NORTHERN TASMANIA ORGANICS COLLECTION TRIAL 2011/12

EVALUATION OF TRIAL RESULTS

Hyder

Hyder Consulting Pty Ltd
ABN 76 104 485 289
Level 5, 141 Walker Street
Locked Bag 6503
North Sydney NSW 2060
Australia
Tel: +61 2 8907 90007
Fax: +61 2 8907 9001
www.hyderconsulting.com

NORTHERN TASMANIAN WASTE MANAGEMENT GROUP

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Evaluation of Trial Results

Author	Victoria Bond, Tanya Rajaratnam
Checker	Victoria Bond
Approver	Ron Wainberg
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GLOSSARY

Abbreviation or Term	Meaning
Bio Basket	Small, aerated bench-top kitchen container or caddy (approx. 10 litres) used for the collection of kitchen organics. In the trial, this caddy was provided to all participants and intended to be lined with Biobags, which were also provided.
Biobag	A breathable biodegradable liner bag made from corn starch and used to line kitchen caddies for collection of kitchen organics.
Bio Bin	This term seemed to be used interchangeably by some trial participants to refer to either the Bio Basket or the green-lidded Organics MGB.
CCWMG	Cradle Coast Waste Management Group
Diversion rate	The average rate of organics recovery across the whole trial area per household per week
DWM	Dulverton Waste Management
GHG emissions	Greenhouse Gas emissions
Hyder	Hyder Consulting Pty Ltd
LGA	Local Government Area
MGB	Mobile Garbage Bin or 'wheelie bin'. The MGB used in the trial was green-lidded and had 240 litres capacity and is also referred to as the Organics bin.
MSW	Municipal Solid Waste
NTWMG	Northern Tasmanian Waste Management Group
Organics	Biodegradable food and/or garden material able to be collected in the trial
Organics MGB	The green-lidded MGB used in the trial to collect food and garden material
Organics yield	The average quantity of organic material per bin collected (in this case measured in kilograms per fortnight, due to the fortnightly collection frequency)
Participation rate	The percentage of trial households using the collection system during the trial
Presentation rate	The percentage of all trial bins that are presented for a collection (in this case measured per fortnight, due to the fortnightly collection frequency)
Residual Waste	Non-recyclable waste, also known as Garbage and sent to landfill.
Wheelie bin	Mobile Garbage Bin or MGB, which in the trial was 240 litres with a green lid

1 INTRODUCTION

The Northern Tasmanian Waste Management Group (NTWMG) proposes to find ways to divert food and garden organics from landfill. These organics make up around half the contents of the household garbage bin and have the potential to be processed into nutrient-rich compost. Their removal from landfill disposal will reduce greenhouse gas emissions.

Hyder Consulting Pty Ltd (Hyder) presented Dulverton Waste Management (DWM) with an assessment of a preliminarily business case for introducing a kerbside organics collection service in the northern and north-western regions of Tasmania in 2011. Six scenarios were evaluated and a weekly 240L combined food and garden organics collection with fortnightly refuse collection system was selected as the preferred scenario. The results of the business case showed that the total volume of waste disposed to landfill could be reduced by over 25% through the introduction of this preferred option.

Before full implementation of a kerbside organics collection system, it was recommended that a trial be conducted in order to identify local issues and knowledge gaps. A trial can encourage community debate and be used to fine tune program / service components, such as education, communication and infrastructure. Therefore, 900 homes throughout parts of north and north-west Tasmania were selected to participate in a food and garden organics trial from July 2011 until June 2012. Each household in the trial was provided with a 240L wheelie bin, kitchen caddy and compostable bags.

As a result of the trial, NTWMG measured organics tonnages captured, surveyed residents participating in the trial, and assessed how well the trial worked. NTWMG councils will consider the outcomes of the trial based on the quantitative data and qualitative information gained from surveys and focus groups. If deemed successful, implementation on a permanent basis throughout the NTWMG areas will be considered. This report provides an analysis and summary of the quantitative and qualitative trial results and focus groups.

There are 17 member councils of Tasmania's north and north-west regions which could benefit from the experience learnt from the trial. Undertaking this evaluation process aims to contribute to the long-term strategic planning of waste management and resource recovery within the region. Consultation with the community will confirm that the community's expectations are met for cost-efficient, convenient and sustainable waste management services. This process supports robust future contract development of organics collection and processing, with unexpected costs minimised.

2 METHODOLOGY

The NTWMG selected approximately 900 households to participate in the trial, a sample size which it considered to be both cost-effective and large enough to provide meaningful results. The trial was undertaken by three member local government areas (LGAs) of the NTRWMG and as such three separate trial areas were chosen. These trial areas are set out in the table below:

Table 1 NTWMG Organics Collection Trial Areas

LGA	Suburb	Trial Area
Meander Valley Council	Blackstone Heights	450 tenements
West Tamar Council	Gravelly Beach	230 tenements
Latrobe Council	Shearwater	220 tenements

The suburbs selected for inclusion in the trial were chosen to ensure that a discrete area could participate and all households in a street were included. The areas were also of a size to facilitate a single truck run. As such, it is possible that the demographics of each trial area were not necessarily representative of each corresponding Council's community profile. However when combined, the three trial areas were considered by NTWMG to demonstrate a range of different household types and property sizes, from elderly individuals to families and small town blocks to large rural acreages.

As advised by the NTWMG, research into collection systems used elsewhere indicated that the best trial method to ensure green waste and food waste were diverted from landfill was to provide collection containers for both inside and outside of the home. Therefore, all households in each trial area were supplied with the following equipment:

- green-lidded 240 litre Mobile Garbage Bin (MGB)
- aerated 10 litre bench-top caddy (Bio Basket)
- roll of 100 biodegradable liner bags (Biobags)

Kitchen Bio Basket lined with Biobags

240 litre Organics MGB

Participants were requested to use the 10 litre Bio Basket to collect food waste in the kitchen and transfer the bags to the MGB when full. Materials to be placed in the container included scraps, leftover food, meat and dairy, shredded paper and paper towel. The aerated kitchen container was selected in order to aid in reducing odours and moisture content of the material, while the provision of liners also maximised the convenience of emptying the container into the collection MGB. Garden organics could then also be included in the MGB, which was then collected from the kerb on a fortnightly basis.

Communications with participants throughout the trial included the following elements:

- Introductory Letter to households in trial areas about 2 weeks prior to commencement;
- An A4 colour brochure delivered with the Bio Baskets and MGBs (an example is provided in ***Appendix E***).
- Media Release and articles published in the local print media; and
- Banners displayed at council facilities.

After collection, organics from the Shearwater trial area were transported to the existing organics facility at DWM for composting. However there is not yet a regional organics processing facility in operation in close proximity to the other trial areas and therefore Meander Valley and West Tamar Councils were not able to transport the organics collected from households to a composting facility. Instead, the material was stockpiled in order to weigh and inspect for contamination, prior to being sent to landfill.

Originally it was intended that Launceston City Council would accept the organic material collected from the trial at the Launceston Waste Centre (LWC) and undertake processing on a temporary basis. These were interim measures for the NTWMG as it awaited the outcomes of the kerbside collection trial and a study into the feasibility of establishing a regional organics composting facility (DJR Environmental, 2012).

Monitoring and data collection consisted of the following methods:

- Number of bins presented at collection;
- Total tonnages per collection;
- Visual inspection for contamination;
- Mid-trial survey;
- Post-trial Focus Groups/ Community Forums.

The results of the above monitoring and evaluation methods are analysed in the following sections of this report.

3 QUANTITATIVE TRIAL RESULTS

3.1 KEY RESULTS

Participation in the trial was not optional in the designated trial areas and all properties received an organics MGB and Bio Basket system. The NTWMG advised that a very small number of elderly residents in the Shearwater trial area requested removal of the bins as they reported being unable to use the system. Presentation of MBGs was highest in the Shearwater trial area with almost 65% of all bins presented on an average fortnight. Presentation rates for Blackstone Heights and Gravelly Beach were just over 50%. It should be noted that the presentation rates differ from participation rates, which were estimated to be much higher. The *presentation rate* is the percentage of bins that are placed out at kerb for each collection, whereas the *participation rate* is the percentage of households who reported to use the system during the trial, including households that did not place the bin at the kerb every fortnight. In addition, the collection quantities outlined in the results refer to the total quantity of organic material.

The average weight of material collected per bin, defined as *the organics yield*, was found to be quite high in this trial, particularly in Gravelly Beach where 23 kg on average was collected per household per fortnightly collection. This result is relatively high compared to typical fortnightly yields in other parts of Australia[1] and suggests that residents tried to ensure bins were full before placing them at the kerb for collection and/or that organic material is generated at a high rate in this region.

The main quantitative results of organic waste collections are outlined on the following page in Table 1.

