





NEW YORK STATE | Department of Environmental Conservation

New York State Solid Waste Management Plan

BUILDING THE CIRCULAR ECONOMY THROUGH SUSTAINABLE MATERIALS MANAGEMENT

Kathy Hochul, Governor | Basil Seggos, Commissioner



Contents

List of Figures and Tables . . . iii
List of Appendices . . . iv
List of Abbreviations . . . v
Glossary of Terms . . . vi
Message from Commissioner Basil Seggos . . . vii
1. Executive Summary . . . 1
Characterizing Waste in New York State . . . 1
Key Accomplishments since 2010 . . . 2
Vision . . . 3
Recommendations . . . 4
2. Introduction . . . 5
Circular Economy . . . 5
Plan Format . . . 8
3. Background on Waste Management in New York State . . . 9
Quick Facts: Total Waste Stream . . . 9
Quick Facts: Municipal Solid Waste . . . 9
Quick Facts: Construction and Demolition Debris . . . 10
Total Waste Stream . . . 11
Total Waste Stream Generation . . . 11
Total Waste Stream Recycling Rates . . . 12
Overall Total Waste Stream Management Methods . . . 14
Municipal Solid Waste (MSW) . . . 15
MSW Generation . . . 15
MSW Disposal Rate . . . 15
Economic Effect on MSW Generation . . . 16
MSW Waste Composition . . . 16
MSW Recycling Rate . . . 17
Overall MSW Management Methods . . . 18
Municipal and Private Roles in MSW . . . 18
C&D Debris . . . 20
C&D Debris Generation . . . 20
C&D Debris Waste Composition . . . 20
C&D Debris Recycling Rate . . . 21
Overall C&D Debris Management . . . 22
Industrial Waste . . . 22
Industrial Waste Generation . . . 22
Industrial Waste Recycling Rate . . . 23
Overall Industrial Waste Management . . . 23
Beneficial Use of Industrial Waste . . . 23
Biosolids . . . 24
Biosolids Generation . . . 24
Biosolids Recycling Rate . . . 25
Overall Biosolids Management . . . 25

Solid Waste Management Facilities . . . 26
Facilities Summary . . . 26
MSW Landfill Disposal Capacity . . . 27
Solid Waste Facilities and Potential Environmental Justice Areas and Disadvantaged Communities . . . 28
Regional Waste Management Variability . . . 30
4. Issues, Challenges, and Opportunities . . . 31
Climate . . . 31
Throw-Away Culture . . . 32
Global Markets . . . 34
Information Sharing and Technology . . . 35
Equity Issues . . . 35
Ecosystems Impacts . . . 36
Marine Debris . . . 36
Persistence of Plastic in the Environment . . . 36
Raw Material Extraction and Habitat Loss . . . 36
Conservation Benefits of a Circular Economy . . . 37
Emerging Contaminants Sampling and Research . . . 37
Emerging Contaminant Sampling at Solid Waste Management Facilities . . . 38
5. Values and Vision . . . 39
Values . . . 39
Vision . . . 39
6. The Future of Materials Management in New York State . . . 42
Focus Areas, Goals, and Action Items . . . 42
Implementation of Focus Area Goals . . . 44
Waste Prevention, Reduction, and Reuse . . . 45
Recycling and Recycling Market Development and Resiliency . . . 51
Product Stewardship and Extended Producer Responsibility . . . 57
Organics Reduction and Recycling . . . 62
Toxics Reduction in Products . . . 67
Design and Operation of Solid Waste Management Facilities and Related Activities . . . 70
7. Waste Projections and Goals 2023–2032 . . . 77
8. Conclusions . . . 79
Extended Producer Responsibility for Packaging and Paper Products . . . 80
Expand and Amend the Existing Food Donation and Food Scraps Recycling . . . 81
Disposal Disincentive Surcharge . . . 81

FRONT COVER

Photo 1: Postconsumer paint collection (credit: PaintCare)

Photo 2: Municipal solid waste landfill in New York State

Photo 3: Plastic containers collected at a recyclables handling and recovery facility in New York State

Photo 4: Windrow turner at Town of Bethlehem compost facility

List of Figures and Tables

Figure 1.1. Recycling Rate for the Total Waste Stream Generated in New York from 2010–2018. 2

Figure 1.2. Recycling Rates for Waste Generated in New York by Waste Type from 2010–2018 2

Figure 1.3. 2018 Management of Total Waste Stream Generated in New York. 2

Figure 1.4. MSW Disposal Rate (lbs/person/day) from 2008–2018 2

Figure 2.1. Circular Economy Systems Diagram 6

Figure 3.1. Types of Waste that Compose the Total Waste Stream 11

Figure 3.2. 2018 Waste Generated by Waste Type in New York 11

Figure 3.3. Recycling Rates for the Total Waste Stream in New York from 2010–2018. 12

Figure 3.4. Recycling Rates for Waste Generated in New York by Waste Types from 2010–2018 13

Figure 3.5. 2018 Management of Total Waste Stream Generated in New York. 14

Figure 3.6. MSW Disposal Rate per Person per Day in New York from 2008–2018. 15

Figure 3.7. MSW Composition in New York. 17

Figure 3.8. Recycling Rate for MSW Generated in New York. 18

Figure 3.9. 2018 Management of MSW Generated in New York 19

Figure 3.10. Distribution of the Methods Used for the Collection of Residential MSW for New York and for Each of the DEC Regions 20

Figure 3.11. C&D Debris Materials Composition 21

Figure 3.12. Recycling Rate for C&D Debris in New York. 22

Figure 3.13. 2018 Management of C&D Debris Generated in New York 23

Figure 3.14. Recycling Rate for Industrial Waste Generated in New York 24

Figure 3.15. Case-Specific BUDs from 2010–2022 25

Figure 3.16. Recycling Rate for Biosolids Generated in New York 26

Figure 4.1. 2019 New York GHG Emissions by CLCPA Scoping Plan Sector 32

Figure 4.2. U.S. Consumer Consumption. 34

Table 1. Type and Number of Permitted Solid Waste Management Facilities in New York (June 2022) 27

Table 2. Type and Number of Registered Solid Waste Management Facilities in New York (June 2022) 27

Table 3. Number of Solid Waste Management Facilities in DACs and the Quantity of Waste Handled by Those Facilities . . 29

Table 4. Number of Solid Waste Management Facilities in PEJAs and the Quantity of Waste Handled by Those Facilities . .30

Table 5. Waste Management by DEC Region 31

Table 6. New York Waste Projections from 2023–2050. 79

Table 7. Projected MSW Recycling Rate and per Capita Waste Disposal from 2018–2050 79

List of Appendices

Appendix A – State Plan History

Appendix B – Accomplishments since 2010

Appendix C – New York State Waste Generation and Waste Imported

Appendix D – Solid Waste Management Facilities and Transporters

Appendix E – Regional Solid Waste Management and Planning Unit Summaries

Appendix F – Local Government Materials Management – Facts and Figures

Appendix G – Disadvantaged Communities and Potential Environmental Justice Area Impacts

Appendix H – Projections and Waste Characterization

Appendix I – New York State Materials Management Laws and Relevant Regulations

List of Abbreviations

AOC . . . . . .Alternative operating cover

BUD . . . . . .Beneficial use determination

C&D . . . . . .Construction and demolition

CSMM . . . . . .New York State Center for Sustainable Materials Management

CLCPA . . . . . .New York State Climate Leadership and Community Protection Act

DAC . . . . . .Disadvantaged community

DEC . . . . . .New York State Department of Environmental Conservation

DOCCS . . . . . .New York State Department of Corrections and Community Supervision

SED. . . . . .New York State Education Department

DAM . . . . . .New York State Department of Agriculture and Markets

DOB . . . . . .New York State Division of Budget

DOH . . . . . .New York State Department of Health

DOT . . . . . .New York State Department of Transportation

DTF. . . . . .New York State Department of Tax and Finance

ESD. . . . . .New York State Empire State Development

EPA. . . . . .United States Environmental Protection Agency

EPR. . . . . .Extended Producer Responsibility

GHG . . . . . .Greenhouse gases

HHW. . . . . .Household hazardous waste

LSWMP . . . . . .Local Solid Waste Management Plan

MSW. . . . . .Municipal solid waste

MWC. . . . . .Municipal waste combustion

MWRR . . . . . .Municipal waste reduction and recycling

NYSP2I . . . . . .New York State Pollution Prevention Institute

OGS . . . . . .New York State Office of General Services

OSC . . . . . .Office of the New York State Comptroller

OPRHP. . . . . .New York State Office of Parks, Recreation and Historic Preservation

PEJA. . . . . .Potential environmental justice area

PFAS. . . . . .Per- and polyfluoroalkyl substances

PFOA . . . . . .Perfluorooctanoic acid

PFOS . . . . . .Perfluorooctane sulfonic acid

RHRF . . . . . .Recyclables handling and recovery facility

SWMF . . . . . .Solid waste management facility

WRRF. . . . . .Water resource recovery facility

Glossary of Terms

Note: the definitions used here are for the ease of the reader and may not be equivalent to the regulatory definitions found in 6 NYCRR Part 360.

Biosolids: the accumulated semi-solids or solids resulting from the treatment of wastewaters at sewage treatment plants

Construction and Demolition (C&D) Debris: all waste and recyclables resulting from construction, remodeling, repair, and demolition of structures, buildings, and roads, including excavated materials used as fill

Disadvantaged Communities (DACs): communities that bear burdens of negative public-health effects, environmental pollution, impacts of climate change, and possess certain socioeconomic criteria, or comprise high concentrations of low- and moderate-income households. Members of Disadvantaged Communities include individuals from either of the following groups:

- Individuals residing in locations that meet both of the following criteria:
  - Census block groups are in the top quartile of HUD census tracks meeting the annual income threshold of 50% Area Median Income, and
  - Location is identified as a Potential Environmental Justice Area, as defined by the New York State Department of Environmental Conservation; or
- Individuals residing in a New York State Opportunity Zone.

Extended Producer Responsibility (EPR): a mandatory or legislated form of product stewardship that places the primary financial and managerial obligation for the environmentally responsible end-of-life management of a product on its producer/manufacturer. EPR shifts the financial burden away from municipalities and taxpayers, and often provides incentives to producers to incorporate environmental considerations into the design of their products.

Leachate: any solid waste in the form of a liquid, including any suspended components, that results from contact with waste.

Municipal Solid Waste (MSW): all waste and recyclables from single-family and multi-family homes (often referred to as "residential waste"); commercial establishments, including all offices, stores, shops, restaurants, or businesses of any nature (often referred to as "commercial waste"); and waste generated by institutions, including any schools, government buildings, prisons, nursing homes, hospitals, or other similar facilities (often referred to as "institutional waste")

Industrial Waste: non-hazardous waste and recyclables generated by manufacturing or industrial processes

Planning Unit: a county; two or more counties acting jointly; a local government agency or authority established pursuant to State Law for the purposes of managing solid waste; any city in the county of Nassau; any of the above in combination with one or more neighboring cities, towns, or villages; or two or more cities, towns, or villages, or any combination of them, that the New York State Department of Environmental Conservation (DEC) determines to be capable of implementing a regional waste management program. In order for a county to be a planning unit, it must include all cities, towns, and villages within its borders.

Potential Environmental Justice Areas (PEJAs): minority or low-income communities that may bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies

Product Stewardship: the act of minimizing the environmental, health, safety, and social impacts of a product throughout its life cycle through a shared responsibility approach. While the producer of the product may have the greatest ability to minimize adverse impacts, other stakeholders, such as distributors, retailers, and consumers, also play an important role. Product stewardship can be either voluntary or required by law

Throughput: the amount of waste processed by a solid waste management facility

Total Waste Stream: all solid waste (including materials that are recycled) as defined in New York State regulations, which excludes hazardous waste. It includes municipal solid waste, construction and demolition (C&D) debris, non-hazardous industrial waste, and biosolids

Message from Commissioner Basil Seggos

Under Governor Kathy Hochul, New York is aggressively advancing implementation of the nation-leading Climate Leadership and Community Protection Act (CLCPA). In New York State, waste is the fourth-largest contributing sector when considering greenhouse gas (GHG) emissions, representing 12% of annual emissions—only slightly less than the electricity sector, at 13%.

To address climate change in the waste sector, New York is encouraging a culture that advances sustainable materials management and supports a continuous cycle of use and reuse.

The 2023 *New York State Solid Waste Management Plan* (Plan) is designed to guide collective efforts to reduce waste and the burden on communities from waste disposal, as well as to mitigate the emissions driving climate change. The Plan outlines strategies and methods to build a circular economy, a more resilient supply chain, and a less wasteful future.

From eliminating bioaccumulative toxins from products to ensuring effective reuse and recycling, a circular economy requires laws, policies, robust programs, and participation in each step along the supply chain. The implementation of New York's Solid Waste Management Plan benefits communities throughout the state by reducing pollution and creating jobs and economic opportunities.

Reducing landfilled waste is a critical strategy to help meet New York State's climate goals. To achieve the State's waste-reduction target, bold action is required, especially by advancing comprehensive Extended Producer Responsibility laws and expanding New York's successful Food Donation and Food Scraps Recycling Law.

Building a circular economy includes encouraging the design of products for durability, reuse, remanufacturing, and recycling, as well as utilizing renewable resources and supporting a more sustainable food system. A circular economy helps conserve natural resources, reduce energy consumption, prevent pollution, reduce GHG emissions, and protect the health of our communities, with a concerted focus on addressing unacceptable disproportionate burdens on disadvantaged communities and potential environmental justice areas.

To help New York State achieve our ambitious climate goals, I look forward to working with our legislative leaders, local government partners, businesses and industries, and New Yorkers across the state to implement the plan's recommendations to reduce waste and build the state's circular economy through sustainable materials management.

This plan is the result of thousands of hours of staff time, which included hosting 14 stakeholder meetings across the State to receive feedback on issues of concern and gain insight from over 425 attendees, analyzing waste data and trends, and conceptualizing a circular economy for New York State. I give my thanks to all those who have participated in this process.

Basil Seggos
Commissioner
February 2023



1. Executive Summary

To protect communities and mitigate the worst effects of climate change, the 2023 *New York State Solid Waste Management Plan* (Plan) builds upon sustained efforts to reduce waste and advance the state's transition to the circular economy, helping to change New Yorkers' understanding of waste and their relationship to it. A circular economy carefully divests from disposal and instead supports processes, activities, and systems that make effective use of materials and prevent environmental degradation and economic loss by keeping valuable materials circulating in the economy. This Plan is intended to guide actions over the next decade, from the beginning of 2023 to the end of 2032, and builds upon the State's 2010 *Beyond Waste* Plan.

Circular economy strategies include designing for durability, reuse, remanufacturing, repairing, and recycling, as well as utilizing renewable resources and supporting a more sustainable food system. Circular economy solutions conserve natural resources, reduce energy consumption, prevent pollution, reduce GHG emissions, and protect human health and the environment. In addition to resource conservation, a circular economy benefits industry by creating new job opportunities through a new business model and ensuring materials with value stay in the economy, providing value instead of being disposed.

The New York State Department of Environmental Conservation (DEC) estimates at least 80% of the material currently sent to landfills or combustion facilities has monetary value, either directly as material that could be used to produce goods or has other beneficial uses, or indirectly through the creation of recycling sector jobs.

This Plan takes a statewide view of complex materials management practices and trends occurring today and provides direction for New York State's waste reduction, reuse, recycling, collection, transportation, and disposal investments, policy, and practices. The Plan also includes a summary of the data relating to the current impacts of waste management on Disadvantaged Communities (DACs) and Potential Environmental Justice Areas (PEJAs) throughout the state to help identify disproportionate burdens and allow for meaningful analysis and policy options to address these circumstances.

> A circular economy is a model of production and consumption that involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products for as long as possible.

This Plan sets forth six major Focus Areas:

- Waste Prevention, Reduction, and Reuse
- Recycling and Recycling Market Development and Resiliency
- Product Stewardship and Extended Producer Responsibility
- Organics Reduction and Recycling
- Toxics Reduction in Products
- Design and Operation of Solid Waste Management Facilities and Related Activities

Each Focus Area has a set of 2–10 identified Goals, for a total of 31.

Each Goal has a set of 1–17 identified Action Items, for a total of 168.

Together, these Action Items are designed to move New York State to an 85% total waste stream recycling rate by 2050.

Characterizing Waste in New York State

The Plan discusses the total waste stream in New York State, which includes all solid waste except hazardous waste. The total waste stream includes municipal solid waste (MSW) (trash from homes, offices, businesses, restaurants, stores, schools, etc. (commonly referred to as residential, commercial, and institutional waste)); construction and demolition (C&D) debris (including all wasted construction materials from new building construction, demolition, road construction, and construction excavation materials); non-hazardous industrial waste; and biosolids. Compilation of the data to perform the analyses in this Plan takes a significant amount of time and effort to ensure the accuracy of the data. Therefore, data from 2018 is the latest available data and was used to provide the basis for planning and projections for this Plan.

Since 2008, the state's recycling rate has grown from approximately 36% to 43% of the total waste stream; however, when only MSW is evaluated, it has remained relatively flat, decreasing by 1% from 2008 to 2018. However, the total recycling rate increased because of the significant increase in the recycling rate for C&D debris over that same period, increasing from 55% in 2008 to 64% in 2018.

Recycling Rate for the Total Waste Stream Generated in New York

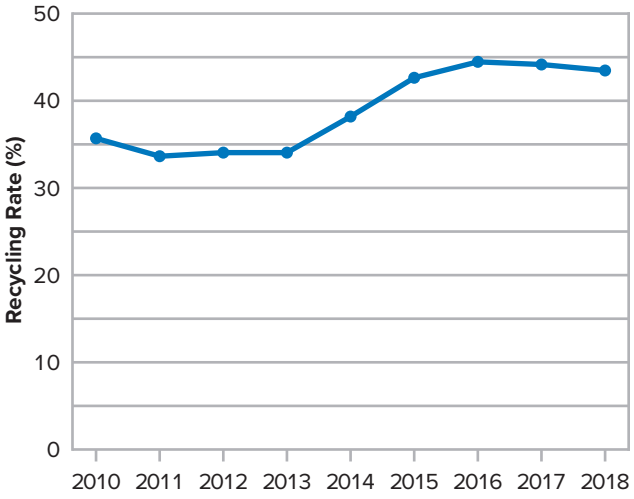


Figure 1.1. Recycling rate for the total waste stream generated in New York from 2010–2018

Recycling Rates for Waste Generated in New York by Waste Type

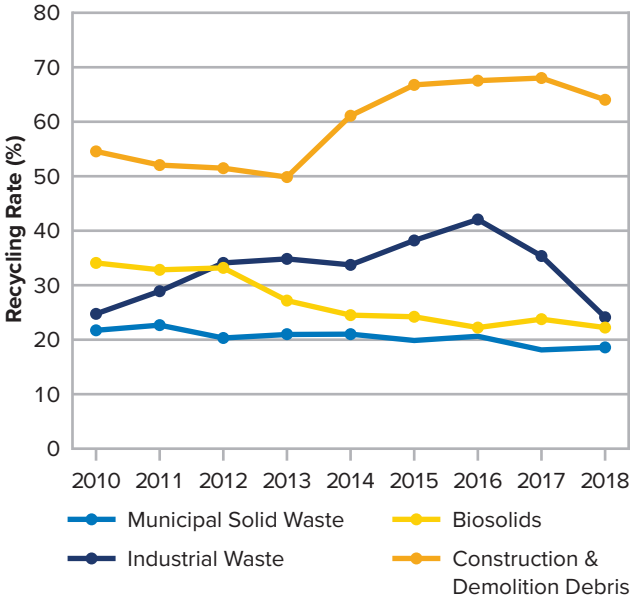


Figure 1.2. Recycling rates for waste generated in New York by waste type from 2010–2018

For MSW, management practices used and the disposal rate per person in 2018 are depicted in the following figures. The Plan discusses the multiple reasons for stagnation in disposal rates for MSW, including the increase in consumer consumption, reduced lifespan of consumer goods, market volatility, weak markets for some materials, and more.

2018 Management of Total Waste Stream Generated in New York

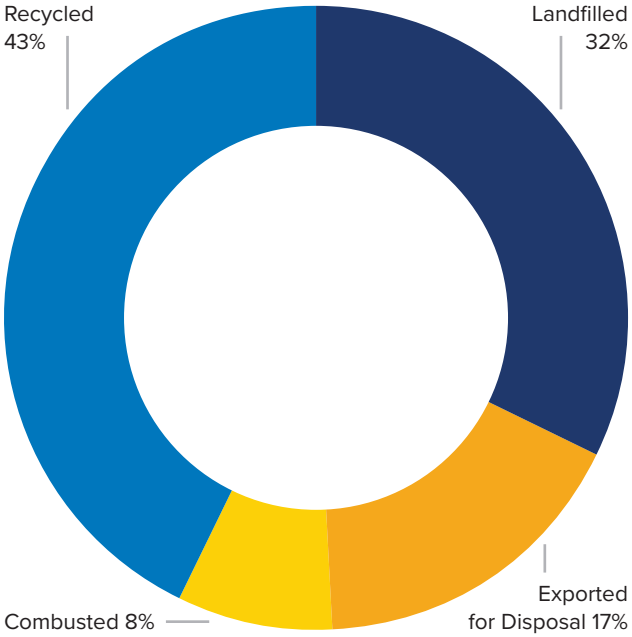


Figure 1.3. 2018 Management of total waste stream generated in New York

MSW Disposal Rate (lbs/person/day)

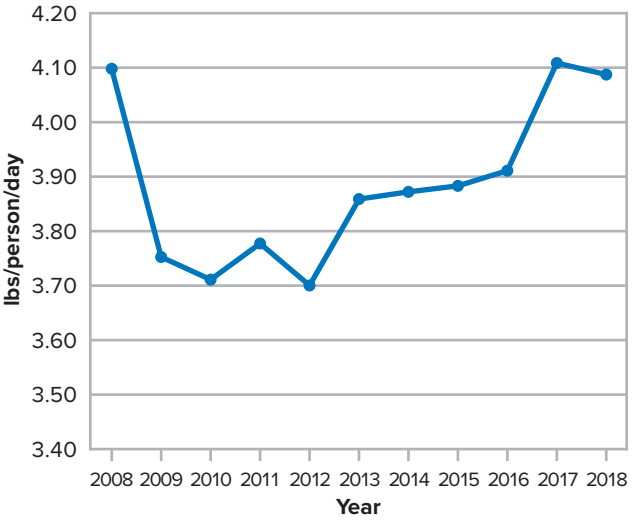


Figure 1.4. MSW disposal rate (lbs/person/day) from 2008–2018

Key Accomplishments since 2010

- "Recycle Right NY" campaign;
- $131.9 million in State grants under the Municipal Waste Reduction and Recycling (MWRR) program;
- 53 new green-procurement specifications established under the GreenNY initiative;
- $20 million investment by DEC to establish materials management research centers at SUNY College of Environmental Science and Forestry (ESF), University at Buffalo (UB), New York State College of Ceramics at Alfred University, and Stony Brook University;
- Increase in the redemption rate under the Returnable Container Act, commonly known as the Bottle Bill, from 61% to 70% in 2021;
- Passage of restrictions on plastic bags and expansion of film plastic recycling requirements – Bag Waste Reduction Act and Plastic Bag Reduction, Reuse and Recycling Act;
- Passage of the Expanded Polystyrene Foam Container and Polystyrene Loose Fill Packaging Ban;
- Passage of product stewardship and Extended Producer Responsibility (EPR) laws: Electronic Equipment Recycling and Reuse Act; Rechargeable Battery Law; Mercury Thermostat Collection Act; Postconsumer Paint Collection Program; Drug Take Back Act; and Carpet Collection Program;
- Passage of the Food Donation and Food Scraps Recycling Law;
- More than $11 million in DEC funding for food donation and food scraps recycling;
- Passage of Consumer Protection Laws: Restricting the amount of 1,4-Dioxane in cleaning products, cosmetics, and personal care products; Child Safe Products Act; PFAS in food packaging; aqueous film-forming foam (AFFF) containing PFAS; PFAS in apparel; restricting the sale of furniture, mattresses and electronic displays containing flame retardants; and requiring disclosure of flame retardants used in electronic displays;
- Comprehensive revisions to State's solid waste regulations (Part 360 series);
- 1,921 inactive landfills identified; 1,884 inspected and ranked, and 899 with groundwater investigations identified; and
- During 2017 and 2018, and again in the spring of 2022, C&D debris enforcement initiatives resulted in over 550 violations found.





Vision

New York's waste management vision for 2050:

- Landfilling is reduced by 85% by 2050.
- The circular economy is realized.
- Collaboration and innovation are commonplace.
- "Waste" is a concept of the past.
- Climate change mitigation is fully implemented.
- Shared responsibility is a given.
- Equitable, inclusive, and accessible waste reduction and reuse efforts are widespread.
- Responsible and resilient markets thrive.



Community compost site at Columbia Street Farm in Brooklyn, NY

Recommendations

The Plan outlines Action Items necessary to achieve the reduction in disposal needed and the other components of the vision. Although all actions are important, the most impactful new initiatives will require legislative changes. To achieve the vision outlined in this Plan, there will need to be a combination of bold new legislation to help provide the framework for transformational change, and consistent commitment from everyone—State and local governments, planning units, the private sector, product manufacturers, distributors, retailers, educators, and all New Yorkers. Partnership is key to achieving the vision for 2050.

Of the legislative recommendations, the following are priorities:

- Developing Extended Producer Responsibility (EPR) for paper and packaging, and ultimately, framework legislation that allows the addition of other products;
- Expanding and amending the existing Food Donation and Food Scraps Recycling Law to include smaller food scraps generators and eliminate the mileage limit for organics recycling facilities; and
- Requiring a per-ton disposal disincentive surcharge on all waste landfilled or combusted in New York State and all waste generated in New York State being sent for landfilling or combustion out-of-state, to provide financial support for reduction, reuse, and recycling projects.

Other legislative recommendations that will assist in reduction and recycling efforts include:

- Extended Producer Responsibility/Product Stewardship for textiles; shoes; furniture; climate impacting materials; gas cylinders; e-cigarettes/vaping devices; solar panels; wind turbine blades; electric vehicle batteries; household hazardous waste; and mattresses;
- Proposals that assist consumers to repair damaged products first instead of purchasing new products, encouraging repair, and reducing e-waste;
- Incentives for reusable and refillable products;
- Ban on the disposal of unsold retail goods;
- Single-use product restrictions;
- Standards for deconstruction materials and recovered aggregate;
- Minimum recycled content requirements;
- Expansion of the Battery Recycling Law; and
- Restrictions on harmful chemical use in consumer products.

2. Introduction

The linear “take, make, toss” model of use and consumption is outdated and fails to put New York on the path to achieve the State’s climate goals, safeguard the environment, and protect communities. In natural ecosystems, all inputs and outputs are used within the system and there is no waste. If materials considered to be waste are looked at more holistically—rather than as worthless by-products of “business as usual,” the waste is valued as a resource, propelling a more circular approach to resource stewardship.

New York State’s approach to material management aligns and supports the greenhouse gas reduction recommendations in the Scoping Plan developed to implement the CLCPA. Diverting waste from landfills and renewing a resilient and recycled supply chain is integral to achieving the State’s climate CLCPA requirements to reduce greenhouse gas emissions, while also promoting a just and equitable transition to a carbon-constrained economy.

Circular Economy

A circular economy supports processes, activities, and systems that make effective use of materials and prevent environmental degradation and economic loss by keeping valuable materials circulating within the economy.

According to the Ellen MacArthur Foundation, which works to accelerate the transition to a circular economy, the circular economy is based on three principles:

- Design out waste and pollution;
- Keep products and materials in use; and
- Regenerate natural systems.

