



COMMODITY PROFILE

Market Assessment
June 30, 2026

Background

The Plastics Recycling Market Assessment (Assessment) for Polyethylene Terephthalate (PET), High-Density Polyethylene (HDPE), and Polypropylene (PP) was conducted by Resource Recycling Systems (RRS) for the North Carolina Department of Environmental Quality (DEQ). Except where specifically noted, the general term “plastic” refers to all three resin types. The Assessment provides an overview of the current state of North Carolina plastic generation and recovery relationships, including estimated total generation rates, recovery rates, future generation rate projections, and material demand.

The first part of the Assessment estimates the total generation and future generation of post-consumer plastic packaging in North Carolina using a combination of available data from the fiscal year 2024-25 annual local government solid waste and materials management reports and waste composition data from the 2025 NC Waste Characterization Study (Study). Each North Carolina county and municipality is required to complete an annual report on their solid waste and recycling activities per § 130A-309.09A. DEQ provided the extracted fiscal year 2024-25 data for the Assessment.

The second part of the Assessment involves an analysis of information received from North Carolina-based plastics recyclers and covers more than just post-consumer packaging. The Assessment covers several types of businesses involved in plastics recycling including haulers, brokers, processors, and end-users utilizing recycled plastic in the manufacture of new products. Throughout the Assessment, the term “plastics recyclers” refers to any of these types of businesses. DEQ identified 56 plastics recyclers listed in the North Carolina Recycling Markets Directory or known through industry connections. The North Carolina Recycling Markets Directory is a continuously updated, online database that lists recycling companies that collect, transport, broker, process, or remanufacture recovered materials in North Carolina. Of the 56 companies identified, 18 were willing to confidentially share data surrounding the quantities of PET, HDPE, and PP recovered, associated costs, processing capacity, expansion capabilities, and investment and support needs.

PLASTIC RESIN DESCRIPTIONS

Polyethylene Terephthalate (PET)

Polyethylene terephthalate (PET), identified as resin code #1, is a thermoplastic polymer widely used in packaging, particularly for food and beverages. It is valued for its strength, clarity, and strong barrier properties that help protect contents from moisture and gases. PET is most commonly used for beverage bottles such as water and soft drinks, as well as for food containers, clamshell packaging, and some thermoformed trays.

Recycled PET, or rPET, is produced from post-consumer bottles and containers and is a key material in circular packaging systems. A primary end use is the production of new beverage bottles and food-grade containers, often referred to as bottle-to-bottle recycling. rPET is also widely used in fibers for textiles such as carpeting, clothing, and insulation, as well as in strapping, thermoformed packaging, and various industrial applications.

High-Density Polyethylene (HDPE)

High-density polyethylene (HDPE), identified as resin code #2, is a thermoplastic polymer, known for its strength, durability, and resistance to moisture and chemicals. It is one of the most commonly used plastics in packaging due to its relatively low cost and versatility. In the packaging sector, it is used to manufacture rigid containers such as milk jugs, detergent bottles, shampoo bottles, household cleaner containers, and some food storage containers. Additionally, more durable injection-molded items, such as buckets, pails, and crates are typically made from HDPE.

Recycled HDPE, often referred to as rHDPE, is processed from post-consumer and post-industrial material. Common end uses include non-food containers, plastic lumber and outdoor decking, piping, crates, recycling bins, and landscaping materials such as flowerpots and edging. In some cases, rHDPE can also be used in new bottles and containers that meet regulatory standards for food contact.¹

Polypropylene (PP)

Polypropylene (PP), identified as resin code #5, is a thermoplastic polymer widely used in packaging due to its strength, heat resistance, and ability to withstand fatigue from repeated use. In the packaging sector, PP is used to produce items such as yogurt cups, margarine and deli containers, microwaveable food containers, prescription bottles, bottle caps and closures, and flexible packaging such as films and pouches. Polypropylene also is used for buckets, laundry baskets, and other plastics classified as bulky rigid plastics by commodity markets.

Recycled polypropylene, or rPP, is derived from post-consumer and post-industrial sources. Common end uses include automotive parts, storage bins, pallets, battery cases, and various consumer goods such as hangers, brooms, and brushes.

Generation

Generation estimates only cover plastic packaging. Examples of packaging material types are provided in Table 1. Packaging generation of PET, HDPE, and PP for the Assessment was estimated using fiscal year 2024-25 annual local government solid waste and materials management reports recovery data combined with the quantity of plastic landfilled based on waste composition data determined from the Study. The following calculation was used:

$$\text{TOTAL PLASTIC GENERATION} = \text{PLASTIC RECOVERY} + \text{PLASTIC LANDFILLED}$$

Table 1. Examples of packaging material types for PET, HDPE, and PP

RECYCLABLE PLASTIC TYPE	PACKAGING EXAMPLES
PET Containers & Packaging	water and soft drinks, food containers, clamshell packaging, and some thermoformed trays
HDPE Containers	milk jugs, detergent bottles, shampoo bottles, household cleaner containers, durable injection-molded items, such as buckets, pails, and crates
PP Containers	yogurt cups, margarine and deli containers, microwaveable food containers, prescription bottles, bottle caps and closures

NORTH CAROLINA LOCAL GOVERNMENT RECOVERY

North Carolina requires units of local government to submit an annual materials management and recycling report. The report includes an accounting of the recyclable materials collected by local governments or through their collection contracts. Local governments in North Carolina primarily handle materials generated from

¹ FDA Accelerates Approvals for Recycled Plastics in Food Packaging" — *Plastics Engineering*, June 2025 <https://www.plasticsengineering.org/2025/06/fda-accepts-recycled-hdpe-for-food-002485/>

households, but some also serve commercial and/or multifamily customers. Data is reported for typical household recyclables (e.g., plastic bottles and jars, glass bottles, aluminum and steel cans, mixed paper and cardboard) and other recovered materials (e.g., tires, construction and demolition materials, electronics, food waste, oil, batteries). Table 2 shows that North Carolina local governments recovered 38,712 tons of PET, HDPE, and PP packaging during fiscal year 2024-25. PET is the predominant plastic resin recovered by local government recycling programs comprising 65% of the total quantity of plastic material recovered.

Table 2. North Carolina Residential Plastics Recovery Data in Fiscal Year 2024-25

RECYCLABLE PLASTIC TYPE	RECOVERED (LBS.)	RECOVERED (TONS)	PERCENT OF RECOVERED
PET Containers & Packaging	50,651,144	25,326	65%
HDPE Containers	18,829,072	9,415	24%
PP Containers	7,942,188	3,971	10%
TOTAL	77,422,404	38,712	100%

It is noted that North Carolina does not require private sector haulers and recyclers to report annual recovery. Therefore, private sector recovery data, which includes material from some residences and a significant portion of commercial (including post-industrial) and multifamily properties, was not available for inclusion in this recovery analysis. Because of this data gap, the total recovered plastic is an underestimate.

