



2022

**Recycling Market
Development Council
Report to the Governor and Legislature**

April 2022

Foreword

While recycling is a familiar part of the day-to-day lives of most Americans, its importance to both the environment and the economy should not be overlooked or forgotten. In fact, recycling has proven over the years to be an environmental and economic success story. This is especially true in New Jersey, which was the first state to mandate recycling in the residential, commercial, and institutional sectors.

Recycling, the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products, is a key element of New Jersey's solid waste management strategy and benefits the environment in many ways. Recycling keeps millions of tons of materials out of landfills and other disposal facilities, conserves natural resources, saves energy, and reduces emissions of water and air pollutants, including greenhouse gas emissions which lead to climate change.

Recycling also plays an important role in our state and national economy by creating jobs and generating billions of dollars annually in economic activity. New Jersey's well-developed recycling industry includes transporters, specialized processing facilities and manufacturers of various recycled products. Undoubtedly, the state's economy would be even further strengthened should new manufacturing operations that use recyclable material feedstocks in their production processes be established in New Jersey in the years ahead.

This report contains numerous recommendations - including legislative, policy and administrative recommendations - that will advance the recycling goals of New Jersey, benefit the environment in numerous ways and have a positive impact on the economy.

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Executive Summary

With the passage of its mandatory recycling law in 1987, New Jersey became a national leader in recycling. Recycling programs in the residential, commercial, and institutional sectors were thereafter established throughout the state and recycling soon became a way of life in New Jersey. The tonnage of recyclable material collected grew dramatically over the years, which led to the development of numerous in-state recycling processing centers. These facilities sort, prepare and send processed recyclable materials to both domestic and international recycling markets where they are ultimately used in the manufacture of new products. Over the last thirty-five years, recycling markets – and the recyclable commodity prices paid by these markets - have at times been extremely strong, alarmingly weak or more typically somewhere in between these two points. Similar to other commodity markets, recyclable materials commodity markets are cyclical and impacted by many global factors.

In the latter part of the previous decade, recycling programs faced difficult times due to weak markets, low recyclable commodity prices and rising program costs. This was due in part to key import policy changes enacted by overseas markets – most notably the Chinese recycling market - but was also the result of other factors such as the market price for oil and the increasing amount of contamination found in loads of recyclable materials. The significant slump in the recycling market lingered for several years and was not only felt in New Jersey but throughout the world. With recycling markets still weak at the outset of 2020, legislation was passed in New Jersey establishing the Recycling Market Development Council (Council). The Council's mission was to explore the market challenges facing New Jersey's recycling programs and propose recommendations that would advance recycling in the state.

The onset of the worldwide health crisis in March of 2020 delayed the launch of the Recycling Market Development Council, but more importantly changed the dynamics of the worldwide recycling markets in some interesting ways as some recyclable material commodity markets benefited greatly from the pandemic while others slumped significantly. For example, the market for recyclable paper and old corrugated cardboard boomed during the pandemic due to a surge in online shopping and panic purchasing





of toilet paper, while the market for recyclable plastics – which is greatly impacted by oil prices - plummeted due to oil prices dropping significantly because of shutdowns in manufacturing and reduced automobile travel.

Thankfully, slumping recycling markets rebounded in 2021, while stronger recycling markets continued to flourish as the new year got underway. Industry experts even described the new market dynamic as a “hot recycling market” during 2021. Changes in consumer and business purchasing practices, oil prices and the strengthening economy were just a few of the factors that made for an overall robust recycling market in 2021. While the strong recycling market conditions seen in 2021 were encouraging, the Council’s mission to identify strategies that would strengthen recycling markets and recycling in general remains essential.

The Council began its deliberations in April 2021 and immediately turned its attention to the recycling contamination problem, which continues to be the most significant issue facing the recycling industry. The Council next examined each of the recyclable materials found in a typical recycling bucket, bin or cart and the markets for these materials. Strategies to stimulate the use of recyclable materials in newly manufactured products were also addressed by the Council, as were policies pertaining to the procurement of recycled content products. In addition, the Council explored methods that could improve the competitiveness of the state as an exporter of recyclable materials and considered statutory and regulatory changes that could be made to advance recycling in New Jersey.

Key recommendations in this report include the need for a statewide recycling education campaign, new financial incentive programs to promote recycling, legislation that would require recycled content in new products and the creation of a New Jersey Recycling Markets Center. Other key recommendations focus on misleading packaging labels that confuse consumers about recycling and the importance of recycled product procurement. **(Note – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council’s deliberations on this matter in 2021.)**

Background on P.L. 2019, Chapter 439

Governor Phil Murphy enacted legislation (P.L. 2019, Chapter 439) on January 21, 2020 that called for the establishment of a Recycling Market Development Council (Council), whose mission was to explore the market challenges facing New Jersey's recycling programs and propose recommendations that would advance recycling in the state.

Tasks:

- 1 Prepare a report on the existing markets that process, reuse or recycle collected recyclable materials.
- 2 Develop best management practices to reduce the contamination of collected recyclables.
- 3 Investigate how to stimulate the use of collected recyclables in newly manufactured products.
- 4 Investigate the feasibility of providing preferences for products with recycled content, including how to stimulate the use in public projects of products or materials with recycled content.
- 5 Investigate methods to improve the competitiveness of the state as an exporter of recyclable materials.
- 6 Provide recommendations on changes needed to state laws or rules or regulations to stimulate the creation of domestic processing facilities, such as paper mills, and end-use manufacturers of products with recycled content.

Recycling Market Development Council

Composition

Pursuant to the statute, the Recycling Market Development Council consists of eight members, including the Commissioner of the Department of Environmental Protection, or his designee and the State Treasurer, or her designee. The remaining members of the Council consist of six citizens of the state appointed by the Governor. The law states that "of the appointed members: three shall be actively engaged in the recycling industry, of whom one shall be a representative of the Association of New Jersey Recyclers; and three shall have expertise in the reuse and processing of recycled materials." It should also be noted that the law calls for the Governor to appoint the chairperson and the vice-chairperson of the council from the appointed members.

Council Members

- **Ann Moore, Chair** - District Recycling Coordinator, Burlington County, New Jersey
- **Marie Kruzan** - Executive Director, Association of New Jersey Recyclers
- **James Lawler** – Sales and Marketing Manager, Sims Municipal Recycling
- **Kevin Lyons, Associate Professor** - Rutgers Business School, Director, Public Private Community Partnerships
- **Steven Rinaldi** - New Jersey Department of Environmental Protection, Bureau of Sustainability
- **John Stanton** - Director of Business Operations, Atlantic Coast Fibers
- **Megan Tagliaferri** - New Jersey Department of the Treasury, Division of Purchase and Property
- **George Tyler, Attorney** - The Law Office of George J. Tyler

Council Mission and Definition of “Class A Recyclable Material”

While the law itself does not specifically speak to “Class A recyclable materials” (see regulatory definition below), the mission of the Council is to address the markets for the recyclable materials typically collected from residential curbside collection programs, office settings and institutional settings, i.e., Class A recyclable materials.

"Class A recyclable material" (N.J.A.C. 7:26A- 1.2) means a source separated non-putrescible recyclable material specifically excluded from Department approval prior to receipt, storage, processing, or transfer at a recycling center in accordance with N.J.S.A. 13:1E-99.34b, which material currently includes source separated non-putrescible metal, glass, paper, plastic containers, and corrugated and other cardboard.

Note

The legislation enacted regarding single use carryout bags includes a provision that calls for the establishment of a Plastics Advisory Council that will, among other things, examine “strategies and policies to increase the recyclability of plastics and reduce the amount of plastic entering the environment; the technological feasibility of increasing recycled content of consumer plastics and expanding the types of plastics that may be manufactured from recycled material; and ways to enhance the development and expansion of markets of post-consumer recycled plastic, including state and local purchasing and procurement practices.” Thus, some of the issues to be explored by the Plastics Advisory Council will overlap with the issues explored by the Recycling Market Development Council.

Background on Recycling Markets

Impact of Changes in the Chinese Recycling Market - 2013-2020

Major changes in global recycling markets – especially for recyclable paper grades and plastics – during the past decade have caused significant challenges for the worldwide recycling community. In particular, the restrictive quality-control specifications imposed by China’s environmental agency in recent years led to loads of recyclable materials from the United States being rejected at Chinese ports due to high levels of contamination. “Recycling contamination” occurs when non-acceptable items end up in the recycling stream. Non-acceptable materials are not necessarily non-recyclable, but they are not accepted by local recycling programs, nor by the recycling end markets that ultimately receive the materials collected. Some prime examples of materials that contaminate the curbside recycling stream are plastic bags, polystyrene coffee cups, garden hoses, syringes, batteries and trash.



Chinese environmental officials ultimately went one step further and banned the import of numerous recyclable materials. With the Chinese recycling market virtually closed, recyclers around the globe scrambled to find new end markets for the growing supply of recyclable materials. The impact of this new recycling market dynamic was also felt in the United States, especially in the latter years of the last decade, as the recycling industry struggled at times to find markets for the materials collected and processed, resulting in recyclables piling up at some recycling centers, commodity prices plummeting for certain recyclable materials and recycling costs rising for municipal and county recycling programs.

The changing dynamics in the Chinese recycling market did, however, lead to the growth of other overseas recycling markets, especially in southeast Asia, and also to the development of new paper mills and paper mill expansions in the United States. These new domestic facilities receive (or will receive for those still under construction) many thousands of tons of recyclable paper generated from local recycling programs. In addition, Chinese recycling markets have shifted to importing recycled paper pulp. Chinese recycling companies have even purchased several closed paper mills in the United States and reopened them as recycled paper pulp mills.

Impact of the Global Pandemic – 2020

The recycling industry continued to struggle as 2020 got underway due to weak end markets and low recyclable commodity prices. The onset of the worldwide health crisis in March of 2020, however, changed the dynamics of the worldwide recycling markets in some interesting ways as some recyclable material commodity markets benefited greatly from the pandemic while others slumped significantly.

With online purchasing booming as a result of the pandemic, the demand for recyclable corrugated cardboard skyrocketed since new corrugated cardboard boxes used to ship goods are made from old corrugated containers and mixed paper. With many businesses closed due to the pandemic, not enough old corrugated cardboard was being generated and recovered from the commercial sector to match the increased demand. While residential curbside collection of corrugated cardboard increased approximately 15% to 25% during 2020, the residential sector was unable to make up for the decreased supply seen in the commercial sector. The result of this situation was that the price paid for recyclable corrugated cardboard, which had been very weak, increased significantly in early 2020 and then increased even further in the following months.

The recyclable mixed paper market also grew stronger as a result of the pandemic. With consumers buying every package of toilet paper, paper towels and tissues available, they drove up the demand for the raw materials used to make these products. Many of these paper products are made with recyclable paper grades, especially office paper, printer overruns and mixed paper. With many businesses shut down, however, very little of this material was being generated or recovered. So, once again, with demand up and supply down, the prices paid for these paper grades shot up quickly in 2020.

Recycled plastics markets, however, declined during the pandemic. Plastics are a petrochemical product and thus are influenced greatly by the price of oil. When the price of oil is high, less expensive recyclable plastic feedstocks become more economically attractive to manufacturers. Conversely, when the price of oil is low, there is less of a demand for recyclable plastic feedstocks. At the outset of 2020, there was a worldwide oversupply of oil and so oil prices were low. Consequently, the market prices paid for recyclable polyethylene terephthalate (PET) plastic (water and soda bottles) and high-density polyethylene (HDPE) plastic (milk jugs and detergent bottles) were weak and on the decline. The health crisis resulted in a further reduction in the demand for oil due to shutdowns in the manufacturing and business sectors and greatly reduced automobile travel. This led to oil prices dropping even further. This in turn further weakened the commodity market prices for recyclable PET and HDPE plastics. In fact, commodity prices for recyclable PET and HDPE plastics during the 2020 pandemic were at or near historic lows.

With manufacturing and building activity greatly reduced and even halted during the health crisis, the demand for products made from scrap metal declined. This in turn led to a decline in scrap metal prices. Consequently, the market price for recyclable steel cans (soup cans, coffee cans, tuna fish cans, etc.) collected in curbside programs slumped considerably in 2020. The health crisis also led to a shortage of workers, which resulted in the shutdown of many scrap yards across the country, which further hindered market growth. The aluminum can recycling market also slumped in 2020. The sluggish recycling market for this material was particularly troubling since aluminum cans have always been one of the most valuable materials in the curbside recycling mix and thus are essential to the economic viability of recycling programs.

The glass recycling market is strictly a domestic market. Color separated container glass has had a low market value for many years, while mixed color glass has little to no value. These glass recycling markets were not significantly impacted by the pandemic and so remained stable in 2020.