[1] Hyder Consulting (2012) *Food and Garden Organics Best Practice Collection Manual*; prepared on behalf of the Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available online at: http://www.environment.gov.au/wastepolicy/publications/organics-collection-manual/index.html

Table 2 Summary of Trial Results

Item	Measurement	Trial Area	Data / Result
Trial Participants	Number of households included	Blackstone Heights	450
		Gravelly Beach	230
		Shearwater	220
		Total	**900**
Presentation rate	Average number of bins presented per collection (per fortnight)	Blackstone Heights	52.31% (235 bins)
		Gravelly Beach	51.93% (119 bins)
		Shearwater	64.79% (143 bins)
		Total	**56.34% (507 bins)**
Average organics collection quantities in trial areas	tonnes / fortnight	Blackstone Heights	4.38
		Gravelly Beach	2.76
		Shearwater	2.69
		Total	**3.28**
Average organics bin yield	kg / bin presented / fortnight	Blackstone Heights	18.59
		Gravelly Beach	23.01
		Shearwater	18.89
		Total	**20.16**

3.2 DIVERSION FROM LANDFILL

The average rate of diversion from landfill per trial household was calculated overall and for each trial area. Although the collection of organics occurred on a fortnightly basis (and therefore presentation and yield are presented per fortnightly collection), the *diversion rate* is a measure of waste recovered that would have otherwise been sent to landfill, and is typically measured on a weekly basis to align with typical residual waste collection frequency. In the results presented here, the diversion rate is based on the average yield (i.e. weight) of organics per bin per collection but also accounts for the average bin presentation rate (ranging from approximately 52% to 65%), resulting in a measure of the average weekly rate of recovery per household across the whole trial area (i.e. not only across bins presented but also across those bins that are not presented for collection). Normally, a diversion rate is expressed as the percentage of material that is recovered from the total material generated. However as data on residual waste collection was not available and the fact that compositional waste stream audits were not undertaken during this study, the total quantity of organics sent to landfill compared to organic waste recovered is unknown. As such, diversion was expressed simply as kilograms of organics recovered per household per week across the each trial area or overall.

The results show that the diversion rate was highest in the Shearwater trial area, with over 6kg of organics diverted from landfill per household per week. Even though the fortnightly yield of organics from bins presented in Gravelly beach was higher than in Shearwater (about 23kg/bin/fortnight), when taking into account the lower presentation rate, the diversion rate in this trial area was very similar to Shearwater (about 6kg/household/week). Hyder recently reviewed a number of similar organics co-collection trials throughout Australia and found an average diversion rate across ten good practice examples of 8.0 kg/household/week. The average diversion rates for all three areas in the current trial were significantly lower than the Australian average; however there are several explanations for this. Firstly, the NTWMG trial was conducted over a 12 month period and average results also include recovery rates during the colder Tasmanian winter, during which time plant growth is minimal and the generation of garden waste material is greatly reduced. Another factor that may explain the lower diversion rate is the apparent low recovery rate of food organics. Although the NTWMG did not undertake waste composition audits to determine the recovery of food versus garden organics, anecdotal information from the visual inspection of organics collected indicated that food organics was a very low proportion of the material collected. Furthermore, the qualitative results indicate that a significant proportion of participants either did not use the Bio Basket at all, or did not include all types of food organics.

The organics diversion results are displayed in the following table (Table 3) and graph (Figure 1)Figure 1 Rate of Organics Diversion from Landfill (per household per week).

Table 3 Rates of Diversion from Landfill

Item	Measurement	Trial Area	Result
Diversion rate overall (based on the above presentation rates)	kg / household / week	Blackstone Heights Gravelly Beach Shearwater	4.9 6.0 6.1
Total diversion of organics during trial	Total tonnes collected over 12 month trial period	Blackstone Heights Gravelly Beach Shearwater	218 138 108

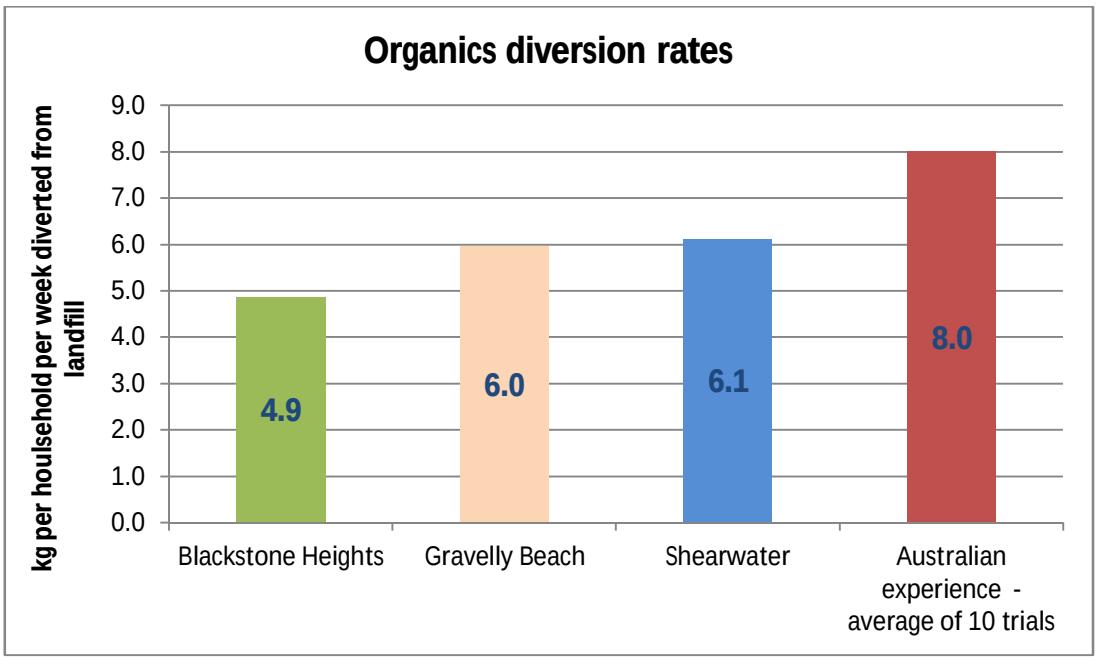

Figure 1 **Rate of Organics Diversion from Landfill (per household per week)**

Based on the total quantities of organic material collected throughout the trial period, an estimate of potential landfill cost savings was calculated. This calculation only took into account costs directly related to the disposal of waste to landfill and did not account for other indirect costs such as collection and transport costs. The figure below presents these estimates.

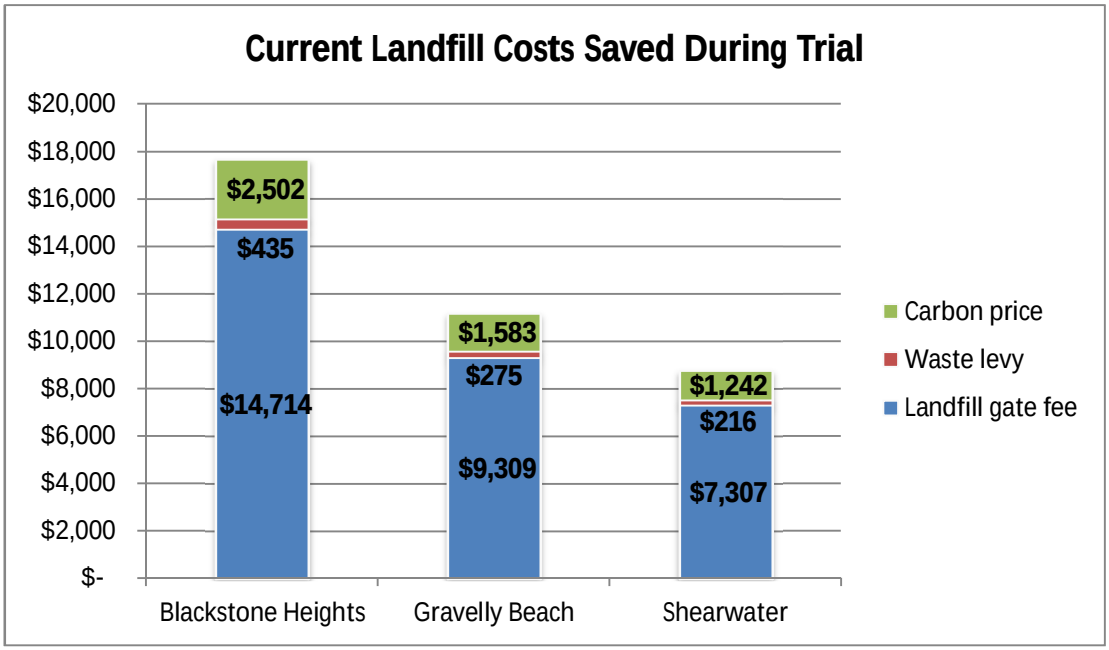

Figure 2 **Direct cost savings potentially avoided as a result of organics diversion from landfill over 12 month period of trial** [2]

[2] Carbon Price saved assumes the following: a) NTWMG Landfills are liable to pay carbon pricing mechanism, b) $15 per unit carbon floor price is maintained throughout period, c) Average National Greenhouse Accounts Emissions Factors (NGA, 2012) are applied in tonnes CO_2-e per tonne of organics, and d) relevant landfills achieve 50% gas capture. Waste Levy saved assumes that the current voluntary levy on waste to landfill is $2.00 per tonne. Landfill gate fee assumes $67.64 per tonne to be the average of gate fees applicable to landfill facilities in the Northern Tasmanian Region as used in Hyder (2011) Table 1-3.

