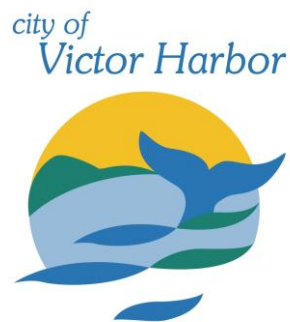




FLEURIEU REGIONAL  
**WASTE AUTHORITY**

## **FORTNIGHTLY KERBSIDE COLLECTION PILOT**

### **EVALUATION REPORT**



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## EXECUTIVE SUMMARY

In May/June 2012, the Fleurieu Regional Waste Authority (FRWA) undertook a regional kerbside bin audit of selected properties within the areas of Alexandrina Council, Kangaroo Island Council, City of Victor Harbor and District Council of Yankalilla. The audit found that 55% of the general waste stream consisted of potentially recyclable materials (28% recyclables and 27% food/green waste). On the basis of this, FRWA recognized the potential to encourage diversion of waste from landfill by altering the bin collection schedule.

To this end, FRWA's constituent councils supported a Pilot/Trial of fortnightly collections within a small selected area (crossing the boundary of Alexandrina Council and City of Victor Harbor) comprising of 630 dwellings. The project ran for four months, from 2 October 2013 to 22 January 2014, allowing the effects of fortnightly collections to be evaluated both during times when few holiday makers are present, through to the peak summer holiday season.

By decreasing the collection of general waste in the Pilot area from weekly to fortnightly and increasing the collection of recycling and green waste from 4-weekly to fortnightly, the Pilot aims to encourage the diversion of waste from landfill. This will mitigate cost increases for waste management into the future and make better use of resources. Fortnightly collections have already been successfully implemented in another region of SA, interstate and overseas.

Integral to the Pilot were community engagement and education activities to encourage greater diversion of waste from landfill. Three kerbside bin audits were undertaken during the Pilot to determine the outcomes of the changed schedule and education program in altering behavior and increasing recycling rates. Feedback was sought from stakeholders regarding the effectiveness of the community engagement and education activities undertaken. The Pilot allowed issues to be identified and solutions evaluated on a small scale, allowing a strategy to be developed for the successful future introduction of an altered collection schedule across a wider area.

Sophie Thomson from ABC's Gardening Australia and the Sunday Mail kindly agreed to be ambassador for the Pilot. She attended the official launch of the Pilot on 2 October 2013 and was featured in the newspaper article covering the launch. She also conducted two composting workshops, with a total of 78 attendees. Sophie has proven to be an excellent advocate for diverting food waste from landfill and raising community awareness of the value of food waste as a resource for improving soils. Her high profile and popularity helped to promote the value of the Pilot in the broader community.

### Results

The mid-Pilot bin audit demonstrated that, for the permanent resident population, fortnightly collections of general waste, recycling and green waste, combined with provision of kitchen caddies and education, can result in the following desirable effects:

- a 57% decrease in the weight of food sent to landfill by each household each week, on average;
- a 54% decrease in the weight of recyclables sent to landfill by each household each week, on average;

- a 40% increase in the weight of recyclables sent for recycling by each household each week, on average; and
- an increase of over 500% in the weight of food and a 77% increase in the weight of green organics presented in the green waste bin by each household each week, on average.

This demonstrates that the Pilot was able to achieve its stated aims, in the absence of holiday makers.

However, the following undesirable effects were also observed:

- the contamination rate of the recycling stream increased from 9% (baseline) to 15% (mid-Pilot), and increased further with the influx of holiday makers to 18% (this is still within acceptable limits for our recycling contractor);
- the proportion of food waste and recyclables in the general waste bin increased during the summer holiday season, with food waste in particular returning to baseline (ie. pre-Pilot) levels;
- some parts of the population were adversely affected by fortnightly general waste collections, specifically large families, families with children in nappies and holiday home owners;
- communicating with holiday makers was very difficult.

Pilot participants were surveyed at the end of the Pilot to determine their preferences for future kerbside collections. Opinions were significantly different between permanent residents and holiday home owners. Continuing the Pilot schedule was the preferred option for permanent residents at 61% (compared to 16% who preferred to return to the regular schedule and 23% who wanted an increased service ie. fortnightly recycling and green waste collections whilst retaining weekly general waste collections).

In contrast, holiday home owners preferred an increased service (42% of family holiday homes and 51% of rental holiday homes), compared to those who wanted to continue with the Pilot schedule (31% and 30%) or return to the existing schedule (27% and 19%). The survey showed that Pilot participants were reluctant to pay any more for an increased service. It is possible that holiday home owners would have been more supportive of the Pilot schedule if weekly general waste collections had occurred over the whole summer school holidays instead of just for 3 weeks.

### **Issues identified by the Pilot**

Should councils choose to proceed with fortnightly collections of all three waste streams on a regional scale, there are a number of issues identified by the Pilot that would need to be addressed in order to maximize success:

- Households that produce nappies – could be addressed with changes to FRWA's existing additional bin policy.

- Large families – could be addressed with changes to FRWA’s existing additional bin policy.
- Holiday homes - weekly collections of general waste are necessary for holiday home owners over the full six weeks of the summer school holidays. Changes to FRWA’s additional bin policy, to allow a seasonal payment, would also assist holiday home owners. Councils could also consider offering a paid on-demand pick up service and/or a ‘put your bins away’ service, which could be provided by FRWA or by private enterprise.
- Households that don’t already have a recycling or green waste bin – could be offered a temporary subsidy for bin purchases during the introduction period of a permanent fortnightly kerbside collection schedule.
- Households that don’t have a green waste service:
  - Kerbside green waste services should be expanded into the rural areas of City of Victor Harbor and Alexandrina Council as much as possible prior to the introduction of a permanent fortnightly kerbside collection schedule.
  - The introduction of a kerbside green waste service in DC Yankalilla and Kangaroo Island township areas is essential to the successful implementation of fortnightly general waste collections.
  - For rural households that remain without kerbside green waste services, the provision of subsidized composting equipment (eg. compost bins, worm farms, bokashi buckets) and education is essential.
- Provision of benchtop kitchen caddies - whilst this is not essential to the success of fortnightly collections, the kitchen caddies used during the Pilot proved very popular. Councils could consider a blanket roll-out of caddies to all households for free or alternatively offering free or subsidized caddies to ratepayers who wish to collect one from a convenient location. Consideration also should be given to the on-going provision of compostable bags.
- Education - additional funding would need to be made available to FRWA to produce educational materials (brochures etc.), to cover staff to answer enquiries (telephone, email and letter) and run education sessions, and to cover a broad range of media advertising.
- Administration – additional funding would also be required to cover administration costs, for activities such as additional bin program administration, bin sales and caddy provision.
- Support of councils and their customer service staff - fortnightly collections would require all councils to cooperate in rolling out a consistent program. FRWA would require support from councils and their customer service staff in promoting a consistent message to the public.

## Future options

The strongest message to come out of the Pilot is that remaining with the existing kerbside collection schedule of weekly general waste and 4-weekly recycling and green waste collections would be unpopular. There is very strong demand in the community for fortnightly collection of recycling and green waste.

Fortnightly collections of all three bins (ie. the Pilot schedule) was preferred by the majority (61%) of Pilot residents after experiencing the Pilot, but was unpopular amongst holiday home owners and presented challenges for large families, families with children in nappies and some individuals who are reluctant to recycle. As holiday home owners are mostly in residence over summer, increasing general waste collections to weekly over (at least) the six weeks of the summer school holidays, along with making changes to the additional bin policy to offer more flexible, seasonal options, could meet their needs. Issues with large families and nappies could also be addressed with changes to the additional bin policy.

An alternative option, not previously considered, would be to provide weekly green waste collection (thus addressing concerns about smelly food waste sitting in the bin for 2 weeks) alongside fortnightly general waste and recycling. This would provide the strongest incentive to divert food waste from landfill, but issues with large families and nappies would remain. Education would be very important to avoid contamination of the green waste stream.

The most popular option would be to provide a weekly general waste collection and fortnightly recycling and green waste collection, as is common in the metropolitan area. This option is the most costly but would avoid controversy. It would address the strong demand in the community for increased recycling and green waste services, without challenging those in the community who are unwilling or unable to reduce their general waste production. Encouragement to divert food waste from landfill could be provided through increased education programs and a subsidized or free kitchen caddy scheme. No changes to the additional bin policy would be necessary (although offering a seasonal option for holiday homes and adjusting the prices to reflect true disposal costs would still be recommended).

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## **1. BACKGROUND**

### **1.1 2012 Bin Audit**

In May/June 2012, the Fleurieu Regional Waste Authority (FRWA) undertook a regional kerbside bin audit of selected properties within the areas of Alexandrina Council, Kangaroo Island Council, City of Victor Harbor and District Council of Yankalilla. The audit found that 55% of the general waste stream consisted of potentially recyclable materials (28% recyclables and 27% food/green waste). On the basis of this, FRWA recognized the potential to encourage diversion of waste from landfill by altering the bin collection schedule.

### **1.2 Options for Improving Kerbside Services**

FRWA's constituent councils (Alexandrina Council, City of Victor Harbor, Kangaroo Island Council and District Council of Yankalilla) are considering options for improving kerbside services, and to this end are supporting a Pilot/Trial of fortnightly collections.

At present, the bin collection schedule within Alexandrina Council and City of Victor Harbor consists of weekly collection of Municipal Solid Waste, henceforth referred to as general waste (blue lid 140 L bin) and 4-weekly collection of recycling (yellow lid 240 L bin) and green waste (green lid 240 L bin) on alternate fortnights. Additional recycling collections are added during the Christmas holiday period. District Council of Yankalilla currently provides weekly collection of general waste (green lid 140 L bin, transitioning to blue lid as bins are replaced) and 4-weekly collection of recycling (yellow lid 240 L bin), but does not provide a kerbside collection of green waste. Kangaroo Island Council currently offers weekly collection of both general waste (red lid 140 L bin) and recycling (yellow lid 140 L bin) and no kerbside collection of green waste.

By decreasing the collection of general waste in the Pilot area from weekly to fortnightly and increasing the collection of recycling and green waste in the Pilot area from 4-weekly to fortnightly, FRWA aims to encourage the diversion of waste from landfill. This will mitigate cost increases for waste management into the future and make better use of resources. Fortnightly collections have already been successfully implemented in another region of SA, interstate and overseas.

### **1.3 Pilot and Objectives**

The Fortnightly Kerbside Collection Pilot aims to evaluate the outcomes of implementing a fortnightly bin collection schedule within a small selected area (crossing the boundary of Alexandrina Council and City of Victor Harbor). The Pilot ran from 2 October 2013 to 22 January 2014, allowing the effects of fortnightly collections to be evaluated both during times when few holiday makers are present, through to the peak summer holiday season. Integral to the Pilot were community engagement and education activities to encourage greater diversion of waste from landfill. Three kerbside bin audits were undertaken during the Pilot to determine the outcomes of the changed schedule and education program in altering behavior and increasing recycling rates. Feedback was sought from stakeholders regarding the effectiveness of the community engagement and education activities undertaken. The Pilot allowed issues to be identified and solutions evaluated on a small scale, allowing a strategy to be developed for the successful future introduction of an altered collection schedule across a wider area.

## 1.4 Stakeholders

The following stakeholders were identified for the Pilot:

- FRWA
- The constituent councils of FRWA: Alexandrina Council, City of Victor Harbor, Kangaroo Island Council and District Council of Yankalilla. (Note that although the Pilot is being undertaken physically within Alexandrina and Victor Harbor council areas, the results will be used to determine the viability of a fortnightly collection across the whole FRWA area, which includes Yankalilla and Kangaroo Island)
- Sophie Thomson – ambassador for the Pilot
- Council customer service staff
- Residents
- Holiday makers who stay in rental properties
- Owners of holiday houses, who may use the holiday houses for their own use and/or rent them out to others
- Real estate agents who manage the letting of holiday houses or who sell properties in the Pilot area
- Small commercial premises
- Zero Waste SA (ZWSA), who provided a funding grant to assist with the cost of ventilated kitchen caddies, compostable bags and composting education for the Pilot.
- Keep South Australia Beautiful (KESAB)

## **2. PILOT AREA**

### **2.1 Geography**

The boundaries of the Pilot area are shown on Figure 1. The Pilot area includes 405 dwellings in the City of Victor Harbor and 225 dwellings in Alexandrina Council (630 dwellings altogether). The Pilot area was specifically selected to include a high proportion of holiday houses (estimated initially to be approximately 50% and found to be closer to 60% based on more detailed investigations), allowing the impact of holiday makers on the outcomes of the program to be determined. The Pilot area is also close to the Goolwa Waste and Recycling Depot, facilitating easy access to the area for bin collections and audits, and provides good access for FRWA project staff from the office.

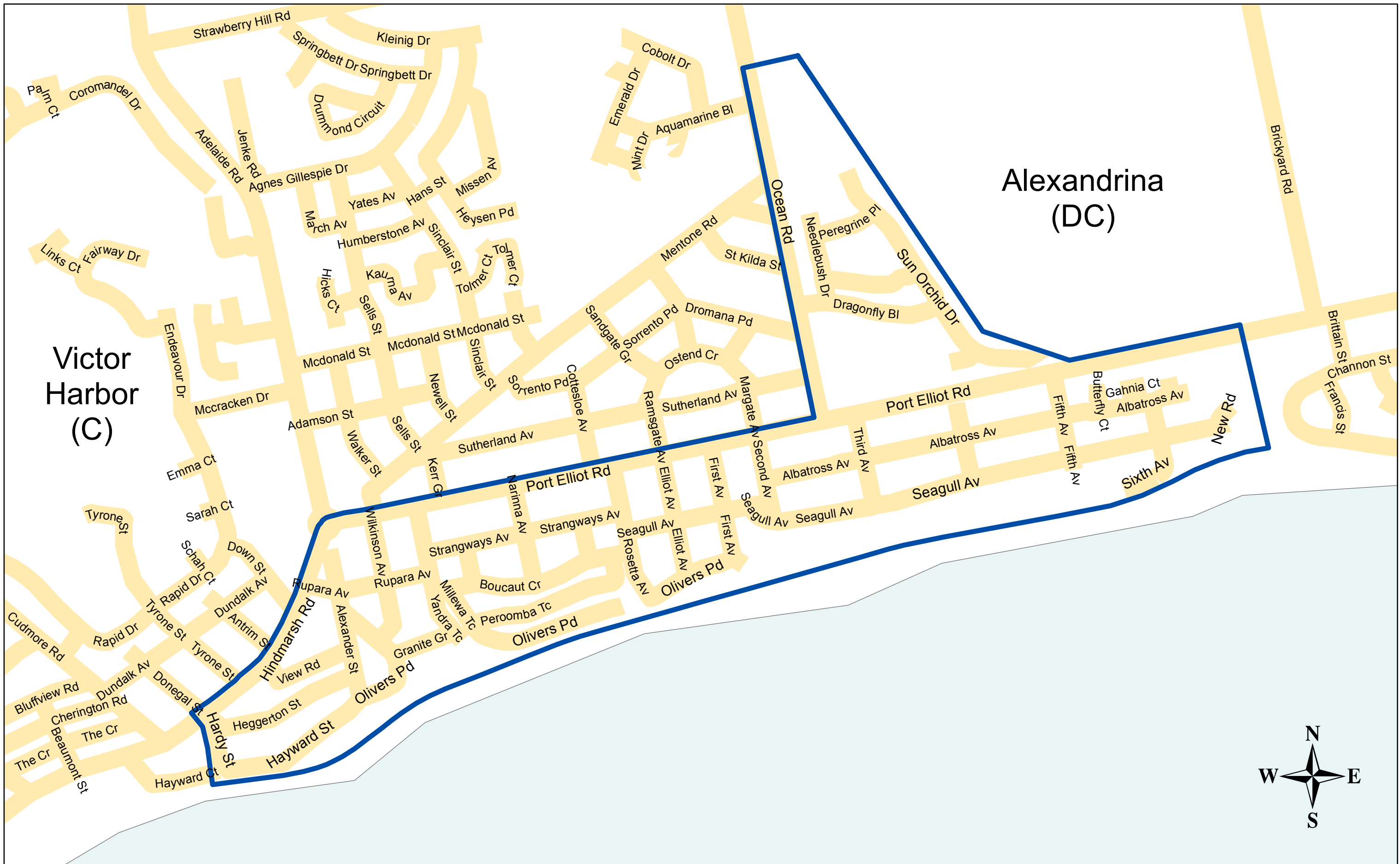
### **2.2 Demographics**

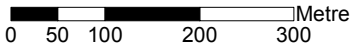
Prior to the commencement of the Pilot, demographic information about the Pilot area was obtained from the 2011 Census of Population and Housing (Australian Bureau of Statistics, 2012). The smallest unit of area available for the Census is Statistical Area Level 1 (SA1). The SA1 boundaries do not exactly match the Pilot area boundaries: three SA1s are required to cover the Pilot area, and these extend beyond the Pilot boundaries. The following statistics are based on the data for these three SA1s.

51% of dwellings were listed as having no persons usually resident. 43% had one or two persons usually resident and only 11% had three or more. This reflects the high proportion of holiday homes in these SA1s. The actual proportion of dwellings with no permanent residents is anticipated to be higher than 51% in the Pilot area as it contains the majority of holiday houses in the three SA1s.

The age distribution data showed that 16% of the resident population is aged 0-19 years, 40% is aged 20-59 years and 44% is aged over 60 years.

Based on these data, the Pilot area would be anticipated to contain at least 50% holiday houses that are not permanently occupied, with the remainder of permanently occupied dwellings containing mostly older retired couples or singles. There will be some families living in the Pilot area, but they would be expected to be in the minority.




 Metres  
 Date: 22/08/2013  
 This map is a representation of information held by the Alexandrina Council and City of Victor Harbor. They accept no responsibility for any errors or omissions in any of the information contained. This map cannot be reproduced without their permission.

**Fleurieu Regional Waste Authority**  
**Fortnightly Kerbside Collection Pilot Area**



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### 3. PILOT BIN COLLECTION SCHEDULE

From 2 October 2013 to 22 January 2014, general waste and green waste bins were collected fortnightly in the Pilot area, with recycling collected fortnightly on the alternate week (refer to temporary collection calendar on this page). Collecting general waste and green waste on the same week aimed to encourage people to place their food and garden waste into the green waste bin and to use their general waste bin only for residual waste, rather than place their food waste into whichever bin is due to be collected next.

To further encourage people to dispose of food waste in the green waste bin, each dwelling was offered a ventilated kitchen caddy, as recommended by Zero Waste SA. The caddies included a roll of 52 compostable corn starch liners, which allow food waste to be conveniently contained and minimize smells and pests, along with an instructional fridge magnet and Pilot information pack.

|  <b>FLEURIEU REGIONAL WASTE AUTHORITY</b><br>FORTNIGHTLY KERBSIDE COLLECTION PILOT<br><b>TEMPORARY CALENDAR</b> |   |   |
|--|---|---|
| Wednesday  |   |   |
| 2 October 2013   | W | G |
| 9 October 2013   | R |   |
| 16 October 2013  | W | G |
| 23 October 2013  | R |   |
| 30 October 2013  | W | G |
| 6 November 2013  | R |   |
| 13 November 2013   | W | G |
| 20 November 2013   | R |   |
| 27 November 2013   | W | G |
| 4 December 2013  | R |   |
| 11 December 2013   | W | G |
| 18 December 2013   | R |   |
| 26 December 2013*  | W | G |
| 1 January 2014   | W | R |
| 8 January 2014   | W | G |
| 15 January 2014  | R |   |
| 22 January 2014  | W | G |
| <b>PILOT ENDS. NORMAL SERVICE RESUMES<br/>           29 JANUARY 2014 (SEE REGULAR CALENDAR)</b>  |   |   |
| W—General Waste, R—Recycling, G—Green Waste<br>* Thursday collection due to Christmas Day  |   |   |



Households with more than 5 people and/or with special needs (such as medical needs that generate excessive waste) were able to request the loan of an additional 140 L general waste bin for the duration of the Pilot.

Households that were missing one or more of the three bins were also able to request a loan bin, ensuring that all Pilot residents were able to fully participate.