Surging Recycling Markets - 2021

A new market dynamic took hold in 2021 as slumping recycling markets rebounded while stronger recycling markets continued to flourish. Industry experts even described the new market dynamic as a “hot recycling market” during 2021. Similar to other commodity markets, recyclable materials commodity markets are cyclical and impacted by many factors.



Changes in consumer and business purchasing practices, oil prices and the strengthening economy are just a few of the factors that made for an overall robust recycling market in 2021.

Undoubtedly, the pandemic changed the purchasing habits of American consumers. With Americans continuing to turn to online shopping at an unprecedented level in 2021, the demand for recycled feedstock to make new boxes and packaging remained strong. Thus, both the domestic and export recycling markets for old corrugated cardboard and mixed paper were robust in 2021, which led to an increase in the prices paid for these recyclable commodities.

As a result of the increased demand from U.S. manufacturers for recycled plastic feedstocks for product packaging, as well as rising worldwide oil prices, recycling markets for both PET and HDPE recyclable plastics were very strong in 2021. The market for recyclable polypropylene plastic was also strong in 2021. Demand for these recycled plastic feedstocks was robust throughout the year, which led to rising market prices for these materials.

After enduring a slumping market in 2020, both the steel can and aluminum can recycling markets bounced back in 2021 with strong market prices not only well above those of the previous year, but also well above the prices paid just prior to the pandemic. This was not only good news for the recycling industry, but also for local recycling programs that rely on the aluminum can recycling market to help stabilize program costs.

Glass recycling markets remained stable in 2021 with continued weak market prices. While color separated glass has nominal value there is only one glass manufacturing plant still operating in New Jersey. Furthermore, due to its heavy weight and low value, transporting recyclable glass long distances is not economical. With single stream recycling being the primary collection system in New Jersey, it is difficult for recycling facilities to color separate the broken glass that they receive and process. Thus, most recycling facilities in New Jersey produce mixed color glass that has little to no value and limited markets.

Key Recommendations

While this report includes numerous recommendations, the following are considered key recommendations from the Recycling Market Development Council. (**Note** – The key recommendations listed below are not listed in order of importance.)

1 Re-establish a low-interest recycling equipment/infrastructure loan program

The Council recommends that the New Jersey State Legislature re-establish a low-interest recycling equipment/infrastructure loan program for the recycling industry. Such a program will enable facilities to invest in upgrades that will ultimately enhance recycling in New Jersey. The Council recommends that federal funding sources or state economic development funding sources be utilized for this program. (**Note** -The DEP administered a low-interest recycling loan program for the private sector in the late 1980s through 1996.)

2 Initiate a statewide public education campaign

The Council recommends that a statewide public education campaign be initiated by the DEP and funded through the Recycling Enhancement Act. More specifically, the Recycling Enhancement Act of 2008 (P.L. 2008, c6) allocates 5% of the annual Recycling Fund, which is generated by a \$3.00 per ton recycling tax on waste sent for disposal, for grants to institutions of higher education to conduct research in recycling. The Council recommends that the Recycling Enhancement Act be revised such that \$250,000 of this allocation is set aside each year for an annual statewide public education campaign to be overseen by the DEP. The campaign will educate the public about the recycling contamination issue and recycling, in general.

3 Promote Recycle Coach and other recycling information systems

The Council recommends that the Recycle Coach information system, or similar systems, be further promoted. The Recycle Coach information system and other similar systems reduce confusion about local recycling program requirements through a mobile app that enables residents to have this information at their fingertips. While the DEP provides Recycle Coach at no cost to municipalities, there are still many non-participating municipalities in the state.

4 Advance “Truth in Labeling” legislation

The Council recommends that “Truth in Labeling” legislation be advanced by the New Jersey State Legislature. This type of legislation makes it illegal to include the recycling symbol on a product or packaging that is not recyclable. The Council further recommends that any Truth in Labeling legislation advanced in New Jersey clarify that a product or packaging labeled as recyclable must in fact be recyclable in practice and not simply recyclable in theory. In addition, the Council recommends that misuse of the term recyclable be classified as a per se violation of the New Jersey Consumer Fraud Act.

5 Advance recycled content mandate legislation

The Council recommends that recycled content mandate legislation be advanced by the New Jersey State Legislature. While this report specifically addresses this topic as it pertains to glass and plastic products, the Council supports and recommends a comprehensive approach that would require the use of post-consumer recycled content in a wide range of consumer products. Furthermore, the Council calls for the percentage of post-consumer recycled content required in products to be significantly greater than that seen in today’s products and thus supports ambitious post-consumer recycled content goals, as determined by the New Jersey State Legislature. **(Note –** The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council’s deliberations on this matter in 2021.)

6 Re-establish a recycling tax credit program

The Council recommends that the New Jersey State Legislature re-establish a recycling tax credit program which would draw manufacturers that use recyclable materials in their production process to New Jersey. The Council further recommends that such a tax credit program not only apply to new manufacturing operations that may be established in New Jersey, but also to existing New Jersey manufacturers that modify their production processes in order to incorporate a percentage of post-consumer recycled content (to be determined by the Legislature) into products and packaging that were previously made with little or no recycled content. **(Note -**The DEP administered a recycling tax credit program for the private sector in the late 1980s and early 1990s.)

7 Support use of recycled “glassphalt” in construction projects

The Council recommends that New Jersey’s transportation agencies revisit the use of “glassphalt” (i.e., asphalt pavements made in part with recycled glass aggregate) and proactively use glassphalt pavements in future road construction projects. Such projects could consume large quantities of the mixed color glass produced by New Jersey’s recycling processing centers. In addition, the Council recommends that the transportation agencies require the use of recycled foamed glass aggregate in future projects that need lightweight fill material.

8 Promote DEP’s Office of Permitting and Project Navigation Assistance Program

The Council recommends that the DEP’s Office of Permitting and Project Navigation assist members of the recycling industry as they navigate the Department’s regulatory procedures. Furthermore, the Council recommends that the DEP proactively promote this one-stop permitting program to the industrial sector since this program streamlines what many in the private sector consider to be a confusing process.

9 Establish a Recycling Markets Center

The Council recommends that a Recycling Markets Center be established in New Jersey and work in conjunction with Rutgers University. Similar to the center established in Pennsylvania, the mission of the New Jersey Recycling Markets Center would be to expand and develop more secure and robust recycling markets. It would be a clearinghouse of environmental, economic development, and manufacturing resources for end use support of recycled commodities and products. Among other things, the proposed Center would work closely with DEP’s Office of Permitting and Project Navigation.

10 Encourage manufacturers to “Design for Recycling”

The Council recommends that manufacturers utilize packaging materials that are readily recyclable rather than materials that are not recyclable or sustainable. More specifically, the Council recommends that product manufacturers follow the Institute of Scrap Recycling Industries’ “Design for Recycling” guidelines.

11 Enact an Executive Order and state law on state agency “green” purchasing

The Council recommends that an Executive Order on state agency “green” purchasing be adopted as a short-term measure. The recommended Executive Order could simply be a re-issuance of Executive Order #11 or an entirely new order and should focus on the purchase of post-consumer recycled content products by state agencies. In addition, the Council recommends that a new comprehensive state law on state agency “green” procurement be enacted as a long-term measure. The Council further recommends that both measures include a 15 percent price preference for the purchase of post-consumer recycled content products. The Council also recommends that such a law include a requirement that an annual report on state agency purchasing of recycled products be prepared by the New Jersey Department of Treasury, Division of Purchase and Property at the conclusion of each calendar year, sent to the Legislature annually and posted on the DPP website.

12 Encourage recycled content product purchasing on municipal level

The Council recommends that local government agencies use the New Jersey Department of Treasury, Division of Purchase and Property system for the purchase of recycled content products when purchasing products for their respective agencies.

13 Establish a “Director of Green Purchasing” position

The Council recommends that the New Jersey Department of Treasury, Division of Purchase and Property establish a Director of Green Purchasing position in the agency. The Director of Green Purchasing would assist state agencies in procuring green products and would be an advocate for the purchase of recycled products and other environmentally friendly products by New Jersey state agencies.

14 Troubleshoot recycling export issues

The Council recommends that the New Jersey Business Action Center’s Office of Export Promotion meet with representatives of the DEP, the Association of New Jersey Recyclers, and the recycling industry to discuss issues impacting the export of recyclable materials from New Jersey ports and acceptance of recyclable materials at international markets.

15 Additional staff resources for DEP

The Council recommends that additional staff resources be provided to the DEP to better enable the Department to act on the recommendations set forth in this report.

Recycling Contamination

Background Information

Recycling contamination has been one of the key issues in the recycling industry for almost a decade. As noted above, recycling contamination occurs when non-acceptable items end up in the recycling stream. Non-acceptable items that are mixed in with commingled recyclable materials negatively impact the marketability and price of the recyclable materials collected.



Manufacturers require clean, contaminant-free recyclable feedstocks to make new recycled content products and thus cannot accept loads of recyclable materials that are contaminated with coffee cups, plastic bags,

17% of
US recycling is
contamination

trash and other non-acceptable items. A 2020 report issued by The Recycling Partnership, a national non-profit recycling advocacy organization, documented a 17 percent national incoming contamination rate at recycling processing centers in the United States. This finding is consistent with the results of a recent New Jersey-focused survey conducted by the Recycling Market Development Council.

Factors contributing to recycling contamination

While there are many factors that contribute to recycling contamination, the following are considered the top reasons behind this troubling development:

- **Single stream collection** - In the early 2000s, most recycling programs switched from dual stream collection to single stream collection. In dual stream systems, bottles, cans and containers are collected in one curbside bucket, while paper grades are collected in another bucket. This contrasts with single stream systems, which allow users to mix all recyclable materials in one bucket, bin or cart. The switch to single stream recycling seemed to send a signal out to some residents that they could put anything and everything in their curbside recycling buckets.

- **Wishful recyclers-** Wishful recyclers are dedicated recyclers who put non-acceptable items in their recycling bucket in the hope that these items will get recycled.

- **Confusion** - Some of the contamination that occurs is simply the result of individuals being confused about what can and cannot be recycled in their local program.

- **Variations in recycling program requirements throughout the state** - New Jersey's recycling law called for each of the state's twenty-one counties to develop a recycling plan that lists the recyclable materials that must be recycled in that county. While all the county recycling plans initially called for and still call for the recycling of the basic materials – paper, glass bottles, metal cans, plastic containers and corrugated cardboard – over time the requirements began to differ from county to county. There can even be differences in recycling requirements between municipalities in the same county. Thus, what is recyclable at your home may not be recyclable at your office in another county.



- **Lack of recycling education programs focusing on the importance of contaminant-free recyclables and insufficient number of curbside recyclable materials inspection programs from 2000-2013** – When recycling collection programs switched to single stream systems in the early 2000s, worldwide recycling markets were very strong and prices were high. At that time, the Chinese economy was booming and Chinese recycling markets accepted as much material as possible with little concern to quality. As a result, there was little incentive for domestic processors and local recycling programs to focus on educating residents about quality control or embarking on recycling enforcement initiatives. Consequently, by the time China instituted its restrictive quality control measures starting in 2013, many residents had already developed numerous misconceptions about the acceptable materials that could be placed in their recycling buckets. Ultimately, the poor recycling habits that had been developed led to loads of recyclable materials originating in the United States being rejected at Chinese ports due to high levels of contamination.

- **Product packaging** - The recycling information found on the product or packaging of many consumer products often misleads consumers about the product or packaging's recyclability. It is quite common for a product or its packaging label to indicate that the product or packaging is recyclable when in fact it is not accepted in local recycling collection programs. Consumers trust product labels and so this misinformation results in recycling contamination.

Best Management Practices for Reducing Recycling Contamination – Recommendations:

→ Return to dual stream collection where feasible

The Council recommends a return to dual stream collection where feasible. (**Note** - Currently, 73 percent of New Jersey's recycling collection programs are single stream systems.) While not financially or logistically feasible for all recycling programs, a return to dual stream collection from single stream collection would make sense and be beneficial for some local recycling collection programs. Dual stream collection programs typically generate cleaner, less contaminated, and more marketable materials than single stream collection systems. Consequently, the recyclable materials generated in dual stream systems have a greater economic value and so local recycling collection programs typically earn more revenue for their materials from dual stream systems. Another key advantage for dual stream programs is that they prove to be more stable when recycling markets are slumping since they generate cleaner, more marketable materials as compared to single stream systems that produce a lower value mix of materials.

- The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers (ANJR), produce a fact sheet on the advantages of dual stream collection for municipalities and counties. The fact sheet should be made available in both print and digital forms and should be posted on the Department's recycling website found at recycle.nj.gov and the ANJR website found at www.anjr.com. The fact sheet should also be sent directly to municipal and county recycling offices.
- The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, hold a free webinar on the benefits of dual stream collection. Municipalities that have successfully switched back to dual stream collection programs from single stream programs should be featured in the webinar.

