

LEGISLATION IN ACTION:

MEASURING THE
IMPACT OF U.S. SINGLE-
USE BAG POLICIES ON
WASTE REDUCTION



TABLE OF CONTENTS

03	<u>Executive Summary</u>
06	<u>Methodology & Approach</u>
06	<u>Why Legislation Is Being Implemented</u>
07	<u>Existing Legislation</u>
09	<u>New Jersey's Get Past Plastic Act</u>
11	<u>Insights From Our Study</u>
11	<u>Insights From the Comparative Review of 11 Existing Reports</u>
14	<u>Insights From Our Study on New Jersey's Get Past Plastic Act</u>
17	<u>The Path Ahead</u>



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EXECUTIVE SUMMARY

The environmental impacts of single-use plastic bags—including waterway pollution, challenges at materials recovery facilities and waste generation—have prompted more than **330 communities and 12 states across the United States to enact legislation** aimed at reducing reliance on single-use plastic bags¹. Despite growing adoption of single-use bag policies, questions persist around which legislative approaches most effectively reduce environmental harm while minimizing unintended consequences.

This white paper, developed by the Consortium to Reinvent the Retail Bag, a pre-competitive collaboration managed by Closed Loop Partners' Center for the Circular Economy, evaluates the efficacy and implications of single-use bag legislation through two key lenses: **(1) a comparative review of 11 existing studies from diverse U.S. communities, and (2) a primary study of New Jersey's Get Past Plastic Act**—currently the most restrictive single-use bag legislation in the country. Together, these analyses provide a data-driven foundation for policymakers seeking to design context-appropriate legislation aligned with their community's environmental goals, consumer behavior and retailer needs.

The national comparative review of 11 studies demonstrates that legislative design matters. Bag fees—particularly those applied universally to all bag types—are the most consistent driver of reductions in bag use. Conversely, bans without fees produce mixed results depending on consumer behavior and the types of bags allowed in replacement. Across all studies, reusable bags only reduce impact when reused multiple times, a threshold not consistently met by consumers today, particularly for thicker plastic bags designed to be reused but are often not.

THE CURRENT STATE OF SINGLE-USE BAG LEGISLATION

100 BILLION
single-use plastic bags
used per year

330
communities have enacted
legislation restricting the
use of single-use plastic
bags

12
states have enacted
legislation restricting the
use of single-use plastic
bags

1 IN 3
Americans live in a
community with legislation

[1] <https://www.rila.org/retail-compliance-center/consumer-bag-legislation>

Building on this context, the New Jersey study explores the environmental and consumer impacts of removing both single-use plastic and paper bags from large-format grocery and super stores. While not intended as a prescriptive model, New Jersey's policy offered a unique opportunity to study the outcomes of highly restrictive legislation.

Key findings from the two-year New Jersey analysis include:

- A **96% reduction in total bags distributed or sold** per week per store, equating to more than **90 million fewer bags in eight months** across the 33 stores in the study.
- A **71% reduction in the material weight of bags** and a **38% decrease in associated greenhouse gas emissions** per week per store.
- Disproportionate use of reusable bags in **pickup and curbside channels**, where lower customer control reduces bring your own (BYO) bag behavior.
- Greater distribution and sales of reusable bags in **rural and lower-income communities**, where consumers were less likely to have reusable bags on hand or bring their own.
- Increasing consumer reports of **bag accumulation over time**, indicating the need for greater reuse infrastructure or bag-sharing solutions.

INSIGHTS FROM OUR STUDY

Comparative Review of 11 Existing Studies:

1. No bag (single-use plastic, single-use paper, reusable) is perfect. All bags have tradeoffs.
2. Bag fees are the only legislative mechanism guaranteed to reduce the number of single-use bags used.
3. Thicker low-density polyethylene (LDPE) reusable bags, typically offered as a replacement when single-use high-density polyethylene (HDPE) bags are banned, have a worse environmental outcome than single-use plastic bags, unless they are used more than six times.

New Jersey's Get Past Plastic Act:

1. Grocery and super stores sold or distributed 96% fewer bags per week during the period studied following the legislation removing all single-use bags.
2. After the single-use bag ban took effect, the weight of bags distributed or sold decreased universally, and the associated emissions of bags decreased overall.
3. "Pick-up" at-store (buy-online pick-up at-store; buy-online pick-up in-store; click and collect; curbside pick-up; online order pick-up) used a disproportionate number of reusable bags.
4. The first four months after the policy's effective date were a transition period that saw increased reusable bag sales and distribution as customers shifted their BYO bag behavior.
5. Following the single-use ban, more reusable bags were used in grocery and super stores located in rural communities or where the household income was less than \$60,000 a year, compared to other demographics.
6. Customers are accumulating too many reusable bags over time, according to customer surveys.
7. Customer sentiment toward the removal of single-use bags largely remained stable over the year following the effective date of the New Jersey Get Past Plastic Act, with happiness being the most common sentiment.

Critically, this study reinforces that **no single legislative model is universally applicable**. Environmental outcomes are influenced by many local factors, including consumer readiness, retail operations and community demographics. Policymakers should be deliberate in designing legislation that reflects these local dynamics and supports consumers in making the intended behavior shifts. Legislation introduced without adequate consumer readiness or operational infrastructure may lead to unintended environmental or equity challenges.

