SMITHS FALLS
RISE AT THE FALLS

Report # 2022-120

To: Mayor and Council
From: Paul McMunn C.E.T. Director of PW & Utilities
Date: August 16, 2022
Committee of the Whole Date: August 22, 2022
Title: FoodCycler Pilot Program Completion Update

☒For Direction
☒For Information
☐For Adoption
☒Attachment (19 pages)

Recommendation: That Council of the Corporation of the Town of Smiths Falls accept the results of the FoodCycler Pilot Program as information;

AND FURTHER THAT Council consider directing staff to investigate a tailored food waste reduction program with Food Cycle Science on a larger scale as presented in Committee of the Whole Report #2022-120.

Purpose:
The purpose of this report is to provide Council with the results of the FoodCycler Pilot Program. Staff are seeking Council direction to further investigate how a larger program with Food Cycle Science could fit in with local interest to divert food waste from the solid waste stream.

Background:
Communities are faced with challenges related to a dependence on landfills as a means for processing municipal residential waste. Some of the challenges with landfills are that many of the existing landfills are nearing their capacity, lack of available land to build new landfills, and increasing community opposition to the way that solid waste has been historically managed. Food waste (also referred to as organic waste) is one of the main components of municipal waste (food waste accounts for 20-40% of household waste) and significantly contributes to the filling up of landfills.

When organic waste is disposed of in landfills, it decomposes into greenhouse gas emissions, such as methane. Each year, food waste accounts for 56.6 million tonnes of CO2 equivalents of greenhouse gas emissions. These numbers are a grave environmental concern, as methane is approximately 25 more potent than carbon dioxide in terms of warming effects. Other environmental concerns tied to disposing of organic waste in landfills include soil nutrient loss, ground contamination with leachate, and inefficient use of water and energy. The social impacts of at-capacity landfills continue to be studied, but known impacts include harmful emissions to those who work and live around landfills, decreased value of nearby land, water supply contamination, odours, smoke, noise, and pests. Areas with large minority and low-income populations are also more likely to be home to, or be located near landfills and waste processing sites, resulting in these populations being disproportionately affected. Thus, there is an urgent need to manage residential organic waste sustainably and prevent food waste from being disposed of in landfills.

Founded in Cornwall but based in Ottawa, Food Cycle Science (FCS) is a company focused on reducing and diverting residential food waste through its technology called the FoodCycler (Figure 1). The FoodCycler is an indoor compost alternative that speeds up the natural decomposition process of food waste via aerobic digestion (Figure 2). Each FoodCycler is estimated to divert at least 2 tonnes of food waste over its lifetime, which has important long-term implications for a community's environmental health and economy. FCS is currently partnered with 42 Canadian municipalities that are in various stages of a pilot project.

In 2021, the Town partnered with FCS to deliver a pilot program to 100 households aimed at diverting residential food waste. The Town's FoodCycler Pilot Program spanned 12 weeks (March 2022 to May 2022). At the beginning of the program, FCS provided participating Town residents with forms to track the number of completed operating cycles, which was later used to estimate the total waste diverted in each household.

With financial support from Impact Canada's Food Waste Reduction Challenge, the Town purchased 100 FoodCyclers from FCS. The retail price for the FoodCycler is $500 (plus HST), however with a subsidization from FCS in the amount of $250 per unit, and an additional municipal subsidization of $100 per unit, the FoodCycler units were offered to participants at a cost of $150 (plus HST).

Figure 1. The FC-30 FoodCycler by Food Cycle Science.

Figure 2. Food waste in the FoodCycler bucket before (unprocessed) and after (processed) a FoodCycler cycle.

Waste management is a significant expense to the Town, with tipping fees being at $119.09/tonne in 2022 (up from $108 in 2021). With collection fees of $4.79/hh/month, the total cost of waste disposal is approximately $201/tonne. Higher fuel prices and labour shortages will contribute to rising costs in the coming years. As food waste/organic waste accounts for an estimated 20-40% of household waste, processing of food waste provides a viable option for increasing waste diversion levels. According to the Government of Ontario, traditional curbside organic collection programs cost approximately $300/tonne[1] for collection and processing. According to the Government of Ontario's Food and Organic Waste Policy Statement, where the collection of food and organic waste is not provided, municipalities must provide solutions for resource recovery of food and organic waste through methods such as backyard composting, or municipal drop off event days. In other words, municipalities located in areas that do not require food and organics curbside collection services should provide alternative solutions to divert food waste from landfills. The FoodCycler satisfies this requirement without needing to provide regular curbside collection or green bins. Regulations surrounding organic waste are expected to increase in the coming years and therefore it is important to ensure that adequate planning is in place to meet such future standards.

Analysis and Options:

During the 12-week pilot period (March 2022 – May 2022), 100 households participated in the pilot program. As part of the program requirements, participants were asked to complete a short survey, for which 92 households completed. When asked how important greenhouse gas reduction and waste reduction are to them, participants answered with an average of 8.7/10 and 9.3/10, respectively. This implies that of the 92 respondents to the survey, a majority of participating households value waste reduction and are willing to be part of available solutions.

