

Bin Tagging Report

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WMRC Member Councils

Town of Claremont | Town of Cottesloe | Town of Mosman Park | City of Subiaco | Shire of Peppermint Grove
with Town of Cambridge

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1. Executive Summary

The Western Metropolitan Regional Council (WMRC) commenced the 2021 bin tagging program in mid-March 2021. This report will cover the results, things we learnt, things we achieved, things we need to improve on and the areas that require additional work to improve community recycling.

Bin tagging is a direct household behaviour change education program which has been proven to be effective in reducing contamination and increasing resource recovery rates from kerbside bins. Bin tagging has been implemented in WA since 2015, with the 2020 program being the largest round of tagging undertaken across WA. The 2021 funding from DWER through the Waste Avoidance and Resource Recovery Account via WALGA, was much smaller than the previous year, and the WMRC was one of the few councils that did receive funding. Under this, the WMRC was given funding to undertake bin tagging of 2000 properties across Mosman Park, Claremont and Peppermint Grove. Peppermint Grove opted out of participation, and therefore bin tagging was only conducted across areas of Mosman Park and Claremont. There is a pending application for a further 2000 houses in each of 2022 and 2023 across WMRC Member Councils.

Below is a summary of the audits completed from March to April. All audits went ahead as planned, with no cancellations due to weather or COVID-19. Final checks of the bins that were taped during Audit 3 went ahead, with Claremont’s check occurring 2 weeks after the original date of check would have been, due to a COVID-19 lockdown.

	March – April 2021								
	General waste bins		Recycling bins			GO bins			
	Audit 1	Audit 2	Audit 1	Audit 2	Audit 3	Audit 1	Audit 2	Audit 3	
Mosman Park (Tuesday)	✓	✓	✓	✓	✓	✓	✓	✓	
Mosman Park (Wednesday)	✓	✓	✓	✓	✓	✓	✓	✓	
Claremont (Thursday)	✓	✓	✓	✓	✓	✓	✓	✓	
✓ = Audit completed					✗ = Audit not completed				

The table below is a summary of the data collected for the 2021 program. The data indicated that across Mosman Park and Claremont, there was an increase in the average percent of properties that had no contamination in their recycling, general waste and GO bins. The main contaminants in each bin were also revealed, indicating that further community education is required.

	% of bins with no contamination for the first audit	% of bins with no contamination for the final audit	Main contaminants (plus % of bins present in for the final check)
General waste	72%	77%	Recycling (18%) Green waste (2%)
Recycling	31%	34%	Soft plastics (38%) Bags (8%)
GO	90%	91%	General waste (6%) Recycling (1%)

Note: plastic lids were a significant contaminant across all recycling bin checks, however, due to the Excel provided by WALGA not having 'lids' as a contaminant, quantifying how many bins had lids in it was not possible.

	March-April
Behaviour changes	The percentage of uncontaminated bins increased for general waste bins, but decreased slightly for both recycling and GO bins. GO and general waste bins became less heavily contaminated, where recycling bins stayed generally the same.
Letter to residents	To ensure that the data collected in the first checks were an accurate reflection of residents' normal kerbside bin usage, letters about the program were not put in residents' letter boxes until the morning of the bin tagging in each area. WMRC outlined information about the tagging program via their Word on Waste newsletter, as well as Facebook posts, including recruitment.
Feedback from residents	Over the course of the program, there were only 6 residents who opted out of their property being tagged, and only two that expressed their dislike for the program and its objectives. Feedback to the taggers was mostly positive, with a few residents questioning what they were doing and what they hoped to achieve from it.
Logistical challenges	The biggest logistical challenge came from coordinating 8+ staff on shifts in the first 4 weeks, delaying bin collections for up to 600 bins each morning, and effectively trying to visualise the best way to tag each area so that each team worked efficiently and had a similar number of houses to tag.
Suggestions for improvements	Finding a way to reduce any risk of losing data since bin taggers entered data onto an Excel sheet on their phones. Also, streamlining the recruitment process to make things easier on bin tagging staff and WMRC HR.
Highest contaminants	The highest recycling contaminants were soft plastics and bags. The highest GO contaminants were general waste and recycling. And for general waste, the highest contaminants were recyclables then green waste.

The report provides an overview of the results from bin tagging undertaken from March/April and identifies educational opportunities regarding kerbside bin use. It also includes a summary of feedback received and suggestions for future bin tagging programs.

The previous bin tagging report was shared with WMRC waste and communications staff members along with the relevant Member Councils, and its findings was used to make

improvements to the 2021 bin tagging program as well as create educational content for Waste Watchers Workshops and social media.

2. Results

The graphs in this section of the report are a summary of the data collected for bins tagged in all council areas throughout the program. Throughout this report, unless stated otherwise:

- Percentages relate to the number of bins tagged with data recorded, rather than the total number of properties. As some bins were missing data for each tagging day, the number of bins tagged and the number of properties with data recorded will not be the same.
- No contamination refers to a bin that had no visible contaminants within. This cannot guarantee that there were no contaminants in the bin, rather that the taggers could not see any from their quick check of the bin.
- As the bin tagging staff did not always fill in every column on the data record sheet for every bin – the total number of bins in each column of the bar graphs for each graph does not add up to the exact same number – hence the data in each graph is represented as percentages of the total number of bins tagged.
- One set of data from one zone was lost in the Mosman Park Wednesday area in week 6 due to an error with Excel on phones. These properties were classified as ‘missed’ on the master Excel sheet, and therefore has not affected the percentage results.
- Contamination levels were calculated as a percentage of bins with contamination. For example, twenty bins were tagged, ten had no contamination and the other ten bins had contamination. Of those ten with contamination, two had level 3 contamination. This would mean that 2% had level 3 contamination.

2.1. Summary of Results

The percentages below are an average over all audits and all tagging areas.

	% of bins with no contamination	% of bins with level 3 contamination	% of properties with no bin presented
General waste	75%	4%	21%
Recycling	34%	12%	19%
GO	85%	5%	38%

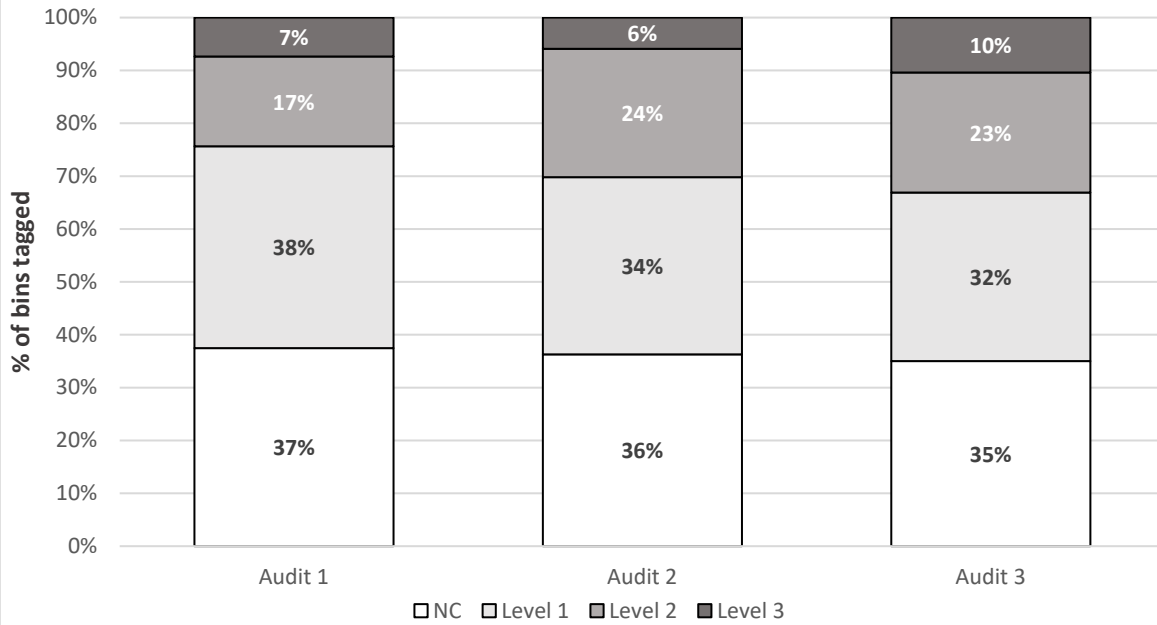
2.2. Contamination levels

Contamination levels recorded were consistent with guidelines provided by WALGA, which were as follows:

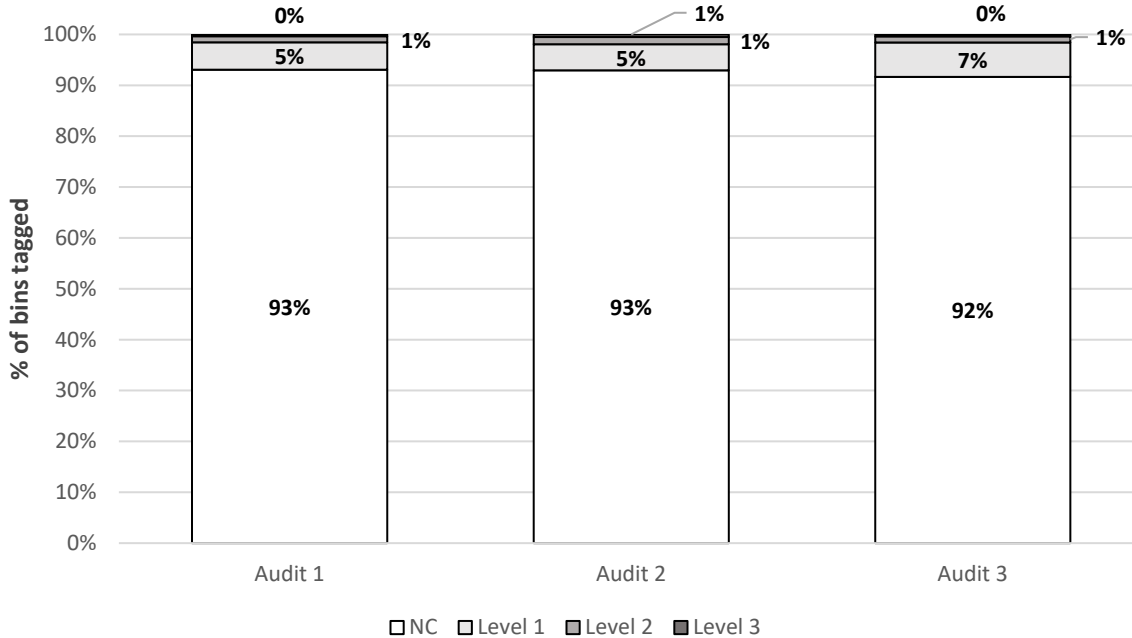
Contamination levels	Percentage of overall contamination
NC	No contamination (nonvisible)
Level 1	Minor contamination (1 or 2 incidences*)
Level 2	Medium contamination (2 to 8 incidences*)
Level 3	Severely contaminated (more than 8 incidences*)

* indicates wrong material or behaviour (e.g., not rinsing containers).

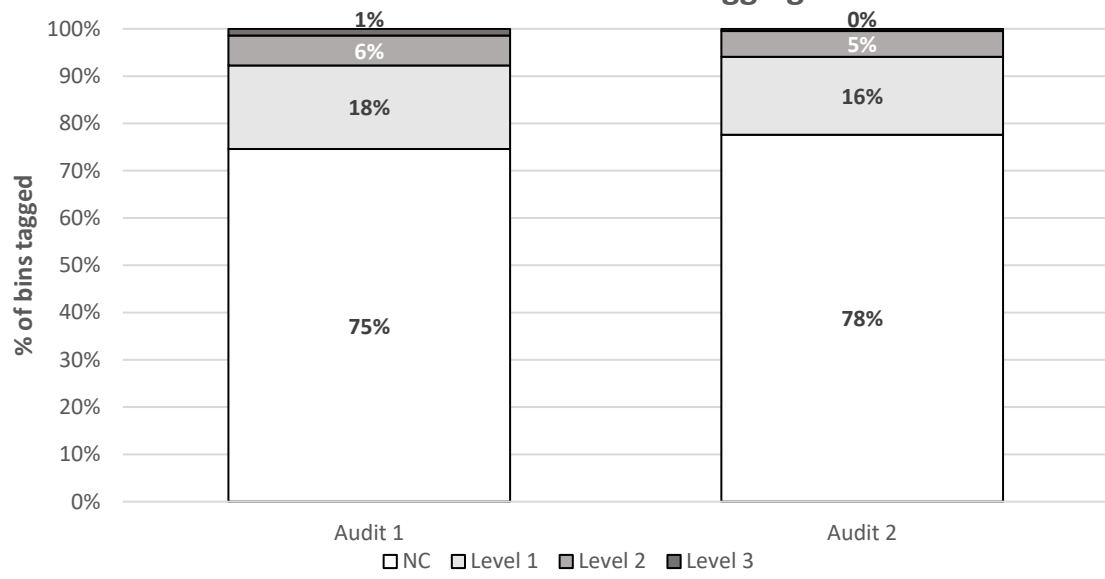
Contamination levels for Recycling bins across Mosman Park and Claremont tagging areas



Contamination levels for GO bins across Mosman Park and Claremont tagging areas



Contamination levels for General Waste bins across Mosman Park and Claremont tagging areas



3. Behaviour Change

The graphs in this section of the report indicate the differences between the data between audits 1, 2 and, where applicable, 3. As all audits were completed on schedule, there were six audits completed in total – 3 Recycling, 3 GO and 2 General Waste – and all are represented in the graphs.

3.1. Contamination Levels

	Differences
General Waste	Percentage of bins with no contamination increased by 3%. Percentage of bins with level 1, 2 and 3 contamination decreased by 2%, 1% and 1% respectively.
Recycling	Percentage of bins with no contamination decreased by 2%. Percentage of bins with level 2 and 3 contamination increased by 5% and 3% respectively.
GO	Percentage of bins with no contamination decreased by 1%. Percentage of bins with level 1, 2 and 3 contamination decreased by 2%, 1% and 1% respectively.

Increased contamination for GO and Recycling could be due to the bin taggers becoming more observant across each audit and picking up more contaminants during their brief checks of the bins. Additionally, the GO bins in the final week which had level 1 or 2 contamination may not have presented a bin in previous weeks, with average presentation rates for GO bins sitting at 62% for the six weeks of audits.

3.2. Cannot Collect Audit

The Cannot Collect (CNC) audits that were run in weeks 5 and 6 were performed to provide a consequence to the households that made no progress in reducing severe contamination in their recycling and/or GO bins. Prior to the CNC audits, the bin tagging coordinator went through and assessed the properties that had level 3 contamination in audit 1 or 2. From this, a list was made highlighting the properties that had made no improvements which were to be potentially taped if level 3 contamination was recorded in this CNC audit. Households that had level 3 contamination in one week but had no contamination, no bin presented, or level 1 contamination could not be included in this list as there was insufficient data that no improvements had been made.

The table below highlights the number of properties from each council that were listed for potential taping.

	Audit 3 Tapeable properties	
	GO bins	Recycling bins
Mosman Park (Tuesday)	3	14
Mosman Park (Wednesday)	1	10
Claremont (Thursday)	3	18
TOTAL	7	42

	Recycling bins				
	No contamination	Level 1 contamination	Level 2 contamination	Level 3 contamination	Taped
Mosman Park (Tuesday)	127	144	121	44	9
Mosman Park (Wednesday)	79	88	53	29	2
Claremont (Thursday)	178	110	77	38	3
TOTAL	384	342	251	111	14

	GO bins				
	No contamination	Level 1 contamination	Level 2 contamination	Level 3 contamination	Taped
Mosman Park (Tuesday)	252	4	3	0	0
Mosman Park (Wednesday)	197	22	4	1	0
Claremont (Thursday)	262	26	2	2	0
TOTAL	711	52	9	3	0

3.3. Cannot Collect Audit follow up.

Following the CNC audit, one WMRC staff went out to each tagging area to check how the bins that were taped during the CNC audit looked before collection. This occurred on the next recycling week for Mosman Park and two recycling weeks after the CNC audit for Claremont. This was due to the COVID-19 lockdown and subsequent restrictions.

