

IMPLEMENTATION OF HAMILTON CITY COUNCIL'S WASTE MANAGEMENT AND MINIMISATION PLAN – AN OPERATIONAL PERSPECTIVE

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1 INTRODUCTION

The Hamilton City Council Waste Management and Minimisation Plan (WMMP) 2012, sets a new direction for Hamilton City Council (HCC) in regard to future waste management and minimisation. The vision of the WMMP is:

“Hamilton City become recognised as a national leader in the minimisation of waste and ensure that innovative and sound waste management practices underpin the City’s environmental, social, economic and cultural well-being”

The purpose of the WMMP is to describe HCC’s vision in relation to waste management; set objectives, policies and actions to achieve the vision; set a framework to monitor and measure progress; provide general information on how the Council intends to fund the actions of the WMMP over the next six years; and help meet all the statutory requirements on the Council in regards to waste management.

The objectives of this paper are to:

- Discuss the development of the WMMP;
- Discuss actions implemented to date;
- Identify constraints HCC has encountered with regards to achieving waste minimisation; and
- Discuss future actions of the WMMP.

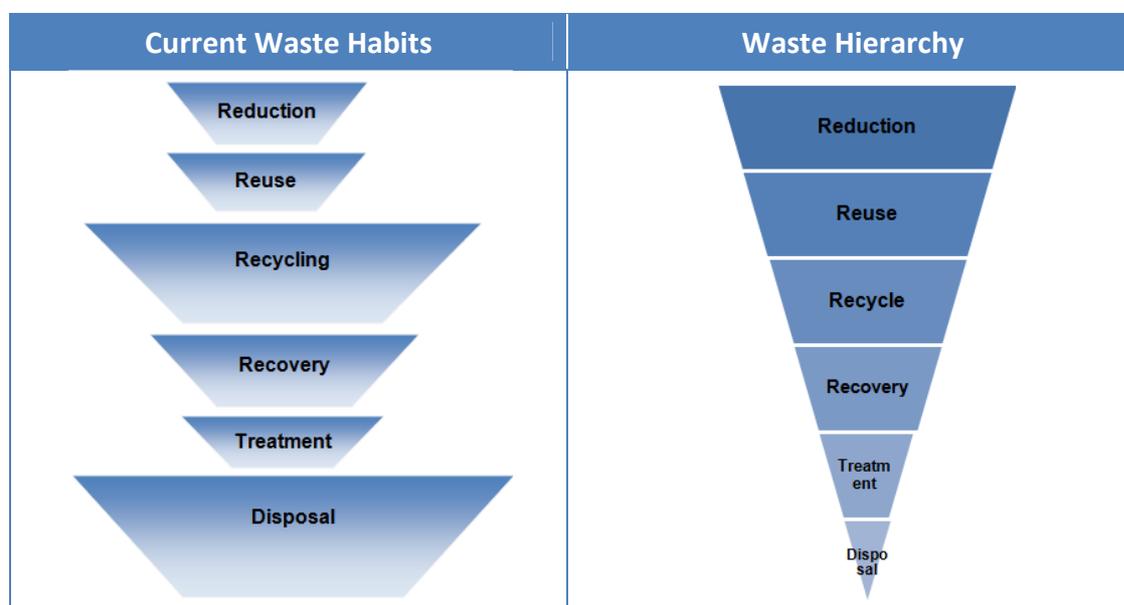
The WMMP can be found on HCC’s website using the following link:

<http://www.hamilton.co.nz/our-council/council-publications/managementplans/Pages/default.aspx>

2 WMMP DEVELOPMENT

2.1 Identifying the problems/issues – role of the Waste Assessment

One of the starting points of developing the WWMP, was the commissioning of a Waste Assessment which examined the existing waste and diverted material services in the City, and identified a number of issues and challenges facing Council that will influence future waste management and minimisation service provision. It also assessed how the waste habits of Hamilton City – both its residents and the Council, compared to the waste hierarchy as outlined by the Waste Minimisation Act. The Waste Minimisation Act recommends the waste hierarchy as a target to aspire to. Therefore the WMMP aims to change the waste habits of Hamilton residents as illustrated below:



When drafting the WMMP, HCC wanted a plan which clearly and robustly identified actions and steps towards achieving minimisation, but one that would enable flexibility and adaptability in a changing market and where best solutions to solve the issues were yet to be identified. It was important to ensure that the plan did not extend costs to the ratepayer beyond what was currently affordable, nor commit the Council to the use of a technology or course of action that may not prove optimal over time.

The waste industry is influenced by fluctuating commodity markets, the introduction of new legislation and the invention of new technologies which results in a difficult environment to plan in. The WMMP looked to update the previous Waste Management Plan in order to

make it a flexible and workable document, it has achieved this through adopting an approach to use wording such as ‘investigate and implement if feasible in order to adapt and accommodate change over time. This ensured a plan that should remain relevant throughout the duration of the plans six year life. The action wording is illustrated in the extract of the top 5 high priority actions for Hamilton’s WMMP below.