To guide future policy development, the report offers 10 insights on the impact of single-use bag legislation and seven key considerations, including: supporting BYO bag behavior; leveraging bag fees as an effective behavior change tool; aligning policy across regions to reduce consumer confusion; and accounting for socio-economic disparities and system readiness.

Ultimately, effective single-use bag legislation is not about replicating the most stringent model, but about **crafting practical, scalable solutions rooted in community-specific needs**. The Consortium to Reinvent the Retail Bag remains committed to supporting policymakers in this work through collaboration, research and shared learning.

CONSIDERATIONS FOR REGULATORS AND POLICYMAKERS

1. Helping customers bring their own bag or go without one remains the best approach to reduce waste, environmental impact and costs.
2. Bag fees, or a minimum price to charge for bags, are the only legislative mechanism guaranteed to reduce the number of single-use bags used. Banning single-use bags alone does not guarantee behavior change or reduced environmental impact.
3. Uniform legislation implemented at the state or regional level creates a consistent consumer experience, reinforces behavior and eases retailer compliance challenges.
4. Zero or lower waste alternatives should be developed for the pick-up and delivery channels.
5. Recovery and recycling systems need to be put in place for any bags used, including reusable bags.
6. Differential socio-economic impacts should be considered in legislation. Fees are inherently regressive, but there are opportunities to create carve-outs or help customers prepare for legislation.
7. The Consortium to Reinvent the Retail Bag and retailers are willing collaborators to identify, shape and activate thoughtful legislation that balances environmental impact, the needs of customers and the operational realities of retailers.

COLLABORATE WITH YOUR LOCAL RETAILERS TO ENSURE YOU'RE CRAFTING THOUGHTFUL POLICY THAT CONSIDERS ENVIRONMENTAL, OPERATIONAL AND SOCIAL IMPACT.

The Beyond the Bag Initiative, managed by Closed Loop Partners' Center for the Circular Economy, is a multi-year collaboration across retail sectors that aims to eliminate single-use bag waste by scaling tested and proven reduction strategies spanning consumer behavior, operational procedures, recovery and policy. To learn more about this study or the Initiative, contact the Beyond the Bag Initiative team at beyondthebag@closedlooppartners.com.

LEGISLATION IN ACTION: MEASURING THE IMPACT OF U.S. SINGLE-USE BAG POLICIES ON WASTE REDUCTION

ABOUT THE CENTER FOR THE CIRCULAR ECONOMY AND THE CONSORTIUM TO REINVENT THE RETAIL BAG

Closed Loop Partners is at the forefront of building the circular economy. The firm is comprised of three businesses that create a platform for systems change. Closed Loop Capital Management is the firm's investment group, managing venture capital, private equity and catalytic capital & private credit investment strategies on behalf of global corporations, financial institutions and family offices. Closed Loop Builders is the firm's operating group, incubating, building and scaling circular economy infrastructure and services.

The Center for the Circular Economy is the firm's innovation center. The Center executes research and analytics, unites organizations to tackle complex material challenges and implements systemic change that advances the circular economy. The Center's expertise spans circularity across the full lifecycle of materials, connecting upstream innovation to downstream recovery infrastructure and end markets.

The Consortium to Reinvent the Retail Bag, managed by Closed Loop Partners' Center for the Circular Economy, is a multi-year collaboration across retail sectors that aims to eliminate single-use bag waste by scaling tested and proven reduction strategies spanning consumer behavior, operational procedures, recovery and policy. Learn more at www.beyondthebaginitiative.com.

METHODOLOGY & APPROACH

Why are states and municipalities imposing fees and bans on shopping bags?

The United States uses over **100 billion single-use plastic bags a year** in addition to numerous alternatives, including single-use paper bags, thicker plastic bags, reusable bags and bags made of alternative materials. Single-use plastic bags are typically used for an average of 12 minutes before being tossed in the trash, used as a bin liner or waste bag, getting tangled in machinery at recycling facilities or migrating to our waterways, which has led to plastic bags becoming a top 10 beach litter item². To reduce bag pollution on land and in waterways, more than **330 communities and 12 states have enacted legislation**³ to try to reduce or eliminate single-use plastic bags and their environmental impact. This legislation includes a fee on single-use bags, a ban on single-use plastic bags and often a combination of both.

[2] https://oceanconservancy.org/wp-content/uploads/2021/09/Annual-Report_FINAL_Digital.pdf

[3] <https://www.rila.org/retail-compliance-center/consumer-bag-legislation>

However, there is an ongoing debate about whether legislation effectively reduces the environmental impact of single-use bags. Legislation varies from community to community regarding what types of bags are allowed and the fee customers are charged for a single-use bag. These variables influence total bag consumption, which determines the environmental impact, including the volume of single-use bags used, their weight, greenhouse gas emissions and the number of single-use bags leaked into the environment.