During the very busy Christmas-New Year holiday period, a temporary return to weekly general waste bin collection was implemented, involving one additional general waste collection on 1 January 2014.

## **4. COMMUNITY ENGAGEMENT**

### **4.1 Background**

The community engagement process was undertaken in accordance with FRWA's Communications and Education Strategy (2012). The following target audiences were identified for the Pilot:

- Residents and property owners (both inside and outside the Pilot area)
- Holiday home owners
- Holiday makers
- Real estate agents
- Councillors and council staff

The following communication channels were utilized:

- Letterbox/doormat drops (within the Pilot area)
- Local media (Victor Harbor Times)
- Council newsletters and websites
- FRWA website
- Speaking directly to residents and holiday makers
- Telephone enquiries hotline
- Community forum

### **4.2 Ambassador**

Sophie Thomson from ABC's Gardening Australia and the Sunday Mail kindly agreed to be ambassador for the Pilot. She attended the official launch of the Pilot on 2 October 2013 and also conducted two composting workshops, the first on 1 October 2013 at the Cittaslow Community Garden in Goolwa and the second on 12 November 2013 at Lilla's Café in Yankalilla. Approximately 45 people attended the first workshop and 33 attended the second. Composting education was part of the grant provided for the Pilot by ZWSA. The workshops were so popular and successful, another is planned for Goolwa following the completion of the Pilot.

Whilst the composting workshops were not directly related to the Pilot, Sophie has proven to be an excellent advocate for diverting food waste from landfill and raising community awareness of the value of food waste as a resource for improving soils. Her high profile and popularity helped to promote the value of the Pilot in the broader community.

### **4.3 Key Messages**

To ensure consistency, the following key messages were reinforced throughout the Pilot:

- Details of the temporary bin collection schedule and why it was being trialled
- Clear instructions on what residents can put in each bin and how to use the kitchen caddy
- Who to contact with questions or problems
- Benefits – for the individual and the community:
  - Help address climate change
  - Reduce waste to landfill
  - Reduce waste costs

- Improve garden soils
- What happens to the food and green waste after collection – link to the production of mulch, a valuable resource (for garden use and, potentially, local farms)
- How the new system replicates their existing behavior – by bagging up food scraps and putting them in a (different) bin
- Encourage the community to see food waste and green waste as a resource that can be reused to improve soils.
- Point out that this system has been introduced successfully in many other places (but we welcome your feedback on how we can do it better)
- Relentlessly focus on the positives

#### 4.4 **Communication with Councils and the FRWA Board**

Two documents, 'Project Scope' and 'Communication Strategy' were developed by FRWA and workshopped by members of the working party to reach agreement on the scope and strategy for the Pilot. These documents were intended for the use of FRWA and councils only and were not released publicly.

Interim reports on the progress of the Pilot were provided to the constituent councils at each of the FRWA Board meetings during the Pilot. A written report was also provided to each council following the completion of the first two bin audits.

Briefings were held with customer service staff at Alexandrina Council and City of Victor Harbor prior to the commencement of the Pilot. Staff were provided with detailed information about the Pilot to enable them to better respond to ratepayer enquiries. The FRWA Project Officer also made a presentation directly to Alexandrina Council elected members explaining the Pilot.

When particular issues arose during the Pilot that could potentially affect council staff, the FRWA Project Officer emailed details to the relevant personnel. Likewise, council customer service staff referred all but the simplest of enquiries back to FRWA.

Councils were also provided with information about the Pilot to place on their websites for the duration of the Pilot.

The Pilot Official Launch was held on Wednesday 2 October 2013 (on the day of the first collection under the temporary Pilot calendar). This was attended by 9 council representatives (staff and elected members from Alexandrina Council, City of Victor Harbor and DC Yankalilla), 3 FRWA staff, the Pilot ambassador Sophie Thomson and a journalist from the Victor Harbor Times.

#### 4.5 **Communication with Pilot residents and property owners**

Written material prepared for the information and education of Pilot residents and property owners was designed to be positive, simple and inclusive, and did not assume high levels of literacy in the target audience.

##### *Pre-launch information*

Prior to the commencement of the Pilot, a letter was posted to the registered postal address of all ratepayers owning property in the Pilot area (except vacant land). A copy of the letter

is included in Appendix 1. The letter informed owners about the Pilot, explaining the temporary collection schedule, when it would commence and why, and who to contact for further information. The letter also told residents to expect the delivery of a caddy in the last week of September and asked them to phone the FRWA Project Officer to arrange a loan bin if necessary. A slightly modified letter was sent to commercial properties.

The letter also included a survey form, which is also reproduced in Appendix 1, and a reply-paid envelope. Details of the survey results are included in Section 6.

The letter and survey was posted to 643 addresses on 28 August 2013. The final mailing list included 399 residential and 11 commercial properties in City of Victor Harbor and 227 residential and 1 commercial property in Alexandrina Council. Additional copies of the letter were sent to alternative addresses for some properties (eg. the owner and the occupant for some commercial properties). The final estimate of the number of occupied properties in the Pilot area was 630.

### *Community Forum*

A Community Forum was held at the Victor Harbor Council Chambers at 5 pm on Friday 13 September 2013. Pilot area residents and owners were invited to the Forum via the letters posted to residents, an advertisement in the Victor Harbor Times and advertisements on FRWA and council websites. The FRWA Project Officer made a brief presentation explaining the Pilot then answered questions. Caddies and information packs were available for collection by residents at the Forum and information about recycling was on display.

The Community Forum was attended by three residents from the Pilot area, three elected members of councils, two council staff and five FRWA staff. It concluded at 5:45 pm and three caddies were handed out to residents.

### *Roll-out information*

In preparation for the roll-out of the Pilot, 700 ventilated kitchen caddies (Mastec 8 L KO bins) and 700 rolls of 52 compostable liner bags (Source Separation Systems 8 L Compost-A-Pak bags) were delivered to FRWA on 13 September 2013. Mastec KO bins were chosen on the basis of price, being South Australian made and having a neutral colour that would suit most kitchens. The Compost-A-Pak bags were supplied by Mastec as part of the caddy order and were also favoured because of their easily identifiable bright green colour.

Caddy packs were prepared, consisting of:

- a caddy
- a roll of bags (sufficient to last the whole Pilot period based on changing the bags 2-3 times a week)
- a detailed information pack containing more information about the Pilot, how to obtain more bags or loan bins, a complete listing of what to put in each bin and how to use the caddy
- a simple brochure "What bin does it go in?" (designed for quick reference and/or low literacy levels)
- ZWSA "Good to go" fridge magnet detailing the items suitable for disposal in the caddy
- Temporary collection calendar fridge magnet



Copies of all the caddy pack contents are included in Appendix 1.

Every dwelling and business in the Pilot area was visited by FRWA staff during office hours in the week of 23 to 27 September 2013. Caddy packs were handed out to premises where someone was home. The opportunity was taken to inform residents about the Pilot and correct use of the caddy. Where no one was home, a flyer was left, either in the letterbox or under the doormat, asking the resident to call FRWA to arrange delivery of their caddy. A copy of the temporary collection calendar was provided on the reverse of the flyer, so residents would know when to put their bins out. The majority of dwellings were unoccupied when visited and as a result, caddy deliveries continued over the ensuing months on request. It was not considered appropriate to leave caddies at properties when we could not be sure when the owners would next be in attendance.

The materials provided to residents both prior to and at roll-out were all clearly marked with the phone number of the FRWA Project Officer. Many phone calls were received and the Project Officer had the opportunity to meet many of the Pilot residents and discuss their concerns. Details of these interactions are summarised in Section 4.8 and a complete transcript is included in Appendix 2.

At the request of a holiday home owner, a simple A4 poster was designed for holiday-makers summarising the Pilot and correct use of the caddy (see Appendix 1). Laminated copies of the poster were offered to the owners and agents of holiday rental properties for prominent display in the kitchen.

About half-way through the Pilot, a bin-tagging exercise was undertaken. On two consecutive weeks, the Project Officer went out into the Pilot area on bin collection day and identified bins that were out on the wrong cycle (ie. recycling bins out on general/green waste day, and vice versa). Paper tags were attached to the lid or handle of the identified bins, providing brief information about the Pilot, an invitation to request a caddy and a temporary collection calendar.

#### *End-of-Pilot information*

Another letter and survey was posted to property owners in the Pilot area on 24 December 2013. The letter thanked owners for participating in the Pilot and invited them to provide feedback by returning the final survey. The letter also explained that the evaluation report would go to councils in February 2014 and that councils would make a decision regarding whether to implement fortnightly collections over a broader area. Residents were also reminded that they could continue to use their caddy for food waste, that replacement compostable bags would be available from the Goolwa Waste and Recycling Depot, and that their bin collections would now return to the standard schedule.

Detailed information on the outcomes of the Pilot was not provided in the letter and owners were informed that this information would appear in the Victor Harbor Times, on the FRWA website and in council newsletters following completion of the Pilot.

Copies of the letter and survey are included in Appendix 1.

#### 4.6 Communication with residents from outside the Pilot area

Communication with residents from outside the Pilot area was generally via the press and council publications. The following press articles appeared prior to, during and on completion of the Pilot (copies of the articles are included in Appendix 3):

- Victor Harbor Times, 25 July 2013 “New Rubbish Rules”
- Victor Harbor Times, 5 September 2013 “Fortnightly Kerbside Collection Pilot” (paid advertisement)
- Victor Harbor Times, 3 October 2013 “Fleurieu bins trial is born”
- Victor Harbor Times, 10 October 2013 “Are you in the Pilot area?” (paid advertisement)
- Victor Harbor Times, 28 November 2013 “Which bin does that belong in?”
- Victor Harbor Times, 19 December 2013 “Rubbish Relief”
- Victor Harbor Times, 9 January 2014 “Trial of fortnightly bin collections nears completion” (paid advertisement)
- Victor Harbor Times, 30 January 2014 “Local bin trial finishes”

These press articles served to inform Pilot area residents as well as those in the broader community. Press coverage was generally positive; this was enhanced by FRWA’s efforts to provide detailed press releases at critical times, which were largely reproduced by the newspaper.

Interested members of the community were also able to obtain information about the Pilot from council websites, the FRWA website and an information display in the City of Victor Harbor customer service area.

Some phone calls were received from residents from outside of the Pilot area who either had misread the map and thought they were included or who had comments or questions. These are detailed in Appendix 2.

Sophie Thomson, the Pilot Ambassador, hosted two composting workshops during the Pilot and these also offered an opportunity for the Project Officer to speak briefly to non-Pilot residents about the Pilot project.

#### 4.7 Communication with real estate agents

A letter was posted to 14 local real estate agents on 21 August 2013, requesting details of holiday rentals managed within the Pilot area. Only two responses were received so the letter was followed up by a phone call to determine which agents managed holiday rentals in the Pilot area and an email requesting a list of addresses. In the end, five real estate agents were identified who were responsible for holiday letting in the Pilot area.

Information about the Pilot was provided to the five real estate agents, including a map of the Pilot area, holiday maker poster, temporary collection calendar and copies of all the information included in the caddy packs. One real estate agent accepted delivery of 12 caddies for the properties she managed and installed these in the properties herself. Another supplied the contact phone numbers of the owners of the properties she managed but most of them did not respond to an SMS offer of caddy delivery. The remaining agents were not forthcoming with assistance in getting Pilot information into the holiday houses, however the owners of some of these properties subsequently contacted FRWA.

#### 4.8 Community feedback and enquiries

Throughout the Pilot, FRWA received feedback and enquiries from the public via a number of channels. This included residents and property owners from within and outside of the Pilot area. Feedback and enquiries were mainly received via telephone and email. Many Pilot area residents and owners added comments to their survey forms. Letters were received directly to FRWA, to councils and as letters to the editor of the Victor Harbor Times. In addition, FRWA staff had many opportunities to speak with Pilot residents and other members of the community while out working in the Pilot area and in other areas. Every opportunity was taken to ask residents for their opinions and allow them to express any concerns. A transcript of all of these interactions is included in Appendix 2.

The following paragraphs summarise the most important themes arising from these conversations.

In the few days following posting of the first letter to owners in the Pilot area, approximately six emails and phone calls were received from people with concerns about the Pilot. These were either logistical calls regarding needing a loan bin due to hardship or people who were very unhappy about the Pilot; all of the latter were holiday home owners. Their main concern was that weekly general waste collections were needed during the summer holidays. The planned additional collection in January was not mentioned in the letter and most callers were reassured once they were told about it.

The majority of phone calls received were requests for caddy delivery in response to the flyers and/or requests for loan bins.

After the first collection of general waste and green waste on 2 October 2013, some calls were received saying that their recycling had not been collected. These individuals had misunderstood the original letters stating that all waste would be collected fortnightly, and interpreted this to mean that all three bins were to go out on the same day. Providing calendars to these people resolved the confusion, and was also an excellent opportunity to deliver caddies.

On 9 and 10 October 2013, after the first collection day in which general waste was not to be collected, we received a number of calls from people saying that their blue general waste bin was not collected. Most of these people were unaware of or unhappy about the Pilot and claimed not to have received the calendar. Once again, this provided an excellent opportunity to deliver more caddies.

Some negative calls were received, mostly protesting that fortnightly collection of general waste is not enough as they fill their bin every week, they have large numbers of guests or that hygiene or smells will be an issue. Holiday home owners expressed concern about the failure of their guests to recycle and problems with holiday makers arriving to find the bin still full from the previous tenant. Some of these issues were resolved by providing more information. In other cases, the concerns were recorded. One caller threatened to call talkback radio but we are not aware of him being broadcast.

Some calls were received from people outside the Pilot area who were confused about whether they were included.

Enquiries were received as to where caddies and/or compostable bags can be purchased. It was decided not to sell caddies to non-Pilot residents, so these enquirers were advised to purchase online or to wrap their food scraps in newspaper or put them loose in the green waste bin. This shows that the Pilot is raising awareness of appropriate food waste disposal outside the Pilot area.

Contact with residents during caddy delivery has allowed sentiment in the Pilot area to be gauged. Opinions tend to reflect those reported in the surveys, with many residents grateful and overjoyed about the fortnightly collections (generally permanent residents who are already committed to recycling) and others concerned about the impact of fortnightly collections of general waste in terms of not having enough room in their bin, odours, hygiene and holiday makers. Some of those expressing concerns are more concerned about the effect on other residents than themselves.

The impact of holiday makers on the area rapidly became apparent. This is a separate issue to the Pilot, but the direct contact with residents has revealed the extent of the issue. Permanent residents often feel resentful about having to put away their neighbours' bins, pick up rubbish when the bins blow over and seeing bins left out all the time. Owners of holiday rentals are concerned that their tenants don't make an effort with recycling. Owners of holiday homes are concerned that they usually aren't there on bin collection day so either their waste does not get collected, they have to leave their bin out or rely on their neighbours. Owners of holiday homes and holiday rental properties seem supportive of the idea of a paid commercial service to put bins out on collection day and then put them away, or of a paid on-demand collection service to better meet their needs.

In addition to FRWA's direct communications with the public, letters to the editor relating to the Pilot, and to fortnightly collections generally, appeared from time to time in the Victor Harbor Times. These are reproduced in Appendix 3.

#### **4.9 Evaluation of effectiveness**

The Pilot has demonstrated how difficult it can be to make effective contact with all the residents of a small area, particularly an area with a high concentration of holiday homes. Not all residents in the area read the Victor Harbor Times, especially young people who tend to rely on social media. Owners of holiday homes who live outside the region are unlikely to read local papers or council newsletters. Whilst the direct mail out reached most owners of properties in the Pilot area, some rental tenants did not receive any information from their landlords. Even at the very end of the Pilot, calls were still being received from Pilot holiday home owners who had not heard anything about it.

Doing caddy deliveries on weekdays meant that many working people were not at home. We may have had more success at evenings or weekends, however the issue of catching holiday home owners remains a challenge. Many holiday homes do not have letterboxes or doormats so it was difficult to find appropriate places to leave a flyer.

Despite the mail out and letterbox drop, there were a number of Pilot residents who claimed not to have received a calendar when the Pilot started. Most of this confusion had settled after the first couple of weeks. Many residents assumed from the wording of the initial letter that all three bins would be collected on the same week. Including the calendar with the initial mail-out would have helped with this, but the confusion did result in many residents calling us, providing an opportunity to offer caddy delivery.

Similarly, by not mentioning the weekly collection of general waste planned for the peak Christmas-New Year period, we received a lot of calls from holiday home owners insisting that this was essential. These callers were usually pacified once they were informed of the weekly collections, and once again it provided an opportunity to organize caddy deliveries.

The education material seems to have been well received, with very few calls from Pilot residents unsure of what to put in each bin. This is also supported by the results of the surveys (see Section 6) and audits (see Section 7), which showed that the majority of Pilot participants understood how to use their caddy correctly.

## 5. CADDY AND LOAN BIN DELIVERIES

Over the course of the Pilot, the following loan bins were delivered:

- One 140 L blue general waste bin to a family with special needs (medical)
- Five 140 L blue general waste bins to families with more than 5 members
- One 140 L blue general waste bin to a family with a child in nappies who requested help part way through the Pilot
- One 140 L blue general waste bin to a holiday house whose blue bins were continually stolen
- Two 240 L blue general waste bins to a block of shops. These shops were sharing five green bins which they were using for general waste and also had a commercial skip for cardboard and paper waste. We provided two yellow lids to convert two of the green bins to recycling bins and two large loan general waste bins. The shops began separating all of their recycling (not just paper and cardboard) and food waste. The hairdresser is also now putting hair trimmings in the green waste stream instead of to landfill. At the end of the Pilot, the shops purchased three complying 140 L blue general waste bins.
- Two 140 L blue general waste bins to the Chiton Rocks SLSC who had been using green-lidded 240 L bins for general waste. In addition, a new public litter bin was placed nearby.
- Four 240 L yellow recycling bins to premises that did not have one
- Fifteen 240 L green waste bins to premises that did not have one

This is a total of 31 loan bins. Some of the recipients of loan bins were identified via survey responses and others phoned FRWA directly after having read the education material and realizing they were eligible for a loan bin.

All loan bins were stenciled “FRWA LOAN” on two sides for easy identification. Wherever possible, loan bins were delivered when someone was home (sometimes this was difficult for holiday homes) and recipients of loan bins were asked to sign a form agreeing to take care of the bin and return it at the end of the Pilot.

Loan bins were collected at the end of the Pilot, with the exception of Chiton Rocks SLSC which was allowed to retain their loan bins pending the results of an audit of community lands bin entitlements.

A total of 244 households received a caddy during the Pilot. This represents approximately 40% of Pilot dwellings. 24 additional rolls of compostable bags were delivered towards the end of the Pilot, including 4 rolls to the childcare centre.

Based on dwelling type information gathered during the Pilot, approximately 60% of caddies went to permanent residents (although they only make up 40% of dwellings in the Pilot area), 20% to family holiday homes and 20% to rental holiday homes.

## 6. SURVEYS

### 6.1 Dwelling Type Summary

Throughout the Pilot, information was recorded about the dwelling type at each address. This information was gathered from initial and final surveys which answered the question “Please tick the box that best describes your premises” and also provided an address (optional question). When the Project Officer had contact with individual Pilot residents, either in person or over the phone, information about the dwelling type was also gathered if possible. At the end of the Pilot, dwelling type had been confirmed for 277 of the Pilot properties. These results are summarized below:

- 36% Permanent Homes (30% owned, 6% rented)
- 61% Holiday Homes (31% family use only, 30% used for holiday rentals to a greater or lesser extent)
- 3% Commercial or Community Use

These results are consistent with those expected based on Census data.

### 6.2 Initial Survey

The initial survey was posted to owners of properties in the Pilot area prior to commencement of the Pilot. 646 surveys were posted and 288 were returned by 30 October 2013, representing a return rate of 45%.

