

Center for Sustainable Behavior & Impact

Understanding What Drives Recycling Participation

How Data and Resident Feedback Can Guide Program Strategies

Sarasota County, FL • 2022

Once residents have access to recycling, establishing behavioral habits where residents actively set out recyclables and recycle most of the available materials in their homes is key to program success. Sarasota County, Florida has a strong single-family recycling program.

In this case study, The Recycling Partnership's Center for Sustainable Behavior & Impact (The Center) took a closer look at this community to attempt to uncover the drivers of their success. The lessons from Sarasota County can help us understand what drives recycling participation and capture locally and determine what else is needed to increase recycling capture even further. And communities across the country can learn from the model that Sarasota County has used to design programs and engage residents.

The Recycling Partnership is grateful for the generosity of Sarasota County for collaborating and graciously offering their staff time, resources, and ideas to strengthen this study. Without their partnership, this would not have been possible.

Best Practices from Sarasota County



Collect data on the recycling program performance including capture rate and participation to set a baseline and monitor progress over time.



Use this data to identify opportunities for improvement and to inform outreach programs.



Encourage recycling participation through various education and outreach efforts to build and maintain enthusiasm for recycling and reassure residents that recycling is worth the effort.

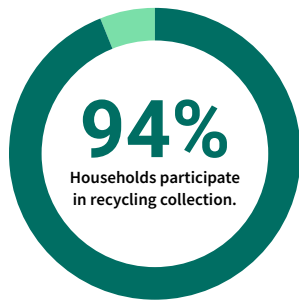


**IN THE STUDY
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Study Design & Implementation

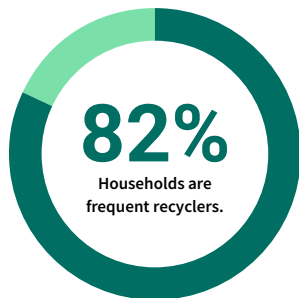
In this study, we measured participation and capture over three routes, interviewed solid waste and recycling staff, and conducted a focus group to learn about the drivers and barriers to recycling participation and capture with a close examination of the mixed paper category. Mixed paper is a category of recyclables that includes paper products such as mail, magazines, office paper, newspaper and paperboard boxes, but excludes cardboard. We looked closely at the mixed paper category to learn about the perceptions of recyclability for various paper types and explore how paper messaging can be improved to increase paper capture.

The routes for the capture rate and participation study were selected by Sarasota County Solid Waste staff in areas where the homes were mostly occupied by year-round residents in middle income neighborhoods. There are 2,962 households across all routes. The participation and capture data were collected during the summer months, typically a time when seasonal residents are not living in the area. The findings from the participation study showed that 98% of residents set out their garbage cart at least once during four collection cycles, which supports Sarasota County's assessment that these areas are occupied by year-round residents.



Recycling Participation

Recycling participation was measured by reviewing the recycling and garbage set out over the course of four weeks from August 15–September 7, 2022. A team of inspectors drove the recycling routes and noted if the garbage and/or recycling was set out at each address. The data was collected at each address in an app and then analyzed to find that **94% of households participate in recycling collection** and 98% of households participate in garbage collection.



Of the households that participate in recycling, **82% of households are frequent recyclers**, setting out their recycling at least twice over four collection cycles, and 18% of households are infrequent recyclers, setting their recycling out just once in over four collection cycles.

Households were selected for the focus groups by segmenting households into two groups using the participation data: frequent and infrequent recyclers. This segmentation allowed us to match focus group participants to their actual behavior rather than how they self-report their recycling behavior.

In the focus group with participants that screened as infrequent recyclers, we found this group was actually more committed to recycling than the frequent recyclers. This group all had a small household size, was older and made up of residents that generate less waste. **This highlighted that infrequent participation does not necessarily mean infrequent recycling.** Infrequent set out or participation could be driven by several factors including household size or that some people generate less recycling. This also suggests that in Sarasota County, having 18% of households set out recycling less than twice a month is likely not an area of concern for their recycling program.

In both the frequent and infrequent recycler groups, residents attributed participation in recycling to motivations and habits. The participants that recycled well or often were highly motivated by the environmental and health impact of recycling. They were also in the habit of recycling and had an in-home system in place to make recycling easy. Although they had systems in place, they also wanted to improve their in-home system and were open to suggestions for improvement.

"And with just the two of us, we don't fill our bin up but every three weeks.... There's no need for him (the recycling driver) to stop at our house, it's only half full."