The following graph, Figure 3, presents an estimate of the total landfill greenhouse gas emissions savings potential as a result of all organics collected and diverted from landfill during the trial. This calculation assumes that all organics collected for recycling would have otherwise gone to landfill if the trial was not in effect and therefore is a measure of the GHG emissions from landfill that would have resulted had facilities been available to compost all the diverted food waste. The estimated emissions generated by this organic material in landfill is based on typical 'emissions factors' for the material type, according to the National Greenhouse Emissions Reporting (NGER) Guidelines and National Greenhouse Accounts Factors, published by the federal government (DCCEE, 2012). It should be noted that the potential emissions savings estimate does not account for the small amount of emissions that would result from the processing of organic material or the sequestration and avoided fertilizer production benefits which result from application of the product compost.

In order to put this calculation into perspective, Hyder has also presented the emissions savings in terms of more tangible and recognisable measures in Figure 4. This graph presents both the number of cars on the road for a year and the number of households' equivalent average annual electricity usage that would need to be avoided for the equivalent value of emissions savings.

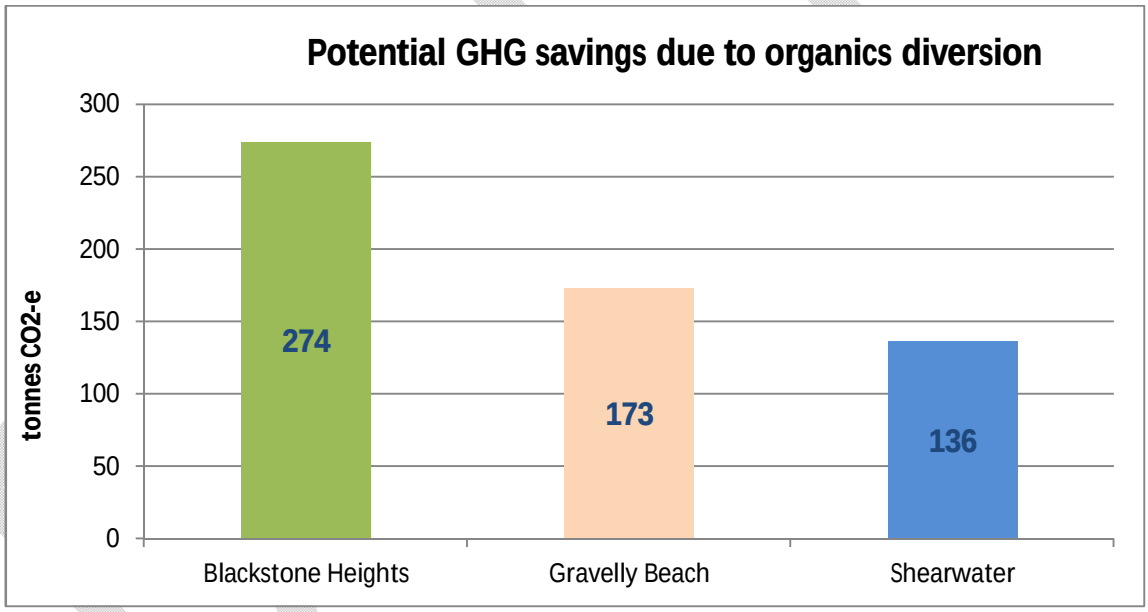

Figure 3 **Potential greenhouse emissions savings due to organics diversion** [3]

[3] Calculation based on emissions factors for food and garden organics from the National Greenhouse Accounts (NGA) Factors (DCCEE, 2012).

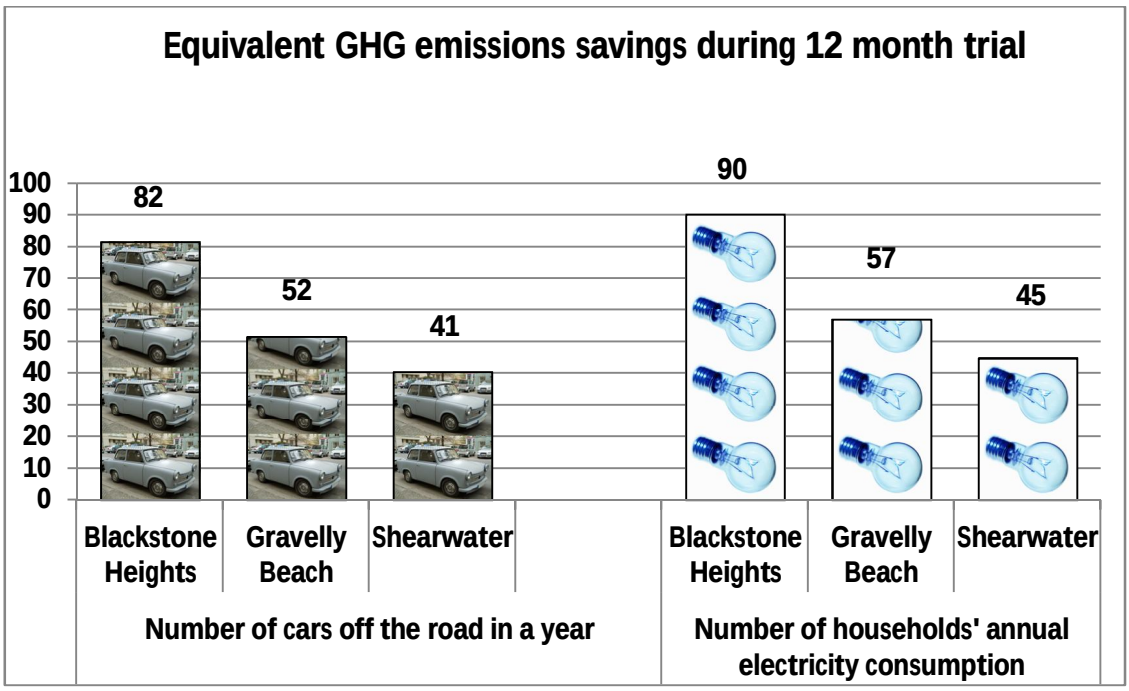

Figure 4 Equivalent measures of greenhouse emissions potentially saved during the 12 month trial due to diversion of organics from landfill [4]

[4] Cars permanently removed from roads: based on 8 litres petrol/100 km (Green Vehicle Guide, Department of Sustainability, Environment, Water, Population and Communities 2009) and an average mileage of 15,000 km per year (Australian Bureau of Statistics, Survey of Motor Vehicle Use, 2007). Annual household electricity requirements: based on an average Tasmanian household electricity consumption of 9,480kWh of electricity annually, or 26KWh daily. (OTER, 2011) and 0.32 kg CO_2-e/kWh (The National Greenhouse Accounts (NGA) Factors, (DCCEE, 2012).

4 QUALITATIVE RESULTS

4.1 PARTICIPANT SURVEYS

A survey of participants was conducted in the middle of the 12 month pilot trial. It is estimated that a total of 465 surveys were distributed by letterbox drop for the mid-trial survey. 440 trial participants in Blackstone Heights received a survey (for which there was a 47% response rate) and 25 participants in Gravelly Beach received a survey (for which there was a 48% response rate). Surveys were not distributed in the Shearwater trial area as the CCWMG chose not to participate in the evaluation stages of the trial. The surveys were designed by NTWMG; however a slightly different survey design was used in the two trial areas surveyed to meet the requirements of the relevant council. As a result of the survey methodology, it should be recognised that the reliability of results may be questionable, particularly for the Gravelly Beach area. Furthermore, results for the two surveys have only been combined and reported where the data collected was directly comparable.

The survey was intended to gather quantitative and qualitative information about the trial, in particular relating to the following:

- Household-level participation in the pilot collection service;
- Attitudes towards the service;
- Convenience of using the system and/or difficulties encountered;
- Effectiveness of education and communications methods;
- Other organics recovery occurring in the household (e.g. home composting);
- Willingness to pay for the service; and
- Suggestions for improving the service.

4.1.1 SURVEY RESULTS

In total, 219 survey responses were received from households, with the majority (207 responses or 95%) being completed by residents of Blackstone Heights. Only 12 households in the Gravelly Beach trial area completed the survey. On average, the size of households that responded to the survey was 2.8 people..

The results suggest that overall, participation in the trial is approximately 90% of households, although in Blackstone Heights, for which the survey sample size was much larger, participation was 91%. In total, 21 respondents reported that they did not participate.

It should be noted however that open-ended responses and results of a later survey question indicate that the above participation rate is not a strictly accurate figure. For example, Question 12 questioned survey participants about their use of composting. If respondents answered '*Yes'*, then the second part of this question asked whether the household still used the trial collection system (either instead or in combination with composting). A total of 66 respondents overall answered '*No*' that they were not still participating in the trial due to composting, even though only 21 respondents indicated that they were not participating in Question 1. This suggests that the actual participation rate estimated in Question 1 may be as much as 21 percentage points lower, at approximately 70%. It should also be noted that the actual presentation of bins on each collection day was at an even lower rate than this (56% overall). This suggests that some households who reported to be participating did not necessarily put the bin out for collection

every fortnight, but may have added material over several weeks until the bin was full before presenting it at kerb.

Furthermore, comments provided in Question 1 suggest that some participating households did not separate food organics and only used the service for collection of garden organics. The survey was somewhat ambiguous in gathering information about participation rates as it asked respondents to answer '*Yes'* or '*No'* to whether they are *'using the green lidded wheelie bin, BioBin (Kitchen Caddie) and Biobags'.* The question appears to imply that participation involves the use of all three elements of the collection system, including recovery of food organics. Households only placing garden organics in the green-lidded MGB may or may not have responded as participating in the trial and there was no specific data gathered in relation to the percentage of households using the service for food or garden organics only.