→ Re-establish a low-interest recycling equipment/infrastructure loan program

The Council recommends that the New Jersey State Legislature re-establish a low-interest recycling equipment/infrastructure loan program for the recycling industry. Such a program would enable facilities to invest in upgrades that will ultimately enhance recycling in New Jersey. Upgrades could include retrofitting a facility to enable it to process recyclable materials collected from dual stream systems. The Council recommends that federal funding sources or state economic development funding sources be utilized for this program. (**Note** -The DEP administered a low-interest recycling loan program for the private sector in the late 1980s through 1996.)

→ Initiate a statewide public education campaign

The Council recommends that a statewide public education campaign be initiated by the DEP and funded through the Recycling Enhancement Act. More specifically, the Recycling Enhancement Act of 2008 (P.L. 2008, c6) allocates 5% of the annual Recycling Fund, which is generated by a \$3.00 per ton recycling tax on waste sent for disposal, for grants to institutions of higher education to conduct research in recycling. The Council recommends that the Recycling Enhancement Act be revised such that \$250,000 of this allocation is set aside each year for an annual statewide public education campaign to be overseen by the DEP. The campaign will educate the public about the recycling contamination issue and recycling, in general.

→ As a short-term strategy, the Council recommends that the DEP work with the state's college and university media and marketing departments and their students on a statewide public education campaign on recycling. The development of short documentary films on various recycling topics should be part of this initiative.

→ Add a “Recycling Corps” element to Sustainable Jersey for Schools

The Council recommends that the Sustainable Jersey for Schools program add a Recycling Corps element to its school certification program. Interested students would enroll in a school Recycling Corps and work together to promote the school’s recycling program. Among other things, Recycling Corps members would educate other students and staff about the school recycling program, monitor the day-to-day operations of the recycling program and report on the results achieved. It is further recommended that New Jersey colleges and universities form their own Recycling Corps programs, which can be modelled after the Climate Corps program established by Rutgers University.

→ Promote Recycle Coach and other recycling information systems

The Council recommends that the Recycle Coach information system, or similar systems, be further promoted. The Recycle Coach information system and other similar systems reduce confusion about local recycling program requirements through a mobile app that enables residents to have this information at their fingertips. While the DEP provides Recycle Coach at no cost to municipalities, there are still many non-participating municipalities in the state.

→ The Council recommends that the DEP provide a bonus grant through its Recycling Tonnage Grant program to those municipalities that have registered in the Recycle Coach system or a similar system. This would be a one-time bonus grant for participating municipalities. This bonus grant initiative would be terminated once all New Jersey municipalities are registered in the Recycle Coach system or other similar system.

→ The Council recommends that the DEP develop a “heat map” highlighting those municipalities participating in the Recycle Coach system or other similar system. This heat map would be posted on the DEP recycling website and would also accompany a press release on the topic. It is believed that this initiative would provide an incentive for non-participating municipalities to register for the Recycle Coach system or other similar system.

- The Council recommends that the DEP develop a case study(ies) highlighting a municipality that has utilized the Recycle Coach or other similar system successfully to reduce recycling contamination. The case study should be featured on the DEP recycling website.
- The Council recommends that the DEP annually recognize the municipality with the most active (i.e., most residents having downloaded the app and most residents using the app) Recycle Coach system or other similar system in the annual DEP Recycling Awards program.
- The Council recommends that the recycling coordinator certification program coordinated by Rutgers University and funded by the DEP incorporate into its curriculum information about the benefits of the Recycle Coach system or other similar system, as well training on the implementation of such systems.
- The Council recommends that municipalities that utilize the Recycle Coach system or other similar system provide adhesive stickers that highlight the applicable recycling information system to residents for use on their recycling buckets, bins or carts. These visual reminders will encourage residents to download and use the applicable app. Funds from the annual recycling tonnage grant program could be used for this purpose.

→ Tie recycling into climate change curriculum at schools

The Council recommends that recycling be tied into the climate change curriculum at schools. Recycling, and especially the recycling of food waste, leads to reductions in greenhouse gas generation. New Jersey students should be made aware of this correlation, as well as the overall environmental and economic benefits of recycling and importance of keeping recyclable materials free of contaminants.

- The Council recommends that the recycling education curriculum developed by the Association of New Jersey Recyclers be updated to include information that highlights the correlation between recycling and reductions in greenhouse gas generation. The Association of New Jersey Recyclers, in conjunction with the DEP, should disseminate the updated curriculum to all New Jersey K-12 school districts.
- The Council recommends that the Sustainable Jersey for Schools program include information on the correlation between recycling and reductions in greenhouse gas generation.

→ Address packaging label confusion

The Council recommends that the confusion arising from packaging labels be addressed. Residents get confused about the recyclability of a product or package when they see a message on a packaging label which indicates that the product or package is recyclable when it is not accepted by any local recycling programs. This confusion results in an increase in recycling contamination in the recycling stream.

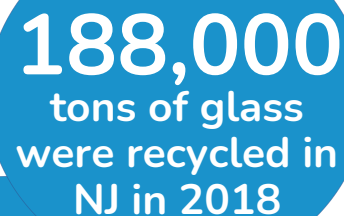
- The Council recommends that the DEP encourage New Jersey based manufacturers to use clear, accurate instructions with respect to recycling messaging on their products and packaging.
- The Council recommends that New Jersey colleges and universities work together and issue a report that explains this problematic labeling issue and ways in which to correct it. The report would be another avenue by which manufacturers would be encouraged to proactively address this labeling issue.
- The Council recommends that information about the problems arising from inaccurate recycling messaging on products and packaging be part of the statewide public education campaign recommended above. In the short-term, this labeling issue should be featured in the college/university-produced recycling documentary films that are recommended above.
- The Association of Plastics Recyclers, whose membership includes companies that manufacture plastic products and packaging, is reviewing this issue through a national committee. It is anticipated that the recommendations of the committee will result in substantive improvements in the recycling messaging found on plastic consumer products. The Council recommends that the DEP and the Association of New Jersey Recyclers support this effort and share the findings of the committee through social media and other means.

→ The Council recommends that “Truth in Labeling” legislation be advanced by the New Jersey State Legislature. This type of legislation, which has already been passed in California, makes it illegal to include the recycling symbol on a product or packaging that is not recyclable. The Council further recommends that any Truth in Labeling legislation advanced in New Jersey clarify that a product or packaging labeled as recyclable must in fact be recyclable in practice and not simply recyclable in theory. In addition, the Council recommends that misuse of the term recyclable be classified as a per se violation of the New Jersey Consumer Fraud Act.

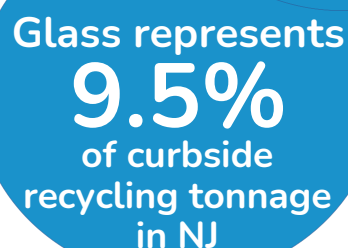
Glass Container Recycling

Background Information

The recycling of glass containers has been a mainstay of municipal recycling since the 1970s. While plastic packaging has replaced glass packaging in many products over the ensuing 50 years, glass food and beverage containers continue to be key components in the curbside recycling stream. In fact, of the typical materials found in curbside recycling buckets, bins or carts, glass represents 9.5% of the total tonnage. According to the DEP's recycling statistics, almost 188,000 tons of glass were recycled in New Jersey in 2018.



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Glass represents
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in NJ

Single stream collection of curbside recyclable materials (i.e., all recyclable materials, - including clear, amber and green glass containers - collected together in one curbside bucket, bin or cart) is the primary method of collection in New Jersey. As noted previously, 73 percent of New Jersey's recycling collection programs are single stream systems (with the remainder being dual stream systems). Understandably, glass containers break during collection and transport, as well as when handled at the recycling processing center. Most recycling processing centers, and especially single stream processing centers, are not designed or equipped to color separate this mixed color broken glass stream. Thus, most of the glass product generated at recycling processing centers is a mixed color glass stream.

Unlike recyclable paper and plastic which moves to both international and domestic end markets, the end markets for recyclable glass are solely domestic. Glass is a heavy material, so shipping it long distances is not economical. Thus, glass recycling is a regional undertaking. Glass recycling end use is tied directly into whether the glass is color separated or mixed color. Color separated glass – especially clear glass – has a higher market value than mixed color glass and can be used for higher end purposes, such as in glass container manufacturing. Lower value mixed color glass cannot be used in glass container manufacturing and so is used in various construction applications and as alternate daily cover for landfills, among other things.

Glass Processing Facilities

While there are over 20 recycling processing facilities in New Jersey that receive mixed recyclable materials from curbside recycling programs, only one has optical sorting equipment capable of color separating glass – Sims Municipal Recycling in Jersey City. Sims uses this equipment to separate the clear glass from the amber and green glass. The region also has one out-of-state mixed glass optical sorting plant – CAP Glass in Connellsville, PA. Based upon discussions with industry representatives, there is a real need for more facilities that can color separate and clean up the recyclable glass generated by recycling processing centers in the state and region. These secondary glass recycling facilities are typically referred to as “glass beneficiation facilities.” Glass beneficiation facilities provide product manufacturers with color separated glass feedstocks that are clean, consistent and free of contaminants.



Glass Container Manufacturers

In the late 1980s there were six glass container manufacturing plants in New Jersey. Today, only one glass container manufacturing plant still operates in New Jersey. It is the Ardagh Glass plant in Bridgeton, New Jersey. The nearest glass container manufacturing plants outside of New Jersey are in western Pennsylvania, north and northwestern New York state and Williamsburg, VA. (While there are a few specialty glass plants in New Jersey producing test tubes, cosmetic bottles and other specialty glass containers, these facilities are small in size and are not considered end markets for the container glass collected curbside in the state.)

According to Scott DeFife, President of the Glass Packaging Institute, it is feasible for a glass container manufacturer to consider siting a new plant in New Jersey or other northeastern location. Mr. DeFife indicated that the most important factor in drawing a plant to New Jersey or the northeast is the need for northeast product manufacturers to package more of their products in glass. While other factors such as energy costs and environmental regulations are also key considerations, it is interesting to note that the need for greater demand for glass is viewed as the most significant factor in drawing a glass container manufacturing plant to New Jersey.

Ardagh Glass uses recycled clear glass in its manufacturing process and would like to use more if a supply was available. According to the Glass Packaging Institute, container glass is currently made on average with 30 percent post-consumer recycled content glass. Major U.S. beer manufacturers are looking to increase the recycled content glass in their bottles to further support their company sustainability goals. The glass container manufacturing industry would like to meet this demand by achieving a 50 percent post-consumer recycled content level in the years ahead but needs to ensure that the recyclable glass to be utilized in the manufacturing process is clean and free of contaminants.

New Jersey is also home to one fiberglass manufacturing plant - the Johns Manville plant in Berlin, New Jersey. The Johns Manville website indicates that the company incorporates an average of 25 percent recycled content glass into its fiberglass building insulation across North America. That content is reported to include an average of 20 percent postconsumer recyclable glass with the balance being post-industrial recycled glass. Fiberglass manufacturers also require high quality glass for their production process.

The northeast (Philadelphia, PA) is also the location of a manufacturing operation – Aero Aggregates of North America LLC - that uses mixed color glass to produce foamed glass aggregate. Foamed glass aggregate is used as lightweight fill in construction applications. Aero Aggregates opened its doors in 2018 and accepts mixed color glass from various local sources. Aero Aggregates would like to receive more recycled glass, but also needs incoming glass to be clean and free of contaminants.

Glass Container Recycling Market Recommendations:

Drawing Glass Container Manufacturing to New Jersey

→ Promote the use of glass packaging among manufacturers

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, promote the use of glass packaging as an environmentally friendly packaging material. The goal of this initiative would be to increase demand for recyclable glass in the region. As part of this campaign, the environmental benefits of recycled glass should be highlighted.

→ Advance recycled content legislation for glass containers

The Council recommends that the New Jersey State Legislature advance recycled content legislation for glass containers sold in New Jersey. The percentage of recycled content in glass containers sold in New Jersey should be set at an ambitious rate that is well-above what the industry is currently achieving at this time. As noted above, the Glass Packaging Institute reports that container glass is currently made on average with 30 percent post-consumer recycled content glass. (**Note** – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council's deliberations on this matter in 2021.)

→ Establish a glass recycling working committee

The Council recommends that a working committee consisting of representatives from the glass container manufacturing industry, local product manufacturers, recycling processing centers and state and county government be established to discuss increasing the use of recycled glass.