Below are the notes made about each tagging area when checking the taped bins from week 5 and 6. One property from Mosman Park (Tuesday) was removed from the check due to the resident opting out.

	Notes
Mosman Park (Tuesday) – 04/05/21	<p>6 out of the 8 bins checked had made significant improvements to their recycling bins between the CNC audit and the check two weeks later. Of these 6 bins, 3 recorded having no contamination and 3 recorded having small contamination (level) with either bottle lids or soft plastic.</p> <p>2 out of the 8 bins checked had made little or no improvements to their recycling bins between the CNC audit and the check two weeks later. One property had high contamination (level 3) with soft plastic as the main contaminant, and the other property had medium contamination (level 2) with soft plastic and tissues being the main contaminants.</p> <p>It must be noted that it was very dark at the time that bins were checked, so there may have been other contamination in the bins, but it was not visible.</p>
Mosman Park (Wednesday) – 05/05/21	<p>Of the 2 taped bins, one had shown significant improvement in the follow-up check with only a coffee cup and bottle lid as contaminants. It was overfull, but this could be due to their bin not being collected the previous week. The other taped bin did not present a recycling bin for collection.</p>
Claremont (Thursday) – 13/05/21	<p>2 of the 4 taped bins showed significant improvements in the follow up check, with small amounts of soft plastic and tissue found in those 2 bins. The other 2 bins did not indicate that any improvements had been made, with both heavily contaminated with soft plastics and bags. One property had bags full of soft plastic.</p> <p>It must be noted that it was very dark at the time that bins were checked, so there may have been other contamination in the bins, but it was not visible.</p>

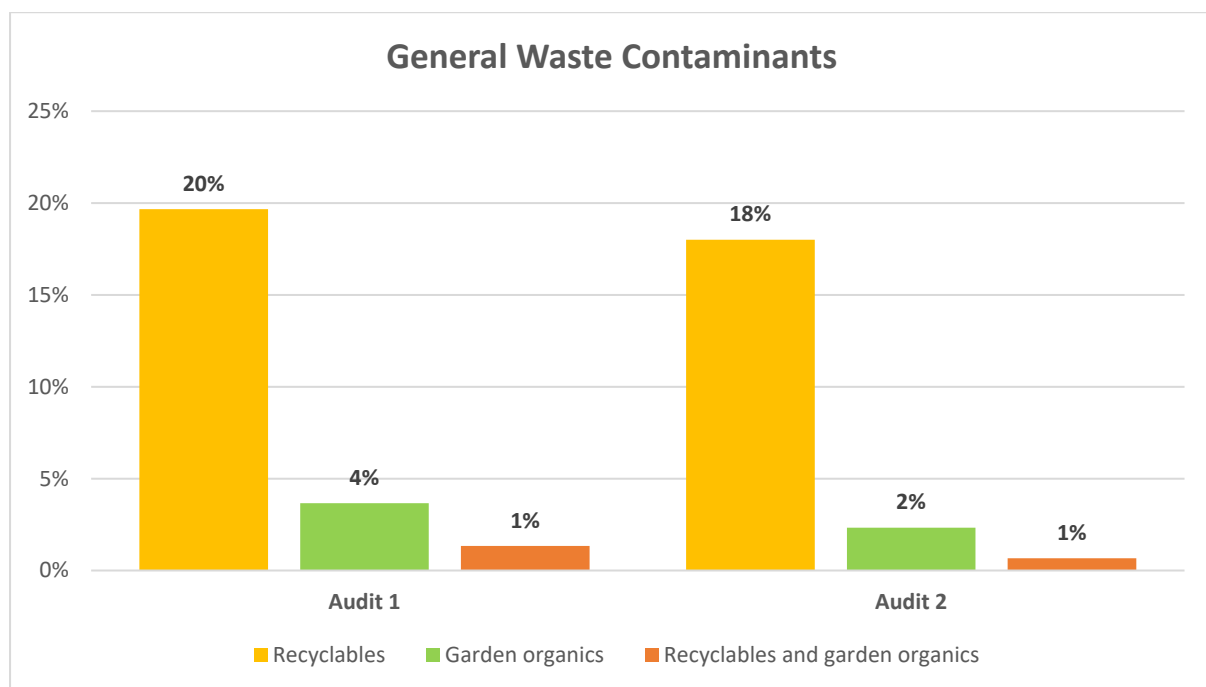
4. Biggest contamination issues

The bin type with the highest sources of contamination across all audits and areas, was recycling bins. The graphs in this section illustrate the top sources of contamination for each bin type across all council areas tagged.

4.1. General waste

Between Audit 1 and 2, recyclables remained the highest source of contamination in general waste bins with the percentage of bins they were identified in decreasing by 2% across all tagging areas. Garden waste was the second highest contaminant, however decreasing by 2% between Audit 1 and 2. As there were several properties in each council that did not have GO bins, usually due to the size of their property not being large enough to be eligible for one, those properties were recorded as having 'no contamination' if there was green waste in their general waste bin. They were given different general waste tags specially to note that garden waste could be placed in their general waste bin.

The graph below is the combined data from the three tagging areas, showing the percentage of bins each contaminant was identified in for Audit 1 and 2.



- Presentation rates of general waste bins ranged between 67% and 83%.
- In the Tuesday Mosman Park tagging area, the percentage of general waste bins with recyclables in them decreased by 1% between Audit 1 and 2, from 17% to 16%. The percentage of bins with garden organics in them decreased by 3% (from 5% to 2%), whereas the percentage of bins with both recyclables and garden organics in them did not change.
- In the Wednesday Mosman Park tagging area, the percentage of general waste bins with recyclables in them decreased by 7% between Audit 1 and 2, from 24% to 17%. The

percentage of bins with garden organics in them did not change, whereas the percentage of bins with both recyclables and garden organics in them decreased by 2%, to none identified.

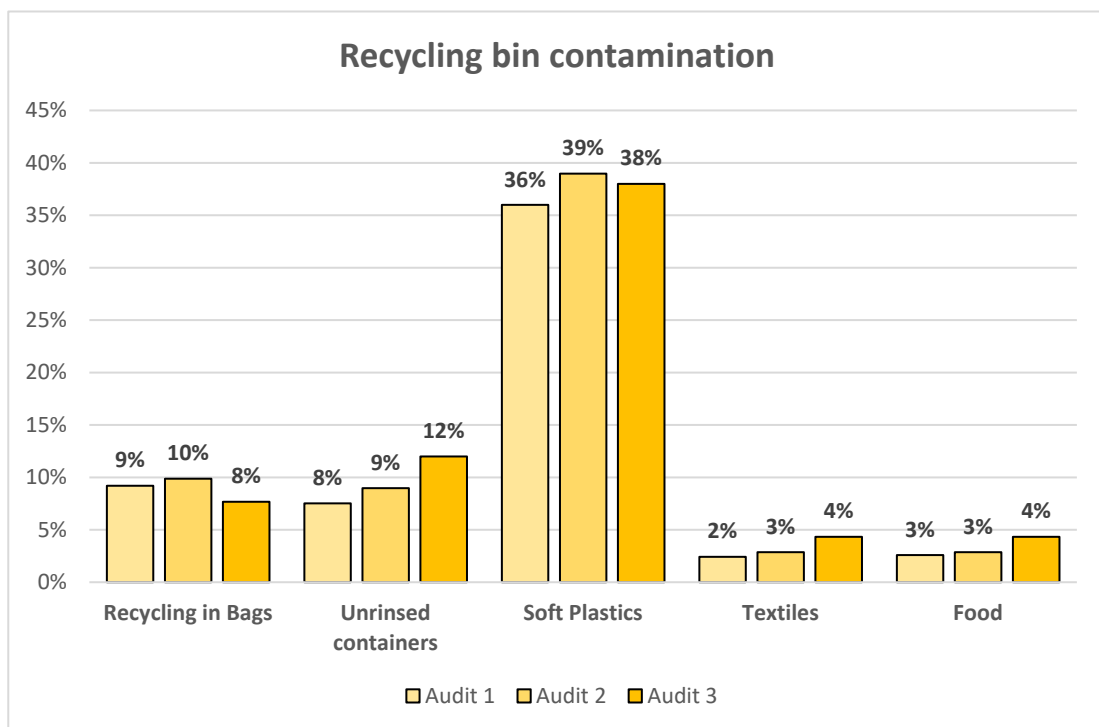
- In the Claremont tagging area, the percentage of general waste bins with recyclables in them increased by 3% between Audit 1 and 2, from 18% to 21%. The percentage of bins with garden organics in them decreased by 1% (from 3% to 2%), whereas the percentage of bins with both recyclables and garden organics in them did not change.
- Despite showing the least change, the Wednesday Mosman Park tagging area had the least contaminated general waste bins.
- As bin taggers were using a spreadsheet provided by WALGA, there was no option to add a column in for e-waste or household hazardous waste (HHW). This would have been beneficial as both of these items do not fall under any of the contamination categories provided. It is therefore difficult to quantify how many households were disposing of e-waste and HHW in their general waste bin.