According to the survey, 40% of overall respondents indicated that they have a compost bin while 6% reported to worm farm at home. However the proportion of respondents from Gravelly Beach composting was much higher at 58%. As such, almost all of the 21 survey respondents who reported that they were not participating in the trial gave reasons relating to re-using organic waste at home already. Almost 60% of non-participating respondents are using a compost bin and almost a third report to be keeping chickens in addition to undertaking composting to recycle food and/or garden organics. Over a quarter of non-participants give food scraps to animals of some kind, with the most common of these animals being chickens.

Only two respondents reported inconvenience of the collection system as being a reason for not participating. Two respondents also indicated that they moved in after the trial started or did not receive the organics bin and information relating to the trial. One respondent who reported to be using the service commented that they only used it for garden material because it was too inconvenient to separate food organics from garbage.

The reasons for non-participation (and number of responses for each) are outlined in the following graph, Figure 5.

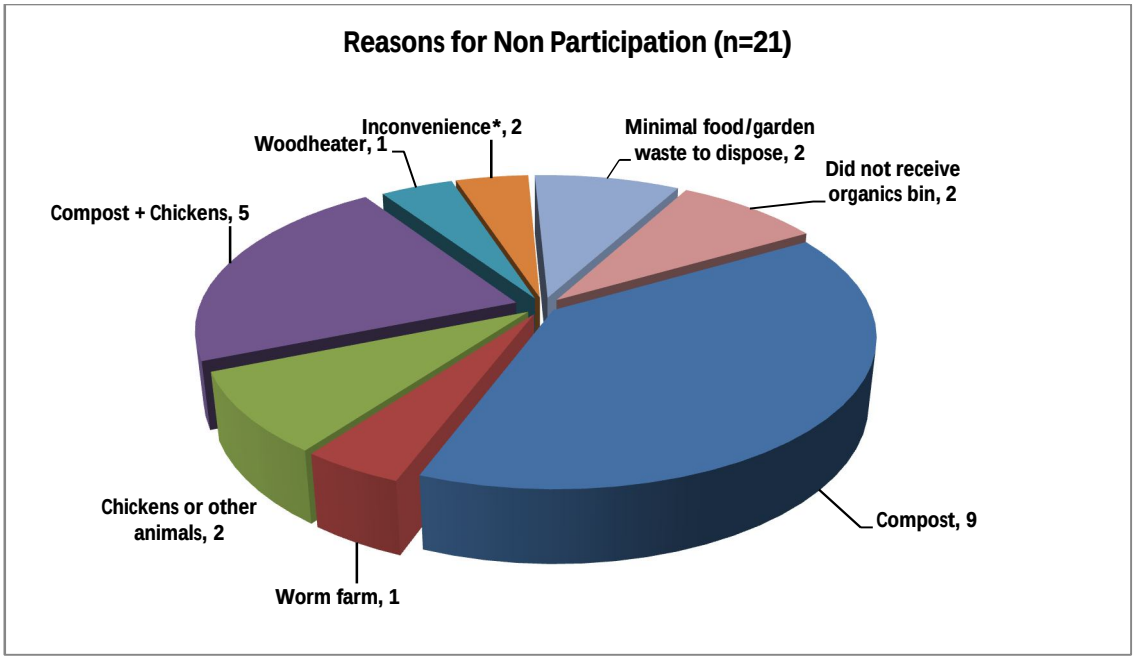

Figure 5 **Reasons reported by respondents for not participating in the pilot scheme**

** Inconvenience referred to difficulty in presenting the bin for collection due to a long distance from the house to kerb.*

95% of respondents found the collection service easy to use. For those who reported that there were difficulties in using the system, the majority of comments related to the Biobags. For those who found the bags inconvenient, reasons reported were mainly that the capacity was too small

and they leak or break easily. There were also a number of comments that the organics bin was extremely heavy when full and difficult to wheel to the kerb. About 20% of respondents overall reported experiencing issues with offensive odours. The majority of comments about odour related to the organics MGB (not the kitchen Bio Basket) and several comments suggested this was only an issue at the end of the fortnight prior to collection.

98% of respondents found educational materials adequate in explaining the use of the system. The majority of comments about this issue suggested that better information could have been provided about how to get additional Biobags when the supply ran out. Meanwhile 99% overall claimed to understand clearly which bin to use for collecting organics and the same proportion reported that they were easily able to identify materials constituting contamination in the organics bin.

About 85% of respondents reported to have been presenting the organics bin for each fortnightly collection. 12% presented the bin on a monthly basis for collection and only 3% claimed that the bin was placed out for collection less frequently. Just over 80% of respondents claimed to still place the bin out for collection when not full.

Over half of respondents used less than 3 Biobag liners per week, as shown in the graph below. The results suggest that most participants change kitchen caddy liners approximately every 3 days. Only about 5% of participants appear to use a new liner on a daily or almost-daily basis.

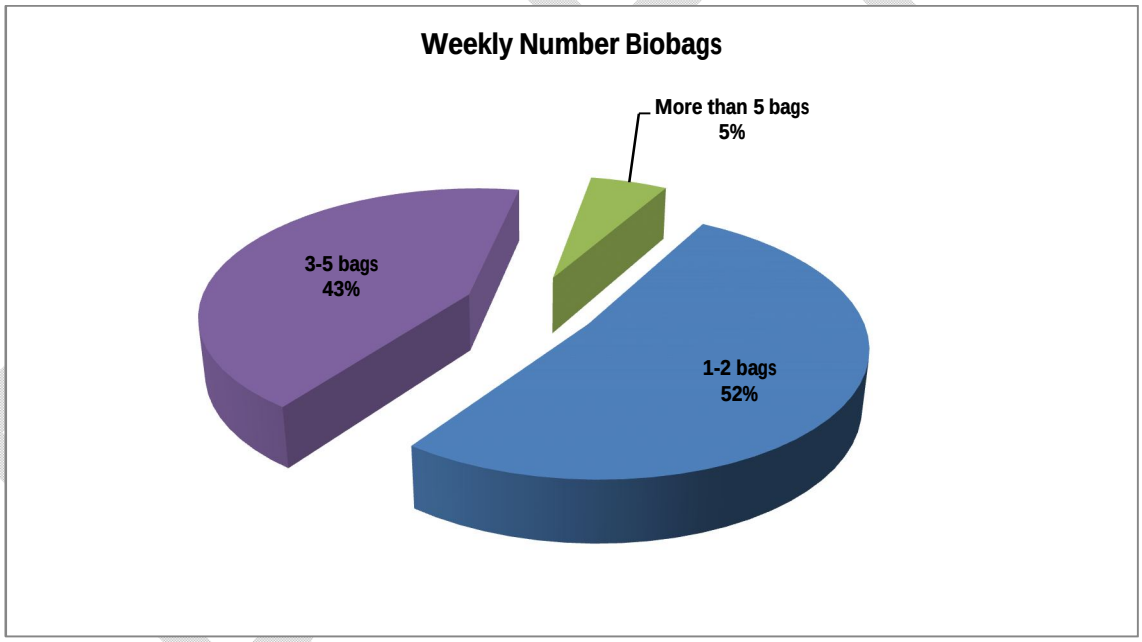

Figure 6 **Average number of Biobag liners used by households per week to collect food organics**

A significant proportion of respondents identified visible differences in the waste collected from the red residual waste bin. About 31% overall noticed a reduction in odour from the garbage, about 66% noticed a reduction in the volume of garbage disposed and about 3% found that the residual waste bin could be collected less frequently.

95% of respondents were supportive of the organics collection becoming a permanent service available to residents. About 55% were also agreeable to the concept of a staggered garbage (residual waste) service, collected less frequently on a fortnightly basis.

Although support for the service was very high, only about 51% overall were willing to pay additional charges for the provision of the service in future. Of those who were willing to pay in

Blackstone Heights, the majority (65%) indicated willingness to pay an additional $20 per year, while a third were willing to pay $50 and only 2% were willing to pay $80. A slightly different question was asked in the Gravelly Beach survey, with amounts of $20, $30, $40 and $50 suggested, however all respondents from this area were only willing to pay the lower figure of $20 per year.

There were 82 respondents overall (37% of total respondents) who made suggestions regarding the service. The majority of these comments were positive towards the service but related to alternative configuration of the bins or collection frequency. Some comments related to problems in using the system, such as smell, pests or grass sticking in the bottom of the MGB. One of the most common suggestions related to providing finished compost to residents for use on their gardens.

Examples of some comments are included below.

"Rental properties need to be continually educated as new tenants come and go."

"Stronger bags, no biobin"

"Something to get rid of rotting compost smell also the insects it attracts."

"Wheelie bin needs something in the bottom to stop grass clippings from sticking. We had 1.5 months worth that had stuck after 3 collections, it didn't come out. (Very smelly by this stage.)"

"Would appreciate the opportunity to purchase compost at a discounted rate as a rate payer if that meant a higher levy."

"Marketing of compost derived from the green waste collections. I've purchased this material from other councils."