→ Re-establish a recycling tax credit program

The Council recommends that the New Jersey State Legislature re-establish a recycling tax credit program which would draw manufacturers that use recyclable materials - including recyclable glass - in their production process to New Jersey. (**Note** – The DEP administered a recycling tax credit program in the late 1980s and early 1990s.)

Increasing Post-Consumer Recycled Content Glass in Fiberglass Production

As noted above, there is one fiberglass manufacturing facility in New Jersey - the Johns Manville plant in Berlin, New Jersey.

- Encourage the Johns Manville company to use more post-consumer recyclable glass

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, initiate a dialogue with the Johns Manville company to promote the greater use of post-consumer recyclable glass in the company's fiberglass products.

Improving the Quality of Recyclable Glass/Need for Glass Beneficiation

- Reinstate the DEP's low-interest recycling equipment/infrastructure loan program with an emphasis on equipment used to clean up the glass stream

As noted previously in this report, the Council recommends that the New Jersey State Legislature reinstate the DEP's low-interest recycling equipment/infrastructure loan program for the recycling industry. While such a program would be open to any recycling equipment/infrastructure purchase, the Council recommends that the DEP's guidelines for this program indicate that equipment used to clean up the glass stream is one of several preferred uses of the loan fund.

- Hold biannual meetings to discuss strategies for cleaning up the glass recycling stream

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, hold biannual meetings with operators of recycling processing centers to discuss strategies to clean up the glass recycling stream, as well as current market challenges and opportunities.

- Promote the establishment of a glass beneficiation facility in New Jersey to domestic and international glass beneficiation companies

The Council recommends that the DEP reach out to both domestic and international glass beneficiation companies and highlight the benefits of establishing a glass beneficiation facility(ies) in New Jersey. The benefits to be highlighted should include New Jersey's large population base which generates a significant tonnage of recyclable glass each year, the mature recycling infrastructure present in the state, the vast distribution network available in New Jersey and the pro-recycling environment that exists in the state.

Proactive Procurement Strategies for New Jersey's Transportation Agencies

New Jersey has utilized recyclable materials in various road construction and maintenance projects throughout the years. Greater use of such materials by the state's transportation agencies would strengthen local recycling markets and enhance recycling in New Jersey.

- Require the use of recycled foamed glass aggregate

The Council recommends that the state's transportation agencies require the use of recycled foamed glass aggregate in future projects that need lightweight fill material.

- Promote the use of recycled foamed glass aggregate

The Council recommends that the state's transportation agencies promote the use of recycled foamed glass aggregate to county and municipal engineering departments, private construction contractors and the U.S. Green Building Council – New Jersey Chapter.

- Revisit the use of "glassphalt"

The Council recommends that the state's transportation agencies revisit the use of "glassphalt" (i.e., asphalt pavements made in part with recycled glass aggregate) and proactively use glassphalt pavements in future road construction projects. Such projects could consume large quantities of the mixed color glass produced by New Jersey's recycling processing centers.

- Establish a financial incentive program to encourage glassphalt use
The Council recommends that the state's transportation agencies, in conjunction with the DEP, establish a short-term financial incentive program that would spark greater interest in the use of glassphalt by the private road construction industry.

Recycled Glass Drainage Material Market

In the 1990s, the DEP worked with national officials to revise the National Plumbing Code to allow recycled glass aggregate to be used as drainage material in various building applications.

- Promote the use of recycled glass in construction drainage systems
The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, promote the use of recycled glass in construction drainage systems to New Jersey's applicable building and construction trade organizations and the U.S. Green Building Council – New Jersey Chapter.

Regulatory Considerations:

- Assess impact of air quality rules on the potential siting of glass container manufacturing plants in New Jersey
The Council recommends that the DEP assess the impact of its air quality rules on the potential siting of glass container manufacturing plants in New Jersey, as well as to determine ways in which any such impacts can be minimized through regulatory reform.
- Assess the impact of air quality rules on the incorporation of recyclable glass in asphalt production
The Council recommends that the DEP assess the impact of its air quality rules on the potential incorporation of recyclable glass in asphalt production at asphalt manufacturing plants, as well as to determine ways in which any such impacts can be minimized through regulatory reform.

- Work with the glass manufacturing and processing industry to ensure compliance with New Jersey's environmental justice law

The Council recommends that the DEP proactively work with the glass manufacturing and processing industry regarding compliance with the state's new environmental justice law.

- Promote the DEP's one-stop permitting program

The Council recommends that the DEP proactively promote its one-stop permitting program administered by the DEP, Office of Permitting and Project Navigation to the glass manufacturing and glass processing industry since this program streamlines what many in the private sector consider a confusing process.

- Track current glass marketing trends through an annual Class A facility report

The Council recommends that the DEP track current glass marketing trends among the recycling centers for Class A recyclable materials located within New Jersey. Specifically, the DEP's annual Class A recycling facility report should include a section for the reporting of the end uses of the glass marketed.

Paper and Corrugated Cardboard Recycling

Background Information:

Paper recycling has always played a prominent role in the recycling history of the United States dating back to the paper drives held during World War II and the 1970s paper drives run by the Boy Scouts, Girl Scouts and other charitable organizations. Paper recycling continues to be a standard component of all municipal recycling programs and an important material to the recycling industry. While digital media has



displaced much of the newspaper in the recycling system, mixed paper and corrugated

Paper represents 35% of Class A recycling tonnage

cardboard remain key components in New Jersey's recycling stream. In fact, paper represents 35% of the total Class A recyclable material tonnage collected in New Jersey while corrugated cardboard represents 45% of the total Class A recyclable material tonnage collected in New Jersey. According to the DEP's recycling statistics, almost 1,600,000 tons of paper and corrugated cardboard were recycled in New Jersey in 2018.

Cardboard represents 45% of Class A recycling tonnage

Paper and Corrugated Cardboard Collection and Processing:

As noted previously, most recycling programs in New Jersey are single stream collection systems. Thus, recyclable paper grades are predominantly collected in the same recycling bucket, bin or cart with glass bottles, metal cans and plastic containers. Corrugated cardboard is either collected in or alongside the single stream recycling bucket, bin or cart. Also as noted above, there are over 20 processing centers in the state that receive loads of commingled curbside recyclables and separate the materials for various end markets. Mixed paper and corrugated cardboard are key materials processed at these facilities.

Paper Mills Using Recyclable Paper and Corrugated Cardboard as a Feedstock:

The New Jersey region is home to four paper mills that use recyclable paper and corrugated cardboard as feedstocks in the production of new paper products. They are as follows:

- **Homasote Company, Ewing, NJ** – Homasote uses old newspapers and mixed paper to make building and industrial packaging products.
- **Marcal, Elmwood Park, NJ** – Marcal uses a variety of recyclable paper grades to make recycled content bath, towel and tissue products.
- **Pratt Industries, Staten Island, NY** – Pratt uses mixed paper and old corrugated cardboard to make new corrugated cardboard boxes and displays.
- **Newman & Company, Philadelphia, PA** – Newman uses mixed paper grades to make chipboard, which is used in paper boxes, game boards, puzzles, book covers, and tablets.
- **Note: Empire Recycled Fiber** is scheduled to open a new paper mill in Fairless Hills, Pennsylvania in 2023 that will make containerboard from recyclable mixed paper and corrugated cardboard.

Export Markets - Impact of Changes in the Chinese Recycling Market on Paper and Corrugated Cardboard Recycling:

At times during the past two decades, it was estimated that approximately 50% of the recyclable paper collected in the United States was sent to China for recycling. Due to the high level of contamination found in the loads of material entering their ports, Chinese environmental officials enacted new quality control specifications starting in 2013. China further tightened its quality control specifications in the ensuing years and eventually banned the import of numerous recyclable materials.



These strict new requirements and the eventual ban on the import of many recyclable materials virtually shut off the Chinese paper recycling market and left recyclers scrambling to find new markets. Other overseas markets - most notably in southeast Asia – began accepting more recyclable paper but it was not enough to offset the loss of the Chinese recycling market. With supply greater than demand, prices for recyclable paper grades and corrugated cardboard declined significantly in the years leading up to the pandemic.

Impact of the Pandemic on Paper and Corrugated Cardboard Recycling Markets:

As noted previously, the dynamics of the paper industry changed dramatically as a result of the pandemic of 2020. Simply stated, the pandemic greatly impacted supply and demand in this market. The demand for recyclable paper and old corrugated cardboard feedstocks skyrocketed due to the surge in online shopping and panic purchasing of toilet paper and other tissue products while the



supply of these recyclable materials declined due to the closing of many businesses. This resulted in a sharp rise in the prices paid for these recyclable commodities. Export and domestic demand for recyclable paper grades and corrugated cardboard remained strong through 2020 and 2021, as did the prices paid for these materials.

In 2021, Indonesia, India and Vietnam were among the countries that began receiving significantly more tons of recyclable paper from the United States. Other major export markets for the recyclable paper generated in the United States are Mexico, Thailand, Taiwan, Canada, Malaysia and South Korea.

Paper and Corrugated Cardboard Recycling Market Recommendations:

The Council contacted representatives of paper mills in the region that use recyclable paper and corrugated cardboard as feedstocks to discuss key market issues and were told by all officials that the most pressing problem facing the paper recycling industry is the recycling contamination problem. The mill operators stated that the quality of the materials being generated from both residential curbside collection programs (especially single stream collection programs) and commercial generators is poor and problematic for the industry. This is consistent with information garnered from representatives of New Jersey recycling processing centers.

Paper and Corrugated Cardboard Recycling in the Residential Sector

- Establish a statewide recycling education campaign for the residential sector

The Council has previously recommended the establishment of a statewide recycling education campaign for the residential sector. This campaign should include specific information on paper and corrugated cardboard recycling. The Council believes that the campaign must emphasize that recyclable paper and corrugated cardboard are raw materials used to make new products and that communities must provide a contaminant-free feedstock for this process to work economically and for the greatest environmental benefit.

- Develop a resource to help the public understand paper and corrugated cardboard recycling systems

The Council recommends that the New Jersey Paper Recycling Association develop an easy-to-understand resource for the public that clearly outlines the complexities of the worldwide paper and corrugated cardboard recycling systems. This resource should cover the following issues: domestic versus export markets, single stream collection versus dual stream collection, the impact of recycling contamination on markets and worldwide commodity pricing factors. It is further recommended that this resource utilize a graphic or video format as opposed to a narrative format.

- Consider removing aseptic cartons from list of mandatory recyclable materials

Aseptic cartons – shelf stable and refrigerated cartons used for juices, soups and other products - represent a very small fraction of the curbside recycling mix and are comprised of paper fibers and other materials but are marketed to paper recycling end markets. The end markets for these cartons, however, have not materialized. As such, the Council recommends that county and municipal recycling officials consider removing these items from their list of mandatory recyclable materials for the residential sector until such time as stable end markets for these cartons are secured.

→ Promote research to improve aseptic carton recycling

The Council recommends that New Jersey colleges and universities apply for state research grant funding for projects aimed at improving the recycling of aseptic cartons.

Paper and Corrugated Cardboard Recycling in the Commercial Sector

→ Initiate a recycling education campaign targeted at the commercial sector

The Council recommends that the DEP initiate a recycling education campaign targeted at the commercial sector.

→ Perform outreach to the commercial sector encouraging commercial generators to clean up their recycling streams

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, reach out to major retail store chains and Chambers of Commerce to promote the need for commercial generators to clean up their recycling streams.

→ Reinstate the “Recycling Enforcement Sweeps” program

The Council recommends that the DEP reinstate its “Recycling Enforcement Sweeps” program, which was utilized successfully in the past to increase recycling compliance in the commercial sector. Through this initiative businesses in a particular county(ies) were visited by DEP enforcement staff to determine if they were complying with local recycling requirements.

→ Provide technical assistance on recycling program implementation to commercial generators

The Council recommends that local officials – municipal recycling coordinators, county health officials, green team members, environmental commission members, etc. – provide technical assistance on recycling program implementation to commercial generators located within their municipality and utilize enforcement powers when necessary.

- Promote recycling at commercial establishments located near college campuses

The Council previously recommended that colleges and universities establish “Recycling Corps” programs to help promote recycling on college campuses. The Council recommends that local officials consider teaming up with Recycling Corps members to promote recycling at commercial establishments near college campuses.

- Initiate a Chamber of Commerce recognition program for New Jersey companies that have outstanding recycling programs

The Council recommends that the New Jersey State Chamber of Commerce initiate a recognition program for New Jersey companies that have outstanding recycling programs. Such a program could mirror the many other existing ranking programs that recognize the top 100 doctors, high schools, municipalities, restaurants, etc. in the state.