4.2. Recycling

From Audit 1 to Audit 3, the number of recycling bins with no contamination increased by 3% across the three tagging areas. In actual numbers, 47 households started the program having contamination in their bins and have now had no contamination.

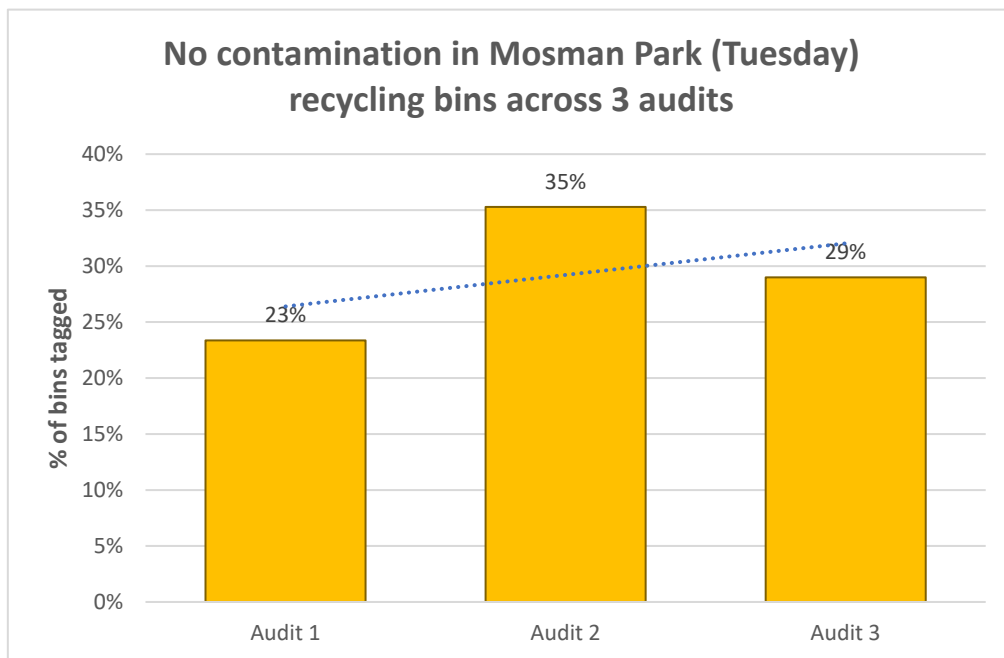
Soft plastics remained the highest source of contamination in recycling bins across the 3 audits. Lids were also a significant contaminant but due to having no column included in the Excel sheet provided by WALGA, it is difficult to quantify exactly how many were noted in each audit and thus also any improvements.

From the biggest contaminants, it is clear what community recycling education needs to be focused on in the coming months. All these items are simple behaviours that, with the right approach to education, could significantly improve contamination rates quickly.

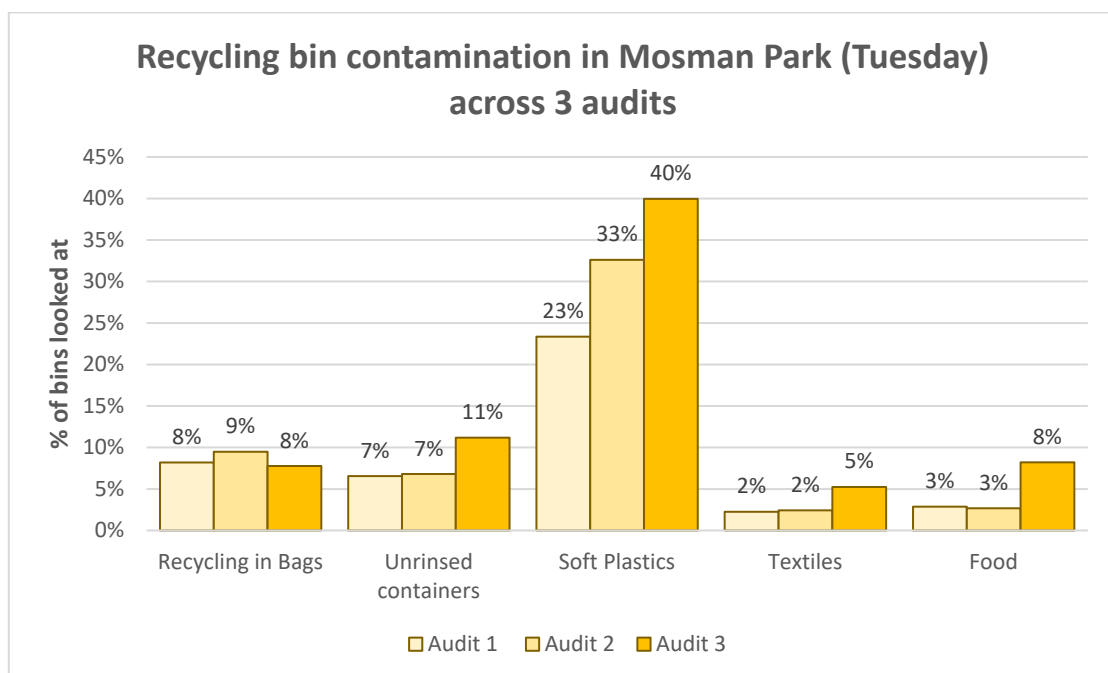


4.2.1. Mosman Park (Tuesday)

The percentage of bins that had no contamination in them increased between audit 1 and 3. There was a higher increase between audit 1 and 2 but slight decrease in the third audit. It is unclear why this occurred, but overall, there was an improvement.