Table 1: Summary of the Efficacy of Single-Use Bag Legislation

		All single-use bags banned	Single-use bags available with a fee			Paper bags available for free	Single-use plastic
		Single-use plastic & paper bag ban	Single-use plastic bag ban + Bag fee on other single-use bags	Universal bag fee	Single-use plastic bag ban + Bag fee on paper bags	Single-use plastic bag ban	All bags available and free (status quo)
Bag Type	Thin Single-Use Plastic Bag (<2.25 mil)	Banned	Banned	(\$) Fee	Banned	Banned	Free
	Thick Plastic Bag (2.25+ mil)	Banned	(\$) Fee	(\$) Fee	Free/ Not Specified	Free	Free
	Paper	Banned	(\$) Fee	(\$) Fee	(\$) Fee	Free	Free
Impact	Absolute change in single-use bag rate	↓ 96%	↓ 35% - 50%	↓ 28% - 42%	↓ 25% - 51%	↓ 0% - 32%	N/A
	Absolute change in reusable bag rate*	N/A	↑ 21% - 47%	↑ 16% - 33%	↑ 23% - 59%	↓ 4% - ↑ 20%	N/A
	Absolute change in no-bagging rate	N/A	↑ 9% - 30%	↑ 10% - 13%	↑ 1% - 24%	↑ 2% - 9%	N/A

Table 1 summarizes the different types of legislation that are in place around the United States by synthesizing what bags can be used and the impact on the total bags used or changes in consumer behavior. These data points are pulled from the sources in Table 2.

What research already exists on bags and bag legislation?

We **analyzed 40 existing reports** and studies on bag legislation in the United States and abroad, but we primarily **focused on 11 studies** that evaluated the impact of legislation in 11 different communities in the U.S. These studies mainly focused on measuring customers' actions at checkout, including the proportion of customers using single-use bags, bringing their own bag or going without a bag.

Table 2: 11 Source Reports and Studies

Single-use plastic bag ban & bag fee on other single-use bags	Universal bag fee	Single-use plastic bag ban & bag fee on paper bags	Single-use plastic bag ban
• Richmond, California (2015) Academic paper: Bans vs. Fees: Disposable Carryout Bag Policies and Bag Usage • Alameda County, California (2014) Government report: Reusable Bag Ordinance – Update and Change in Bag Price Recommendation • Mountain View, California (2014) Government report: Amend Chapter 16, Section 16.82, of the Mountain View City Code to Retain Current Charges for Carry-Out Bag • San Mateo County, California (2014) Government report: San Mateo County Reusable Bag Ordinance Survey and Reporting Report	• Chicago, Illinois (2018) Academic paper: Skipping The Bag; Assessing the impact of Chicago's tax on disposable bags • Montgomery County, Maryland (2018) Academic paper: Can Small Incentives Have Large Effects? The Impact of Taxes versus Bonuses on Disposable Bag Use	• San Jose, California (2012) Government report: Bring your own bag ordinance implementation results and actions to reduce EPS foam food ware • Santa Monica, California (2013) NGO report: The Effects of the Plastic Bag Ban on Consumer Bag Choice at Santa Monica Grocery Stores	• Chicago, Illinois (2018) Academic paper: Skipping The Bag; Assessing the impact of Chicago's tax on disposable bags • Austin, Texas (2015) Government report: Environmental Effects of the Single Use Bag Ordinance in Austin, Texas • Philadelphia, Pennsylvania (2023) Government Report: Evaluating the Ban: Philadelphia's Plastic Bag Ban and Changes in Bag Usage in the City

We also reviewed several prominent lifecycle assessments on different shopping bags. We utilized Robert M. Kimmel, Sc.D.'s *Life Cycle Assessment of Grocery Bags in Common Use in the United States* as our base Life Cycle Assessment (LCA) to help us compare the total impact of different legislation.

New Jersey's Get Past Plastic Act:

At the time of our 2022 study, New Jersey's removal of both single-use plastic and paper bags through the Get Past Plastic Act had just been implemented (effective date of May 4, 2022) and had not been assessed through a publicly available academic or scientific report. To fill this gap, the Consortium to Reinvent the Retail Bag conducted an independent study of the Get Past Plastic Act, analyzing the impact of removing single-use plastic and paper bags compared to the status quo of providing single-use plastic bags for free.

Over two years, we studied the **impact of removing single-use bags on consumers and the environment**. The goals of our study in New Jersey were to:

1. Measure the holistic impact of the New Jersey legislation through primary data sources.
2. Identify opportunities to improve environmental and equity outcomes further.

NEW JERSEY'S GET PAST PLASTIC ACT

Implemented in May 2022, New Jersey's Get Past Plastic Act is the United States' most restrictive legislation for single-use bags. The policy bans distribution of all single-use bags (paper and plastic) from grocery and super stores occupying at least 2,500 square feet. All other retailers, including small format grocers, can still offer paper bags. Like fees and bans implemented in other communities, the act intends to "keep[s] our communities clean and protect[s] aquatic and marine life as well as wildlife."

How did we assess New Jersey's Get Past Plastic Act?

We issued four surveys to New Jersey residents over one year after the Get Past Plastic Act went into effect (Equity Impact) and analyzed two years of single-use and reusable bag procurement and sales data from 33 grocery or super stores across 11 diverse communities in New Jersey (Environmental Impact)⁴.

How did we measure the impact on individuals and consumers?