NORTH CAROLINA LANDFILLED PET, HDPE, AND PP PACKAGING

The multi-season Study at three disposal facilities located across different regions of the state assessed 175 waste samples, consisting of 100 residential, 65 commercial, and 10 mixed loads that contained commingled residential and commercial waste. The data obtained from these distinct waste streams were evaluated both separately and combined to determine differences in residential versus commercial waste composition as well as an overall combined composition of municipal solid waste being disposed of in North Carolina landfills. For this Assessment, the combined weighted average composition of residential, commercial, and mixed load sources is used.

North Carolina tons disposed for each commodity was derived by multiplying the tons of waste landfilled in fiscal year 2024-25 by the total overall average percent of each plastic by weight found in Study. Table 3 shows an estimated 455,423 tons of focus recyclable plastic types were disposed in fiscal year 2024-25. As a percentage of overall MSW landfill composition, PET containers and packaging are estimated at approximately 2.26% or 272,843 tons, HDPE containers at 0.77% or 93,377 tons, and PP containers at 0.74% or 89,203 tons.

Table 3. PET, HDPE and PP Disposed in Fiscal Year 2024-25

RECYCLABLE PLASTIC TYPE	LANDFILLED WASTE COMPOSITION	DISPOSED (TONS)
PET Containers & Packaging	2.026%	272,843
HDPE Containers	0.77%	93,377
PP Containers	0.74%	89,203
TOTAL	3.77%	455,423

Estimated generation of recyclables plastics was calculated by summing the tons disposed and the tons recovered. Figure 1 and Table 4 shows that North Carolina generated an estimated 494,434 tons of PET, HDPE,

and PP containers and packaging, with 38,712 tons recycled through local government programs. Of the three packaging types analyzed, PET represents 60% of the packaging generated at 298,169 tons per year.

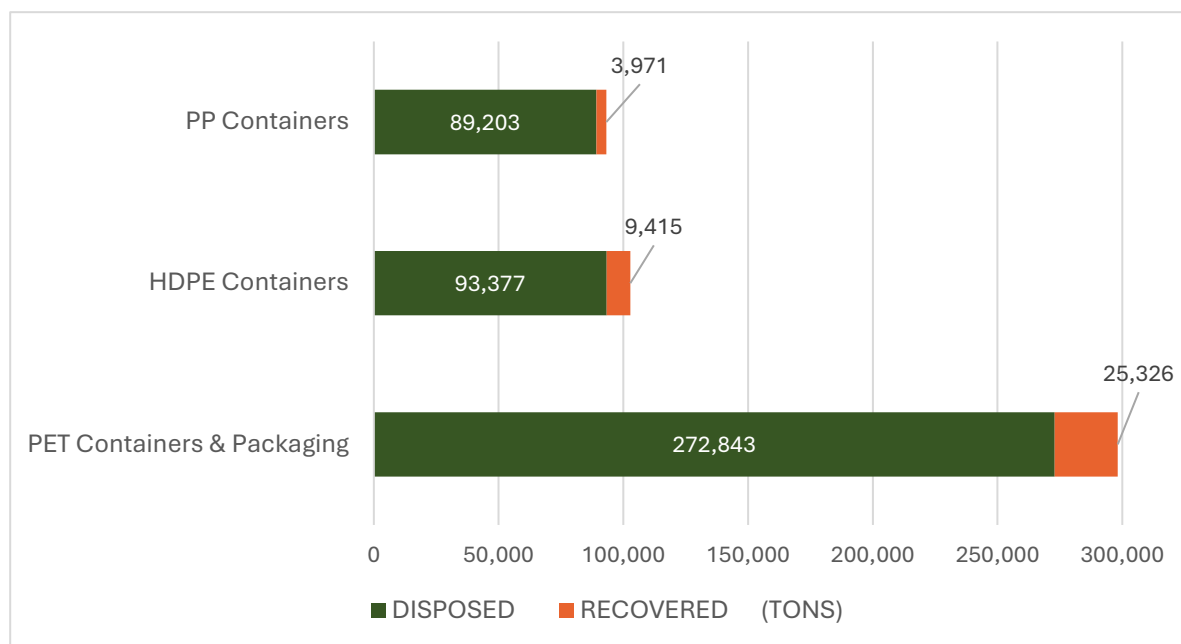


Figure 1. Estimated PET, HDPE, and PP Generation in Fiscal Year 2024-25

Table 4. PET, HDPE and PP Generated in North Carolina in Fiscal Year 2024-25

RECYCLABLE PLASTIC TYPE	DISPOSED (TONS)	RECOVERED (TONS)	GENERATED (TONS)
PET Containers & Packaging	272,843	25,326	298,169
HDPE Containers	93,377	9,415	102,792
PP Containers	89,203	3,971	93,174
TOTAL	455,423	38,712	494,134

GENERATION PROJECTIONS

Figure 2 and Table 5 present projected recyclable plastic packaging generation in North Carolina for 2030 and 2040 based on 2025 per-capita generation rates and population projections developed by the North Carolina Office of State Budget and Management (OSBM). The projections were calculated by applying the estimated amount of PET, HDPE, and PP packaging generated per person in 2025 to projected population growth. Because the analysis assumes per-capita consumption patterns remain constant over time, the projections do not account for potential changes in packaging design, material substitution, consumer behavior, or policy interventions that could alter the composition or quantity of plastics generated in future years.