Households responded that they cycled the units on average 4 times per week, which is equivalent to approximately 208 kg/year/household. This equates to a total of 20.8 tonnes of food waste diverted from landfill/year, resulting in the reduction of 41.6 metric tonnes of CO_2 equivalents of greenhouse gas emissions.

When asked how many bags of waste were reduced from their monthly garbage production as a result of diverting their food waste, 74% of participants reported a notable reduction of monthly waste generation, with 30% reporting a reduction of 2 or more bags per month. In terms of electricity costs, 98% of participants stated they noticed no increase in costs during the time they used the FoodCycler.

Participants were asked to rate the overall pilot experience. The average rating was 4.5/5 stars. Additionally, 93% of participants answered that they would recommend the FoodCycler to others, and 100% of participants reported that they will continue using the FoodCycler after the pilot. For the full results of the survey, please refer to the Food Cycle Science presentation (Attachment 1).

[1] http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2017/013-0094_DiscussionPaper.pdf, figures updated for inflation.

The following options are presented for Council's consideration;

Option 1 (recommended): Accept the FoodCycler Pilot Program results as information and direct staff to further investigate how an expanded organics program can be achieved with a continued partnership with Food Cycle Science, to be presented to Council at 2023 budget deliberations.

Option 2 : Accept the FoodCycler Pilot Program results as information only and not direct staff to further investigate a continued partnership with Food Cycle Science.

Budget/Financial Implications: None at this time, however should Council direct staff to further investigate an expanded food waste reduction program with Food Cycle Science (or other vendor); staff will present program implementation during 2023 budget deliberations.

Link to Strategic Plan: NA

Existing Policy: NA

Consultations: Pilot participants, Engineering and Environmental Coordinator, Food Cycle Science

Attachments: Attachment 1 - Food Cycle Science presentation

Notes/Action (space for Council Member's notes):

Respectfully Submitted:

Original Copy Signed
Paul McMunn
Director of Public Works and Utilities

Approved for agenda by Acting CAO:

Original Copy Signed
Paul McMunn, Acting
Chief Administrative Officer

Attachment 1

FOODCYCLER™

On-Site Organics Diversion Program Update

Prepared for:
The Town of Smith Falls
August 2022

Presented by:
Food Cycle Science
Alex Hayman& Jacob Hanlon

ABOUT US

- Canadian company based out of Ottawa, Ontario
- 100% focused on Food Waste Diversion Solutions
- Recent Awards include:
  - Semi-finalists in Impact Canada's *Food Waste Reduction Challenge*
  - Selected as one of the 2021 Deloitte Fast 50 CleanTech award winners
  - # 81 on Globe & Mail's Canada's Top Growing Companies for 2021

TRUSTED CANADIAN SOLUTION

FROM COAST TO COAST TO COAST

Forty-Two Canadian Municipal Partners
...and counting!