Paper and Corrugated Cardboard Recycling – DEP Recycling Reporting Systems

The Council recommends that the DEP delete the “Newspaper” category from its Recycling Tonnage Grant program list of material categories. In addition, the same revision is recommended for the reports required of recycling centers for Class A recyclable materials. This recommended revision would better reflect today’s paper recycling market as recycling programs no longer market material as “Newspaper.” Such a material category revision would help clarify market needs and provide better data that could be used to address market issues. The Council recommends that the DEP meet with the Association of New Jersey Recyclers and recycling industry representatives to better define the various paper categories in the DEP recycling reporting system to reflect today's paper recycling market.

Plastic Container Recycling

Background Information

Over the last 50 years, manufacturers have increasingly turned to plastic packaging for numerous consumer products that were once packaged in glass containers or metal cans. Not surprisingly, the ever-growing use of plastic packaging in consumer products has led to a proliferation of plastics in the waste stream. With many of the plastics used in today's consumer products having limited or no recycling end markets, a significant amount of plastic is disposed as solid waste or illegally disposed in the environment.



In 1988, a plastic resin identification system was developed by the plastics industry to facilitate the recycling of post-consumer plastics. Seven different resin identification codes (i.e., types of plastics) were established at that time and are as follows:

- **#1 PET or PETE (polyethylene terephthalate)** – PET plastic is used to make soda and water bottles.
- **#2 HDPE (high density polyethylene)** – HDPE plastic is used to make milk, detergent and juice bottles.
- **#3 PVC (polyvinyl chloride)** – PVC plastic is used to make flooring, shower curtains, house siding, garden hoses, and many other products.
- **#4 LDPE (low density polyethylene)** – LDPE plastic is used to make cellophane wrap, disposable diaper liners and squeeze bottles.
- **#5 PP (polypropylene)** – PP plastic is used to make yogurt containers and margarine tubs.
- **#6 PS (polystyrene)** – PS plastic, commonly known as "Styrofoam," is used to make coffee cups, take-out food packaging, egg cartons, and packaging "peanuts."
- **#7 Other Plastic** - All other plastic resins or a mixture of resins.

Plastic Containers – Collection and Processing:

While there are seven different resin identification codes for plastic packaging, most New Jersey recycling programs only collect polyethylene terephthalate (PET #1) and high density polyethylene (HDPE #2) plastic bottles since end markets for these plastics are more well established and readily available. There are, however, programs that also collect polypropylene containers at the curb and even some that accept all types of plastics. Plastic containers are either collected via single stream collection systems (all recyclables mixed together in one bin) or dual stream collection systems (containers mixed together in one bin and paper collected in a separate bin). Of the typical materials found in curbside recycling buckets, bins or carts, plastic containers represent almost 6% of the total tonnage collected at the curb. According to the DEP's recycling statistics, almost 113,000 tons of plastic containers were recycled in New Jersey in 2018.

As noted previously, there are over twenty processing centers in New Jersey that accept and sort commingled curbside recyclables for various recycling end markets. These facilities are typically designed for sorting out PET #1 and HDPE #2 plastic containers from the incoming mix of materials, however, there are a few facilities that also sort out polypropylene #5 plastic containers.

While there are several recyclable plastics processors and manufacturers in the region (particularly in Pennsylvania) that process and use both non-residential and residential recyclable plastics to make new plastic end products or feedstocks, there is only one such operation in New Jersey:

- **GDB International, Inc., New Brunswick, NJ** – GDB pelletizes post-consumer recyclable plastic film (e.g., shrink wrap, stretch wrap, garment bags) that is generated by commercial warehouses, retail stores and households. The pellets are used by manufacturers to produce recycled content garbage and grocery bags.

Export Markets - Impact of Changes in the Chinese Recycling Market on Plastic Container Recycling:

As noted previously, a large percentage of the recyclable plastic collected in the United States was sent to China in the first decades of this century. With the Chinese recycling market tightening its quality control specifications in 2013 (and in the ensuing years) and eventually banning the receipt of numerous recyclable materials, the worldwide supply of recyclable plastic soon outpaced the demand for the material. This led to the prices for these materials dropping considerably in the years leading up to the pandemic of 2020.

Pandemic impact:

The health crisis resulted in a reduction in the demand for oil due to shutdowns in the manufacturing and business sectors and greatly reduced automobile travel. This led to oil prices dropping significantly. This in turn further weakened the commodity market prices for recyclable PET and HDPE plastics, both of which are greatly impacted by oil prices. Commodity prices for recyclable PET and HDPE plastics during the 2020 pandemic were at or near historic lows.

Current Status/Prices for Recyclable Plastics Markets:

Plastics markets rebounded in 2021 and are currently very strong with market prices extremely high. This is due in part to increased demand from U.S. manufacturers for recycled plastic feedstocks for product packaging, as well as rising worldwide oil prices.

Plastic Container Recycling Market Recommendations:

- Ensure proposed “chemical recycling” practices do not disrupt traditional recycling activity

There is some support at the federal and state level for what is being called “chemical recycling” of plastics. This process entails breaking down plastics to their chemical compounds via a pyrolysis system with the end product being a fuel. (**Note** - Pyrolysis is the thermal decomposition of materials at elevated temperatures in an inert atmosphere. It involves a change of chemical composition.) Historically, the NJDEP, the Association of New Jersey Recyclers and other environmental organizations have not considered the use of a recyclable material as a fuel to be a recycling activity. The Council agrees with this position and is concerned that chemical recycling options could disrupt viable traditional recycling markets for plastic containers and lead to the burning of recyclables being considered a recycling activity. Thus, the Council finds that chemical recycling should not be considered a recycling activity, nor count towards state recycling goals or state recycling tonnage grants since plastics that are chemically recycled are consumed as fuel and not used to make new products.

- The Council would reconsider its position on the chemical recycling of plastics should future developments in the field of chemical recycling be such that they do not hinder or disrupt traditional recycling markets for plastic containers, but rather complement the existing plastics recycling system by providing a use for plastics with few or no traditional recycling markets.

- Advance “Truth in Labeling” legislation

As noted previously, residents get confused about the recyclability of a product or package when they see a message on a packaging label which indicates that the product or packaging is recyclable when in fact it is not accepted by any local recycling programs. This issue is especially pronounced with regard to plastic products and packaging. As a result, local recycling education programs spend an inordinate amount of time and resources addressing this issue. In addition, with new plastic packaging continually appearing in the marketplace, this confusion over recyclability only deepens. This results in an increase in recycling contamination in the recycling stream.

The recommendations on misleading packaging labels set forth previously in the recycling contamination section of this report are especially applicable to plastic packaging but will not be reiterated in this section with the exception of the Council's support for "Truth in Labeling" legislation. The Council recommends that "Truth in Labeling" legislation be advanced by the New Jersey State Legislature. This type of legislation, which has already been passed in California, makes it illegal to include the recycling symbol on a product or packaging that is not recyclable. The Council further recommends that any Truth in Labeling legislation advanced in New Jersey clarify that a product or packaging labeled as recyclable must in fact be recyclable in practice and not simply recyclable in theory. In addition, the Council recommends that misuse of the term recyclable be classified as a per se violation of the New Jersey Consumer Fraud Act.

→ The Council also recommends that the statewide education campaign previously recommended in this report place considerable focus on the misleading labeling issue as it pertains to plastic packaging.

→ Advance recycled content mandate legislation

The Council recommends that recycled content mandate legislation for plastic containers be advanced by the New Jersey State Legislature. Such legislation is essential since it would create continued demand for recyclable plastics and would help mitigate the fluctuating demand for this material caused by oil price fluctuations. (**Note** – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council's deliberations on this matter in 2021.)

→ Draw plastics processors to New Jersey through enhanced regulatory assistance

As noted above, there is only one recyclable plastic processor in New Jersey and it solely handles plastic film. As a result, plastic containers generated in New Jersey are typically sent to out-of-state processors, especially the many located in Pennsylvania. The Council believes that a major reason for the lack of plastic processing facilities in New Jersey and abundant number of such facilities in Pennsylvania is the regulatory flexibility inherent in Pennsylvania's environmental rules as compared to the lack of regulatory flexibility found in

New Jersey's environmental rules. The Council finds that regulatory issues too often delay projects in New Jersey and are a disincentive to the siting of new recycling businesses in the state. While the Council understands that New Jersey's environmental rules are designed to protect the environment and public health and cannot be disregarded for recycling projects, it recommends the measures outlined below be employed to make New Jersey more attractive and receptive to those looking to start a plastics recycling business (as well as other recycling businesses) in the northeast.

- The Council recommends that the DEP's Office of Permitting and Project Navigation assist members of the recycling industry as they navigate the Department's regulatory procedures.
- As noted previously in this report's recommendations for glass recycling, the Council recommends that the services of the DEP, Office of Permitting and Project Navigation be promoted through a targeted media campaign since it is a valuable, yet underutilized program.

→ Create a New Jersey Recycling Markets Center

The State of Pennsylvania's Recycling Markets Center is a non-profit 501c(3) corporation whose mission is to expand and develop more secure and robust recycling markets. It is a clearinghouse of environmental, economic development, and manufacturing resources for end use support of recycled commodities and products. The Center is headquartered at Penn State University - Harrisburg. The Council recommends that a similar New Jersey Recycling Markets Center be established in New Jersey and work in conjunction with Rutgers University. Among other things, the proposed Center should work closely with DEP's Office of Permitting and Project Navigation.

→ Explore polypropylene recycling (#5) opportunities

As noted above, polypropylene plastic (#5) containers are collected in a few New Jersey recycling programs. There is strong market demand for polypropylene and markets for this material are considered to be long-term viable markets. As such, the Council recommends that local recycling officials and recycling processing facility operators explore the feasibility of adding polypropylene containers to curbside collection programs.

Aluminum Can Recycling

Background Information:

The recycling of aluminum beverage cans has been an integral part of local recycling programs for decades. Of the typical materials found in curbside recycling buckets, bins or carts, aluminum cans represent 2% of the total tonnage collected at the curb. According to the DEP's recycling statistics, over 45,200 tons of aluminum cans were recycled in New Jersey in 2018. While these cans – which are sometimes referred to as UBCs (Used Beverage Containers) – do not account for a significant amount of tonnage, they have historically been the most valuable material in the curbside mix. Revenue from the sale of aluminum cans has always been essential to the economics of curbside recycling.

Another factor affecting the recycling tonnage of this commodity is a trend referred to as “lightweighting.” Simply stated, the aluminum industry has made its cans lighter and lighter over the years. In 1972 one pound of aluminum yielded 21.75 cans. In 2014, one pound yielded 30.4 cans and today, by using less material to make each can, one pound of aluminum makes approximately 34.9 cans. Thus, considerably more aluminum cans need to be collected by today's recycling programs in order to reach a ton.



Aluminum Cans – Collection and Processing

Aluminum cans are either collected via single stream collection systems (all recyclables mixed together in one bin) or dual stream collection systems (containers mixed together in one bin and paper collected in a separate bin).

New Jersey's recycling processing centers use eddy current separators to sort out aluminum cans from the mix of materials on the conveyor system. (**Note** - An eddy current separator is a machine that uses a powerful magnetic field to separate non-ferrous metals from an input waste or ore stream.) Notwithstanding the use of eddy current separators, today's lightweight cans crush more easily which increases their chance of not getting captured by the eddy current and ending up on the paper sorting conveyor lines, where they are difficult to detect. Recycling processing centers may need to upgrade their aluminum separation equipment if this becomes more of an issue in the future. The separated aluminum cans are then baled for shipment.

Aluminum Smelters in New Jersey:

State Metal Industries, Inc., Camden, NJ – State Metal Industries, Inc. is an aluminum smelter that receives various forms of aluminum scrap, including used beverage cans, and produces standard and custom specification aluminum alloy ingots.

Pandemic Impact:

As noted previously, the aluminum can recycling market slumped in 2020. The sluggish recycling market for this material was particularly troubling since aluminum cans have always been one of the most valuable materials in the curbside recycling mix and thus are essential to the economic viability of recycling programs. Aluminum can recycling is also critical to industry and the environment since the production of aluminum from recycled aluminum saves more than 90 percent of the energy that would otherwise be required to produce aluminum from raw materials.

Current Status of Aluminum Can Recycling Market and Key Issues:

Similar to other commodities, market prices for aluminum cans fluctuate based on global demand. While the price for aluminum cans dropped in 2019 and 2020, the price for this material rebounded in 2021 as market conditions changed. Global demand for aluminum cans remained strong throughout 2021 and is predicted to remain strong in the near future. The growing demand from beverage companies for recyclable and sustainable packaging has helped fuel this demand. New products – hard seltzers, energy drinks and more – are also being packaged in aluminum cans at an increasing rate.