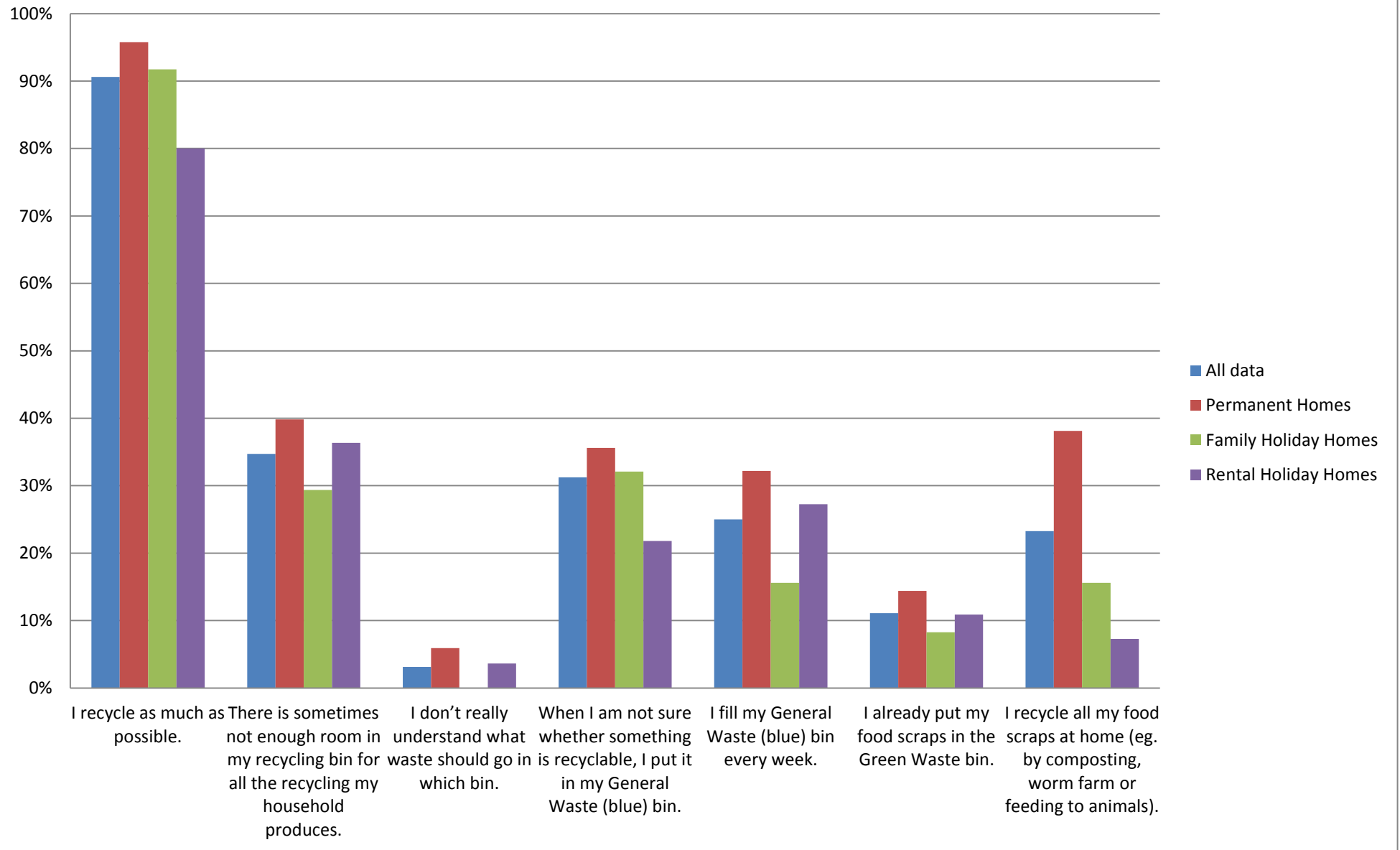
The initial survey aimed to gather information about dwelling types, household composition, attitudes to recycling and anticipated concerns or problems with the Pilot. A copy of the initial survey is included in Appendix 1 and a detailed summary of the results are included in Appendix 4.

Permanent residents were asked questions about their household composition and pets. The average number of persons per household was 2.6. Only 5% of households contained any members aged under 5 years. 15% contained one or more members aged between 5 and 18 years, while 59% contained at least one adult aged between 18 and 65, and 53% contained at least one person aged over 65. This is consistent with Census data and shows that the permanent population of the Pilot area is dominated by older couple households.

36% of permanent households contained one or more dogs, 12% had cats, 3% had rabbits and/or guinea pigs and 4% had birds. The primary method of disposal of pet waste was via the general waste (blue) bin (60%) followed by garden or compost heap (36%) and lastly the green waste bin (4%). This indicates that Pilot residents were either unaware that it is acceptable to put most types of pet waste in the green waste bin, or they were reluctant to do so on a 4-weekly collection cycle.

Survey respondents were asked read a number of statements relating to recycling attitudes and to tick any that they agreed with. The results are summarized in Figure 2 overleaf and tabulated in Appendix 4. The vast majority of respondents believe that they recycle as much as possible, ranging from 96% of permanent residents to 80% of rental holiday home owners. Overall 35% of respondents felt that there was sometimes not enough room in their

**Figure 2 Initial survey statement responses**





recycling bin for all the recycling they produce. Most respondents seemed confident in their understanding of the three-bin system, with only 3% admitting that they don't really understand which waste should go in which bin. 32% of permanent residents, 16% of family holiday home owners and 27% of rental holiday home owners claimed to fill their general waste (blue) bin every week. 11% of respondents already put their food waste in the green waste bin, while 23% of respondents recycle their food waste at home by composting, worm farming or feeding to pets (comprising mainly of permanent residents at 38%, followed by family holiday home owners at 16% and rental holiday home owners at 7%).

In response to the question "Do you think the fortnightly collection will cause problems for your household?", 58% of permanent residents and 48% of family holiday home owners answered "no", while 60% of rental holiday home owners answered "yes".

Survey respondents were given the opportunity to write comments. Please note that these are unsolicited comments, rather than statements provided on the survey for respondents to agree or disagree with. The most common comments were as follows:

- 'weekly collections needed for holiday house over summer' (mentioned by 30% of family holiday homes and 55% of rental holiday homes) – at this stage, Pilot participants were not aware of the extra weekly collection scheduled at New Year, as they had not yet received a calendar
- negative comments regarding smells, health hazards or vermin related to either the blue or green bin (26% of permanent residents, 9% of family holiday homes, 22% of rental holiday homes)
- positive comments to the effect that 'I'm happy to have more recycling and/or green waste collections, because 4-weekly isn't enough' (ranging from 12% of permanent residents to 7% of rental holiday homes)
- positive comments to the effect that 'I think fortnightly collections are a great idea' (13% of permanent homes, 13% of family holiday homes and 4% of rental holiday homes)
- 13% of family holiday home owners mentioned that having extra people in the house at times puts a strain on bin capacity
- owners of rental holiday homes expressed concern that tenants don't use the bins properly (22%) and that tenants don't like to arrive to find the bins full of the previous tenants' waste (15%)

The survey had the desirable effect of allowing people to express their feelings about the Pilot without needing to phone FRWA. Survey respondents seemed grateful to have their concerns heard and this helped to open up a productive dialogue.

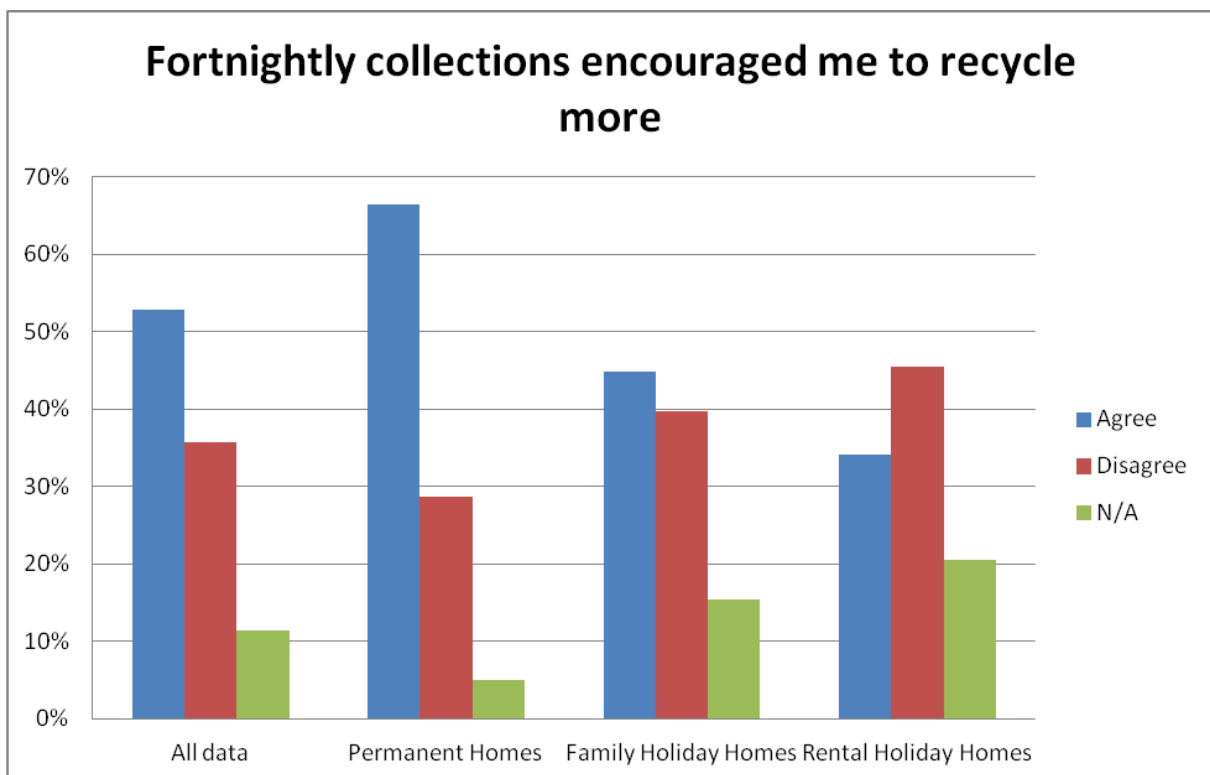
### 6.3 Final Survey

The final survey was posted to 639 Pilot property owners on 24 December 2013. A total of 231 responses was received by 31 January 2014, a response rate of 36%.

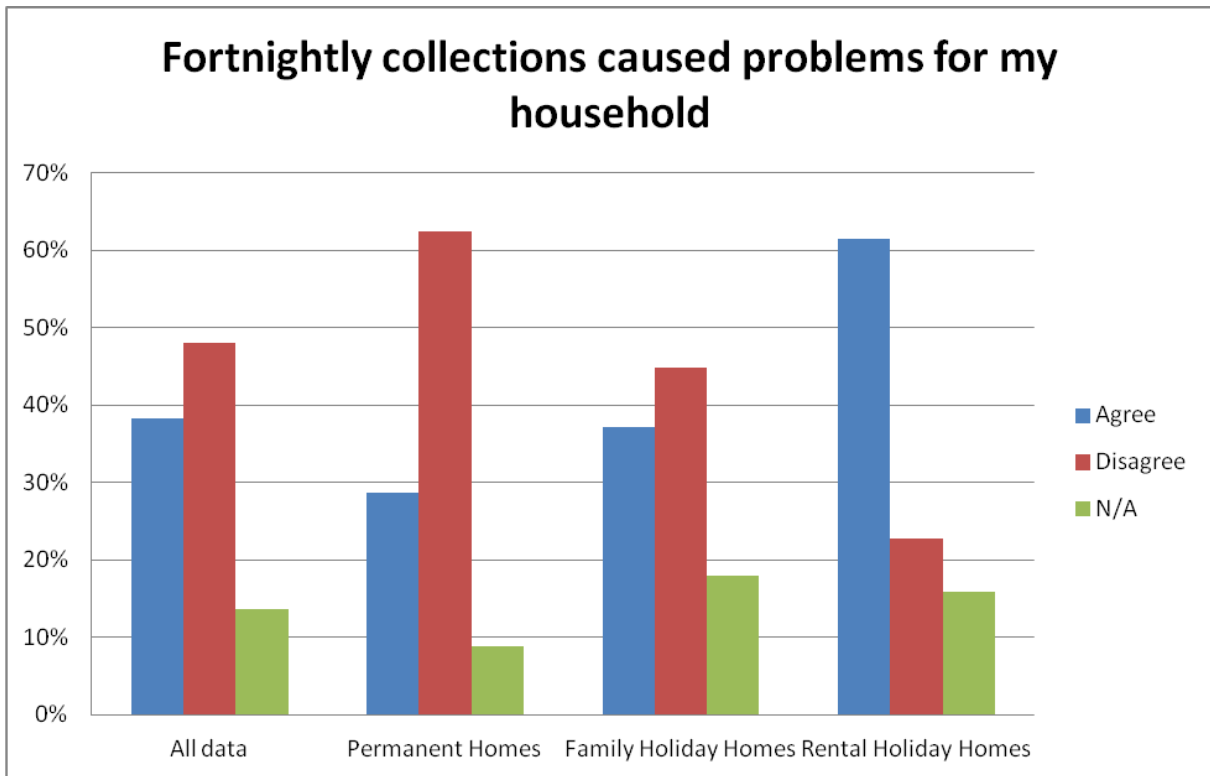
The final survey focused on assessing participants' experiences of fortnightly collection, whether it changed their attitudes to recycling and what problems they encountered. It also assessed participants' preferences for three different potential future kerbside collection schedules.

Survey participants were asked to tick agree, disagree or not sure/not applicable, in response to 17 statements. The responses are summarized below in Figure 3 and are tabulated in Appendix 4.

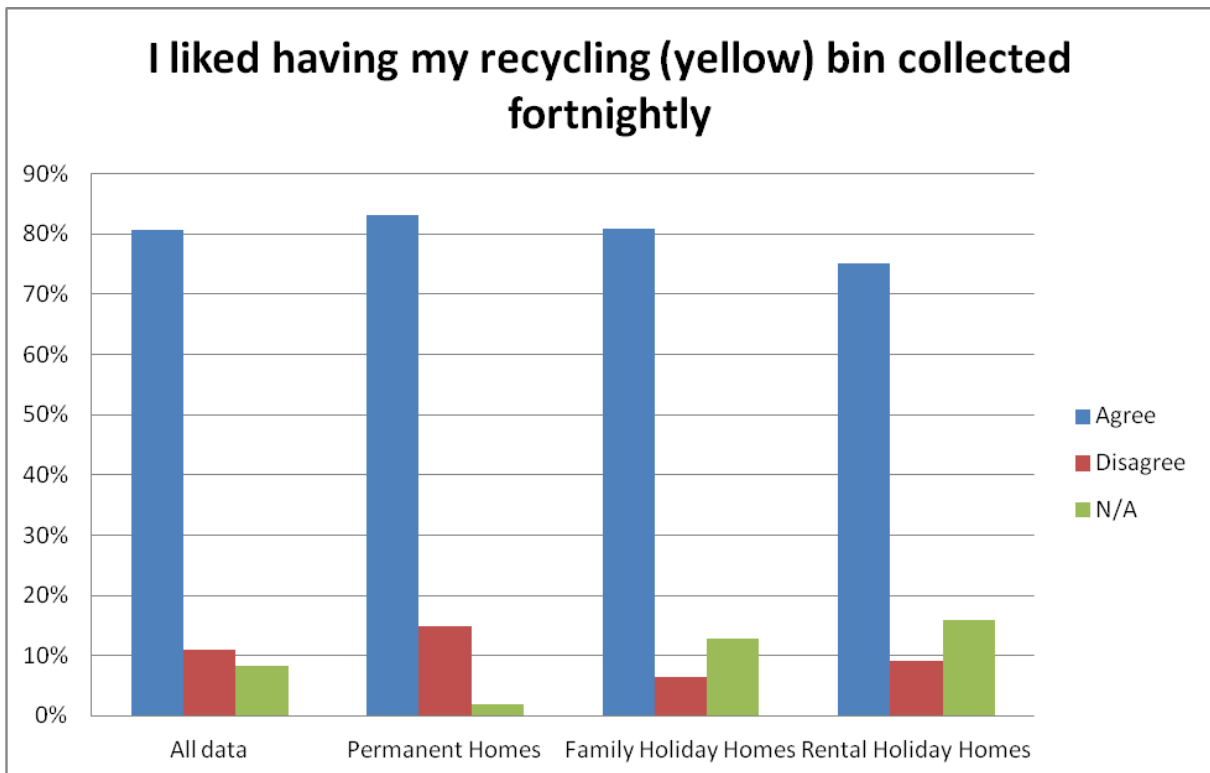
**Figure 3 Final survey statement responses**



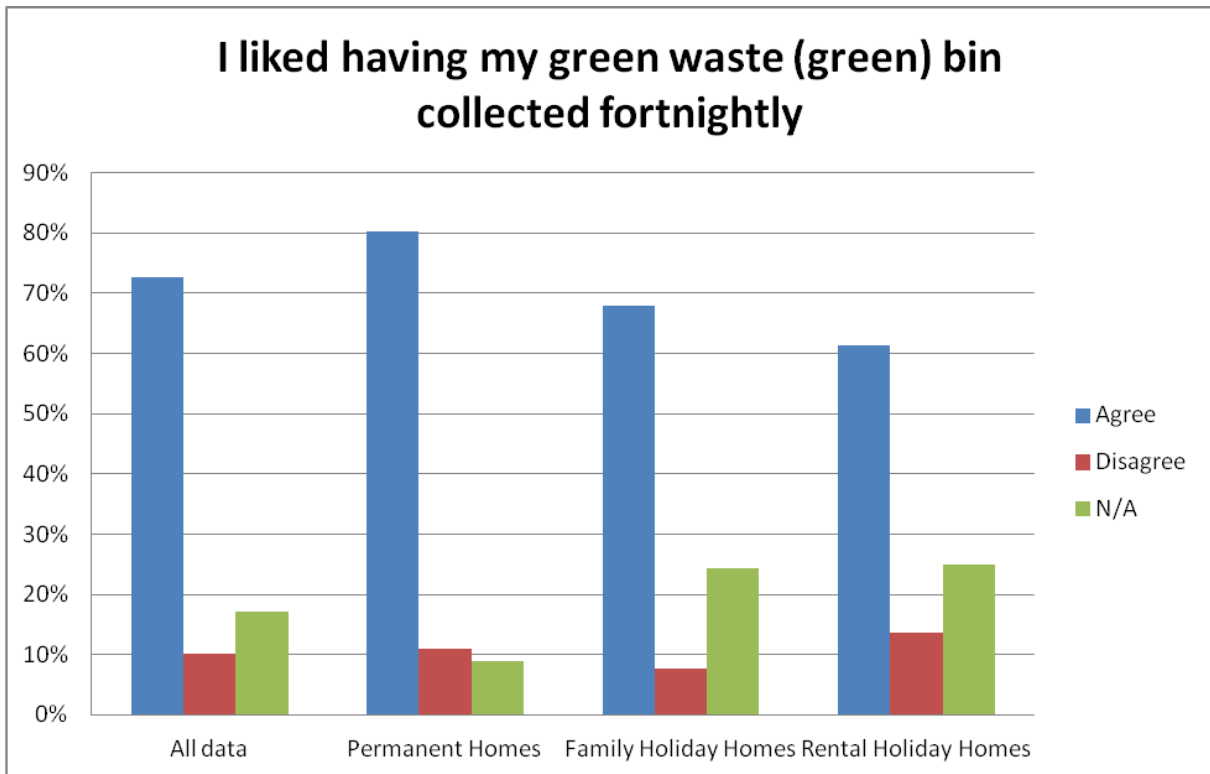
Permanent residents showed strong agreement with the statement that 'Fortnightly collections encouraged me to recycle more', with family holiday home owners agreeing somewhat less and rental holiday home owners mostly disagreeing.