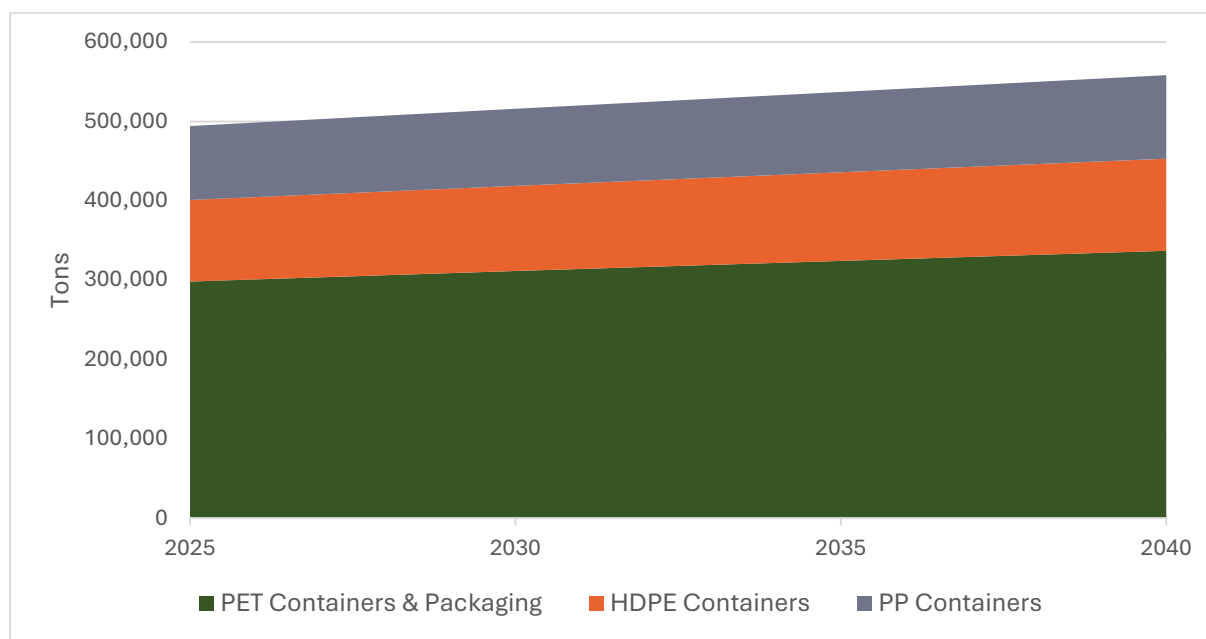


Figure 2. Projected Tons of PET, HDPE, and PP Packaging Generated in North Carolina 2025 - 2040

Under these assumptions, generation of recyclable PET, HDPE, and PP in North Carolina is projected to increase 13% from 494,134 tons in 2025 to 558,310 tons by 2040.

Table 5. North Carolina Projected Generation by Plastic Type 2025 - 2040

RECYCLABLE PLASTIC TYPE	GENERATION (TONS)		
	2025	2030	2040
PET Containers & Packaging	298,169	311,411	336,893
HDPE Containers	102,792	107,357	116,142
PP Containers	93,174	97,312	105,275
TOTAL	494,134	516,080	558,310

Price History

Figure 3 displays the raw pricing data for baled colored HDPE, natural HDPE, PET, and PP from April 2016 to April 2026 (Southeast region). The pricing data is from www.recyclingmarkets.net and reflects the confidential information provided by qualified purchasing officials in the industry. Prices are freight on board (FOB) seller's dock in trailer-load quantities and do not reflect variances such as premiums, spot loads, freight allowances, regular quantity of shipments, or special contract terms.

Over the ten-year time frame, HDPE (natural) is the highest valued, recycled resin commodity averaging \$0.51 per pound while PP, PET, and HDPE (colored) average \$0.13, \$0.15, and \$0.17 per pound, respectively. However, HDPE displays more volatility compared to other recycled resins as the price is tied to brand owner's demand. As brands compete with a limited supply of material, prices are driven up. When the price gets too

high, demand weakens and the price falls. This leads to boom-and-bust cycles in pricing that other plastic commodities do not experience.²

From April 2016 to January 2019, pricing was relatively stable for all commodities. However, beginning in late 2019 through April 2026 recycled resin pricing shows the volatility of global economic turbulence including US sanctioned global trade wars, export volatility including China National Sword and Basel Convention trade impacts, rising inflation, aggressive monetary tightening, and geopolitical disruption of the Russia-Ukraine war and the US-Iran conflict.

One important trend to note is beginning in January 2026, pricing for HDPE (natural), HDPE (colored), and PP sharply rose, while PET pricing continued a downward trajectory that began in the summer of 2025. As of April 2026, PET prices are at the lowest point in the ten-year time frame at \$0.04 per pound. Downward pressure on PET prices is likely the result of weakened demand for domestically produced rPET, driven by an oversupply of domestically produced virgin PET, cheap imported rPET, and the rollback of recycled content commitments by major consumer product brands. As a result of these market challenges, several PET processing facility closures occurred throughout 2025 and into 2026, significantly reducing U.S. plastics recycling capacity. In North Carolina, Alpek closed a large facility in Fayetteville during 2025. Additional closures include Evergreen facilities in California, New York, and Ohio; FENC in Ohio; Alpek in Pennsylvania; and rPlanet in California. The systemic challenges facing the domestic rPET marketplace will require ongoing collaboration, policy changes, and buyer commitments to ensure the long-term viability of the US recycling infrastructure.³

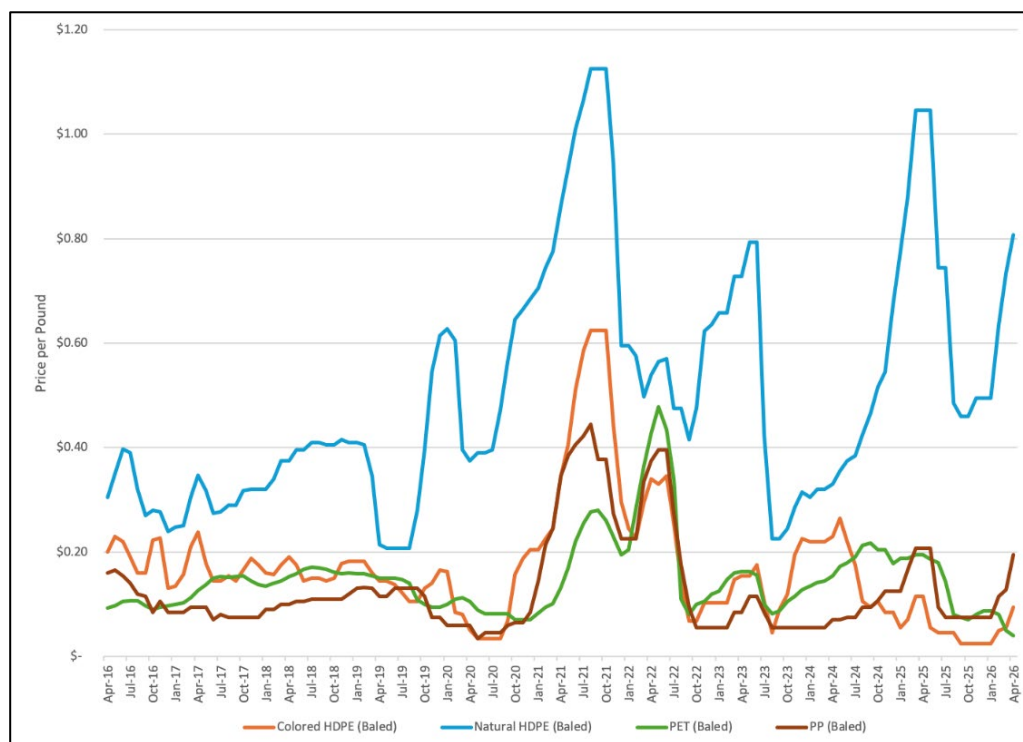


Figure 3. HDPE natural and colored, PET and PP pricing April 2016 to April 2026

² Staub, Colin. "Analyst Lays Out Cyclic Pattern of Recycled Resin Markets." Resource Recycling, 8 May 2024, resource-recycling.com/plastics/2024/05/08/analyst-lays-out-cyclic-pattern-of-recycled-resin-markets/.