There is sufficient domestic recycling market capacity in the United States for the aluminum cans generated in New Jersey. New Jersey recycling processing centers send bales of aluminum cans to markets on the east coast and in the southeastern United States. Aluminum cans generated in New Jersey are not shipped to international markets. Recognizing the growth in this market, domestic can producers are making investments to increase their capacity and consumption of recycled metals.

A key challenge facing the aluminum can recycling industry is the recycling contamination issue. As noted previously in this report, this is one of the most significant issues impacting recycling in the United States. A number of new beverage products packaged in aluminum cans feature a plastic labeling sleeve around the can and/or a plastic tab top. These plastics are contaminants in the aluminum recycling process. These contaminants are also fire hazards in the aluminum recycling system. Bales of aluminum that contain these plastic contaminants may be rejected by end markets.

In 2021, several national recycling organizations called for the enactment of national deposit legislation (also known as a “bottle bill”) for a variety of containers (including aluminum cans). The enactment of such a system would greatly impact recycling programs in New Jersey since it would result in the suspension of the recycling tax and the recycling grants derived from this funding source. In addition, deposit legislation would have a significant negative impact on New Jersey’s private recycling processing businesses, which have made significant investments in their facilities. Undoubtedly, should the most valuable recyclable materials – aluminum, plastics – be removed from the incoming mix of materials, it would threaten the economic viability of these facilities and could even result in operations going out of business.

Aluminum Can Recycling Market Recommendations:

→ Keep aluminum cans in curbside recycling stream

Discussions regarding aluminum can recycling often focus on deposit legislation (also known as “bottle bills”). The Council does not, however, support such legislation for aluminum cans (or other materials collected in curbside recycling programs) as deposit legislation would threaten the economic viability of New Jersey’s numerous recycling processing centers by removing the most valuable materials from the recycling stream. There are over twenty such recycling processing businesses in New Jersey, all of which have made significant monetary investments in their facilities. Furthermore, the Council finds that deposit legislation would increase costs for local recycling programs in New Jersey as processing centers would have to charge considerably more for the receipt of incoming materials to remain viable in light of the removal of valuable aluminum from the recycling stream. Furthermore, such a system would also result in the suspension of New Jersey’s recycling tax and the recycling grants derived from this funding source.

→ Instruct residents not to crush aluminum cans

The Council recommends that residents be instructed not to crush aluminum cans as crushed cans are more difficult to sort at recycling processing centers. Crushed and flattened aluminum cans that bypass sorting systems will contaminate other recyclable material streams.

→ Conduct outreach to New Jersey beverage companies that incorporate plastic components on aluminum cans

The Council recommends that the DEP reach out to New Jersey beverage companies that are currently placing plastic sleeves around their aluminum cans and/or utilizing aluminum cans with plastic tabs and inform them of the following:

- Aluminum cans with plastic sleeves and plastic tabs are contaminants in the aluminum can recycling system.
- Aluminum cans with plastic sleeves and plastic tabs jeopardize the economic viability of aluminum can recycling in New Jersey.
- All beverage products marketed in New Jersey should follow the Institute of Scrap Recycling Industries’ “Design for Recycling” guidelines; and

→ Extended Producer Responsibility legislation for aluminum cans will be recommended by the DEP to the New Jersey State Legislature should voluntary compliance with Institute of Scrap Recycling Industries' Design for Recycling guidelines not be followed by the local beverage industry.

Steel Can Recycling

Background Information

The recycling of steel cans (also known as tin cans) has been an integral part of local recycling programs for decades. These cans, which are actually tin-plated steel cans, are used for soups, tuna fish, diced tomatoes and other food products. Of the typical materials found in curbside recycling buckets, bins or carts, steel cans represent 2.5% of the total tonnage collected at the curb. According to the DEP's recycling statistics, almost 51,000 tons of steel cans were recycled in New Jersey in 2018.

Steel Cans – Collection and Processing

Steel cans are either collected via single stream collection systems (all recyclables mixed in one bin) or dual stream collection systems (containers mixed together in one bin and paper collected in a separate bin).

New Jersey's recycling processing centers use magnetic separators to sort out steel cans from the mix of materials on the conveyor system. Quality is typically not a problem in steel can recycling thanks to the use of magnetic separators. As such, steel cans are considered the easiest commodity to handle at these facilities. The separated steel cans are then baled for shipment.

Steel Mills in New Jersey

CMC Steel New Jersey, Sayreville, NJ – CMC Steel New Jersey uses scrap steel to produce rebar. The company has in the past accepted bales of steel cans for use in the steel production process but suspended their receipt of steel cans in mid-2021 due to a melting issue with the cans. The company is open to revisiting the use of steel cans in their production process in the future.

McWane Ductile - New Jersey, Phillipsburg, NJ – McWane Ductile - New Jersey uses scrap steel to produce metal pipes (3" - 24" in diameter, 18.5' long) that are used in domestic water lines. The company is open to receiving steel cans for use in their production process.

Pandemic Impact

As noted previously, the pandemic led to a reduction in manufacturing and building activity, which in turn reduced the demand for products made from scrap steel. Consequently, the market price for recyclable steel cans slumped considerably in 2020.

Current Status of Steel Can Recycling Market and Key Issues:

Markets for metals are typically stable, but like other commodities, they will fluctuate to some degree over time depending on various economic factors. The market price for this commodity rebounded in 2021 and remains stable. Historically, there is always a market for scrap metal and so moving this material to market is not considered a problem for the recycling industry. In general, steel cans generated in New Jersey are shipped to domestic markets.

- **Shifts in Consumer Product Packaging** - Packaging is always changing, and these changes have impacted steel can generation and recycling. Products that have historically been packaged in steel cans are now packaged in a variety of plastics with limited or no recycling markets. For example, tuna fish is now available in plastic pouches, while ground coffee is now packaged in plastic containers. Coffee pods have also reduced the use of steel cans.

Hybrid packaging – packaging that uses more than one material - presents its own set of problems for the recycling industry. For example, containers made with steel and paper used for potato chips or nuts are problematic in both the steel and paper recycling systems.

Undoubtedly, product manufacturers must move towards sustainable packaging that is readily recyclable in today's recycling system. National packaging legislation may be needed to address the proliferation of non-recyclable packaging that ultimately must be disposed as solid waste.

- **Public Education** - While it is believed that most residents in New Jersey know that steel cans are recyclable, there are still some that are unaware of this fact. As such, recycling education remains a top priority in the New Jersey recycling community.
- **Meal Kit Services** - A meal kit is a product delivered to customers that includes pre-portioned and sometimes partially prepared ingredients, which enables customers to prepare a meal without having to plan or shop for the ingredients. While some meal kit service companies use recyclable packaging materials, many do not. Thus, these kits generate a significant amount of waste. These companies must move towards sustainable packaging that is readily recyclable in today's recycling system.

Steel Can Recycling Market Recommendations:

→ Utilize packaging materials that are readily recyclable

The Council recommends that manufacturers utilize packaging materials that are readily recyclable – such as steel cans – rather than materials that are not recyclable or sustainable. For example, steel cans used for tuna fish can be recycled in all recycling programs, whereas plastic pouches used for tuna fish are not recyclable and only increase the amount of waste in need of disposal. More specifically, the Council recommends that product manufacturers follow the Institute of Scrap Recycling Industries’ “Design for Recycling” guidelines.

→ Encourage manufacturers to “Design for Recycling”

The Council recommends that the DEP reach out to product manufacturers in New Jersey and recommend that their product packaging follow the Institute of Scrap Recycling Industries’ “Design for Recycling” guidelines.

→ Promote the use of steel cans as a sustainable packaging choice

The Council recommends that the Institute of Scrap Recycling Industries undertake an educational campaign targeted at product manufacturers that promotes the use of steel cans as a recyclable and sustainable packaging choice.

→ Discontinue use of hybrid packaging

The Council recommends that manufacturers discontinue their use of hybrid packaging, e.g., a packaging container made with both paper and steel. Such hybrid packaging is not readily recyclable. In the example noted above, the hybrid paper-steel container cannot be recycled through either the paper or steel recycling systems.

→ Develop national legislation that requires “Design for Recycling”

The Council recommends that the National Recycling Coalition consider developing national packaging legislation that would address the need for companies to design their products and packaging for recycling.

→ Include steel cans in statewide recycling education campaign

The Council has previously recommended that the DEP initiate a statewide recycling education campaign. The Council recommends that this campaign remind consumers that steel cans are recyclable, as well as a sustainable packaging choice.

→ Provide a tool on the DEP website that allows residents to calculate their environmental footprint

The Council recommends that the DEP include a tool on their website that enables residents to calculate their environmental footprint. In using such a tool, residents would be able to see that their actions – for example, purchasing tuna in a recyclable steel can rather a non-recyclable plastic pouch – can make a difference in the environment.

→ Encourage the use of recyclable packaging materials in meal kits

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, reach out to New Jersey companies that supply meal kits and discuss with them the importance of utilizing recyclable packaging materials in their products.

Advancing the Use of Recyclable Material Feedstocks in Manufacturing

Background Information

Manufacturers that use recyclable materials in the production of new products are categorized as recycling markets and are essential to the success of the recycling system. Without such demand from the manufacturing sector, recycling will flounder and ultimately fail. The use of post-consumer recycled content in newly manufactured products is also consistent with the principles of the “circular economy,” a term used to describe an economic model that embraces recycling and reuse over the older linear model wherein products are made, used and thrown in the trash. While many manufacturers in the United States and abroad already incorporate post-consumer recycled content into their products as they look to make their products more sustainable, there are still many that do not.

In recognition of the need for more manufacturers to utilize recyclable materials in their production processes, states have been moving towards adopting recycled content mandates that require a certain percentage of post-consumer recycled content in new products and packaging. Such legislation would create continued demand for the recyclable materials that are collected and processed. This in turn would help mitigate the fluctuation in demand that occurs over time in the recycling marketplace and thus make the recycling industry more resilient. Recycled content mandates also demonstrate a strong commitment to recycling by government and the public. Such a commitment to recycling provides assurance to the recycling industry, which can ultimately lead to increased investment in the domestic recycling infrastructure. Recycled content mandates also promote innovation and creativity in product design.

Advancing the Use of Recyclable Material Feedstocks in Manufacturing – Recommendations:

→ Advance recycled content mandate legislation

As noted previously in this report, the Council recommends that recycled content mandate legislation be advanced by the New Jersey State Legislature. While this report specifically addresses this topic as it pertains to glass and plastic products, the Council supports and recommends a comprehensive approach that would require the use of post-consumer recycled content in a wide range of consumer products. Furthermore, the Council calls for the percentage of post-consumer recycled content required in products to be significantly greater than that seen in today's products and thus supports ambitious post-consumer recycled content goals, as determined by the New Jersey State Legislature. (**Note** – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council's deliberations on this matter in 2021.)

→ Assemble task force of New Jersey manufacturers

The Council recommends that a task force of New Jersey manufacturers be assembled to discuss the use of recycled content in their products and packaging. While this notion is previously touched upon in the glass recycling section of this report, the Council supports a comprehensive approach to this issue and therefore recommends that the proposed task force be open to all New Jersey manufacturers.

→ Re-establish a recycling tax credit program

As noted previously in the glass recycling section of this report, the Council recommends that the New Jersey State Legislature re-establish a recycling tax credit program, which would draw manufacturers that use recyclable materials in their production process to New Jersey. Taking this recommendation one step further, the Council recommends that such a tax credit program not only apply to new manufacturing operations that may be established in New Jersey, but also to existing New Jersey manufacturers that modify their production processes in order to incorporate a percentage of post-consumer recycled content (to be determined by the Legislature) into products and packaging that were previously made with little or no recycled content. (**Note** – The DEP administered a recycling tax credit program in the late 1980s and early 1990s.)

→ Create a New Jersey Recycling Markets Center

As detailed in the plastic container recycling section of this report, the Council recommends the creation of a New Jersey Recycling Markets Center similar to that established in Pennsylvania. In building on this recommendation, the Council further recommends that such a center focus on the following:

- Supporting businesses that use recycled materials or are part of the supply chain.
- Bringing together interested parties and resources to facilitate collaboration and partnership.
- Identifying and overcoming technical, logistical, and economic barriers that inhibit the growth of recycling markets.
- Providing expertise and decision support tools to drive and coordinate strategies throughout the system; and
- Working to achieve positive environmental and economic outcomes.
(Source: “Best Practices for State Recycling Market Development Centers” report issued by Ameripen and Resource Recycling Systems)

Promoting Recycled Product Procurement and Use

Background Information

The purchase of recycled products by government agencies, businesses and consumers is crucial to the success of New Jersey's many recycling programs, as well as recycling in general. By purchasing recycled products, government agencies, businesses and consumers are helping to create long-term stable markets for the recyclable materials that are collected from New Jersey's many residential and commercial recycling programs.