"Feedback on if we are indeed putting the right stuff in. I need to know if it is environmentally the right thing to do ie what sort of energy input goes in at the deposit site? I can compost or I can do this. Which is better for the environment?"

"We have been very happy with the service."

"It is ok as it is but not if it means more cost!"

"Very satisfactory as is for us. Maybe all households could receive a free bag of compost produced once a year?"

"Think all three services necessary. Food scraps should be every week."

"This service has been implemented well. It is very clear what can go in the bin and when it is collected. Excellent initiative."

"Change Red lidded Bin to fortnightly. Green Bin to weekly. Red Bin only used for non recyclables. Does not get full or dirty/smelly. Green Bin becomes very smelly & needs emptying more often."

"It seems ok but I would like to see more people using their own compost bins & therefore put less responsibility on the council."

4.1.2 SURVEY RESULTS SUMMARY

Although the survey results only provide reliable feedback from the Blackstone Heights trial area, it indicates that community acceptance of the organics collection systems was very high. Participation levels were high (potentially 90% according to survey data), although as explained above, there is some uncertainty surrounding this self-reported rate and meanwhile there is

uncertainty regarding the percentage of households using the service for collecting garden organics versus its use for collecting food organics. Given that the reported use of the Bio Basket was at a lower level than for the MGB and the observed bin presentation rates were lower than reported participation rates (i.e. some participants' bins were not collected regularly), it is likely that diversion of food organics was in fact relatively low. Without more detailed survey data or compositional audits of the bins or material collected, there is no way of determining the separate diversion rates of garden organics versus food organics.

According to the survey results, households that didn't participate typically gave the reason that they were already recycling organic material at home, either through a home composting system or as animal feed.

About 1 in 5 respondents indicated that they had noticed offensive odours, primarily from the green-lidded MGB, however there was no indication of the impact of odour experience on participation. It is possible that the fortnightly collection frequency in addition to the time of year during which the survey was conducted (i.e. summer) were the main contributing factors for the number of responses relating to odour issues.

The survey results indicate that there was some confusion in terminology between the kitchen bench-top Bio Basket and the 240 litre green-lidded MGB, which perhaps may need to be considered in any future communications. The survey also investigated resident willingness-to-pay for a future service and found that the majority are comfortable with an additional charge, however the lowest additional amount suggested ($20 annually) was most acceptable.

4.2 FOCUS GROUPS

In addition to the data gathered throughout the trial, NTWMG conducted focus groups with residents of the Blackstone Heights and Gravelly Beach trial areas.

Focus groups are an excellent method of getting a deeper insight into issues and are typically used to explore factors relating to attitudes, knowledge, motivations and behaviour. Although the results gained from a focus group cannot be generalised for the wider community, they will give a greater insight into the thoughts and issues of the general populace, and in this instance those who were part of the food and garden organics collection trial.

4.2.1 AIM OF THE FOCUS GROUPS

The intention of the focus groups was to assist the NTWMG in understanding the various options and issues to be considered for a food and garden organics collection roll-out. The discussions enabled gathering of qualitative feedback from residents who were included in the trial. The discussion outcomes, coupled with the previous survey data, quantitative data and outcomes of the recent study into the Feasibility of a Regional Organics Processing Facility will provide a fuller picture so that each council can make an informed decision as to whether or not to roll out a scheme council-wide and how this should be designed and implemented.

4.2.2 FOCUS GROUP METHODOLOGY

The councils decided to conduct two meetings per council over a period of two days, allowing for one afternoon and one evening session in each trial area involved (Blackstone Heights and Gravelly Beach). Latrobe Council decided not to conduct a qualitative assessment of the trial in the Shearwater trial area. A consecutive Monday and Tuesday in late October 2012 were chosen as the dates for the sessions.

The sessions were conducted as interactive community forums rather than traditional focus groups and it was designed for at least 10 to 15 people to attend each session. The Councils distributed invitations to all residents in the two trial areas to allow opportunity for anyone to input. Most residents in Gravelly Beach did not receive a survey during the trial and this was the only opportunity these residents were given to provide open feedback. ***Appendix A*** contains the invitations which were letterbox dropped by the councils to residents.

Venues were chosen by the councils for their proximity and accessibility to households in the trial areas. Venues required sufficient parking and were large enough for participants to be arranged in one large circular or horse-shoe row of chairs, with suitable facilities for displaying a PowerPoint presentation. Refreshments were made available at the start and end of the sessions.

A Council representative was required to be present at each session, in addition to the facilitators, in order to answer any council-specific questions and ensure council was immediately made aware of any particular concerns or issues raised.

The group forums were approximately 90 minutes in duration and included three separate sessions of group discussion and three short presentations from the facilitator, which was intended to maintain interest and lead the direction of the discussion, without being overly prescriptive. ***Appendix B*** contains the forum Agenda.

The sessions also incorporated a number of elements that were used as feedback prompts, which included the following:

- Trial Results, including environmental and financial impacts (PowerPoint Slides)
- Copies of trial education materials (brochure and fridge magnet calendar)
- Examples of trial equipment (Bio Basket, rolls of liner biobags, 240 litre green-lidded MGB)
- Details of current Council Domestic Waste Management Charges

Appendix C contains the PowerPoint slides that were presented to all attendees.

At the conclusion of each session, feedback forms were distributed to each participant in order to gather supplementary written feedback, identify any issues that people were uncomfortable sharing in the group, provide further information on resident willingness-to-pay for a new service and to evaluate the session itself. ***Appendix D*** contains a copy of the Feedback Form provided.

4.2.3 FOCUS GROUP RESULTS

A total of 68 people attended the focus groups/forums over the two-day period and 51 people completed a written feedback form. A breakdown of community participation in the group sessions is provided below:

Location	Session	Approx. Age Range	Total Participants
Blackstone Heights	Afternoon	Over 55 years	18 people
Blackstone Heights	Evening	30 – 65 years	17 people
Gravelly Beach	Afternoon	Most over 55 years	21 people
Gravelly Beach	Evening	Most over 55 years	12 people

In general, attendees of the community forum-style focus groups tended to be older but there was a relatively even mix of men and women. Written responses showed that attendees had an average household size of one to two people and only about 20% of attendees were in a household of three or more people.

Attendees were led through three key discussion areas in each group session and although comments were not always confined to the relevant discussion topics during the sessions, a summary of relevant responses are analysed under each of these three key areas. Attendees were also asked to complete a written feedback form to supplement comments in the group discussion. The analysis below considers both the verbal and written responses of attendees in each session.

During each stage of the discussion, attendees were prompted with additional questions from the facilitator which was intended to explore the behaviour, knowledge, motivation and attitudes of trial participants around the key discussion areas. Therefore responses are analysed below in terms of these four aspects. Any notable differences between the responses from Blackstone Heights and Gravelly Beach are highlighted where appropriate.

Part 1: Design of the service

The design of the service was found to be very suitable to households in the trial areas with the 240 litre bin capacity and fortnightly collection frequency being acceptable to most. Overall, attendees indicated that having liner bags for the Bio Basket was preferred as this made the system easy to use and convenient to clean, but an enclosed kitchen caddy may have been equally or more acceptable than the aerated Bio Basket due to minor concerns from some participants with leakage and odour.

Most attendees from Blackstone Heights were comfortable with the suggestion of swapping the trial system, i.e. reducing the garbage collection frequency to fortnightly and providing a 240 litre organics bin collected on a weekly basis to compensate. Attendees from Gravelly Beach were very supportive of a weekly organics collection at least in the peak gardening seasons (Spring and Autumn) but a fortnightly service was still deemed acceptable by most.

Behaviour

Written responses from the focus groups found that almost all attendees participated in the trial and there was only one response of non-participation. More than two-thirds of respondents

collected food scraps in the Bio Basket on a daily basis, while about 15% did not collect wasted food at all and used the MGB only for garden organics.

Feedback on the operation of the system indicated that overall there were very few concerns about odours and virtually no problems relating to pests as a result of the service. This related to both the green-lidded MGB as well as the bench top Bio Basket.

Attendees from the Blackstone Heights sessions seemed more likely to have hesitation in disposing of certain food items to the Bio Basket, these being mainly meat and seafood and "anything smelly", due to concerns about preventing odours. Several attendees said that they put food scraps in the freezer over the fortnight and placed frozen waste into the MGB just prior to collection to avoid any problems such as odours. Overall most households from the Blackstone Heights trial area seemed to use the Bio Basket for collecting food waste if they weren't already composting at home. In contrast, only about half of the attendees from the Gravelly Beach trial area used the Bio Basket to collect food scraps and the remainder only disposed of garden organics in the MGB.

Very few people commented on any problems with the Bio Baskets and bag liners. Two people received bags that were already damaged but there were almost no complaints about leakage from bags. The number of liner bags used per fortnight ranged greatly, with some people only collecting food in one bag during the fortnight, some people reusing liners several times and emptying contents direct to the MGB, while others used almost a new bag each day. On average most households appeared to change the liner twice per week, using about 4 to 5 bags during each collection period.

It was estimated that in the Gravelly Beach area only about 50% of attendees used the Bio Basket to collect food, while the rate was slightly higher in the Blackstone Heights area. The forums found that there is a high rate of home composting in the trial areas, particularly in Gravelly Beach where almost half of attendees claimed to have a compost bin. The majority of people who were already composting at home stated that they didn't use the bio basket and continued to compost normally. However some composters commented that they found the service particularly good for recycling bones, meat and other things not normally put into the home compost.