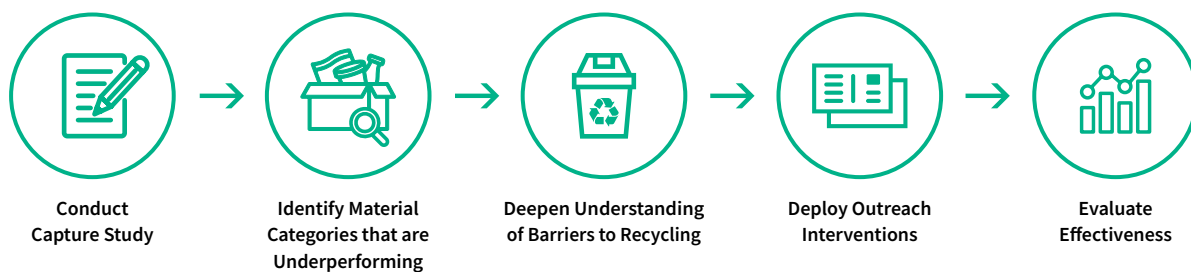
Infrequent recycling set out focus group participant.

Despite the high level of enthusiasm for recycling in both focus groups, residents expressed concern about the lack of transparency in recycling and wanted to know what happens to their materials, including whether there were markets for materials. They noted these uncertainties undermined their motivation to recycle. Additionally, anti-contamination messaging is harming some residents' confidence and commitment to recycling. These participants were concerned that whole truckloads of recyclables would be landfilled for minor contaminants, and several expressed the idea that this concern made them more wary about recycling, because they did not want to make mistakes and jeopardize a whole load.

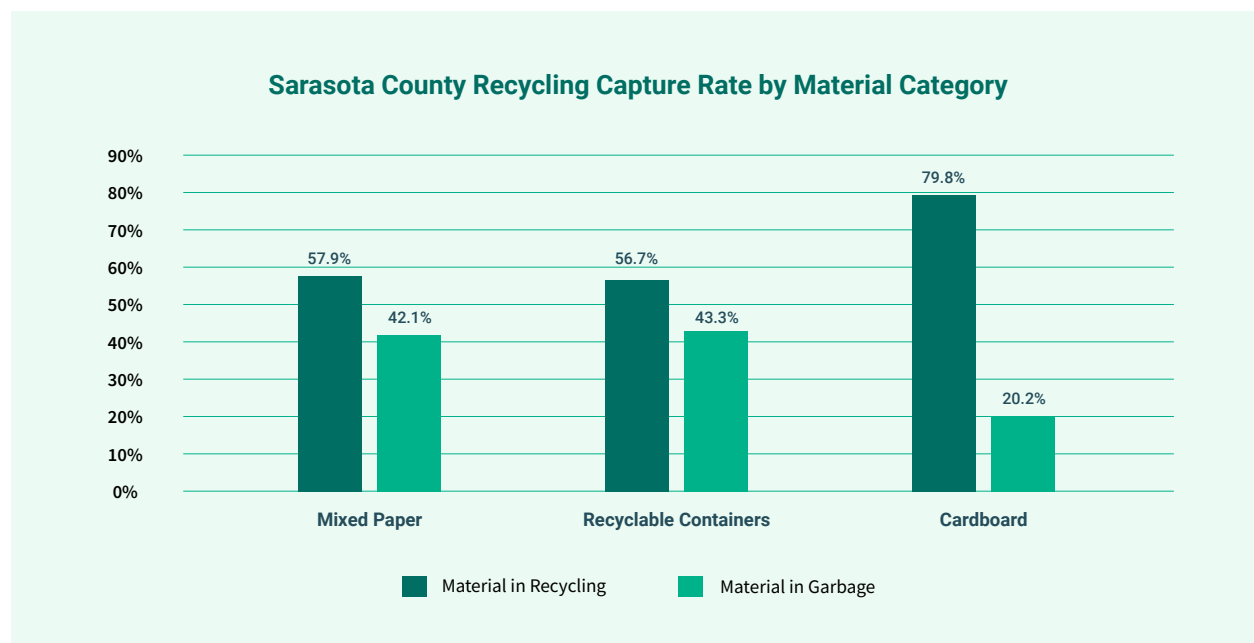
The focus group findings as well as the baseline participation study suggest that Sarasota County does not need to focus on increasing recycling set outs but should focus their efforts on continued reinforcement of the importance of recycling to maintain resident motivation, while offering insights into how recycling works and the true impacts of contamination. For other communities with high set out and participation, similar strategies could be effective.

Recycling Capture

Recycling capture studies provide communities with detailed information about the generation of recyclable materials (total available recyclables found in the home) and amount of materials that are collected in the recycling. This data is extremely useful in measuring program performance and determining areas for program improvement.