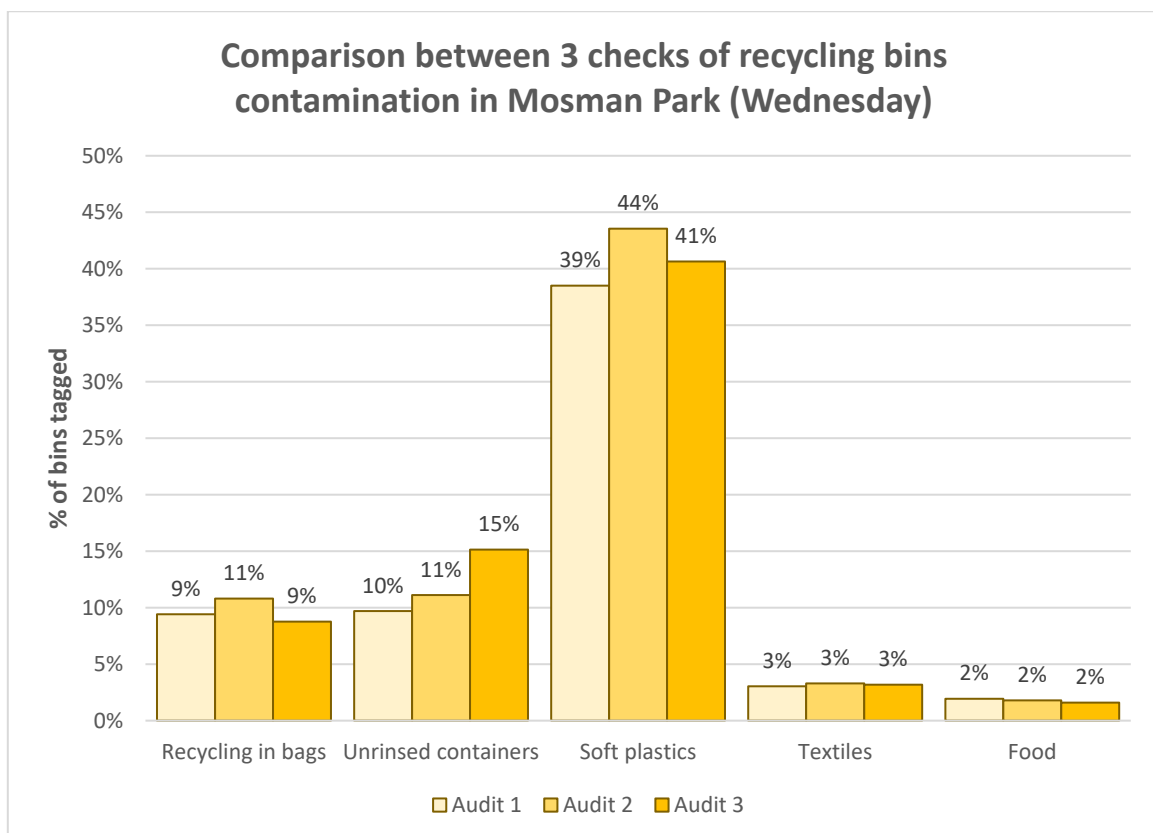
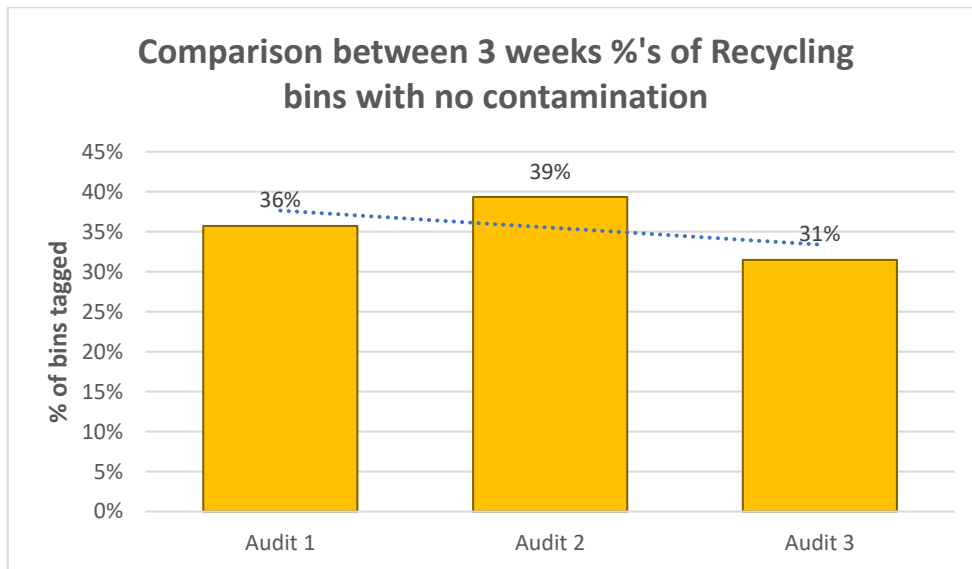


Soft plastic was the biggest contaminant in audit 1 and unfortunately increased significantly in audit 2 and again in audit 3. It is unclear to why this occurred, as this area started with the lowest soft plastic contamination of all tagging areas and finished the almost equal highest at 40% of all contaminated bins. It could be due to confusion of what soft plastics are still, and perhaps a result of less recyclables being put in the general waste bin, but not being rinsed before recycling.



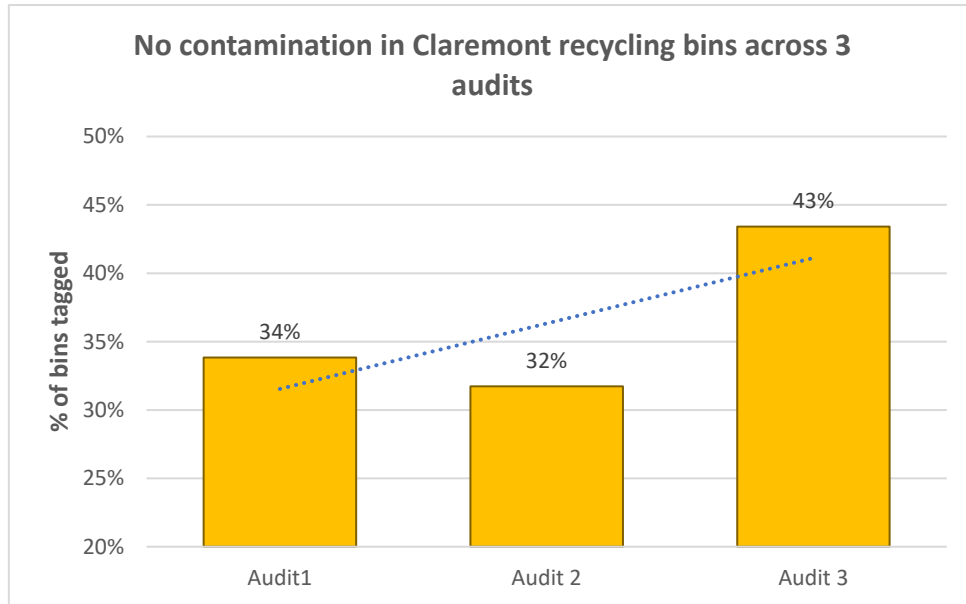
4.2.2. Mosman Park (Wednesday)

This area unfortunately did not improve in recycling in any of the 5 highest contaminants, or in increasing the percentage of bins with no contamination. The graphs below show this. Most contaminants only increased slightly or stayed the same, so this could be an indication that the tagging confused residents or that residents were not willing to change their behaviours.