³ Recycling Partnership. (2026, March 27). rPET market challenges further impacted by more closures, trade pressures. Waste Dive. <https://www.wastedive.com/news/rpet-market-reclaimer-closures-trade-pressures-iran-wm-republic/815970/>

North Carolina Plastic Recycler Analysis

NORTH CAROLINA PLASTIC RECYCLERS

Confidential data surrounding the quantities of PET, HDPE, and PP recovered, processing capacity, expansion capabilities, and investment and support needs were provided and analyzed from eighteen of the fifty-six plastics recyclers serving North Carolina local governments and businesses. The data in the following section reflects a snapshot of plastic recycler feedback from those willing to share information as part of this Assessment. For confidentiality reasons, individual companies are not identified in the following analysis and discussion.

Recyclers were identified using the North Carolina Recycling Markets Directory and through DEQ industry connections, and include brokers, exporters, secondary processors & reclaimers (excluding single stream MRFs), and end-users. Figure 4 illustrates the location of the 56 plastic recyclers serving North Carolina communities and businesses. It is noted that Figure 4 shows fewer than 56 location markers because some plastic recyclers share the same city or region.

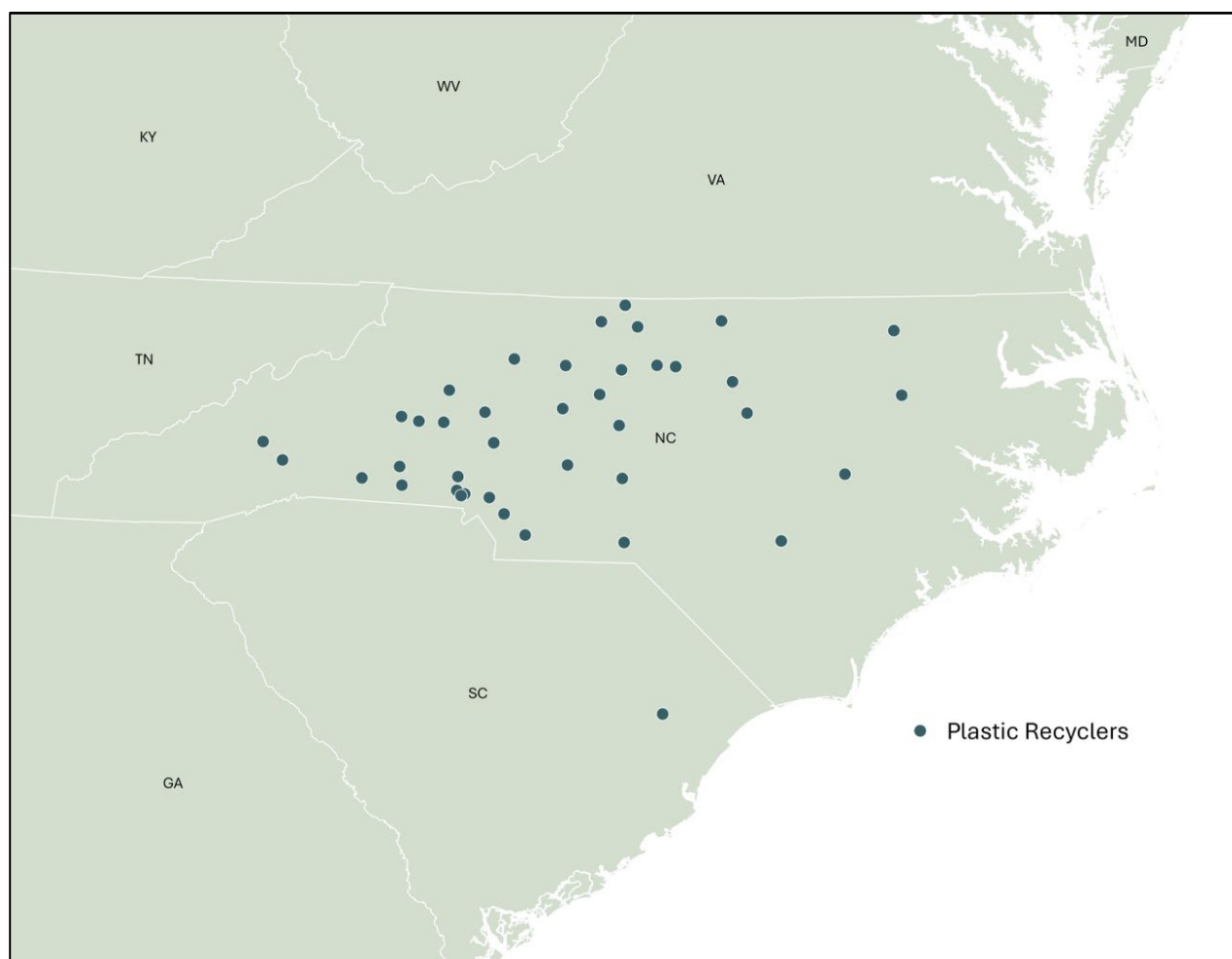


Figure 4. North Carolina Plastics Recyclers

PLASTIC RECYCLER MATERIAL TYPES ACCEPTED

Figure 5 shows the percentage of plastics recyclers accepting various post-consumer and post-industrial plastic material types. Post-industrial PET, HDPE, and PP are accepted by 50% of recyclers, making this the most common material category. HDPE injection-molded items, such as buckets, pails, and crates, are accepted by 22% of recyclers. HDPE Containers, PET Containers & Packaging, and PET non-bottle thermoform packaging each account for about 11%, while PP Containers represent the smallest share at less than 6%.