High Priority Actions	
1.	Council <i>to consider</i> the need for a waste minimisation officer to lead waste management and minimisation within Council and coordinate the implementation of the Actions within this Plan.
2.	<i>Review and evaluate future options</i> for service delivery, including the contractual arrangements of the transfer station and collection services, for the purpose of obtaining competitive rates and security of access to disposal facilities.
3.	<i>Review, evaluate and update</i> the existing waste bylaw to better regulate the collection, transportation and management of waste....
4.	<i>Monitor and report</i> on the waste related complaints received through Council’s service request system.
5.	<i>Work with</i> the Waikato District Health Board to establish formal communication protocols between the organisations regarding health implications associated with waste management and minimisation activities.

Once the actions were developed they were prioritised based on legislative requirements; key issues raised during consultation and within the preparation of the Waste Assessment; maximum impact in terms of waste minimisation; and also cost to implement. To ensure that these actions were programmed and could successfully be accounted for in financial planning, HCC also incorporated dates for implementation of each of these actions and their funding sources. Because HCC also considers the mandating of actions to be an important tool for programming, each action was linked to the objective and policy it is to achieve.

3 ACHIEVING WASTE MINIMISATION

Since the adoption of the WMMP in April 2012, Council has made good progress with implementing several of the actions, including:

3.1 Appointment of a Waste Minimisation Advisor

Action 1 of the WMMP sought the appointment of a Waste Minimisation Advisor to lead waste management and minimisation within Council. This action was prioritised as it is fundamental to the success of the WMMP. This role has now been appointed and involves:

- Implementing objectives and actions outlined within the WMMP and monitoring performance measures.
- Coordinating Waste Minimisation activities.
- Leading the development and implementation of solid waste education and communication processes.
- Management of HCC's Waste Levy funding.

This is significant for HCC as historically, waste management/minimisation was not specifically resourced, therefore a dedicated Advisor will ensure that opportunities are maximised and waste minimisation solutions are integrated.

3.2 Development and implementation of the Solid Waste Bylaw 2012

HCC identified in the Waste Assessment and the preparation of the WMMP, that a key implementation method in initiating a new approach to waste minimisation, was the Council's Solid Waste Bylaw. Therefore, Council worked towards developing the WMMP and reviewing the existing waste bylaw concurrently. The following needed to be addressed:

- Poor information on the volumes and destination of Hamilton's waste.
- The existing bylaw contained irrelevant contract related information.
- The scope of the bylaw needed to be widened to include the management and control of all waste streams in Hamilton. This would also allow for any change in levels of service that may occur.
- Wording and terminology needed to be updated to ensure consistency with current legal and legislative context.

In addition, the review of the WMMP highlighted the following additional issues that needed addressed and included within the new bylaw:

- Licensing of waste operators to allow monitoring and measurement of waste flows and volumes.

- Event waste management to ensure consistency of recycling opportunities and expectations across the city.
- The accumulation and storage of waste (including recyclables).
- Inclusion of the whole city area in the bylaw to open up opportunities to maximise city waste recycling.
- Control littering and illegal dumping of waste.

3.3 *Input into the District Plan*

An action within the WMMP was to incorporate opportunities for waste minimisation into the District Plan. Using the District Plan as a tool to assist waste minimisation, was considered important, as it places requirements and responsibilities to ‘developers’ and takes the issues to the wider public. Whereby making waste minimisation, a community function, not just the Council or dedicated interest groups or individuals. The District Plan includes more standard requirements such as recycling space requirements as well as the need for waste assessments and waste audits for certain types and scale of developments. Specific measures included in the draft Proposed HCC District Plan includes:

- Waste Management Plans for large events.
- Requirement for solid waste storage areas for recycling and litter bins which provide convenient access for waste collection for building developments.
- Using materials from a renewable resource (where possible).

3.4 *Leading by example*

HCC have undertaken an internal audit of waste within the Council, and have developed strategies to minimise the amount of waste being generated, this includes:

- Paper and cardboard recycling bins.
- Removal of individual desk side bins and replacement with small desktop bins.
- Worm composting unit for organic waste.
- Promoting and engaging in “Keep New Zealand Beautiful” week.
- Developing an internal Sustainability Plan.

3.5 Establishment of an e-Cycle facility

An electronic waste collection facility was opened in Hamilton in January 2012. It collects and disassembles a range of domestic electrical appliances (“e-waste”) so components and materials can be reused and recycled.

The RCN e-Cycle site is operated by Raglan-based recycling organisation Xtreme Waste Incorporated, in conjunction with nationwide company RCN Group. The facility operates on a user pays basis, with customers offloading TVs, computers, photocopiers and other electronic items.