Over the years, recycled product procurement has been advanced in New Jersey state government through legislation, executive orders and policy. The following provides a snapshot of the key recycled product procurement measures adopted by the State of New Jersey since 1987:

- **The New Jersey Statewide Mandatory Source Separation and Recycling Act, P.L. 1987, c.102** – The Recycling Act included several provisions designed to stimulate recycling end markets, including a requirement that at least 45% of the paper products purchased by the State of New Jersey be made with recycled content.
- **Executive Order #91 (May 1993)** – Executive Order #91 established sweeping recycled product purchasing goals for all state agencies and instrumentalities and included price preferences for recycled products.
- **“Solid Waste Management & Sludge Management State Plan Update” (January 2006)** – In this report, the DEP recommended that a new executive order which requires state agencies to purchase recycled products and other environmentally preferable products be adopted. The update also stressed the importance of “buying recycled” and described the many activities undertaken by the Department to advance recycled product procurement.

- **Executive Order #11 (April 2006)** – Executive Order #11 updated and expanded upon Executive Order #91 and included a wide range of recycled products and environmentally friendly products that were to be purchased by state government. It included a 15% price preference for the purchase of recycled products and mirrored the requirements found in the USEPA’s Comprehensive Procurement Guidelines developed pursuant to Federal Executive Order #13101. Executive Order #11 is available online at https://www.nj.gov/dep/dshw/recycling/resource_page.htm.

Promotion of Recycled Product Procurement by the New Jersey Department of Environmental Protection:

Recycled product procurement has been promoted by the New Jersey Department of Environmental Protection through numerous policy initiatives, including the “Solid Waste Management & Sludge Management State Plan Update.” In addition, the Department has advanced recycled product procurement through educational programs designed for the private sector, partnerships and promotional initiatives designed for the public. The Department’s New Jersey WasteWise Business Network, Sustainable Business Registry and Sustainability Speakers Series are educational programs that promote private sector procurement of recycled products, among other things. The Department has also worked to advance recycled product procurement through its participation in the Sustainable Jersey program, its partnership with the Association of New Jersey Recyclers and through other organizations. The Department has produced brochures and other educational materials on this topic and includes information on recycled product procurement on its website.

State Agency Purchasing of Recycled Content Products through the New Jersey Department of Treasury, Division of Purchase and Property:

The use of recycled content paper and office products in New Jersey state government offices is standard practice thanks to the work of the New Jersey Department of Treasury, Division of Purchase and Property (DPP). In fact, the DPP contracts for the following product categories are solely for recycled content products: copy paper, paper napkins/towels/toilet tissue, trash bags and liners, office supplies and corrugated boxes.

The DPP's "NJ START" system is the State of New Jersey's e-procurement system. State agencies purchase products through this system. The "Marketplace" nodule under the NJ START system allows local agencies to purchase through a cooperative and is the bridge between the cooperative purchasing partners and the state purchasing contract system. Cooperative purchasing partners include municipalities, counties, school districts, state colleges and universities, fire stations and other public entities. Local agencies using this system save money, time and effort since the DPP has done the bidding and related administrative work associated with this process. The Marketplace program enables the DPP to track purchases – including purchases of recycled products - made by local agencies using the system. The DPP has a team devoted to the Marketplace and has initiated an outreach campaign designed to increase awareness of the program among local procurement officials. Local procurement officials are also able to purchase recycled content products through the DPP's Distribution Center in Ewing.

Rutgers University Green Purchasing Cooperative Program:

Rutgers University administered a successful green purchasing cooperative program from 2007-2012. While the program has been dormant for the past decade, the university intends to restart its green purchasing cooperative program in 2022. The overall goal of this program is to develop, implement and sustain a green purchasing program at Rutgers University, which would then be open to organizations (including universities, schools, cities, townships, counties or any other local government agency, or non-profit organization) that share the university's green purchasing goals. The principle behind cooperative purchasing is that the more materials or equipment a group can purchase at one time, the less the unit price will be. The Rutgers University Purchasing Department will apply this concept to the procurement of "green" or "environmentally responsible" products and services.

General Recommendations for Promoting Recycled Product Procurement:

Recommendations – State Government - General

→ Enact an Executive order and state law on state agency "green" purchasing

The Council recommends that an Executive Order on state agency "green" purchasing be adopted as a short-term measure. The recommended Executive Order could simply be a re-issuance of Executive Order #11 or an entirely new

order and should focus on the purchase of post-consumer recycled content products by state agencies. In addition, the Council recommends that a new comprehensive state law on state agency “green” procurement be enacted as a long-term measure. The Council further recommends that both measures include a 15% price preference for the purchase of post-consumer recycled content products. The Council also recommends that such a law include a requirement that an annual report on state agency purchasing of recycled products be prepared by the New Jersey Department of Treasury, Division of Purchase and Property at the conclusion of each calendar year, sent to the Legislature annually and posted on the DPP website.

- Assist in the development and promotion of “green” purchasing cooperatives

The Council recommends that the New Jersey Department of Community Affairs assist in the development and promotion of regional “green” purchasing cooperatives through New Jersey colleges and universities, such as the one previously undertaken and soon to be re-started by Rutgers University.

- Procure post-consumer recycled content products for state projects

The Council recommends that state agencies procuring non-office products and supplies – such as those used in construction projects, parks, marinas, and other facilities - purchase post-consumer recycled content products and supplies consistent with the product listings found in the Addendum to Executive Order #11 until such time as a new Executive Order or law on “green” purchasing supersedes Executive Order #11.

- Include annual public meetings as part of reinvigorated State Solid Waste Advisory Council (SWAC) agenda

The Council supports the efforts currently underway to reinvigorate the State Solid Waste Advisory Council (SWAC). The Council recommends that such a reinvigorated State SWAC hold annual public meetings to discuss statewide strategies to enhance and sustain recycling programs, including the benefits of state and local recycled product procurement practices.

- Expand local government use of Division of Purchase and Property system

The Council recommends that local government agencies use the New Jersey Department of Treasury, Division of Purchase and Property system for the purchase of recycled content products when purchasing products for their respective agencies.

Recommendations for the New Jersey Department of Treasury, Division of Purchase and Property:

- Further open recycled product contracts to public entities

The Council recommends that all recycled product contracts entered into by the New Jersey Department of Treasury, Division of Purchase and Property be open to counties, municipalities and other public entities.

- Establish a permanent evaluation and review process for green purchasing

The Council recommends that the New Jersey Department of Treasury, Division of Purchase and Property establish a permanent evaluation and review process for the purchase of recycled products and other environmentally friendly products.

- Create a Director of Green Purchasing position

The Council recommends that the New Jersey Department of Treasury, Division of Purchase and Property establish a Director of Green Purchasing position in the agency. The Director of Green Purchasing would assist state agencies in procuring green products and would be an advocate for the purchase of recycled products and other environmentally friendly products by New Jersey state agencies.

- Increase outreach to local government procurement officials

The Council recommends that the New Jersey Department of Treasury, Division of Purchase and Property increase its outreach to county and municipal procurement officials regarding the availability of state contracts and purchasing programs for recycled products.

- Promote green purchasing to local government officials

The Council recommends that the New Jersey Department of Treasury, Division of Purchase and Property work in conjunction with the Government Purchasing Association of New Jersey (GPA-NJ) to promote the purchase of recycled products to local procurement officials.

Recommendations for the New Jersey Transportation Agencies - as previously included in the Glass Recycling section of this report:

- Require the use of recycled foamed glass aggregate in transportation projects

The Council recommends that the state's transportation agencies require the use of recycled foamed glass aggregate in future projects that need lightweight fill material.

- Promote the use of recycled foamed glass aggregate

The Council recommends that the state's transportation agencies promote the use of recycled foamed glass aggregate to county and municipal engineering departments, private construction contractors and the U.S. Green Building Council – New Jersey Chapter.

- Revisit the use of “glassphalt”

The Council recommends that the state's transportation agencies revisit the use of “glassphalt” (i.e., asphalt pavements made in part with recycled glass aggregate) and proactively use glassphalt pavements in future road construction projects. Such projects could consume large quantities of the mixed color glass produced by New Jersey's recycling processing centers.

Non-State Government Recommendations:

- Engage New Jersey colleges, universities and hospitals through partnerships

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, reach out to the New Jersey Higher Education Partnership for Sustainability and the New Jersey Hospital Association and seek the assistance of these organizations in promoting the procurement of recycled products by New Jersey colleges, universities and hospitals.

→ Engage businesses with the help of regional Chambers of Commerce

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, reach out to the many regional Chambers of Commerce in New Jersey and seek their assistance in promoting the procurement of recycled products by New Jersey businesses.

→ Engage businesses with the help of the Institute for Supply Management

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, reach out to the Institute for Supply Management New Jersey Inc. and seek the organization's assistance in promoting the procurement of recycled products by New Jersey businesses.

→ Engage municipalities and schools with the help of Sustainable Jersey

The Council recommends that the DEP, in conjunction with the Association of New Jersey Recyclers, reach out to Sustainable Jersey/Sustainable Jersey for Schools and seek the organization's further assistance in promoting the procurement of recycled products by New Jersey municipalities and school districts/schools.

→ Establish a Recycled Products Procurement Star awards program

The Council recommends that the DEP establish a Recycled Products Procurement Star awards program that recognizes excellence in recycled product procurement by government, the private sector, academia and non-academic institutional organizations. The program could be a stand-alone program or could be incorporated into the DEP's existing recycling awards program.

Improving New Jersey's Standing as an Exporter of Recyclable Materials

Background Information

Exports markets for recyclable materials have played an integral role in recycling for decades and remain extremely important to the overall viability of recycling in New Jersey and the United States. Nevertheless, many in the recycling community would like to see most, if not all, recyclable materials generated in New Jersey sent solely to domestic markets since this would eliminate the many uncertainties and complications that can arise from the use of export markets. With recycling export markets often paying more for certain recyclable materials than domestic markets, it is anticipated, however, that New Jersey's numerous recycling processing centers will continue to rely on export markets as outlets for recycled commodities.

Reducing contamination in loads of recyclable materials is clearly one way to improve the competitiveness of the state as an exporter of recyclable materials. Undoubtedly, clean, contaminant-free recyclable materials are more marketable and valuable than loads of recyclable materials with high levels of contamination, which may be rejected upon arrival at international markets. With this topic being addressed earlier in this report, the Council considered other factors pertaining to export, especially the logistical aspects of export.

Exporting Recyclable Materials from New Jersey Ports

Various paper grades are the primary recyclable materials being shipped to export markets. It is estimated that 85% to 90% of the recyclable paper collected from the east coast is shipped to international markets. With export market prices strong, the greatest challenge for the recycling industry is simply getting recyclable materials to the export markets. Recyclable materials are shipped out of ports at discounted rates, so cost is not viewed as a serious impediment to the export of recyclable materials. There are numerous infrastructure and logistical issues pertaining to pier operations, however, that negatively impact the export of recyclable materials from New Jersey ports. For example, the limited availability of shipping containers is a central concern, as is the insufficient lead time often afforded by ports to those making deliveries. While not port issues, recycling industry officials noted that there are not enough trucks and truck drivers available in today's marketplace. These issues are also seen at the national and global level.

Improving New Jersey's Standing as an Exporter of Recyclable Materials Recommendations:

→ Reduce contamination in loads of recyclable materials

As noted previously in the report, the Council recommends that the New Jersey recycling community work to reduce contamination in loads of recyclable materials. Undoubtedly, this would improve the competitiveness of the state as an exporter of recyclable materials.

→ Troubleshoot issues pertaining to the export of recyclable materials

The Council recommends that the New Jersey Business Action Center's Office of Export Promotion meet with representatives of the DEP, the Association of New Jersey Recyclers, and the recycling industry to discuss issues impacting the export of recyclable materials from New Jersey ports and acceptance of recyclable materials at international markets.

→ Utilize domestic recycling markets to the greatest extent possible

The Council recommends that the New Jersey recycling community utilize domestic recycling markets to the greatest extent possible to avoid the uncertainties associated with the export of recyclable materials and international markets.

→ Fund research to increase competitiveness of recycling industry

The Council recommends that the state allocate research funds to study new technologies and logistical strategies that could potentially improve the competitiveness of New Jersey's recycling industries.

Encouraging the Development of Recycling Markets Through Changes in Laws and Rules

Recommendations on changes needed to state laws, rules or regulations are included throughout this report. They are also listed below for easy reference.

From Recycling Contamination section

- Establish a low interest recycling equipment/infrastructure loan program

The Council recommends that the New Jersey State Legislature re-establish a low-interest recycling equipment/infrastructure loan program for the recycling industry. Such a program would enable facilities to invest in upgrades that will ultimately enhance recycling in New Jersey. Upgrades could include retrofitting a facility to enable it to process recyclable materials collected from dual stream systems. The Council recommends that federal funding sources or state economic development funding sources be utilized for this program. (**Note** -The DEP administered a low-interest recycling loan program for the private sector in the late 1980s through 1996.)