Additionally, 39% of recyclers reported accepting additional plastic types outside the scope of this Assessment, such as Acrylonitrile Butadiene Styrene (ABS), Polystyrene (PS), High Impact Polystyrene (HIPS), Flex PVC, SBR rubber compounds, Polyvinyl chloride (PVC), Cross linked polyethylene (XLPE/PEX), Polycarbonate (PC), Polymethyl Methacrylate (PMMA), Polyoxymethylene (POM), and Nylon (PA), Low Density Polyethylene (LDPE), SBR rubber compounds, natural rubber, butyl rubber, uncured rubber, tire rubber, friction rubber, nonwoven fabric and yarns, and other unspecified grades of plastic stretch. While these other types of plastics were not the focus of the Assessment, it shows there is a diverse marketplace for post-industrial plastic recovery in North Carolina.

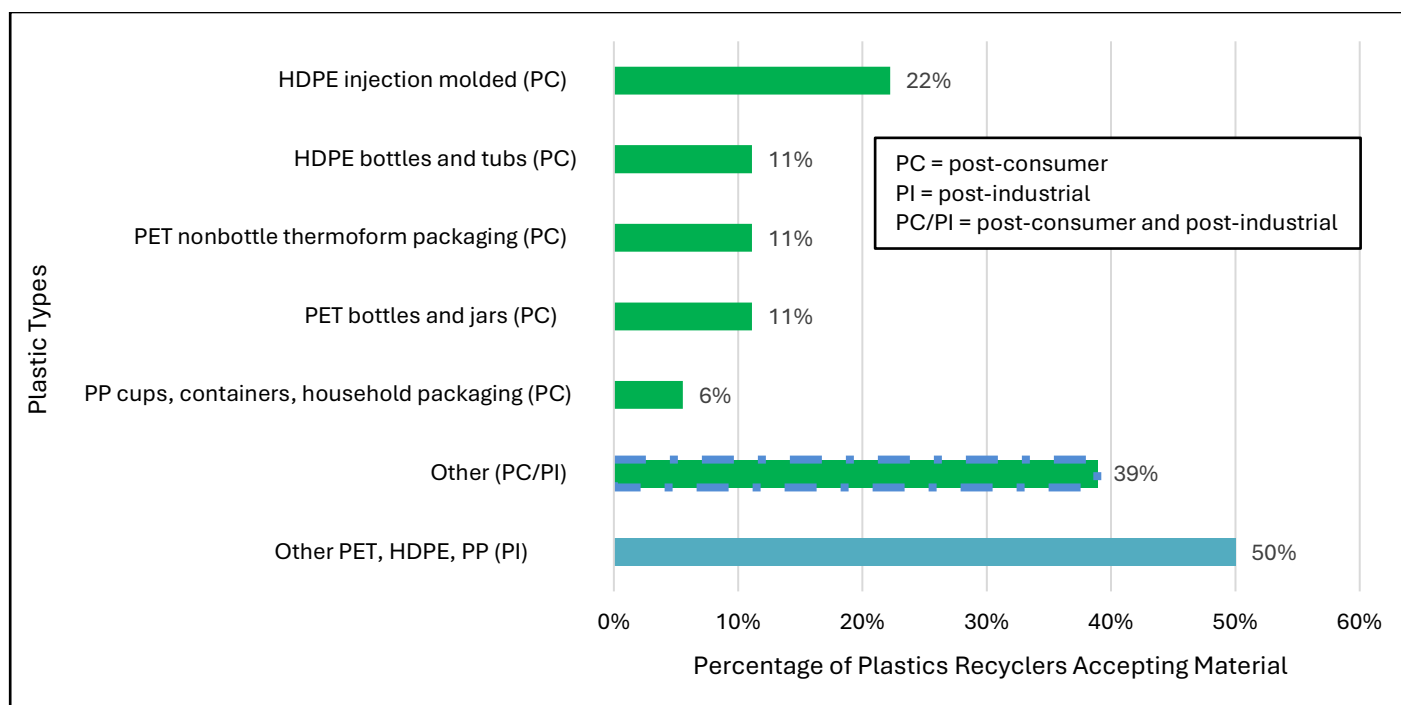


Figure 5. Percent of Plastic Recyclers and Acceptance of Post-Consumer and Post-industrial Plastic Types

PLASTIC RECYCLER QUANTITIES

As shown in Table 6, eleven of the eighteen plastic recyclers serving North Carolina reported handling, processing, or using a combined 390.9 million pounds of PET, HDPE, and PP in 2025, nearly all of it from domestic sources. More than half (53%) came from within North Carolina, 46% from other U.S. states, and less than 2% was imported.

A few important caveats apply to this data. The total quantity of material managed from North Carolina sources could not be determined because not all recyclers provided this information. Additionally, some double counting is likely, as recyclers may have received material already collected by North Carolina municipalities.

The tonnage in Table 6 should therefore not be read as the total amount of plastic recycled in the state; it reflects the scale of material handled by the recyclers providing data.

Post-industrial plastics make up the largest share of recovered plastic resin at 41%, exceeding post-consumer PET bottles and HDPE bottles and tubs, which each account for less than 30%. This gap likely reflects market preference for post-industrial materials, which tend to be produced in large quantities from commercial and industrial sources, and cleaner and less contaminated than post-consumer sources. In addition, the availability of post-consumer materials tends to lag based on varied generation points and recovery options, typically at much lower rates. HDPE injection-molded products and PET non-bottle thermoform packaging together contribute less than two percent.

Notably, despite plastic recyclers reporting acceptance of PP cups, containers, and household packaging, no quantities of these materials were reported in 2025.

Table 6. Plastic Recycler Managed Tons as Reported by Participating Recyclers in 2025

PLASTIC TYPE	MANAGED QUANTITY (LBS.)	MANAGED QUANTITY (TONS)	PERCENT OF TOTAL MANAGED
PET Bottles and Jars	115,000,000	57,500	29%
PET Non-Bottle Thermoform Packaging	5,000,000	2,500	1%
HDPE Bottles and Tub	100,000,000	50,000	26%
HDPE Injection Molded	9,000,000	4,500	2%
Post-Industrial or Other PET, HDPE, PP	161,910,000	80,955	41%
PP Cups, Containers, Household Packaging	0	0	0%
TOTAL	390,910,000	195,455	100%

PLASTIC RECYCLER MATERIAL SOURCES

Plastic recyclers provided data on the types of generators from which they receive plastics. Figure 6 illustrates the percentage of plastic recyclers that reported receiving plastics directly from each of the seven generator source categories. As shown, manufacturers (pre-consumer scrap) are the dominant source of material, with approximately 76% of plastic recyclers reporting acceptance of material from this category.