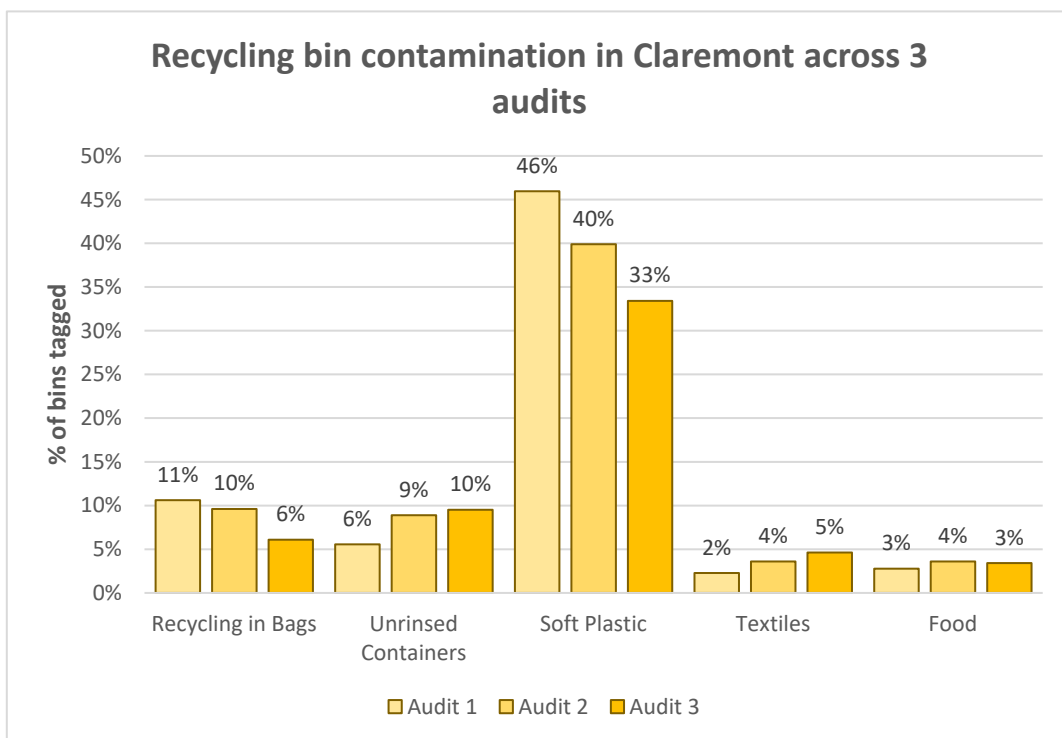


4.2.3. Claremont

Claremont's recycling contamination rates improved the most, with the number of bins with no contamination increasing by 9% between audit 1 and 3. There was a slight decrease in audit 2 by 2%, but improved by 11% in one week, finishing with almost half of bins (43%) having no contamination in them in the final audit.



Soft plastic and recycling in bags were two of the biggest contaminants in Claremont, but both decreased significantly between audit 1 and 3, by 13% and 5% respectively.

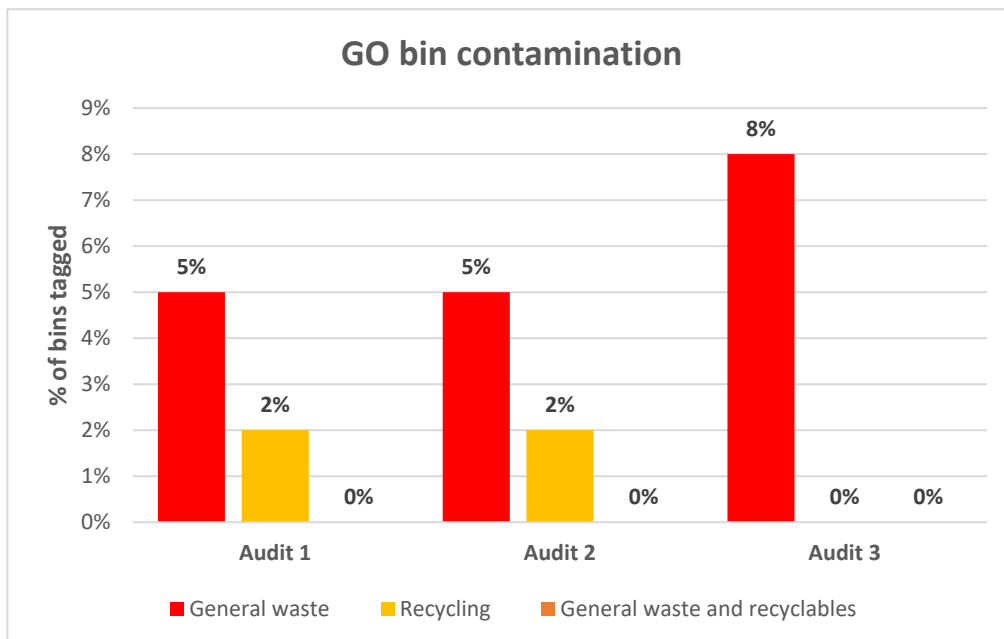


4.3. GO

Prior to bin tagging beginning in March, staff at the West Metro Recycling Centre had noticed an increase in contamination in GO bins. This increase sparked a new campaign, Clean your Greens, that ran alongside the bin tagging program and aligning with the same goal of reducing GO contamination. Therefore, changes to GO bin contamination could be due to bin tagging and/or the Clean your Greens campaign.

Not all properties in the tagging areas have GO bins, and therefore those that do not, are not represented in the data.

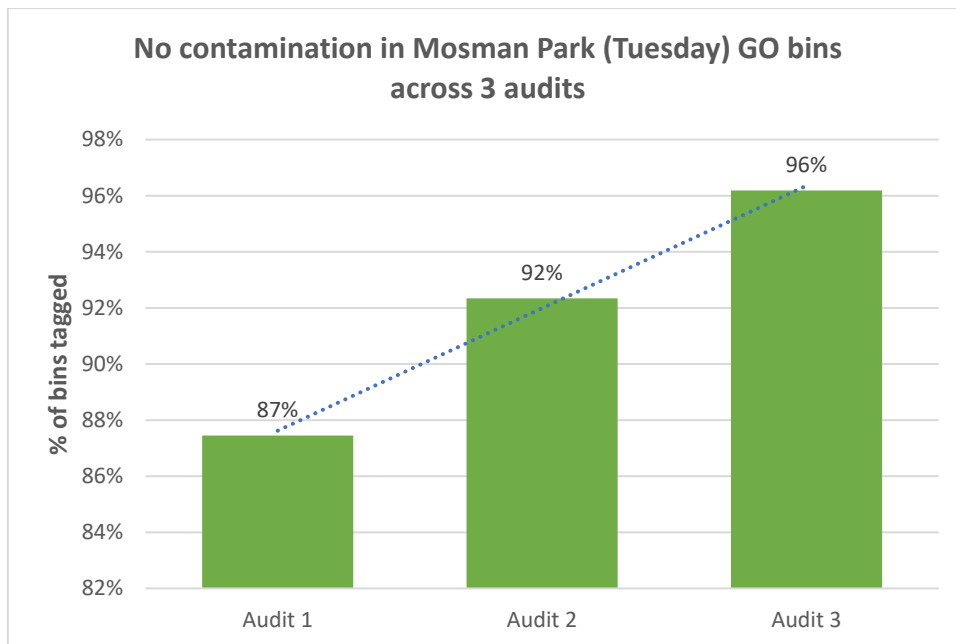
The graph below is the combined data from the three tagging areas, showing the percentage of bins each contaminant was identified in for Audits 1, 2 and 3.



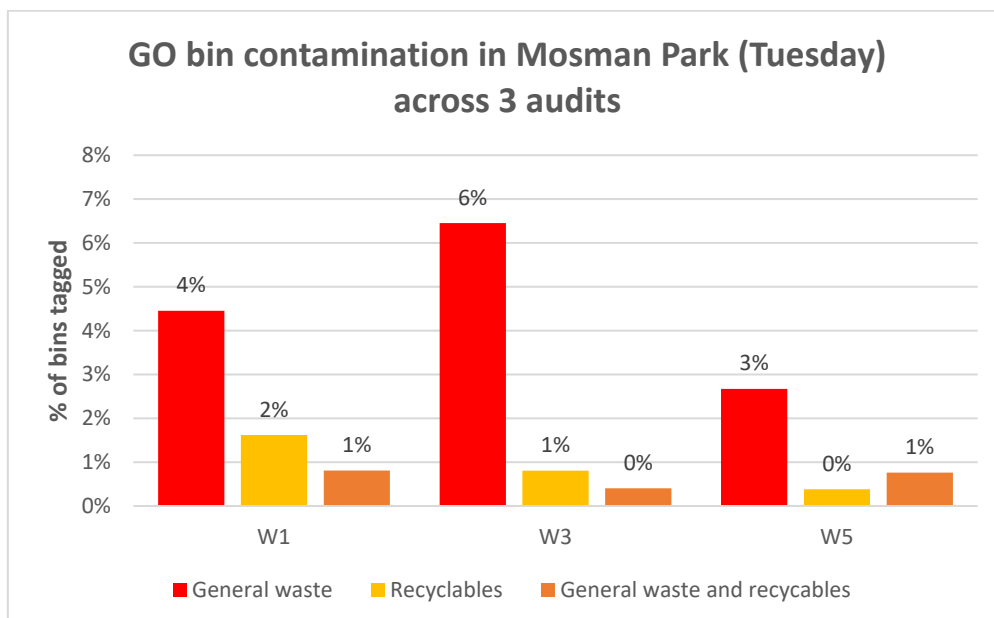
Of the notes that were entered for properties that had general waste contamination in their GO bins, a significant amount was about food waste. This may be due to the FOGO rollout that is occurring in other councils in the Perth metropolitan area, which could be causing some confusion. Both bins have a lime green lid and there is messaging that crosses council boundaries that are not relevant to WMRC member councils yet. This issue is ongoing and will only get worse as more councils rollout FOGO before 2025. It is being approached further by the WMRC in response to the data collected through bin tagging.