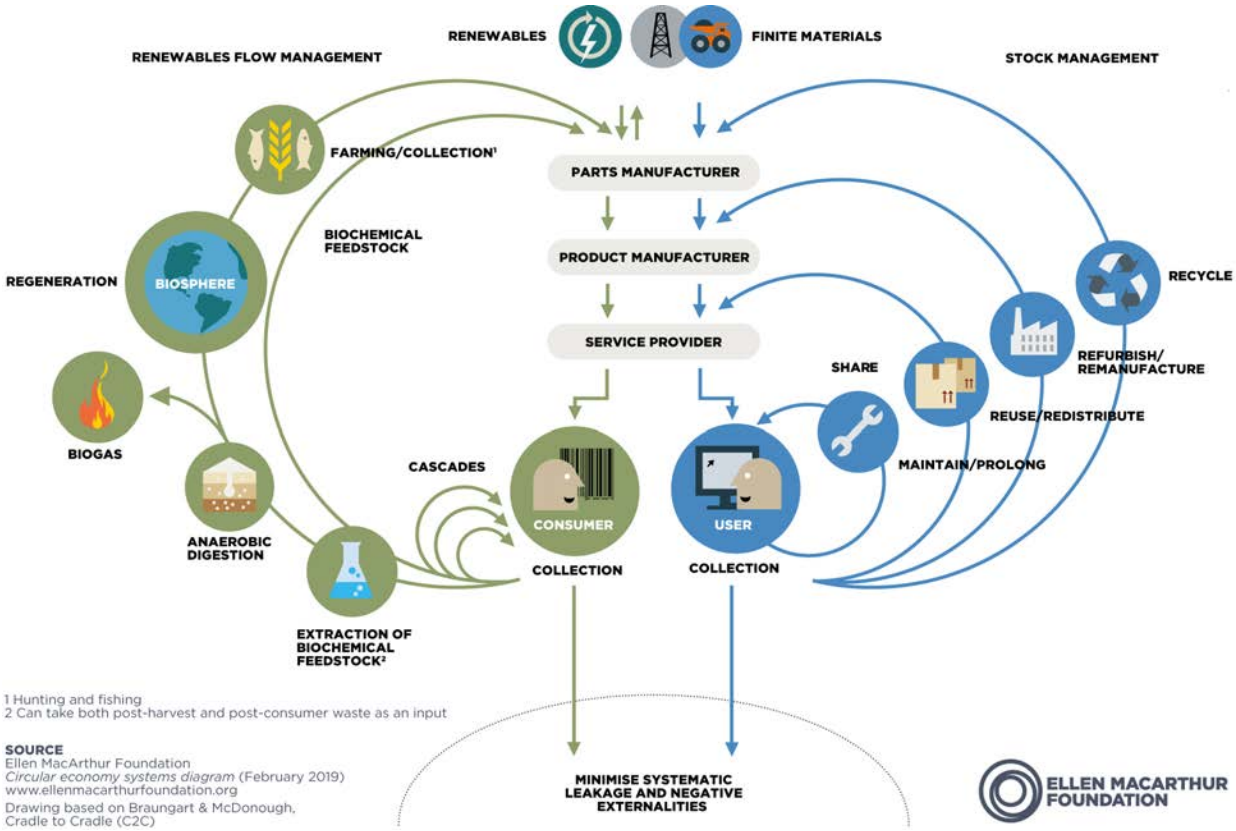


Figure 2.1. Circular economy systems diagram

As demonstrated in Figure 2.1, circular economy strategies include designing for durability, reuse, remanufacturing, and recycling, as well as utilizing renewable resources and supporting a more sustainable food system. Circular economy solutions conserve natural resources, reduce energy consumption, prevent pollution, reduce GHG emissions, and protect human health. In addition to resource conservation, the circular economy also benefits industry by creating new job opportunities through a new business model and ensuring materials with value stay within the economy, continuing to provide value instead of ending up in landfills or combustors.

The waste of valuable resources is a problem for which the solution is within society's control. The current "take, make, toss" model of use and consumption drives the single-use culture that is prevalent throughout society. From single-use items such as utensils, food wrappers, and takeout containers to containers for household items such as soaps, shampoos, and cleaning products, an enormous array of single-use packaging and single-use items exists across all areas of life. The "take, make, toss" model also applies to durable goods, which are items such as furniture, sports equipment, and tools. These types of items are typically intended to have a longer lifespan than single-use products, but currently, these types of materials do not have adequate avenues for keeping them in circulation. The first step in rethinking the management of discarded

materials is to prevent materials from being discarded in the first place. Addressing the "take, make, toss" model includes replacing single-use systems with reuse systems. An example of this is reusable container systems aimed at reducing the amount of waste that comes from takeout containers. These types of programs are already being piloted in Europe, South America, and the United States, including in New York State. There are both "B2C" (business to consumer) and "B2B" (business to business) container and packaging reuse models operating in New York State. Some New York State businesses developing reuse systems for food service containers are Redish, Deliver Zero, and Cup Zero. Businesses such as Returnity provide reuse services for shipping and delivery. Businesses also engage in other reuse models in food service, such as Just Salad, and reuse models in grocery and personal care products, such as Honest Weight Food Co-Op and The O Zone.

The key is to view discarded materials not as problems, but as assets with value and longevity, and to prioritize reuse over the purchase and use of raw materials. Policy solutions can help accelerate this shift, valuing creativity and innovative thinking to avoid and prevent waste at the source to better utilize resources, and assure a level playing field sector-wide.

A circular economy creates new opportunities, spurs innovation, and propels New York State competitively into the future. Instead of disposal and combustion, New Yorkers can reuse, repair, and repurpose to make a profit out of material that would be wasted otherwise, in turn creating something to use and benefit from again. The circular economy is happening now. New York State will move forward with building a resilient future that will work for everyone in the long term.

Sustainable materials management is good for New York, communities, the environment, and the economy. But it will take everyone—state and local governments, planning units, the private sector, product manufacturers, distributors, retailers, educators, and consumers—to make the concept of waste a thing of the past.

DEC estimates at least 80% of the material currently sent to landfills or for combustion still has monetary value either directly as material that could be used to produce goods or other beneficial uses or indirectly through the creation of recycling sector jobs. Often, the demand for these materials is misaligned within the supply chain, meaning that the supply is not readily available in the quality, condition, and location where and when it is demanded.

To protect the environment, retain opportunities for future generations, and maintain New York's status in the global economy, the State needs to advance a more holistic concept of waste and use resources to their maximum benefit to reduce disposal burdens on communities and conserve natural resources.

This Plan provides a path to help New York State realize a circular economy and its associated benefits. This path will require legislation, outreach and education, equity considerations, funding, and programmatic improvements.

Plan Format

New York State's *Solid Waste Management Plan* takes a statewide view of the complex materials management practices and trends occurring today and provides direction for New York State's waste reduction, reuse, recycling, collection, transportation, and disposal investments, policy, and practices. Solid waste management is hyperlocal and every municipality in New York State has a slightly different practice for collection, financing, and processing. This Plan supports local solid waste management planning units continuing to lead local efforts to achieve waste reduction and recycling goals by articulating the current status of solid waste in New York State today, discussing policy changes, and identifying critical solid waste policies and infrastructure investments needed to recover and repurpose raw materials for a more resilient supply chain to power a more circular economy.

To best present this information and the interrelated complexities, the Plan is divided into several components to help readers with various areas of expertise and levels of interest to easily navigate to the most relevant information.

The body of the Plan:

- Provides background information on current solid waste management in New York State;
- Identifies a number of issues, challenges, and opportunities including climate, throw-away culture, global markets, information sharing and technology, equity issues, ecosystem impacts, and emerging contaminants sampling and research;
- Discusses the values and visions with regards to materials management in New York State and the guiding principles that will provide the direction and structure to get us there; and
- Lists six Focus Areas and a detailed roadmap of the actions that must be taken to achieve the waste disposal reduction goals through 2050.

For ease of reading and navigation, more detailed information and data are located in a series of appendices to this Plan. In this way, the body of the Plan serves as the focal point, specifically identifying where more information can be found in related appendices for interested readers. The appendices include a historical summary of waste management in New York in Appendix A; a summary of programmatic initiatives that have been implemented since 2010 in Appendix B; detailed and comprehensive data on solid waste management facilities and practices in Appendices C and D; summaries of the planning units and local government programs and the flow of waste across the state in Appendices D–F; data related to waste management facilities with respect to potential environmental justice areas and disadvantaged communities in Appendix G; projections on waste quantities and characteristics in Appendix H; and a guide to applicable State statutes and policies in Appendix I.

3. Background on Waste Management in New York State

Developing recommendations to move the state toward a more circular economy requires an examination of the state's waste characterization and waste management so that areas of success and areas requiring improvement can be clearly identified. Waste management in New York State involves several different types of waste streams and categories of waste, which together make up the total waste stream. DEC puts significant effort into providing an analysis of these major waste streams to not only provide transparency in the numbers, but to also help guide planning and resource commitments to have the greatest impact. Compilation of the data to perform the analyses in this Plan takes a significant amount of time and effort to ensure the accuracy of the data. Therefore, data from 2018 is the latest available and was used to provide the basis for planning and projections for this Plan. We expect the data for 2019 and 2020 to show a dip in recyclables recovered and processed in 2019 due to a combination of the recycling materials market ramifications of China's National Sword policy on the global market for paper and plastic materials coupled with the effects of COVID-19 on both waste-generation patterns and recyclables processing. We also expect to see that the effects COVID-19 had on the economy reflected in a temporary reduction of waste generation in certain sectors. Additionally, we expect to see COVID-19 had an altering effect on both the waste composition and the percentages of waste decreasing in the commercial sector while increasing in the residential sector. Much of these temporary adjustments are expected to have stabilized in 2021 and 2022, but future analysis and waste composition data that is being collected through a project with SUNY Stony Brook, discussed in more detail in Appendix B, will help with the evaluation of anomalies due to COVID-19 and the lasting waste-composition trends. Waste management in New York State involves several different types of waste streams and categories of waste, which together make up the total waste stream.

Quick Facts: Total Waste Stream

The total waste stream includes municipal solid waste (MSW), construction and demolition (C&D) debris, non-hazardous industrial waste, and biosolids.

- The total waste stream generation was 42.2 million tons in 2018.
- Of the 42.2 million tons of total waste stream generation, MSW accounted for 45%, C&D debris 46%, non-hazardous industrial waste 5%, and biosolids 4%
- The recycling rate for the total waste stream has increased from about 36% in 2008 to 43% in 2018.
- The management of the 2018 total waste stream included disposal through a combination of landfills in New York State (32%), export for disposal (17%), and combustion in New York State (8%), for a combined total of 57%, with the remaining 43% recycled.

Quick Facts: Municipal Solid Waste

MSW comprises all waste that is generated by residents, whether in single-family or multi-family residences; commercial establishments, including all offices, stores, shops, restaurants, or businesses of any nature; and waste generated by institutions, including

any schools, government buildings, prisons, nursing homes, hospitals, or other similar facilities.

- The MSW stream generation prior to recycling was 17.9 million tons in 2018.
- Of the 17.9 million tons of MSW generation, residential waste accounted for 54% and commercial/institutional waste for 46%.
- The MSW portion of the total waste stream is often the only portion of waste people think of, but it is actually less than half (45%) of the total waste stream, with residential waste accounting for less than a quarter (24%) of the total waste stream.
- The state remained essentially at the same disposal rate of pounds of MSW per person per day in 2018 (4.09) as it was in 2008 (4.10).
- The MSW stream by weight in New York State comprises paper, which is the largest category (32%), followed by food scraps (17%), plastics (14%), yard trimmings (7%), metals (7%), textiles (5%), glass (4%), wood (3%), and miscellaneous (10%).
- In 2018, MSW was managed by disposal through a combination of landfills in New York State (39%), export for disposal (27%), and combustion in New York State (15%) for a combined total of 81%, with the remaining 19% recycled.

Quick Facts: Construction and Demolition Debris

C&D debris includes all wasted construction materials from new building construction, demolition, road construction, and construction excavation materials.

- The total C&D debris waste stream generation prior to recycling was 18.4 million tons in 2018.
- DEC estimates that the largest component of C&D debris is concrete/asphalt/rock/brick (35%), followed by soil/gravel (27%), wood (15%), metal (6%), roofing (5%), drywall (2%), cardboard (2%), plastic (1%), and other (7%).
- The recycling rate for the C&D portion of the total waste stream was much higher than the MSW stream, starting at 55% in 2008 and steadily increasing to 64% in 2018.
- In 2018, the management of C&D debris included disposal through a combination of landfills in New York State (26%), export for disposal (9%), and combustion in New York State (1%), with the remaining 64% recycled.

Together, these data points, along with the comprehensive data and analyses that follow below and in Appendix C, help to highlight the current status of materials management in New York State. This comprehensive data allows for the identification of areas to improve the future of materials management in New York State and move the state toward a more circular economy.

For detailed information on solid waste management facilities, waste quantities, waste composition, waste projections, and regional waste management, see Appendices C through H of this Plan.

Total Waste Stream

The total waste stream includes municipal solid waste (MSW) (trash from homes, offices, businesses, restaurants, stores, schools, etc. (commonly referred to as residential, commercial, and institutional waste)); construction and demolition (C&D) debris (including all wasted construction materials from new building construction, demolition, road construction, and construction excavation materials); non-hazardous industrial waste; and biosolids.

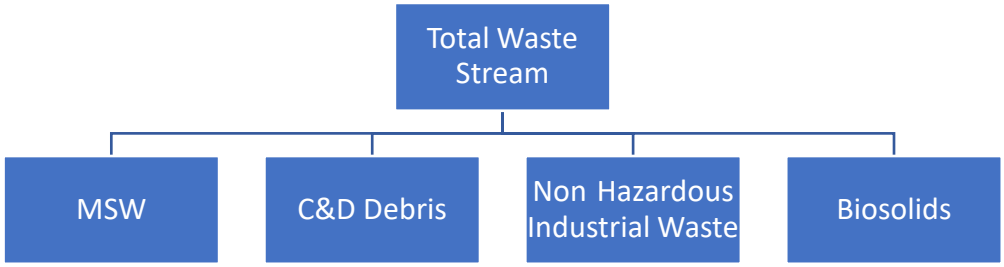


Figure 3.1. Types of waste that compose the total waste stream

Total Waste Stream Generation

In this Plan, the term "total waste stream" includes all four of the waste categories shown in Figure 3.1. The total waste stream generation was 42.2 million tons of waste in 2018. Compilation of the data to perform the analyses in this Plan takes a significant amount of time and effort to ensure the accuracy of the data. Therefore, data from 2018 is the latest available and is used as the base data for planning and projections.

The MSW portion of the waste stream is often the only portion of waste people think of, but it is actually less than half (45%) of the total waste stream. It is actually slightly less than C&D debris, which constitutes 46% of the waste stream; non-hazardous industrial waste is 5%; with biosolids constituting 4%. The breakdown of the total waste stream for New York State is found in Figure 3.2.

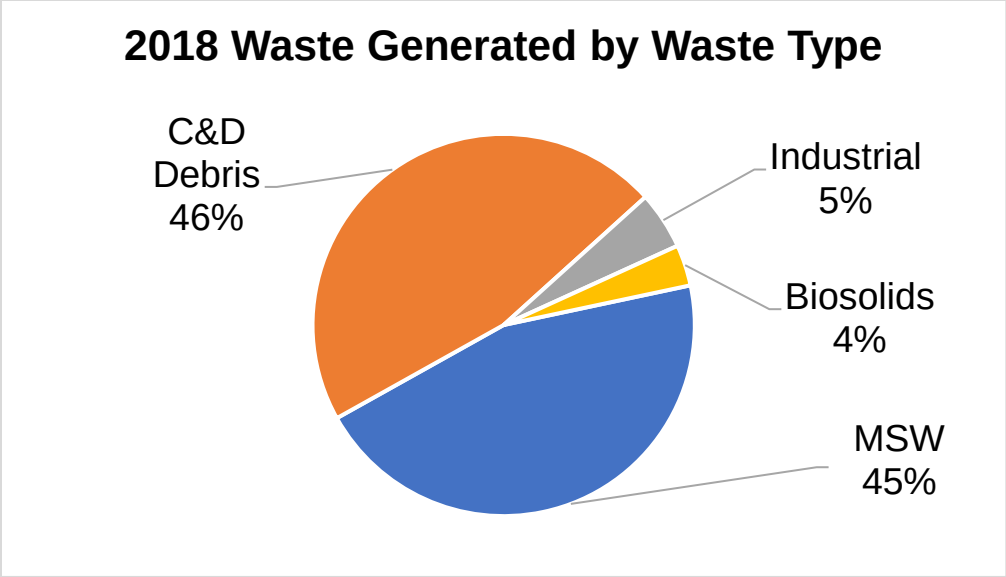


Figure 3.2. 2018 Waste generated by waste type in New York

Total Waste Stream Recycling Rates

The recycling rate for the total waste stream increased from about 36% in 2008, to 43% in 2018.

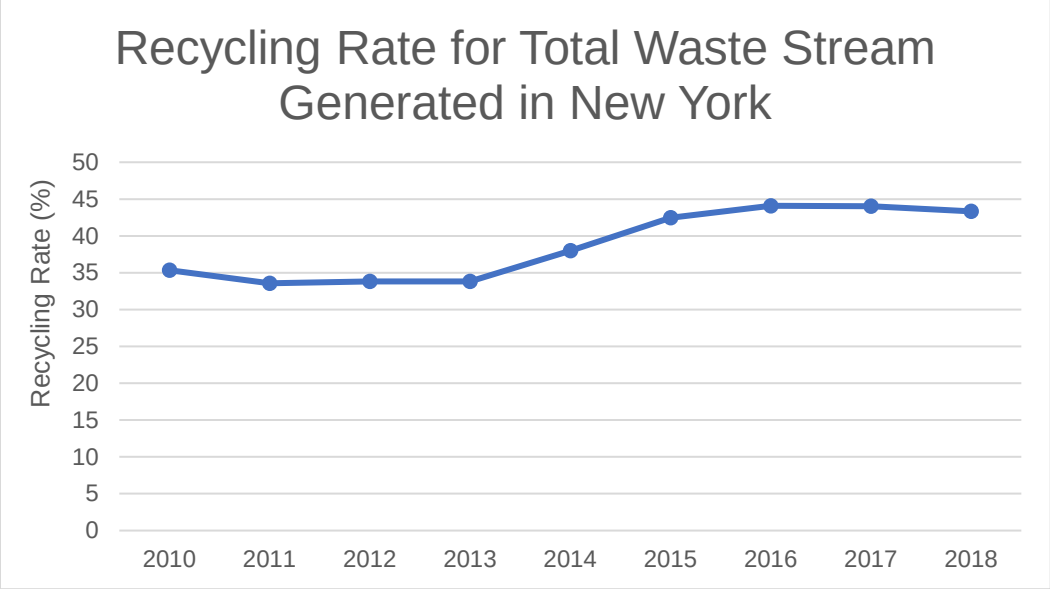


Figure 3.3. Recycling rates for the total waste stream in New York from 2010–2018

However, there is more detailed information to consider when evaluating the four primary components of the total waste stream (MSW, C&D debris, industrial waste, and biosolids) separately. While, as noted above, the total waste stream recycling increased from 2008 to 2010, the MSW recycling rate remained relatively stable and even dipping slightly in 2007 and 2008. However, during that same period, the C&D debris recycling rate rose considerably from 55% in 2008 to 64% in 2018. The significant increase in C&D debris recycling is the driver behind the increase in the overall total waste stream recycling rate.

When recycling rates for the four major waste stream components are viewed separately, the impacts of each major waste stream component on the overall recycling rate become clearer. The following figure shows the recycling rates by waste stream.

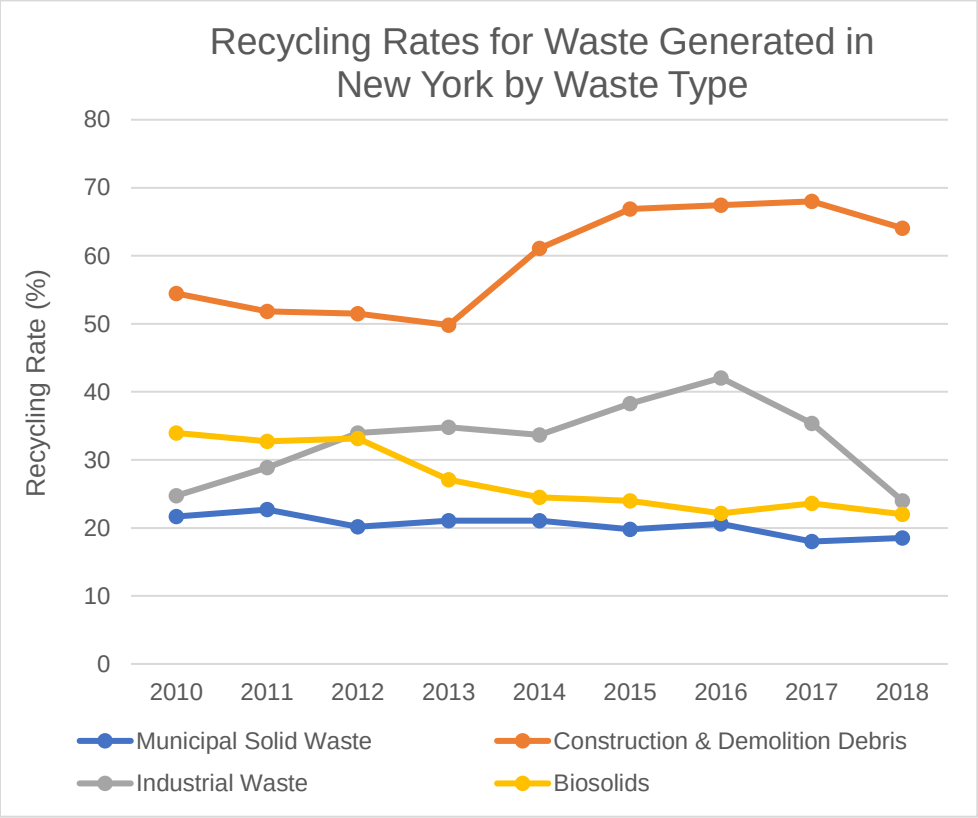


Figure 3.4. Recycling rates for waste generated in New York by waste types from 2010–2018

Overall Total Waste Stream Management Methods

As shown in Figure 3.5, the management of the 2018 total waste stream included disposal through a combination of landfills in New York State (32%), export for disposal (17%), and combustion in New York State (8%), for a combined total of 57%, with the remaining 43% recycled.

More waste is exported from New York State than is imported; however, waste generated outside of the state is consistently imported for disposal in landfills and processing in municipal waste combustors. Between 2010 and 2018, the total waste stream imported into New York State was relatively consistent, ranging from 1.9 million tons per year to 2.3 million tons per year, with the exception of 2011, with 2.7 million tons per year. This is less than one-third of the amount of the total waste stream generated in New York State exported for disposal. A more detailed presentation of the information related to waste imported into New York State is included in Appendix C.

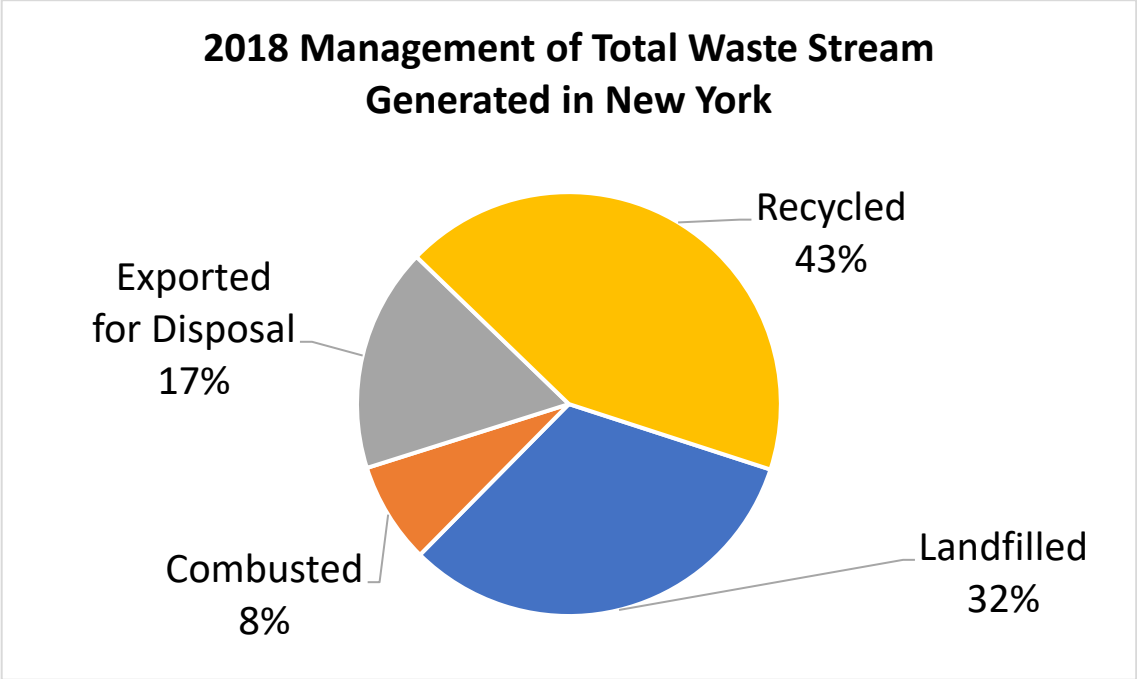


Figure 3.5. 2018 Management of total waste stream generated in New York

Municipal Solid Waste (MSW)

MSW Generation

The MSW generated prior to recycling was 17.9 million tons in 2018. As noted previously, MSW comprises all waste generated by residents, whether in single-family or multi-family residences; commercial establishments, including all offices, stores, shops, restaurants, or businesses of any nature; and waste generated by institutions, including any schools, government buildings, prisons, nursing homes, hospitals, or other similar facilities. In New York State it is estimated that residential waste accounts for 54% of MSW and commercial/institutional waste constitutes the remaining 46%.

MSW Disposal Rate

The state remained essentially at the same disposal rate of pounds of MSW per person per day in 2018 (4.09) as it was in 2008 (4.10). After an initial decline in the disposal rate, resulting in a drop of 10% in 2012, the disposal rate for MSW steadily rose, returning to the initial rate. The following figure summarize the disposal rates from 2008 to 2018.

Year	Disposal Rate (lbs/person/day)
2008	4.10
2009	3.75
2010	3.71
2011	3.77
2012	3.70
2013	3.86
2014	3.87
2015	3.88
2016	3.91
2017	4.11
2018	4.09

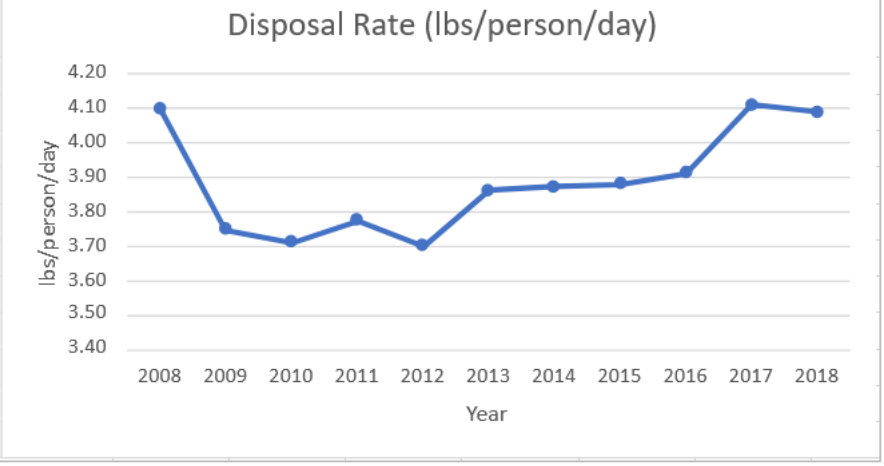


Figure 3.6. MSW disposal rate per person per day in New York from 2008–2018

Economic Effect on MSW Generation

Historically, waste generation typically tracks the economy. The state gross domestic product grew by 35% from 2008 to 2018. That growth would generally lead to a higher waste-generation rate. In New York State, the per capita MSW generation, which includes recyclables, decrease 2.5% in that same period, from 5.15 pounds per person per day in 2008 to 5.02 pounds per person per day in 2018. The generation rate has been relatively stable over that 10-year period, even during the growth in state gross domestic product. In addition to the gross domestic product, other factors apply, such as the character of the waste stream (more plastic containers instead of glass bottles, etc.) and waste reduction efforts. It's a positive sign related to true progress in reducing overall waste generation. It's also a reminder that generation rate and disposal rate should be considered when evaluating solid waste management data. Simply looking at the disposal rate over a period of time may not give a true picture of waste reduction, reuse, and recycling efforts, when due to economic circumstances, the overall generation rates would have instead been expected to have increased over that period. Waste data can be tricky to interpret in isolation and from one source to another, such as one state to another. It's important to evaluate all the data as part of any planning effort.