FOODCYCLE SCIENCE

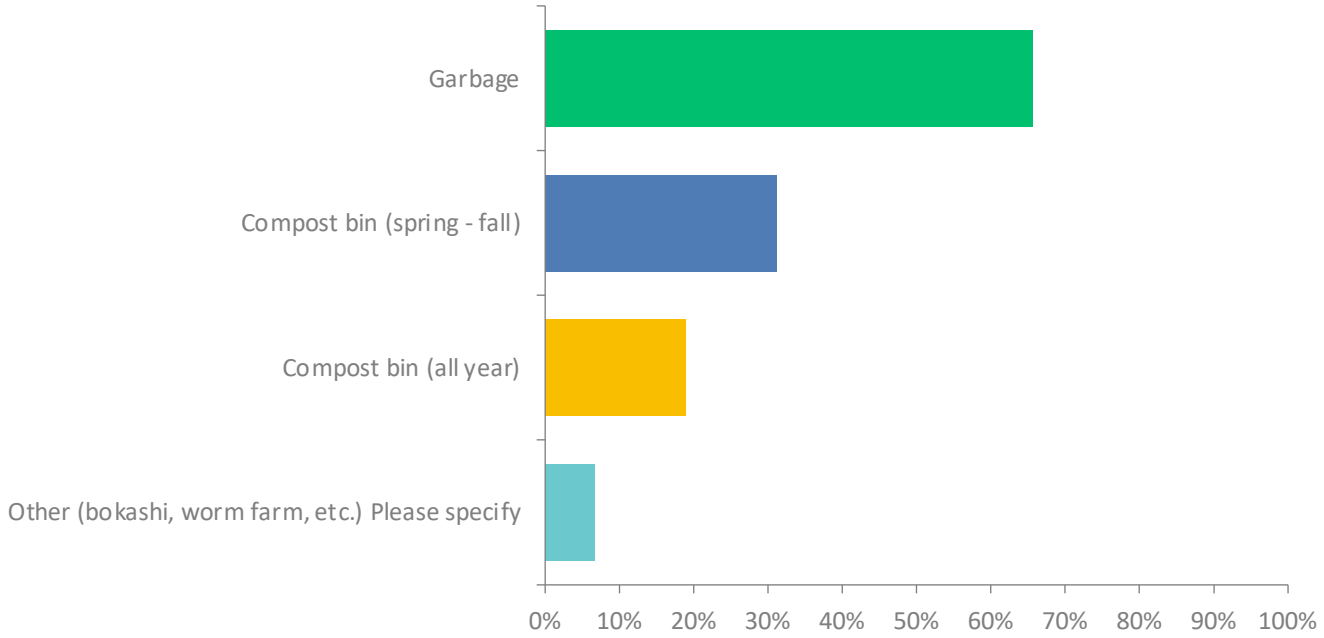
RECAP – PILOT PROGRAM

- With support from Impact Canada's Food Waste Reduction Challenge, a pilot program was run in Smith Falls that included 100 participating households.
- Net cost to the Town was $10,000 + HST + SHIPPING
- Program ran from March 2022 to May 2022
  - Usage was tracked for 12 weeks to calculate total waste diversion.
  - Participants completed a survey to provide data and feedback.
- The program was managed by Vanessa Bernicky and Paul McMunn – thank you very much for all your work!

RESULTS – PILOT PROGRAM

92 responses collected out of 100 participants (92%)

- How important is greenhouse gas reduction to you? **8.7/10**
- How important is waste reduction to you? **9.3/10**
- Where does your food waste currently go?



RESULTS – PILOT PROGRAM

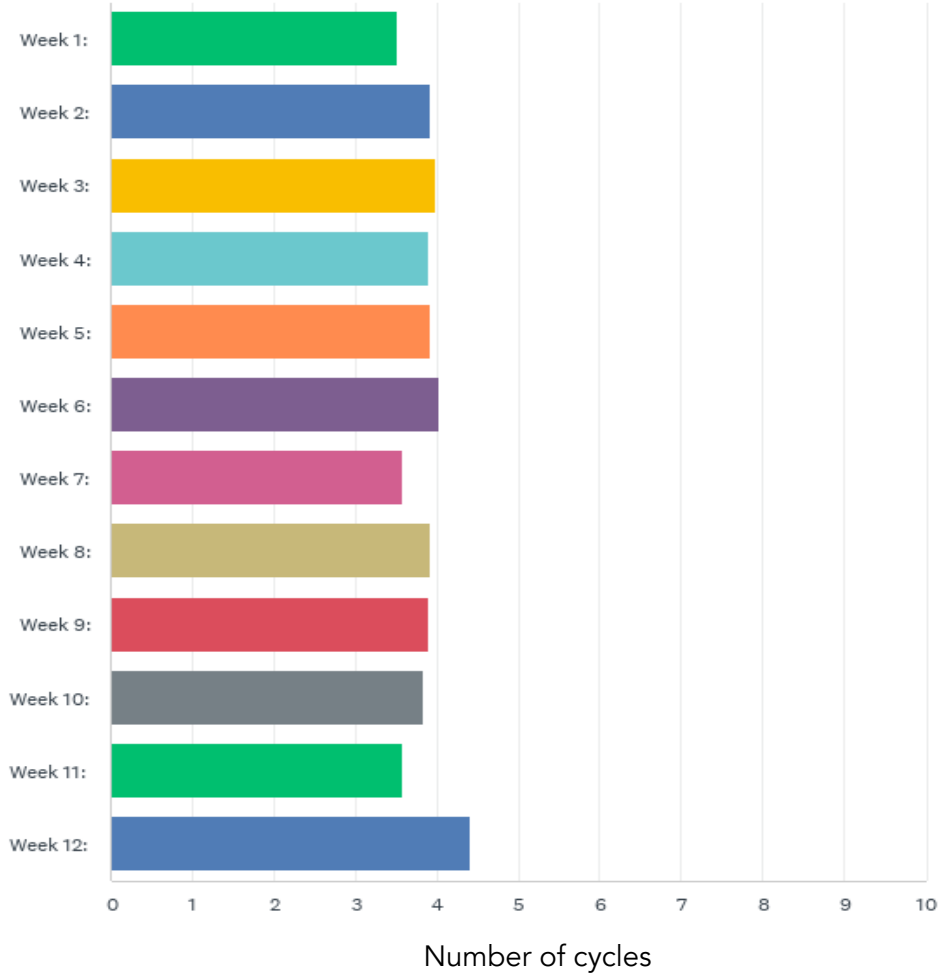
Why don't you compost?