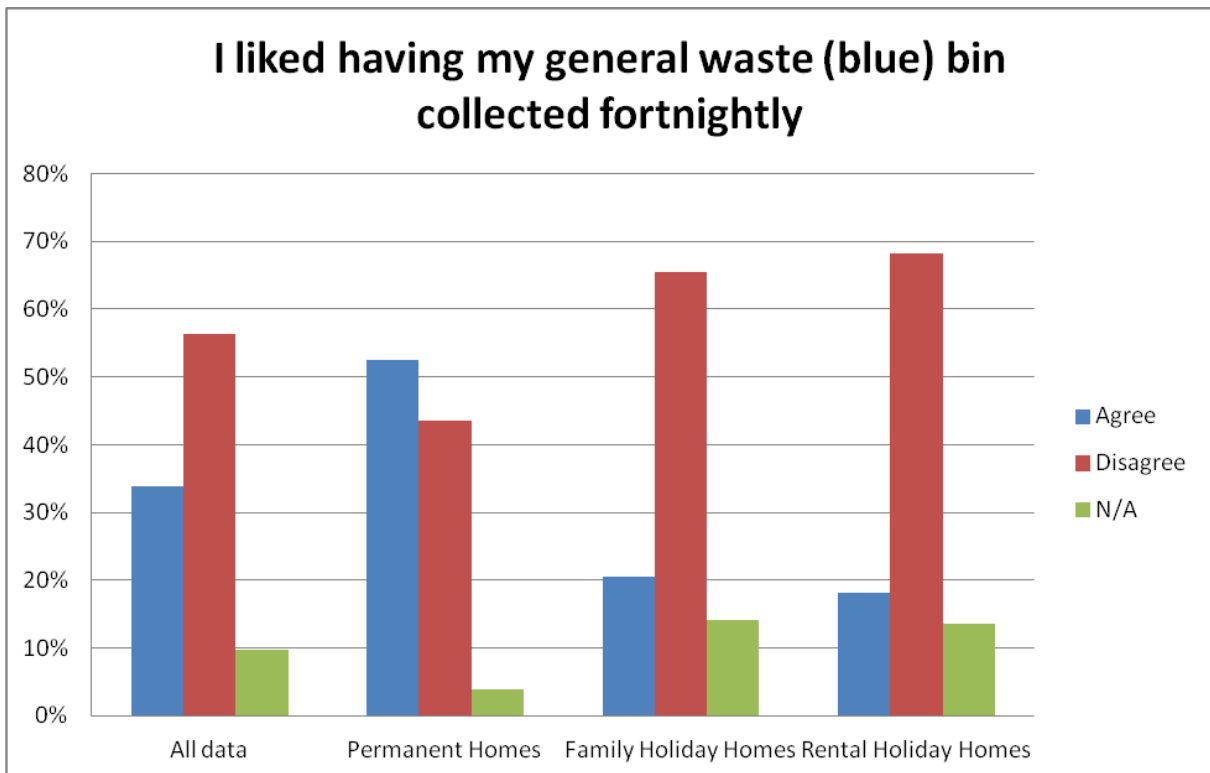
Most permanent residents disagreed that ‘Fortnightly collections caused problems for my household’, while most rental holiday home owners agreed.



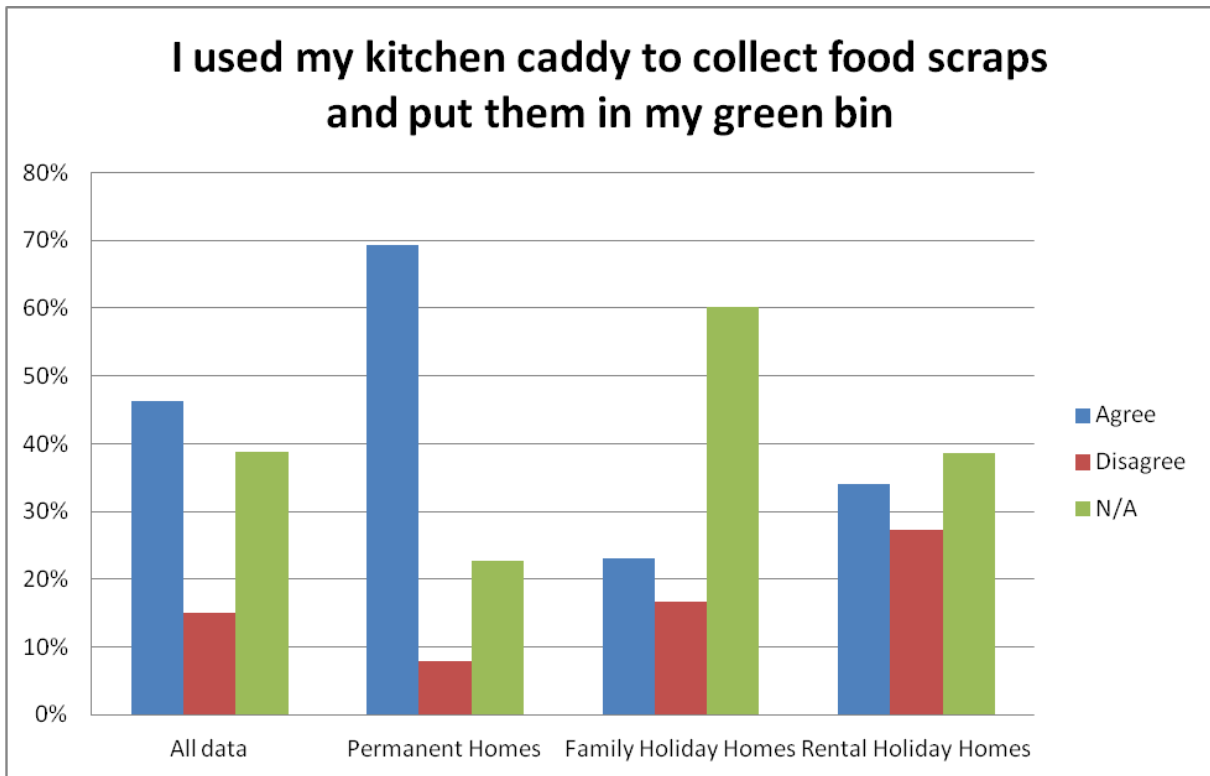
The great majority of survey respondents ‘liked having their recycling bin collected fortnightly’, with permanent residents more in favour than rental holiday home owners.



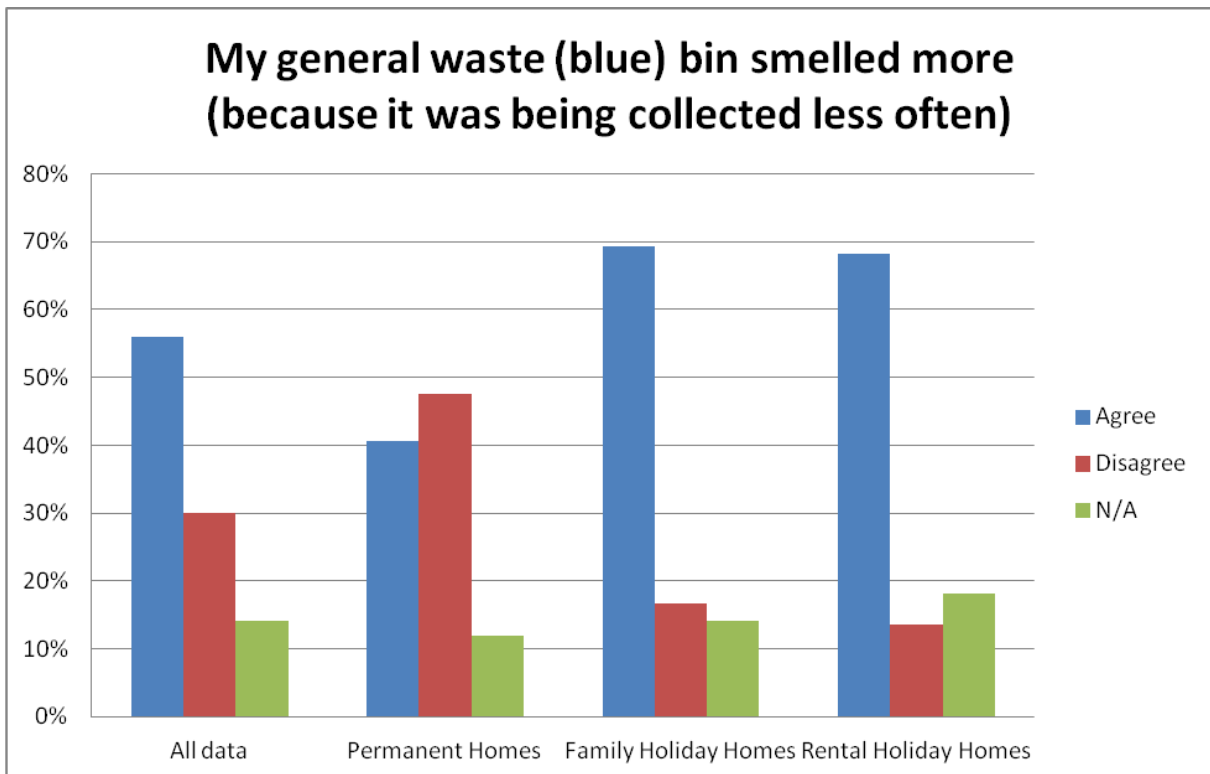
Similarly, most survey respondents ‘liked having their green waste bin collected fortnightly’, but this effect was noticeably less pronounced for rental holiday home owners.



The statement ‘I liked having my general waste bin collected fortnightly’ shows a dramatic difference in opinion between permanent residents and holiday home owners (both family and rental). Whilst a slim majority of permanent residents agreed with the statement, the great majority of holiday home owners disagreed.

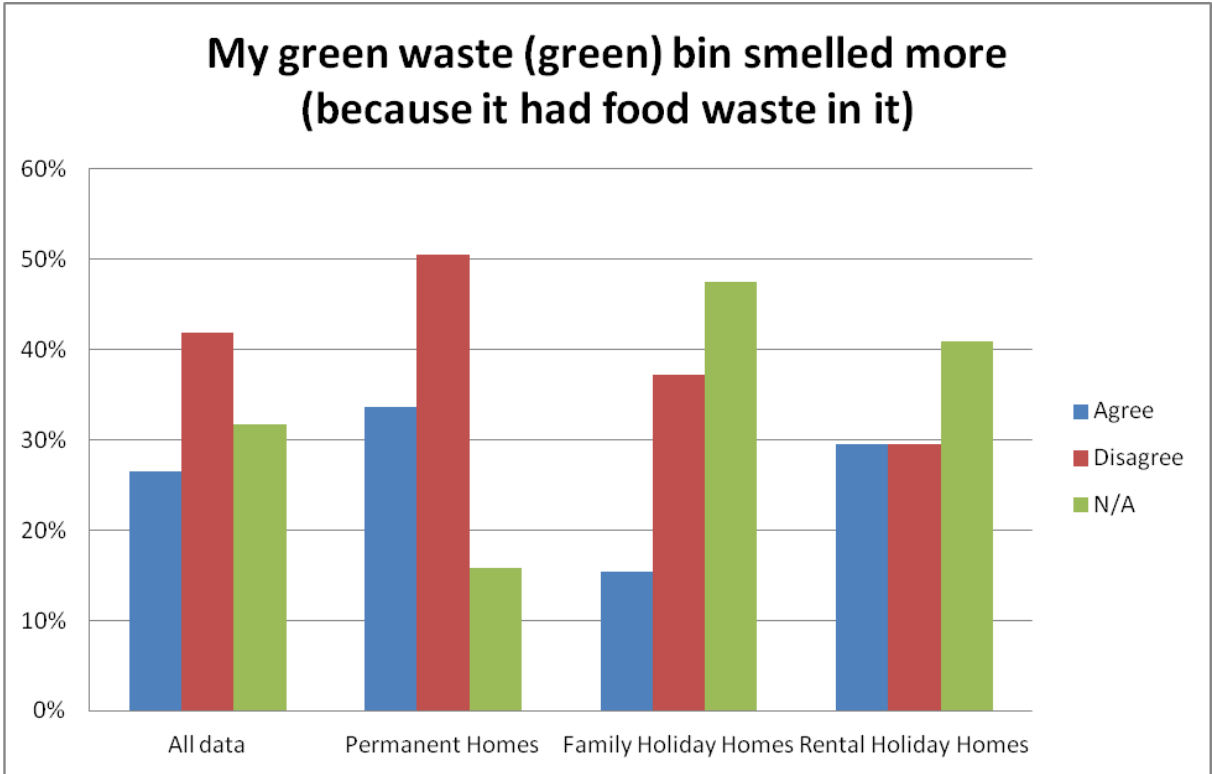


The majority of permanent residents used their kitchen caddy to collect food scraps for the green bin, whilst there was a lower use of the kitchen caddy seen for holiday home owners. N/A responses to this statement generally relate to households who did not receive a caddy, the majority of which were holiday homes that did not respond to or were not aware of the flyer offering caddy delivery.

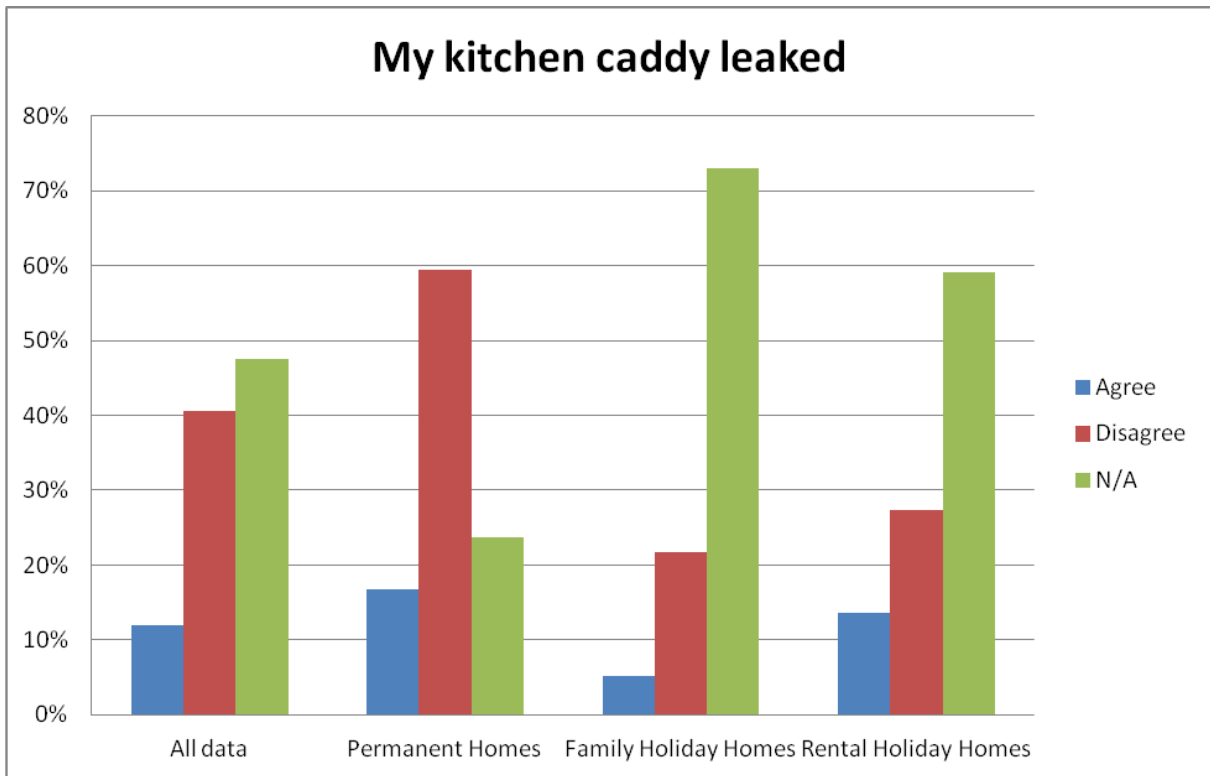


Most permanent residents disagreed that their blue bin smelled more due to less frequent collection, probably because they were correctly using their kitchen caddy to contain their

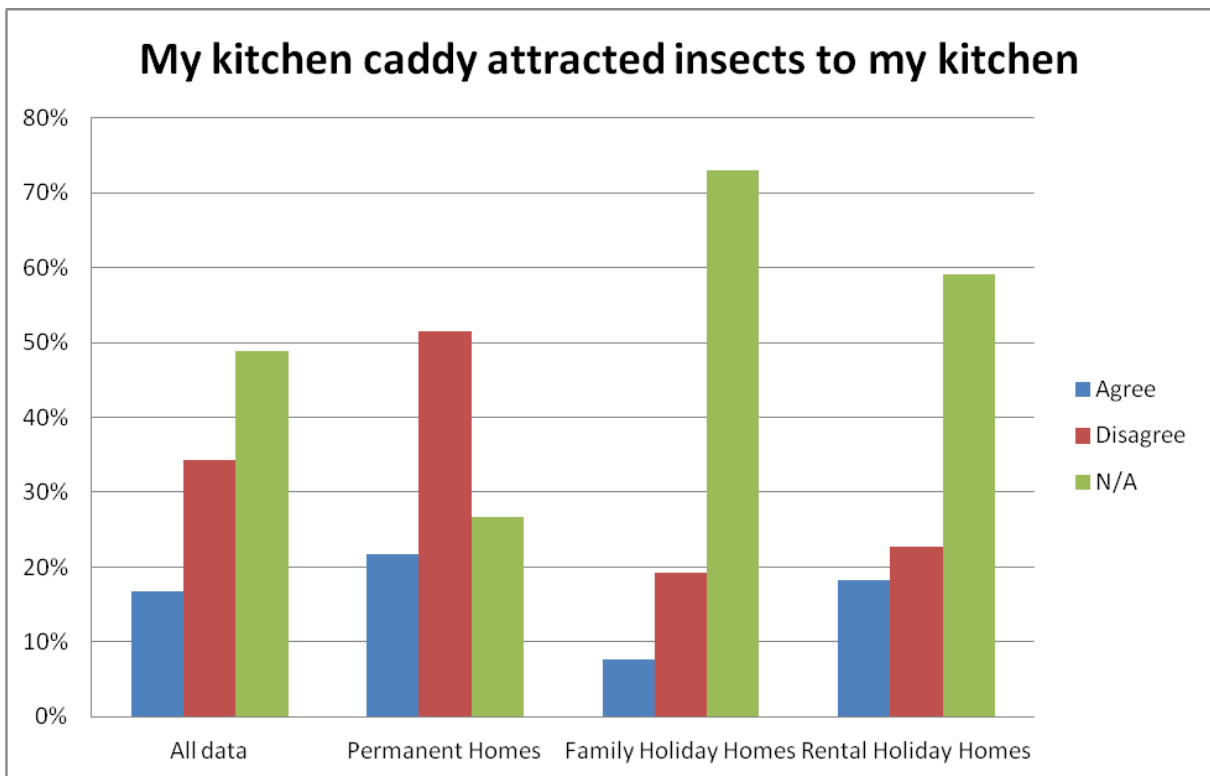
food waste in their green bin. However, the majority of holiday home owners agreed that their blue bin smelled more, which is consistent with their lower use of the kitchen caddy.