In the Blackstone Heights trial area, some residents with large acreage properties found that the bin was either too small or not collected often enough to be of much use, however people with standard block sizes found the service extremely useful.

Knowledge

The majority of attendees stated that there was an observable reduction in the volume of their residual garbage bin at collection while the organics trial was operating, which has now reversed since its completion.

Several people across the sessions verbally admitted that they became more aware of their wastage as a result of being involved in the trial and had tried to change their food or cooking habits to waste less. The exact number of participants to which this applied or the degree to which awareness was increased was not able to be determined.

Motivation

The social factor of 'Convenience' was most frequently stated as the main benefit of the organics collection service for householders. Environmental improvement was not a particularly high priority for most people in discussing the system, although some people saw this as a side benefit.

Many Blackstone Heights attendees observed that smoke from 'burn-offs' throughout the area had noticeably decreased during the trial period but since the completion of the trial has now

gone back to normal levels. All attendees agreed to the considerable benefits of improved air quality when residents have a regular disposal option other than 'burning off'. Most attendees claimed that they did not personally participate in burning off practices however and the majority were more likely to transport excess garden waste to the local waste facility, have someone else collect the material on their behalf, or stockpiled it on their property instead. A written comment from a Blackstone Heights resident was:

"Please bring it back! There were hardly any fires during the trial period."

Although most people attending did not have any problems in using the service, there was overall much more interest in recycling garden material compared to food organics. Many people stated that alternative options for disposing of garden organics are very costly and inconvenient. A number of people indicated that prior to the collection trial, their household needed to transport a load at least every month to the local waste transfer station, amounting to well over $100 per year. In contrast, the need to transport garden material was reduced or prevented during the course of the trial for most households leading to a significant cost saving for many households.

Several people commented that a side benefit of having the collection was that it encouraged them to do more pruning and keep the garden tidy which improved the aesthetics of their properties during the trial period. A number of people commented on feeling guilty about putting organics in the red garbage bin after the green organics bin was removed.

Attitudes and Perceptions

100% of written responses reported the system to be extremely easy and convenient to use.

In general, most people indicated that a fortnightly organics service frequency was adequate however at peak times, such as during Spring and Autumn, they could have easily filled the bin with garden organics on a weekly basis. Many suggested that a fortnightly service frequency in Winter and a more frequent (weekly) service at other times of the year would be desirable.

In Blackstone Heights, where the garbage collection is currently weekly, there was overall agreement that this could be reduced to a fortnightly frequency providing that the organics collection was provided on a weekly basis. However, many of these people felt that the size of the garbage bin should be increased if it was collected fortnightly. Comments included:

"There were times when I put food in the red bin rather than waiting for the fortnightly collection"

"I only used it for vegetable scraps, anything smelly went in the garbage"

One attendee from Gravelly Beach once noticed smoke coming from the organics bin prior to collection and found ash in the base after collection, and felt that a weekly collection would be safer to reduce the likelihood of heat build-up in bins especially during the hotter months.

There was a suggestion from several attendees that people with a very large property size or alternatively no backyard at all should be able to opt out of any future service. Some people whose properties have a long or steep driveway found the MGB very difficult or inconvenient to wheel to the kerb.

Several people suggested that the Bio Basket was overly prescriptive and an unnecessary expense. Most people agreed that it would be acceptable for the Councils not to supply a kitchen caddy and allow people to work out their own food collection system based on what works best for the individual, although others did emphasise that the caddy supplied in the trial was extremely convenient which probably improved its usage.

There was general consensus among attendees that they "felt deprived" when their green organics bins were removed at the end of the trial.

Part 2: Communications and education tools

The forums indicated that communications and educational materials used during the trial were effective and well received. Participants appeared very satisfied with the information provided overall and easily understood what was involved in participating.

Although many attendees of the forums were already knowledgeable about issues associated with organic waste management and some were experienced in composting, there was a noticeable knowledge gap for some attendees which appeared to cause confusion about matters such as the purpose of the trial and reasons why the service is not yet permanently implemented throughout the region. If the service is implemented on a wider scale in future, more comprehensive community education about the outcomes and benefits of organics recycling may improve the motivation for full participation from households, especially with regard to recovery of food organics.

Behaviour

Given that the trial was extended from 7 to 12 months, some households appeared to run out of liner bags for the Bio Basket before the trial completion. Some people in the Blackstone Heights trial area were not aware that additional bags were available and did not consider requesting more bags. An attendee from Blackstone Heights commented:

"*I looked in the supermarket for the bags, I didn't even think of ringing the Council for more*".

As such, it appears that some households may have lined the caddy with newspaper or a plastic bag while others stopped using the Bio Basket when there were no liners left. In contrast, most attendees at Gravelly Beach commented that they received a letter from Council that the trial was extended which clearly stated the availability of replacement bags from the Council.

Participants who did request additional liner bags were very positive about the fast response they received from the councils when additional bags were requested:

"I rang up and had bags within three days when I ran out" (Blackstone Heights attendee);

"the Council was very efficient in providing more bags" (Gravelly Beach attendee).

Knowledge

Although it could be said that most attendees seemed somewhat knowledgeable about recycling and environmental issues in general, knowledge of issues related to organic waste management appeared to be quite varied.

Across the two council areas more than a third of all participants had experience of home composting, although in Gravelly Beach this was more common with at least half of attendees were composters. The majority of attendees indicated they have visited a local waste facility recently to self-haul loads of garden and other waste, whether on an occasional or regular basis.

Some attendees said that they assumed the material collected in the green-lidded bins was composted, while others commented that they had no knowledge of what would happen to it. A number of attendees showed limited awareness of any issues relating the use of landfills and had no particular concern for the disposal of organic waste to landfill:

"No, I didn't really know that there was a problem with food going to the garbage".

The majority of attendees agreed that their garbage bin was notably less full during the trial period. Only a small number of people commented that they were surprised by the amount of food that the household was throwing away when it was separated in the Bio Basket.

Some attendees appeared unaware of all the materials that were able to be placed in the organics bin and had limited understanding of the commercial composting process. At least one person stated that they avoided placing weeds, especially blackberries, in the organics bin for concern that this would spread. Another man was completely unaware that food could be placed in the bin.

A number of people indicated that they would have liked more information about the composting process, the end market for the compost as well as the environmental impacts of the service, such as reductions in greenhouse gas emissions.

Attendees were virtually unanimous in stating that the educational brochure was very straightforward and unambiguous about what could and couldn't be recycled. Furthermore there appeared to be no confusion about which week to put the bin out.

Motivation

Overall, most attendees stated that the greatest benefit of the organics collection service to them was the convenience of a regular kerbside disposal method for garden waste. Financial savings were also a key reason for participation in the service, with many commenting on reduced costs of their self-hauled waste disposal during the trial period. Noticeable reductions in the frequency of backyard "burn-off" was a key benefit discussed by Blackstone Heights residents but was not a factor for the Gravelly Beach trial area. A large number of people from both trial areas stated that they were motivated to work in the garden more often when they had a bin to fill with garden waste and this had an added side benefit of improving the tidiness and aesthetics of their properties.

Although the "feel-good" factor of recycling was mentioned, only a handful of attendees confirmed that the environmental benefits of the service had much importance to them. Attendees did indicate however that the brochure from Council did not provide specific information about environmental impacts and therefore it appears that some people were not aware of such benefits.

Attitudes and Perceptions

Several attendees from all sessions commented that in future the bins (MGBs) should be clearly marked with items that can and can't be included to avoid confusion.

About half of written responses indicated that people prefer to receive waste service information in an electronic form in future either online or by email. However approximately half of attendees still only wanted hard copy information by post or letterbox drop. Several people said that the Council Newsletter was the best medium for providing this type of information.

There was a general consensus that residents had been well-informed about the service and all attendees confirmed that they had plenty of warning about the introduction of the service.

"there were no issues whatsoever with the implementation"

Several people also felt that the Bio Basket and bin was a "*great educational tool*" and commented that "*kids liked the bin*" and "*I personally thought it was a great innovation*".

Part 3: Willingness to pay

The most frequent question asked at this stage of the discussion in all sessions was “when are we getting our green bins back?”. In general, attendees were comfortable with being charged a moderate additional cost for an organics collection services and written responses indicated that an additional $1.00 per bin collection per household (either weekly or fortnightly) was very acceptable to almost all attendees.

Behaviour

In general it appears that most residents used the garden organics collection service to its full potential when it was available, some even admitting to doing extra gardening in order to fill up the bin for collection, but most have now adjusted back to the lack of the service. A number of people did note however, that their disposal costs at waste facilities have seen a noticeable increase now and one Blackstone Heights resident stated that they had to upsize their red bin after the green bin was removed and is now paying $160 more per year.

Knowledge

It was interesting to note that the majority of attendees were not aware of the amount they are currently charged by the local Council for domestic waste management services. When told the range of annual waste charges for their Council area by the Council Officer, some people seemed surprised by the relatively small impact that the additional collection service would have in terms of extra charges per household.