ANSWER CHOICES	RESPONSES	
Concerns about bears, pests, etc.	28.57%	26
Concerns about odours	21.98%	20
Don't want to invest in equipment	2.20%	2
Don't know how	6.59%	6
Too much work / too busy / maintenance concerns	10.99%	10
Not enough space	14.29%	13
Too physically demanding / not able to	4.40%	4
N/A	40.66%	37
Other	20.88%	19
TOTAL		137

RESULTS – PILOT PROGRAM

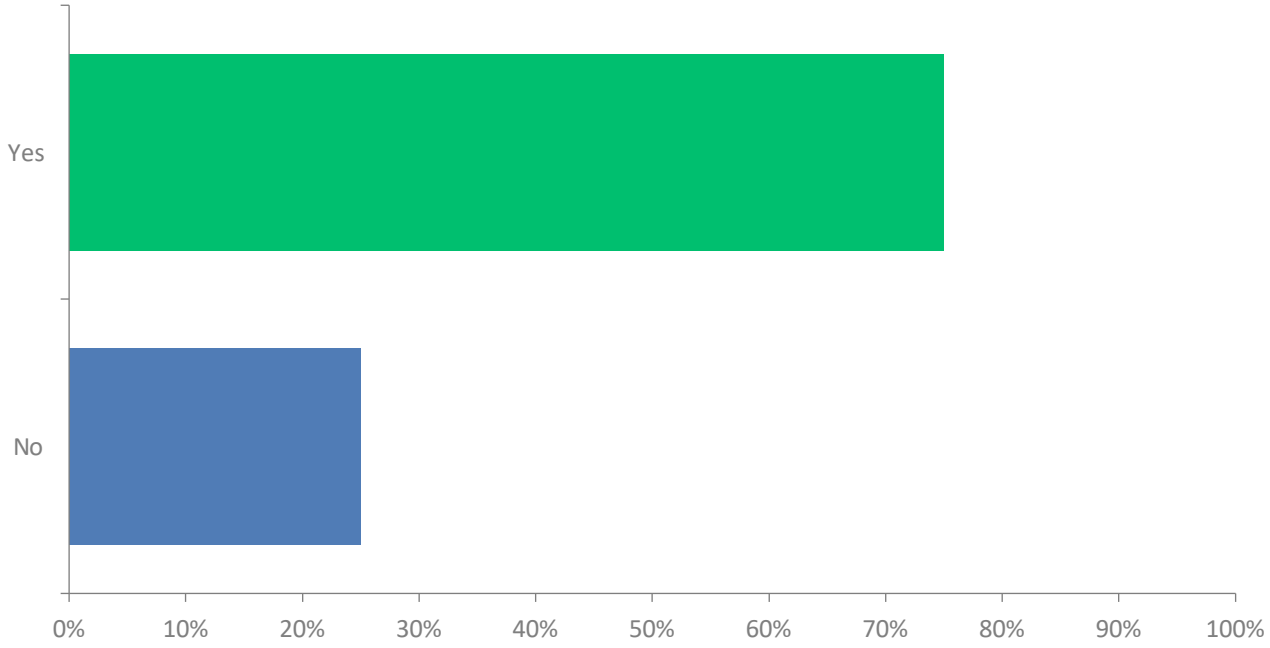
- Average of 4 cycles per week
  - Equivalent to ~208 kg/year/household
  - Total of **20.8 metric tonnes (MT)** of food waste diverted from landfill/year from 100 FoodCyclers in use
  - Equivalent to preventing **~41.6 MT of CO2e** (compared to disposing of food waste in landfill)
  - We estimate annual potential diversion is closer to 230kg per year as there are more food scraps generated in the summer based on other pilots

Number of Completed Cycles by Week



RESULTS – PILOT PROGRAM

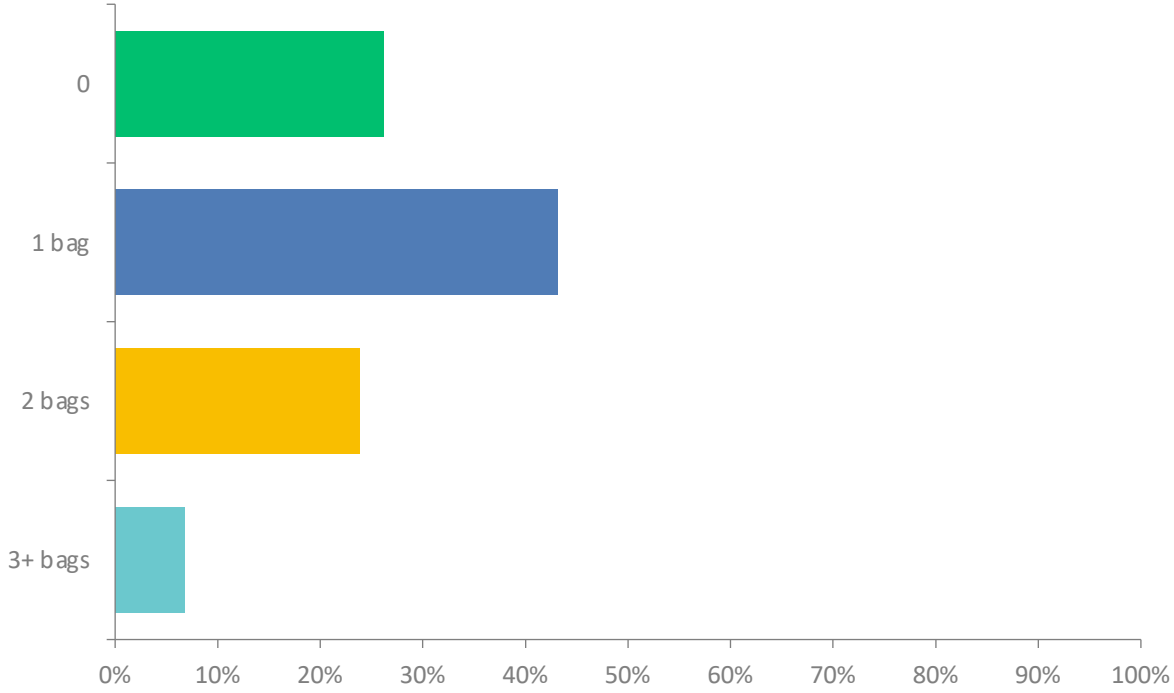
- Did increased awareness of food waste motivate you to waste less food?
  - **Yes = 75%**



