2021 AF&PA

Access to Recycling Study

Tracking Consumer Access to Community Paper Recycling

American
Forest & Paper
Association

PREPARED BY:

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American
Forest & Paper
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Forward

The American Forest & Paper Association (AF&PA) plays an active role in our industry's continuous progress on sustainability. By setting and achieving ambitious goals, the paper and wood products industry has clearly demonstrated a meaningful commitment to advancing paper recycling's success well into the future.

Let's first acknowledge the outstanding action of millions of Americans who recycle and the expanded access to recycling programs. Public engagement, combined with our industry's investment and widespread access for paper recycling, means that nearly twice as much paper today is recycled today than three decades ago.

Since 1994, AF&PA has periodically conducted national surveys to measure the extent and growth of access to community paper and paperboard recycling.

The findings presented in the *2021 AF&PA Access to Recycling Study* show us that community recycling programs for paper and paper-based packaging are well-developed and widely accessible. This is good news when so many individuals are looking to make a difference on behalf of the environment.

Remarkably, in 2020, during a period defined by the challenges of the COVID-19 pandemic, almost two-thirds of paper was recycled and transformed into new sustainable paper products. The resilience of our industry is clear, as is the active participation of consumers in making paper recycling the success it is today.

Importantly, our industry innovation and investment continue. We have planned or announced approximately $5 billion in manufacturing infrastructure investments from 2019-2024 to continue the best use of recycled fiber in our products. That's more than $2 million per day in investments.

Ours is an industry that has developed an effective and efficient system for recycling over the past decades. Producer responsibility is something we do on a voluntary and market-driven basis.

And yet, the commitment to do more has strengthened. Our latest sustainability initiative builds on our industry's success and continues our commitment to manufacture sustainable products.

AF&PA has established five quantifiable sustainability goals that the industry aims to meet by 2030. I encourage you to visit our website (afandpa.org) to learn more about this bold initiative—*Better Practices, Better Planet 2030: Sustainable Products for a Sustainable Future.*

Together, in partnership with the households across the country, we can advance a circular value chain through the production of renewable and recyclable products.

Heidi Brock,
AF&PA President & CEO

Executive Summary

Since 1994, the American Forest & Paper Association ("AF&PA") has performed a series of national surveys to measure the extent and track the growth of access to community paper and paperboard recycling. This report presents the results of the 2021 AF&PA Access to Recycling Study ("2021 Study") as an update to the last study AF&PA conducted in 2014. The 2021 Study was performed by the consulting firm Resource Recycling Systems (RRS).

SURVEY BACKGROUND

The 2021 Study measures curbside and drop-off community recycling programs provided through municipal or county governments, organized via contract or franchised through a private hauler, or available to residents via subscription services or privately operated drop-offs. This definition varies slightly from the 2014 Study which did not include subscription recycling programs or privately operated drop-offs.

Similar to previous studies, the Project Team collected data on recycling programs from two research groups:

Largest recycling programs—this set includes approximately 3,700 of the largest recycling programs serving ~80% of the U.S. population

Small communities—for the population outside of the largest counties, a random sampling of communities (400) was searched with the results extrapolated to the remaining 20% of the U.S. population.

Communities in both research groups were drawn from a custom data set of over 8,000 recycling programs and 41,000 "geographies" as defined by the U.S. Census Bureau. These geographies correspond to the local governments in each state that provide recycling services, taking into account that the relevant geographic unit (e.g. city, county, town, township, village, or unincorporated community) tends to vary from state to state. Each recycling program in the RRS database was related to one or more geographies; for example, a county-wide recycling program
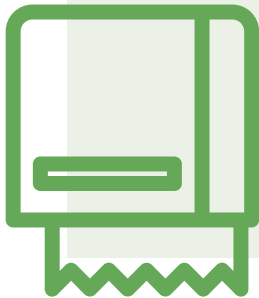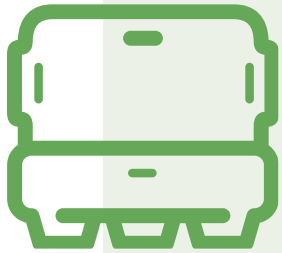
corresponds to all the geographies in that county, while a single-city recycling program corresponds with only that city.
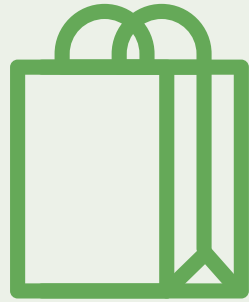
In previous years, AF&PA has relied on surveys completed by county level and municipal recycling coordinators to collect community recycling information. However, achieving the desired response rate representing at least 80% of the U.S. population has become increasingly challenging. To address this, The Project Team designed a systematic method for collecting community recycling information via direct internet verification of community recycling programs, providing AF&PA the target data coverage with a high level of accuracy.