MSW Waste Composition

The waste composition varies between the various generating sources as well as in different areas of the state, such as rural, suburban, or urban areas. The aggregated data for all MSW in New York State provides an approximate breakdown of urban 54%, suburban 30%, and rural 16%. A detailed discussion of these differences in waste composition is included in Appendix H.

Figure 3.7 contains a breakdown of MSW by weight in New York State. The paper category is the largest (32%), followed by food scraps (17%), plastics (14%), yard trimmings (7%), metals (7%), textiles (5%), glass (4%), wood (3%), and miscellaneous (10%). These rates may be somewhat different than data from other sources, such as the United States Environmental Protection Agency (EPA), because these have been evaluated and prepared taking into consideration the demographic characteristics of New York State, including the substantial urban population. Waste composition is not static. As consumer products and lifestyles change, so will the character of MSW. Paper and paperboard use decreases as electronic mail becomes widespread and the number of newspapers that are printed drops significantly, but food packaging use increases as lifestyles lean toward increased take-out or delivery meals. Materials management systems must be nimble and must be able to adjust to these changes.

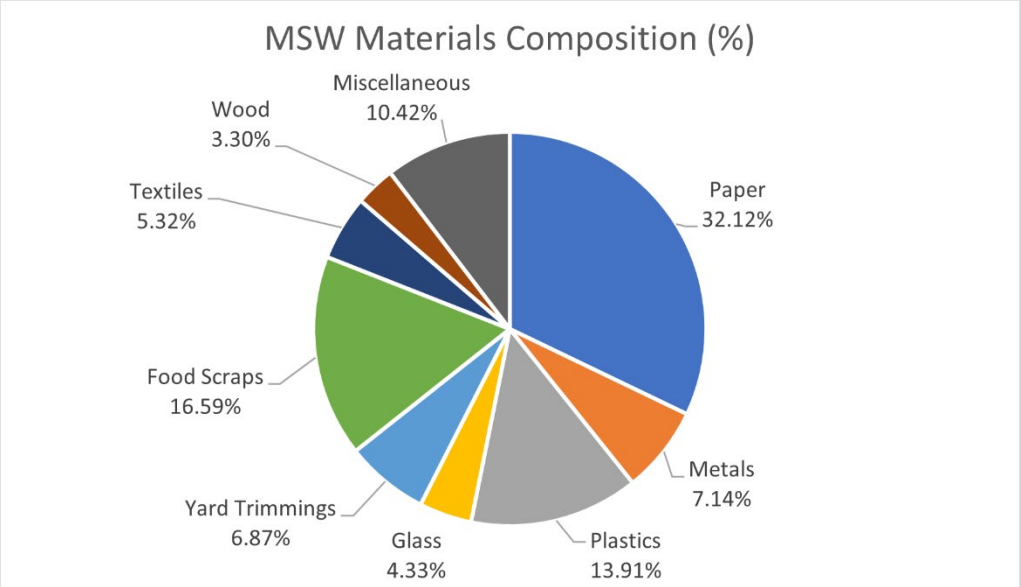


Figure 3.7. MSW composition in New York

MSW Recycling Rate

The target metric for the *Beyond Waste* Plan issued in 2010 was for MSW, and the goals were for the disposal rate of pounds of MSW per person per day, and DEC will continue to use that established metric as the most accurate and meaningful metric to measure the ultimate goal of reducing waste disposed. However, for comparison purposes, using a recycling rate for MSW, the recycling rates ranged from 20% in 2008, nearing 23% in 2011, and declining to 18.5% (rounded to 19%) in 2018. This information is depicted in Figure 3.8. Both the disposal rate and the recycling rate follow a similar pattern, showing a brief improvement but a relative stagnation overall.

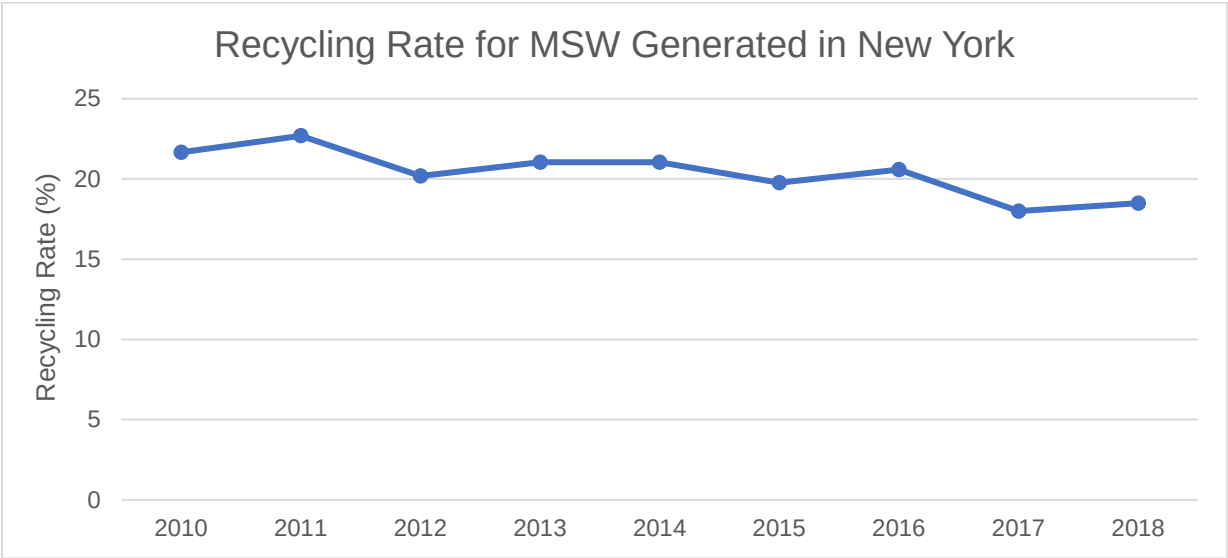


Figure 3.8. Recycling rate for MSW generated in New York

Overall MSW Management Methods

In 2018, MSW was managed by disposal through a combination of landfills in New York State (39%), export for disposal (27%), and combustion in New York State (15%), for a combined total of 81%, with the remaining 19% recycled. This breakdown is shown in Figure 3.9.

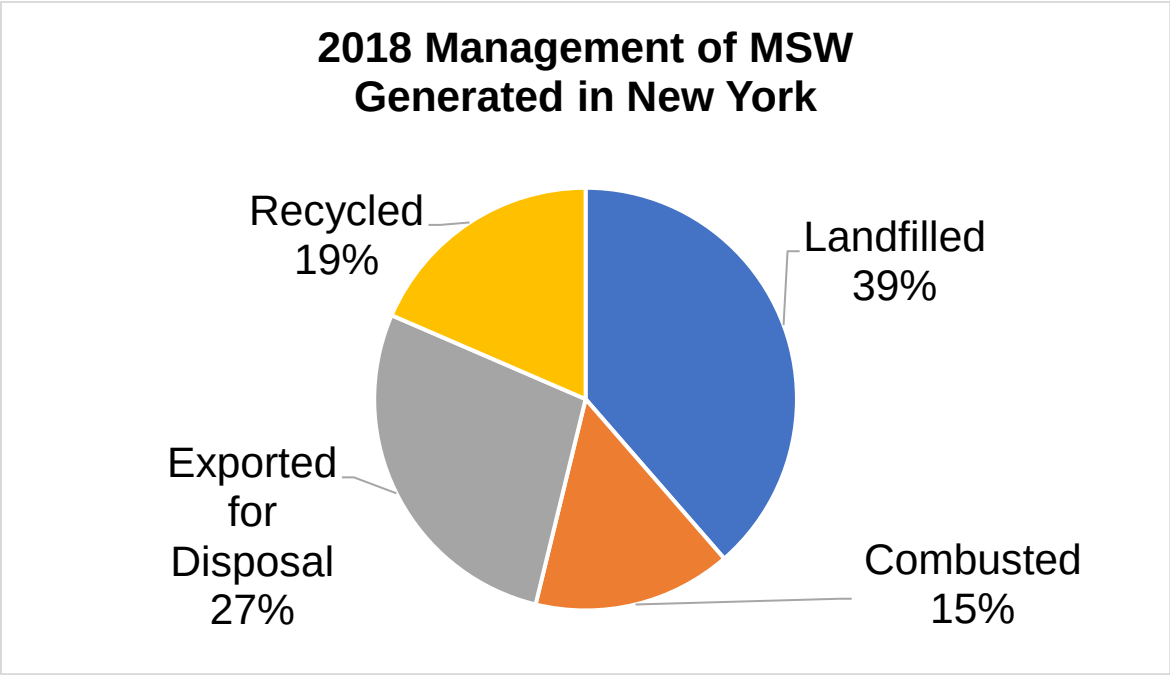


Figure 3.9. 2018 management of MSW generated in New York

Municipal and Private Roles in MSW

The traditional picture of the local government collecting waste and managing it at local municipal facilities has changed. In the past 30 years, operation of much of the landfill and municipal waste combustor (MWC) capacity in New York State has shifted from municipalities and planning units to private companies. By number, landfills owned by municipalities are still the largest, with 19 of the 25 active landfills in the state. However, the capacity of municipal landfills is dwarfed by the capacity of private landfills. Four of the larger municipally owned landfills are operated by private companies under long-term operational agreements. By capacity, the privately owned and operated landfills and the privately operated/municipally owned landfills accounted for 82% of the working MSW landfill capacity in 2018. This represents a complete reversal of the ownership and operation roles over the past 30 years. For MWCs, it is even more dramatic, with only 1 of the 10 MWCs owned and operated by a municipality. Ninety-eight percent of the working MWC capacity in 2018 was owned or operated by private companies. This information is presented in more detail in Appendix D.

Collection of waste and recyclables in most areas of the state, especially the urban and suburban areas, from multi-family residences with more than four units, such as apartment complexes, condominiums, etc., as well as essentially all commercial waste is handled by private waste companies that contract directly with the property owner. The significant exception, and an anomaly in the United States, is New York City. The New York City Department of Sanitation provides municipal collection for all single-family and multi-family residential waste, regardless of the number of units, for both waste and recyclables. As depicted in Figure 3.10, for New York State as a whole, 60% of the residents are provided direct municipal curbside collection services. The remaining 40% of residents are divided between 25% of the property owners procuring collection services directly with private waste collectors and the other 15% handled by municipalities contracting private waste collection services on behalf of residents.

Because New York City represents about 44% of the state's population and it provides a unique level of municipal service to multi-residential residences, it is useful to analyze the information without New York City. Without the New York City data, 45% of New York State's residents are covered under collection services contracted directly with private waste collectors, 29% of residents receive direct municipal curbside collection services, and the remaining 26% of the population is covered by municipalities contracting private waste collection services on behalf of residents.

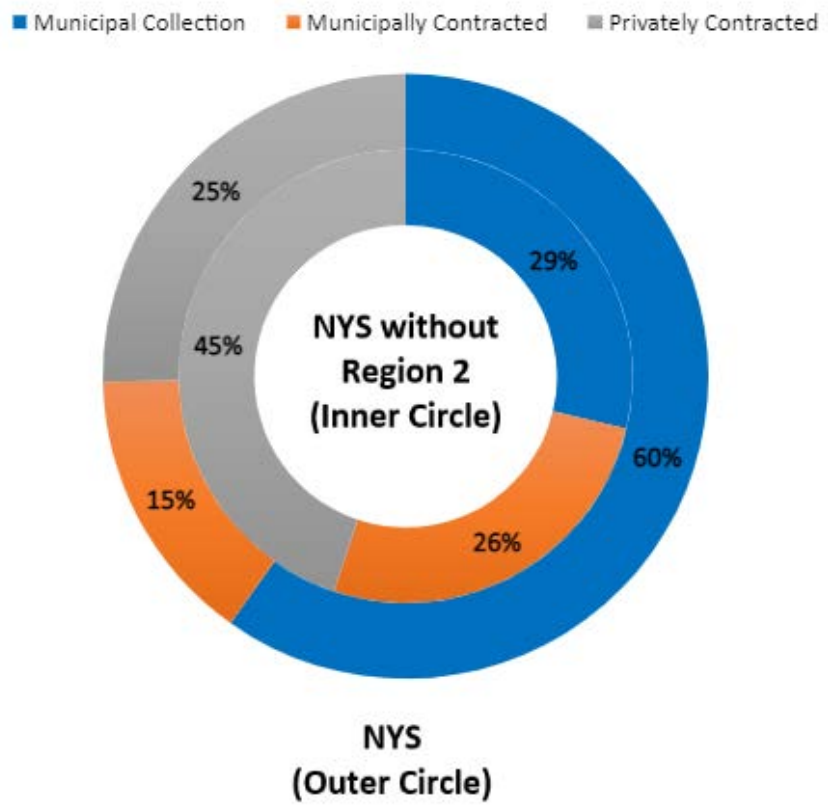


Figure 3.10. Distribution of the methods used for the collection of residential MSW for New York and for each of the DEC Regions

Because essentially all commercial waste is collected by private waste collectors, and MSW comprises 54% residential waste and 46% commercial waste of the MSW collected for New York State as a whole, approximately 32% of all MSW is collected through direct municipal curbside collection services. Without New York City data included, approximately 16% of all MSW is collected through direct municipal collection.

C&D Debris

C&D Debris Generation

The total C&D debris waste stream was 18.4 million tons in 2018. C&D debris is the largest component of the total waste stream at 46%. C&D debris includes all wasted construction materials from new building construction, demolition, road construction, and construction excavation materials. This provides for a wide range of distinct streams of material. After MSW, C&D debris is the largest component of discarded materials, constituting 27% or approximately 6.6 million tons annually.

C&D Debris Waste Composition

DEC estimates that the largest component of C&D debris is concrete/asphalt/brick/rock (35%), followed by soil/gravel (27%), wood (15%), metal (6%), roofing (5%), drywall (2%), cardboard (2%), plastic (1%), and other (7%). Additional detailed waste characterization data is included in Appendix H.

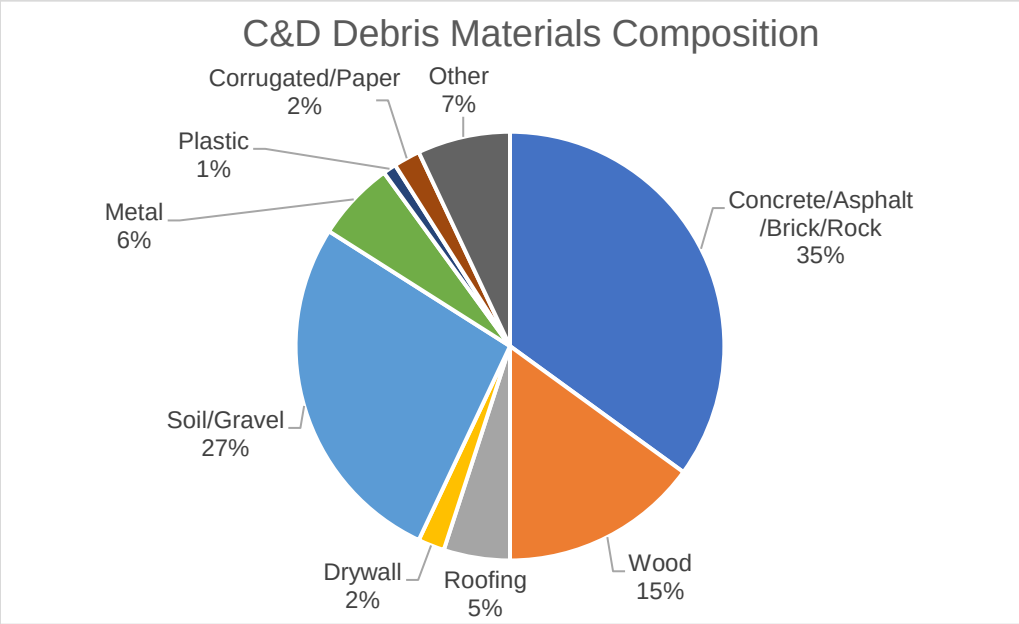


Figure 3.11. C&D debris materials composition

C&D Debris Recycling Rate

As shown in Figure 3.12, the recycling rate for C&D debris is much higher than the recycling rate for MSW, starting at 55% in 2008 and steadily increasing to 64% in 2018.

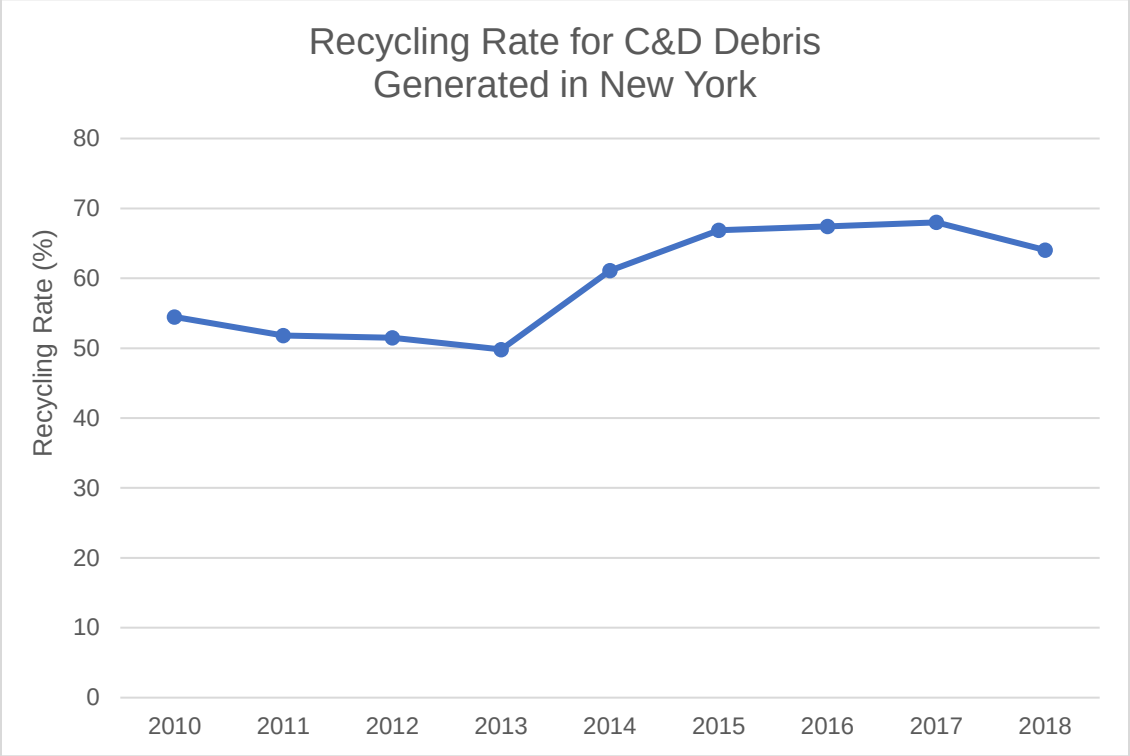


Figure 3.12. Recycling rate for C&D debris in New York

There are likely many contributing factors to this increase in C&D debris recovery, including:

- DEC's focus on proper C&D debris management with the coordinated enforcement efforts against illegal disposal in 2016, 2017, and 2022, discussed in more detail in Appendix B;
- Enhancing Part 360 regulations, effective in late 2017, providing regulatory changes allowing for more paths to recover and recycle clean C&D debris; and
- Better data reporting from facilities on fill material, road construction material, and beneficially used materials.

It is expected that the recycling rates will continue to rise, even as the amount of material continues to increase. Further detail and discussion related to the regulatory changes and the coordinated and focused enforcement efforts are included in Appendix B. A more detailed discussion of C&D debris processing facilities is included in Appendix D.

Overall C&D Debris Management

As outlined in Figure 3.13, the management of C&D debris includes disposal through a combination of landfills in New York State (26%), export for disposal (9%), and combustion in New York State (1%), with the remaining 64% recycled.

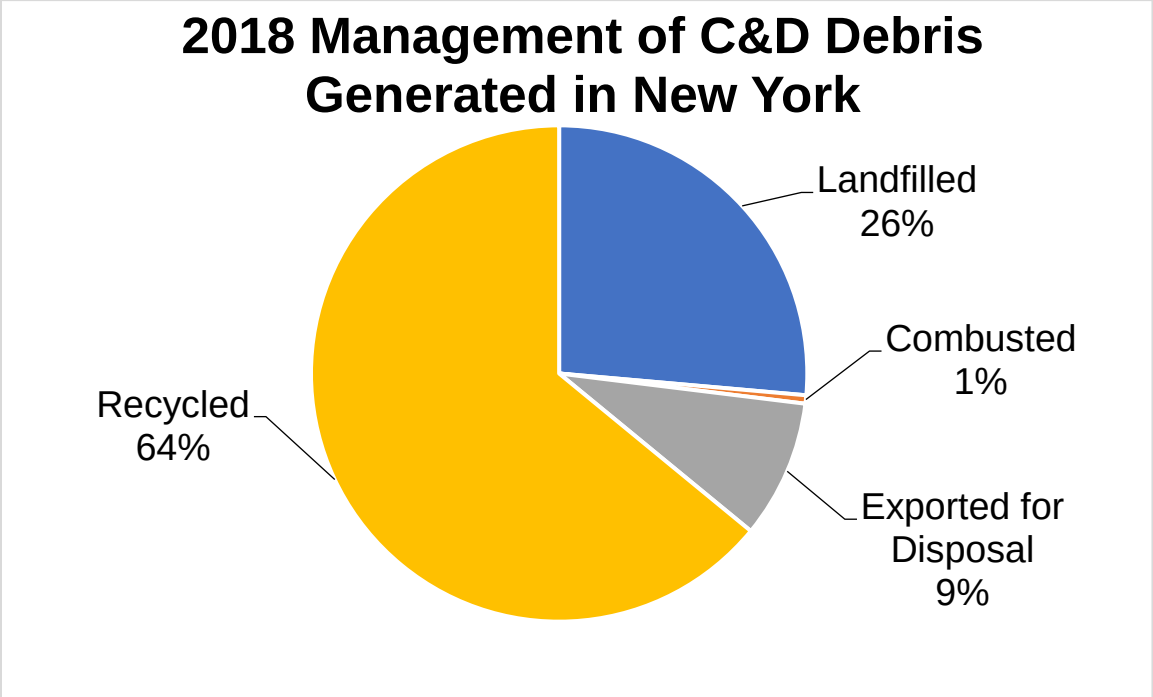


Figure 3.13. 2018 Management of C&D debris generated in New York

Industrial Waste

Industrial Waste Generation

The industrial waste category is about 5% of the total waste stream, accounting for 1.9 million tons of waste annually, and includes discarded materials generated by manufacturing or industrial processes, such as paper mill residues, food processing waste, liquid wastes (acids, leachate, etc.), and foundry sands. It does not include hazardous waste generated from industrial processes, such as chemical manufacturing. The determination of whether a material is hazardous is outlined in the Part 370 series regulations.

Industrial Waste Recycling Rate

It is challenging to obtain recycling data on this waste stream because it may be sent directly from the generator to another industry for use as a feedstock and this data is not required to be reported to DEC. Also, if waste from an industry is transported directly out of state for disposal, without going through a transfer facility, that data is not readily available to DEC. Therefore, it is likely that the recovery and the total generation in this category is underreported in this Plan.

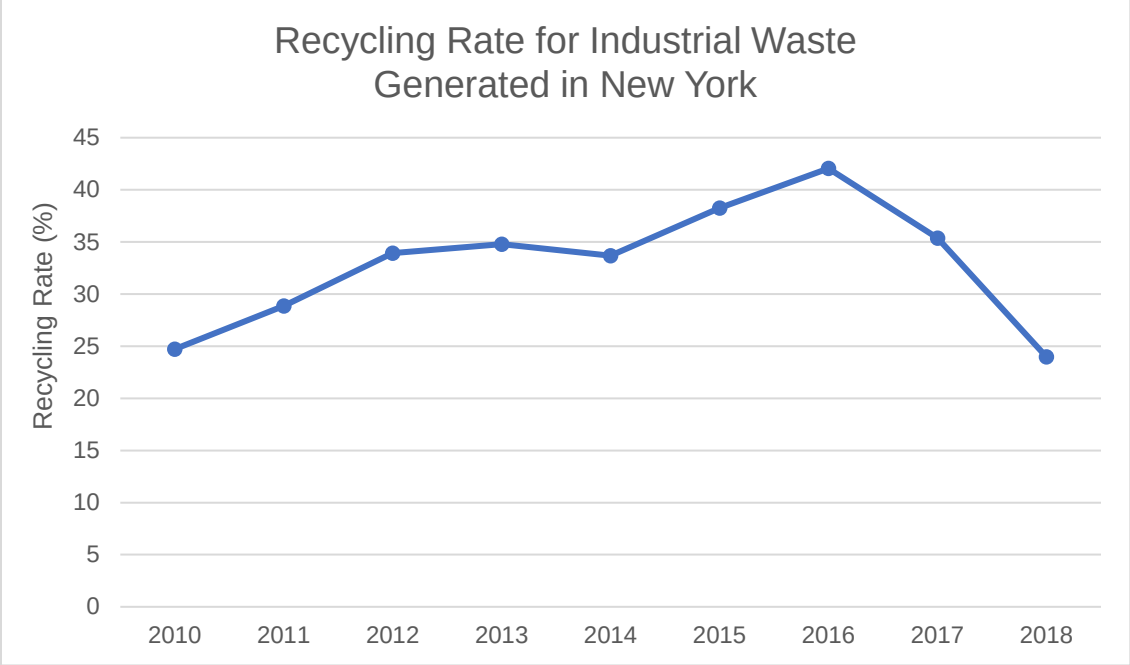


Figure 3.14. Recycling rate for industrial waste generated in New York

Overall Industrial Waste Management

Management of the industrial waste stream includes disposal through a combination of landfills in New York State (50%), export for disposal (15%), and combustion in New York State (6%), for a combined total of 71%, with the remaining 29% recycled.

Beneficial Use of Industrial Waste

A significant portion of the case-specific Beneficial Use Determination (BUD) program allows for the use of some waste as by-products to substitute for raw materials or commercial products. These are often components of the industrial waste stream. Beneficial use is not always considered to be recycling, but it is a preferable alternative to waste disposal or combustion. The structure of the program includes two types of approval: predetermined beneficial uses and case-specific beneficial uses. Predetermined beneficial uses are established in Subdivision 6 NYCRR Section 360.12(c) and identify the specific ways that certain wastes can be utilized.

Predetermined beneficial uses are analogous to exemptions in other program areas, in that the approval is established in regulation, and in most cases, no additional DEC authorization or reporting is required. Case-specific beneficial uses are not explicitly identified in regulation; however, the information that is required for a determination is established in Subdivision 6 NYCRR 360.12(d). Case-specific beneficial use determinations are issued for a maximum five-year term and require annual reporting of the amount of material beneficially used, analytical data (if required), and any other information required by DEC. The following figure depicts the types of materials and amounts that were included in case-specific BUDs from 2010–2022.