RESULTS – PILOT PROGRAM

- Using your best estimate, how much did you reduce your monthly garbage production as a result of diverting your food waste?
  - 0 bags = 26.14%
  - 1 bag = 43.18%
  - 2 bags = 23.86%
  - 3+ bags = 6.82%

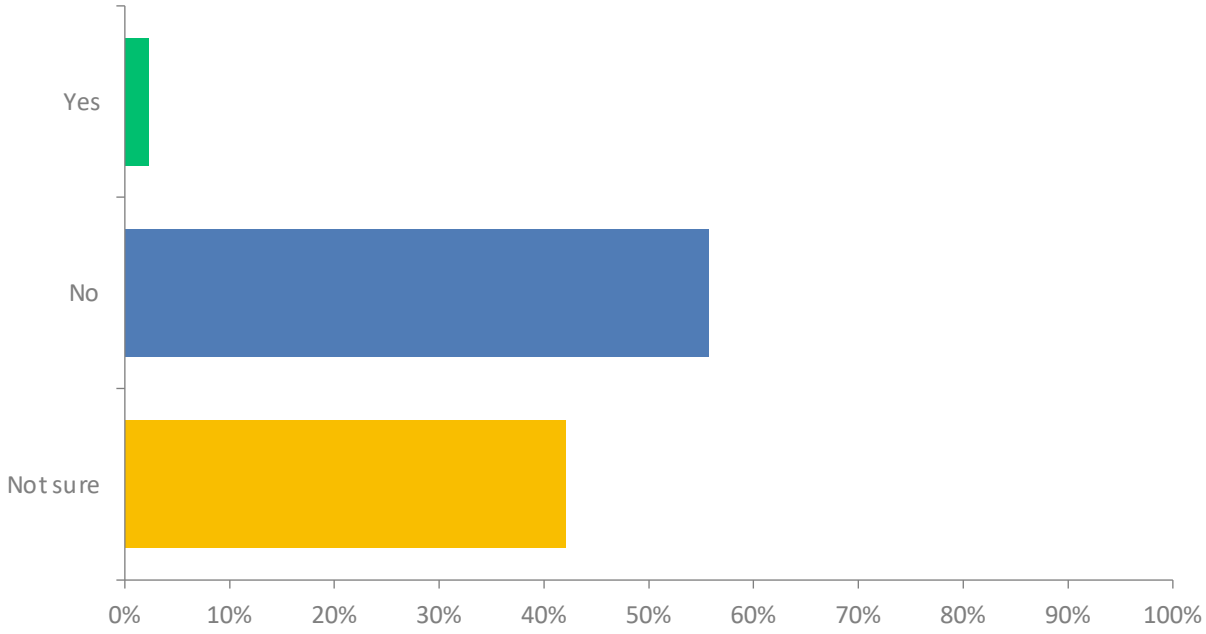
73.86% reported a notable reduction of monthly waste generation