The direct internet verification approach included a ranking system to evaluate community recycling guidelines and determine if the study material is accepted in the curbside and/or drop-off recycling programs available to residents. The ranking differentiated explicit and implicit acceptance:

Explicit acceptance—the item is specifically mentioned or pictured in a community's consumer communications information as accepted into recycling program.

Implicit acceptance—the item is not explicitly listed or mentioned but should be considered accepted based on broader acceptance categories, context of the material, and local materials recovery facility (MRF), and end market information that suggests material is commonly found in the collection stream, gets sorted properly at the MRF, and is not considered a contaminant.

The differentiation between explicit and implicit acceptance was new to the 2021 Study and had not been considered in previous study years.

Through direct verification, guidelines for both curbside recycling programs and drop-off recycling programs available to residents were evaluated. For each community in the sample, project staff evaluated recycling program information provided by the local unit of government either directly on its official web page or via other resource (such as newsletters or hauler and/or recycler websites), typically as directed by the community.

Using a five-point ranking system, the Project Team rated the resident guidance language of each recycling program to characterize its acceptance/exclusion of the materials in both recycling guidelines (such as images, lists, or PDF flyers) and lookup

tools/apps/waste wizards (such as ReCollect or Recycle Coach) where available, to capture nuances between the sets of guidelines:

1 **Explicitly Accepted:** Specifically mentioned or pictured as accepted in the recycling program.

2 **Implicitly Accepted:** Not specifically mentioned or pictured but considered accepted based on broader acceptance categories and context of the material.

3 **Unclear or Contradictory Information:** Guidelines on material acceptance were contradictory or ambiguous.

4 **Implicitly Denied:** A proxy package (similar use or material) is specifically denied, or a detailed list of accepted items does not include this specific item.

5 **Explicitly Denied:** Specifically mentioned or pictured as prohibited in the recycling program.

Where both types of guidance were found, the two items were scored separately and then combined into a single rating in the data analysis process. If a waste wizard identified a material category as accepted but the guidelines did not specify if the material is accepted or prohibited, the material received the more specific score (the waste wizard) and was counted as accepted in the recycling program.

The data collection was conducted over a ten-week period from June to August 2021, thus the study findings are representative of that time period. It should be recognized that programs and service availability in a given program are subject to change at any time.

The materials considered in the 2021 Study varied slightly from previous years. Categories were revised to better reflect distinctions in community recycling guidelines and provide more useful information. Table 1 compares material categories from the 2014 Study to the 2021 Study.

Table 1: *Material Category Comparison*

CATEGORY	DESCRIPTION	INCLUDED IN 2014 STUDY	INCLUDED IN 2021 STUDY
Newspaper	Newspapers and inserts	●	●
Magazines & Catalogs	Magazines with glossy paper	● (broken into two categories)	● (combined into one category)
Office Printed Paper	White or colored printing and writing paper from home, school, or office	●	●
Mail	All types and sizes of mail and envelopes regardless of fiber type, color, coatings, windows, etc.; can be bleached or unbleached	●	●
Paper Bags	Any paper bag including grocery, take-out food, single serve and retail bags; unbleached brown bags, bleache d bags, or colored bags	●	●
Corrugated Packaging	Unbleached brown boxes with a wavy inner layer; may have a printed bleached or unbleached top layer	●	●
Paperboard packaging without poly coating	Uncoated paperboard such as cereal and other dry food boxes, shoe boxes, and tissue boxes		●
Paperboard packaging with poly coating	Paperboard with a poly coating such as frozen dinner boxes and laundry detergent boxes		●
Pizza boxes	Delivery pizza boxes made from corrugated cardboard		●