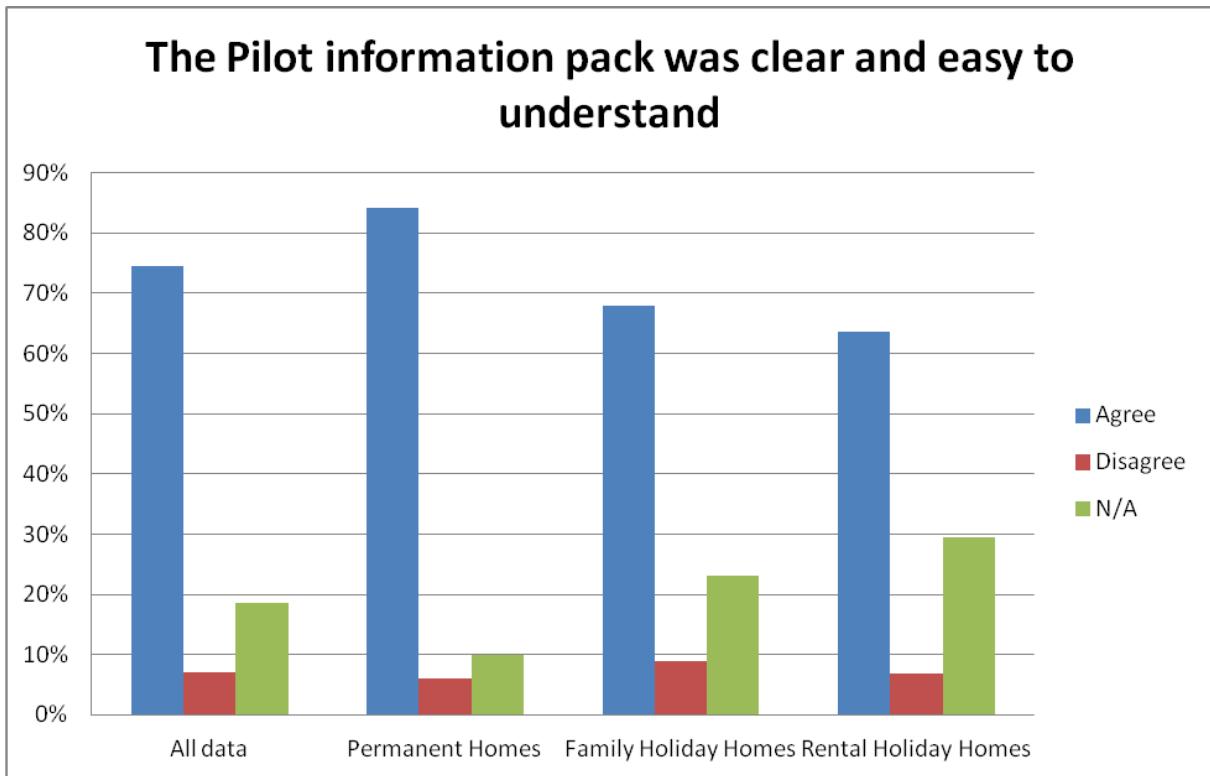
Responses to the statement ‘my green waste bin smelled more because it had food waste in it’ showed that the majority of permanent residents did not experience odour problems with using their green bin for food waste, while the high number of N/A responses to this question from holiday home owners showed that they did not use their green bins for food waste.



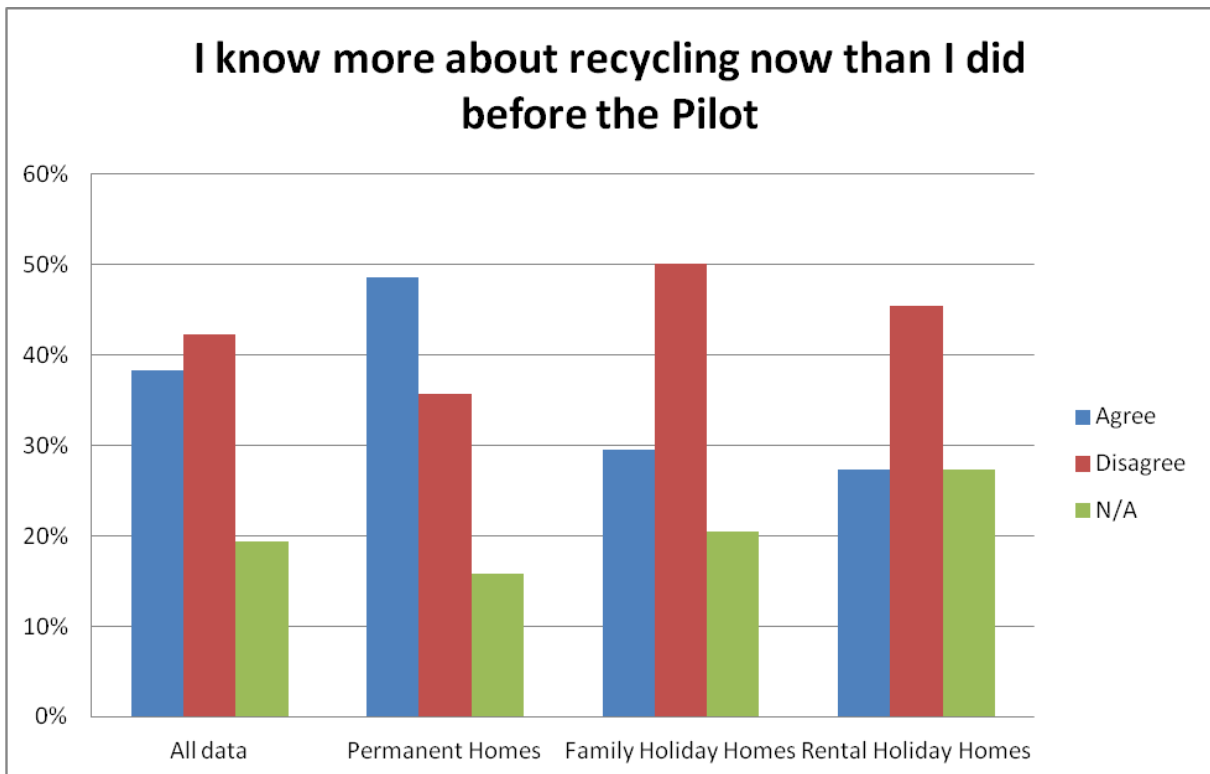
Responses to the statement ‘my kitchen caddy leaked’ showed that a minority of respondents experienced this problem. Once again, the high number of N/A responses from holiday home owners reflects their low uptake of the caddy.



Similarly, only a minority of respondents experienced problems with their caddy attracting insects to their kitchen (this problem is easily overcome by changing the liner more often).



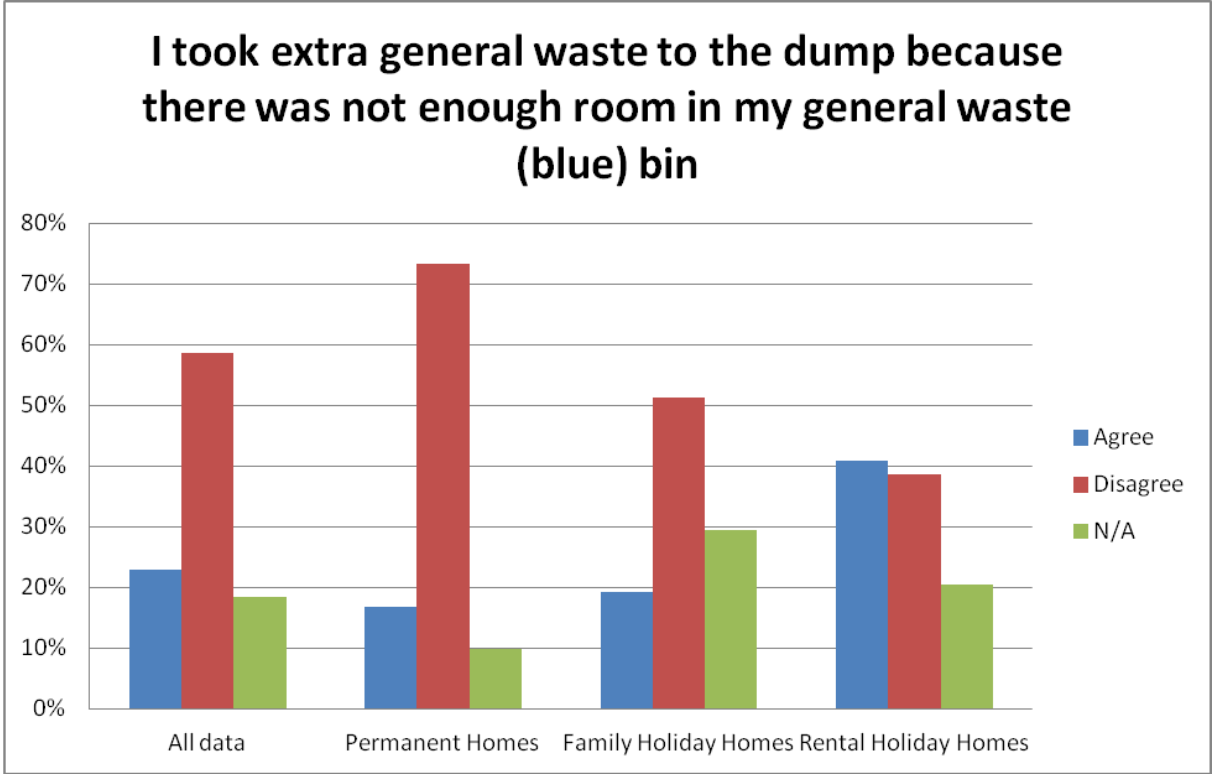
The majority of respondents agreed that ‘the Pilot information pack was clear and easy to understand’, showing that the information provided was suitable for the target audience. The lower percentage of holiday home owners agreeing with this statement is accounted for by the higher percentage who answered N/A – these individuals would not have received the information pack if they did not receive a caddy.



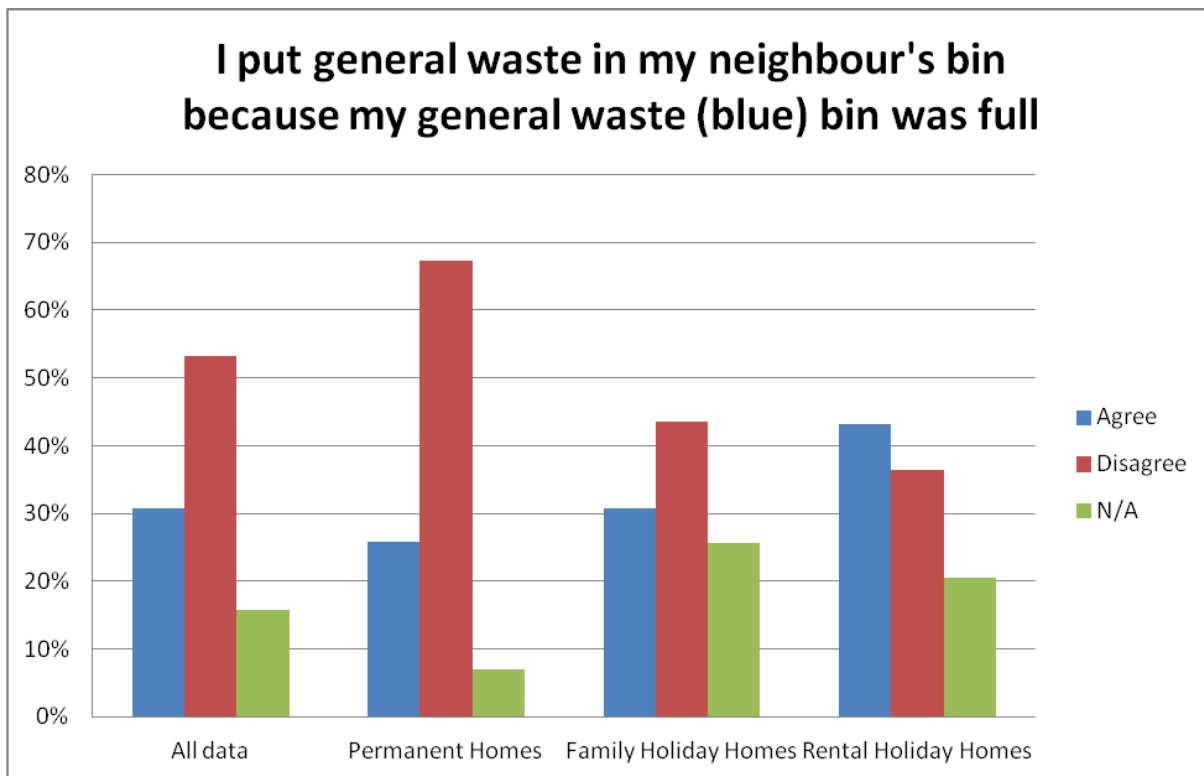
The responses to the statement ‘I know more about recycling now than I did before the Pilot’ shows that many of the permanent residents of the Pilot area felt that they learned



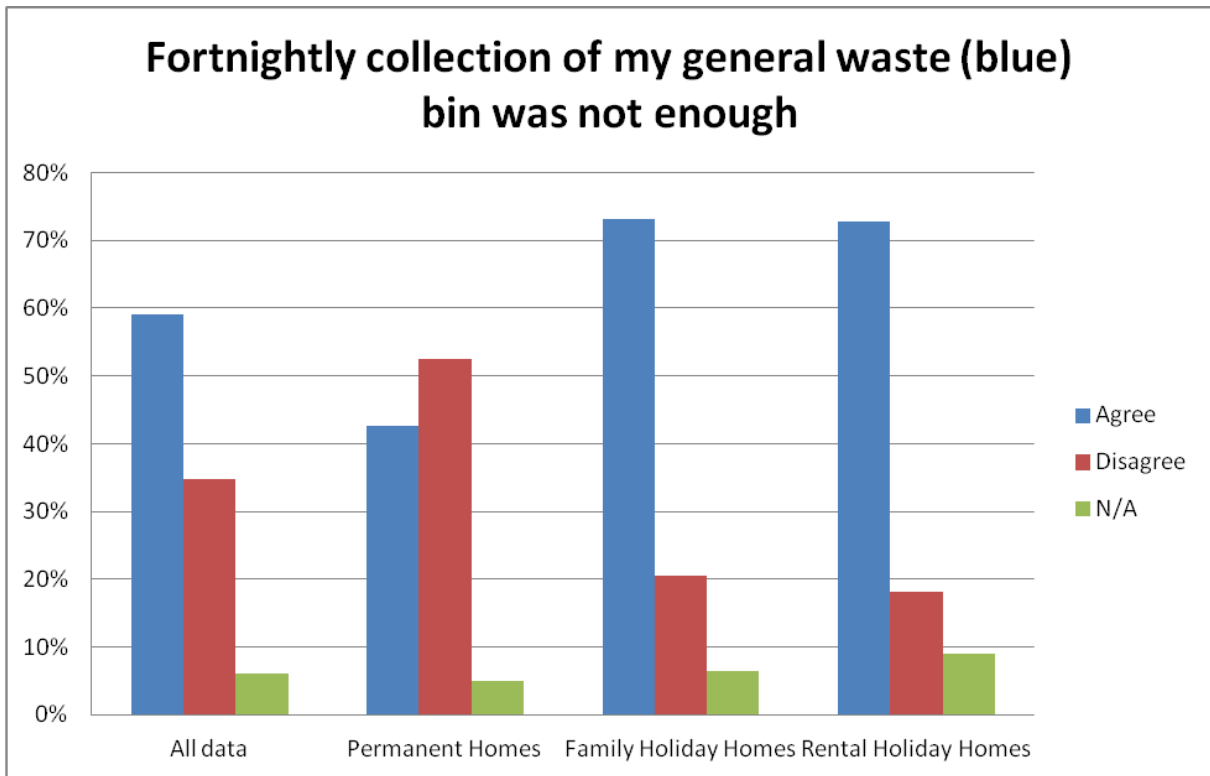
something from the experience and/or from the information provided. Responses from holiday home owners show that they were less inclined to feel that the Pilot provided them with valuable learning. This may reflect that they did not receive all of the information, that they were not in residence for long enough for fortnightly collections to change their behavior, or that they usually reside in an area where recycling education is well catered for and the Pilot did not add anything they didn't already know.



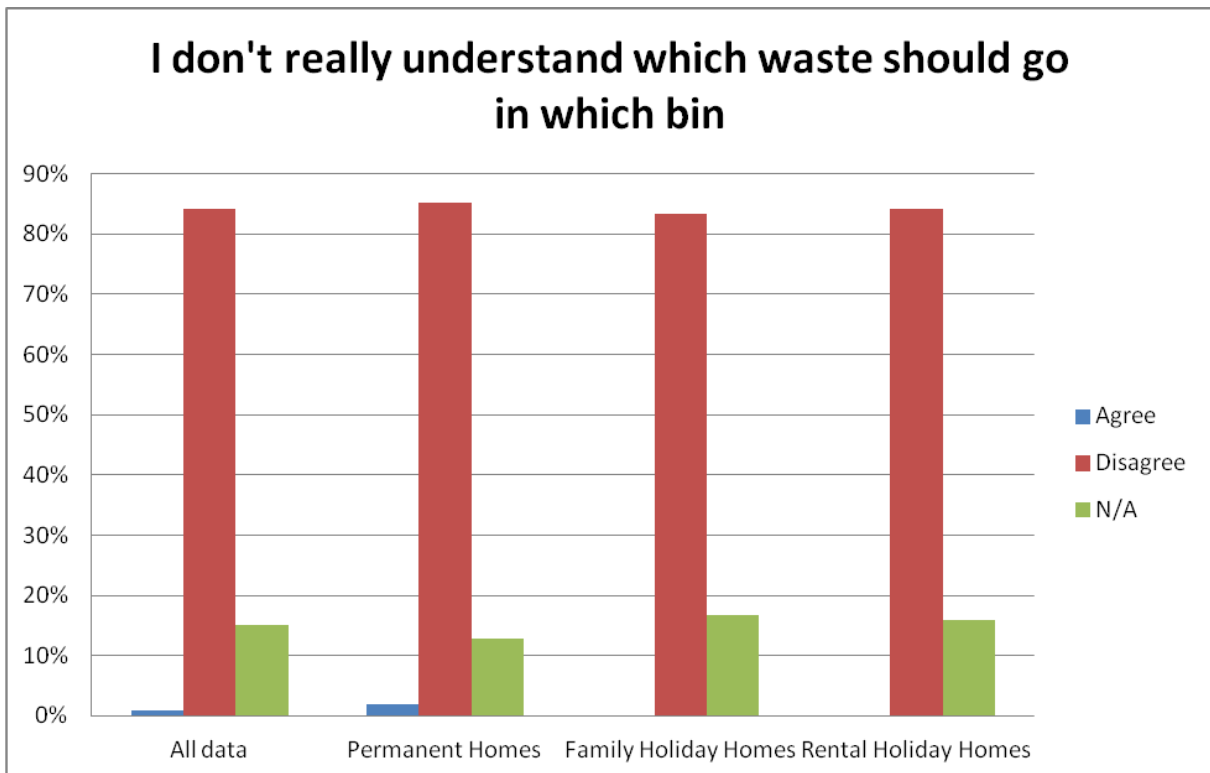
Most permanent residents did not need to take extra waste to the dump during the Pilot, showing that fortnightly collections catered for their waste disposal needs. However, over 50% of family holiday home owners and just under 40% of rental holiday home owners did experience the need to take extra waste to the dump, showing that the general waste bin capacity during fortnightly collections was inadequate for their needs (possibly due to less use of the recycling and green waste bins and greater numbers of occupants in their houses).



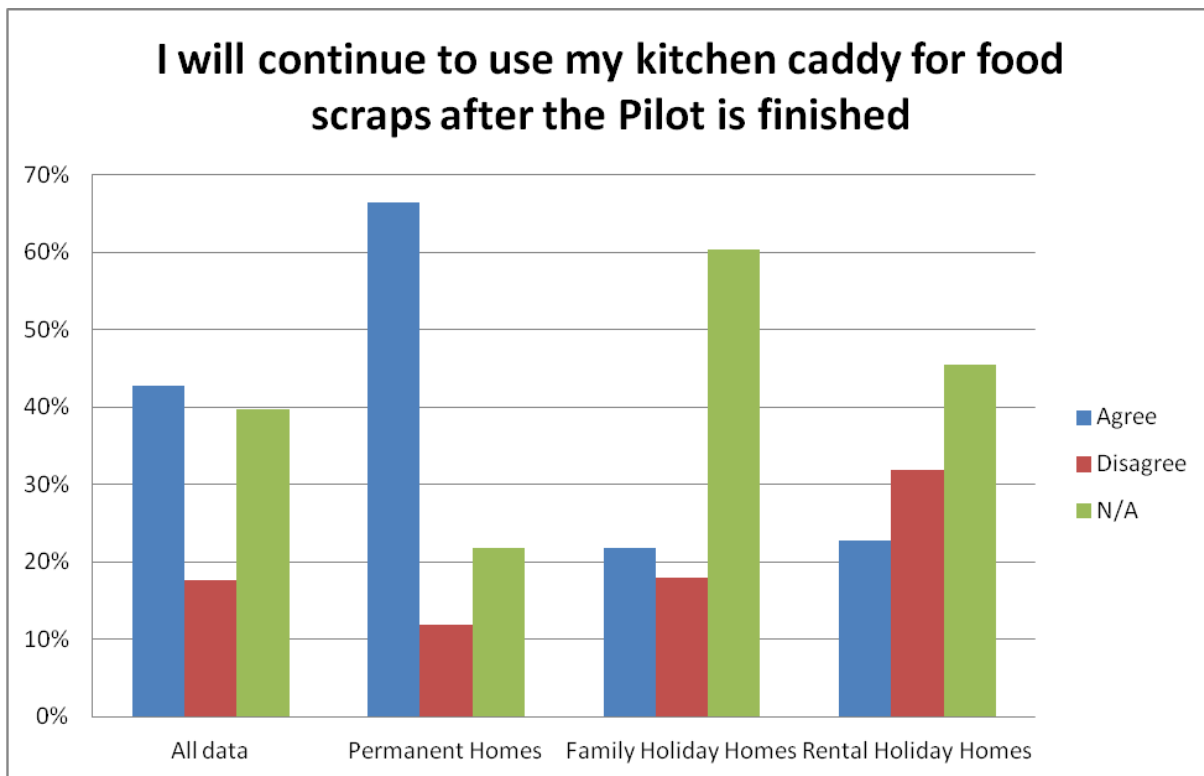
About a quarter of permanent residents and up to 43% of holiday home owners used their neighbours' bins during the Pilot, once again reflecting that some permanent residents and many holiday home owners found that fortnightly collections of the general waste bin were insufficient for their needs. Anecdotally, it appears that bin-sharing is a common practice, even without the Pilot, and neighbours are not always happy about it.