We issued four surveys to 2,600 New Jersey residents to measure their awareness, understanding, sentiment, bag saturation, behavior and attitudes towards removing single-use bags in grocery and super stores over time. Survey details include:

- **Respondents:** 650 respondents per survey, 2,600 total respondents. Each survey was representative of New Jersey's population.
- **Survey issuance dates:** May 2022, June 2022, July 2022 and April 2023.
- **Number of questions:** 28 questions, including demographic questions, were included in each survey.

[4] We did not have access to data on the sales of tangential products like trash bags, pet waste bags, or produce bags that might be impacted by the bag ban, so this assessment fell outside the scope of our work. Other studies, including Rebecca Taylor's [Bag, "Leakage": The Effect of Disposable Carryout Bag Regulations on Unregulated Bags](#), saw up to a 120% increase in sales of certain trash bags, offsetting about 28.5% of the plastic reduction from the legislation studied.

[5] Bags used covers all single-use bags procured or distributed along with a fee and all reusable bags procured or sold. Single-use bags used is quantified through procurement data. Reusable bags used is quantified through a mix of reusable bags sold and procured. Reusable bags were not tracked to the individual bag in pick-up, as most stores charged a flat fee for unlimited reusable bags.

How did we measure environmental impact?

We measured the quantity of bags used (distributed or sold)⁶, the weight of bags used and the associated greenhouse gas emissions of bags used across diverse communities and stores. Because each bag type varies in its total weight and potential associated greenhouse gas emissions, we documented the bag material used, weighed the bags and leveraged the best-in-class LCAs for shopping bags in use today.

Table 3: Overview of Commonly Used Shopping Bags



	T-Shirt Plastic (<1.0 mil)	Thicker Plastic (2.25+ mil)	Biodegradable or Compostable	Paper	Synthetic Fibers	Cotton
Material type	High-Density Polyethylene (HDPE)	Low-Density Polyethylene (LDPE)	• Hydrocarbon (ex. PVA) • Biopolymer (PLA)	• Wood pulp • Recycled fiber	• Polypropylene (PP) • Polyester (PET)	• Natural fibers
Cost per bag	\$.01	\$.06 to \$.12	\$.08 to \$.10	\$.04 to \$.10	\$.10 to \$.25	Varies
# of uses to equal SUP	Baseline	3 to 6	<1 to 42	3 to 43	4 to 52	131 to 20,000
Average # of actual uses	<2 waste-based reuse (trash / pet waste)	<2 waste-based reuse (trash / pet waste)	<2 waste-based reuse (compost / pet waste)	<2 waste-based reuse (recycling / compost)	N/A	N/A
End-of-life pathway	• Store recyclable, but rarely recycled (<10%) • Limited pull from end market due to contamination	• Store recyclable, but rarely recycled (<10%) • Limited pull from end market due to contamination	• Biodegradable, but limited pull from end market • Further testing needed on decomposition	• Recoverable with relatively strong demand and infrastructure	• Limited recovery methods and pull from end markets	• Limited recovery methods and pull from end markets
General notes	• Contamination at MRFs is challenging • High litter potential (top 10 beach litter item)	• Similar challenges to T-Sack, often paired with policy reducing demand • Reuses don't often match intent	• Contamination major issue at composting sites • Customers don't understand terms	• Higher energy and water usage in production • Strong customer understanding	• Bag reuse unknown • Behavior dependent • Availability of bags tied to socioeconomic variables	• Bag reuse unknown • Behavior dependent • Availability of bags tied to socioeconomic variables

This approach ensures a holistic comparison of single-use plastic bags across regulated and unregulated markets, compared to eliminating single-use paper and plastic bags in stores. The stores, specific communities and retailers involved in this study are aggregated and anonymized.

- **Data collected from stores:** All single-use paper and plastic bags procured or sold, all reusable bags (polyester, polypropylene, cotton, insulated or other) procured or sold, weight and material type of all single-use and reusable bags used and total units of products sold.

[6] Bags used covers all single-use bags procured or distributed along with a fee and all reusable bags procured or sold. Single-use bags used is quantified through procurement data. Reusable bags used is quantified through a mix of reusable bags sold and procured. Reusable bags were not tracked to the individual bag in pick-up, as most stores charged a flat fee for unlimited reusable bags.

- **Timeframe of data collected:** To measure the impact of the legislation, we analyzed two years of data, one year before and one year after the effective date of the Get Past Plastic Act⁷. The data from the year before the effective date includes all bags used (single-use bags and reusable bags sold), and the data from the year after the effective date is only reusable bags procured or sold, since single-use bags could not be used or distributed.
- **Sociodemographic calculations:** All calculations based on sociodemographic variables are made using the sociodemographic statistics of the communities the 33 stores are in, and they are pulled from the U.S. Census⁸. The sociodemographic factors of individual customers shopping in the stores are unknown, and it is likely that the customers are not perfectly representative of the community.
- **Greenhouse gas emissions calculations:** Dr. Kimmel's comparative lifecycle assessment (LCA) through Clemson University⁹ was used to calculate the greenhouse gas emissions for all single-use and reusable bags. The report utilizes the same methodology to estimate the relative environmental impact of different single-use and reusable bags, and this same approach is applied to the study to measure the relative change in associated emissions for bags. This study did not measure the absolute emissions, as we did not conduct an independent LCA.