CATEGORY	DESCRIPTION	INCLUDED IN 2014 STUDY	INCLUDED IN 2021 STUDY
Direct food contact foodservice packaging	Direct food contact take-out containers, clamshell sandwich boxes, bakery boxes		●
Paper cups	Paper to-go cups		●
Liquid packaging cartons/containers	Cartons for milk, juice, etc.	●	●
Paper containers with metal ends	Spiral containers used for products like coffee, nuts, and frozen juice		●
Bleached paperboard	Medical packaging, cosmetics and perfume packaging; white bakery and candy boxes; white take-out food containers; frozen food boxes; can be coated or uncoated	●	
Unbleached/recycled paperboard	Cereal and other dry food boxes, shoe boxes, laundry detergent and similar product packaging; take-out food containers; clamshell sandwich boxes; bakery and candy boxes; beverage cartons and carriers; can be coated or uncoated	●	

There were three categories in the 2014 Study that do not have a comparable category in the 2021 Study: old telephone directories, unbleached paperboard, and bleached paperboard.

NOTES:

1. Paper Containers with Metal Ends: This type of recyclable paper-based packaging (spiral paper containers used for products like coffee, nuts and frozen juices) was targeted for the study. However, since the research found it to have less than 5% explicit acceptance, the study does not conclude that there are sufficient grounds to determine whether the material is intended to be included in community recycling programs, and therefore this material is considered to have inconclusive findings.

2. Direct Food Contact Foodservice Packaging: More research may be warranted for this category (which includes direct food contact take-out containers, clamshell sandwich boxes and bakery boxes) due to the complicating factor of direct food contact.

RESULTS SUMMARY

Figure 1 presents results from the 2021 Study showing percent of U.S. population with total access to recycling, access to curbside recycling, and access to drop-off recycling. Figure 1 includes all previous results from AF&PA studies alongside the 2021 Study results. Overall, the Project Team found a 2% decrease in percent of U.S. population with access to recycling, either curbside, drop-off, or both. The biggest change in access was recorded in drop-off. In 2014, 81% of the U.S. population had access to drop-off recycling whereas in 2021 the estimated percent decreased to 55%. While this decline seems large, the Project Team found the majority of the decline in drop-off access occurred in communities that also are documented to have access to curbside services. The recent decline in drop-off access may be due to communities cutting costs and removing duplicated services such as when curbside services are available to residents. There may also be communities that have temporarily suspended their drop-off programs to avoid crowds gathering due to COVID-19 and not yet resumed their programs as of this survey.

Figure 1: *1997-2021 Results: Percentage of Population with Access to Paper/Paperboard Collection*   ◀ BACK TO PREVIOUS VIEW
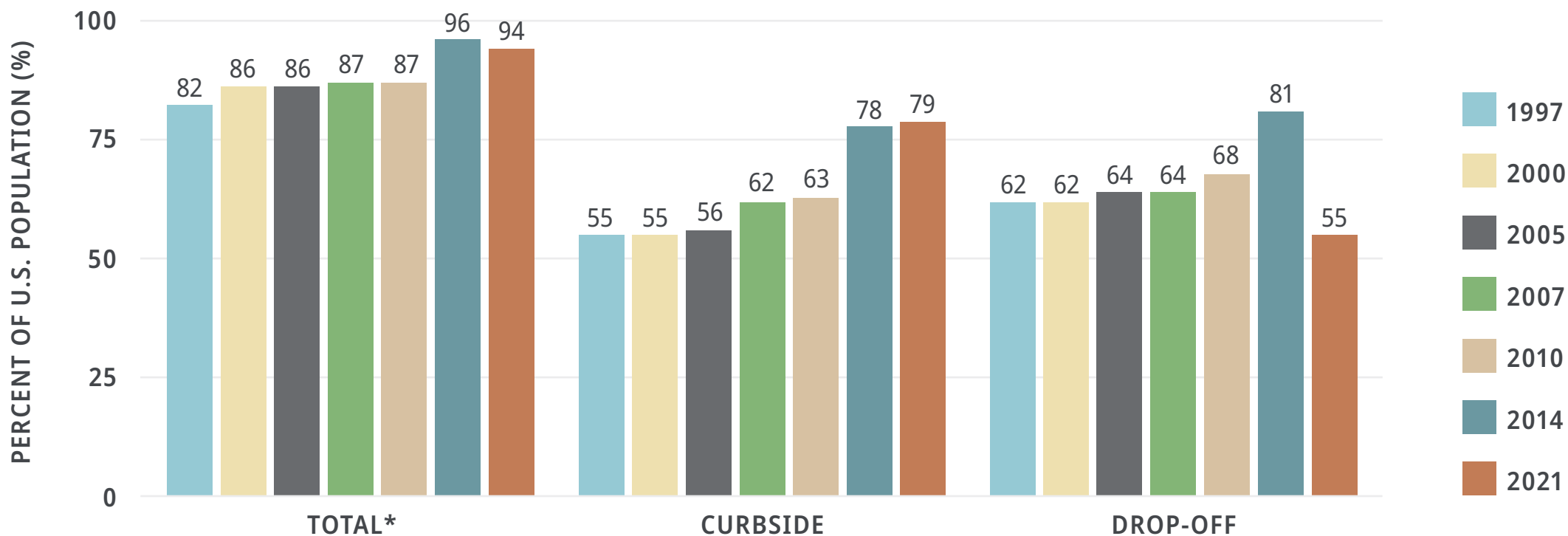
*Note that the total population with access is not equal to the sum of curbside and drop-off population with access, as many communities provide access through both curbside and drop-off collection.