43% of permanent residents and 73% of holiday home owners stated that ‘fortnightly collection of their general waste bin was not enough’.



The vast majority of respondents believe they have a good understanding of the three-bin system. However, the answers to other statements (above) suggested that many holiday home owners in particular were not aware that food waste should go in the green waste bin, suggesting that people’s confidence in their own knowledge is not always accurate.

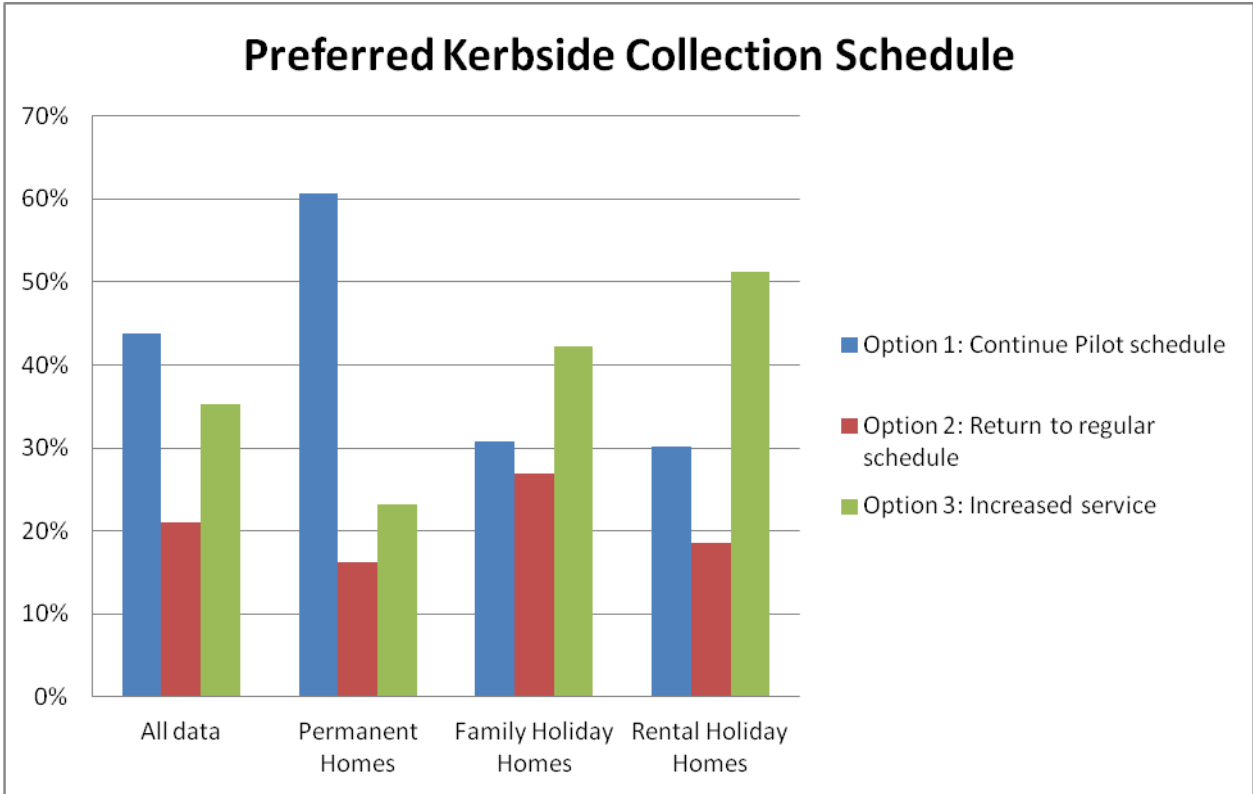


The majority of permanent residents agreed that they would continue to use their kitchen caddy for food scraps after the Pilot is finished. This is a good result, especially considering that green waste collections will return to 4-weekly, which many would consider too long to have food waste sitting in their bin. The responses from holiday home owners once again reflect the fact that many of them did not receive a caddy.

Overall the responses to the statements show that permanent residents are more in favour of fortnightly collections and experience less problems, when compared to holiday home owners, especially those who rent their homes out to holiday makers.

The final question on the survey asked participants about their preferences for three different potential future kerbside collection schedules. Option 1 was to continue with the Pilot schedule (fortnightly collection of all three waste bins, on alternating weeks). Option 2 was to return to the regular schedule (weekly collection of the general waste bin, 4-weekly collection of recycling and green waste bins). Option 3 was for an increased service, similar to that provided in many metropolitan councils, with weekly collection of general waste and fortnightly collection of recycling and green waste bins on alternating weeks. A comment was provided for each option, with the aim of making ratepayers aware that Options 1 and 2 were within the current budget, that Option 1 would result in savings in disposal costs to landfill, Option 2 would result in future increases in disposal costs to landfill, and that Option 3 would result in increases in collection and disposal costs. For Option 3, respondents were asked to provide an amount that they would be willing to pay (in addition to existing costs) for the increased service, although few provided an answer. Respondents were asked to number the three options in order of preference, but many respondents only marked one choice, so the following results are based on first choices only (Figure 4).

Figure 4 Preferred kerbside collection schedule



For permanent residents, 61% were in favour of Option 1, 16% Option 2 and 23% Option 3. This shows that fortnightly collections are the definite favourite, with returning to the regular schedule the least favoured option.

However, the majority of holiday home owners were in favour of Option 3, increased service. This effect was even more pronounced for rental holiday home owners.

Willingness to pay for increased service (Figure 5) was evaluated only for those respondents who marked Option 3 as their first choice. Many respondents did not answer how much they would be willing to pay despite marking Option 3 as their choice, however it is assumed that this means they would not be willing to pay any extra.

**Figure 5 Willingness to pay for increased service**



Permanent home owners were least likely to be willing to pay for an increased service. Owners of holiday homes were more likely than permanent residents to be willing to pay, however, the majority still were unwilling to pay. Of those who were willing to pay, \$50 or \$100 per annum were the most commonly suggested amounts, with other amounts of \$20, \$40 and \$52 (presumably based on \$1 per week) also suggested.

On the basis of these results, it is concluded that whilst an increased service would be a popular option, particularly among holiday home owners, ratepayers are generally unwilling to pay any more for their waste collection service.

The final survey allowed space for respondents to make comments. These comments are presented in full in Appendix 5. Several themes came up repeatedly in the comments; representative quotes are included here to summarise the main issues identified.

“Thank you for including me in the Pilot Program. I have been recycling all my life and was so happy this program was put into place. I hope it has taught everyone involved to put stuff in the correct bins! I thought it was the best program ever! With all the information and 3 bins, we had every opportunity to dispose of our waste correctly. I don’t put my blue bin out every week, and it shouldn’t be needed to have weekly blue bin collections when we have so many options. The green bin every fortnight was marvellous as I didn’t have to have piles of prunings waiting to be put in the green bin. Taking greens to the dump is not an option now, as it has become too expensive to empty a trailer. Fortnightly recycle is very good. Please keep this program going. It is the way for us to go forward. Less landfill! Well done to all concerned. PS. Thank you for the kitchen caddy.” #82 Permanent resident – owner.

“Generally OK, except for the busy December/January period, when we have a houseful of people. The rest of the year it works well for us, as normally only the 2 of us here.” #73 Holiday home owner (family use only).

“It is a seasonal thing given house is used as a holiday house. Most of the year, monthly collection of recycling and greens is insufficient and recyclable things end up going in general waste. I really want to keep fortnightly greens/recycling collections. Fortnightly collection of general waste is not enough however in spring/summer with extra patronage at house. It may be possible if the general waste bin was bigger.” #107 Holiday home owner (family and rental use).

“As the study was conducted in a holiday area, fortnightly of general waste is too long during the Dec/Jan period. I suggest extra collection of general waste during this period and for the rest of the year fortnightly. We have found guests tend to be a bit slack on recycling and also buy easy meals therefore more waste as they are on holidays.” #156 Holiday home owner (family and rental use).

“We didn’t mind the changes except after long weekends/school holidays and Xmas/January. The weekly collection of recycling/general should go to end of January (or at least 2 weeks longer than the trial) – has been a real issue with tenants going in and out to clear bins for next lot of guests!! Also there should be waste and recycling collections after Easter, after long weekends and after school holidays please – happy to pay a bit extra for this.” #85 Holiday home owner (family and rental use).

“Our house is a holiday home. When it is not being used we are not affected by the waste collection but when we are at the house we like to have the blue bin emptied weekly and the yellow bin fortnightly so that we can leave them out when we depart. Also, we often have lots of people staying so the blue bin fills very quickly. It would really help if the collection was more regular during holiday periods, as it has been recently (ie. early January). Many thanks.” #133 Holiday home owner (family use only).

“As a family holiday house, the property is used extensively by my family (including four toddler grandchildren all at the same time) – December-January, Easter and school holidays. Fortnightly blue bin collection during these periods is unacceptable. Full each week with nappies and household waste. Fortnightly collection would be OK at other times when the house is intermittently occupied and usually not by whole family (and grandchildren) at the same time.” #151 Holiday home owner (family use only).

## 7. WASTE AUDITS

Three formal bin audits were undertaken during the Pilot. An integral part of the Pilot was to measure the composition of the contents of each waste stream as the Pilot progressed, to assess whether fortnightly collections were contributing to a change in recycling behaviour. To this end, three audits were undertaken at the beginning, middle and end of the Pilot. These were timed as follows: immediately prior to commencement of the Pilot, to provide baseline data; at the mid-point of the Pilot, to provide an indication of progress without the influence of schoolies and holiday makers; and at the end of the Pilot, to capture the effects of the peak holiday period.

The methodology for the bin audits was guided by Zero Waste SA guidelines (refer to *Guide to Kerbside Performance Reporting*, October 2007, available at <http://www.zerowaste.sa.gov.au/councils/kerbside-performance-reporting>).

### 7.1 Methodology

At each audit, the contents of 50 bins of each waste stream (general waste, recycling and green waste) were collected for auditing. Recycling bins were collected the week before audit day and stored at the Goolwa Waste and Recycling Depot for sorting the following week. General waste and green waste bins were collected on audit day.

The Pilot area was divided into 5 sections of approximately equal size. A short route was devised for each of these sections, intended to cover permanent dwellings (both rented and owner-occupied), family holiday homes and holiday rental properties. The same collection routes were used for each audit. The first 10 bins of each waste stream presented on each route were collected (10 bins per route times 5 routes equals 50 bins total per waste stream). Each waste stream was collected separately. The collected waste was taken by truck to the Goolwa Waste and Recycling Depot, where it was deposited (in separate piles for each waste stream) inside a large shed on a concrete floor to protect it from the weather.

Each pile of waste was sorted by trained staff working under the supervision of an accredited auditor. Waste was categorised into 12 categories, consistent with the 2012 audit: paper & cardboard, glass, plastic, liquid paperboard (LPB), aluminium, metals, food, green organics, hard waste, hazardous waste, residual waste and incorrectly presented recyclables. Waste in each category was weighed and recorded in a spreadsheet before being appropriately disposed of. The categories paper & cardboard, glass, plastic, LPB, aluminium and metals represent materials which would correctly be disposed of in the yellow recycling bin. Soft plastics and polystyrene were not included in the plastic category as they are not recyclable under our kerbside system; these were included in the category residual waste.

Categories food and green organics represent waste which would correctly be disposed of in the green waste bin, while residual waste represents waste which would correctly be disposed of in the blue general waste bin. Categories hard waste and hazardous waste represent items which are not suitable for disposal in any bin and should be taken to the depot directly, not disposed of via the kerbside system.

For the general waste stream, food in packaging (such as jars containing pasta sauce or bottles containing soft drinks) was treated as follows: the total weight of the food in its packaging was measured, then the approximate weight of the packaging (based on prior



experience) was subtracted. The weight of the food component was added to the category food while the weight of the packaging was added to the appropriate category (plastic, glass or metal). Where food was contained in lightweight plastic bags, the weight of the plastic bags was considered to be negligible, and so was included in the weight of the food. In the case of food waste presented in the green waste stream, if it was in plastic bags or packaging it was recorded as incorrectly presented recyclables, whereas if it was in a compostable bag, wrapped in newspaper or loose it was recorded as food. Notes were made in the spreadsheet so that the exact nature of food in packaging was fully recorded.

Bin presentation rates across the Pilot area on audit day were also recorded by the general collection truck driver.

For simplicity, the results of the three audits have been compiled into tables and charts allowing comparison between the audits. Figures are presented on the following pages, while summary tables are included in Appendix 6.

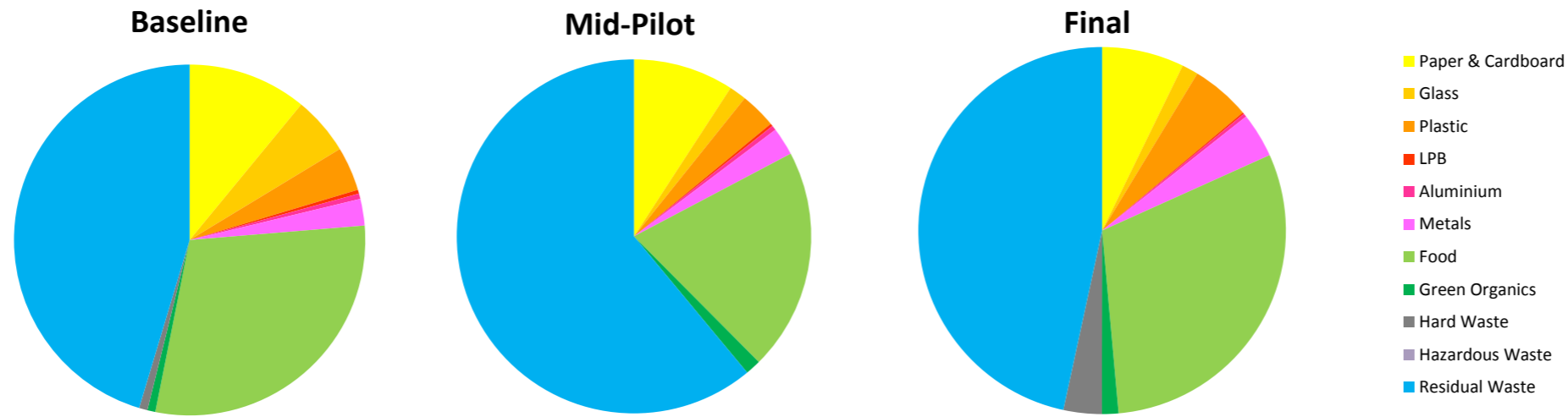
Table A1 summarises the results of each audit by proportion. Pie charts illustrating the composition of waste presented in each stream at each audit are shown in Figure 6.

Table A2 and Figure 7 provide a comparison of the results of the baseline and mid-Pilot audits in terms of average weight per household per week. This is calculated by dividing the total weight of waste by 50 (the number of bins audited for each waste stream, ie. the number of households) and then dividing by the number of weeks of waste that each waste stream contains (ie. for the baseline audit, general waste represents 1 week and recycling and green waste represent 4 weeks; for the mid-Pilot audit, general waste, recycling and green waste all represent 2 weeks). Average weight per household per week is measured in kg/hh/wk and provides a valid comparison taking into account the different collection frequencies.

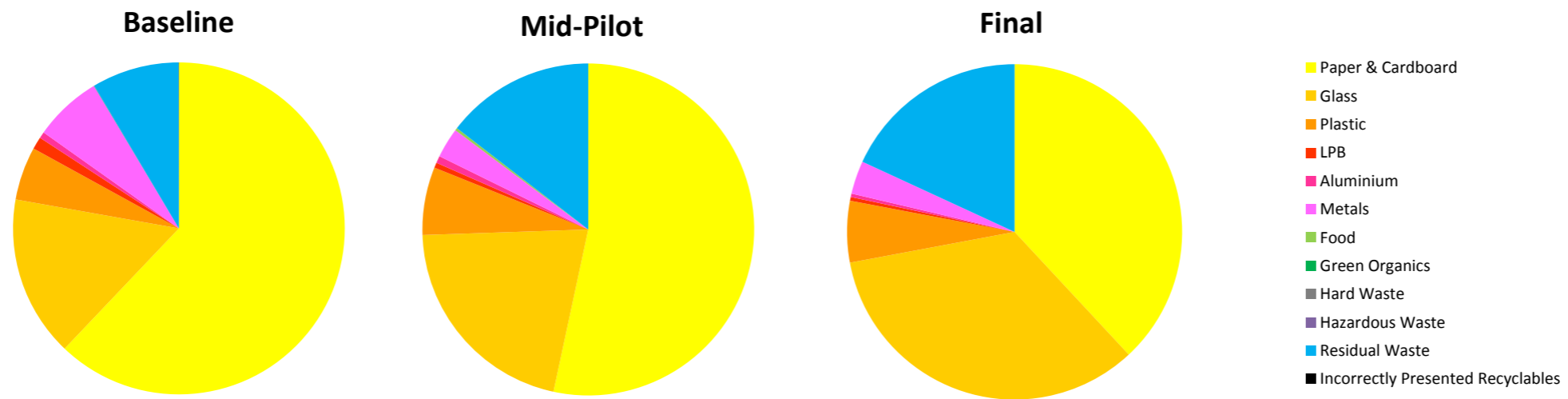
Table A3 presents detailed results showing the weights of each category found in each waste stream. Photographs taken during the audits are included in Appendix 7.