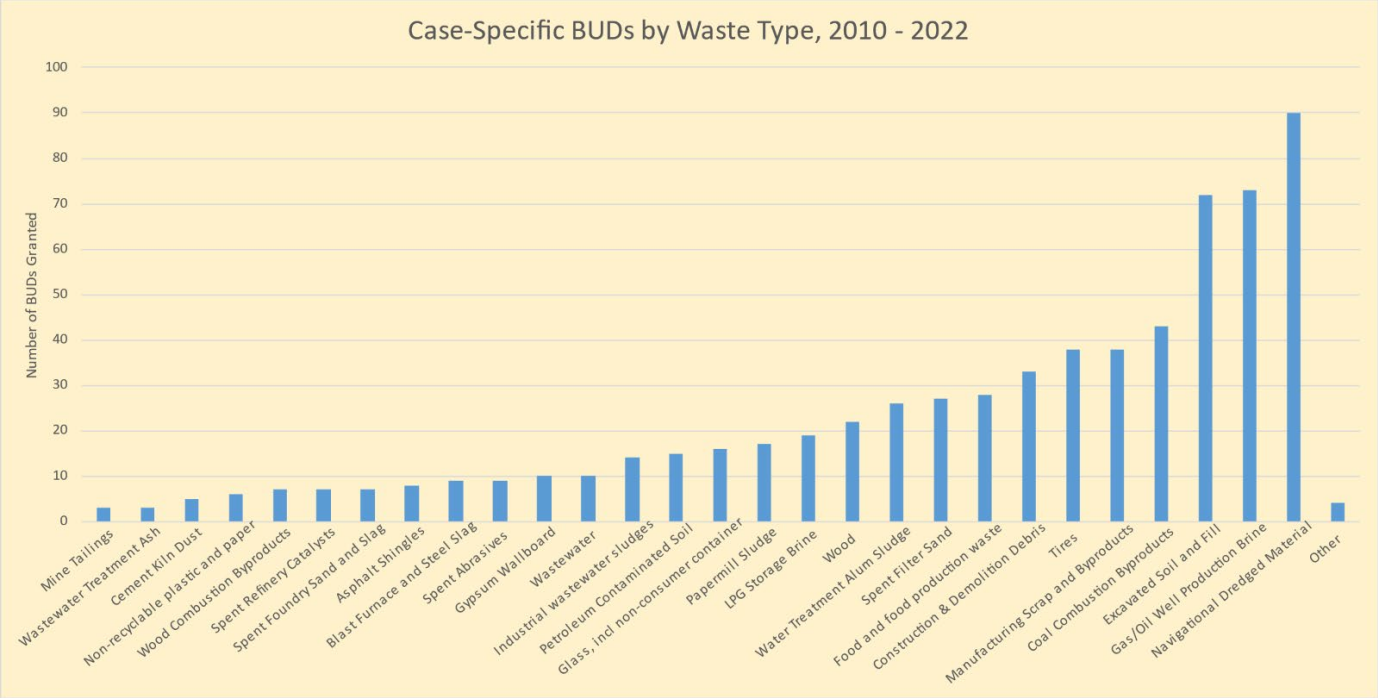


Figure 3.15. Case-specific BUDs from 2010–2022

Biosolids

Biosolids Generation

New York State is served by more than 600 water resource recovery facilities (WRRFs), that treat approximately 2,400 million gallons of wastewater per day. Sometimes referred to as publicly owned treatment works (POTWs), WRRFs generate approximately 375,000 dry tons or about 1.3 million total tons of biosolids annually.

Biosolids are nutrient-rich organic materials that can be recycled and utilized as a soil amendment when properly treated and processed. Biosolids treatment and quality standards have been developed to promote the safe use of this material. Public health

and the environment are protected by controlling pollutant limits and reducing the pathogenic content of the material that is beneficially used.

Biosolids Recycling Rate

DEC supports the beneficial use of biosolids; however, landfilling continues to be the most common management method for biosolids. Beneficial use, through methods such as land application, composting, and heat drying, steadily decreased since 2008 from nearly 47% to 22% in 2018.

Biosolids management practices have changed over the last 30 years. Trends show a steady increase in the use of landfills for biosolids disposal. This is primarily due to relatively low tipping fees at landfills in the state. DEC will continue to support local efforts to increase biosolids recycling as a means to provide nutrients and organic matter to soils and to reduce the landfilling of biosolids that can contribute to GHG emissions. Learn more about how biosolids are managed in New York State.

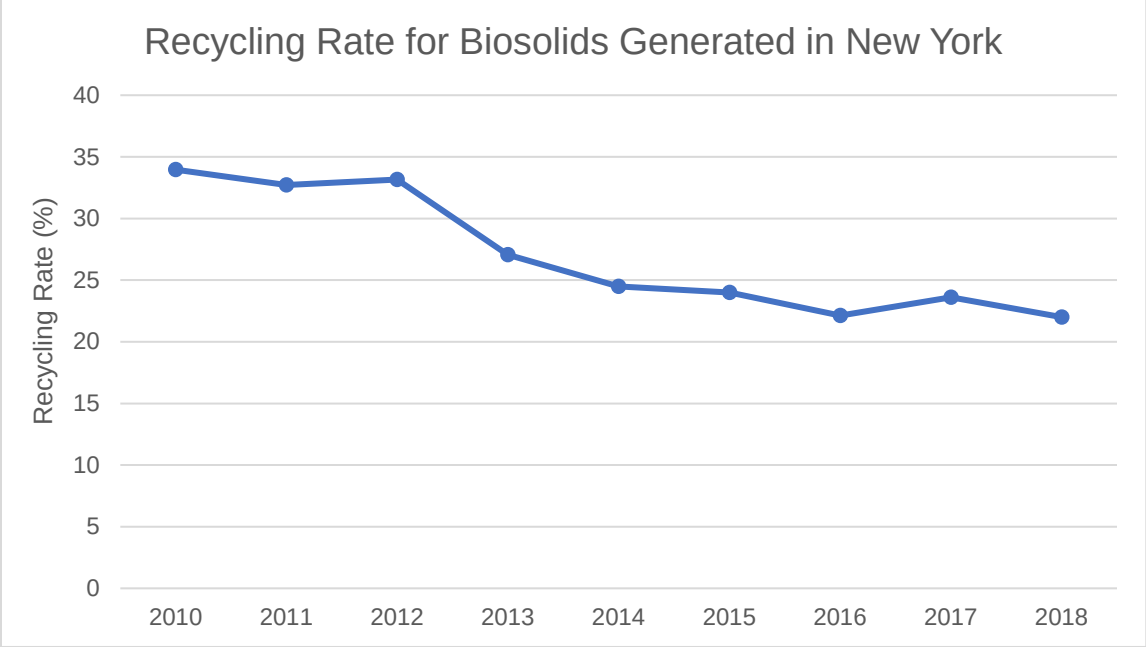


Figure 3.16. Recycling rate for biosolids generated in New York

Overall Biosolids Management

Management of biosolids includes disposal through a combination of landfills in New York State (38%), export for disposal (19%), and combustion in New York State (21%) for a combined total of 78%, with the remaining 22% recycled.

Solid Waste Management Facilities

The regulation and oversight of solid waste management facilities is discussed in more detail in Appendix D. The regulatory framework of exemptions, registrations, and permits for the authorization of activities at solid waste management facilities is provided in 6 NYCRR Part 360.

Facilities Summary

The following is a summary of the Part 360 series, *Solid Waste Management Facilities* discussed throughout the State's *Solid Waste Management Plan*. The number of solid waste management facilities in the state varies constantly as individual facilities open for business or cease operations. Table 1 and Table 2 provide a snapshot of the full list of active facilities as of June 2022.

Table 1. Type and number of permitted solid waste management facilities in New York (June 2022)

Type of Permitted Solid Waste Management Facility	Number of Facilities
Transfer Facility	189
C&D Debris Processing and Recovery	93
Composting	66
Recyclables Handling and Recovery	64
Used Oil	26
Landfill - MSW	25
Biosolids Storage and Land Application	22
Household Hazardous Waste Collection	17
Regulated Medical Waste	15
Nonspecific Facility	14
Combustion/Thermal Treatment	11
Landfill - C&D Debris	11
Used Cooking Oil and Yellow Grease Processing	11
Waste Tire Handling and Recovery	11
Landfill - Industrial Waste Monofill	9
Mulch Processing	6
Landfill – Long Island (limited to MWC ash and C&D debris only)	5
Anaerobic Digestion	4
Research Development and Demonstration	1
Other Organics Processing	1
TOTAL	**601**

Table 2. Type and number of registered solid waste management facilities in New York (June 2022)

Type of Registered Solid Waste Management Facility	Number of Facilities
C&D Debris Handling and Recovery	464
Vehicle-Dismantling Facility	460
Transfer Facility	318
Recyclables Handling and Recovery	316
Organics Storage/Land Application	188
Composting	154
Scrap Metal Processor	126
Motor Vehicle Repair Shop	53
Mulch Processing	29
Waste Tire Handling and Recovery	26
Regulated Medical Waste	16
Mobile Vehicle Crusher	14
Combustion/Thermal Treatment	4
Land Reclamation/Grade Adjustment	2
Research Development and Demonstration	2
Source Separated Organics Processing	2
Used Cooking Oil and Yellow Grease Processing	2
Used Oil - Collection Center	2
Anaerobic Digestion	1
Animal Feed Production	1
TOTAL	**2,180**

MSW Landfill Disposal Capacity

While the 25 MSW landfills in the state have available permitted disposal capacity, several factors must be taken into consideration when calculating the available remaining disposal capacity. Limitations at the local municipal level may restrict the acceptance of waste from areas outside of the municipality where the landfill is located. Additionally, landfills must operate within their permit limits, limiting the amount of waste that can be disposed of on an annual basis. An analysis of existing data indicates that the 25 MSW landfills have a combined landfill capacity life of between 16 and 25 years based on several factors. If the amount of waste that was accepted in 2018 is used (instead of the amount allowed in the landfill permits), the full remaining landfill capacity life of all the MSW landfills would be used in 25 years. If the full amount allowed by permit for each landfill is used instead, the remaining landfill capacity life is 19 years. If local restrictions on waste acceptance are also included in the calculation, the remaining landfill capacity life is 16 years. This is discussed in more detail in Appendix D.

Solid Waste Facilities and Potential Environmental Justice Areas and Disadvantaged Communities

DEC evaluated the locations, size, and type of solid waste management facilities and their location in both Potential Environmental Justice Areas (PEJAs) and Disadvantaged Communities (DACs). A more detailed presentation of the data, along with maps depicting the locations of facilities with respect to PEJAs and DACs are provided in Appendix G. While there are many differences in the size and characteristics of solid waste management facilities and their potential long- and short-term impacts on nearby residents, the following is a summary of the information.

Statewide

- From a population perspective, approximately 46% of the population lives in a PEJA and 36% of the population lives in a DAC.
- Based on the total number of all solid waste management facilities, 25% of solid waste management facilities are located in a PEJA and 33% are located in a DAC.
- Based on the facility throughput, 37% of the total waste stream was managed at facilities in a PEJA and 57% of the total waste stream was managed at facilities located in a DAC.

Evaluating the data further with respect to the influence of New York City facilities yields the following information.

New York City

- From a population perspective, approximately 72% of the city's population lives in a PEJA and 50% of the city's population lives in a DAC.
- Based on the total number of all solid waste management facilities, 77% of solid waste management facilities are located in a PEJA and 83% are located in a DAC.
- Based on the facility throughput, 66% of the total waste stream was managed at facilities located in a PEJA and 88% of the total waste stream was managed at facilities located in a DAC.

There are no landfills or MWCs operating in New York City. The largest contributor in New York City, for both number of facilities and total throughput, is C&D debris handling and recovery facilities. The second largest in number of facilities, but low in throughput, are vehicle dismantling facilities. Third in number of facilities and a close second in throughput are transfer facilities. Recyclables handling and recovery facilities are a distant fourth in number of facilities and a distant third in throughput.

Table 3. Number of solid waste management facilities in DACs and the quantity of waste handled by those facilities

	Statewide		Disadvantaged Communities				
	Total Number of Facilities	2018 Total Throughput in Tons (capacity)	Percentage of Population	Number of Facilities	Percentage of Total Number of Facilities	2018 Throughput in Tons (capacity)	Percentage of Total Throughput Handled by Facilities in DACs
NYC	185	13,350,665	49.7%	154	83.2%	11,779,718	88.2%
Outside NYC	2618	41,142,922	25.0%	759	29.0%	19,307,772	46.9%
Total NYS	2803	54,493,587	35.7%	913	32.6%	31,087,490	57.0%

Table 4. Number of solid waste management facilities in PEJAs and the quantity of waste handled by those facilities

	Statewide		Potential Environmental Justice Areas				
	Total Number of Facilities	2018 Total Throughput in Tons (capacity)	Percentage of Population	Number of Facilities	Percentage of Total Number of Facilities	2018 Throughput in Tons (Capacity)	Percentage of Total Throughput Handled by Facilities in PEJAs
NYC	185	13,350,665	71.5%	142	76.8%	8,801,808	66.0%
Outside NYC	2618	41,142,922	25.8%	563	21.5%	11,447,172	28.0%
Total NYS	2803	54,493,587	45.8%	705	25.2%	20,248,980	37.0%

Regional Waste Management Variability

New York State is a large, diverse state. There are densely populated urban areas and sparsely populated, very rural areas. Waste management practices vary just as widely across the state. Appendix E contains a full description of how the four major categories of waste described above are managed in each region of the state and each planning unit, as well as the flow of waste across the state and to MSW landfills and MWCs. The following table summarizes waste management by DEC Region.

Table 5. Waste management by DEC Region

DEC Region	Population	MSW Disposal Rate (lbs./person/day)	Recycling Rate (%)*			Waste Composition (%)*			
			MSW	CDD	Total Waste	MSW	CDD	IND	BIO
1	2,832,331	4.50	20%	60%	43%	41%	58%	-	1%
2	8,390,081	3.54	19%	66%	43%	46%	52%	1%	1%
3	2,322,431	4.06	22%	61%	38%	57%	40%	1%	2%
4	925,618	4.02	28%	66%	40%	51%	38%	9%	2%
5	581,970	3.75	21%	4%	22%	54%	20%	15%	11%
6	537,866	3.24	20%	1%	12%	51%	34%	12%	3%
7	1,165,354	3.35	22%	25%	21%	51%	38%	6%	4%
8	1,326,787	3.61	19%	38%	26%	46%	42%	6%	6%
9	1,420,330	4.31	20%	65%	32%	49%	32%	14%	5%

MSW – municipal solid waste
CDD – construction and demolition debris
IND – non-hazardous industrial waste
BIO – biosolids

4. ISSUES, CHALLENGES, AND OPPORTUNITIES

A growing number of issues have propelled waste management practices front and center on the world stage and into mainstream culture. New York State is uniquely situated to advance the circular economy and sustainable materials management. There are many opportunities to achieve lower disposal rates and higher recycling rates by adopting policies and funding programs that transform unwanted consumer goods and packaging into recovered raw materials for a resilient local supply chain.

Climate

In 2019, New York passed the Climate Leadership and Community Protection Act (CLCPA) with some of the most ambitious climate requirements in the country. The CLCPA became effective on January 1, 2020. Among other things, the CLCPA directs DEC to establish GHG emission limits, requiring a 40% reduction in statewide GHG emissions from 1990 levels by 2030 and an 85% reduction by 2050.

The Waste Sector is a sizable contributor to GHG emissions. Responsible for 12% of statewide GHG emissions, the Waste Sector is behind Buildings (32%), Transportation (28%), and very close to Electricity (13%).

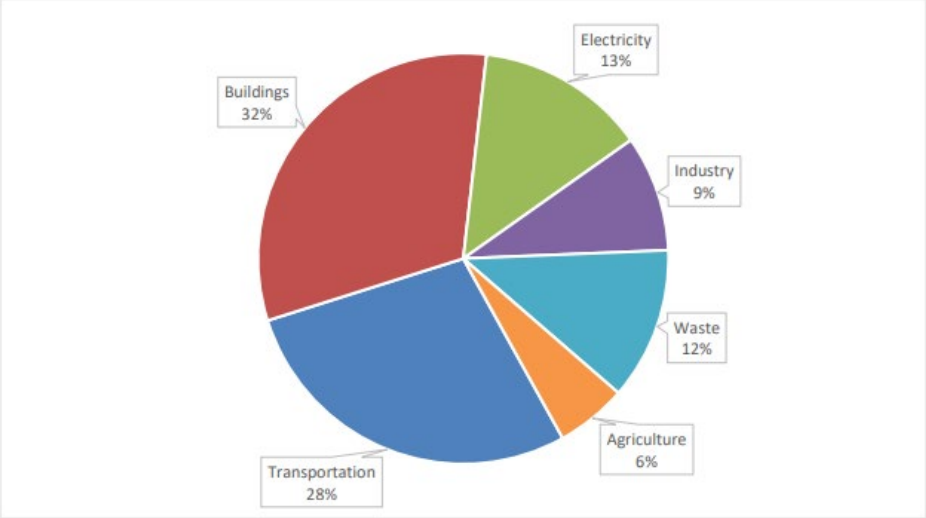


Figure 4.1. 2019 New York GHG emissions by CLCPA Scoping Plan sector

The Waste Sector includes emissions primarily associated with landfills, waste combustion, and wastewater management. Of the total Waste Sector contribution, landfills account for 78%, waste combustion accounts for 7%, and wastewater treatment accounts for 15%. Most of these emissions represent the long-term decay of organic materials buried in a landfill, which will continue to emit methane at a significant rate for more than 30 years. Waste emissions represent both the landfilling of waste in New York State and the exporting of waste to landfills in other states. For additional

information on GHG emissions in New York State, see the 2021 Statewide GHG Emissions Report.

With 17% of MSW in New York State coming from food waste, sustainable materials management strategies, such as food waste prevention, food donation, and composting, can play a major role in decreasing GHG emissions and rebuilding healthy soils that decrease erosion and store carbon, by preventing food waste in the first place and diverting organic material from disposal. Climate change also presents business risks, such as disruption of production, increased costs for equipment, insecurity of supply, damage to facilities and logistics, and shifting market preferences. Sustainable materials management strategies can reduce these risks by creating resilience instead of inaction. Implementing waste prevention strategies and increasing the reuse and recycling of materials will allow businesses to be less reliant on raw materials that are vulnerable to climate risks.

The Climate Action Council developed a Scoping Plan in 2022 to address how New York State will achieve the emissions reductions outlined in the CLCPA. Many of the broader initiatives to be undertaken related to waste found in the Scoping Plan are also found in this Plan. This *Solid Waste Management Plan* provides greater detail on the proposed initiatives and projected results. The initiatives laid out in this Plan are consistent with the overarching requirements and time frames established in the CLCPA.

Although the CLPCA is limited to addressing emissions that occur within the state, New York State needs to go above and beyond its goals related to emissions from waste and consider the role that all New Yorkers play in an interconnected, global system in which the emissions associated with the production of products New Yorkers utilized within the state are contributing to climate impacts elsewhere in the world. Growing waste streams from switching to renewable energies and green transportation, such as batteries, solar panels, and wind turbines, must also be addressed. Circular economy solutions such as waste reduction, reuse, recycling, and composting can play a vital role in fighting climate change, and New York State will lead the way not just by focusing on renewable energy, but also on transforming the way products and materials are used and waste is prevented in order to avoid GHG emissions, not just within New York State but around the world.

Throw-Away Culture

Throw-away and convenience cultures have risen to new heights with an uptick in online ordering, convenience packaging, and planned obsolescence. Many products and single-use packaging are designed to be used for a short time—often only once—and discarded. Products are increasingly designed without durability, reuse, or repair in mind, to perpetuate a cycle of waste and consumption. Packaging continues to evolve in shape, size, material composition, and other design features. Although these design features are considered an innovation from a product packaging point of view, new packaging features can pose challenges for recycling facilities that cannot recover and

market many of these new types of packaging that have not been designed to be compatible with recycling facility infrastructure. New Yorkers, especially the younger residents, have begun to realize that these practices of the past are not sustainable or worthwhile and are pushing manufacturers to rethink these product models. For example, globally, approximately 42% of non-fiber plastics have been used for product packaging, much of which is single-use and designed to be used once and discarded. Although a lot of progress has been made to reduce waste, simultaneously, as Figure 4.2 below shows, the average U.S. person now consumes twice as much as they did 50 years ago, and in many cases, keeps material goods for a shorter amount of time before recycling or disposal.

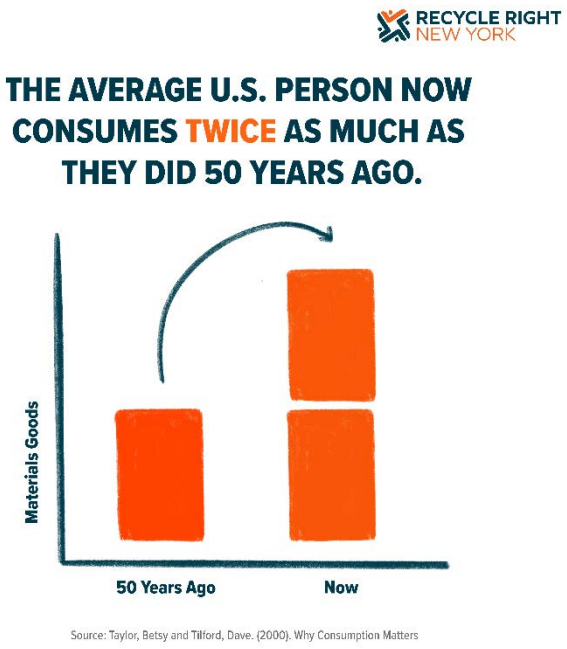


Figure 4.2. U.S. consumer consumption

The fast fashion trend has continued to surge with clothing sales doubling while clothing utilization—the number of times a piece of clothing is worn—has decreased by 36%, indicating that people are buying more clothing and keeping each item for less time. The fast fashion model for textiles has negative environmental and societal impacts. DEC estimates that approximately 1.4 billion pounds of clothing and textiles are disposed of in the state each year. Globally, GHG emissions from textile production total 1.2 billion metric tons of CO_2 equivalent, more than emissions from international flights and maritime shipping combined. In the United States, textile waste is one of the fastest growing waste streams with the average person throwing away 81 lbs. of clothing each year. Approximately 15% of post-consumer textiles are recycled, resulting in 85% of our used clothing and other textiles being disposed of. Decreasing the amount of textiles going to landfills and MWCs can conserve natural resources; reduce toxins from pesticides, herbicides, dyes, and other chemicals used in textile production; reduce GHG emissions, and help address other environmental and social issues. According to

the EPA, diverting a year's worth of textiles from disposal is equal to removing 7.3 million cars off the road.

Global Markets

The recycling system across New York State and the United States now sets quality and contamination reduction as a priority, in large part due to lessons learned from global recycling market disruptions in 2018. The overall recycling system has adjusted to those circumstances, placing a higher emphasis on higher quality, cleaner materials.

The lessons learned from managing the impacts of China's National Sword policy cannot be lost, as they are a valuable reminder for recycling program management. In January 2018, China determined that many of the recyclables coming from the U.S. and other developed countries, such as the United Kingdom, Canada, and Australia, were too contaminated with non-recyclable material that decreased the value of recyclables and contributed to pollution. This policy set a contamination limit of 0.5% on incoming recyclable paper and plastic—a number unattainable by most recycling facilities. China's National Sword policy affected recycling markets across the globe, leading to initial negative consequences for recycling programs in New York State and around the world as almost a third of collected recyclable materials in the U.S. were being exported at the time. Following China's National Sword policy, other nations followed suit and instituted restrictions on the quality or quantity of recyclables imported into their countries.

Although the export of recyclables from New York State was less than in other parts of the U.S., the state was not insulated from the disruptions of recycling markets. China's National Sword policy made it clear—New York State must help reduce contamination in the recycling stream, find new outlets and uses for recyclable materials, and help find solutions to support recycling efforts on a local and regional scale in order for recycling to remain resilient in the face of global market disruptions. Amid the crisis, DEC met with stakeholders across the state to collect feedback about the impacts of the National Sword policy and develop possible solutions to mitigate negative impacts, improve recycling, and ensure that New York State's recycling systems would be more resilient in the future. DEC also invested over $20 million in recycling and market research with several SUNY universities to help navigate the next steps for New York State.

In addition to the disruption caused by the National Sword policy, in 2020, the world faced a global pandemic caused by the COVID-19 virus, adding another layer of complexity to the global recycling markets and further negatively affecting the movement of recyclables and other materials. Recycling markets began to adjust and improve into 2021.

Information Sharing and Technology

Global interconnectivity has never been more apparent than it is today. The exponential growth in technology used for information sharing seen since the release of the *Beyond Waste* Plan in 2010 has brought about significant changes in how people communicate and share ideas. The COVID-19 pandemic accelerated the use of technology for communication even further, as people around the globe were required to rapidly transition to other means of work, which spurred an uptick in the use of and innovations in digital communications that allowed people to share ideas and information on a scale not seen before. The increased use of digital communication methods and the ability to reach a wider audience has also changed the way people think about waste management. Social media platforms, apps, and web-based organizations have played a major role in organizing citizens behind concerns around waste management, and apps allow everyone to feed into worldwide data collection about litter and waste. This increased connectivity enabled by digital means has also helped spur new opportunities for the sharing economy, which opens opportunities for improved access to the sharing of goods, services, and food that improve efficiencies and quality of life while supporting waste reduction and reuse.

However, with these changes comes the growth of electronics and portable devices, which brings waste management implications along with it. The Global E-waste Statistics Partnership's *Global E-Waste Monitor* report from 2020, a comprehensive report about the world's e-waste, reports a record 53.6 million metric tons of e-waste generated worldwide in 2019, up 9.2 million metric tons in 5 years. Without significant changes, e-waste generation is estimated to reach 74.7 million metric tons worldwide by 2030, almost double the 2014 figure. These staggering numbers demonstrate the growth of electronic devices and the urgent need for New York State to employ circular economy strategies to reduce e-waste generation locally and impact e-waste globally, especially since some discarded products are exported from high-income countries to low- and middle-income countries. This *Solid Waste Management Plan* will address how technology can be used to increase awareness about sustainable materials management, improve outreach and education, and keep valuable materials in circulation while also ensuring that the technology that now connects us all on a global scale is managed properly at the end of its useful life and is reused, repaired, and recycled to the fullest extent possible.

Equity Issues

Waste is also an environmental justice issue, particularly for people who have been disproportionately impacted by either discriminatory waste disposal practices and siting of waste management facilities or the lack of equitable waste management services. By implementing sustainable materials management strategies that reduce waste generation or prevent material from heading for disposal, impacts to communities from waste can be mitigated. Communities that have been disproportionately impacted must be supported and able to meaningfully participate in the decision-making process about waste and sustainable materials management that will help communities thrive.

Sustainable materials management is not only good for the environment, but also necessary for people, especially those in communities that are most vulnerable and historically have been disadvantaged. The ability to expand local options, such as community composting, must be explored, as these activities encourage more community engagement and potential employment opportunities, and help prevent negative impacts to the community from waste management practices. This is a critical issue for DEC and it begins with an honest and direct evaluation of the current status of waste management in DACs and PEJAs. That evaluation becomes the basis for implementing programs and policies that can effect positive change. A discussion of the current status of SWMFs in DACs and PEJAs was included in Section 3 of the Plan; however, more detailed data and maps illustrating the relationship between solid waste management facilities and disadvantaged communities are included in Appendix G.

Ecosystems Impacts

Marine Debris

A report from the World Economic Forum titled *The New Plastics Economy* indicated that at the current rate of plastic generation and leakage into the environment, there will be more plastic in the ocean than fish by weight by 2050.

Persistence of Plastic in the Environment

Microplastics from products and raw materials, and microfibers from textiles are being found in freshwater—including bottled drinking water—as well as in soil, the air, and the deepest parts of the oceans. Larger macro-plastics also affect New York State communities in the form of litter and negative impacts on wildlife and ecosystems. Various accounts of bird and marine animal necropsies turning up plastic in the stomach and digestive tracts, and famous images of adult albatross at Midway Atoll feeding chicks plastic pieces have captured the attention of the world. Since the release of the *Beyond Waste* Plan in 2010, New York State has led the way with new laws that seek to reduce problematic single-use plastics, such as plastic carryout bags, and expanded polystyrene foam containers and loose fill packaging, and will continue working to address emerging issues related to plastic pollution.

Raw Material Extraction and Habitat Loss

Habitat loss is currently one of the greatest threats to biodiversity and ecosystems, threatening 85% of all species on the International Union for Conservation of Nature's *Red List of Threatened Species*, the most comprehensive source on extinction-risk status for animals, fungi, and plant species worldwide. While many factors contribute to habitat loss, the unsustainable consumption of natural resources, waste, pollution, and agriculture for food production play a role.

Conservation Benefits of a Circular Economy

Circular economy strategies that reduce the need to harvest virgin natural resources, reduce waste, prevent pollution, and prevent and reduce food and agricultural waste can greatly contribute to reducing the negative impacts on the environment and communities that are associated with waste.

New York State must implement new and innovative materials management solutions to create transformative change to prevent waste and the associated pollution and resource consumption that negatively impacts people, fish, wildlife, and the environment.

Emerging Contaminants Sampling and Research

Prevention of Emerging Contaminants

Emerging contaminants such as 1,4-Dioxane and per- and polyfluoroalkyl substances (PFAS) are found in many consumer products and persist in industrial discharges, and wastes. DEC is working to limit the environmental exposure of these chemicals.

Preventing these chemicals in the environment and supply chains is a specific focus for materials management.