In capture rate studies conducted by The Recycling Partnership, the national average capture rate for single-family residents across an entire city is 55%. In Sarasota County, the capture rate of cardboard was the highest of any category, followed by recyclable containers (plastic, glass, and metal) and mixed paper.



Recycling capture data was collected by conducting route level capture rate study in July 2022. In the study area, at the route level, households had an average generation of 607 pounds of recyclables each year and were placing 62.1% of these materials in the recycling. The cardboard capture rate was the highest of any material category with 79.8% capture. The capture for recyclable containers including plastic, glass and metal was 56.7%. The capture rate for mixed paper was 57.9%.

Generation (pounds/household/year) & Recyclables Capture Rate				
Material Category	Lbs / HH / Year			Capture Rate
	Recycling	Trash	Total	
E-Commerce Corrugated Cardboard	25.26	0	25.26	100.0%
Other Corrugated Cardboard	78.81	26.27	105.08	75.0%
Program Recyclable Cardboard	104.07	26.27	130.34	79.8%
Newspaper	15.52	4.54	20.06	77.4%
Paperboard Boxes	47.18	26.96	74.14	63.6%
Reading Material	18.93	8.02	26.95	70.2%
Mail	13.68	24.1	37.78	36.2%
Office and Note Paper	4.38	3.68	8.06	54.3%
Paper Bags & Kraft Paper	4.4	7.64	12.04	36.5%
Recyclable Bathroom Paper	0.43	2.1	2.53	17.0%
Other Recyclable Paper	5.65	3.24	8.89	63.6%
Aseptic Containers/Cartons	3.54	2.38	5.92	59.8%
Program Recyclable Paper	113.71	82.66	196.37	57.9%
PET Bottles	34.87	22.41	57.28	60.9%
Natural HDPE Bottles	10.33	2.93	13.26	77.9%
Colored HDPE Bottles	11	6.34	17.34	63.4%
Non-Bottle PET Containers	3.38	1.58	4.96	68.1%
Non-Bottle HDPE Containers	1.26	0.69	1.95	64.6%
PP Containers	5.56	13.84	19.4	28.7%
Other Plastic Containers (#3, 4, 6, 7)	2.58	5.23	7.81	33.0%
Bulky Rigid Plastics	7.65	19.56	27.21	28.1%
Glass Containers	62.44	30.4	92.84	67.3%
Tin/Steel Cans	6.53	6.92	13.45	48.6%
Aluminum Cans	13.56	11.57	25.13	54.0%
Program Recyclable Containers	159.16	121.47	280.63	56.7%
Total	376.94	230.4	607.34	62.1%

Mixed Paper Recycling – What Residents Want to Know

With a 94% recycling participation rate and the total capture rate of 62%, we wanted to learn more about what was contributing to a capture rate for mixed paper, that is 58% capture. The overwhelming majority of these households were putting their recycling cart out to recycle, but 42% of their household mixed paper was found in the garbage. If you are going through the effort to recycle, why is nearly half of the mixed paper still in the garbage? In the focus group, we asked participants about their understanding of the recyclability of various types of paper and what was preventing them from recycling more mixed paper.

Most of the focus group participants found paper recycling to be generally intuitive and were making a diligent effort to recycle paper. However, participants cited confusion about the specific characteristics of some types of paper and their recyclability was identified as the most significant barrier. Participants had many questions about the specifics of paper recycling including questions about cellophane windows, staples, fake credit cards sent in direct mail offers, tape and other adhesives, shiny and glossy surfaces, thicker paper such as magazine covers, metallic or foil surfaces on paper products and wax coating. They wanted a website or place where they could look for more information about paper recycling that could provide this level of specificity.

Other barriers to paper recycling that were less prominent included concerns about security or confidentiality and the underlying concerns about if recycling matters or if it works.

This suggests that targeted information about paper recycling and providing residents information about the specifics of paper recycling could help them recycle more paper. Both paperboard boxes and mail have more than 20 pounds per household per year of material being placed the garbage.



Information Shared in Focus Group: Mixed Paper Info Card

Residents liked learning more about mixed paper, but still had questions about the details of paper recycling (tape, windows in envelopes, staples, etc.)

