrysmith Foundation

4.3 TRIAL REQUIREMENTS

The Foundation is currently undertaking a small-scale trial of composting bins to determine ideal collection regime and organic matter ratios, as well as weight and mass reduction of materials in local conditions.

A wider, community-based trial will need to be undertaken to determine:

- Diversion rates with and without bin liners, and with and without use of organic matter
- Ideal collection regime in the community
- Consumer perceptions
- Appropriate incentives and disincentives to achieve maximum diversion

The proposed collection cycle outlined in the Draft WMMP appears based on international studies of behaviour (e.g. preference for plastic bins for safety and cleanliness, pick up of food waste more frequently than general refuse increases diversion, levels of service are considered to be reduced with less frequent pick-ups). These scenarios need testing in local conditions, along with options for a more innovative and environmentally friendly food waste collection system; namely a pre-composting system.

The Berrysmith Foundation would like to partner with Council to undertake a wider trial on pre-composting of food waste collection.

Auckland Council
Te Kaunihera o Tāmaki Makaurau

To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

The Berrysmith Foundation would like to partner with Council to undertake a wider trial on pre-composting of food waste collection

The Foundation is undertaking a small-scale trial of composting bins to determine ideal management in local conditions

The Foundation will share these results with Council as soon as they are available

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5. LEGISLATIVE ALIGNMENT

The proposed pre-composting system supports the Council's vision "to become the most liveable eco-city in the world". To achieve this vision, Auckland not only needs to adopt aspirational goals such as zero waste by 2040, it also needs to be a leader, to be innovative and to adopt new approaches.

The pre-composting system is such an approach. While closely aligning with home composting as a preferred treatment methodology, it introduces a new way of managing food waste, minimising environmental impacts associated with a weekly collection regime. This also supports the Council goal of a 40% reduction in human generated GHG emissions by 2031, by significantly reducing transport related emissions associated with collection of food waste.

The pre-composting system also supports the strategic objectives of the draft WMMP. In particular,

- It achieves improved operational efficiencies in domestic waste and recycling by reducing pick-up frequencies and associated vehicle movements
- Provides infrastructure and processes to maximise resource recovery by providing households with composting infrastructure and pre-treating material to aid handling and the end use composting process
- Maximises economic opportunities by reducing transport costs and effects, allowing funding to be utilised elsewhere
- Is neutral in respect of other objectives (i.e. provides no additional support, but remains consistent with all)

The table on the following page provides a further brief assessment against Council's assessment criteria, of the pre-composting system compared to the proposed weekly food waste collection system.

Auckland Council
Te Kaunihera o Tāmaki Makaurau

To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

To become the most liveable eco-city in the world Auckland needs to be a leader, to be innovative and to adopt new approaches. The pre-composting system is such an approach.

The system supports the Council goal of a 40% reduction in human generated GHG emissions by 2031, by significantly reducing transport related emissions associated with collection of food waste

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Waste Plan Assessment Criterion	Pre-composting system compared to weekly food waste pick up
ENVIRONMENTAL ISSUES	
• Waste minimisation e.g. volume of waste reduction/diversion from landfill.	Neutral
• Resource efficiency benefits.	Positive – reduced transportation requirements
• Environmental harm.	Positive – reduced transportation requirements
• Climate change related issues/impacts.	Positive – reduced transportation requirements
SOCIAL – CULTURAL ISSUES	
• Health and safety considerations (including public health, staff and contractor-related issues).	Neutral
• Public concern/interest.	Negative/neutral – public perceptions associated with any food waste collection will need to be managed
• Partnership/community involvement.	Neutral/positive – improved support to home composting processes
• The level to which producer and consumer responsibility is supported.	Neutral
ECONOMIC ISSUES	
• Estimated whole-of-life cost.	Neutral
• Consideration of whether revenue is generated by the initiative (where relevant).	Neutral
• Other economic impacts, such as avoided costs or other benefits to the Council or other stakeholders.	Positive – avoided transportation costs
ORGANICS DISPOSAL OPTIONS ASSESSMENT CRITERIA	
• Reducing waste to landfill (and aiming for Zero Waste)	Neutral
• Cost	Positive – increased cost of bins and start up packs to residents offset by reduction in transportation requirements and associated impacts/costs
• Convenience and ease of use for residents	Neutral/negative – residents may have negative perception of delayed collection regime, but views about cleanliness of food waste collection need to be countered for any pick up regime
• Beneficial end products and end uses (and potential revenue)	Neutral – some composted material may be preferentially diverted to home use
• Health and safety (for contractors)	Neutral/positive – pre-composted material improves handling at transfer stations
• Impact on the private green waste sector	Neutral/positive – reduced collection frequency discourages use of bins for green waste collection