Table 2 provides data on the population with access for the 2021 Study that was depicted in Figure 1. It also provides data on the number of communities with access to paper and paperboard recycling in total, in curbside programs, and in drop-off programs.

Table 2: *2021 Paper/Paperboard Recycling Program Summary* ◄ BACK TO PREVIOUS VIEW

PROGRAM TYPE	POPULATION WITH ACCESS		COMMUNITIES WITH ACCESS	
	Population (Millions)	Percent of U.S. Total	Number of comms.	Percent of U.S. Total
Curbside	197	79%	24,236	61%
Drop-off	138	55%	21,165	53%
Total	235	94%	33,360	84%

*"Collecting Paper" refers to the total population with access to at least one paper or paperboard category.

Figure 2 and Figure 3 assess the percentage of the U.S. population and percentage of U.S. communities, respectively, with access to paper and paperboard recycling through curbside and drop-off programs by material type. In these figures, 'Direct' refers to actual county level research or results, and 'Extrapolated' refers to a calculated estimate for the remaining portion of population/communities as described above. Overall, compared with 2014 results the Project Team found access rates for paper materials such as newspapers, office paper, magazines, etc. to be fairly consistent in 2021. Access to recycling of many of these materials fluctuated 1-3% since 2014, consistent with the 2% drop in overall recycling seen in Figure 1. However, all of these paper materials still have a population access rate of 90% or higher and a community access rate of about 80%. The material with the largest change in access was liquid packaging cartons, which saw an 8% decline in 2021 by population (7% in terms of number of communities).

In 2021, the Project Team collected data on six additional material categories (see Table 1 above for more details). Among these, over half of the U.S. population has collection access to three of the material categories —paperboard with poly coating (60%), paperboard without poly coating (91%), and pizza boxes (82%).

Figure 2: *2010 to 2021: Percentage of Population with Access to Paper/Paperboard Collection* ◀ BACK TO PREVIOUS VIEW