- *Disclosure and Consumer Notification*
  As required by law, DEC is implementing a program that requires the disclosure of ingredients in children's products and cleaning products.
- *Restrict*
  DEC is implementing programs to restrict the concentration of 1,4-Dioxane allowable in cleaning, personal care, and cosmetic products.
- *Safely Replace*
  DEC participated in an interagency effort to evaluate PFAS-free fire-fighting foams that ultimately determined that effective PFAS-free foams are currently available for use.
- *Research Alternatives*
  Through its partnership with the New York State Pollution Prevention Institute (NYSP2I), DEC has advanced research to understand sources of emerging contaminants at both the consumer and industrial levels and assessed the viability of preferable alternatives.

Recycling of Biosolids

Biosolids are the residuals from WRRFs. Since emerging contaminants such as PFAS are found in household products and some industrial discharges, they are found in biosolids and effluent. Actions to reduce the content in consumer products and use in industry will also reduce the concentration of PFAS in biosolids. The recycling of biosolids through land application and other means can be a source of PFAS in the

environment. The EPA is completing a comprehensive risk assessment to determine an environmentally protective limit for biosolids recycling. Also, DEC is providing funding to SUNY ESF to determine the concentration of PFAS in recycled biosolids in New York State and to identify any industrial sources so they can be addressed.

Emerging Contaminant Sampling at Solid Waste Management Facilities

Because emerging contaminants are often found in MSW and C&D debris, they will also be found in landfills and landfill leachate. In order to ensure that these contaminants are properly contained, the 2017 revisions to the Part 360 series regulations added requirements for active landfills to include PFAS and 1,4-Dioxane to their sampling plans for both leachate and groundwater monitoring. In 2018, DEC conducted sampling of leachate at most landfills in the state to better understand the concentrations of those contaminants. Results of this leachate sampling effort showed the following averages and ranges:

PFOS (ng/L):	229 (97–982)
PFOA (ng/L):	832 (490–3,766)
1,4-Dioxane (µg/L):	97 (0–490)

ng/L = nanograms per liter µg/L = micrograms per liter

The ubiquitous presence of PFAS compounds in consumer and commercial products for decades, and continuing today, leads to issues in all environmental media (air, water, and land) and DEC programs. DEC continues to tackle this issue on multiple fronts, from remediation of contaminated sites to implementing laws that restrict the use of these compounds in consumer products. It is a complex issue and one that will take a concerted effort to address over the coming years.

5. VALUES AND VISION

Values and a vision guide the principles underpinning this Plan and align with the goals and recommendations of the Plan.

Values

Values are the guiding principles that provide direction and structure for the steps taken by DEC to reach the visions for 2032 and 2050 and underlying Goals in this Plan, which are also integral to meeting the Climate Act goals outlined above. The values statements for this Plan reflect the existing values of DEC and serve to guide the Division of Materials Management and the agency in embodying these values in its work in materials management in New York State.

Serve as Stewards of the Environment

- Reduce waste and its impacts on the environment through waste prevention and sustainable management practices.
- Conserve and protect the resources used to manufacture new products, including raw materials, by maximizing the use of recyclable materials.
- Mitigate the impacts of climate change through sustainable materials management strategies, such as waste reduction and recycling (including organics recycling).

Strive for Full Public Participation, Fairness, and Environmental Justice

- Ensure that all New York State residents can fully participate and engage in materials management planning in their communities.
- Strive to eliminate the barriers some New York State residents may face in accessing information about and participating in waste reduction, reuse, repair, and recycling.
- Encourage partnerships and collaboration with community organizations, particularly those in communities of disproportionate impact, in materials management planning.
- Strive to reduce the disproportionate burdens faced by DACs and PEJAs related to waste management facilities.

Foster the Development of a Robust and Dynamic Sustainable Materials Economy

- Consider the environmental costs of production into the monetary value of materials and products.

- Capture the economic value of materials by using them for their highest and best use, and support recycling market development and viability through forward-thinking, creative, and flexible policies and strategies.

- Prioritize investment in infrastructure and innovative design to improve market resiliency and increase diversion options.

Vision

The vision represents where New York State should be in 2050. It is bold and should be bold if New York State is to achieve the transformational changes that are needed to address the global concerns today. Small improvements are no longer sufficient to make the strides necessary to protect the environment.

Landfilling Is Reduced by 85% by 2050

Landfills are only a place for materials that cannot be recycled, and there are very few materials that meet that criterion for landfilling. Reduction, reuse, and recycling are the most common methods for materials management and landfills are only utilized for 20% or less of the materials generated. Products are designed and manufactured with reduction, reuse, and recycling as integrated principles of their design.

The Circular Economy Is Realized

This Plan envisions the future of sustainable materials management in New York State through 2032, with a full planning horizon through 2050. The initiatives and Goals listed in "The Future of Materials Management in New York State" chapter serve as guidance for achieving this vision.

Collaboration and Innovation Are Commonplace

New York State's materials management system embraces and fosters partnerships between private industry, public entities, and community organizations to support DEC's efforts in fostering an environment of innovation, cooperation, and creativity to achieve environmental sustainability and economic vitality.

"Waste" Is a Concept of the Past

New York State manufacturers, businesses, and residents fully understand the social, environmental, and economic consequences of waste. The concept of waste is reimagined, and waste is no longer considered inevitable. Rather, the inherent value is recognized in products and materials that are designed for reuse, repair, remanufacturing, and recycling rather than simply disposable products. This view of waste supports a universal shift away from linear systems of consumption and disposal to more circular systems.

Climate Change Mitigation Is Fully Implemented

New York State fully recognizes and embraces the climate change mitigation benefits of sustainable materials management policies and strategies and leverages them to achieve the State's progressive GHG emissions reduction targets. The GHG emissions reduction benefits of waste reduction, reuse, and recycling are acknowledged and reflected in materials management strategies. Organics diversion, waste reduction, reuse, and recycling dramatically reduce the amount of material that is landfilled, which will reduce the amount of the potent GHG methane leaking from landfill systems.

Shared Responsibility Is a Given

The responsibility for managing materials encompasses producers and users throughout a product's entire life cycle. Costs of materials management are no longer externalized to taxpayers and municipalities. Producers are responsible for the entire product life cycle. A sophisticated and sustainable materials management system exists and considers waste reduction, reuse, and recycling at every stage of product design, production, and distribution. Manufacturers and producers design products for durability, reuse, and repair. Citizens are able to exhaust opportunities to reduce, reuse, repair, and recycle before disposing of materials.

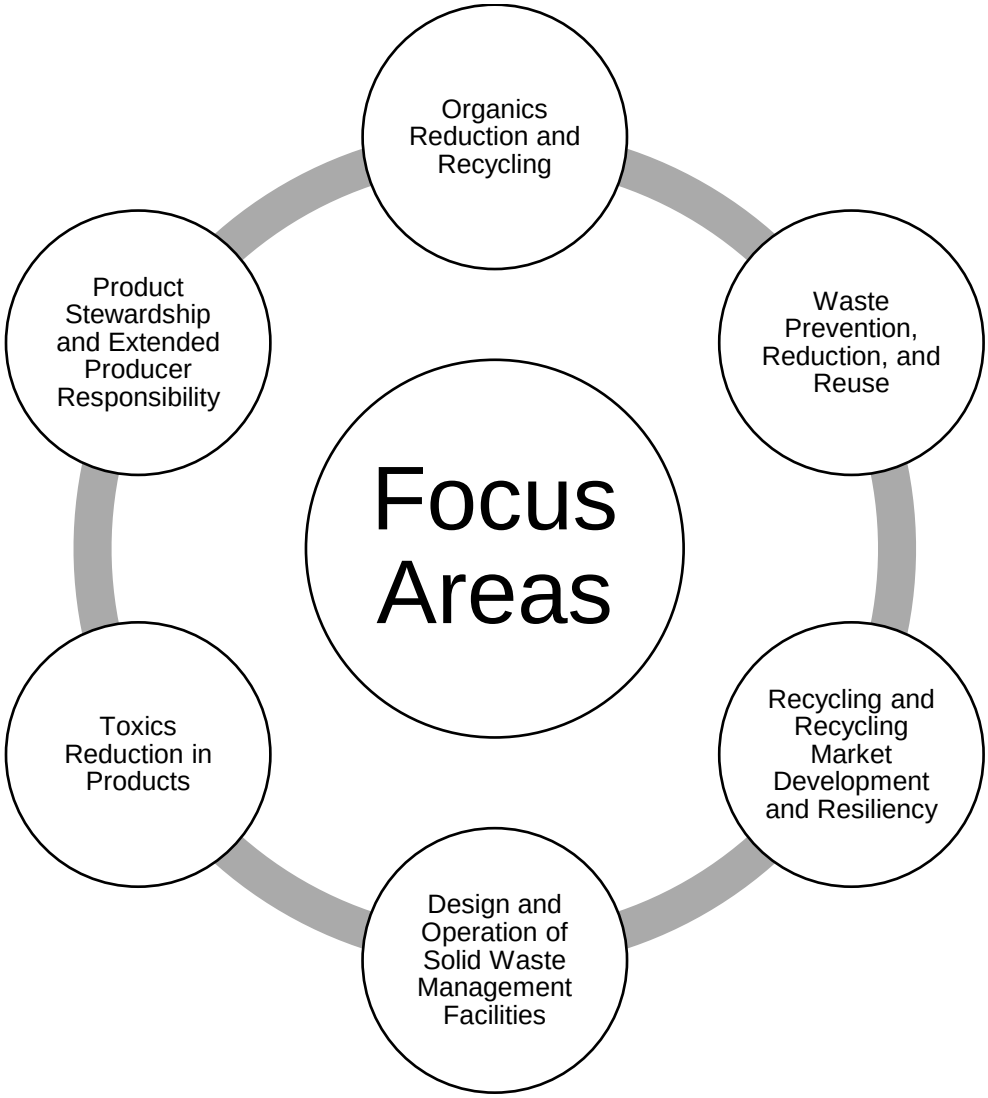
Equitable, Inclusive, and Accessible Waste Reduction and Reuse Efforts Are Widespread

The shift to a reuse culture and a sharing economy has been characterized by equity and accessibility. All New Yorkers have access to durable, reusable goods and the tools and knowledge needed to reduce their household waste. Recovery and reuse efforts are made more inclusive and serve lower-income and disadvantaged residents of New York State.

Responsible and Resilient Markets Thrive

Policies, recommendations, research, and other strategies encouraging innovative design, market development, education, and stewardship programs have created a circular supply chain in New York State that incorporates both producer and consumer responsibility. Organics recycling and traditional recycling markets in New York State have become more resilient to pressures and swings from national and global market disruptions by developing more local and regional opportunities for materials management. Sustainable materials management policies support the creation of jobs and new opportunities for economic growth by retaining the value of materials, keeping that value within the supply chain, and presenting new business models.

6. The Future of Materials Management in New York State



Focus Areas, Goals, and Action Items

How New Yorkers utilize resources will be fundamental to a prosperous future for the environment and the economy. For New York State to remain competitive and ensure resiliency, sustainable materials management strategies must be employed. The Goals and supporting Action Items for New York State laid out in this Plan are part of a larger national and world vision for a sustainable future where the value of resources is maintained within a circular economy, GHG emissions are reduced, and the environment and its resources are preserved for future generations. This Plan seeks to achieve this vision through the following Focus Areas and their Goals and Action

Items/recommendations over the 10-year planning period (2022–2032) and the full planning horizon through 2050.

Most of the Focus Areas in this plan include Goals and Action Items that will have positive climate impacts. For solid waste management, methane emissions from landfills are the largest source of GHG emissions in New York State. Methane is generated in landfills from the anaerobic degradation of organics. Reducing the amount of organics that are landfilled, as outlined in the Organics Reduction and Recycling Focus Area, will reduce GHG emissions and support the State's emission reduction goals. In addition, reducing and recycling non-organic materials decreases GHG emissions through a reduction in the extraction and processing of raw materials, either in New York or elsewhere. Many of the Focus Areas in this Plan include action items addressing the reduction and recycling of these materials, further working to achieve the State's GHG emissions reduction goals. As discussed earlier, many of the broader initiatives to be undertaken related to waste are addressed in the Climate Action Council's Scoping Plan. This Plan supports the Scoping Plan by supporting the actions needed to address GHG emissions in this sector. Both plans complement each other. However, this *Solid Waste Management Plan* provides greater detail on proposed initiatives and projected results that are consistent with the overarching requirements and time frames established in the CLCPA.

An overarching theme throughout the Focus Areas is outreach and education for materials management-related topics. Outreach and education are important strategies to ensure that all New York State residents have the information and tools they need to comply with laws and regulations pertaining to preventing and managing waste and to empower individuals to fully participate in sustainable materials management to protect their communities, their health, and the environment. Participating in sustainable materials management practices is a way for residents to make an immediate positive difference in the environment, making accessible outreach and education in this topic area even more critical.

Actions to take to ensure outreach and education efforts are equitable and accessible, and that all New York State residents have access to quality materials management education include:

- Building relationships with community-based organizations and local groups in rural and/or underserved communities;
- Identifying barriers and developing solutions related to accessing information;
- Developing necessary outreach materials in the diversity of languages spoken in New York State; and
- Ensuring that relevant diversity, equity, and access training is available to DEC staff who provide materials management outreach and education.

Disadvantaged communities also often host solid waste infrastructure that disproportionately impacts community health from increased truck traffic, air emissions, water discharges, nuisance odors, and other impacts. To help address these issues,

DEC can improve transparency and public access to solid waste management facility location information, documents, and public data about the environmental quality of specific sites across the state. Through outreach, education, and transparency, DEC can inspire and support residents and advance equity, access, and justice through sustainable materials management in New York State.

While this Plan will address all major components of the total waste stream (MSW, C&D debris, industrial waste, and biosolids), there is a significant focus on initiatives targeted at the MSW stream. The MSW stream reduction in disposal rate and recycling rate have been relatively stagnant for nearly two decades despite the funding and programs that have been implemented targeted toward this portion of the waste stream. A substantial portion of the MSW stream is composed of recyclable material; achieving this Plan's ambitious landfill diversion goals is feasible through comprehensive programs targeting the following materials that are a part of the MSW stream:

- Organics (23% of the MSW stream/more than 4.1 million tons)
- Paper (32% of the MSW stream/more than 5.7 million tons)
- Plastics (14% of the MSW stream/more than 2.5 million tons)
- Metals (7% of the MSW stream/more than 1.25 million tons)
- Textiles (5% of the MSW stream/900,000 tons)

Coordinated programs focused on the larger components in the MSW stream, combined with technical and fiscal support to those who provide the services, will have the greatest impact. There will need to be a combination of bold new legislation to help provide the framework for transformational change and consistent commitment from everyone—state and local governments, planning units, the private sector, product manufacturers, distributors, retailers, educators, and all New Yorkers—to work together to realize the vision and Goals of the Plan and achieve circular material recovery and recycling.

Implementation of Focus Area Goals

A roadmap for the implementation of the Goals identified in this section includes a series of Goals, Action Items, time frames, and stakeholders involved. Each Focus Area is divided into specific Goals and the Action Items required to achieve those Goals. The successful implementation of the identified goals is dependent on both legislative and programmatic action. Legislative action means passing new legislation, or, in some instances, amending existing laws. Items identified under each Goal as "Legislative" means a particular action cannot be fully realized and implemented without legislative action. Items identified under each Goal as "DEC" are actions DEC can take that are not dependent upon legislative action, although in some instances, legislative action may be found to be beneficial as DEC moves through steps to implement these actions. Together the two categories of legislative and programmatic action strive to move New York State toward a more circular economy.

Waste Prevention, Reduction, and Reuse

Waste prevention, reduction, and reuse not only keep valuable materials from being disposed of, but also minimize or eliminate materials from requiring processing or management at all. Waste reduction focuses on the prevention or reduction of solid waste generation through changes in consumer and business behavior; changes in products, packaging, and purchasing; repair; and reuse.

Reuse and recycling should be maximized when the generation of waste cannot be prevented or reduced. It is important that these materials are integrated into the circular economy and utilized in the development of new products.

Goal: Increase opportunities for New York State residents and institutions to participate in waste prevention, reduction, and reuse.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Reuse and Repair			
Support proposals that assist consumers to repair damaged products first instead of purchasing new products, encouraging repair, and reducing e-waste.	Legislative	3 years Propose – 2024 Begin – 2027	DEC, manufacturers, environmental organizations, retailers, municipalities, consumers, repair organizations and businesses
Encourage the use of materials exchanges and sharing platforms through development of resources and facilitate the development of avenues for material reuse and product-sharing opportunities for used goods.	DEC	5 years Begin – 2023	Municipalities, industry
Support colleges and universities within New York State in efforts associated with the reuse of materials.	DEC	5 years Begin – 2024	Colleges and universities
Maintain partnerships within the SUNY system to create reduction and reuse guidance documents and tools for use by the general public and schools.	DEC	Ongoing	SUNY ESF
Partner with the New York State Department of Education and Department of Health to develop and promote sharing table and donation guidance for K–12 schools.	DEC	Ongoing	DOH, SED

Reduction and Prevention			
Educate students on the connections between waste and the environment through a partnership with the New York State Department of Education to develop curriculum around materials management.	DEC	5 years Begin – 2023	SED, school districts
Encourage local planning units to partner with schools in their jurisdiction to implement integrated waste reduction and reuse programs.	DEC	Ongoing	Municipalities, school districts, SED
Create guidance for the public that supports and encourages the use of reusable and refillable containers and packaging in accordance with state and federal food safety guidelines.	DEC	Ongoing	Food service operators and establishments, retailers, food stores, DOH, DAM, CSMM

Goal: Support waste prevention, reduction, and reuse within the commercial and industrial sectors in New York State through education, engagement, and policy			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Reuse and Repair			
Support proposals that incentivize reusable and refillable solutions across the full spectrum of the packaged goods sectors, such as reuse system options that promote the primary consumer-facing reuse models—refill at home, return from home, refill on the go, and return on the go. Examples that fit into these models include reuse systems for takeout containers and shipping packaging and bulk refill of household goods.	Legislative	7 years Propose – 2024 Begin – 2029	DEC, manufacturers, producers, environmental organizations, industry organizations and associations, retailers, food service establishments, municipalities, consumers
Support and promote initiatives that facilitate reuse infrastructure development for businesses.	DEC	5 years Begin – 2025	ESD, business councils, environmental organizations, municipalities, industry organizations and associations, retailers, food service establishments
Support and promote initiatives that identify and develop opportunities for waste prevention and reuse programs in specific industrial sectors.	DEC	5 years Begin – 2024	Industry, environmental organizations, municipalities, NYSP2I

Work with colleges and universities within New York to research the viability of reusable shipping and packaging materials as a waste prevention strategy by engaging with retailers to determine interest in utilization of these options, barriers to incorporation of these products into their shipping operations, and strategies for incorporation into product shipping.	DEC	5 years Begin – 2024	Colleges and universities, shipping companies, industry, manufacturers, environmental organizations, retailers, municipalities, consumers
Participate in workgroups with national organizations working toward waste reduction solutions to assist with dissemination of information and technical assistance to commercial and industrial sectors.	DEC	Ongoing	Industry, environmental organizations
Create guidance for food service operators, retail food stores, and other establishments to support and encourage reusable and refillable containers and packaging and reduce single-use containers and packaging.	DEC	Ongoing	Food service operators and establishments, retailers, food stores, DOH, DAM, CSMM
Assess and explore how policy can advance circularity in furniture waste reduction through information gathering via avenues such as stakeholder and industry meetings with commercial and industrial sectors to understand current practices and identify policy and practices that could assist with closing the loop.	DEC	4 years Begin – 2023	Furniture manufacturers, retailers, OGS, environmental organizations, municipalities, consumers
Support projects and programs that enhance secondary markets, donations, and exchanges for useable products, such as textile goods and furniture, as well as industrial by-products.	DEC	Ongoing	Municipalities, industry, donation and reuse organizations, recyclers, consumers
Reduction and Prevention			
Support prohibitions of the disposal of textiles that can be reused or recycled and encourages transparency in the supply chain about resource consumption, GHG emissions, and social issues relating to textile production and disposal. DEC estimates that approximately 1.4 billion pounds of clothing and textiles are disposed of in the state each year. In addition to environmental concerns, the apparel and textile industries are also known for below-standard, dangerous, and unsafe working conditions. Supporting this type of legislation will help address these issues.	Legislative	5 years Propose – 2024 Begin – 2029	DEC, textiles industry, recycling industry, retailers, donation and reuse organizations and businesses, environmental organizations, municipalities, consumers

Support initiatives that ban or prevent unsold retail goods, including textiles, from going to disposal.	Legislative	5 years Propose – 2024 Begin – 2029	DEC, textiles industry, manufacturers, retailers, donation and reuse organizations and businesses, environmental organizations, municipalities, consumers
Identify New York industrial sectors and develop targeted educational programs to support waste reduction and reuse in those areas.	DEC	5 years Begin – 2024	Industrial sectors, municipalities, ESD, NYSP2I
Promote the economic benefits of reduction and reuse in education and outreach efforts to encourage businesses and institutions to make choices aligned with waste reduction and reuse.	DEC	5 years Begin – 2023	Businesses, institutions, manufacturers
Through existing or future opportunities with colleges and universities within New York, study the issue of unsold retail goods in New York State and develop approaches to prevent the disposal of these unsold goods. This will include researching current production practices and tracking technologies across the value chain, assessing industry and stakeholder needs, and the development of tools that will reduce waste and increase materials exchange and end uses for unsold goods.	DEC	5 years Begin – 2023	Colleges and universities, retailers, manufacturers, donation and reuse organizations
Engage in a “rethink waste” campaign aimed at waste generators and manufacturers in various sectors to encourage source-separation, storage, and partnering with off-site processors or reuse and donation businesses and organizations to divert beneficial and usable streams from disposal.	DEC	3 years Begin – 2023	Manufacturers, municipalities, recyclers, donation and reuse organizations
Provide guidance and support to commercial and institutional entities interested in conducting waste audits.	DEC	Ongoing	Businesses, institutions, municipalities
Support efforts to reduce textile shedding and migration of microfibers into the environment by conducting research with colleges and universities within New York State, developing best practices and educational materials to help reduce the negative impacts of these fibers, and identifying target audiences for these resources.	DEC	3 years Begin – 2024	Colleges and universities, textile industry, plastic manufacturers, environmental organizations, municipalities, operators of WWRFs

Goal: Foster community resiliency by developing programs, supporting communities and organizations, and supporting proposals and initiatives that prevent and reduce waste and promote reuse.			
Action Items			**Other Key Stakeholders**
Reuse and Repair			
Support proposals, to restrict, and certain single-use products in New York to prevent problematic waste and institutions to purchase and use reusable products.	Legislative	3 years Propose – 2024 Begin – 2026	Retailers, manufacturers, environmental organizations, municipalities, consumers
Support proposals enhancing implementation of and compliance with the New York State Bag Waste Reduction Law including clarifying the definitions of plastic carryout bag and reusable bag, unifying the Plastic Bag Reduction, Reuse, and Recycling Law with the Bag Waste Reduction Law to clarify film plastic collection requirements for covered retailers, and proposals aimed at further reducing paper carryout bag distribution.	Legislative	3 years Propose – 2023 Begin – 2024	DEC, bag manufacturers, retailers, consumers
Support the advancement of community level reuse and repair programs and the existing network of Repair Café initiatives, to increase product lifespan	DEC	Ongoing	Municipalities, repair services, reuse and repair organizations and businesses
Establish a targeted grants funding program to support reuse.	DEC	5 years Propose – 2024 Begin – 2028	Reuse sector, municipalities
Reduction and Prevention			
Participate in workgroups with local organizations working toward waste reduction solutions to assist with dissemination of information and technical assistance to local communities.	DEC	Ongoing	Municipalities, environmental organizations

Assess and explore how to increase opportunities for furniture and home furnishing reuse for communities.	DEC	3 years Begin – 2024	Furniture manufacturers, retail, municipalities, donation organizations, OGS

Recycling and Recycling Market Development and Resiliency

Recycling is subject to changes in markets, technology, and global policy, which can lead to challenges with business and process consistency. An effective recycling system should be designed and operated and financed in a way that can provide stability and resiliency in the face of changes in markets, policy, and technology as well as environmental threats such as climate change. The following Goals and Actions are intended to help support stable recycling systems.