4.3.1. Mosman Park (Tuesday)

GO bins improved significantly in the Mosman Park Tuesday area. The percentage of bins that had no contamination increased by 9% from audit 1 to audit 3, with 96% having clean GO bins in audit 3. This area had the highest percentage of bins with no contamination, showing a great effort by residents to keep their GO bins clean.

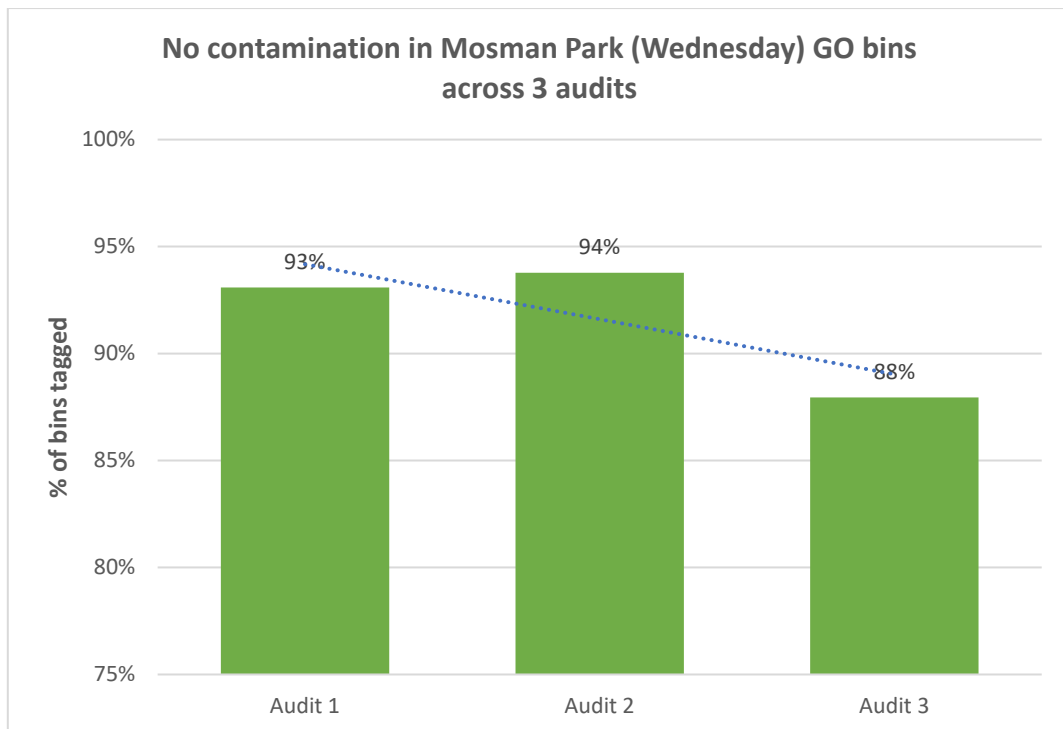


General waste contamination decreased by 1%, recyclables decreased by 2% to none, and general waste and recyclables remained the same. This shows great progress in reducing contamination in GO bins.

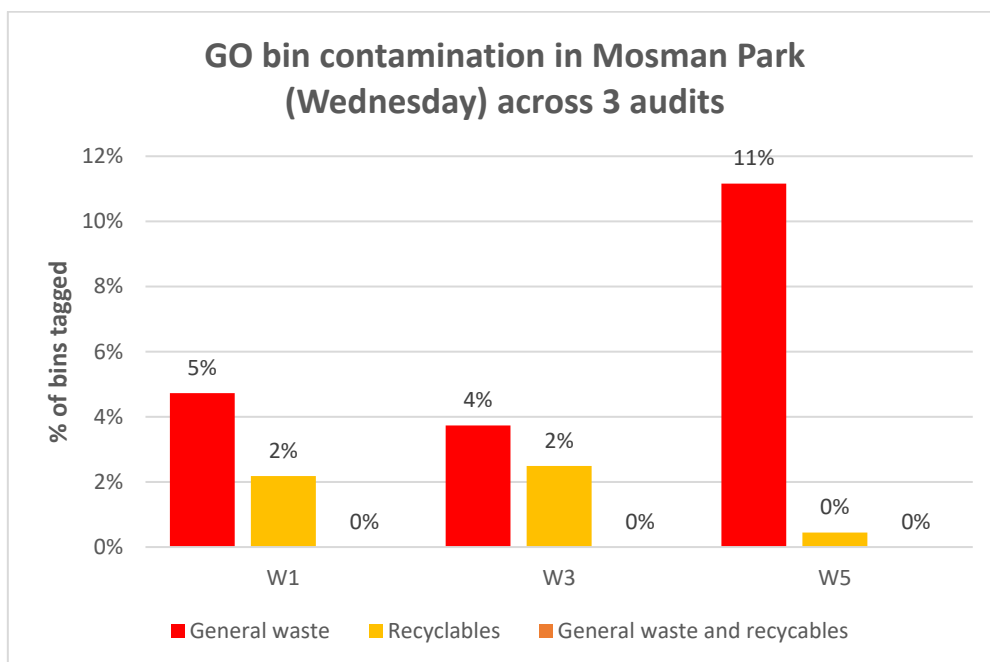


4.3.2. Mosman Park (Wednesday)

The Wednesday area in Mosman Park also did not improve as expected, with rates of no contamination starting strong at 93% and finishing at 88% in audit 3. It is unclear as to why this occurred, as bins were clean and then became more contaminated as more education was given. This seems to be an anomaly in all the GO bin data.

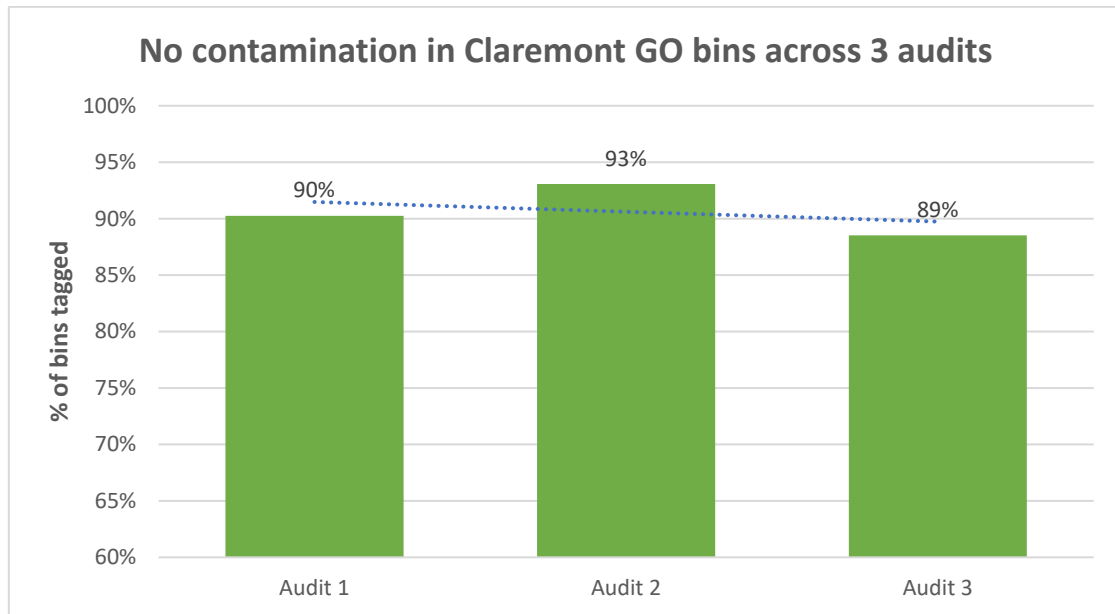


Each contaminant did not act linearly, with general waste increasing overall by more than double, recyclables decreasing to 0% and general waste and recyclables remaining at 0% across all audits. This is shown in the graph below.