Material Category	Lbs / HH / Year			Capture Rate
	Recycling	Trash	Total	
Newspaper	15.52	4.54	20.06	77.4%
Paperboard Boxes	47.18	26.96	74.14	63.6%
Reading Material	18.93	8.02	26.95	70.2%
Mail	13.68	24.1	37.78	36.2%
Office and Note Paper	4.38	3.68	8.06	54.3%
Paper Bags & Kraft Paper	4.4	7.64	12.04	36.5%
Recyclable Bathroom Paper	0.43	2.1	2.53	17.0%
Other Recyclable Paper	5.65	3.24	8.89	63.6%
Aseptic Containers/Cartons	3.54	2.38	5.92	59.8%



Paperboard Boxes & Mail

Of the mixed paper categories, these two material groups have the largest opportunity for improvement and increasing the capture rate of these materials could have a dramatic impact on overall paper capture.

Sarasota County Recycling Program

Sarasota County began their recycling program over 30 years ago in response to a voter referendum in 1991 where residents requested recycling service. This process highlights that residents were interested in recycling and the culture of openness to recycling has existed in the county for decades. Sarasota County offers curbside recycling service to 136,000 single family households. Recycling is mandatory for commercial and residential properties. Although recycling is required, the county focuses on voluntary participation and has worked to foster and maintain the culture of recycling within the community. In 2019, The Recycling Partnership provided a recycling cart grant to Sarasota County to support them in their shift from recycling bins to recycling carts.

Sarasota County Solid Waste staff attribute their high participation rates due to residents' interest in the environment and keeping their local beaches clean. They noted residents have a sense of pride in doing the right thing by putting waste in the right place. Sarasota County has been successful in leveraging existing community values to shape their recycling messaging to match the interests and needs of their community.

Staff encourage recycling participation through various education and outreach efforts and have created a comprehensive suite of campaigns and tactics designed to reach all residents in engaging ways. They strike a balance between providing basic information about how to recycle with engaging messaging on why it is important. Their programs include school lessons, multimedia campaigns, speaking directly with community members and partnering with community organizations to reach new audiences. They are committed to providing repeated messages across multiple platforms to reach residents where they are already learning information.

Sarasota County Solid Waste staff have worked to develop strong relationships both across their organization with other departments and within the community. Their relationships allow them to amplify their work and create efficiencies. Additionally, their staff interacts regularly with the community, gaining a better understanding of the challenges the community faces in recycling more and a sense of which messages and tactics will help residents overcome these barriers.

And what is more engaging than a little fun? The Sarasota County Solid Waste and Communications programs are not afraid to take risks and use humor to engage residents in recycling. For instance, staff created an innovative [infomercial](#) on how to use their new recycling carts in 2019. Like traditional infomercials, the actor overemphasizes the difficult task of taking two recycle bins to the curb by tripping over himself in the driveway, while the narrator asks, "Are you worn out from dragging two pesky recycle bins to the curb?". The narrator then introduces a recycling cart as the solution, paired with instructions on how to roll it to the curb and find information—"your brand-new cart will be delivered right to your door for zero easy payments of nothing!" Overall, they emphasized that recycling participation is supported by residents' enthusiasm for the service matched by educational support from their office.

Conclusion

The model that Sarasota County uses in their communications and engagement with residents can be replicated by communities across the country. It is critical that program managers understand program performance before implementing behavior change tactics. Programs need to connect and understand the recycling behaviors before messaging to their constituents.

Sarasota County Solid Waste staff have successfully utilized capture rate studies and resident feedback to measure and guide program efforts while maintaining relevant communication and outreach strategies. Residents of Sarasota County are clearly using the recycling program and putting their carts at the curb, but that only tells half the story. By conducting capture studies with the Sarasota County Solid Waste staff, we uncovered that almost 40 percent of recyclables in the home were still being placed in the garbage, with a large portion of that being mixed paper. When operating a relatively high-functioning program like Sarasota County, this level of behavior analysis will allow the program to move forward with impactful messaging by speaking to its residents while listening.

Sarasota County has a strong recycling program with high resident engagement. Due to the high recycling participation rate, efforts to motivate residents to recycle more mixed paper and recyclable containers should be the focus of future campaigns. Due to the high level of engagement from residents, it is likely that focusing messaging on these items and providing specific guidance on acceptable materials will yield significant program improvement, continuing their strong program momentum. Additionally, Sarasota County would benefit from continued campaigns that help reassure residents that recycling makes a difference to help maintain resident motivation.

There is no one-size-fits-all, clear roadmap to increase participation and capture in recycling but there are tools and resources that The Recycling Partnership believes can help communities, counties, and states along the way. In 2022, The Recycling Partnership conducted a series of pilot projects through its Center for Sustainable Behavior & Impact, with support from The Walmart Foundation, as well as WM, to test types of messages, methods for education, and interventions in eight areas across the country. The Recycling Partnership is grateful to each of the communities and counties that participated. Additional information about each can be found at recyclingpartnership.org.