Goal: Support residential recycling through education, outreach, and the advancement of policies.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support proposals, such as EPR for paper and packaging, that motivate producers to reduce the amount of paper and packaging material entering households.	Legislative	5 years Propose – 2023 Begin – 2027–2029	DEC, producers, manufacturers, environmental organizations, municipalities, consumers
Support proposals, such as the development of an interagency Bottle Bill task force, that will reduce fraud in the Returnable Container Act.	Legislative	3 years Propose – 2023 Begin – 2025	DEC, DTF, DAM, DOB, OSC
Support infrastructure development to increase access to reuse and recycling opportunities for traditional and non-traditional recyclables at multi-family housing units and residential campuses through technical assistance, education, and funding.	Legislative	5 years Propose – 2025 Begin – 2027	DEC, OGS, ESD
Increase research collaborations and expand upon existing partnerships to improve residential recycling education.	DEC	Ongoing	Municipalities, recycling organizations, CSMM
Increase partnerships with community organizations to increase the public's knowledge of correct disposal and recycling practices through community education programs and social media campaigns.	DEC	Ongoing	Municipalities, recycling organizations, businesses, CSMM
Continue working with the NYS Center for Sustainable Materials Management to further support and expand upon the Recycle Right NY campaign.	DEC	Ongoing	CSMM

Increase outreach to households to improve awareness of existing product-specific recycling opportunities, for items such as electronics, batteries, paint, etc.	DEC	Ongoing	Municipalities, recycling organizations, CSMM
Emphasize outreach efforts by local planning units in review of Local Solid Waste Management Plans (LSWMPs) and biennial updates.	DEC	Ongoing	Planning units, municipalities
Expand funding and promotion of MWRR grant opportunities to improve municipal recycling physical infrastructure and municipal education, promotion, planning, and coordination programs. Where possible, prioritize new grant funding opportunities for projects located in DACs and/or that have positive climate change outcomes.	DEC	3–5 years Funding Increase Request – 2024 Promotion efforts – Ongoing	Legislature, municipalities
Improve the implementation of the Returnable Container Act (Bottle Bill), by creating a public data system of all the beverages where a deposit has been initiated.	DEC	3 years Funding Request – 2024 Begin – 2025	Legislature, deposit initiators, redemption centers, DTF, DAM, DOB, OSC
Improve the implementation of the Returnable Container Act by advancing regulations that clarify key requirements.	DEC	3 years Propose – 2023 Begin –2025	Deposit initiators, redemption centers, DTF, DAM

Goal: Support commercial, industrial, and institutional waste generators to improve recycling practices through education and technical assistance.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support proposals, such as EPR for paper and packaging, that motivate producers to reduce the amount of paper and packaging material entering businesses and institutions.	Legislative	5 years Propose – 2023 Begin – 2027–2029	DEC, producers, manufacturers, environmental organizations, municipalities, consumers

Develop and distribute technical guidance documents, resources, and tools about alternative business practices, technologies, and options related to recycling.	DEC	3 years Begin – 2024	Municipalities, recycling organizations, CSMM
Encourage and educate about existing predetermined beneficial uses of materials such as glass for cement and aggregate, ash reuse, and other beneficial uses for material traditionally considered waste products which are currently authorized. Identify procedures by which generators or users can petition for case-specific beneficial use determinations.	DEC	3 years Begin – 2023	Municipalities, recycling facilities, glass industry, construction industry
Support innovation in traditional waste product alternative uses to retain value and divert waste.	DEC	Ongoing	Municipalities, recycling organizations, CSMM

Goal: Partner with K–12 schools, colleges, and universities to educate, engage, and empower students to develop better recycling habits and enhance school recycling programs.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support colleges and universities, including through working with SUNY ESF and the Center for Sustainable Materials Management, in improving their recycling programs through the development of guidance, education material, and technical support.	DEC	Ongoing	Municipalities, colleges and universities within New York State, CSMM, recycling organizations, recyclables processors
Encourage local planning units to partner with schools in their jurisdiction to implement integrated recycling programs.	DEC	Ongoing	Planning units, school districts

Goal: Reduce waste disposal through innovative policy approaches.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support a disposal disincentive surcharge (fee per ton) on all waste landfilled or combusted in New York State and all waste generated in New York State being sent for landfilling or combustion out-of-state to provide financial support for reduction, reuse, and recycling projects.	Legislative	3 years Propose – 2024 Begin – 2027	Municipalities, waste industry, businesses, consumers

Support proposals for a minimum level of recycled content in certain products and packaging to support end markets.	Legislative	6 years Propose – 2023 Begin – 2029	Municipalities, waste industry, businesses, consumers
Support policy approaches that increase the capture and use of building deconstruction materials and recovered aggregate for a variety of applications. This may include government requirements (e.g., procurement standards, bid specifications, etc.) to include recycled or reused deconstruction materials.	Legislative, DEC	5 years Propose – 2024 Begin – 2026	OGS, ESD, municipalities, general contractors, construction industry
Support policy approaches that incentivize public-private partnership for recycling facility development.	Legislative, DEC	5 years Propose – 2025 Begin – 2030	Municipalities, ESD, recycling facilities, construction industry
Promote source separation and recycling in the transportation sector (i.e., public and private paved surface construction and maintenance).	DEC	Ongoing	DOT, municipalities, construction industry
Partner with colleges and universities within New York to provide technical information to product designers and manufacturers to educate them on packaging and product design that is compatible with recycling systems in North America.	DEC	3 years Begin – 2024	Colleges and universities, CSMM, product packaging manufacturers, recycling industry

Goal: Increase knowledge of and pathways for increased textile and furniture circularity.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support EPR for the management of clothing, shoes, other textiles, and furniture.	Legislative	5 years Propose – 2024 Begin – 2029	DEC, textiles industry, manufacturers, retailers, environmental organizations, municipalities, waste management industry, consumers
Promote existing procurement guidelines and necessary updates to encourage and	DEC	5 years	OGS, textiles industry, textiles retailers

support sustainable textile purchasing and textile recycling by state agencies.		Begin – 2024	
Work with colleges and universities within New York to better understand textile donation and recycling rates and current limitations in order to create a roadmap to increase textile diversion and recycling in New York and reduce exports and disposal.	DEC	3 years Begin – 2024	Colleges and universities, textiles industry, CSMM, textile donation, recycling, and reuse organizations

Goal: Utilize collaborative partnerships to research and promote recycling strategies and strengthen information-sharing networks for recycling.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Maintain partnerships with colleges and universities within New York to create guidance documents and tools to create recycling education programs informed by science for use by the general public, businesses, government, schools, and other organizations.	DEC	Ongoing	Colleges and universities, municipalities, businesses, institutions, consumers, school districts
Facilitate relationships among recycling coordinators from planning units in each DEC Region by coordinating the formation of regional materials management working groups to encourage information sharing, collaboration, and problem-solving for regional materials management challenges.	DEC	Ongoing	Planning units, municipalities, CSMM
Continue to work with NYSP2I to provide outreach, education, and technical assistance across all sectors to utilize raw materials more efficiently, utilize manufacturing by-products on-site, and identify reuse opportunities for manufacturing by-products.	DEC	Ongoing	NYSP2I

Goal: Support efforts in New York and the Northeast to build capacity for processing secondary material commodities collected for recycling.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support colleges and universities within New York in researching recycling market challenges, plastics recycling, and glass processing innovations for New York State.	DEC	Ongoing	CSMM, Center for Glass Innovation, Center for Plastic Recycling Research and Innovation, NYSP2I

Goal: Encourage the development and expansion of recycling markets by demonstrating the state's ability to "lead by example."			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support the GreenNY Council to advance greater purchasing of products with recycled content as well as the purchase of recycled products (compost, etc.) by state agencies.	The GreenNY Council	Ongoing	DEC
Support the GreenNY Council in their work with individual state agencies on conducting waste audits and other materials management improvements.	The GreenNY Council	Ongoing	DEC
Support the GreenNY Council in their effort to ensure all state agency operations have strong recycling and organics diversion programs.	The GreenNY Council	Ongoing	DEC

Product Stewardship and Extended Producer Responsibility

Key strategies to achieving the 2032 and 2050 vision and Goals of the Plan are product stewardship and Extended Producer Responsibility (EPR), to minimize the environmental impacts from the improper end-of-life disposal of products and packaging. Product stewardship is a shared responsibility approach that can be either voluntary or required by law. EPR is a mandatory type of product stewardship requiring the passage of legislation to ensure a manufacturer's responsibility for its products extends to postconsumer management of those products. EPR policy shifts the financial and managerial responsibility (with government oversight) of end-of-life products upstream to the manufacturer and away from the public sector and consumers. EPR programs can also be structured to provide incentives to manufacturers to incorporate environmental considerations into the design of their products and packaging. The effects of comprehensive product stewardship and EPR can thread across waste prevention, waste reduction, reuse, and recycling, depending on the product or commodity. When manufacturers are required to move away from disposal and toward recycling management, it drives future product and commodity decisions toward waste prevention, reduction, and reuse ideals as part of the product or commodity design, as well as designing for better recyclability for any materials that may remain at the end of life. Accordingly, while product stewardship and EPR is an important stand-alone Focus Area presented here, these strategies will also be referenced below in both the Waste Prevention, Waste Reduction, and Reuse Focus Area, as well as the Recycling and Recycling Market Development and Resiliency Focus Area as the policy impacts are vital components of those Focus Areas as well.

Goal: Promote the development and passage of EPR legislation for packaging and paper products.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support broad packaging and paper product legislation to include all types of packaging and all paper products by all generators, to have the greatest effect on waste reduction, reuse, and recycling possible.	Legislative	5 years Propose – 2023 Begin – 2027–2028	DEC, producers, manufacturers, environmental organizations, municipalities, retailers, consumers

Goal: Work to improve the state's existing product stewardship and EPR programs.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Electronic Equipment Recycling and Reuse Act			
Support overall improvements to e-Waste program performance, for example, by moving away from a target-based collection approach to a consumer-convenience model.	Legislative	3 years Propose – 2024 Begin – 2027	DEC, covered electronic equipment manufacturers, collectives, e-waste recyclers, e-waste consolidation facilities, e-waste collection sites, out-of-state collectors, retailers, municipalities, consumers
Provide outreach to the regulated community and consumers regarding the manufacturers' requirements of recently adopted Part 368 regulations for electronic waste (e-waste) collection, recycling, and management and how the regulations provide for the free and convenient collection of e-waste from consumers in New York State.	DEC	Ongoing	Covered electronic equipment manufacturers, collectives, e-waste recyclers, e-waste consolidation facilities, e-waste collection sites, out-of-state collectors, retailers, municipalities, consumers
Rechargeable Battery Recycling Law			
Support amendments to the Rechargeable Battery Law to require the collection and recycling of additional consumer battery types (e.g., alkaline, electric and hybrid vehicle batteries, etc.) to an already successful EPR program.	Legislative	3 years Propose – 2024 Begin – 2027	DEC, rechargeable battery manufacturers, retailers, consumers

Increase program compliance monitoring and enforcement in accordance with existing statute to improve manufacturer engagement, retailer participation, and consumer convenience.	DEC	Ongoing	DEC, producer responsibility organizations, rechargeable battery manufacturers, retailers of rechargeable batteries and rechargeable battery-containing products, consumers
Mercury Thermostat Collection Law			
Support amendments to the existing law to extend the program beyond the January 1, 2024 sunset date and to improve overall program performance.	Legislative	2 years Propose – 2023 Effective – 2024	DEC, thermostat manufacturers, contractors, environmental organizations
Postconsumer Paint Collection Program			
Amend the Part 373 Universal Waste regulations and the Part 360 series regulation to help streamline the management of postconsumer paint in New York.	DEC	1 year Underway Effective – 2024	Paint industry, PaintCare, municipalities, paint retailers, environmental organizations
Promulgate regulations to implement the Postconsumer Paint Collection Program Law and to improve overall program performance.	DEC	3 years Propose – 2025 Effective - 2027	Paint industry, PaintCare, municipalities, paint retailers, environmental organizations
Prioritize development of a recycled-content paint specification under Executive Order 4 to help promote and support the paint recycling infrastructure in New York State.	DEC	2 years Begin – 2023 Effective – 2025	OGS, paint manufacturers

Pharmaceutical Take Back Act			
Continue to assist the Department of Health (DOH) in ensuring the state's drug take back program is as convenient as possible to state residents.	DOH	Ongoing	DEC
Carpet Collection Program			
Work with the regulated community to develop and implement the newly enacted Carpet Collection Program, which requires carpet producers to either individually or collectively establish an acceptance program for end-of-life carpet by July 1, 2026 in a manner free and convenient to NYS consumers.	DEC	Ongoing	Carpet producers, artificial turf producers, producer responsibility organization(s), retailers, installers, consumers, municipalities, recyclers, carpet stewardship advisory board members

Goal: Promote the development and passage of EPR framework legislation, as well as EPR legislation for priority products.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support creation of a consistent framework for new EPR programs. The "framework" EPR legislative approach would establish a comprehensive process for recommending, developing, proposing, and passing new EPR laws that follow best practices (e.g., producer responsibility and engagement, sustainable program funding, sufficient consumer convenience, government compliance oversight, and comprehensive consumer education and outreach, etc.).	Legislative	5 years Propose – 2025 Begin – 2026	DEC, product manufacturers, environmental organizations, municipalities, retailers, consumers

Support EPR requirements specifically targeting products with the greatest GHG impacts, products that will drive the renewable economy to reach CLCPA emissions reduction goals, and/or products that pose significant end-of-life management challenges due to their size, composition, or toxicity, etc., and for which there are limited opportunities available for proper end-of-life management. Potential products beyond the packaging and paper product identified above to target for EPR legislation include, but are not limited to, mattresses, tires, solar panels, wind turbine blades, vaping devices, all batteries, refrigerant-containing appliances, compressed gas cylinders, and HHW.	Legislative	5 years Propose – 2023–2027 Begin – 2025–2032	DEC, product manufacturers, environmental organizations, retailers, municipalities, consumers

Organics Reduction and Recycling

Organic waste represents about one-third of MSW, including food scraps, soiled paper, yard trimmings, and wood. For food purveyors, such as grocery stores or restaurants, organic waste can constitute more than two-thirds of their waste. In addition to the organic waste in MSW, other organic waste materials generated include biosolids from water resource recovery facilities and food processing waste. The reduction and recycling of these materials diverts them from landfilling, where they produce methane, and produces a rich soil product for improving soils. For excess edible food, donation provides a means to assist those in need.

Goal: Prioritize wasted food reduction, food donation, and food scraps recycling programs and initiatives in the commercial, industrial, and institutional sectors.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support expansion to the existing Food Donation and Food Scraps Recycling law to include smaller food scraps generators and eliminate the mileage limit for organics recycling facilities.	Legislative	2 years Propose – 2024 Begin – 2026	DEC, food scraps generators, food donation organizations, organics recycling facilities, waste transporters, environmental groups
Continue to develop food waste reduction education and outreach specific to the business sector.	DEC	Ongoing	NYSP2I, food scraps generators
Provide additional financial assistance for food banks and emergency food relief organizations to address capacity, transportation, and other needs to capture more food for donation.	DEC	5 years Begin – 2023	Food donation providers
Encourage partnerships between retailers and food donation organizations.	DEC	Ongoing	Feeding NYS, food retailers
Provide financial assistance and education and outreach to schools to combat food waste.	DEC	5 years Begin – 2026	School districts, DOH
Support food waste reduction and education strategies for school meals.	DEC	Ongoing	Feeding NYS, DOH, school districts

Goal: Support the continued development of the organics recycling industry in New York State.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Allow composting facility operation on municipal park lands.	Legislative	2 years Propose – 2024 Begin – 2026	DEC, OPRHP, municipalities
Establish a requirement for a good faith effort from all state agencies to sustainably manage organic material from their properties	Legislative	5 years Propose – 2024 Begin – 2026	DEC, OGS, all State agencies
Promote additional recycling of all organics, including food processing waste and biosolids.	DEC	Ongoing	Food processors, WRRFs
Provide additional financial assistance for organics recycling infrastructure and outreach, for both public and private facilities.	DEC	3 years Begin – 2025	ESD, municipalities, private facilities
Provide training for yard trimmings compost operators to encourage the addition of food scraps into their operations.	DEC	3 years Begin – 2025	Industry associations
Promote the recycling of food scraps at water resource recovery facilities and yard trimmings composting facilities by providing demonstrations, trainings, and other forms of technical assistance.	DEC	Ongoing	WRRFs
Provide guidance on starting a composting operation for source separated organics.	DEC	2 years Begin – 2025	Municipalities, private facility operators
Provide guidance on starting a food scraps drop-off program that identifies regulations and factors to consider.	DEC	2 years Begin – 2025	Municipalities, private facility operators
Provide financial assistance for local, nonprofit, and small-scale organics collection and processing systems.	DEC	4 years Begin – 2027	Municipalities, nonprofit groups

Partner with the United States Composting Council (USCC) and Compost Research and Education Foundation (CREF) to bring USCC and CREF events and trainings to the State such as the annual Compost Conference and the Compost Operations Training Course.	DEC	3 years Begin – 2023	USCC, CREF
Publish information on successful models for organics collection programs inclusive of multi-family buildings and public housing.	DEC	3 years Begin – 2023	Organizations involved with multi-family building recycling operations

Goal: Empower residents of New York State to properly manage excess food, reduce wasted food, and recycle their food scraps.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Develop household food waste prevention materials and educate residents on how to save money while reducing wasted food.	DEC	4 years Begin – 2023	
Partner with Cornell Cooperative Extension and community-led organizations to facilitate master composter classes and composting workshops for residents.	DEC	4 years Begin – 2024	Cornell Cooperative Extension
Provide financial assistance to expand food scraps drop-off programs and local-scale processing opportunities (e.g., farmers' markets, community gardens, transfer facilities, etc.).	DEC	4 years Begin – 2026	
Continue to provide financial assistance to municipalities to expand residential food scraps collection services.	DEC	Ongoing	Municipalities
Assess the accessibility of composting opportunities and resources available for residents, especially in PEJAs and DACs and promote the development of community accessible composting opportunities (community composting, food scraps drop-off programs, residential collection, etc.).	DEC	Ongoing	Affected communities

Goal: Improve and expand markets for products made from organics materials such as compost and digestate.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Partner with New York State Department of Agriculture and Markets and industry associations to explore ways to increase the use of compost in the agriculture industry.	DEC	4 years Begin – 2024	DAM
Partner with DOT and industry associations to explore ways to increase the use of compost in large transportation and public works projects.	DEC	5 years Begin – 2024	DOT, construction contractors
Promote the sharing of information between municipalities concerning successful organics management models and programs.	DEC	Ongoing	Municipalities
Partner with compost facility operators and other interested parties to develop guidance on biodegradable products.	DEC	5 years Begin – 2024	Biodegradable packaging producers, biodegradable certification entities
Explore methods to use additional products locally, such as local compost networks with food growers, municipal tree programs, stormwater resiliency projects, individuals, etc.	DEC	5 years Begin – 2025	
Fund additional research to expand markets for compost, digestate, etc.	DEC	5 years Begin – 2025	Academic institutions involved in product use

Goal: Engage the farming and agriculture community in food donation, recycling organic waste, and using waste-derived organics products.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Explore methods (outreach, research, etc.) to emphasize the role waste-derived organics products, such as compost or digestate, can play in improving soil health and resiliency.	DEC	3 years Begin – 2023	DAM, Cornell University, New York Farm Bureau
Engage farm groups and others to find ways to increase the use of organics on farms.	DEC	Ongoing	DAM, Cornell, New York Farm Bureau
Promote the development of composting facilities on farms that accept off-site organics and the development of anaerobic digestion capacity on farms.	DEC	Ongoing	DAM, Cornell, New York Farm Bureau, Cooperative Extension, Soil and Water Conservation Districts
Explore the increased use of food scraps for animal feed.	DEC	3 years Begin – 2023	DAM, Cornell, New York Farm Bureau
Enhance current efforts to donate excess edible food from farms.	DEC	3 years Begin – 2023	DAM, Cornell, New York Farm Bureau, Feeding NYS

Toxics Reduction in Products

As new products, packaging, and services emerge, there are inevitably toxic materials and contaminants that must be addressed rapidly in order to prevent or mitigate damage or harm to people and the environment. Toxic materials are intentionally added to new products as ingredients that give the product a desired property. In addition, toxics may be found as contaminants derived from chemical reactions, residue on manufacturing equipment, or from recycled content feedstocks. The following goals focus on addressing toxic materials and contaminants in products. Steps taken to achieve the goals listed under this Goal will drive the market toward products that are safer and more appropriate for reuse, remanufacturing, and recycling.

Goal: Leverage partnerships to expand knowledge of harmful chemicals in products to promote their reduction and to enhance materials reuse and recycling			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Partner with NYSP2I to identify ways toxics can be reduced in manufactured materials, broadening options for beneficial use upon the end of their useful life especially in agricultural or construction uses.	DEC	5 years Begin – 2023	NYSP2I
Identify and work with industry sectors to find innovative approaches to reduce hazardous chemicals use and waste generation.	DEC	5 years Begin – 2023	NYSP2I, manufacturers
Partner with the colleges and universities in New York to better understand the presence of toxic materials, such as PFAS, in products and to enhance DEC's implementation of programs that restrict their use or require their disclosure.	DEC	5 years Begin – 2023	Colleges and universities, NYSP2I, DOH
Partner with colleges and universities in New York to identify preferable alternatives to the use of toxic chemicals, such as PFAS, in products.	DEC	5 years Begin – 2023	Colleges and universities, NYSP2I, DOH
Implement statutory restrictions on PFAS in apparel, provide guidance to affected entities to ensure industry compliance, and educate the public on the necessity for this action.	DEC	5 years Begin – 2023	Textile and apparel manufacturers, distributors, retailers, consumers, environmental organizations

Provide outreach on and enforce the requirements of Subpart 368-2 that establishes standards for the labeling of mercury-added consumer products.	DEC	Ongoing	Manufacturers of mercury-containing products, distributors, consumers, environmental groups

Goal: Support legislation, policy, and initiatives that reduce the presence of toxic materials and contaminants in products.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support initiatives that ban materials and chemicals that are a growing concern for people and the environment.	Legislative	5 years Propose – 2023 Begin – 2026	DEC, DOH, environmental organizations, manufacturers, consumers
Support implementation of chemical restrictions in a way that acknowledges scientific consensus and existing standards and better enables a circular economy.	Legislative	5 years Propose – 2023 Begin – 2025	DEC, DOH, environmental organizations, manufacturers, consumers
Develop and advance regulations that require greater disclosure of ingredients in products.	DEC	3 years Begin – 2023	Product manufactures, environmental organizations, DOH, manufacturers, consumers
Support efforts to restrict the presence of toxic materials and contaminants in the products New York State purchases.	OGS	Ongoing	DEC, DOH, environmental organizations, manufacturers, consumers
Increase support for research and assessment of plastic pollution and microplastics/microfibers.	DEC	5 years Begin – 2024	Plastics industry, environmental organizations
Develop regulations to guide the disclosure of chemicals present in children's products and advance an online system to make this information available to the public.	DEC	Ongoing	Manufacturers, environmental organizations, DOH, consumers
Convene the Children's Product Safety Council and consider their recommendations on chemicals that should be restricted from children's products.	DEC	5 years Begin – 2023	Product Safety Council, DOH

Develop regulations to guide the disclosure of ingredients in cleaning products and advance an online system to make this information available to the public.	DEC	Ongoing	Manufacturers, DOH, environmental organizations, consumers
Participate in the Interstate Toxics in Packaging Clearinghouse to assure compliance with the restrictions on lead, cadmium, mercury, and hexavalent chromium in packaging.	DEC	Ongoing	Toxics in Packaging Clearinghouse and member states
Provide outreach and education material to make affected entities aware of the restrictions on PFAS in food packaging.	DEC	Ongoing	OGS
Develop regulations to guide the restriction of 1,4-Dioxane in cleaning, personal care, and cosmetic products.	DEC	Ongoing	DOH, manufacturers, environmental organizations, consumers
Develop regulations to guide the restriction of applicable flame-retardant chemicals in upholstered furniture, mattresses, and electronic displays.	DEC	Ongoing	DOH, manufacturers, environmental organizations, consumers

Design and Operation of Solid Waste Management Facilities and Related Activities

Solid waste management facilities are critical to the proper management of waste generated in the State. A variety of facilities are needed to receive wastes, from organics recycling facilities and recyclables handling and recovery facilities to landfills and combustion facilities. Others are needed to provide intermediate services such as collection and transfer. All these facilities must be operated in a way that is protective of human health and the environment. To ensure that these facilities operate in an environmentally sound manner, appropriate regulatory controls are required.

Goal: Maintain regulations governing the design and operation of solid waste management facilities to ensure that those facilities are protective of groundwater and other environmental			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Amend solid waste facility regulations based on new legislation, continuing evaluation of technical standards and criteria, and feedback from the regulated community. Updated regulations will implement new laws related to paint recovery, food scrap recovery, and improved materials management procedures at mulch and C&D debris facilities on Long Island. Amendments will also allow for greater reuse of concrete, asphalt, rock, and brick, while increasing regulatory control on contaminated soil, enhancing design requirements for solid waste landfills, and easing regulatory requirements some municipal facilities in order to encourage greater collection of recyclables.	DEC	Ongoing	Regulated community, public, environmental groups, professional organizations
Incorporate climate impact criteria and related design and operating requirements into solid waste facility regulations to facilitate achievement of GHG reduction goals.	DEC	3 years Begin – 2023	Regulated community, public, environmental groups, professional organizations

Goal: Encourage increased reuse of C&D debris, including excavated material.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Develop new outreach and education efforts focused on excavated material and new regulatory changes related to reuse of excavated material in order to maximize reuse of the material and reduce both legal disposal and illegal dumping.	DEC	4 years Begin – 2023	Regulated community, construction industry
Establish methods for collecting data on C&D debris generation and management, including identification of regional characteristics and opportunities for increased diversion from disposal.	DEC	5 years Begin – 2023	Regulated community, construction industry

Goal: Enforce solid waste regulations to enhance compliance.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Increase electronic reporting to facilitate timely data reporting, data evaluation, compliance determinations, and enforcement.	DEC	3 years Begin – 2023	Regulated community
Increase the use of drones and other new technologies to assess facility performance.	DEC	3 years Begin – 2023	Regulated community
Develop policy to implement the requirement in Part 360 that mandates that solid waste management facilities (SWMFs) effectively control nuisance odor.	DEC	1 year Begin – 2023	Regulated community, public, environmental groups
Implement new policy for streamlining review of most typical case-specific beneficial use determination petitions. This policy will provide petitioners with application criteria and will speed review by establishing standard review criteria that will be implemented by regional program staff.	DEC	1 year Begin – 2023	Regulated community

Goal: Provide technical assistance to solid waste management facilities to improve operations.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Develop guidance to help facilities remain in compliance with the regulatory criteria and to improve operations.	DEC	4 years Begin – 2023	Regulated community
Contact facilities and others to determine what types and means of assistance are needed.	DEC	5 years Begin – 2023	Regulated community
Facilitate cooperative discussions between facilities to solve common problems.	DEC	5 years Begin – 2023	Regulated community

Goal: Minimize GHG emissions from solid waste management facilities.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Incorporate improved methane monitoring technologies into facility operations and existing monitoring programs for landfills, anaerobic digesters, etc. Identify mitigation measures that landfill operators must implement in order to eliminate fugitive emissions.	DEC	5 years Begin –2023	Regulated community
Implement design and operational practices for further emissions reduction.	DEC	5 years Begin – 2023	
Amend regulations as needed to enhance GHG emission monitoring and leak reduction.	DEC	5 years Begin – 2024	
Implement policies, procedures, and regulatory revisions to apply CLCPA evaluation requirements to solid waste management facility permitting activities. Investigate mitigation methods at landfills that would reduce the impact on CLCPA goals, including identification of methane-generating wastes and pre-processing to reduce potential for GHG emissions or redirection of those wastes to alternative facilities (e.g., organics composting, MSW composting, anaerobic digestion, etc.) where GHG emissions are reduced.	DEC	Ongoing	

Goal: Investigate innovative means of reducing environmental impacts from solid waste management activities.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support changes and evaluate funding mechanisms to support purchasing and use of on-site organics processing equipment (e.g., small-scale anaerobic digesters, etc.) at apartment buildings, convention centers, restaurants, schools, and other locations that generate significant amounts of food scraps and other organic wastes.	Legislative	5 years Propose – 2024 Begin – 2026	Climate Action Council, DEC, ESD, organic waste generators, building/facility owners
Support efforts to require solidification of industrial, commercial, or remedial wastes that contain PFAS compounds prior to disposal in solid waste landfills.	Legislative, DEC	1–5 years Propose – 2024 Begin – 2028	Waste generators, DEC, solid waste landfills
Investigate available technologies for solidification of landfill leachate and feasibility of requiring landfills to solidify leachate for landfill disposal, which would reduce loading of contaminants, including emerging contaminants, in WRRFs and reduce contamination of downstream materials, such as biosolids.	DEC	2 years Begin – 2023	Regulated community, WRRFs
Investigate alternative management methods for ash generated by MWCs, including initial separation of bottom ash from fly ash and air pollution control equipment residues, in order to maximize reuse opportunities especially related to bottom ash.	DEC	3 years Begin – 2023	Regulated community, construction industry, municipal highway departments, DOT
Investigate opportunities for new case-specific beneficial use determinations to be added to Part 360 in future rulemakings, especially for materials such as ash, slag, glass, and other materials that could provide significant waste diversion if clear reuse options and materials sources and markets could be established.	DEC	5 years Begin – 2023	

Goal: Improved data collection and analysis processes and methodologies related to solid waste management.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Identify and categorize commercial and industrial infrastructure in New York utilizing records from other state agencies and/or Standard Industrial Classification (SIC) codes or other system classifications.	DEC	3 years Begin – 2023	
Investigate and utilize innovative methods and web-based tools (e.g., surveys, electronic data requests, etc.) to collect information on waste generation, reduction, reuse, and recycling from commercial and industrial generators and generators of C&D debris.	DEC	Ongoing	
Identify methods of extrapolating data reported by portions of the commercial and industrial waste sectors in order to estimate total generation and diversion in each sector.	DEC	3 years Begin – 2023	
Implement electronic annual reporting options for solid waste management facilities.	DEC	3 years Begin – 2023	
Implement electronic annual reporting options for waste transporters.	DEC	3 years Begin – 2023	
Identify discrepancies or data gaps in data collected from solid waste management facilities and design methods to improve data collection and validation.	DEC	2 years Begin – 2023	
Implement methods of differentiating and analyzing data related to recyclables handling and recovery facilities based on facility design (e.g., dual stream, single stream, drop-off, etc.)	DEC	1 year Begin – 2023	

Goal: Support improvements to grant programs for municipal waste reduction and recycling			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support new funding for municipal landfill closure and landfill gas management grant program. Existing waiting list projects require total funding of approximately $10 million, and applications for 6 of the 10 current waiting list projects have waited more than 10 years for reimbursement. At current funding levels, it will take more than 36 years to reimburse municipalities for their investments in landfill cover and gas management systems.	Legislative	1 year Propose – 2024 Begin – 2025	DEC, municipalities
Explore opportunities to convert current program to a direct funding system if disposal surcharge legislation is enacted.	Legislative	5 years Propose – 2025 Begin – 2028	DEC, municipalities
Continue to investigate improvements and modifications to the MWRR grant programs. Significant improvements to the MWRR grant regulations were implemented in 2017, but additional streamlining and program improvements may be available that will speed up review times and reduce wait times for reimbursement to municipalities.	DEC	Ongoing	Municipalities

Goal: Implement legislative changes related to local solid waste management planning and evaluate potential modifications and improvements to local solid waste management planning (LSWMP) processes and procedures.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support requirements for municipalities to develop and implement LSWMPs, or to become affiliated with planning units with approved LSWMPs.	Legislative	5 years Propose – 2024 Begin – 2027	Municipalities
Identify legislative opportunities that impact LSWMP requirements and apply them to program procedures and prepare draft rulemaking to implement changes as necessary	DEC	5 years Begin – 2023	Municipalities
Evaluate internal procedures utilized to implement program and apply adjustments to improve delivery of program and to support local planning efforts.	DEC	Ongoing	Municipalities

Apply particular focus on planning units that have not pursued new or updated plans and on municipalities that are unaffiliated with a planning unit and have not completed a CRA.	DEC	3 years Begin – 2023	Municipalities

Goal: Improve implementation of Site Investigation and Mitigation programs.			
Action Items	**Implementation Lead**	**Time to Implement**	**Other Key Stakeholders**
Support funding under Article 27, Title 12 to reimburse municipalities that have implemented mitigation and remediation at solid waste sites that have impacted drinking water sources, and prepare plans for a grant program that would provide for distributing these funds.	Legislative	5 years Propose – 2025 Begin – 2027	Municipalities
Evaluate new opportunities to provide funding for municipal programs that collect and dispose of waste tires.	Legislative	5 years Propose – 2025 Begin – 2030	Municipalities
Continue to implement Inactive Landfill Investigation (ILI) program and implement revised procedures to program implementation as necessary.	DEC	Ongoing	Landfill owners
Issue ILI annual report every July as required by Article 27 Title 12.	DEC	Ongoing	
Establish policy for identifying, investigating, and mitigating illegal waste tire disposal sites, establishing standard procedures for identifying illegal disposal sites and establishing time frame for mitigation, provide options for self-mitigation by property owners, establish standard consent order language that allows site access for DEC contractors to mitigate sites if landowners fail to do so, and provide methods for documenting completion of mitigation activities.	DEC	1 year Begin – 2023	Regulated community
Review results from research conducted under memoranda of understanding with SUNY universities for program and regulatory adjustments that would enhance diversion and reuse of waste tires.	DEC	2 years Begin – 2023	
Work with New York Farm Bureau and other interested groups to investigate strategies and potential programs to reduced waste tire use on farms and for processing of waste tires currently used on farms.	DEC	3 years Begin – 2023	New York Farm Bureau, farming community

7. Waste Projections and Goals 2023–2032

The Implementation of Focus Area Goals section lays out an array of 168 Action Items that must be tackled during the planning period of this Plan, from 2023–2032. These Action Items include a combination of proposed legislative actions and DEC programmatic actions. They also require strategic partnerships with key stakeholders. If those actions are completed and the programs fully implemented, the goals for reduction in landfilling of waste found in the draft Scoping Plan of the CLCPA can be achieved by 2050. Many of the Action Items require both an action, such as a piece of legislation, but also robust implementation of an ongoing program that will have impacts beyond 2032 and 2050. Table 6 below provides targets for waste projections and projected recycling rate goals for each of the main categories of the total waste stream until 2050. The projections for recycling rates from 2023–2050, found in Table 7, are based on time of implementation outlined for the Action Items and an assessment of how each Goal will affect waste reduction, reuse, and recycling and the reduction in disposal and combustion. By the end of 2032, it is projected that the recycling rate for the total waste stream will be 60%, and it will increase to 85% by the end of 2050.