Non-residential post-consumer is the next prevalent source, supplying material to 47% of recyclers. Municipal residential curbside recycling programs, and material recovery facilities (MRFs) each account for roughly 12%, while private hauler residential curbside recycling and other sources each contribute around 5%. Notably, no recyclers reported receiving material from county drop-off recycling programs. These findings reinforce a broader pattern in the data: North Carolina plastic recyclers draw predominantly from post-industrial and commercial sources rather than residential collection systems.

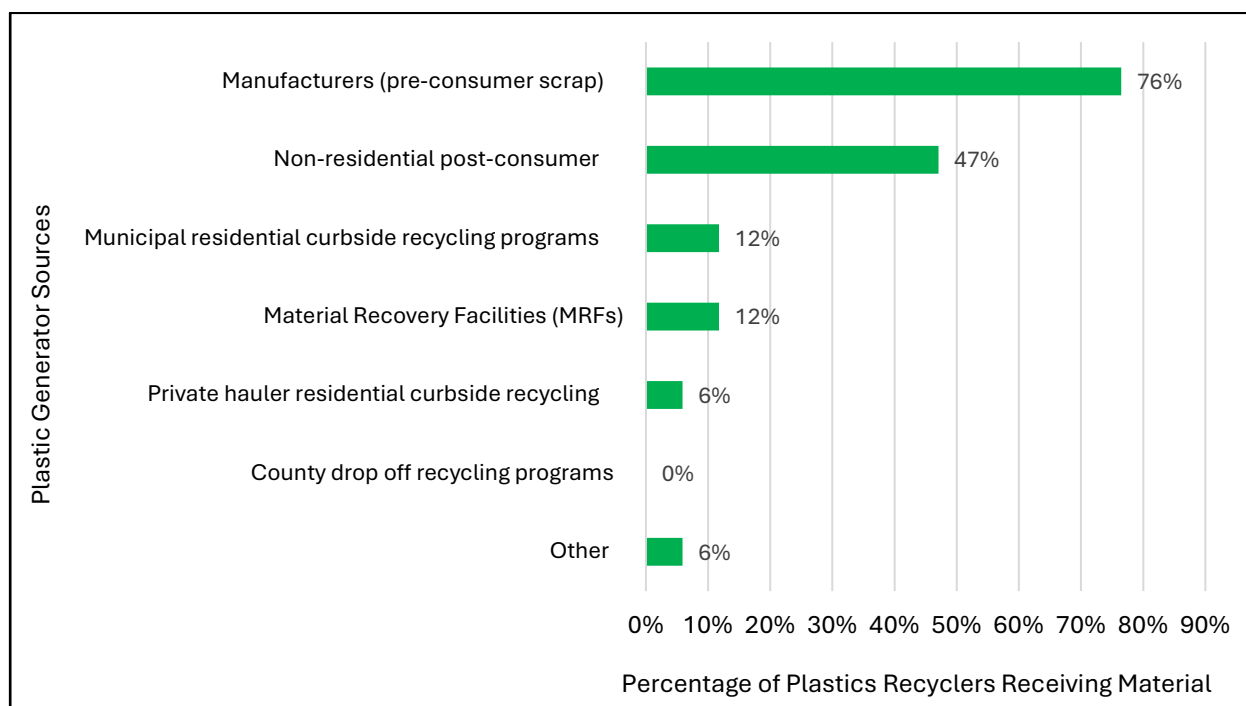


Figure 6. Percentage of Plastics Recyclers Receiving Plastic from Generator Source Types

PLASTIC RECYCLER CAPACITY

Plastic recyclers reported a combined annual facility capacity exceeding 854 million pounds (427,000 tons), with individual facility capacities ranging from 100,000 to 300 million pounds. One recycler reporting zero capacity noted that current low market prices have made baling and selling plastics economically unfeasible, highlighting how market conditions can sideline available capacity even when physical infrastructure exists.

For the general plastics recycling value chain that was surveyed as part of this analysis capacity utilization remains well below its ceiling. Fewer than 30% of recyclers reported operating at full capacity, 67% reported operating below capacity, and a small fraction (3%) reported operating at capacity. This points to a significant gap between the current use and what the system can handle.

That gap becomes even clearer when comparing capacity to current throughput. Recyclers reported managing approximately 195,455 tons of plastics in 2025, which is less than half of their reported 427,000 tons of capacity. While individual points in the plastics recycling supply chain likely need continued investment to remain competitive, North Carolina's plastic recycling infrastructure could absorb more volume based on available systemwide capacity.

Meanwhile, North Carolina local governments reported recovering just 38,712 tons of PET containers and packaging, HDPE containers, and PP containers combined. Measured against existing recycler capacity, this figure represents a fraction of what the system could absorb. There is substantial room for municipalities to increase collection and diversion of these materials and the recycling infrastructure to receive them largely already exists.

PLASTIC RECYCLER CAPACITY EXPANSION

Regarding market growth potential, 67% of plastic recyclers indicated the ability to expand operations. A total of 61,150 tons of planned or potential capacity expansion was reported, with individual facility expansions ranging from 50 to 25,000 tons. Combining the market growth potential with the existing capacity of 427,000 results in more than 488,000 tons of capacity.

Facilities reported needs and barriers to enable such expansion. As illustrated in Figure 7, approximately 67% of plastic recyclers identified access to funding as their primary investment need, while 25% cited other needs such as increased feedstock availability, upgraded equipment, higher market prices for recycled plastics, and reduced influx of virgin feedstock. Collectively, these findings point to considerable opportunities for increased material capture and market growth.