Figure 6 Composition of waste streams at baseline, mid-Pilot and final audits

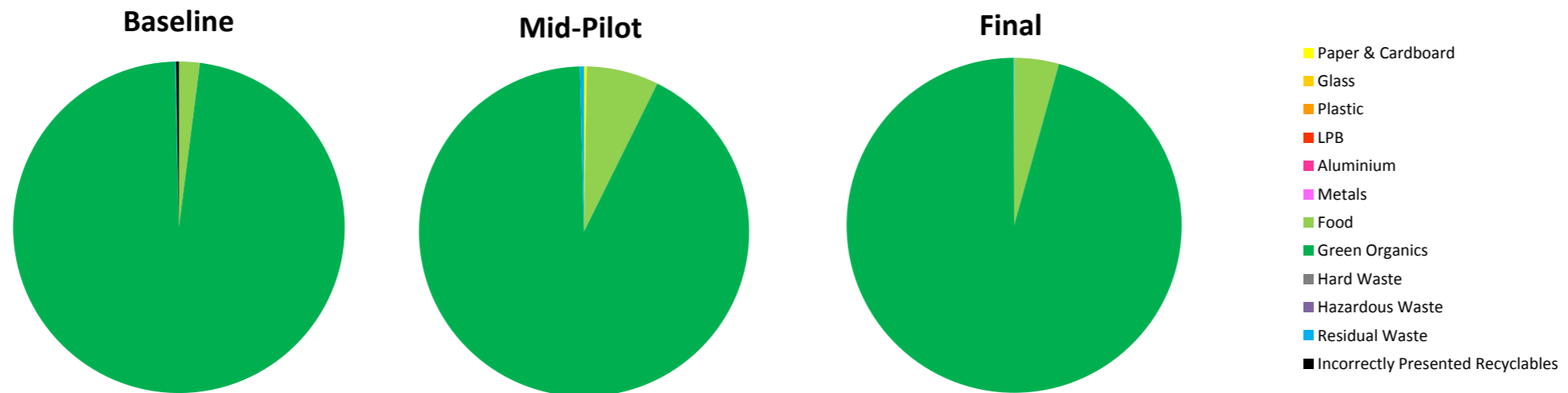
General waste bins



Recycling bins

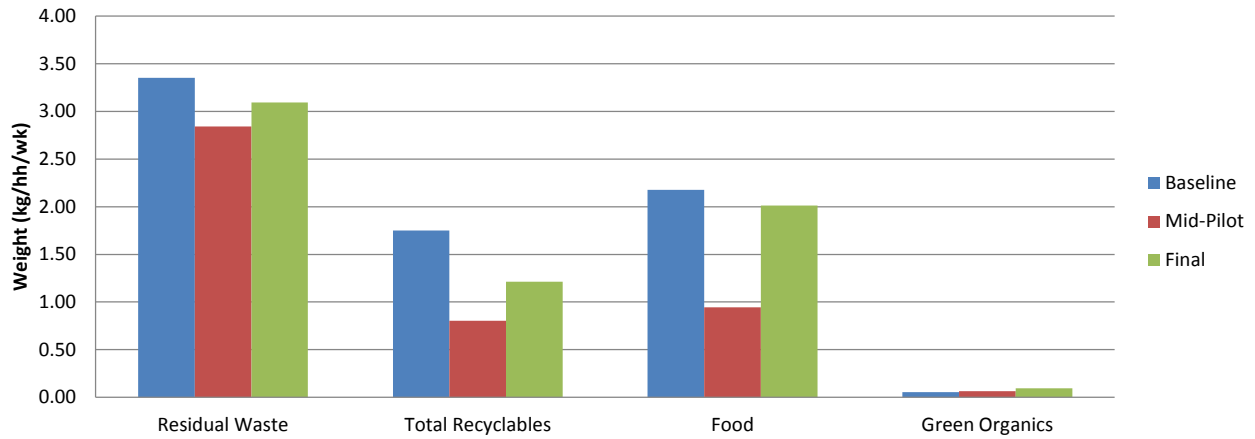


Green waste bins

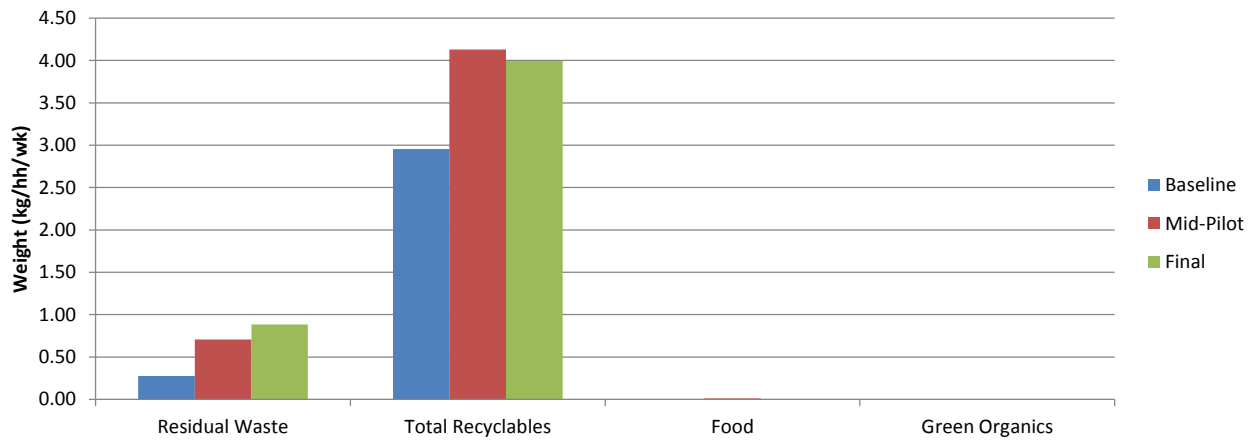


**Figure 7 Comparison of audit results - average weight per household per week**

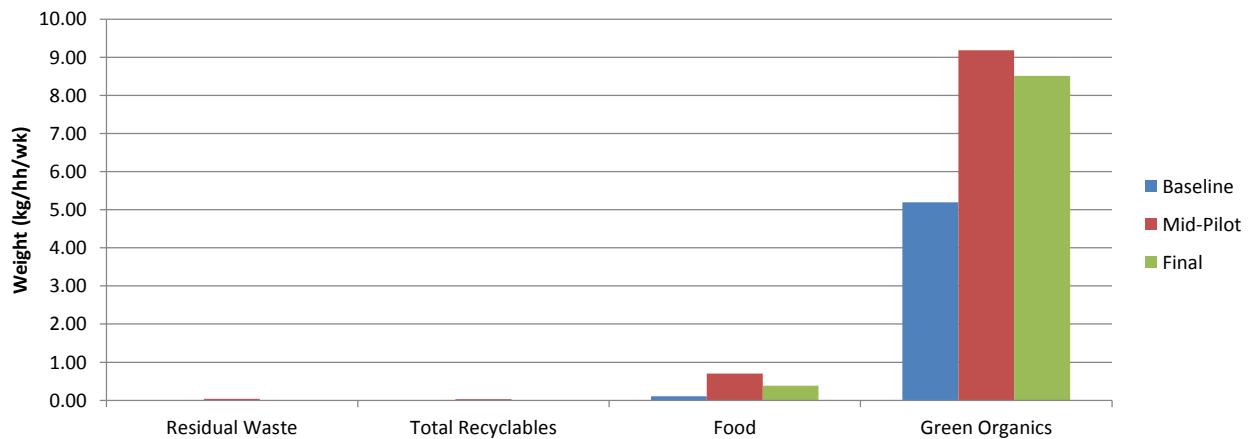
**General waste bins**



**Recycling bins**



**Green waste bins**



## 7.2 Baseline Audit

The baseline audit was timed to coincide with the first bin collection under the Pilot Temporary Collection Calendar (2 October 2013). At this time, dwellings in the Pilot area had been receiving weekly collections of their general waste bins and 4-weekly collections of recycling and green waste bins. General waste and green waste bins were due for collection on 2 October consistent with the standard collection calendar, and thus would be expected to contain a waste composition consistent with pre-Pilot conditions. Recycling bins in the Pilot area were collected on 18 September and it had been planned to audit bin contents on this day, prior to commencement of the Pilot. However, due to an unforeseen problem, this did not occur. Instead, a representative sample of recycling bins from the area immediately adjacent to the Pilot area was collected on 2 October.

The results for the general waste stream were skewed by two bins containing commercial quantities of food waste, specifically potatoes, lemons and bagged lettuce, totalling 114 kg or 24% of the total weight of general waste collected. Including this material in the analysis effectively doubles the total amount of food waste presented in the general waste stream and is considered misleading. The results presented in the tables and figures and the discussion following exclude these commercial quantities of food. For a comparison of the results both including and excluding these data, refer to Table A3 in Appendix 6.

### *Presentation rates*

556 general waste bins were presented for collection in the Pilot area on audit day, 2 October 2013. On 9 October (the first fortnightly recycling collection in the Pilot area), 316 recycling bins were presented for collection. A large number of residents also presented general waste bins on this date, although they were not due for collection according to the Temporary Calendar. These were not collected.

### *General waste*

The general waste stream was found to contain a high level of contamination (55%), defined as waste which should have correctly been placed in either the recycling or green waste bin or unsuitable for kerbside collection (hard or hazardous waste). Only 45% of the contents of the general waste bins was residual waste, with 54% being potentially recyclable (24% dry recyclables and 30% food and green organics, mostly food). This is a very similar result to that found in the 2012 audit, in which 55% of the general waste stream was found to be potentially recyclable (28% dry recyclables and 27% food waste).

On average, households were found to be presenting 7.39 kg/hh/wk in their general waste bin, of which 3.35 kg/hh/wk was residual waste, 1.75 kg/hh/wk was dry recyclables, 2.18 kg/hh/wk was food waste and 0.05 kg/hh/wk was green organics.

A small amount of inappropriate waste unsuitable for kerbside collection was found in the general waste stream, comprising two bricks (hard waste) and three hypodermic needles (hazardous waste).

Of the 109 kg of food waste presented in the 50 general waste bins audited, 12% or 13 kg was contained in packaging.

## *Recycling*

The recycling stream contained 9% contamination, most of which was residual waste. No food waste, hard waste or hazardous waste was found in the recycling stream. Only a very tiny amount (0.03%) of green organics was found in the recycling stream. Incorrectly presented recyclables only accounted for 0.02% of the recycling stream, indicating that residents have received the message not to put their recyclables in plastic bags. The only incorrectly presented recyclables found was a single LPB carton containing a mixture of plastic and metal lids. This suggests that one resident has heard the message to 'put your lids inside a bottle' but has not realised that plastic lids need to go inside plastic bottles and metal lids need to go inside cans, to avoid mixing materials. Only one plastic bottle containing plastic lids was found (counted in plastic category). The message to place plastic lids inside a milk bottle is relatively new and has not yet achieved a high take-up rate.

The baseline audit's result of 9% contamination is an improvement in comparison to the 2012 audit, which found a contamination rate of 14% for the mainland recycling stream. The composition of recyclables presented was similar in both audits, with paper and cardboard making up the greatest proportion, followed by plastic and glass. Food waste, hard waste and hazardous waste were all found (in small quantities) in the recycling stream in the 2012 audit, but they were all absent from the baseline audit.

On average, households were found to be presenting 3.23 kg/hh/wk in their recycling bin, of which 2.95 kg/hh/wk was dry recyclables and 0.28 kg/hh/wk was residual waste.

## *Green waste*

The green waste stream contained a very low level of contamination, 0.38%. This was comprised mainly of incorrectly presented food waste in plastic bags, residual waste and a tiny amount of dry recyclables. Food waste made up only 2% of the green waste stream, with the vast majority of the green waste stream comprised of garden waste. Approximately 15 compostable bags as provided with the Pilot kitchen caddies were found in the green waste stream, showing that residents were already starting to use them. These were recorded as food. Unfortunately, about 4 plastic bags containing food waste were also presented in the green waste stream. These were counted as incorrectly presented recyclables. No loose food waste or food waste wrapped in newspaper was observed.

On average, households were found to be presenting 5.32 kg/hh/wk in their green waste bin, of which 0.11 kg/hh/wk was food and 5.19 kg/hh/wk was green organics.

In comparison to the 2012 audit, the proportion of green organics presented in the green waste stream at the baseline audit was similar (97.61% compared to 98.9%), food waste was greater (2.01% compared to 0.7%) and contamination was also similar (0.38% compared to 0.4%).

## *Conclusions*

The results of the baseline audit were very similar to those of the previous audit undertaken in 2012 and show that, prior to commencement of the Pilot, large quantities of food waste (29%) and dry recyclables (24%) were being presented in the general waste stream. Contamination in the recycling stream was somewhat less (9% compared to 14% in 2012).

### 7.3 Mid-Pilot Audit

The mid-Pilot audit was timed to avoid schoolies week and school holidays. The timing of the mid-Pilot audit coincided with the tenth and eleventh weeks of the Pilot Temporary Collection Calendar. The contents of 50 recycling bins were collected on 4 December 2013 and stored for auditing the following week. The contents of 50 general waste and 50 green waste bins were collected for auditing on 11 December 2013. All bins were collected from within the Pilot area.

Benchtop kitchen caddies were well established in many households in the Pilot area by the time of this audit so compostable bags (bright green colour) were expected to be present in the green waste stream, and were classified as food.

#### *Presentation rates*

428 general waste and 190 green waste bins were presented for collection in the Pilot area on audit day, 11 December 2013. On 4 December, 237 recycling bins were presented for collection.

#### *General waste*

The general waste stream was found to contain a lower level of contamination than was found at the baseline audit (39% compared to 55%). For the purposes of this report “contamination” in the general waste stream is considered to include anything that should properly be disposed of in either the recycling or green waste bin, or that should not be disposed of in any bin (ie. contamination means anything other than residual waste).

Food and green organics decreased from 30% to 22%, while dry recyclables decreased from 24% to 17%.

The weight of general waste presented per household per week decreased from 7.39 kg/hh/wk at the baseline audit to 4.66 kg/hh/wk at the mid-Pilot audit. Most of this decrease is accounted for by a decrease in the weight of food and dry recyclables per household per week, which both dropped by over 50%. The weight of residual waste in the general waste stream also declined slightly.

No waste unsuitable for kerbside collection (such as hard waste or hazardous waste) was found in the general waste stream.

Of the 94 kg of food waste presented in the general waste stream, 8% or 7.7 kg was contained in packaging and 0.85% or 0.8 kg was contained in a compostable bag. The latter represents one instance of someone putting a compostable bag of food waste in the general waste bin instead of the green waste bin.

The general waste stream contained 5 compostable bags of residual waste, with a total weight of 2.62 kg (counted in the total for residual waste). This suggests that a resident has chosen to use the compostable bags as free bin liners instead of for their intended purpose.

#### *Recycling*

The recycling stream contained 15% contamination, most of which was residual waste. This is an increase from the 9% found at the baseline audit. The contamination was comprised not only of loose items which may have been mistakenly thought to be recyclable but also

larger items such as pillows and air mattresses. Two bags of general waste were found in the recycling stream. No hard waste, hazardous waste, green organics or incorrectly presented recycling was found in the recycling stream. A total of 1.2 kg of food waste, mainly comprised of drinks in plastic bottles or LPB cartons, was found in the recycling stream.

The composition of recyclables presented was similar to the baseline audit, with paper and cardboard making up the greatest proportion, followed by plastics and glass.

The weight of waste presented in the recycling bins increased from 3.23 kg/hh/wk at the baseline audit to 4.85 kg/hh/wk at the mid-Pilot audit, a 50% increase. The majority of this increase came from correct recycling, with the weight of dry recyclables in the recycling stream increasing from 2.95 kg/hh/wk to 4.13 kg/hh/wk, a 40% increase. Unfortunately the amount of residual waste in the recycling stream increased by 156%, from 0.28 kg/hh/wk to 0.71 kg/hh/wk, which is also reflected in the increased contamination rate.

### *Green waste*

The green waste stream contained a slightly higher level of contamination than seen in the baseline audit, 0.68% compared to 0.38%. This is still considered to be a low level of contamination.

The contamination was mostly comprised of dog droppings in council-issued 'degradable' plastic bags, which were contained within two green compostable bags. This shows how easily residents can be confused by the term 'degradable', thinking it is equivalent to 'compostable'. These bags are marked with other misleading labelling such as 'caring for our environment' which does not help residents to understand that these bags are unsuitable for the green bin.

Other contamination found in the green waste stream was mostly paper and cardboard, with a small amount of plastic. No food waste in plastic bags was found.

The proportion of food waste in the green waste stream had increased from 2% in the baseline audit to 7% in the mid-Pilot audit. All of the food waste was contained in compostable bags, showing that Pilot residents are making good use of their caddies. A total of 76 compostable bags were counted (excluding those containing dog droppings), all but one of which were of the type issued for the Pilot (Compost-A-Pak). One BioBag brand compostable bag was found. Very little contamination was observed in the compostable bags – only a very tiny amount of plastic and foil. The compostable bags contained all kinds of food scraps including meat and bones as well as tissues and paper towels as instructed in the residents' information pack.

The vast bulk of the green waste stream was comprised of garden waste, although the percentage had dropped from 97.6% to 92.3% concurrent with the increase in food scraps and contaminants.

The overall weight of waste disposed of via the green waste stream increased from 5.32 kg/hh/wk at the baseline audit to 9.96 kg/hh/wk, an increase of 87%. Food waste increased from 0.11 kg/hh/wk to 0.70 kg/hh/wk (556%) and green organics increased from 5.19 kg/hh/wk to 9.19 kg/hh/wk (77%).

## Conclusions

The mid-Pilot waste audit has provided initial indications of the effectiveness of fortnightly collections in diverting waste from landfill. By comparing the results of the mid-Pilot audit to the baseline audit, the following effects were observed:

- The amounts of recyclables and food waste in the general waste stream have decreased by 0.95 kg/hh/wk (54%) and 1.23 kg/hh/wk (57%) respectively. If this rate were extrapolated to all 630 dwellings in the Pilot area, it would equate to 0.8 tonnes per week of food and 0.9 tonnes per week of recyclables diverted from landfill.
- The amount of food waste in the green waste stream has increased by 0.59 kg/hh/wk (556%). Interestingly, this only accounts for less than half the food waste diverted out of the general waste stream, suggesting that residents are either wasting less food or disposing of their food waste at home (by feeding to pets or composting). It has been reported that benchtop kitchen caddies can have the effect of reducing food waste by making residents more aware of how much food they are wasting.
- The amount of residual waste contaminating the recycling stream increased by 0.43 kg/hh/wk, while the amount of residual waste in the general waste stream decreased by a similar amount (0.51 kg/hh/wk) suggesting that as residents ran out of room in their general waste bins they started to put residual waste in the recycling bin.
- The amount of recyclables in the recycling stream has increased by slightly more (1.18 kg/hh/wk) than the amount of recyclables in the general waste stream has decreased (0.95 kg/hh/wk), suggesting that not only are residents diverting recyclables from the general waste stream but that they may be putting recyclables into their kerbside recycling bin that they may have previously disposed of elsewhere (perhaps by taking them directly to the Waste and Recycling Depot).
- The amount of green waste generated by residents has almost doubled, from 5.32 kg/hh/wk to 9.96 kg/hh/wk (87% increase). Some of this is accounted for by the increased disposal of food waste via the green waste stream, but in addition to this, garden waste has increased by 77%. Residents may be using the increased kerbside collections to dispose of garden waste that they would otherwise have composted or taken directly to the Waste and Recycling Depot.
- It does not appear that residents are deliberately using their green waste bins for residual waste disposal – the waste classified as residual waste in the green waste stream in this audit was almost entirely comprised of dog droppings in council-issued plastic bags and indicates that one or two individuals have been misled by the labelling on these bags to think they are suitable for the green waste bin. Councils may wish to consider using a different type of doggy waste bag in their park and beach dispensers to avoid this confusion.

Whilst fortnightly collections appear to be having the desired effect, it is up to councils to decide whether the effects are significant enough to warrant a permanent change in the collection schedule and whether the increase in contamination of the recycling stream is acceptable (it is understood that our new recycling contractor will accept contamination rates of up to 20% without penalty).



## 7.4 Final Audit

The contents of 50 recycling bins were collected on 15 January 2014 and stored for auditing the following week. The contents of 50 general waste and 50 green waste bins were collected for auditing on 22 January 2014, the last day of the Pilot. At this time, holiday makers were still abundant in the Pilot area, but kerbside collections had reverted to fortnightly. All bins for auditing were collected from within the Pilot area.

### *Presentation rates*

On 15 January 2014, 378 recycling bins were presented for collection in the Pilot area. Presentation rates for general waste and green waste bins were not recorded by the collection truck drivers on 22 January 2014.

### *General waste*

The general waste stream was found to contain a similar level of contamination to that found at the baseline audit (53% compared to 55%). For the purposes of this report “contamination” in the general waste stream is considered to include anything that should properly be disposed of in either the recycling or green waste bin, or that should not be disposed of in any bin (ie. contamination means anything other than residual waste).

The proportion of food (30%) and green organics (1%) were similar to that measured at the baseline audit (29% and 1% respectively), while dry recyclables were slightly lower at 18% compared to the baseline of 24%.

The weight of general waste presented per household per week was only slightly lower (6.64 kg/hh/wk in the final audit compared to 7.39 kg/hh/wk at the baseline audit). Most of this decrease is accounted for by a decrease in the weight of dry recyclables per household per week, which dropped by over 30%. The weight of residual waste and food in the general waste stream also declined slightly (8%).

A total of 22 kg of hard waste (unsuitable for kerbside collection) was found in the 50 general waste bins audited. No hazardous waste was found.