For MSW alone, New Yorkers sent 4.09 pounds of MSW per person per day, or 0.75 tons per person per year, to disposal facilities in 2018. The Plan seeks a progressive reduction in the amount of MSW disposed, to reach the ultimate goal of reducing disposal to 0.72 pounds per person per day by 2050. See Table 7 for incremental goals during the period for the reduction in disposal of MSW. The goal applies to the State as a whole; each planning unit must develop its own baseline and progressive goals and actions, and the amount achieved will vary from one planning unit to another. Additional details and supporting information for the waste projections and goals are included in Appendix H.

Table 6. New York waste projections from 2023–2050

New York State Waste Projections 2023 - 2050									
		2018	2023	2025	2027	2030	2032	2040	2050
MSW	Tons Generated	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980
	Tons Diverted	3,399,096	3,935,796	4,651,395	5,724,794	7,155,992	9,123,890	11,628,487	15,206,483
	Recycling Rate (%)	19%	22%	26%	32%	40%	51%	65%	85%
CDD	Tons Generated	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987
	Tons Diverted	11,751,032	12,301,861	13,219,911	13,770,740	14,321,570	14,688,790	15,056,009	15,606,839
	Recycling Rate (%)	64%	67%	72%	75%	78%	80%	82%	85%
Industrial	Tons Generated	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296
	Tons Diverted	560,366	618,335	695,627	869,533	1,062,763	1,255,992	1,449,222	1,642,452
	Recycling Rate (%)	29%	32%	36%	45%	55%	65%	75%	85%
Biosolids	Tons Generated	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854
	Tons Diverted	302,028	425,585	453,042	480,499	507,956	535,413	617,784	782,527
	Recycling Rate (%)	22%	31%	33%	35%	37%	39%	45%	57%
Bulk/Heavy Metals	Tons Generated	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161
	Tons Diverted	2,369,102	2,369,102	2,396,023	2,422,945	2,422,945	2,476,788	2,503,710	2,557,553
	Recycling Rate (%)	88%	88%	89%	90%	90%	92%	93%	95%
Total Waste Stream	Tons Generated	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278
	Tons Diverted	18,381,623	19,650,678	21,415,997	23,268,511	25,471,226	28,080,873	31,255,212	35,795,853
	Recycling Rate (%)	44%	47%	51%	55%	60%	66%	74%	85%

Table 7. Projected MSW recycling rate and per capita waste disposal from 2018–2050

MSW				
	Tons Generated	Tons Diverted	Recycling Rate (%)	Per capita Waste Disposal (lbs/person/day)
2018	17,889,980	3,399,096	19%	4.09
2023	17,889,980	3,900,016	22%	3.91
2025	17,889,980	4,561,945	26%	3.71
2027	17,889,980	5,760,574	32%	3.37
2030	17,889,980	7,191,772	40%	2.97
2032	17,889,980	9,159,670	51%	2.42
2040	17,889,980	11,664,267	65%	1.71
2050	17,889,980	15,224,373	85%	0.72

NYS Population	
2018	19,530,351
2023	19,628,003
2025	19,667,259
2027	19,706,593
2030	19,765,713
2032	19,805,244
2040	19,963,686
2050	20,163,323

8. Conclusions

This latest version of the *New York State Solid Waste Management Plan* builds upon the solid waste management plans before it, learning from both the successes and the challenges of implementation. While adapting to the obstacles and frustrations that inevitably come with the implementation of a wide-ranging, far-reaching, long-term plan for comprehensive solid waste management planning, it is important to remember New York State's significant achievements over the past 35 years since the Solid Waste Management Act was passed in 1988, transforming from a solid waste management system where less than 3% of the waste stream was recycled to more than 43% of the total waste stream being recycled. There were over 1,800 individual unlined landfills across the state compared to today's system of 25 MSW landfills and 10 MWCs. There was no structural system for comprehensive solid waste management for the State; however, today's system of 69 planning units manages 42 million tons of waste annually and recovers over 43% through a combination of private and public efforts. It is an important reminder of what can be achieved—because New York State is being called upon to collectively move forward once again. Climate change presents a critical impact on the environment, and waste management plays a significant role in helping address the challenges of addressing climate change. Waste management accounts for 12% of the GHG emissions in New York State, on par with the transportation sector. New York State has the tools today to reduce emissions in the waste sector.

This Plan is a guide for legislative action, local solid waste planning decisions, industry practices, university research, and industry innovations to support systems, policies, and practices that will slash GHG emissions today from the waste sector for a more climate secure future, all while conserving valuable natural resources and building a more robust and resilient supply chain for the products used every day.

This Plan sets forth six major Focus Areas:

- Waste Prevention, Reduction, and Reuse
- Recycling And Recycling Market Development and Resiliency
- Product Stewardship and Extended Producer Responsibility
- Organics Reduction and Recycling
- Toxics Reduction in Products
- Design and Operation of Solid Waste Management Facilities and Related Activities

Each Focus Area has a set of 2–10 identified Goals, for a total of 31.

Each Goal has a set of 1–17 identified Action Items, for a total of 168.

Together, these Action Items are designed to move New York State to an 85% total waste stream recycling rate by 2050.

DEC cannot do this alone, and the Action Items indicate the legislative changes needed to successfully implement the Plan. One of the lessons learned from implementation of the last *State Solid Waste Management Plan* is that while projected reductions in the waste stream and increased recovery rates may theoretically be possible, the biggest and boldest actions that have the broadest and most transformative impacts require legislative action.

The three most important Action Items and transformative legislative actions needed are:

- Develop and promote broad packaging and paper product legislation to include all types of packaging and all paper products by all generators, to have the greatest effect on waste reduction, reuse, and recycling possible;

- Expand and amend the existing Food Donation and Food Scraps Recycling law to include smaller food scraps generators and eliminate the mileage limit for organics recycling facilities; and

- Require a per ton disposal disincentive surcharge on all waste landfilled or combusted in New York State and all waste generated in New York State being sent for landfilling or combustion out-of-state to provide financial support for reduction, reuse, and recycling projects.

All three of these recommendations are included in this Plan and in the Climate Action Council's Scoping Plan. Legislative action on packaging and paper EPR, expanding the Food Donation and Food Scraps Recycling Law, and enacting a surcharge on landfilled waste are critical to realize a more sustainable, climate secure, and less wasteful future.

Extended Producer Responsibility for Packaging and Paper Products

The importance of an inclusive and expansive packaging and paper product EPR law is critical to help shift the inherent system uncertainties of the existing recycling programs for MSW. Packaging and paper products account for approximately 40% of the MSW stream. A comprehensive EPR program for these materials will be truly transformative as it will drive a fiscal reconfiguration for the entire recycling system. That, in turn, will drive the technical collection and processing reconfigurations that are needed for the entire system. Those changes will in turn drive market demand and stabilization for the industry and insulate municipalities from their current unpredictable and unstable middleman status and return them instead to entities providing municipal services. The system will lead to new practices by manufacturers and product design decisions. The legislative and fiscal responsibility for the management of their products will lead manufacturers to changes in product design or composition that will reduce waste at its source and make products more readily recyclable.

Expand and Amend the Existing Food Donation and Food Scraps Recycling Law

The current law only addresses the largest commercial generators and has a very small mileage limit to an organics recycling facility for applicability. Food scraps account for approximately 17% of the MSW stream and are a disproportionate contributor to GHG if landfilled instead of reduced or diverted and recycled. The law must be amended to include smaller food scraps generators, including a transition to residential generators, and must eliminate the mileage limit to organics recycling facilities. The mileage limit simply does not match how waste is managed in the state now. The average transportation distance for waste management is currently close to 60 miles and will only increase as the current disposal capacity further concentrates on larger facilities. Much of this waste stream should never become waste in the first place and redirection of wholesome edible food to the food-insecure is by far the most important component of the law and to society in general. The food that cannot be redirected for consumption is readily recyclable and has the greatest impact on GHG emissions if landfilled. There are no societal, humanitarian, or environmental downsides to this action. It is simply common sense and economics. An increase in organics diversion spurs the construction of facilities to manage this waste, lowering the economic costs of recycling and making food donation second nature to businesses and food scraps just another recyclable to manage.

Disposal Disincentive Surcharge

A per ton disposal disincentive surcharge on all waste landfilled or combusted in New York State and all waste generated in New York State being sent for landfilling or combustion out-of-state would have a two-fold impact on waste management. First, it would increase the cost of waste disposal, thereby incentivizing the reduction and recycling of waste. Second, it is intended for the per ton charge collected to provide direct municipal financial support by being redistributed entirely to municipalities that have approved LSWMPs for their waste reduction, reuse, and recycling costs. This surcharge, even at only a minimal $5 per ton, could not only help disincentivize disposal, but also generate $133 million per year in its initial years. Over 30 states already use some form of this successful fee structure. It is time for New York State to act.

While New York State faces significant challenges, this Plan will make a difference. With the support of the people of New York and full legislative commitment, the challenges will turn into opportunities and opportunities into achievements.

Thirty years ago, most households had one trash container in the house and a few garbage cans to drag to the street each week. Today, most households separate recyclables every day and roll at least two containers out each week—one for waste and one or more for recyclables. This is a fundamental societal change that has occurred in just the last few decades, and it happened because state law mandated it and created a funding program to help initiate it. Most New Yorkers support recycling, but this fundamental societal change only happened because New York's Legislature

required separation of recyclables from waste at the curbside. Around the same time, bottles and cans littered roads and streets, and those containers that did not end up on the roadside went into the trash. Today, most households separate their bottles and cans and redeem them to collect their deposits. Unforeseen new subsystems developed, from schools providing container bags that send the deposits directly to their coffers, to people in large cities sustaining themselves by collecting bottles and cans around town. Ultimately this transformation only happened because the Legislature passed the Returnable Container Act, fundamentally changing the way bottles and cans are managed and valued in New York. Perhaps the most amazing part of these transformations is how little disruption they caused. People recognized the progress that the changes represented, and they adapted.

New York State is taking the opportunity to build a nation-leading sophisticated sustainable materials management system. New Yorkers want to reduce, reuse, and recycle, but they need systems to be established in which they can easily do those things. The three priorities identified above provide the foundation to modernize reduction and recycling circular systems.

Appendix A: State Plan History

The History of New York State Solid Waste Management Plans

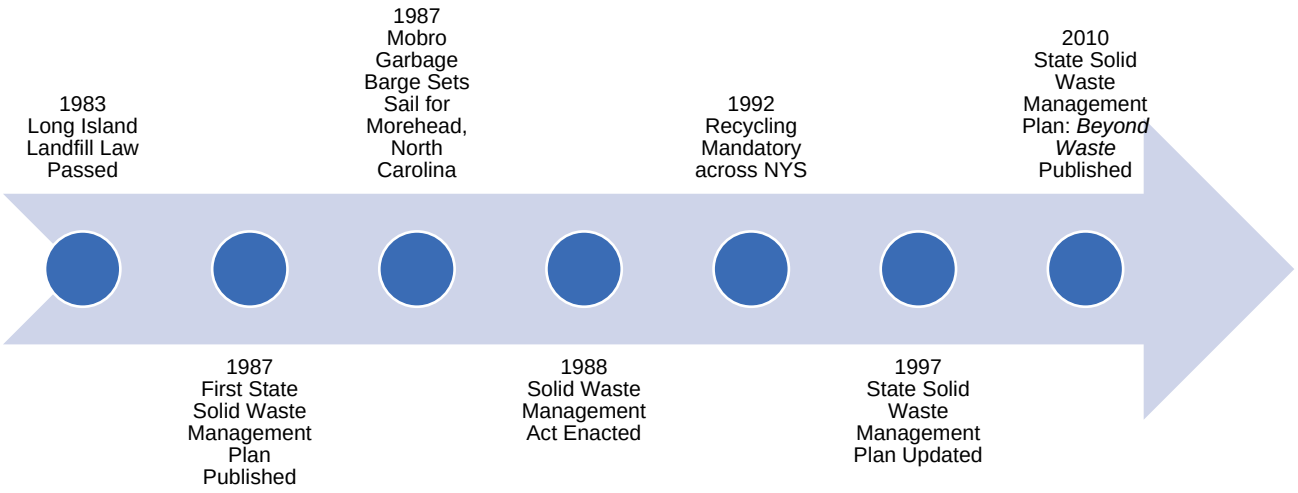


Figure A.1. History of New York State Solid Waste Management Plans

Initial Statewide Solid Waste Management Plan Efforts

While the value of solid waste management planning was acknowledged by both the federal and state governments more than 40 years ago, initial progress was intermittent and overshadowed by efforts to address the environmental consequences of hazardous waste mismanagement. The federal Resource Conservation and Recovery Act (RCRA) of 1976 required states to develop solid waste management plans, and the New York State Legislature responded with Chapter 425 of the laws of 1977, which required DEC to prepare a draft "comprehensive resource recovery plan."

DEC prepared and submitted a plan in 1978. Chapter 552 of New York State's laws of 1980 acknowledged the development of the draft plan required by Chapter 425 and recognized the need for solid waste management planning. It gave DEC responsibility for preparing a solid waste management plan and required that all solid waste management projects follow the plan. DEC prepared a draft plan, but in fiscal year 1980–1981, federal funding for the municipal solid waste program was withdrawn, and

further development of the plan ceased. At the federal and state levels, emphasis and funding were shifted from solid waste management to hazardous waste management programs.

The 1987 Solid Waste Management Plan (1987 Plan)

DEC drafted the 1987 *Solid Waste Management Plan* in response to several laws and concerns that arose in the 1980s. First, in 1983, the Long Island Landfill Law passed, which mandated the phaseout of landfills in the deep flow aquifer recharge zones on Long Island, thereby encouraging the transition to "resource recovery" through a combination of municipal waste combustion (MWC) and recycling and the development of infrastructure to transfer waste for long-haul export.

Across the state, groundwater contamination and operational deficiencies at many older, unlined landfills became a primary concern. By June 1986, New York State had 358 active landfills, only 47 of which had valid permits, and 7 operating MWCs with another 6 under construction. At that time, available disposal capacity in New York State, not including New York City's waste or the Fresh Kills landfill, was estimated to be four years. This resulted in concern about a looming disposal crisis in the state. In response, DEC issued the *Solid Waste Management Plan* in March 1987. The 1987 Plan outlined an integrated waste management system approach to the impending crisis. Also, the application of technical standards found in Part 360 brought New York State into compliance with the provisions of RCRA and the state laws.



Coincidentally, on March 22, 1987, the *Mobro 4000* barge set sail from Islip, New York carrying 3,168 tons of baled municipal solid waste (MSW) destined for a pilot project in Morehead, N.C. to be converted to methane.



Once in Morehead City, North Carolina officials began an investigation and ultimately ordered the now infamous "garbage barge" to find another home for its rotting cargo. This began a months-long odyssey that took the barge all the way to Belize and back to New York State.

In October 1987, the garbage was incinerated in New York City and the ash disposed of in Islip. Although the saga was an embarrassment to the state, the garbage barge incident was widely publicized across the nation, and that led to significant improvements in solid waste management.



The 1987 Plan was not intended as a panacea for the state's disposal problems at the time, but, rather, represented the beginning of a change in solid waste management practices to meet both current and future needs. It was explicitly intended to be the first step of what was envisioned to be a long-term, ongoing, solid waste management planning process. The State was to update the Plan annually (which was subsequently amended in a 1992 law to biennially) to address emerging issues and recommend actions to improve solid waste management in New York State. This iterative approach was intended to provide a dynamic solid waste management planning process. The 1987 Plan contained important goals, including a goal to reduce, reuse, or recycle 50% of the waste stream (using 1988 as a base year) and a recommended hierarchy of preferred solid waste management methods. The 1987 Plan set what were seen at that time as visionary and aggressive, yet achievable, goals for a 10-year planning period with the intent of using annual updates to adjust policies, programs, plans, and goals to ensure continued progress.

The New York State Solid Waste Management Act

In response to the 1987 Plan, the Solid Waste Management Act (ECL 27-0106) established in law the Plan's preferred hierarchy of solid waste management. The hierarchy established the following priorities to guide the programs and decisions of DEC and other state agencies:

a) First, to reduce the amount of solid waste generated;
b) Second, to reuse material for the purpose for which it was originally intended or to recycle the material that cannot be reused;
c) Third, to recover, in an environmentally acceptable manner, energy from solid waste that cannot be economically and technically reused or recycled; and
d) Fourth, to dispose of solid waste that is not being reused or recycled, or from which energy is not being recovered, by land burial or other methods approved by the department.

In addition to the hierarchy, the Act established:

- Structure and expectations for regional solid waste management planning units to encourage regional cooperation;
- Requirements and funding for local solid waste management plans in accordance with the hierarchy of solid waste management methods;
- A mandate that municipalities adopt and implement source separation laws or ordinances for recyclables from *all* generating sectors by 9/1/1992 (less than five years from enactment); and
- DEC's role in fulfilling these requirements.

The Act's requirements were intended to ensure that both state and local governments work actively toward establishing environmentally sound solid waste management systems that integrate the hierarchy of solid waste management methods and emphasize waste reduction and recycling, using landfills only for materials that could not be managed in a more productive way.

Solid Waste Management Plan Updates

The first update of the 1987 *Solid Waste Management Plan*, produced in 1987/1988, included revisions aimed at incorporating the requirements and direction embodied in the Solid Waste Management Act of 1988. Subsequent updates of the 1987 Plan did not directly revise or replace portions of the 1987/1988 Plan update. Instead, each update became a stand-alone document that characterized the activities undertaken within the state with respect to solid waste management during the update period. In time, as the state's regulations and local solid waste management plans (LSWMPs) were developed and implemented, the Plan updates became a means to publicize achievements, obstacles encountered, and comparisons to the initial base year of the Plan. The Plan updates also made recommendations for action.

Because the initial 10-year planning period of the 1987 Plan ended in 1997, the 1997/1998 update was intended to be a more comprehensive assessment of solid waste management in the state. That Plan:

- Launched a new five-year planning period (1998–2003);
- Identified objectives for the five-year planning period;
- Provided baseline solid waste management data for the new planning period; and
- Summarized developments and progress in solid waste management since the last update of the Plan.

Draft Plan updates were prepared for 1999/2000 and 2001/2002. The 1999/2000 update was approved and released, but while the 2001/2002 draft update was released

for public comment, it was never finalized, and no further updates or Plans were issued until 2010.

The 2010 Solid Waste Management Plan *(Beyond Waste* Plan)

The 2010 Solid Waste Management Plan, called *Beyond Waste: A Sustainable Materials Management Strategy for New York State*, established a 10-year planning period, through the end of 2020, and sought to fundamentally change the way discarded materials are managed in New York State. The *Beyond Waste* Plan primarily focused on the MSW portion of the waste stream with respect to metrics. It reframed the metrics to be used for MSW going forward to focus on the reduction in the amount of waste landfilled or processed in a municipal waste combustor (MWC) instead of relying solely on recycling rate percentages. The recycling rate does not account for practices such as waste reduction efforts of an individual or business, the light-weighting of goods such as the lighter weight of plastic bottles, or changes in the waste stream characteristics such as increased on-line readership of newspapers and print media. Therefore, the focus on the reduction in landfilling and combustion metric was something that would help capture the broader impact of waste reduction efforts as well as traditional recycling, while simultaneously accounting for changes in the waste stream characteristics and was more consistently measurable with the State's solid waste facility reporting requirements.

The *Beyond Waste* Plan included a robust list of recommendations, outlining 89 actions that were grouped into three broad categories—Regulatory, Programmatic, and Legislative, that were needed to achieve the goals of the Plan. The goals intended to represent a path to move the state toward sustainable materials management by progressively reducing the amount of material that is wasted. The *Beyond Waste* Plan set very aggressive goals for reducing both the generation of MSW and disposal of what remained. These goals were characterized as aspirational, with targets of reducing pounds of MSW per person per day disposed or combusted from 4.1 pounds of MSW per person per day in 2010 to 1.7 pounds of MSW/person/day in 2020. A future target of 0.6 pounds of MSW per person per day for 2030 was also noted as achievable for the future if all actions were undertaken as outlined in the *Beyond Waste* Plan.

Summary of State Solid Waste Management Plans from 1987 to 2018

DEC's 1987 Plan was aggressive for its time. It set a goal of reducing, reusing, or recycling 50% of the state's waste stream in 10 years, and set forth a solid waste management hierarchy, adopted into law in 1988, that placed priority on waste prevention, reuse, and recycling, followed by MWC with energy recovery, and finally, landfilling as the lowest tier of management.

In broad terms, the State Solid Waste Management Act (Act) was a success in spurring the development of municipal recycling programs across the state and requiring that recycling opportunities were available to all New Yorkers. The requirement for local governments to establish source-separation programs yielded an increase in the state's recycling rate. While the Act's implementation launched successful waste prevention and recycling programs and integrated solid waste management systems, it lacked a mechanism for fostering continual improvement beyond the minimum mandates. Furthermore, changes in the marketplace have led to legal and economic realities that, in some cases, undermine the state's solid waste management planning constructs. The roles and responsibilities of the various players in the solid waste chain must evolve to respond to current conditions. Thirty years later, the majority of the materials generated are still managed by the lowest priority strategy (landfilling), and the state is still striving to achieve its initial recycling goals initially targeted to be achieved by 1997.

The 1987 Plan was drafted to address what was determined at that time to be a developing solid waste disposal crisis. That Plan focused on an integrated solid waste management approach to be implemented by municipal planning units and favored reduction, reuse, and recycling and local self-sufficiency in managing the remaining waste stream. The implementation of the 1987 Plan, the Solid Waste Management Act of 1988, and local solid waste management plans established by municipal planning units, has yielded significant progress.

- Hundreds of open dumps and environmentally harmful incinerators have been closed and replaced with modern landfills and MWCs that comply with regulations that are among the most protective in the nation.
- The state's recycling rate has grown from approximately 3% to 43% of the total waste stream (that includes MSW, construction and demolition (C&D) Debris, industrial waste, and biosolids) and 19% when only MSW is evaluated.
- Many of the state's communities have implemented exemplary integrated materials management systems that have yielded recycling rates well beyond the statewide average.

However, the state continues to stagnate at levels of MSW recycling near 20%. The 1987 Plan sought to phase out MSW incineration without energy recovery and replace landfills in the state with a network of 37 MWCs with energy recovery for treating the waste remaining after reduction, reuse, and recycling. Only 10 MWCs were in operation in 2010. The goal of phasing out MSW incineration was accomplished, though some biosolids are still incinerated without energy recovery.

The 1987 Plan prescribed phasing out landfilling of unprocessed MSW and using landfills only for discreet streams (i.e., MWC residues, some biosolids, and some C&D debris). The number of active MSW landfills has been drastically reduced, from 348 mostly unlined MSW landfills in 1987 to the currently operating 25 lined MSW landfills, representing a significant investment in state-of-the-art engineering and controls.

However, landfilling—considering both in and out-of-state disposal—remains the predominant waste management method for New York State's waste.

The 1987 Plan established a framework that was built around municipal management systems. However, in the past 30 years, operation of much of the state's landfill capacity has shifted to private companies instead of municipalities or planning units, with 82% of the state's working MSW landfill capacity operated by the private sector and 98% of the MWC capacity. Over 30 years after the 1987 Plan and the enactment of the Solid Waste Management Act of 1988, New York State finds itself relying on a mix of different local solid waste management systems. The current network of recycling and solid waste collection, and transfer and disposal operations comprise some remaining local government-owned and operated facilities and programs, which were typical in the 1980s, and significant privately controlled waste collection, transportation, and handling infrastructure. Outside of the City of New York, direct municipal collection of MSW from residents is now approximately 36%. Due to a number of factors, including a period of time in New York State when it was uncertain whether local governments could control the waste flow in their jurisdiction and the increased costs and complexity in managing an integrated system on a municipal level, some municipalities that had planned or developed their own integrated systems of solid waste facilities no longer have any involvement in the management of significant portions of the MSW generated within their borders. New York State also relies on privately owned facilities in other states for the disposal of more than 4.9 million tons of MSW per year (27% of the MSW stream) and more than 7.1 million tons per year of total waste (17% of the total waste stream). While the environmental impact of export has been reduced by the movement of waste exports by rail instead of truck, exports have increased fivefold during the past 30 years.

There have been many accomplishments and actions taken since 2010 during the implementation of the *Beyond Waste* Plan, which are described in detail in Appendix B. Since 2008, the state's recycling rate has grown from approximately 36% to 43% of the total waste stream (that includes MSW, C&D debris, industrial waste, and biosolids). However, when only MSW is evaluated, it has remained relatively flat, decreasing 1% from 2008 to 2018. However, the total recycling rate increased because of the significant increase in the recycling rate for C&D debris over that same period, increasing from 55% in 2008 to 64% in 2018.

The New York State Solid Waste Management Plans have helped to set direction and policy that have led to significant advances in solid waste management. It will require bold actions to make bold strides forward, but those actions are needed to benefit New York State's environment, climate, and economy.

Appendix B: Accomplishments since 2010

There have been significant achievements in solid waste management in New York State since the publication of *Beyond Waste* in 2010. Some of these efforts represent the completion of recommendations outlined in *Beyond Waste*, but many efforts represent advancements above and beyond those found in the last Plan. This appendix contains a summary of the major accomplishments since 2010. They encompass outreach, education, legislative action, financial assistance programs, enforcement initiatives, and regulatory programs.

This appendix contains a brief summary of the multitude of current solid waste reduction, reuse, recycling, and management programs DEC is administering. It is not intended to be an exhaustive list of the programs nor an in-depth analysis of all aspects of the various projects. Instead, this summary section is merely intended to help frame out the wide array of comprehensive efforts undertaken by DEC related to solid waste management. Greater detail can be found on DEC's website at https://www.dec.ny.gov/chemical/292.html.