INSIGHTS FROM OUR STUDY

What did we learn from the comparative review of the 11 existing reports and communities across the United States?

1) No bag (single-use plastic, single-use paper, reusable) is perfect. All bags have tradeoffs.

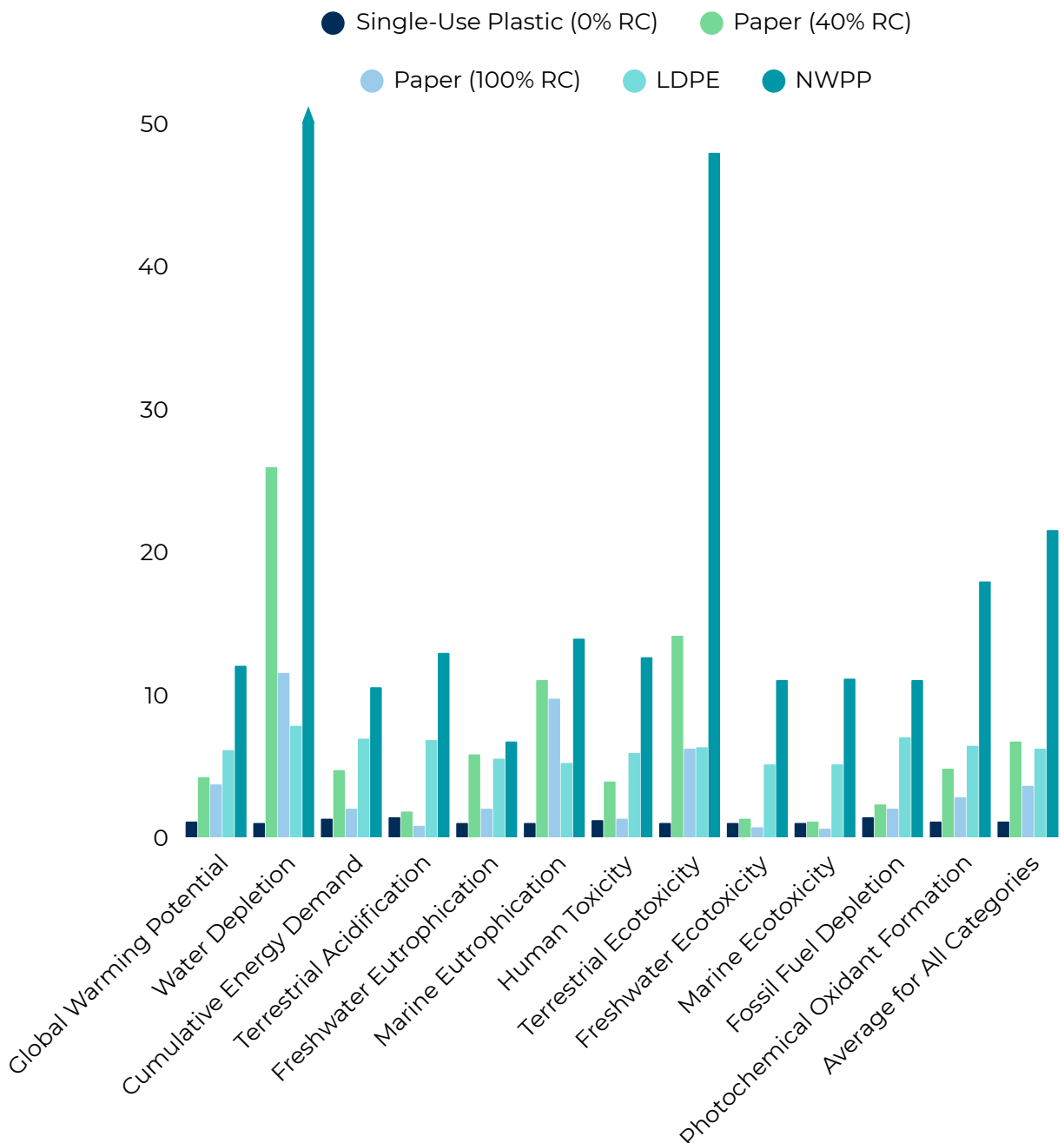
Every new single-use or reusable bag created will have an environmental impact. **Reducing the number of bags produced and used is the only way to reduce environmental impact holistically.** Kimmel's *Life Cycle Assessment of Grocery Bags in Common Use in the United States* generally summarizes the classic high-density polyethylene (HDPE) single-use plastic bag as having the lowest overall environmental impact compared to paper bags, thicker low-density polyethylene (LDPE) bags and non-woven polypropylene (NWPP) reusable bags on a per trip basis. Paper bags with 100% recycled content are estimated to have lower freshwater and marine ecotoxicity compared to single-use plastic bags. However, the single-use plastic bag is estimated to perform better in terms of the other 10 environmental impact metrics measured: global warming potential, water depletion, cumulative energy demand, terrestrial acidification, freshwater eutrophication, marine eutrophication, human toxicology, terrestrial ecotoxicity, fossil fuel depletion and photochemical formation. While the single-use plastic bag might have a lower environmental impact from a resource usage perspective, it comes with its well-known tradeoffs like being a top 10 beach litter item, having a low recovery rate and posing challenges in the recycling stream.