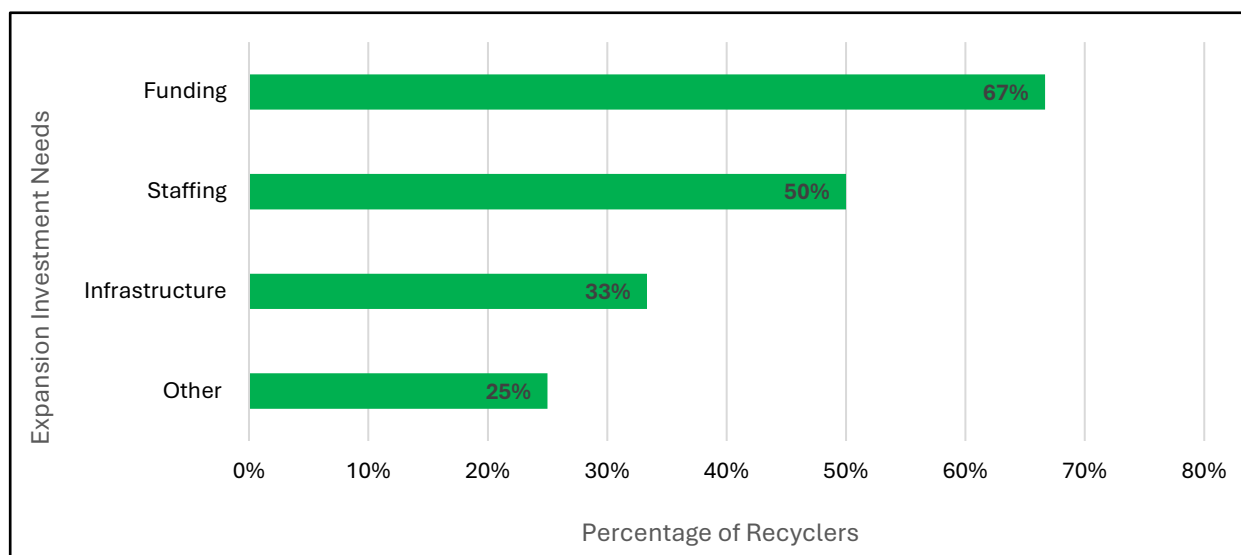


Figure 7. Plastic Recycler Expansion Capacity Needs in 2025

PLASTIC PROCESSING MECHANISMS

More than 83% of North Carolina plastic recyclers reported engaging in physical or chemical plastic processing, while a small fraction primarily performs baling and material transport functions.

Plastic recyclers described a range of processes and steps involved in recycling post-consumer and post-industrial plastics tailored to the intended end use. Notably, 28% of plastic recyclers indicated that they have integrated new investments and modernization technologies over the past three years, including the addition of processing lines, shredders, granulators, blending systems, optical sorters, AI-assisted robotics, metal detection equipment, and extrusion systems.

Generally, the plastic recycling process begins with material preparation, where plastics are sorted, and contaminants are removed using physical and mechanical methods. After sorting and decontamination, the materials undergo physical size reduction by cutting, shredding, grinding, or pulverizing.

At this stage, the process diverges based on the intended application. In some cases, size-reduced recycled plastics can be utilized directly in manufacturing. Other applications require pelletizing, which involves

washing, shredding, and high temperature extrusion to convert plastic flakes into uniform pellets. The recycled pellets are then used in a wide range of manufacturing applications.

PLASTIC INDUSTRY SECTORS SUPPORTED AND END-MARKETS

The processed post-consumer and post-industrial plastics are utilized as raw materials to produce flakes, pellets, polyester resin, and polyester yarn which serve as feedstock for further manufacturing. During product manufacturing, the raw materials are then used in production across a wide range of industry sectors.

As shown in Figure 8, recyclers reported that plastics are transformed into a diverse range of end products across many industries. Automotive is the most prevalent industry with material received from 29% of recyclers for use in the manufacturing of injection molded parts and liners. Textiles follow closely at 21% and include the production of polyester yarn and subsequent fabric/garment manufacturing. There are several sectors clustered together at 14% to include Agriculture, Container and Consumer Products, and Healthcare. Materials produced in these sectors can include rigid packaging items including blow-molded and injection-molded containers, trays, pots, and flexible packaging.

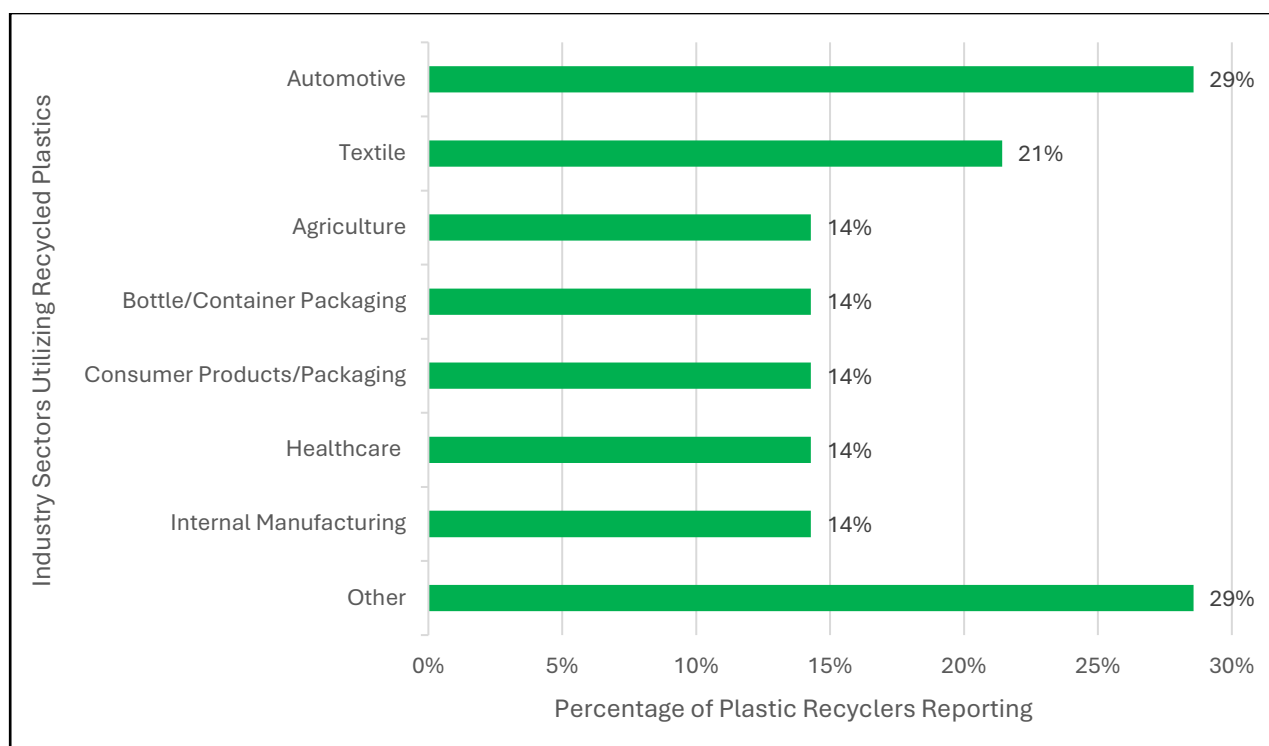


Figure 8. North Carolina Industry Sectors Utilizing Recycled Plastics

There are a handful of NC plastic recyclers in the Internal Manufacturing category that are vertically integrated and consume the recycled plastic feedstock they buy directly in their own manufacturing. This includes making a recycled plastic pellet and using that input in the production of injection molded products using various resins.