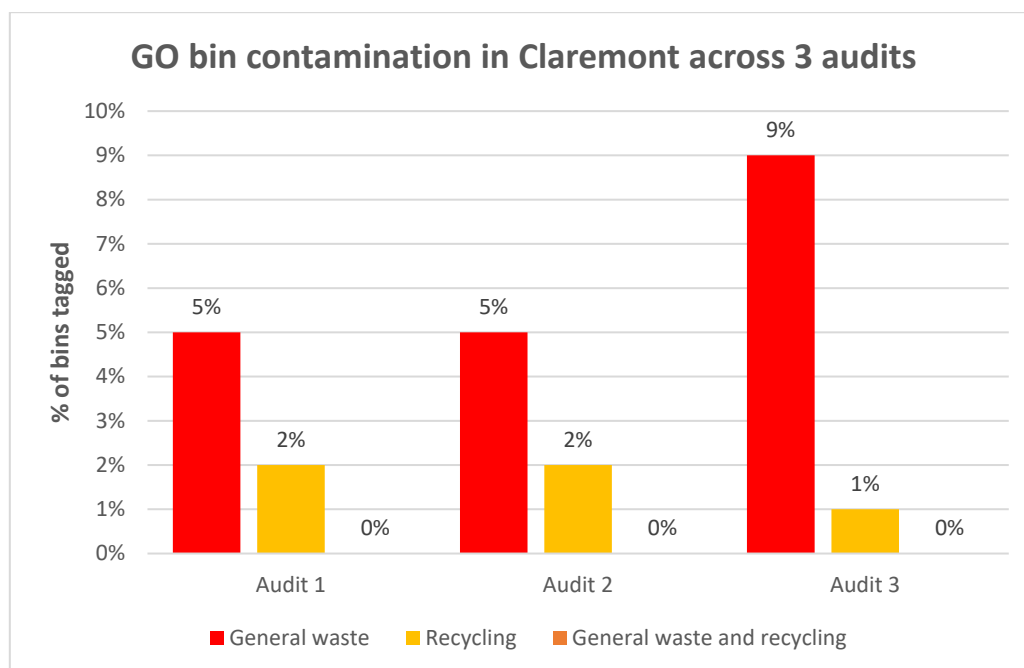


4.3.3. Claremont

Claremont's GO bins decreased slightly in the percentage of bins with no contamination. There were some promising results in audit 2, but ultimately the percentage of bins with no contamination in audit 3 finished at 1% lower than in audit 1. This is not a terrible change, but one that is not as good as had hoped for.



The percentage of bins with general waste increased by 4% over the 3 audits, whereas bins with recyclables in them decreased by 1% and bins with both general waste and recyclables in them remained at 0% across all audits. This information is shown in the graph below.



5. Feedback from residents

Residents shared feedback throughout the bin tagging program in the form of conversations with bin tagging staff during tagging shifts, as well as by contacting WMRC via email and recycling hotline, and posting on social media.

5.1. Social media

The Town of Mosman Park’s Marketing and Communications Advisor noted that some feedback came up in a few closed Mosman Park community Facebook groups. Overall, the feedback the bin tagging program received was largely positive and supportive of the program.

5.2. Residents that opted out of the program

In the 2021 program, there were a few households that requested to be removed from the program (0 in Mosman Park (Tuesday), 3 in Mosman Park (Wednesday) and 2 in Claremont). Most of these residents opted out due to privacy concerns and others had personal issues that required their attention more than the bin tagging program, which is understandable.

5.3. Direct feedback while tagging

Comments and questions received from residents, and the nature of responses given were as follows:

Comments and questions	Responses
“What are you doing?”	This comment often came up in the first audits in each area. Bin tagging staff explained their household had been selected as part of the bin tagging program and said that there would be a letter in their mailbox explaining the details.
“It all goes to landfill, so why bother?”	It does not. Part of the reason for doing bin tagging is to educate residents, in order to reduce the amount of contamination in their bins and increase the number of resources that can be recovered rather than being sent to landfill.
“There are recyclables in our general waste bin because we start putting them in the bin once our recycling bin is full.”	WMRC runs Waste Watchers’ Workshops which involve tips on how to reduce your waste and recycle right. Contact your council to request a second recycling bin.
“I don’t know what a soft plastic is.”	If something can be scrunched into a ball (and in the case of items that look like foil, it does not stay scrunched) it is a soft plastic.
“It’s difficult to know what items are accepted in the recycling bin”	Items accepted in the recycling bin are listed on the recycling bin tags. If you have questions about items that are not on the tag, you can check the Recycle Right website or app, or call the WMRC recycling hotline.

<p>“Not all of the waste in my bin is my waste. My neighbours or other member of the public put waste in my bin once I’ve put it out on the street for collection”.</p>	<p>Suggested waiting until the morning to put their bin out for collection. Reassured them that a note will be made on the bin tagging data collection sheet about this. Reassured that this is just an education program, and if they know they’re doing the right thing, not to worry about if they got a happy or sad tag.</p>
<p>“The West Metro Recycling Centre flyer attached to the tag was helpful.”</p>	<p>Some items that can’t go in recycling or general waste bins are accepted for free at the West Metro Recycling Centre, so flyers were attached to the tag when one of these items were placed in their household bin.</p>
<p>One team spoke with a Mosman Park councillor while tagging, where they were told that there had been some negative feedback towards the bin tagging program through them.</p>	<p>Their response was that they would give this feedback to the WMRC.</p>

5.4. Feedback via the WMRC recycling hotline

Comments and questions	Responses
<p>“I feel I am being targeted by bin taggers.” – from a resident of a taped bin.</p>	<p>This comment came from a resident in Claremont who had received 3 sad tags for their recycling bin and had had their recycling bin taped in the third/CNC audit. The response from WMRC staff was that their bin was taped and not collected due to their being an extreme amount of contamination in their recycling bin over all 3 audits.</p>
<p>“The truck driver wouldn’t collect my bin after I had removed the contaminants.” – from a resident of a taped bin.</p>	<p>The CNC letter states that they must call the council to have their bin assessed and collected, as the truck drivers cannot make that assessment. WMRC staff advised them that they needed to call the council to organise their bin to be collected.</p>

6. Educational Opportunities

The bin tagging data indicates that the bin with the highest source of contamination, and therefore the greatest potential for change via further education, is recycling bins.

The highest sources of contamination for each bin type indicate:

- Items residents are confused about which bin to put in, or where to dispose of (i.e. items that are not accepted in any of the bins).
- Topics to focus education on – via WMRC social media posts, emails and events (such as Waste Watchers' workshops).
- Information to share with Recycle Right (to add to their app and website), and to raise at Consistent Communications Collective meetings.

Suggestions for education:

- Soft plastics
 - What they are.
 - Why they can't go in household recycling bins.
 - What to look for.
 - How to reduce soft plastic consumption.
 - Where to take soft plastics.
- Bagged recyclables
 - Why they need to be loose.
- Bottle lids
 - Why they can't go in household recycling bins.
 - How to tell if they can or can't be recycled based on size.
 - Containers for change lid collections (and where they go once it is known).

From the first audit, WMRC communications staff started posting on social media about the most prominent contaminants in recycling and GO bins. This continued as the program did, with continual updates about each audit's progress and findings, which guided the recycling and GO bin-based content from mid-March.