[7] The summary statistics in this brief do not include all two years of procurement and sales data. Before the effective date includes single-use bags procured and reusable bags sold from May 2021 to December 2021 (eight months), and after the effective date includes reusable bags procured and sold from September 2022 to May 2023. There was a transition period from January 2022 to August 2022 as stores started to prepare for the law, and stores responded by reducing the number of single-use bags ordered, transitioning out single-use bags before they were required and ordering additional reusable bags. This also represented a transition period for customers as they adopted new behaviors. The impact of the transition period is measured separately. The seasonal differences in bag consumption are partially accounted for as bag consumption is normalized for total units of product sold in a store over the same time period.

[8] <https://www.census.gov/>

[9] https://open.clemson.edu/cgi/viewcontent.cgi?article=1006&context=cudp_environment

Graph 1: Comparing the Impact of Commonly Used Shopping Bags to the Single-Use Plastic Bag with 30% Recycled Content



Robert M. Kimmel, Sc.D.'s Life Cycle Assessment of Grocery Bags in Common Use in the United States

Graph 1 is pulled directly from Robert Kimmel's report, and it compares the relative impact of different bags used compared to a base of a single-use plastic bag with 30% recycled content. Terminology included: RC – Recycled Content; LDPE – Low-Density Polyethylene; NWPP – Non-Woven Polypropylene.

WHAT SINGLE-USE BAG LEGISLATION WAS IMPLEMENTED IN CHICAGO AND PHILADELPHIA?

In November 2016, Chicago repealed its ban on single-use plastic bags, opting to implement a \$.07 fee instead starting February 2017. By comparison, Philadelphia banned single-use plastic bags and required retailers to offer paper bags.

2) Bag fees are the only legislative mechanism guaranteed to reduce the number of single-use bags used.

In the reports and communities studied where single-use bag fees were implemented, including Washington, DC¹⁰, Chicago¹¹ and California¹², there was a **universal decrease in total bags used and bag litter post-implementation of a bag fee**. However, the holistic environmental impact beyond total bags used varied across markets due to the type of bag used after the post-legislation. By comparison, implementing a single-use bag ban alone sometimes does reduce total bags used, as seen in Philadelphia¹³, but a single-use plastic bag ban alone has also not changed total bags used in specific markets, as seen in Chicago¹⁴.



SINGLE-USE BAG FEES IMPACT ON RETAILERS

Retailers consistently noted that all alternative bags—whether paper, thicker plastic or reusable—cost significantly more than standard single-use plastic bags, often six to 10 times as much (see Table 3). While many retailers expressed openness to fees, they emphasized the importance of a minimum price floor and careful consideration of how fee revenue is distributed. For low-margin sectors like grocery, the cost burden of bags is a critical factor in implementation discussions.

3) Thicker LDPE bags, typically offered as a replacement when single-use HDPE bags are banned, have a worse environmental outcome than single-use plastic bags, unless they are used more than six times.

Kimmel's *Life Cycle Assessment of Grocery Bags in Common Use in the United States* estimates that consumers are using thicker LDPE bags on average 3.1 times, but these bags would need to be used on average 6.2 times without waste-based secondary uses (e.g., trash bin liner) or 9.5 times when including waste-based secondary uses. When looking at public applications, **California documented 157,385 tons of plastic bag waste in 2014** when SB270, which allowed the use of the thicker LDPE bag for a fee, was passed. By 2022, **plastic bag waste rose to 231,072 tons**. Total plastic bag waste rose from 4.08 tons per 1,000 people in 2014 to 5.89 tons per 1,000 people in 2022¹⁵. The average LDPE bag weighs nearly four times as much as the thinner single-use HDPE bag, and LDPE has a 90% higher global warming potential than HDPE per kilogram. In short, thicker LDPE bags use significantly more plastic, have a higher global warming potential per bag due to their weight and material, still leak into the environment and are not, at the time of study, reused at a requisite rate to offset the larger environmental impact.

[10] <https://ggwash.org/view/38159/the-data-proves-the-dc-bag-fee-is-working>

[11] https://www.ideas42.org/wp-content/uploads/2018/09/Bag_Tax_Paper_final.pdf

[12] <https://www.latimes.com/environment/story/2023-08-24/whats-the-deal-with-single-use-plastic-bag-bans>

[13] <https://www.phila.gov/media/20230428110156/PlasticBagBanReportApril2023.pdf>

[14] https://www.ideas42.org/wp-content/uploads/2018/09/Bag_Tax_Paper_final.pdf

[15] <https://www.latimes.com/environment/story/2024-08-30/california-tries-again-to-ban-plastic-grocery-bags>

What did we learn from our study of New Jersey's Get Past Plastic Act?

1) Grocery and super stores sold or distributed 96% fewer bags per week during the period studied following the legislation removing all single-use bags.