Legend:
- 2010 DIRECT
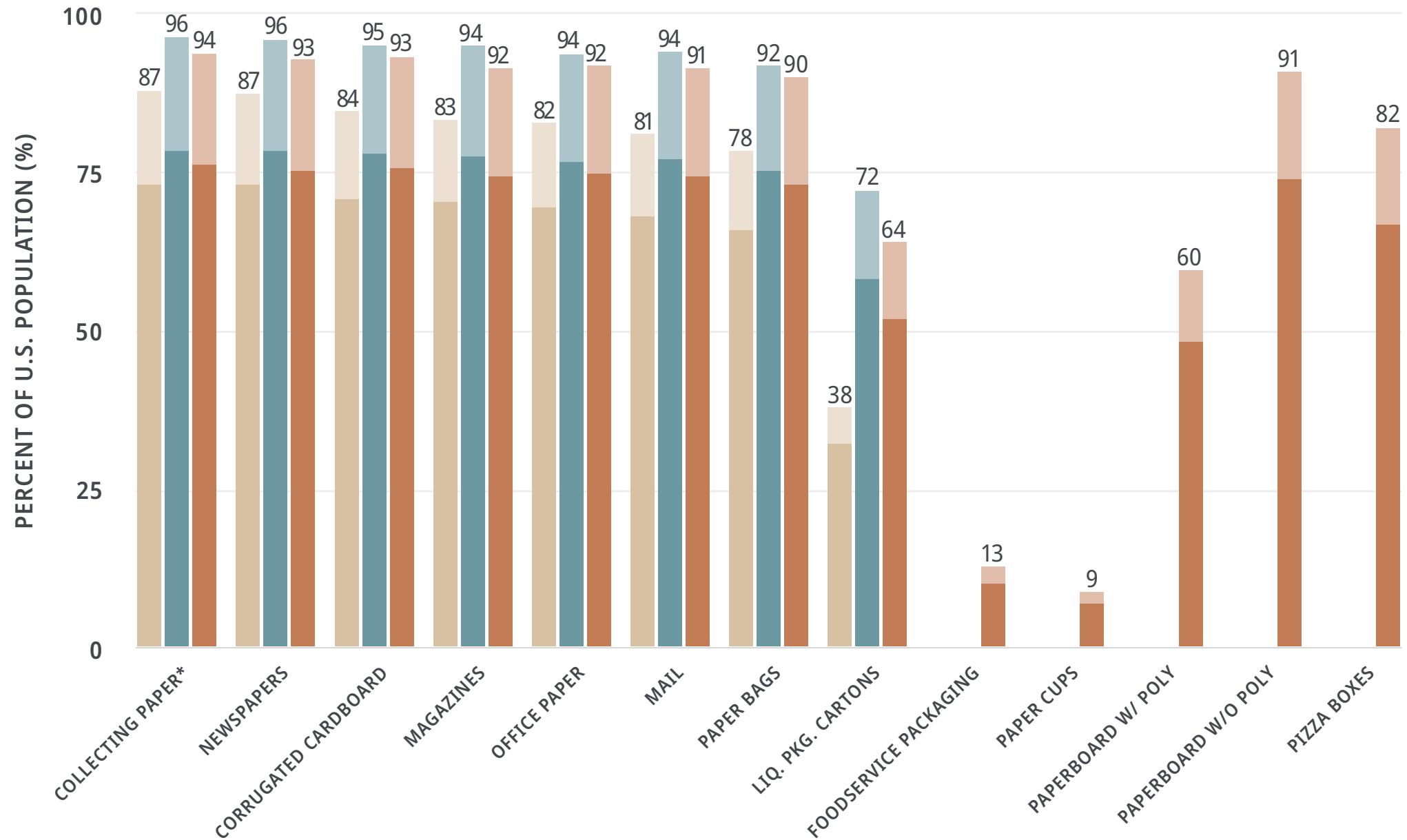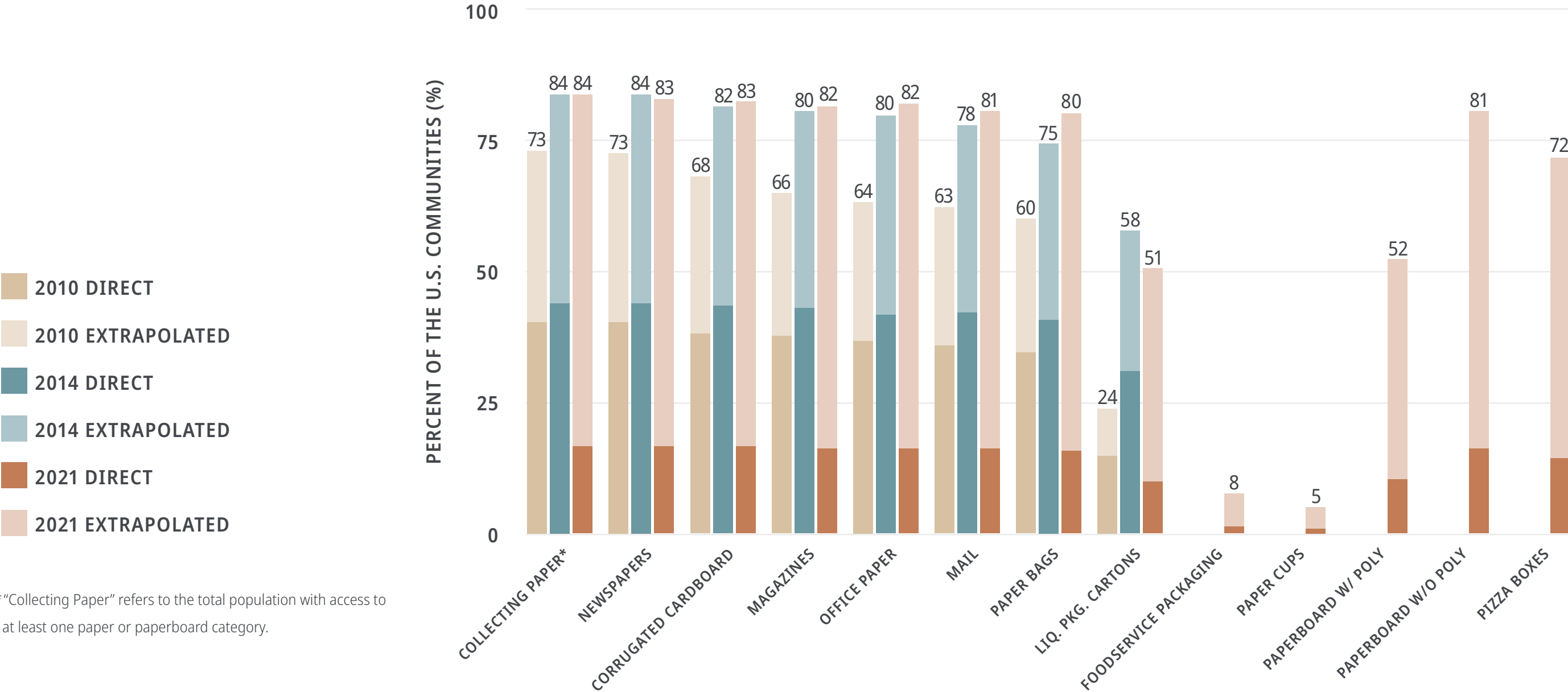- 2010 EXTRAPOLATED
- 2014 DIRECT
- 2014 EXTRAPOLATED
- 2021 DIRECT
- 2021 EXTRAPOLATED