Of the 201 kg of food waste presented in the general waste stream, 8% or 15.5 kg was contained in packaging and 0.8% or 1.8 kg was contained in a compostable bag. The latter represents three instances of someone putting a compostable bag of food waste in the general waste bin instead of the green waste bin. A large number of lemons were found in the general waste stream, similar to the baseline audit, although the weight (approximately 20 kg) was not enough to significantly skew the results so the data was included.

### *Recycling*

The recycling stream was found to contain a much higher proportion of glass (34%) than in the two previous Pilot audits (16% at baseline and 21% at mid-Pilot). Due to the methodology used in performing the audits, which resulted in repeated handling of the recycling stream (at collection, at emptying of the truck, when transferring the recycling to storage containers for a week of storage, then tipping out for auditing), a lot of glass was broken. It was not practical or safe for the auditor to hand-separate broken glass. As a result, broken glass was included in the residual waste component. For the first two audits, this was not considered likely to have a significant impact on the results (contamination of the recycling stream may have been slightly over-estimated). However, the auditor considered

the amount of broken glass included in the residual waste component to be significant at the final audit, so the results were adjusted to account for this (10 kg was taken off the total residual waste and 10 kg added to glass). This is considered a conservative estimate. The discussion below and all tables and figures are based on the adjusted weights.

The recycling stream contained 18% contamination, all of which was residual waste. This is an increase from the 9% found at the baseline audit. Residual waste was found in the form of loose materials placed in recycling bins (comprising 75% of the contamination) and also in the form of bags of general waste (comprising 25% of the contamination or about 10 bags of waste), indicating that Pilot participants were deliberately using their recycling bins to dispose of general waste. No hard waste, hazardous waste, food, green organics or incorrectly presented recycling was found in the recycling stream.

The composition of recyclables presented was different to the baseline audit, with increased proportions of glass and plastic and a reduced proportion of paper and cardboard. This is likely to be due to increased drink consumption by holiday makers and residents over the summer festive season.

The weight presented in recycling bins increased from 3.23 kg/hh/wk at the baseline audit to 4.88 kg/hh/wk at the final audit, a 51% increase (similar to the mid-Pilot audit). The majority of this increase came from correct recycling, with the weight of dry recyclables in the recycling stream increasing from 2.95 kg/hh/wk to 3.99 kg/hh/wk, a 35% increase compared to baseline. Unfortunately the amount of residual waste in the recycling stream increased by 221%, from 0.28 kg/hh/wk at baseline to 0.88 kg/hh/wk, which is also reflected in the increased contamination rate.

#### *Green waste*

The green waste stream contained a lower level of contamination than seen in the previous two audits, 0.06% compared to 0.38% at baseline and 0.68% mid-Pilot. This is considered a very low level of contamination. The contamination was comprised of small amounts of paper, cardboard and metal (ie. recyclables).

The proportion of food waste in the green waste stream increased from 2% in the baseline audit to 4% in the final audit (although not as much as the 7% seen in the mid-Pilot audit). Much of the food waste was contained in compostable bags, with 43 counted, all of which were of the type issued for the Pilot (Compost-A-Pak). The compostable bags contained the correct kinds of food scraps including meat and bones as well as tissues and paper towels as instructed in the residents' information pack. Food waste was also found loose or wrapped in newspaper.

The vast bulk of the green waste stream was comprised of garden waste, although the percentage had dropped from 97.6% to 95.6% concurrent with the increase in food scraps.

The overall weight of waste disposed of via the green waste stream increased from 5.32 kg/hh/wk at the baseline audit to 8.90 kg/hh/wk, an increase of 67%. Food waste increased from 0.11 kg/hh/wk to 0.38 kg/hh/wk (257 %) and green organics increased from 5.19 kg/hh/wk to 8.51 kg/hh/wk (64%).

## *Conclusions*

The final waste audit shows the impact of holiday makers on the effectiveness of fortnightly collections in diverting waste from landfill. Whilst improvements were still seen, in terms of a slight increase in the amount of food waste in the green waste bins and a slight decrease in the amount of recyclables in the general waste bin, the improvements were much less than those seen at the mid-Pilot audit. The contamination rate of the recycling bins increased to a level that is only just within acceptable for our recycling contractor. These effects demonstrate the difficulty in communicating with a transient population. Many holiday makers were unaware of the Pilot and did not know that food waste was to go in the green waste bin.

## **8. CASE STUDIES**

The following case studies are presented to illustrate some of the challenges encountered in implementing fortnightly collections and the ways in which these challenges were overcome.

### **8.1 Case Study 1 – The Family with a Child in Nappies**

The Project Officer received an email from a Pilot resident in early December, two months into the Pilot. The household consisted of two adults and a child in nappies, and the email said “We are struggling with the one bin. We have a toddler and the nappies are piling up”. The Project Officer phoned them to discuss their issues. The family had been giving most of their food waste to their chooks, and the remainder was going to the green waste bin via their kitchen caddy. They were committed to recycling and were filling the recycling bin every fortnight. The family was struggling with insufficient capacity in their general waste bin and had been taking extra waste to neighbours and friends. Disposable nappies were the main issue. They had purchased a nappy wrapper specifically for the Pilot, to reduce odours (at a cost of about \$30 plus \$15 per month for refills). Their child used 6 to 8 nappies per day, which equates to about 100 per fortnight. The Project Officer visited their house to inspect the contents of the general waste and recycling bins, two days before the next general waste collection was due (ie. 12 days since the last collection). The general waste bin was full and contained, by volume, half general waste and half nappies. A very small amount of recyclable material was found in the general waste bin, and the Project Officer took the opportunity to educate the residents, which they gratefully received.

The Project Officer concluded that the family was doing everything right but that the volume of nappies produced by one child was leaving them with an unrealistically small volume for the remainder of their general waste. The family was given a loan bin for the duration of the Pilot.

### **8.2 Case Study 2 – The Holiday Home Owner**

The owner of a holiday home in the Pilot area contacted FRWA as soon as he became aware of being included in the Pilot. His holiday house is mainly rented to holiday makers (sleeps 12) and sometimes used by his own family. He has a local cleaner who helps to manage the bins, but is not responsible for taking rubbish away. He had been using two general waste bins and did not have a recycling or green waste bin. Initially he was very unhappy about the Pilot and did not want to accept any information materials because of his strong belief that holiday makers will not recycle properly. He was also unhappy about having to pay for an additional bin which is only used at peak times, and felt that a seasonal option should be available.

After a few days and more discussions, the owner decided to accept loan recycling and green bins, a caddy and educational materials. He suggested FRWA provide an A4 laminated poster for holiday houses, summarizing the Pilot information. The Project Officer prepared this, and it was subsequently also provided to many other holiday homes in the Pilot area. The owner also requested that all the educational material be emailed to him, so he could provide it to tenants upon booking. An additional bin sticker was provided for the second general waste bin. The owner said that he finds families are quite good about recycling but younger groups are not. He does not rent the house during Schoolies week. He was pleased about the

weekly general waste collection over Christmas-New Year but concerned about the lack of general waste collection on 15 January.

The owner provided the Project Officer with regular reports on how his tenants were coping with the Pilot. Those who were keen recyclers at home had no problems. Other groups did not care and left a huge mess. These groups tended to fill both general waste bins and leave waste around the bins which was not collected. In the first instance, the owner cleaned up and took extra waste to the Waste & recycling Depot. He charges a cleaning fee for these types of situations.

In the second instance, the Project Officer went to the property and did a full audit of the bin contents. At this time, the house had been booked by 12 young people (late Schoolies, unbeknownst to the owner), who had left both general waste bins and the recycling bin full to overflowing and surrounded by bags of waste. It was 5 days since the last general waste collection, with two more groups booked back-to-back and 9 days to go before the next general waste collection. The green waste bin had not been used. After sorting the waste properly, there was one general waste bin full, one empty for the next tenants, the recycling bin about three-quarters full (due for collection in two days' time) and the green waste bin two-thirds full of food waste. The tenants had disposed of huge amounts of unopened food packages in the general waste bins. Large amounts of CDL cans and bottles were taken separately to the depot, worth over \$23. A small amount of cardboard was also taken to the depot to leave some room in the recycling bin for the next tenants.

The owner agreed that even with weekly collections, this situation would have been a problem for him, but he felt that fortnightly collections made it worse. He said "Whilst I support recycling and good waste management, the fortnightly general waste collection will be a real challenge for us when we are busy. It's very difficult to manage the situation from afar and when there are short turn-arounds between tenants."

The owner had been using two general waste bins for over 12 months and found that this resolved almost all issues with bins (when the collections were weekly). He says "I will most likely purchase a yellow and green bin after the Pilot particularly if pickups for these bins are fortnightly".

It is noted that this holiday house was booked out almost continuously from the start of November.

### **8.3 Case Study 3 – The Reluctant Recycler**

A loan general waste bin was offered to a family of five, who expressed serious concerns about fortnightly collections in the initial survey. The Project Officer and other FRWA staff had long conversations with the father of the family, both in person and over the phone, in which he expressed strong hostility towards the Pilot. The family has three older children and their general waste bin is full every week. FRWA also has a history of problems with waste management at the father's workplace.

In the early stages of the Pilot, the father made several calls to FRWA to report that his general waste and recycling bins had been missed. It seemed that he was waiting for the truck and pulling the bins in just before they were collected, then using this as an excuse to call and complain. In another instance, he complained that his neighbour's bin was missed,

but on investigation, the Project Officer found that the father had replaced his neighbour's bin with his own (full) bin.

The opinions expressed by the family in the many conversations can be summarized as follows: they did not want to be included in the Pilot and think fortnightly collections are a bad idea; they are concerned about health hazards and smells associated with their bins; they don't have the time or inclination to sort their waste for recycling or to separate their food waste; and they believe that the council should collect as much general waste as they choose to put out. The Project Officer observed that this family had at least four general waste bins in addition to the loan bin, and were using them for commercial waste as well as domestic waste. The family could not be convinced that, taking into consideration the loan bin with which they were provided, they were receiving a far greater service than previously.

After confronting the family about putting their own bins out in place of their neighbour's, they agreed to only put out the two general waste bins that they were entitled to, in front of their own property. No further complaints were received, although the family's response to the final survey showed that they were still very unhappy.

## 9. DISCUSSION

The Pilot has demonstrated that, for the permanent resident population, fortnightly collections of general waste, recycling and green waste, combined with provision of kitchen caddies and education, can result in the following desirable effects:

- a 57% decrease in the weight of food sent to landfill by each household each week, on average;
- a 54% decrease in the weight of recyclables sent to landfill by each household each week, on average;
- a 40% increase in the weight of recyclables sent for recycling by each household each week, on average; and
- an increase of over 500% in the weight of food and a 77% increase in the weight of green organics presented in the green waste bin by each household each week, on average.

This demonstrates that the Pilot was able to achieve its stated aims, in the absence of holiday makers.

However, the following undesirable effects were also observed:

- the contamination rate of the recycling stream increased from 9% (baseline) to 15% (mid-Pilot), and increased further with the influx of holiday makers to 18% (this is still within acceptable limits for our recycling contractor);
- the proportion of food waste and recyclables in the general waste bin increased during the summer holiday season, with food waste in particular returning to baseline (ie. pre-Pilot) levels;
- some parts of the population were adversely affected by fortnightly general waste collections, specifically large families, families with children in nappies and holiday home owners;
- communicating with holiday makers was very difficult.

The design of the Pilot had some unavoidable limitations:

- it was conducted over a short time period, which may not have allowed some participants enough time to change their habits;
- the short time period also did not allow seasonal variations to be accounted for (eg. the increased presentation of garden waste may be more related to spring growth than to the provision of increased green waste collections);
- Pilot residents may have been taking excess waste to friends' bins outside of the Pilot area, which would not be possible if a fortnightly schedule was put in place across the whole region;

- it is not possible to tell whether a similar level of diversion of food waste and recyclables from landfill would have occurred just by increasing the frequency of recycling and green waste collections (without reducing general waste collections).

Pilot participants were surveyed at the end of the Pilot to determine their preferences for future kerbside collections. Opinions were significantly different between permanent residents and holiday home owners. Continuing the Pilot schedule was the preferred option for permanent residents at 61% (compared to 16% who preferred to return to the regular schedule and 23% who wanted an increased service ie. fortnightly recycling and green waste collections whilst retaining weekly general waste collections). In contrast, holiday home owners preferred an increased service (42% of family holiday homes and 51% of rental holiday homes), compared to those who wanted to continue with the Pilot schedule (31% and 30%) or return to the existing schedule (27% and 19%). It is possible that holiday home owners would have been more supportive of the Pilot schedule if weekly general waste collections had occurred over the whole summer school holidays instead of just for 3 weeks.

The survey showed that Pilot participants were reluctant to pay any more for an increased service. Many Pilot participants felt that they already pay very high rates and holiday home owners in particular feel that they don't make use of the waste collection service for most of the year so it should be increased to suit their needs when they are present. Holiday home owners remain unconvinced that it is reasonable for them to pay for the service that is offered all year (ie. the collection trucks still drive past their house every week, even when they are not there). Owners of rental properties do not tend to view themselves as operators of an income-producing business and generally are reluctant to pay for commercial waste collection, even though the kerbside service offered by FRWA is intended as a residential service. Most of them feel strongly that they receive little for their perceived high rates and expect that the kerbside service should be adapted to meet their needs and the needs of their tenants.

Should councils choose to proceed with fortnightly collections of all three waste streams on a regional scale, there are a number of issues identified by the Pilot that would need to be addressed in order to maximize success. These issues, and suggestions for addressing them, are summarized below.

#### *Households that produce nappies*

The needs of families with children in nappies (and adults with continence issues) could be addressed by modification to FRWA's existing additional bin policy, allowing such households to apply annually for an exemption sticker entitling them to put out an additional bin for free. The sticker colour would change each year, so that households would have to go through the process of re-applying, confirming that they still have a child in nappies (no proof would be required and the system would be open to misuse). Families with two or more children in nappies would be able to apply for more bins. This scheme would address the problems of inadequate bin volume experienced by families with children in nappies, but would not address the odour concern. It may be necessary for councils to consider subsidizing the cost of additional bins for families applying for an exemption, or to provide loan bins (which would incur administrative costs).



### *Large families*

The needs of large families (which could be defined as at least 5 or 6 persons per household, permanent residents only) could be addressed with the same scheme proposed for households producing nappies. Provisions would need to be put in place to ensure that reasonable limits are placed on households which fall into both categories (eg. a family of 5 with toddler twins).

### *Holiday homes*

Holiday home owners insist that weekly collections of general waste are necessary over the full six weeks of the summer school holidays, from the week before Christmas to the end of January. Many holiday homes accommodate much larger numbers of people than the typical household, so produce greater amounts of waste.

In addition, many rental holiday homes are rented more-or-less continuously from the beginning of November to the end of February. The additional bin policy could be modified to accommodate these needs by offering a seasonal payment for an additional bin, with a special sticker design that easily identifies the additional bin as seasonal only. This could be offered for a lower price than an annual additional bin.

Councils could also consider offering a paid on-demand pick up service and/or a 'put your bins away' service, which could be provided by FRWA or by private enterprise (either incorporated with existing cleaning, gardening or holiday rental agent services, or as a stand-alone service). Some holiday home owners would be happy to pay for a tailor-made service that provides for all their needs.

### *Households that don't already have a recycling or green waste bin*

Councils should consider providing a temporary subsidy during the introduction period of a permanent fortnightly kerbside collection schedule, to encourage those ratepayers who do not already have a full set of bins to purchase them. Having a full set of bins is imperative to the success of fortnightly collections. Whilst loan bins were appropriate to such households during the Pilot, because it was temporary, loan bins would not be a suitable solution for a permanent change to fortnightly collections.

### *Households that don't have a green waste service*

Kerbside green waste services should be expanded into rural areas of City of Victor Harbor and Alexandrina Council as much as possible prior to the introduction of a permanent fortnightly kerbside collection schedule. The introduction of a kerbside green waste service in DC Yankalilla and Kangaroo Island Council township areas is essential to the successful implementation of fortnightly general waste collections. For rural households that remain without kerbside green waste services, the provision of subsidized composting equipment (eg. compost bins, worm farms, bokashi buckets) and education is essential. Even residents with a kerbside green waste service would benefit from such a scheme, as it is more efficient to deal with food waste at the source.

### *Provision of benchtop kitchen caddies*

Whilst provision of kitchen caddies is not essential to the success of fortnightly collections, as residents have the alternative of wrapping their food scraps in newspaper or placing them loose in the green waste bin, the kitchen caddies used during the Pilot proved very popular (even residents from outside the Pilot area were requesting them). The advantage of the caddy is that it replicates existing behavior, allowing people to use a bin lined with a bag that is similar to the bin liners they are already using for general waste. Few problems were reported with leaks, smells and insects with the caddies trialed in the Pilot.

Councils could consider a blanket roll-out of caddies to all households for free (Zero Waste SA may still offer grants to assist with the cost) or alternatively offering free or subsidized caddies to ratepayers who wish to collect one from a convenient location. The latter option would avoid wasting caddies on people who don't want or need them. Consideration also should be given to the on-going provision of compostable bags. Some other councils provide residents with an annual free entitlement, while others sell replacement bags through their customer service centres. If councils choose to charge for bags and caddies, consideration should be given to offering a discount to pensioners.

### *Education*

Education is critical to the success of fortnightly collections. Additional funding would need to be made available to produce educational materials (brochures etc.), to cover staff to answer enquiries (telephone, email and letter) and run education sessions, and to cover a broad range of media advertising. Councils should also bear in mind that sufficient lead time needs to be allowed to prepare the public for what would be a substantial change in their habits (at least 6 months from first public announcement to roll-out).

### *Administration*

Additional funding would also be required to cover administration costs, for activities such as additional bin program administration, bin sales and caddy provision.

### *Support of councils and their customer service staff*

Fortnightly collections would require all mainland councils to cooperate in rolling out a consistent program. FRWA would require support from councils and their customer service staff in promoting a consistent message to the public. Information would need to be placed on council websites and in council newsletters.

### *Providing a consistent message with our additional bin policy*

FRWA's customer service staff have noted that the message given to the public through our additional bin policy (which charges the same price for an additional general waste, recycling or green waste bin, even though recycling and green waste bins are collected ¼ as often) is in conflict with the message we were trying to present during the Pilot, which is that costs for landfilling waste continue to rise and diverting waste from landfill by recycling will mitigate cost increases in the future.

The upcoming change in FRWA's recycling processor will reduce the cost of recycling relative to landfilling, and this should be promoted to the public.

## 10. FUTURE OPTIONS

The strongest message to come out of the Pilot is that remaining with the existing kerbside collection schedule of weekly general waste and 4-weekly recycling and green waste collections would be unpopular. There is very strong demand in the community for fortnightly collection of recycling and green waste.

Fortnightly collections of all three bins (ie. the Pilot schedule) was preferred by the majority (61%) of Pilot residents after experiencing the Pilot, but was unpopular amongst holiday home owners and presented challenges for large families, families with children in nappies and some individuals who are reluctant to recycle. As holiday home owners are mostly in residence over summer, increasing general waste collections to weekly over (at least) the six weeks of the summer school holidays, along with making changes to the additional bin policy to offer more flexible, seasonal options, could meet their needs. Issues with large families and nappies could also be addressed with changes to the additional bin policy.

An alternative option, not previously considered, would be to provide weekly green waste collection (thus addressing concerns about smelly food waste sitting in the bin for 2 weeks) alongside fortnightly general waste and recycling. This would provide the strongest incentive to divert food waste from landfill, but issues with large families and nappies would remain. Education would be very important to avoid contamination of the green waste stream.

The most popular option would be to provide a weekly general waste collection and fortnightly recycling and green waste collection, as is common in the metropolitan area. This option is the most costly but would avoid controversy. It would address the strong demand in the community for increased recycling and green waste services, without challenging those in the community who are unwilling or unable to reduce their general waste production. Encouragement to divert food waste from landfill could be provided through increased education programs and a subsidized or free kitchen caddy scheme. No changes to the additional bin policy would be necessary (although offering a seasonal option for holiday homes and adjusting the prices to reflect true disposal costs would still be recommended).

## 11. REFERENCES

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