For every 100 single-use or reusable bags procured or sold by each store before the Get Past Plastic Act, each store in this study only sold or distributed four reusable bags. The smallest decrease in bags used at stores without preexisting legislation was 92%. In total, it is estimated that more than 90,000,000 fewer bags [of all kinds] were used in eight months across these 33 stores. This reduction in bags also coincided with a **60%+ decrease in single-use bags that leaked into the environment**¹⁶.

In total, it is estimated that more than **90,000,000 fewer bags of all kinds were given out in eight months across the 33 stores** compared to the pre-ban usage.

Graphic 1: Summarized Environmental Impact of Removing Single-Use Bags from Grocery Stores in New Jersey

Quantity of Bags
Sold or Distributed /
Store / Week

-96%
DECREASE

Weight of Bags
Sold or Distributed /
Store / Week

-71%
DECREASE

Associated Emissions of Bags
Sold or Distributed /
Store / Week

-38%
DECREASE

Graphic 1 summarizes the change in the impact of the 33 stores included in the study. For example, if a store distributed or sold 100 single-use and reusable bags in a week before the effective date of the Get Past Plastic Act, it would now distribute or sell four reusable bags.

2) After the single-use bag ban took effect, the weight of bags distributed or sold decreased universally, and the associated emissions of bags decreased overall¹⁷.

The stores participating in the study typically offer multiple reusable bags made of one material but of differing sizes. We accounted for this variation through sales data and by weighing the bags provided by the participating stores. Our study found that the average non-woven polypropylene reusable bag used by the participating stores is 9x heavier and has a 15x higher global warming potential than the average single-use plastic bag¹⁸, whereas the average polyester bag used by the participating stores is 8x heavier and has a 20x higher global warming potential.

[16] <https://dep.nj.gov/wp-content/uploads/get-past-plastic/docs/pac-second-year-report.pdf>

[17] Except for five stores where associated emissions increased.

[18] We took samples of single-use and reusable bags from each participating retailer, and we weighed the bags. The global warming potential of bags is a calculation based off weight and the greenhouse gas emissions per kilogram of material as found in the base LCA used.

Despite the reusable bags being heavier and having higher global warming potential, the 33 stores in our study saw an estimated **71% decrease in total material weight of bags used per week and a 38% decrease in associated emissions of bags used per week**. In total, it is estimated that the 33 stores in the study **avoided more than 570 tons of bags and 700 MTCO₂e** during the eight-month study period. Five stores saw their estimated associated emissions increase, and each saw a below-average reduction in bags used (<95% decrease). Of these stores that saw an increase in associated emissions, two saw only a 92% decrease in bags used, and another two stores primarily sold and procured polyester bags, which have higher associated emissions per gram than non-woven polypropylene.

3) Pick-up at-store used a disproportionate number of bags.

“Pick-up” (buy-online pick-up at-store; buy-online pick-up in-store; click and collect; curbside pick-up; online order pick-up), a channel where customers order goods online and pick them up either curbside or in the store, accounts for only about **6% of the average grocery store’s total sales**¹⁹. However, in this study, **pick-up used 32% of all reusable bags** after the effective date. This study does not have any estimates on single-use bags used in the pick-up channel before the effective date, and we utilized procured reusable bags to estimate the number of reusable bags used in pick-up. The stores included in this study did not sell reusable bags by the unit but charged a flat fee (ranging from \$1 to \$1.50) to provide customers with as many reusable bags as needed per order.

4) The first four months after the policy’s effective date were a transition period that saw increased reusable bag sales and distributed as customers shifted their BYO bag behavior.

Compared to the steady state, **stores used 3,400 additional reusable bags in the first week and 52% more reusable bags per week in the first four weeks following the effective date** of the legislation. The number of reusable bags used decreased to the steady state as customers increasingly reported bringing their bag most or all the time across all shopping occasions, including grocery, superstore, pharmacy, convenience, apparel and restaurants. Grocery saw the largest change of 14 percentage points, as 83% of all customers reported bringing their bag most or all of the time by August 2022. By May 2023, 85% of customers reported bringing their bag to grocery stores most or all the time.

5) Following the single-use ban, more reusable bags were used in grocery and super stores in rural communities or where the household income was less than \$60,000 a year, compared to other demographics.

While all stores studied without preexisting legislation saw a 92% or greater reduction in bags used, stores located in rural communities or serving communities with a household income of \$60,000 or less a year used comparatively more reusable bags after the effective date of the legislation, creating equity challenges. In both instances, these stores used more reusable bags compared to the average store after the effective date (**35% more for rural stores and 27% more for stores in communities with a household income of \$60,000 or less**) despite using fewer single-use and reusable bags than the average store before the effective date.

[19] <https://www.supermarketnews.com/consumer-trends/online-grocery-sales-slide-7-72b>

Customers earning less than \$60,000 a year were also the least likely to report having enough reusable bags at the effective date, and rural customers were the least likely to report bringing their own reusable bags most or all of the time in the consumer surveys.

NEW JERSEY CONSUMER SURVEY METHODOLOGY

Four surveys were issued over 2022 and 2023, with 650 different New Jersey residents included in each survey. These surveys included questions to measure customer awareness, attitudes and behavior following the rollout of the policy. Timeframes for the surveys include:

- Wave 1: May 2022
- Wave 2: June 2022
- Wave 3: July-August 2022
- Wave 4: April 2023

6) Customers are accumulating too many reusable bags.