The “Other” category includes a mix of industries including construction and building materials, mining industries, nonwoven materials, and stretch wrap manufacturing. In these sectors, recycled plastics are widely used in construction and building materials such as composite decking, plastic lumber, fence posts and

boards, nonwoven materials, and plastic composite board. Additional end markets include industrial products such as pallets and cable and wire spools manufactured entirely from 100% recycled content.

PLASTIC RECYCLER CHALLENGES

Recycling processors reported a range of interrelated hurdles that span market conditions, feedstock availability, logistics, and operations. Market demand challenges such as pricing volatility, low demand for recycled resins, and competition from an oversupply of cheap virgin plastics make processing economically challenging. Processors noted supply-side challenges, including difficulty securing consistent feedstock and difficulty sourcing clean streams of film and HDPE. Logistical challenges include rising transportation and freight costs. Processors reported facing operational challenges, including individual instances of limited processing capacity (even though there seems to be an excess of system wide capacity), staffing challenges, and electricity infrastructure limitations. Lastly, finding buyers for finished products further strains operations.

PLASTIC RECYCLER RECOMMENDATIONS

North Carolina plastic recyclers shared recommendations to improve the state's recycling infrastructure and end markets. These suggestions are derived from the daily experience handling post-consumer and post-industrial plastics and reflect the real challenges facing the industry. Some recommendations may conflict with state-wide policy decisions or are beyond the scope of assistance that the State can provide.

The recommendations fall into six areas: equipment and infrastructure, collection and consolidation, funding and financial assistance, market development, legislation and policy, and education and outreach. Together, they offer a potential path forward for state agencies, policymakers, and industry partners to remove systemic barriers and build a recycling system that is more resilient, efficient, and financially sustainable.

EQUIPMENT AND INFRASTRUCTURE

Recyclers emphasized the need for physical upgrades and material quality:

- Encourage MRFs to invest in advanced sorting equipment to improve material quality and bale yields.
- Incentivize plastic processors to install new sorting technologies and processing machinery to improve efficiency and flexibility in the production of PCR inputs.
 - Shredders, granulators, blending systems, optical sorters, AI-assisted robotics, metal detection equipment, and extrusion systems.

COLLECTION AND CONSOLIDATION

Recyclers noted areas to improve the front-end of the recycling system:

- Enhance collection efforts to increase the volume and consistency of recyclable materials entering the system.
- Create avenues to consolidate recycling collections to improve efficiency and reduce costs.

FUNDING AND FINANCIAL ASSISTANCE

Recyclers expressed the need for expanded grant programs and direct financial assistance to help operations remain viable during periods of low pricing:

- Increase availability of grants and access to other financial assistance for polymer sorters and next-generation technology integration.

- Recognize that plastics companies face existential financial risks amid low virgin plastic prices and high fuel costs. In the short term, financial assistance, such as subsidies, may be necessary to keep recyclers in business.
- Subsidize waste generator logistics and transportation.

MARKET DEVELOPMENT

Processors emphasized the need for stronger market development efforts, including the creation of platforms to connect buyers and sellers of recyclable materials and greater promotion of NC-made recycled products:

- Create a virtual trading post or marketplace where sellers of recyclable plastics can list and connect with buyers.
 - Promote internal DEQ marketplace tools, as well as sites like www.plasticmarkets.org to better connect and network buyers and sellers in NC.
- Provide stronger mechanisms to connect generators of recycling to markets seeking material.
- Increase consumer and industry awareness of products made from recycled plastics to drive demand and create opportunities for increased diversion of material from landfilling.
- Drive more innovative market development opportunities.

LEGISLATION AND POLICY

Legislative action was identified as a critical lever, with processors urging the state to mandate recycled content use, pass bottle bill legislation, and address the competitive pressure posed by low-cost virgin and off-spec materials that are driving recyclers out of business:

- Mandate recycled content requirements for molders and manufacturers, particularly for HDPE, PP, and PET materials.
- Enact deposit return systems for PET bottles and other consumer packaging to drive collection rates.
- Promote and enforce household and community recycling through state and local mandates.
 - Remind consumers and community program managers of existing landfill bans and other state and local mandates to encourage and promote plastics recovery and recycling.
- Address the competitive disadvantage caused by low-cost virgin and off-spec HDPE.
 - Activate regional coalitions and industry trade associations to highlight marketplace impacts, disruptions, and solutions.
- Help close the gap between the incremental cost of recycled materials and consumer willingness to pay a premium, particularly in packaging applications.

EDUCATION AND OUTREACH

Recyclers stressed that ongoing public education and community outreach are fundamental to the long-term success of recycling:

- Educate the public and businesses that recycling is real and effective. This is important to counter misinformation and skepticism.
- Communicate that recycling has value in landfill-avoidance contexts, even as scrap commodity prices decline.

- Provide support for mechanical-type plastics recycling that enables plastics to become new products and discourage pyrolysis and chemical recycling.
 - Educate the marketplace on the variation of recycling methods and impacts or improvement to existing material management.
- Use a combination of education and enforcement to encourage more residential household recycling.

Conclusion

In 2025, North Carolina landfilled an estimated 455,424 tons of PET, HDPE, and PP containers and packaging, while local government recycling programs recovered only approximately 38,000 tons. This gap represents both a significant challenge and a substantial opportunity. The state's fifty-six plastics recyclers (i.e., haulers, brokers, processors – not including MRFs, and end-users) collectively demonstrate the capacity to redirect these materials from landfills into the recycling value chain, yet realizing that potential requires coordinated action across infrastructure, policy, markets, and education.

The plastics recycling supply chain is a fragile, interconnected system in which every link matters. Increasing plastic recovery in North Carolina will require collective action with all stakeholders. Success depends on residents and businesses recycling, local governments, business, and industry providing effective recycling services, MRFs producing marketable bales, processors converting material, manufactures and brands committing to using recycled material in new products, and policymakers crafting supportive regulatory frameworks.

Feedback gathered from North Carolina plastic recyclers reflects a clear consensus: a level playing field with virgin materials, consistent regulatory support to remain competitive and grow, and a business environment to allow for financial viability. Addressing these needs holistically is essential to building a resilient circular economy for plastics and other materials in North Carolina.

It is recommended that DEQ use this Assessment as a foundational document for continued engagement with local government and industry partners and drive coordinated actions necessary to meaningfully increase plastics recycling across the state. Next steps can include follow-up focus groups with market participants and development of a plastics recycling market strategy and implementation planning as a follow-up to this market assessment commodity profile.