RESULTS – PILOT PROGRAM

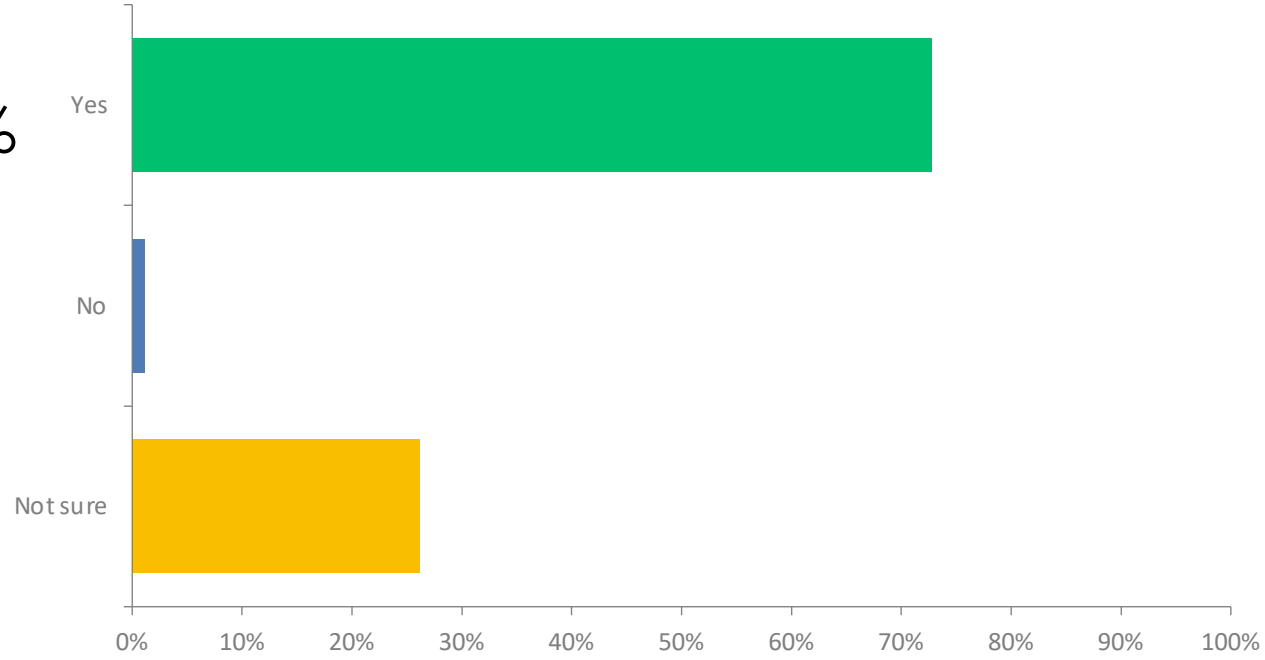
- Did you see increased electricity costs during the time you used the FoodCycler?
  - Yes = 2.27%
  - No = 55.68%
  - Not sure = 42.05%

*Suggests that increased electricity costs are negligible/acceptable.



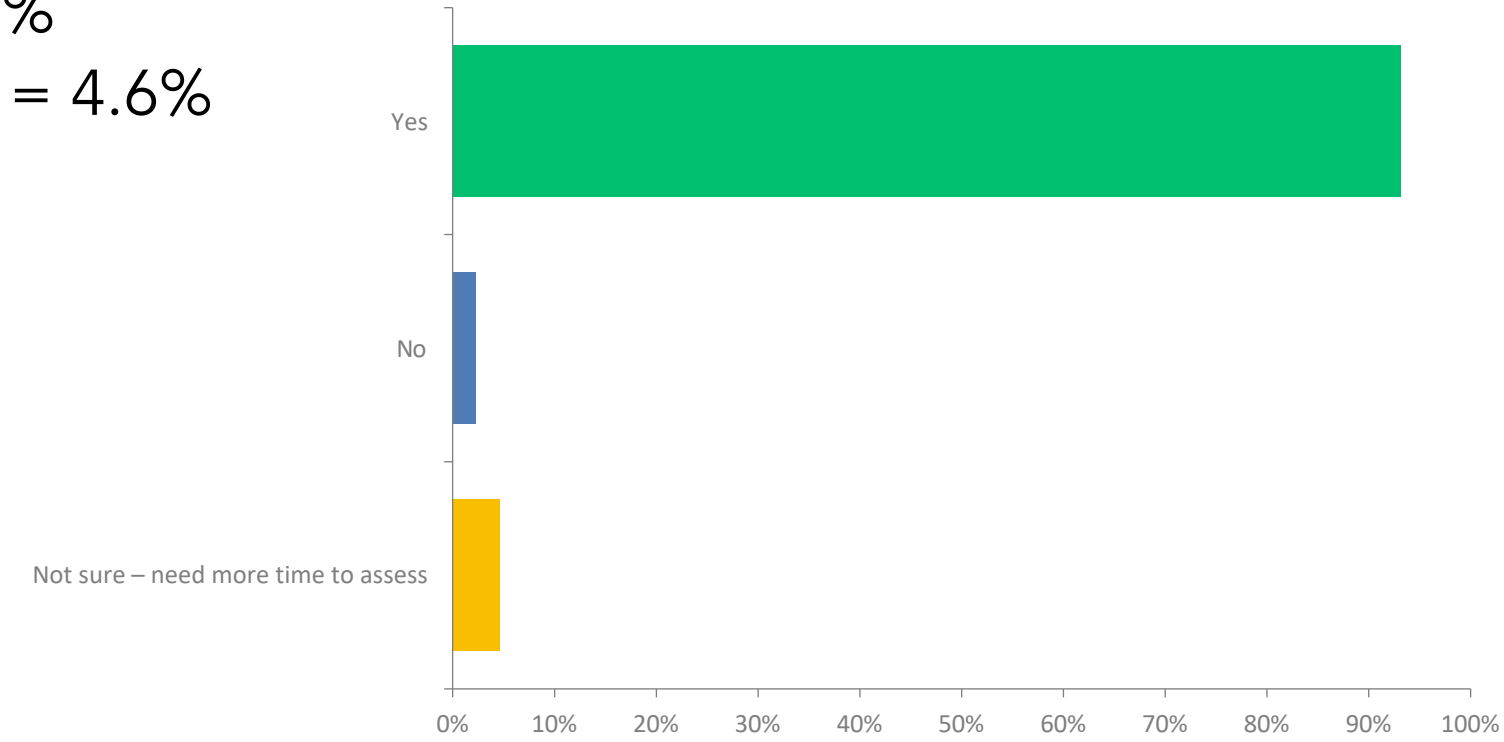
RESULTS – PILOT PROGRAM

- If the municipality offered a FoodCycler to residents at no cost as part of a diversion program, do you think your friends / neighbours in the community would participate?
  - Yes = 72.73%
  - No = 1.14%
  - Not sure = 26.14%