Although there is a charge for disposal, customers have provided positive feedback, knowing that their e-waste will be dealt with in an ethical and environmentally-friendly way. The challenge for this facility and service will be to capture more of the electronic waste market in an environment where disposal of e-waste with general refuse is predominant.

3.6 Investigation of sewage sludge options

An action identified within the WMMP, was the investigation and assessment of alternatives to the current practice of disposing sewage sludge to landfill. In 2011, HCC commissioned an investigation to establish if there were other disposal or beneficial re-use options available for its sewage sludge. Three alternative options were short listed and recommended for further investigation being:

- Land application of dewatered cake
- STERM (Low temperature incineration)
- Land application of vermi-composted sludge

HCC further investigated each of the three options and identified vermicomposting as the preferred option for the immediate future, as it met a variety of objectives including the comparatively well proven nature of the process; sustainability and reuse; low capital

expenditure; and environmental benefits. HCC are now progressing contractual discussions with vermicomposting providers with an aim to switch to this option in early 2013. This will result in 12,000 tonnes per annum of sewage sludge being diverted from landfill.

3.7 Investigation of pyrolysis options

The pyrolysis study was a two year project which has now been completed; this project was started before the WMMP was adopted however, it complements actions in the WMMP of investigating organics diversion. The project was a Waikato based case study on the pyrolysis process using feedstocks such as sludge, paunch grass, food waste and chicken waste. Pyrolysis is a well understood process but its application to converting organic waste into useful resources is still at an early stage of development.

The objective of this project was to have a commercial solution to Waikato's regional waste, to clarify market values and opportunities for biochar in New Zealand, investigate the impact of pre-drying feedstock and syngas recovery, and to get an indication of what the major impacting variables and overall economic viability would be. The first year results showed that syngas and biochar can be produced from the above feed stocks whilst the second year investigations built a clear picture of the major economic factors and their likely impact on the feasibility of a pyrolysis project in the Waikato. Evidence was provided that if the right conditions could be met, pyrolysis could become an alluring investment opportunity with significant environmental benefits.

4 CONSTRAINTS TO ACHIEVING WASTE MINIMISATION

HCC has made good progress to date and developed some excellent initiatives for waste minimisation. However, there have also been a number of constraints faced when implementing the action plan including:

- Balancing experimenting with new waste minimisation techniques and using funding to maintain and improve the current level of service to residents.
- Financial constraints in terms of funding and budgets.
- Landfill costs are comparatively cheap. Recycling and reuse can be a more expensive option.

- Some recycling services are not available in New Zealand with the only option being to send overseas for processing.

5 SELECTION OF OTHER ACTIONS BEING PROGRESSED

5.1 Review of the waste services

A key action of the WMMP that could lead to the most fundamental change is the comprehensive review of the waste services HCC provides. This review will look at not only what waste services are provided, and how (eg bins or bags), but also who pays.



Currently every household within the City can put out two 60 Litre black rubbish bags and is also provided with a 45 Litre recycling crate for the collection of recyclables 1 and 2, together with all unbroken glass, steel and aluminium cans are collected. Clean paper and cardboard can also be securely bundled and put out next to the recycling.



The current model is working well from an operational perspective, and a high quality of separation is achieved due to kerbside sorting, however it is limited in terms of what recyclables are provided for and there is little incentive for waste minimisation of the refuse. In addition approximately 80% of submissions in the WMMP process requested that the recycling service be expanded and that bins be provided for refuse collection. A future review and investigation will include the following options:

User pays service	Green waste collection	Sewage sludge disposal
		
Greater recycling options	Inorganic Collection	Organic Collection
		

5.2 Continuing education of residents

The education of residents is an essential tool in minimising the amount of waste generated and ultimately ending up in landfill. The education of residents is ranked as a high priority in the action plan and was also raised as an issue during the consultation and hearing of the WMMP. HCC already supports education programmes such as Enviro Schools and developed a recycling and refuse guide, a waste directory, supports the waste exchange and are also developing waste factsheets. This will be a key role of the new Waste Minimisation Advisor.

5.3 Other actions looking forward

Some of the other actions in the WMMP yet to be implemented include:

- Produce a guidance document that sets out the framework to guide companies and groups who wish to work with Council to minimise waste. This will provide a more cohesive strategy on matters the Council might want to invest resources
- Investigate and implement if feasible, options to divert greenwaste and putrescible waste.
- Investigate options of providing and promoting, collections and individual exchanges to promote the reuse of unwanted items. Such as localised community events, free to sell/exchange student waste events, etc.
- Review the adequacy of diverted material drop off facilities within the City.

6. CONCLUSION

The Waste Minimisation Act has taken some time to get to grips with and is a move away from the targets of the old NZ Waste Strategy. However, now that the WMMP has been produced setting an ambitious new vision for the City, HCC feel like they are starting to get some really good outcomes. Like most things, the momentum of the actions will be the measure of success of the WMMP but it is tracking well to date.