Some participants, particularly in the daytime session at Gravelly Beach, were unaware of the types of costs and logistics involved in delivering the Council’s waste services. Several participants in this session appeared to be confused by the complexity of processing and disposing of waste outside of the Council area and were frustrated that local waste facilities do not exist and the actual cost of introducing the new collection system is not yet known. Many people stated they believed that all material collected in the trial was being recycled and some assumed that the trial was being used to test the processing methods and/or determine the actual costs of delivering the service.

Motivation

The majority of people attending were ratepayers and the cost of the service was an important factor to them. Several attendees from Gravelly Beach expressed frustration and confusion about why West Tamar Council does not operate its own landfill and is required to pay other facilities for waste disposal. The environmental constraints on the disposal of waste to landfill are clearly not understood by some residents and many attendees indicated concern that fees at local waste facilities are too high. Residents from Gravelly Beach were overall more concerned about the financial impact of the organics service than residents from Blackstone Heights. There were one or two comments relating to illegal dumping of rubbish due to the cost of waste disposal.

Residents appear very supportive of the local sale of compost products derived from an organics collection and this visible benefit may be an important motivator for participants. Many attendees indicated they are very keen to buy their compost back for use on their gardens, particularly if sold at subsidised rates to local residents.

Attitudes and Perceptions

A number of attendees were of the opinion that there should be flexibility to opt out of a future organics collection service if it isn’t needed:

“If you don’t need it then why should you have to pay?”

There was concern amongst some attendees that households that are already composting, properties that have no garden and people who pay for commercial garden maintenance and have organics removed from site would be financially disadvantaged by a compulsory additional charge.

Some residents were concerned that the bin was too large or too heavy to wheel up steep or long driveways and there should be an option to request a smaller sized organics bin. However others commented that a smaller sized bin would be less useful and it wouldn't fit longer sticks and palm fronds.

There was a sentiment from most people that it was preferable not to have to individually pay for the supply of bags, although most acknowledged they would be paying for it through rates anyway.

An insightful comment from one resident of Blackstone Heights was:

"People adapt to whatever bins they have."

Written responses provided a clear picture of attitudes towards the issue of financial cost for residents. Residents were asked to indicate an amount (per bin collection per household) in additional charges that residents could reasonably be asked to pay for an organics service, at whatever frequency it was collected (i.e. weekly or fortnightly). Only two respondents overall indicated that they were unwilling to pay an additional charge for the benefits of the organics service, whereas 95% of respondents were very comfortable with an additional charge. About 46% of respondents felt that additional charges should be kept below $1.00 per bin collection (per household), while 49% were comfortable with charges over $1.00 per bin collection. Only about 12% felt that residents could be reasonably expected to pay more than $2.00 extra in addition to their current waste charges per bin collection.

4.2.4 SESSION EVALUATION

Attendees were asked to complete a written feedback form at the end of each session in order to provide supporting information, clarify comments, provide some additional quantitative data and allow the councils to develop a database of email contacts for future updates about the service. This form also allowed for feedback on the effectiveness of the forum's facilitation and venue.

About 53% of respondents said that they found the group discussion to be extremely interesting or useful. Some comments included:

"Learnt a lot"; "Great to be consulted"; "Great discussion and informative"; "Should be more meetings of this type".

Attendees were asked to rate the level of impact they thought their contributions would have on Council decision-making. 40% believed their input would have a very strong impact on Council's decisions, almost 50% believed it would have some impact while about 10% believed it would have little or no impact at all. A number of people expressed surprise or disappointment that attendance at the forums wasn't higher.

In relation to the venue, about 90% of respondents reported that the venue was extremely suitable, however a small number of people had trouble finding the Blackstone Heights venue and suggested that better signage could have been erected to the function room.

4.2.5 FOCUS GROUPS RESULTS SUMMARY

Almost all forum attendees identified active participation in the organics collection trial and expressed a positive response towards their involvement. On the whole, attitudes towards the possible introduction of a permanent organics collection service in future were extremely positive and there was consensus that it should be re-introduced as soon as possible.

The focus groups revealed that interest and participation in the recovery of food organics was significantly lower than for garden organics, owing to both the high rate of home composting in the trial areas and the stated inconvenience and cost of alternative methods available for disposing of garden organics. This is an important point that was not clearly identified by the participant surveys.

The majority of attendees indicated they would be satisfied with a reduced frequency of garbage collection if the organics collection was provided weekly, although some people expressed concern that ratepayers not requiring the service (i.e. lacking a garden) or those requiring more frequent garbage collection (such as for nappies and sanitary products) should not be unduly penalised.

There was some disagreement over how much ratepayers should be expected to pay for a new service, but overall the forum found that an additional charge of up to $1.00 per collection per property (or $26.00 to $52.00 per annum per ratepayer depending on bin collection frequency) was very acceptable to the majority, while a minority of attendees were even comfortable with up to $2.00 per collection per property (or $52.00 to $104.00 per annum per ratepayer depending on bin collection frequency). Very few attendees expressed an expectation that the service should be provided at no additional cost to ratepayers.

5 CONCLUSIONS AND RECOMMENDATIONS

The results presented in this report indicate that the pilot kerbside organics collection trial conducted by the NTWMG in 2011/12 to co-collect food and garden organics from 900 tenements in three Council areas successfully diverted food and garden organics and was accepted by the community. During the 12 month trial period, the following key results were achieved:

- About 90% of households participated in the collection trial, although average bin presentation per collection in each trial areas ranged from 52% to 65% of total bins delivered to the trial areas;
- The average weight of organics bins presented was about 20 kg per fortnight;
- A total of 253 tonnes of organic material was collected over the 12 month period;
- The landfill diversion rate in each trial area ranged from 4.9 to 6.1 kg/ household/ week;
- Total potential direct emissions savings over the 12 month period as a result of diversion from landfill during the trial was 584 tonnes CO_2-e, or 661 kg CO_2-e per household on average;
- 95% of survey respondents stated that the service was easy to use;
- About half of participants used more than three liner bags per week to line the Bio Basket;
- About 20% of survey respondents experienced issues with odour during the trial;

Based on these results, key conclusions that can be highlighted include:

- A food and garden organics collection could result in diversion of at least 0.26 to 0.32 tonnes of waste from landfill per household annually across the LGAs, with contamination levels expected to be low;
- The aerated Bio Basket with liner bags was a suitable and well-accepted kitchen collection system, although given that odour was reported by up to 1 in 5 households and a small percentage (less than 5%) experienced issues with liquid leakage or breakage of liner bags, the councils should consider that an enclosed caddy may be equally well-accepted while reducing odour problems, minimising the need for provision of liners and ultimately improving cost-effectiveness;
- Community acceptance of a fortnightly residual waste collection appears high, however the majority of participants desire a weekly organics collection, at least in the warmer months of the year;
- Communication methods used during the trial seemed to be easily understood and very effective, however feedback from participants was that in future residents would benefit from a list of acceptable items displayed on MGBs (and potentially also on Bio Baskets).
- Of participants who provided written or verbal feedback, the majority are willing to pay additional charges for an organics collection service, with mid-trial surveys indicating that up to $20 annually and focus groups indicating that up to $1.00 per collection are the most acceptable amounts of additional charges that participants are willing to pay;
- There appears to be a high level of interest from residents in receiving or buying back composted product for their domestic use;
- The high level of existing home composting in the region needs to be taken into account when considering the potential for recovery of food organics.
- The potential weight of 240 litre MGBs (particularly when full of moist organics) may be problematic when provided to elderly residents and properties with steep or long access

routes from the property to the kerb, and therefore consideration may need to be given to offer the option of one or two (2) 120 litre MGBs as an alternative to certain properties.

Recommendations

Should any of the councils decide to extend the trial or roll the service out, it is recommended that additional data gathering be undertaken in relation to the composition of waste streams. For example, a compositional audit of organic material delivered by collection trucks to the stockpiling or processing facility would provide quantitative information about non-organic contamination levels and the proportion of food versus garden organics collected. In addition or alternatively, it would also be beneficial to conduct compositional audits on individual Organics, Recycling and Residual Waste bin contents. This type of audit would provide information not only on the breakdown of material collected but also a more accurate measurement of landfill diversion rates and an indication of changes in recycling / waste avoidance occurring as a result of the new collection scheme. Such information would allow each Council to develop more reliable projections of future waste collection tonnages and costs if an organics service was introduced across the LGA.

Based on the results of this trial, Hyder recommends that in the short-term, the NTWMG or the individual councils involved in the trial should focus on investigating options for the processing of organics collected from the LGAs, given that securing a processing solution is essential to the successful implementation of an organics collection scheme. The Organics Facility Feasibility Study recently undertaken on behalf the NTWMG (DJR Environmental, 2012) indicates that the reliability of feedstock sources and the certainty of long term end markets will be critical factors for the feasibility of a new regional organics processing facility servicing the NTWMG.

The councils may consider the following steps towards implementation of an organics collection scheme:

1 Update modelling of the feasibility for an organics processing facility using the electronic model developed by DJR Environmental (Appendix A in DJR Environmental, 2012);

2 Choose a preferred option for organics processing, possibly also undertaking an 'Expression of Interest' (EOI) process to better assess market interest, capability and potential costs;

3 Review current collection contracts and undertake a process to further investigate current options, issues and potential costs of collection to inform the tendering for a future organics collections contract (individually or jointly across the region);

4 If required, undertake remodelling of future financial and environmental implications of organics collection and processing (based on the outcomes of the previous steps and the Trial results) in order to determine the preferred organics collection system for each Council area;

5 Obtain final agreement and commitment from member councils, as required;

6 Tender for new collections and processing contracts, as required;

7 Develop a roll-out plan (in collaboration with contractors) at least 12 months prior to service commencement;

8 Develop a communication and education plan (in collaboration with contractors) at least 6 months prior to service commencement.