RESULTS – PILOT PROGRAM

- Would you recommend the FoodCycler to others?
  - **Yes = 93.10%**
  - No = 2.3%
  - Not sure = 4.6%

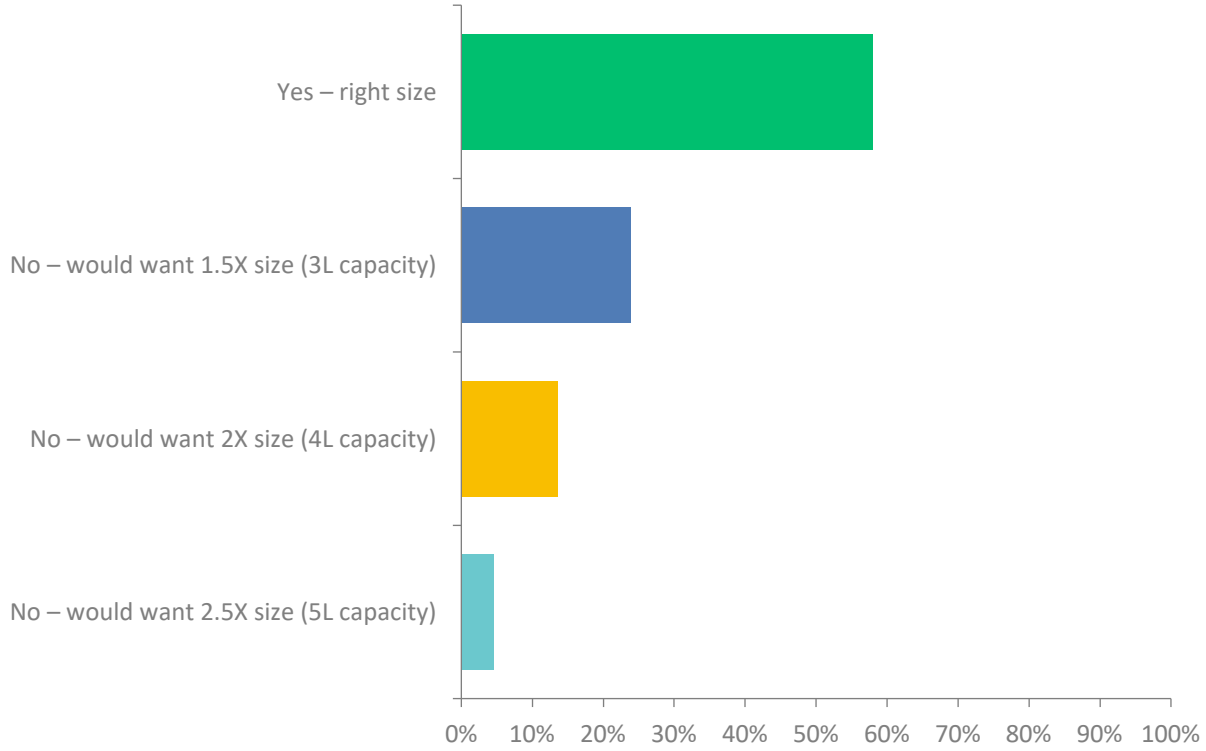


RESULTS – PILOT PROGRAM

- Was the FoodCycler sufficiently large for the quantity of daily food waste you generated?
  - Yes = 57.95%
  - No = 42.05%