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To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

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Section 77 of the Local Government Act requires that Council consider all reasonably practicable options for achieving objectives. Given that the pre-composting system aligns with, and supports, the Council's strategic objectives and is generally neutral or positive against Council's stated assessment criteria, the Foundation considers that this system should be contemplated as a viable alternative for food waste management.

Further, the pre-composting system supports the purpose of the Waste Minimisation Act 2008 to "encourage waste minimisation and a decrease in waste disposal in order to: protect the environment from harm; and provide environmental, social, economic and cultural benefits", improving protection of the environment by avoiding those impacts associated with more regular collections.

Auckland Council
Te Kaunihera o Tāmaki Makaurau

To become the most liveable eco city in the world, Auckland will aim for the long-term aspiration goal of zero waste by 2040, turning its waste into resources.

The strategic objectives of the draft WMMP are supported through increased operational efficiency, maximum resource recovery and maximised economic opportunities through diverted costs

The system improves protection of the environment by avoiding impacts associated with more regular collections

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6. SUMMARY OF SUBMISSION AND RELIEF REQUESTED

The Berrysmith Foundation strongly supports the adoption of a food waste collection system but considers that the proposed weekly collection has an unnecessarily high environmental footprint, and is costly.

Therefore, the Foundation is seeking that the Council adopt policies and approaches that maximise the diversion of food waste but that close consideration is given to the use of a pre-composting system, which comprises:

- An aerobic composing wheeled bin for onsite food waste collection and management
- Supply of kitchen collection bins and bin liners
- Supply of high carbon material
- Pick up regime extended to around 12 weeks

The benefits of this approach include:

- Reduced bin capacity over the collection period, reducing likelihood of green waste capture
- Significant reduction in transportation requirements and associated environmental impacts
- Management of potential nuisance from anaerobic bin conditions
- Similarity to home composting, and provision of infrastructure for such practices

To further quantify the positive impacts of the pre-composting system, when compared with the weekly collection, a detailed comparison of the environmental and financial aspects of both systems is required. The Foundation is happy to assist the development of Business Case for the pre-composting system, but would like access to Council's models for the proposed collection and transportation scenarios so that accurate comparisons can be made. Further, the Foundation recommends that this comparison includes the carbon footprint of both scenarios, given Council's commitment to a reduction of GHG emissions.

Further, as the barriers to resident participation to food waste collection systems need to be understood

in the local context, research and trials will be required to ensure maximum diversion of food waste. Research and trails should include the pre-composting option. This will ensure that system design, communication, education and enforcement are tailored to address barriers.

The Foundation is undertaking a small scale trial of use of a pre-composting system in local conditions, and will make available information to Council as it comes to hand. The Foundation would then like to partner with Council to undertake a wider trial, to ensure that consideration is given to a pre-composting system for food waste collection in the Auckland Region.

The Foundation looks forward to ongoing discussions with Auckland Council on recycling food waste in the region.

Disclaimer:

The Berrysmith Foundation is a not for profit organisation, with interests in research and development of sustainable food production systems. The Foundation has an interest in a food waste collection system in Auckland as a public good and has no supply agreements in place, and does not specifically endorse any product or service related to food waste collection or composting systems. However, to support its ongoing research activities into sustainable food production, the Foundation is always seeking to identify alternative funding sources

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