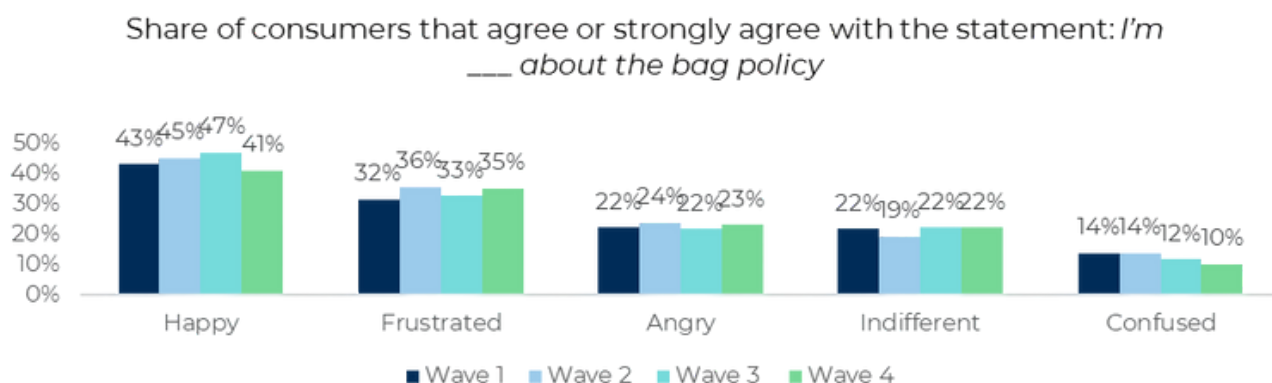
One year after the effective date, 91% of survey respondents, up from 75% at the effective date, indicated that they had enough or too many reusable bags. 62% of survey respondents, up from 33%, had too many reusable bags. **16% of survey respondents, up from 5%, indicated they had too many reusable bags and wanted to dispose of them.**

7) Customer sentiment towards the removal of single-use bags largely remained stable over the year following the effective date of the New Jersey Get Past Plastic Act.

43% of survey respondents indicated they were happy at the legislation's effective date, and 41% indicated they were happy one year after. Like happiness, **no sentiment, including frustration, anger and indifference, saw greater than a four percentage-**

point change between the effective date and one year after the effective date, with some fluctuations in the four percentage-point variance between surveys. One year after the effective date, happiness was the most common sentiment (41%), frustration was the second most common sentiment (35%), anger was the third (23%), indifference was the fourth (22%) and confusion was the fifth (10%)²⁰.

Graph 2: Measuring Sentiment Towards New Jersey's Bag Policy Over Time



[20] Survey respondents could share multiple sentiments, which is why the percentages don't add up to 100%. For example, customers could respond that they were both happy and confused.

WHERE DO WE GO FROM HERE?

New Jersey's Get Past Plastic Act reduced more bags compared to other legislative mechanisms and reduced relative material weight and associated emissions of bags used. However, there are equity and environmental challenges with New Jersey's law and other single-use bag legislation, and this poses the question of what could change to improve outcomes.

CONSIDERATIONS FOR REGULATORS AND POLICYMAKERS

1. Helping customers bring their own bag or go without one remains the best approach to reduce waste, environmental impact and costs.
2. Bag fees, or a minimum price to charge for bags, are the only legislative mechanism guaranteed to reduce the number of single-use bags used. Banning single-use bags alone does not guarantee behavior change or reduced environmental impact.
3. Uniform legislation implemented at the state or regional level creates a consistent consumer experience, reinforces behavior and eases retailer compliance challenges.
4. Zero or lower waste alternatives should be developed for the pick-up and delivery channels.
5. Recovery and recycling systems need to be put in place for any bags used, including reusable bags.
6. Differential socio-economic impacts should be considered in legislation. Fees are inherently regressive, but there are opportunities to create carve-outs or help customers prepare for legislation.
7. The Consortium to Reinvent the Retail Bag and retailers are willing collaborators to identify, shape and activate thoughtful legislation that balances environmental impact, the needs of customers and the operational realities of retailers.

Understanding tradeoffs is key to creating effective single-use bag legislation.

Legislation is an effective tool to reduce the environmental impact of single-use bags.

Each community is distinct—no universal legislation will work for every community, and some policies will undoubtedly prove more effective than others. The data-driven analysis in our study provides visibility into some of the unintended consequences that may arise from accessibility, equity and environmental standpoints. Understanding the tradeoffs of various single-use bag legislation types is key to unlocking effective policy in individual states and communities.

How to learn more.

Please contact us at beyondthebag@closedlooppartners.com or check our publicly available policy resources here <http://closedlooppartners.com/beyond-the-bag/policy>.

ACKNOWLEDGEMENTS

We completed our study of the environmental and equity impact of New Jersey's Get Past Plastic Act in collaboration with multiple organizations, including retailers that shared their data. Thank you to Cascadia Consulting Group, which developed the model to help measure the environmental impact. Thank you to Lab42, which issued the consumer surveys to help us measure the equity impact. Photos by Nicholas Pizzolato.



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