*"Collecting Paper" refers to the total population with access to at least one paper or paperboard category.

Figure 3: *2010 to 2021: Percentage of Communities Collecting Paper/Paperboard*

Legend:
- 2010 DIRECT
- 2010 EXTRAPOLATED
- 2014 DIRECT
- 2014 EXTRAPOLATED
- 2021 DIRECT
- 2021 EXTRAPOLATED

Y-axis: PERCENT OF THE U.S. COMMUNITIES (%)

Data values:
- COLLECTING PAPER*: 73, 84, 84
- NEWSPAPERS: 73, 84, 83
- CORRUGATED CARDBOARD: 68, 82, 83
- MAGAZINES: 66, 80, 82
- OFFICE PAPER: 64, 80, 82
- MAIL: 63, 78, 81
- PAPER BAGS: 60, 75, 80
- LIQ. PKG. CARTONS: 24, 58, 51
- FOODSERVICE PACKAGING: 8
- PAPER CUPS: 5
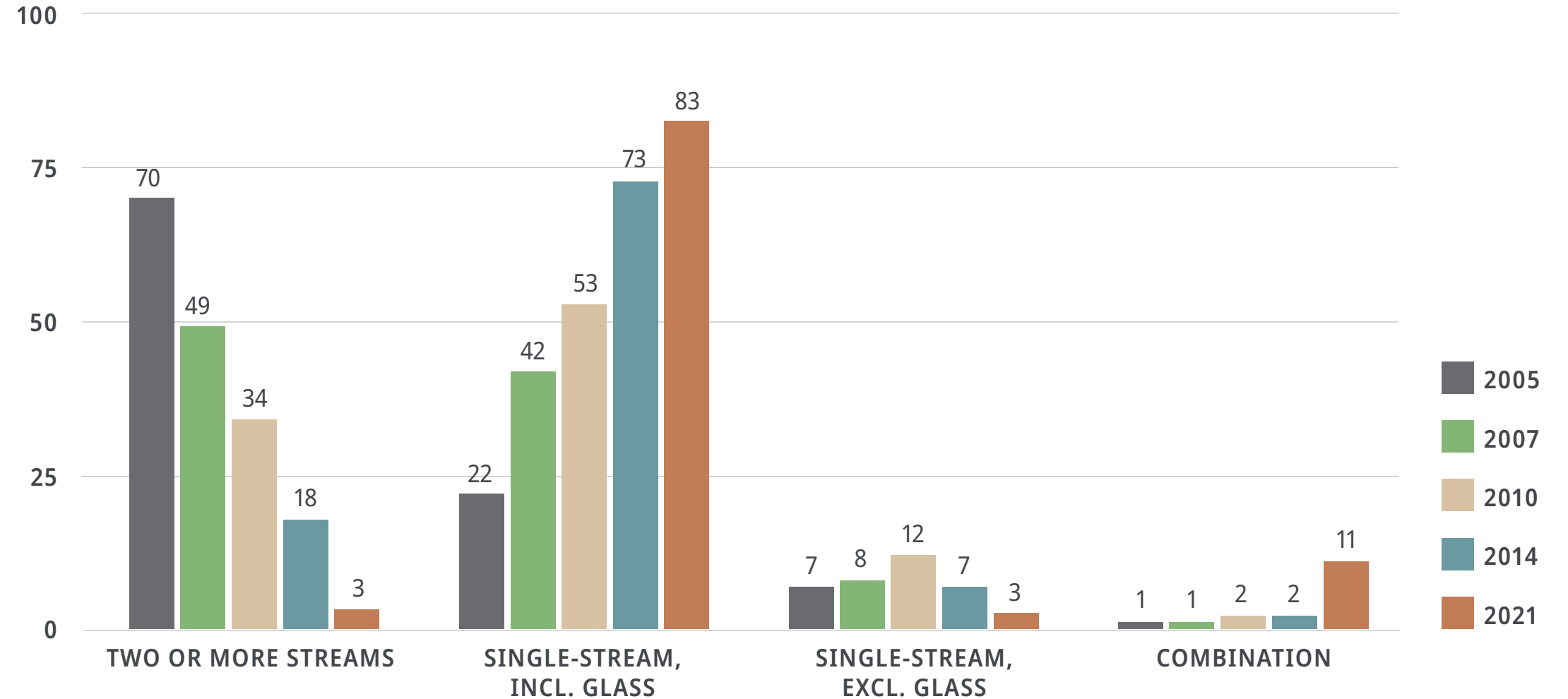- PAPERBOARD W/ POLY: 52
- PAPERBOARD W/O POLY: 81
- PIZZA BOXES: 72

*"Collecting Paper" refers to the total population with access to at least one paper or paperboard category.

Single-stream recycling—where all fiber grades and recyclable containers are collected commingled together in one compartment on the recycling collection vehicle—has been a growing trend for more than twenty years. The prevalence of single-stream collection was first evaluated in the 2000 Study and has continued to be evaluated in the subsequent studies. As shown in Figure 4, the growth in single-stream recycling has steadily increased. In 2005, only 29% of the population with recycling had access to a single-stream program. By 2021, that number has increased to 86%. Note that in the 2021 Study, the "combination" category has expanded to include mixed waste recycling (a system where trash and recyclables are collected in the same container and recy-clables are separated out at the recycling facility) and different collection methods among haulers serving communities with subscription service (subscription services were not included in previous studies).

Figure 4: *Paper/Paperboard Collection Techniques*

Legend: 2005, 2007, 2010, 2014, 2021

TWO OR MORE STREAMS: 70, 49, 34, 18, 3
SINGLE-STREAM, INCL. GLASS: 22, 42, 53, 73, 83
SINGLE-STREAM, EXCL. GLASS: 7, 8, 12, 7, 3
COMBINATION: 1, 1, 2, 2, 11

In the 2021 Study, the Project Team gathered information on how curbside collection services are provided to residents. Each curbside program was associated with one of the following service arrangements:

Municipal—Service is run through the community

Contract/Franchise—The municipality grants a franchise to one or more companies making them the exclusive provider of these services; recycling service is provided to all residents as a requirement of receiving the contract/franchise.

Subscription—Residents must set up their own service with a private hauler; the community may provide a list of haulers that are licensed or operating in the community.

Figure 5 illustrates the breakdown in curbside recycling service arrangements. Over half (54%) of the population receiving curbside collection of paper/paperboard items are served by the municipality. Another 28% of residents with curbside collection are served by communities that contract with one or more private companies to provide collection. Only 6% of the population with access to curbside collection must sign up to receive service from a hauler of their choosing.

ACKNOWLEDGEMENTS

Figure 5: *Distribution of Service Arrangements of Curbside Programs Accepting Paper/Paperboard Items*