More detailed guidance on planning for an organics collection scheme can be found in a recent publication prepared by Hyder on behalf of the Department of Sustainability, Environment, Population and Communities, the *'Food and Garden Organics Best Practice Collection Manual'* (Hyder, 2012), which is available to download online: http://www.environment.gov.au/wastepolicy/publications/organics-collection-manual/index.html.

6 REFERENCES

Department of Climate Change and Energy Efficiency (2012) *National Greenhouse Accounts Factors*, July 2012.

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Hyder Consulting (2011) *Preliminary Business Case for the Introduction of Kerbside Organics Collection Service – Final Report*, prepared on behalf of Dulverton Waste Management.

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APPENDIX A

FOCUS GROUPS - INVITATION CONTENT

[Date]

[INVITED PARTICIPANT NAME]
[INVITED PARTICIPANT ADDRESS]

Dear [NAME]

Invitation to Organics Trial Feedback Session – what happens next?

[Council Name] would like to thank you for your participation in the food and garden organics collection trial held between July 2011 and June 2012. The trial has since stopped and council is investigating the way forward. To help inform this process we need your opinion.

Food and garden waste makes up around half of your total rubbish bin and council is investigating ways to recycle these materials to make nutrient rich composts and to make a positive contribution to the environment by reducing greenhouse gas emissions

Your support can input to council's review of the trial to decide if this is the best way to remove food and garden waste from the household rubbish bin. By taking part, you are helping inform council's decision making in selecting a suitable system for all residents for the future.

WHAT HAPPENS NEXT? HAVE YOUR SAY

We are seeking YOUR VIEWS, to assist in planning the next steps. Do we continue with the scheme? What worked well? What could be done better?

WHAT DOES IT INVOLVE?

Your attendance is required at a meeting between [6:30pm and 8pm]. You will be presented with an overview of the scheme results and a discussion will be facilitated, giving you the chance to report your views on the advantages and disadvantages of the collection scheme.

HOW DO YOU PARTICIPATE?

All you need to do is return the attached form by [date], if you would like to attend the meeting.

Yours sincerely

[Officer Name]

[Waste Management Officer, Council Name]

……..

☐ ***Yes I would like to attend the feedback session at [location] on [date/time]***

☐ ***No thank you, I cannot attend the meeting***

Name:

Address:

……

APPENDIX B

FOCUS GROUPS - AGENDA

APPENDIX C

FOCUS GROUPS - POWERPOINT PRESENTATION SLIDES

APPENDIX D

FOCUS GROUPS - FEEDBACK FORM

ORGANICS COLLECTION TRIAL
COMMUNITY FORUM – FEEDBACK

Thankyou for participating in today's community forum.

We would appreciate your assistance in completing this feedback survey about the trial and your experience today in order to supplement the group discussion and further support planning for future waste management services.

1. Were you an active participant in the kerbside organics collection trial? *(Please tick)*
☐ Yes ☐ No

If you answered yes to the above question, please answer the following three questions:

a) Did you collect food scraps in the Bio Basket and how often? *(Please circle)*				
Every Day 1	2	3	4	Never 5

b) How many people would normally reside in your household? *(Please tick)*		
☐ 1 – 2	☐ 3 – 4	☐ 5 +

c) Do you have any feedback about the convenience or problems in using the trial organics collection service? *(Please circle)*				
Easy 1	2	3	4	Difficult 5
Comments:				

2. Considering the environmental and social benefits of a permanent organics collection service, what do you think is the **maximum additional charge per bin collection** that ratepayers should reasonably be asked to pay for this service in future? *(Please circle)*				
$0	Less than $1	$1 to $2	$2 to $3	$3 to $5

2. Considering the environmental and social benefits of a permanent organics collection service, what do you think is the **maximum additional charge per bin collection** that ratepayers should reasonably be asked to pay for this service in future? *(Please circle)*

Comments:

3. Do you have any additional comments about a future organics collection system if it was introduced? (e.g. type and size of bins, frequency of collection etc.)

4. Do you have any additional comments on how you would like to be informed about a future organics collection system if it was introduced? (e.g. information content, method etc.)

e.g. household visit in person, by post, online information, social media, community information sessions, or any other suggestions

5. How interesting or useful did you find this group discussion? *(Please circle)*

Extremely 1	2	3	4	Not at all 5

Comments:

6. How much impact do you believe that your contributions today will have on Council's decision making? *(Please circle)*

Very strong impact 1	2	3	4	No impact at all 5

Comments:

7. How suitable/convenient did you find the location and facilities for this event? *(Please circle)*				
Very suitable 1	2	3	4	Not suitable at all 5
Comments:				

Please provide your contact details if you would like to be kept informed by Council about information relating to your waste services. (Please note Council's Privacy Policy will apply.)	
Name:	Email:

APPENDIX E

EXAMPLE EDUCATION MATERIAL - A5 BROCHURE

What is the trial about?

It is about finding ways to divert food waste from landfill. Food waste and garden organic material makes up around half of what is left in rubbish bins. With support from this trial we will measure how much oraganic waste is captured, survey residents about using the containers, and assess how well the containers work.

Why take part?

By putting food waste and garden organics into your green organics bin it will be collected and processed into nutrient-rich compost. Using your Bio Basket will reduce greenhouse gas emissions and divert compostable material from landfill. By taking part, you are helping Council select a suitable system for all residents in the future.

Who is in the trial?

Around 1,000 homes through parts of North and North West Tasmania have been selected to participate in this trial. Each household in the trial has been provided a container to use. The trial will be for a seven month period. Please refer to your calendar collection days.

What if I already compost or use a worm farm?

Keep up the good work! You may wish to use the Bio Basket for organic materials that you don't currently compost (e.g. meat, citrus, onions) and place the bag in your green organics bin for regular collection.

If you use the compostable bags to collect for your backyard compost system, or worm farm, empty the contents into the system. The bags decompose slower than the food inside, particularly in backyard compost systems, which are not as hot as commercial composting systems. You can reuse bags once or twice.

What are the bags made of?

The bags are made of biodegradable material from cornstarch, vegetable oil and compostable polyester. When commercially composted (in a hot, moist environment) they break down completely in around 30 days.

What if I need more compostable bags?

Your supply of 75 bags should last for 6 months. *Never use plastic bags in your Bio Basket.*

Turn your food scraps & garden organics into compost

Contact your local Council on:

Latrobe Council Ph. 6421 4650

Meander Valley Council Ph. 6393 5300

West Tamar Council Ph. 6323 9300

A joint initiative of: Cradle Coast Authority; Northern Tasmanian Waste Management

Put one of the provided compostable bags into your Bio Basket.

Place all your food scraps into the lined Bio Basket.

Remove the bag and contents every 2-3 days, tie a knot in the top of the bag.

Place the bag into your Green Organics bin, and place the bin out for its normal collection even if its not full.

What can I put in the Bio Basket?

- ✓ Food scraps, peels
- ✓ Cake, bread crusts
- ✓ Fruit, vegetables
- ✓ Teabags , coffee grounds
- ✓ Meat scraps, bones,
- ✓ Seafood (cooked, raw)
- ✓ Egg, oyster shells
- ✓ Cheese, yoghurt
- ✓ Takeaway foods
- ✓ Shredded paper
- ✓ Tissues, paper towels
- ✓ Hair

What can't I put in the Bio Basket?

- × Plastic bags/oven bags
- × Cling wrap
- × Dishcloths/sponges
- × Liquids
- × Nappies
- × Cigarette butts or ash
- × Vacuum dust
- × Sharps

These items will not break down in compost. If you place these items in your green organics bin, we may stop collecting it.

Tips

- Let hot food cool down before placing into your Bio Basket.
- Freeze meat and seafood until your bin collection day (to avoid odours).

The Green Lidded bin can also be used for garden organics

Garden organics that can be placed into the Green Lidded bin includes:

- ✓ Lawn clippings
- ✓ Prunings
- ✓ Weeds
- ✓ Bark, small branches & twigs (ensure the lid can shut)

Items that can't be placed into the Green Organics bin include:

- × Plastic bags
- × Nappies
- × Bricks/rubble
- × Pots
- × Hot ashes
- × Plastic
- × Dog or cat waste, kitty litter or bird cage litter
- × Treated wood, heavy logs or rope
- × Waste pesticides, herbicides or oil

Tips

Remember your garden organic material is a valuable resource used to make compost and mulch, so do the right thing.

How to place your bins for collection on the kerbside:

Bins are required to be 1m apart where possible and 1m from surrounding objects such as poles, trees, cars etc. All bins must be out by 6.00am.

Bins may not be collected for the following reasons:

Excessively contaminated with materials that should not be placed in that bin. Excessive weight - bins that exceed 70kg in weight will not be collected.

For more information please refer to the 'Projects' page of the Northern Tasmanian Waste Management website...

www.northtaswaste.com.au