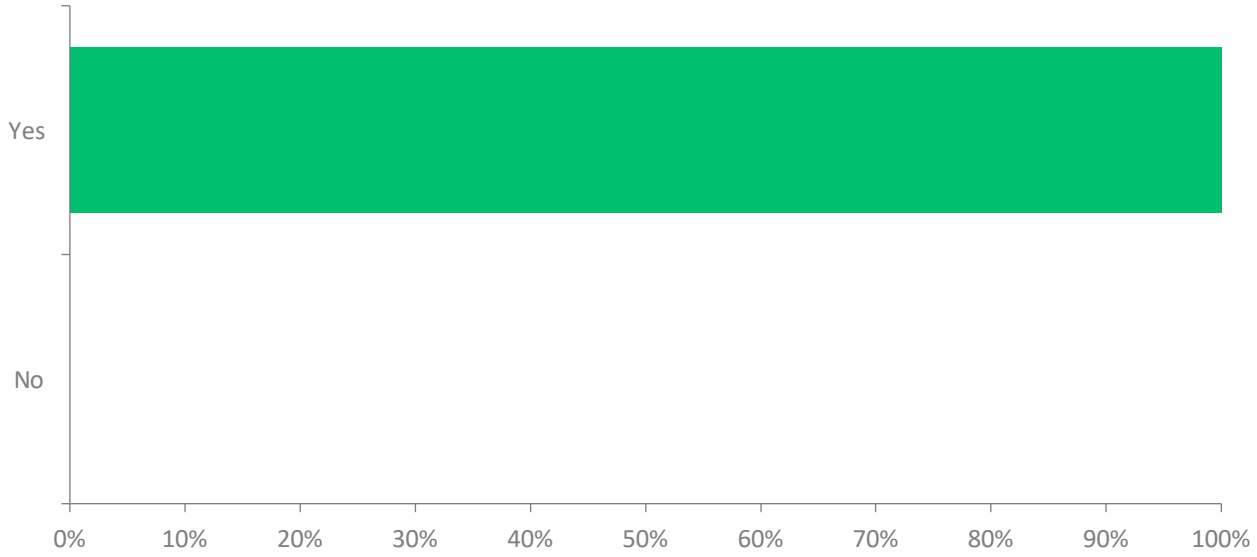
Suggestions:

- Spare bucket to double capacity
- Consider new model with 2x capacity (5L)



RESULTS – PILOT PROGRAM

- Will you continue using the FoodCycler after this pilot?
  - **Yes = 100%**
  - No = 0%

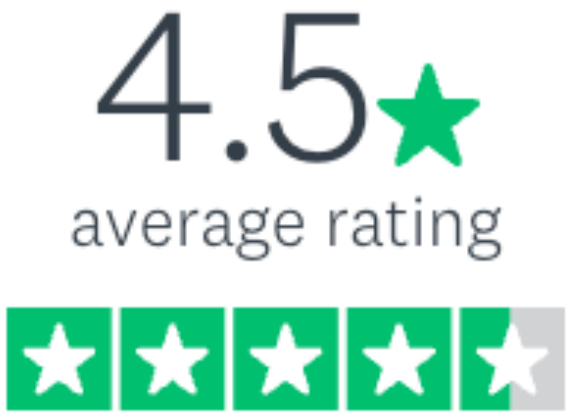


RESULTS – PILOT PROGRAM

- Please rate out of 5 stars the overall pilot project experience.

Average rating: 4.5/5 Stars

- 1 Star = 0%
- 2 Stars = 0%
- 3 Stars = 9.2%
- **4 Stars = 33.3%**
- **5 Stars = 57.47%**



RESULTS – PILOT PROGRAM

- If a municipal program was not available, would you consider purchasing a FoodCycler?

ANSWER CHOICES	RESPONSES
Yes, I would pay the full retail price of $500	12.64%
Yes, but only if there was a provincial / federal / municipal rebate that brought the cost to $350 or less	4.60%
Yes, but only if there was a provincial / federal / municipal rebate that brought the cost to $250 or less	41.38%
Yes, but only if there was a provincial / federal / municipal rebate that brought the cost to $150 or less	39.08%
No, waste is a local government's responsibility and they must provide solutions.	2.30%
TOTAL	

COMMENTS – PILOT PARTICIPANTS

- I think it works well, I would only use it during the winter when I can't get to my regular composter. Good for people who don't compost at all, would save waste going to the dump
- For a family of 4 having a slightly larger sized would be ideal. We ran it full each day and often there was an extra cycle run on the weekend to catch up
- I think we should have this project available more often, that way more people may be inspired to compost more
- I found that I used my own composting bucket that is larger and transferred when necessary. If I was making a big meal the size of the FoodCycler bucket was too small and I had to store extra composting material while the cycles ran. But day to day this was not an issue for my family.
- Handy device to have, saved going out in the rain to empty the composting bucket.
- Excellent for City and Apartment living, great for winters when access to areas isnt possible. I love the food cycler. I was interested in purchasing a similar product, however the costs are quite high. I am really glad that I could get it at a rebated price. It is a great product.

COMMENTS – PILOT PARTICIPANTS

- it is quite the best little machine! thank you for the opportunity to participate and contribute to the city's initiatives!
- A great initiative for sure, easy unit to use . We enjoyed the experience & became more aware of our food waste. We started using a compost bucket just to see how much we generate in a week. Some weeks didn't seem to generate as much compostable waste as others. My houseplants are happy with the results of the composer.
- Good to know that there are different sizes as this size was great for us, but may have been too small for a larger family
- I have told/shown, family and friends about the FoodCycler and all have asked about getting one.
- It is a great product - it is expensive experience to commit or budget but worth every cent when you use it.

FOODCYCLE SCIENCE

Proposed Next Steps:

- Receive feedback from Council
- If there is interest or intention to expand the program, refer to Staff to develop a tailored recommendation.

THANK YOU!

ANY QUESTIONS?

Alex Hayman
VP of Business Development
Email: alexh@foodcycler.com
Phone: 613-979-4167