- Revise Recycling Enhancement Act allocations to include funding for an annual statewide public education campaign

The Recycling Enhancement Act of 2008 (P.L. 2008, c6) allocates 5% of the annual Recycling Fund, which is generated by a \$3.00 per ton recycling tax on waste sent for disposal, for grants to institutions of higher education to conduct research in recycling. The Council recommends that the Recycling Enhancement Act be revised such that \$250,000 of this allocation is set aside each year for an annual statewide public education campaign to be overseen by the DEP.

→ Advance “Truth in Labeling” Legislation

The Council recommends that “Truth in Labeling” legislation be explored and advanced by the New Jersey State Legislature. This type of legislation, which has already been passed in California, makes it illegal to include the recycling symbol on a product or packaging that is not recyclable. The Council further recommends that any Truth in Labeling legislation advanced in New Jersey clarify that a product or packaging labeled as recyclable must in fact be recyclable in practice and not simply recyclable in theory. In addition, the Council recommends that misuse of the term recyclable be classified as a per se violation of the New Jersey Consumer Fraud Act.

From Glass Recycling section

→ Develop recycled content legislation for glass containers

The Council recommends that the Legislature develop recycled content legislation for glass containers sold in New Jersey. The percentage of recycled content in glass containers sold in New Jersey should be set at an ambitious rate that is well-above what the industry is currently achieving at this time. **(Note** – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council’s deliberations on this matter in 2021.)

→ Re-establish a recycling tax credit program

The Council recommends that the Legislature re-establish a recycling tax credit program which would draw manufacturers that use recyclable materials – including recyclable glass - in their production process to New Jersey.

→ Reinstate a low-interest recycling equipment/infrastructure loan program

As noted previously in this report, the Council recommends the reinstatement of the DEP’s low-interest recycling equipment/infrastructure loan program for the recycling industry. While such a program would be open to any recycling equipment/infrastructure purchase, the Council recommends that the DEP’s guidelines for this program indicate that equipment used to clean up the glass stream is one of several preferred uses of the loan fund.

- Revisit air quality rules to assess their impact on glass container manufacturing plant siting and recycling

The Council recommends that the DEP assess the impact of its air quality rules on the potential siting of glass container manufacturing plants in New Jersey, as well as to determine ways in which any such impacts can be minimized through regulatory reform.

The Council recommends that the DEP assess the impact of its air quality rules on the potential incorporation of recyclable glass in asphalt production at asphalt manufacturing plants, as well as to determine ways in which any such impacts can be minimized through regulatory reform.

- Work with the glass manufacturing and processing industry to ensure compliance with New Jersey’s environmental justice law

The Council recommends that the DEP proactively work with the glass manufacturing and processing industry in regard to complying with the state’s new environmental justice law.

- Promote the DEP’s one-stop permitting program to the glass industry of New Jersey

The Council recommends that the DEP proactively promote its one-stop permitting program administered by the DEP, Office of Permitting and Project Navigation to the glass manufacturing and glass processing industry since this program streamlines what many in the private sector believe to be a confusing permitting process.

From Plastics Recycling section

- Ensure proposed “chemical recycling” practices do not disrupt traditional recycling activity

The Council finds that chemical recycling should not be considered a recycling activity, nor count towards state recycling goals or state recycling tonnage grants since plastics that are chemically recycled are consumed as fuel and not used to make new products.

Note - The Council would reconsider its position on the chemical recycling of plastics should future developments in the field of chemical recycling be such that they do not hinder or disrupt traditional recycling markets for plastic containers, but rather complement the existing plastics recycling system by providing a use for plastics with few or no traditional recycling markets.

→ Advance “Truth in Labeling Legislation

The recommendations on misleading packaging labels set forth previously in the recycling contamination section of this report are especially applicable to plastic packaging but will not be reiterated in this section with the exception of the Council’s support for “Truth in Labeling” legislation. The Council recommends that “Truth in Labeling” legislation be explored and advanced by the New Jersey State Legislature.

→ Advance recycled content mandate legislation for plastic containers

The Council recommends that recycled content mandate legislation for plastic containers be advanced by the New Jersey State Legislature. Such legislation is essential since it would create continued demand for recyclable plastics and would help mitigate the fluctuating demand for this material caused by oil price fluctuations. (**Note** – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council’s deliberations on this matter in 2021.)

→ Draw plastics processors to New Jersey through enhanced regulatory assistance

As noted previously, there is only one recyclable plastic processor in New Jersey and it solely handles plastic film. As a result, plastic containers generated in New Jersey are typically sent to out-of-state processors, especially the many located in Pennsylvania. The Council believes that a major reason for the lack of plastic processing facilities in New Jersey and abundant number of such facilities in Pennsylvania is the regulatory flexibility inherent in Pennsylvania's environmental rules as compared to the lack of regulatory flexibility found in New Jersey's environmental rules. The Council finds that regulatory issues too often delay projects in New Jersey and are a disincentive to siting a new recycling business in the state. While the Council understands that New Jersey's environmental rules are designed to protect the environment and public health and cannot be disregarded for recycling projects, it recommends the measures outlined below be employed in order to make New Jersey more attractive and receptive to those looking to start a plastics recycling business (as well as other recycling businesses) in the northeast.

- The Council recommends that the DEP's Office of Permitting and Project Navigation assist members of the recycling industry as they navigate the Department's regulatory procedures.
- As noted previously in this report's recommendations for glass recycling, the Council recommends that the services of the DEP, Office of Permitting and Project Navigation be promoted through a targeted media campaign since it is a valuable, yet underutilized program.

→ Establish a New Jersey Recycling Markets Center

The Council recommends that a New Jersey Recycling Markets Center be established in New Jersey and work in conjunction with Rutgers University. Among other things, the proposed Center should work closely with DEP's Office of Permitting and Project Navigation.

→ Keep Aluminum Cans in Curbside Recycling Stream

Discussions regarding aluminum can recycling often focus on deposit legislation (also known as “bottle bills”). The Council does not, however, support such legislation for aluminum cans (or other materials collected in curbside recycling programs) as deposit legislation would threaten the economic viability of New Jersey’s numerous recycling processing centers by removing the most valuable materials from the recycling stream.

→ Conduct outreach to New Jersey beverage companies that incorporate plastic components on aluminum cans

The Council recommends that the DEP reach out to New Jersey beverage companies that are currently placing plastic sleeves around their aluminum cans and/or utilizing aluminum cans with plastic tabs and inform them of the following:

- Aluminum cans with plastic sleeves and plastic tabs are contaminants in the aluminum can recycling system.
- Aluminum cans with plastic sleeves and plastic tabs jeopardize the economic viability of aluminum can recycling in New Jersey.
- All beverage products marketed in New Jersey should follow the Institute of Scrap Recycling Industries’ “Design for Recycling” guidelines; and
- Extended Producer Responsibility legislation for aluminum cans will be recommended by the DEP to the New Jersey State Legislature should voluntary compliance with Institute of Scrap Recycling Industries’ Design for Recycling guidelines not be followed by the local beverage industry.

From the section on Advancing the Use of Recyclable Material Feedstocks in Manufacturing

→ Advance recycled content mandate legislation

As noted previously in this report, the Council recommends that recycled content mandate legislation be advanced by the New Jersey State Legislature. While this report specifically addresses this topic as it pertains to glass and plastic products, the Council supports and recommends a comprehensive approach that would require the use of post-consumer recycled content in a wide range of consumer products. Furthermore, the Council calls for the percentage of post-consumer recycled content required in products to be significantly greater than that seen in today's products and thus supports ambitious post-consumer recycled content goals, as determined by the New Jersey State Legislature. (**Note** – The Council is aware that recycled content legislation was enacted in New Jersey in January 2022 and supports this historic achievement. The Council has opted to keep its recommendation for recycled content legislation in this report to provide the reader with a complete picture of the Council's deliberations on this matter in 2021.)

→ Establish a recycling tax credit program

As noted previously in the glass recycling section of this report, the Council recommends that the New Jersey State Legislature re-establish a recycling tax credit program which would draw manufacturers that use recyclable materials in their production process to New Jersey. Taking this recommendation one step further, the Council recommends that such a tax credit program not only apply to new manufacturing operations that may be established in New Jersey, but also to existing New Jersey manufacturers that modify their production processes in order to incorporate a percentage of post-consumer recycled content (to be determined by the Legislature) into products and packaging that were previously made with little or no recycled content.

From the section on Promoting Recycled Product Procurement and Use

- Enact an Executive Order and state law on state agency “green” purchasing

The Council recommends that an Executive Order on “green” purchasing be adopted as a short-term measure. The recommended Executive Order could simply be a re-issuance of Executive Order #11 or an entirely new order and should focus on the purchase of post-consumer recycled content products by state agencies. In addition, the Council recommends that a new comprehensive state law on state agency “green” procurement be enacted as a long-term measure. The Council further recommends that both measures include a 15% price preference for the purchase of post-consumer recycled content products. The Council also recommends that such a law include a requirement that an annual report on state agency purchasing of recycled products be prepared by the New Jersey Department of Treasury, Division of Purchase and Property at the conclusion of each calendar year, sent to the Legislature annually and posted on the DPP website.

- Include annual public meetings as part of reinvigorated State Solid Waste Advisory Council (SWAC) agenda

The Council supports the efforts currently underway to reinvigorate the State Solid Waste Advisory Council (SWAC). The Council recommends that such a reinvigorated State SWAC hold annual public meetings to discuss statewide strategies to enhance and sustain recycling programs, including the benefits of state and local recycled product procurement practices.

Glossary

- ▶ *Aseptic Cartons* – These cartons are primarily made from paper, with a thin layer of polyethylene plastic. There are two types of aseptic cartons – shelf-stable and refrigerated. Shelf-stable cartons also contain a layer of aluminum, whereas refrigerated cartons do not. Shelf stable cartons are used to package juice, milk, soup, broth and wine. Refrigerated cartons are used to package milk, juice, cream and egg substitutes. Example – Juice boxes.
- ▶ *Class A Recyclable Materials* - These are the recyclable materials typically collected from residential curbside collection programs, office settings and institutional settings. This term is defined in N.J.A.C. 7:26A- 1.2 as “a source separated non-putrescible recyclable material specifically excluded from Department approval prior to receipt, storage, processing, or transfer at a recycling center in accordance with N.J.S.A. 13:1E-99.34b, which material currently includes source separated non-putrescible metal, glass, paper, plastic containers, and corrugated and other cardboard.”
- ▶ *Commingled Recyclable Materials* – Recyclable materials that have been separated at the point of generation and then mixed (commingled) together.
- ▶ *Contamination or Recycling Contamination* - Recycling contamination occurs when non-acceptable items are mixed in with commingled recyclable materials. Recycling contamination negatively impacts the marketability and price of the recyclable materials collected. It also negatively impacts the operations of recycling processing facilities.
- ▶ *Council* – The Recycling Market Development Council
- ▶ *DEP or NJDEP* – Department of Environmental Protection or New Jersey Department of Environmental Protection
- ▶ *DOT or NJDOT* – Department of Transportation or New Jersey Department of Transportation
- ▶ *DPP* - The New Jersey Department of Treasury, Division of Purchase and Property

- ▶ *Dual Stream* – A recyclable materials collection system wherein bottles, cans and containers are collected in one curbside bucket, bin or cart, while paper grades are collected in another bucket, bin or cart.
- ▶ *Glass Beneficiation Facility* - A secondary glass recycling facility that accepts mixed color glass and utilizes specialized equipment that is capable of color separating and cleaning up the glass stream.
- ▶ *Glassphalt* - Asphalt pavements made in part with recycled glass aggregate.
- ▶ *HDPE* - High Density Polyethylene plastic (#2 in the plastic resin identification system). This type of plastic is used to make plastic milk jugs and plastic detergent bottles.
- ▶ *PET* - Polyethylene terephthalate plastic (#1 in the plastic resin identification system). – This type of plastic is used to make plastic soda and water bottles.
- ▶ *Post-Consumer Recycled Content* – Refers to a product that is made with a percentage of recyclable material that was generated by consumers and then recycled.
- ▶ *PP* – Polypropylene plastic (#5 in the plastic resin identification system). – This type of plastic is used to make plastic margarine and yogurt tubs.
- ▶ *Recycle Coach* - The Recycle Coach information system is a mobile app that provides residents with information about their local recycling program requirements.
- ▶ *Single Stream* – A recyclable materials collection system wherein all Class A recyclable materials are mixed together in one bucket, bin or cart.