The accomplishments are grouped into the following categories:

1. Outreach and Education
2. Local Solid Waste Management Planning
3. State Assistance Programs
4. GreenNY/Executive Order 4
5. Recycling-Related Research
6. Returnable Container Act (Bottle Bill)
7. Plastic Bags and Film Plastic
8. Expanded Polystyrene Foam Ban
9. Product Stewardship/Extended Producer Responsibility (EPR) Programs
10. Organics Reduction and Recycling
11. Product Consumer Protection Laws
12. Part 360 Series Revisions
13. Inactive Landfill Initiative
14. Construction and Demolition (C&D) Debris Enforcement Initiatives
15. Waste Tire Abatement Program
16. New York City's Fresh Kills Landfill Becomes Freshkills Park

1. Outreach and Education

Changes in how people communicate, learn, and share information call for education programs to keep up with these changes.

Additionally, the shift in some recycling programs from dual-stream to single-stream recycling has impacted waste reduction and recycling outreach and education programs. The shift to single-stream recycling has brought with it a more relaxed attitude about recycling and some confusion; many members of the public believe that anything—glass, metal, plastic, paper, fabric, and beyond—can be put in single-stream recycling programs. Although many recycling facilities have updated their infrastructure to handle single-stream recycling, most facilities do not have the technology to catch up with the public's misunderstanding about what is accepted in single-stream recycling programs.

In addition, labeling on packaging and products as well as the ever-increasing use of single-use packaging, including flexible packaging and multi-material packaging, with little communication between packaging designers and recyclers, has also confused the public about what is recyclable or not. China's National Sword Policy also brought waste reduction and recycling education into a new light. This policy set a recycling contamination standard of 0.5% for certain imports of recyclable materials to China. At the time, some United States recycling facilities were seeing contamination rates around 30–40% and China was a major export destination for recyclables from the United States. It became clear after this policy was established that New York and other states needed to not only work to increase the amount of material being captured for recycling but shift more of the focus to reducing contamination in the collected recyclables stream. With the quality of recyclables impacting their use and integration into postconsumer recycled content products, educating the public on not just why they should recycle, but exactly how to properly recycle, have become a critical part of outreach and education.

"Recycle Right NY" Campaign

In 2018, DEC launched a public education campaign called "Recycle Right NY" to address contamination in the recyclables stream. Recycling programs do have some regional variations, which are discussed in more detail in Appendix E; however, there are key common materials that should be "in" and "out" of the recycling bin. The Recycle Right NY campaign aims to improve the quality and quantity of recycling and began by focusing on one item per month that is recyclable and should be in the bin or is a common contaminant and should be out.

In 2019, to continue and expand the scope and reach of the Recycle Right NY campaign, with funding from the Environmental Protection Fund (EPF), DEC established the New York State Center for Sustainable Materials Management at SUNY College of Environmental Science and Forestry (ESF). One of the many services the

Center provides is the continuation and growth of the Recycle Right NY program, including a stand-alone website for the campaign. Also, as part of this initiative, Syracuse University is partnering with ESF to handle much of the Recycle Right NY campaign.

Since its inception, the Recycle Right NY campaign has provided free tools and resources for counties, cities, municipalities, schools, private waste collectors, facilities, and others to support informing and inspiring residents to recycle better and to reduce confusion about recycling. Resources include social media, e-newsletters, and custom graphics that are distributed to recycling stakeholders (facilities, private waste collectors, county and municipal recycling coordinators, schools, etc.) and others in the community. Educational resources consistently focus on and amplify waste reduction and recycling messages. Recycle Right NY is complemented by DEC Delivers e-newsletters and DEC's social media accounts.

Growth of the Recycle Right NY program through the NYS Center for Sustainable Materials Management includes a stand-alone webpage at https://recyclerightny.org/, serving over 20,000 as of June 2022, with expanded resources and increased stakeholder engagement and training resources. Resources include:

- The searchable NYS Recyclopedia – a search tool and guide that provides reduction, reuse, and recycling instructions for more than 300 common household items;
- A *Know Your Local Guidelines* tool that provides links to the recycling rules for every municipal recycling program in the state; and
- Tips for "recycling right" and free social media kits with enhanced graphics.

The webpage has accessibility options, and resources are available in other languages, ensuring increased access to all NY residents. The Recycle Right NY program has also experienced growth across its social media accounts with an Instagram reel reach total of approximately 10,000 as of June 2022. The Recycle Right NY team also regularly interacts with recycling stakeholders throughout the state by surveying stakeholders to ensure maximum relevancy of resources and providing direct technical assistance to municipalities on sustainable materials management related topics. These resources and programming along with continued statewide messaging from the Recycle Right NY campaign will continue to improve recycling material streams across New York State.

Additionally, through the New York State Environmental Protection Fund (EPF), DEC has also funded behavioral science research by SUNY Buffalo to collect data on New York residents' attitudes and knowledge about recycling and waste reduction. This research is currently helping to inform the Recycle Right NY campaign and will help inform future outreach and education programs, including a large-scale statewide public service announcement (PSA) campaign to address waste reduction and recycling education. This research will also be used to develop guidance documents and reports

that will assist communities with improving their recycling outreach and education efforts.

Other Outreach Efforts

Educational resources on waste reduction and recycling are provided to the public consistently through DEC Delivers e-newsletters and DEC's social media accounts and filtered down through communities for their programs. As of June 2022, DEC's Solid Waste & Recycling Newsletter has 53,113 subscribers.

DEC also continues to have a presence at in-person outreach events with new creative hands-on tools to teach about reducing recycling contamination, reducing the use of single-use items, and the importance of sustainability.

DEC has also increased education to promote specialized recycling programs that the public can use to manage household materials that are recyclable but not commonly included in residential recycling programs, such as textiles, batteries, film plastics, and electronics. Often, the public knows these materials can be recycled but improperly place them in household recycling bins, but when materials are collected in that manner, they instead become contamination for the other recyclables. DEC has also supported communities in their efforts to try new, innovative strategies to combat recycling contamination, such as new apps that assist with educating residents about their recycling programs and cart check programs.

Since the release of the *Beyond Waste* Plan in 2010, DEC Regional Recycling Contacts have been established in each of the nine DEC regional offices, who are targeted to dedicate at least 25% of their time to recycling activities. These regional contacts located throughout the state work closely with the local recycling coordinators in the counties, cities, and municipalities in their region; take recycling questions from the public; and attend outreach events to educate the public. Some Regional Recycling Contacts have also assisted other DEC programs with compliance efforts, such as educating business owners about the requirements of the New York State Bag Waste Reduction Law and Plastic Bag Reduction, Reuse and Recycling Act.

Regarding education, DEC has gone above and beyond what was envisioned in the recommendations of the *Beyond Waste* Plan by staying relevant with new communication strategies and partnerships, and developing and supporting new creative outreach and education tools to promote education of the latest trends in waste reduction and recycling. Education and outreach staff have attended advanced digital marketing and immersion trainings to ensure they are using the most up-to-date and innovative strategies available to educate the public, ensuring the education strategies being employed resonate with current attitudes and behavior of the public. DEC also ties into national and global days of sustainable materials management celebration and action, such as Plastic Free July®, World Refill Day, World Oceans Day®, Buy Nothing

Day, America Recycles Day®, and others to inspire the public to participate and lead by example.

2. Local Solid Waste Management Planning

In 2010, about 70% of the 64 planning units either had expired Local Solid Waste Management Plans (LSWMPs) or never had an approved LSWMP. In the early 2010s, this trend continued to increase, although some planning units began to submit draft plans. The backlog of draft LSWMPs in a queue for review by DEC became significant. In 2015, the program was restructured, and the pace for LSWMP reviews increased greatly in the following years. The primary focus of the program continued to be to assist in comprehensive solid waste management planning at the local level and to establish an open and collaborative relationship with planning units and municipalities to support their planning efforts. Additional technical assistance and tools for LSWMP evaluation and development were developed by DEC.

The Part 360 series regulation revisions that became effective in 2017 were instrumental to the restructuring of the program. LSWMPs are required to be a 10-year planning period and have updates submitted and approved by DEC every 2 years. The contents of a LSWMP include the requirement that the local government evaluates and implements, to the greatest extent possible, programs that promote waste prevention and reuse of materials, education and outreach, volume-based pricing structures, recovery of organics, and other materials, enforcement, and other initiatives. Additionally, to obtain funding under the municipal waste reduction and recycling Municipal Waste Reduction and Recycling (MWRR) grant program, the municipality must show that the project is consistent with its LSWMP. This promotes the implementation of the programs in their LSWMPs and the objectives of the State's *Solid Waste Management Plan*.

As of December 2021, there were 69 planning units in the state and 43 non-affiliated municipalities, which are Towns, Villages, or Cities that are not specifically aligned with any of the 69 established planning units. As of December 2021, 54% of the planning units in the State have approved or are in the last stages of approval, 29% have submitted a draft plan, and 17% are operating under an expired LSWMP or in the absence of one. Two out of the 43 non-affiliated municipalities have an approved Comprehensive Recycling Analysis (CRA), which is an analysis required for non-affiliated municipalities that includes the waste reduction and recycling components of an LSWMP.

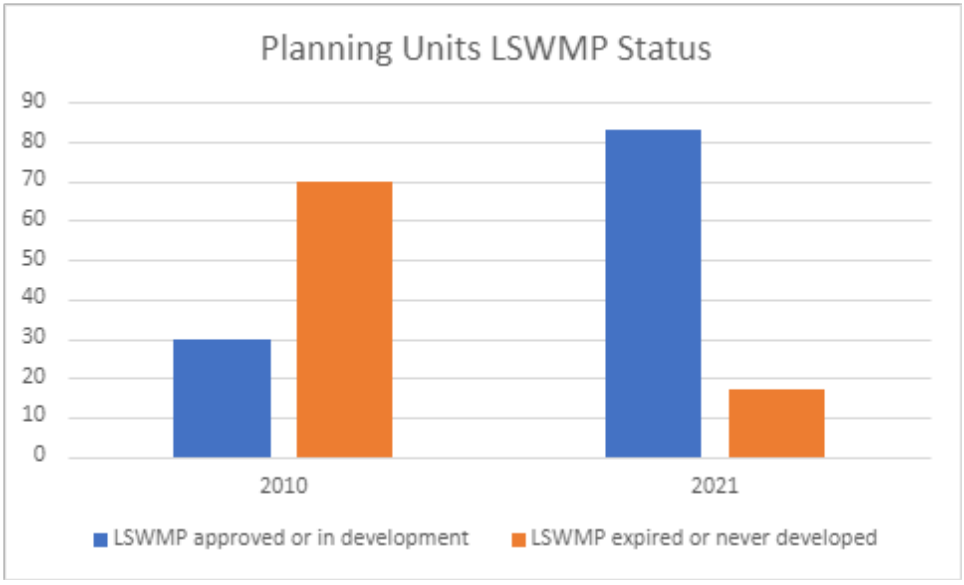


Figure B.1. Status of planning units' Local Solid Waste Management Plans (LSWMPs)

Figure B.1 shows the status of LSWMPs in the state. DEC remains steadfastly committed to assisting planning units with developing an LSWMP representative of their planning unit. DEC will continue to offer technical assistance to local governments around the state through a combination of one-on-one meetings and helping foster the use of the tools available to address LSWMP development and implementation challenges through DEC's website.

3. State Assistance Programs

DEC administers state assistance programs for waste reduction, recycling, and household hazardous waste (HHW) programs. The MWRR program, funded by the EPF, is the financial assistance backbone of municipal recycling infrastructure in New York State.

The MWRR program offers a recycling grant program for municipalities that provides up to 50% reimbursement for:

- Capital (trucks, recycling facilities, containers) costs
- Recycling Coordinator salaries
- Waste reduction and recycling education, outreach, and planning projects
- HHW collection and management costs

In 2016, there was a one-time budget appropriation of $3 million in the EPF for electronic waste (e-waste), providing funding to municipalities for a three-year period through 2018.

Table B.1. MWRR funding from the EPF since 2010

Year	Amount
2010	$6.639 million
2011–2012	$6.435 million/yr
2013–2014	$7.0 million/yr
2015	$7.5 million
2016–2020	$14 million/yr
2021	$15.3 million
2022	$19 million

From 1993–2020, DEC invested over $240 million in funding for waste reduction and recycling programs, which has supported 2,024 projects.

Table B.2. MWRR funding since 1993

Grant Type*	Number of Projects Funded	Total Funding Provided
EPF recycling grants	736	$ 144,768,013
CWCA Bond Act recycling grants	143	$ 50,000,000
1972 Environmental Quality Bond Act grants	6	$ 4,323,321
EPF HHW grants	1059	$ 49,858,922
EPF e-waste grants	283	$ 3,000,000
TOTAL	**2,227**	**$ 251,950,256**

*Grants for food donation and food scraps recycling are discussed in Section 10. Organics Reduction and Recycling

In addition, the EPF provides funds for projects related to municipal landfill closure and municipal landfill gas management. DEC provides 50% reimbursement grants for the closure of municipally owned landfills and for projects at municipally owned closed landfills that promote improved air quality at solid waste landfills, capture greenhouse gases, and encourage energy recovery from landfill gas. Funding for each project is capped at $2 million. These programs have been provided between $250,000 to $300,000 in each budget cycle in recent years. The waiting list for grant funding is currently at 10 projects with a total funding need of over $10 million.

The lack of flexibility in the MWRR financial assistance programs in the past has previously resulted in an inability to target resources towards new priorities or emerging issues. The revised Part 369 regulations, effective November 4, 2017, provide DEC with additional flexibility to provide more holistic support to help underwrite integrated programs. The authority to provide targeted funding to address specific issues in a timely manner is a key improvement enacted under these new regulations. One of these new target areas has been Organics, with specifically targeted funding provided in the EPF since 2019, which is discussed in Section 10. Organics Reduction and Recycling.

4. GreenNY/Executive Order 4

The procurement of green products can drive the market for products made with recycled content and reduce waste. Through the GreenNY initiative, New York leverages tremendous purchasing power to drive markets to produce products that utilize recycled content, generate less waste, and are in alignment with circular economy principles. The GreenNY initiative drives State procurement of green products in accordance with Executive Order 4 on State Green Procurement and Agency Sustainability, and Executive Order 18, which restricts State purchases of bottled water. The GreenNY procurement effort is also aided by State Finance Law Section 165. This policy requires State entities to purchase recycled, remanufactured, or recyclable commodities even when these commodities are 10–15% more costly than comparable products.

With these State programs, purchasing green, postconsumer products is made easier and more accessible. The New York State Office of General Services' (OGS) Procurement Services manages about 1,500 State purchasing contracts, many of which contain environmentally friendly products and services. As a part of the GreenNY initiative, OGS established a Green Procurement Team in 2017 to make it easier and more cost-effective for State agencies to purchase green products. A list of centralized contracts and Preferred Source offerings which contain green products and a list of competitively priced green products offered on State contract is maintained for the use of State purchasers.

The GreenNY initiative has established a total of 53 green procurement specifications covering approximately 94 different commodities, services, or technology products to be purchased by the State, which must meet the following criteria:

- Reduce or eliminate the health and environmental risks from the use or release of toxic substances;
- Minimize the risks of the discharge of pollutants into the environment;
- Minimize the volume and toxicity of packaging;
- Maximize the use of recycled content and sustainably managed renewable resources; and
- Provide other environmental and health benefits.

The procurement of green products by the State continues to spread knowledge and awareness of the importance of purchasing products containing postconsumer and recycled content. This stimulates the market for green products and sets an example for other purchasers to follow. While current State policies only require the purchase of green products by executive branch government agencies, the GreenNY initiative will likely influence purchasing decisions by other government jurisdictions.

5. Recycling-Related Research

In 2019, New York State launched a nation-leading academic collaboration on material science, public behavior, and recycling innovation. Recognizing the need to build more resilient recycling markets—a harsh lesson learned from the 2018 recycling market crash driven by China's imposition of exceptionally high-quality standards–DEC has invested $20 million into partnerships with several SUNY schools, targeting research and recycling initiatives focused on several areas, including mixed plastic, glass, and low-grade paper recycling infrastructure; waste composition analyses; and recycling education. These partnerships and research efforts continue and include the following:

Material Evaluation and Market Focus

SUNY College of Environmental Science and Forestry (ESF)

DEC entered into an initial five-year, $5.7-million partnership with the SUNY College of Environmental Science and Forestry (ESF) in Syracuse to help establish the New York State Center for Sustainable Materials Management (Center for Sustainable Materials Management) to help reinvigorate the State's recycling industry. The Center for Sustainable Materials Management initially focused its work in six areas:

- Promoting waste prevention and reduction – focusing on packaging reduction and product stewardship;
- Encouraging closed-loop, responsible purchasing;
- Developing economic markets for recyclables, fostering entrepreneurship, and helping convert manufacturing to use recycling feedstock;
- Launching a comprehensive community outreach and public education campaign, and facilitating additional stakeholder engagement;
- Identifying new methods to manage non-recyclable fibrous materials through the development of composting options; and
- Identifying new methods to manage non-recyclable fibrous materials through the development of unique conversion options.

Several of the work area projects focus on addressing the challenges facing paper recycling markets in New York State and researching the alternative technologies, products, and markets for non-recyclable fibrous materials. DEC is also working with ESF to research the capability of composting non-recyclable papers—a unique venture that could truly revolutionize how paper products are handled. Through this research, it recommended that types of non-recyclable papers suitable for diversion from recycling facilities to composting facilities will be identified along with recommended methods for composting identified non-recyclable papers. This work could reimagine composting as we traditionally think of it and brings with it the potential to be a game-changer across the state for paper waste that is difficult to recycle, much of which currently goes to landfills. Unique work with paper also includes developing a unique process that has

two foci with global implications: 1) developing bioprocess technologies for the production of biodegradable, renewable plastic from waste paper fibers and 2) investigating the recycling of wastes from the paper-making processes by researching efforts on “sticky/gluey fibers.”

In addition, the Center for Sustainable Materials Management will facilitate statewide interagency activities across the focus areas, foster statewide job creation related to the development of recycling markets, and bridge the expertise and capacity found in academic, government, and potentially corporate partners around the nation. The Center for Sustainable Materials Management is the first of its kind in the nation, in that it is supported directly by state government, brings state government and academia together for the benefit of this industry, and tackles important issues beyond recycling, such as the development of new sustainable materials and the reduction of waste at the source.

University At Buffalo

DEC entered into an initial $1.9 million partnership with UB with a twofold objective. Research initially focused on: 1) assessing the state of the plastics recycling market, and 2) behavioral science involving recycling outreach and education messaging and methods.

Changes in recycling markets have made contamination in recycling streams a major issue, reducing the value of the materials being recycled. For recycling to continue as a viable industry, contamination must be reduced. UB researchers evaluated sorting technologies to assess the potential costs and benefits to improving recycling infrastructure. UB researchers are examining different ways to reduce plastic use, such as finding more sustainable substitutes. UB will also evaluate the effectiveness of single- versus multi-stream recycling and bottle deposit efforts, specifically as they relate to plastics contamination reduction.

Building on the initial work of UB, $4.5 million in additional resources have been added to the existing memorandum of understanding to create the New York State Center for Plastic Recycling Research and Innovation (Center for Plastic Recycling Research and Innovation) at UB where ongoing secondary materials research and market development work can continue, with the Center for Plastic Recycling Research and Innovation becoming a trusted resource to businesses and municipalities across the state and become a national leader in plastics recycling information. The goal is for the Center for Plastic Recycling Research and Innovation to become a world-recognized resource on plastics recycling and develop solutions that will decrease contamination in recycling—both in the plastics recycling stream itself, and also addressing plastics as a contaminant to other recyclable materials such as mixed paper—improve marketability and enhance markets for recycled plastics, and also develop solutions to improve plastics recycling infrastructure and examine alternatives to virgin plastics made from fossil fuels. Through the Center for Plastic Recycling Research and Innovation,

recycling will be improved in New York State and waste from plastics will be reduced, supporting New York State on a path to a circular economy.

This phase of the project will focus on the following tasks intended to be cutting-edge and push the scientific boundaries in plastics recycling.

- Mapping the reverse supply for plastics in New York State and evaluation of the structure of the collection, disposal, and recycling industries;
- Improving the efficiency of businesses involved in collecting and processing plastics;
- Plastics in waterways and marine environments;
- Plastics in New York State agriculture/food and medical industries; and
- Evaluating opportunities for advanced high-speed plastic sorting by molecular contrast infrared imaging.

The Center for Plastic Recycling Research and Innovation will also competitively fund Innovation Projects that will have a clearly defined impact. In partnership with the DEC, a Call for Proposals will be issued each year and projects will be jointly reviewed by UB and DEC. Several 12-month-long Innovation Projects (2–3) are anticipated to be funded each year. These projects will include academic projects as well as projects in partnership with New York State industry or the local communities in New York State. The Center for Plastic Recycling Research and Innovation will also be available to respond to any items of importance that arise in the plastic recycling arena.

New York State College of Ceramics at Alfred University

DEC entered into an initial $1.7 million partnership with SUNY's statutory unit at Alfred University, the New York State College of Ceramics at Alfred University (NYSCC), to bolster markets for recycled glass and improve the quality of glass available for recovery throughout New York. As a major focus of this initiative, NYSCC formed the New York State Center for Glass Innovation (Center for Glass Innovation) as a research resource for glass producers in New York State, and ultimately, nationally. The Center for Glass Innovation will play an instrumental role in helping recycling markets and municipal recycling programs find new ways to produce and recycle glass.

Recycling markets continue to experience volatility. As a result, recycling operations are struggling to find suitable markets for material, impacting local solid waste recycling efforts. Glass is the heaviest per-unit component of the municipal waste stream and is costly to process. This work will help bolster new markets to build capacity in the state and the Northeast to address these challenges.

The Center for Glass Innovation created space for basic and applied research, user facilities, and experimental glass tanks for applied, industrial-scale research, with an emphasis on creating higher value end markets for curbside-collected glass. This is the

first of its kind center in the United States where glass companies will be able to test small batches of new glass compositions in a pilot production environment.

NYSCC has a world-renowned reputation in the field of glass science and engineering and is the only institution in the country to offer a doctoral degree in glass science. Since NYSCC's glass science and engineering degree was established in 1932, thousands of graduates are in positions at the forefront of materials discovery, glass processing, and manufacturing. NYSCC's location in the Southern Tier of New York State is in excellent geographic proximity to important facilities, including Corning Inc., Guardian Glass, Anchor Glass, and Tesla/SolarCity. Other collaborators include Monofrax, St. Gobain, Owens-Illinois, and the Glass Manufacturer Industry Council.

Based on the initial work at the Center for Glass Innovation, an additional $2.5 million has been added to the $1.7 million already provided as part of a three-year agreement. Under this expanded initiative, NYSCC will expand the Center for Glass Innovation's projects and include work on:

- Accelerating recycling facility waste stream remanufacturing of glass-based waste streams using cost-effective sorting technologies. Because the impurity levels of the glass to be recycled will be higher than currently, it is imperative to demonstrate that there are paths to remanufacturing the glass into new value-added glasses with properties suitable for commercial applications;
- Determination of excitation and emission wavelengths for common waste plastics and glasses;
- Feasibility study for a wine bottle washing facility in the Finger Lakes;
- Pilot and prototype testing of recycled glass seawall off Long Island – Silica-X Labs and winery coalition partnership;
- Extended testing for micro-bead applications, including farming and DOT partnerships
- Exploiting mixed wastes in recycled waste streams for value-added glasses; and
- Atomistic modeling to understand recycled glass melt behavior.

Recycling Education Focus

SUNY College of Environmental Science and Forestry (ESF)

As noted above, DEC entered into an initial five-year, $5.7-million partnership with ESF in Syracuse to help establish the Center for Sustainable Materials Management. A primary focus area of the Center for Sustainable Materials Management was launching a comprehensive community outreach and public education campaign and facilitating additional stakeholder engagement. In 2019, to continue and to expand the scope and reach of the Recycle Right NY campaign initiated by DEC, the Center for Sustainable Materials Management provided the continuation and growth of the Recycle

Right NY program, including a standalone website for the campaign. Also, as part of this initiative, Syracuse University is partnering with ESF to handle much of the Recycle Right NY campaign which is described in more detail in Section 1. Outreach and Education.

University At Buffalo

As noted above, DEC entered into an initial $1.9 million partnership with UB. One of the focus areas was research focused on behavioral science involving New York State residents' attitudes and knowledge about recycling, and recycling outreach and education messaging and methods.

Understanding New York State residents' knowledge and attitudes about recycling and evaluating the messaging and mediums available to best advance education and outreach statewide is critical to reducing contamination, maintaining the value of recyclables, and efficiently and effectively using resources. This work will support the development of recycling outreach and education methods based on science and data that can best guide the public to recycle right.

Additional work at the Center for Plastic Recycling Research and Innovation at UB related to understanding knowledge, contemporary attitudes toward recycling, and current recycling behaviors have helped in designing communication strategies that increase recycling knowledge and decrease contamination in the recycling stream, and understanding consumer knowledge and attitudes about reusables and single-use items. These efforts will continue with additional funding.

Waste Composition Analysis and Recycling Processing Focused

Stony Brook University

DEC entered into an initial five-year, $4.2-million partnership with Stony Brook University that focused its work in the following areas:

- Perform solid waste characterization studies on recyclables and waste that analyze how these materials are processed to create more marketable materials;
- Through collaborations with multiple recycling facilities, university research, and DEC, determine the efficiency of current recycling programs across the state, as well as the type of materials remaining in the waste stream;
- Create a user-friendly rudimentary cost analysis tool that will allow municipalities to investigate impacts on recovery rates and program costs related to the addition or deletion of specific materials from existing curbside collection programs to allow for optimization of programs and for more frequent and accurate consideration of program expansions;

- Conduct case studies on single-stream recycling and investigate the development of modern recycling markets; and
- Analyze the highest and best use for recycled products and the circular economy to determine the economic and technical constraints that lead to limitations on “closing the loop” in recycling.

6. Returnable Container Act (Bottle Bill)

The New York State Returnable Container Act, also known as the "Bottle Bill", is a tremendous success. Since its passage in 1982 and implementation in 1983, the Bottle Bill has reduced roadside container litter by 70%. Requiring the deposit on beverages in New York State for nearly 40 years has been an important element in New York State's overall waste reduction and recycling programs and achievements. The redemption rate for deposit beverage containers has averaged 65%—far beyond the reported 24% recycling rate in states that do not require a deposit and where beverage containers are only collected through municipal recycling programs. New York State's Bottle Bill continues to be a solid anchor component of the overall waste reduction and recycling program by:

- Having a positive and continuing impact on both litter and solid waste control;
- Helping to create and continue to foster a recycling ethic in New York State;
- Reducing the burden to municipalities and private waste collectors by successfully internalizing the cost of solid waste management associated with the sale of beverages covered by the law; and
- Being fully compatible with and enhancing local municipal recycling programs.

2020 Bottle Bill Accomplishments

- 8.6 billion deposit containers sold
- 5.5 billion beverage containers redeemed
- 64% redemption rate
- 241,505 tons of plastic, glass, and aluminum recycled
- $125.7 million in unclaimed deposits remitted to New York State with $23 million of that dedicated to the State's EPF

Bottle Bill Amendments

When originally enacted in 1982, the Bottle Bill included carbonated soft drinks, mineral water, soda water, beer, and other malt beverages. The legislature has amended the Bottle Bill several times in its 40-year history. The more significant amendments include:

- 1984 – prohibited metal containers with detachable parts if they weren't biodegradable or photodegradable;
- 1988 – added wine products to the list of covered beverages;
- 2009 – added non-sugar water containers, as well as requiring the deposit initiator of beverages to register and remit 80% of unclaimed deposits to Department of Taxation and Finance (DTF);
- 2013 – amended to guarantee that $15 million of the unclaimed funds would be directed to the EPF and added language and criminal penalties to prevent fraud; and

- 2018 – increased the guarantee of funds sent to the EPF to $23 million.

Bottle Bill Data

Table B.3. Overview of bottle bill redemption rate and total payments received by NYS from registered deposit initiators from 2011–2021

Year	Statewide Redemption Rate (%)	Total Payments Received by NYS from Registered Deposit Initiators (million $)
2011	61	$ 103.2
2012	61	$ 111.1
2013	62	$ 104.4
2014	64	$ 102.7
2015	65	$ 100.6
2016	66	$ 108.6
2017	65	$ 114.1
2018	64	$ 118.0
2019	65	$ 111.0
2020	64	$ 125.7
2021	70	$ 127.3

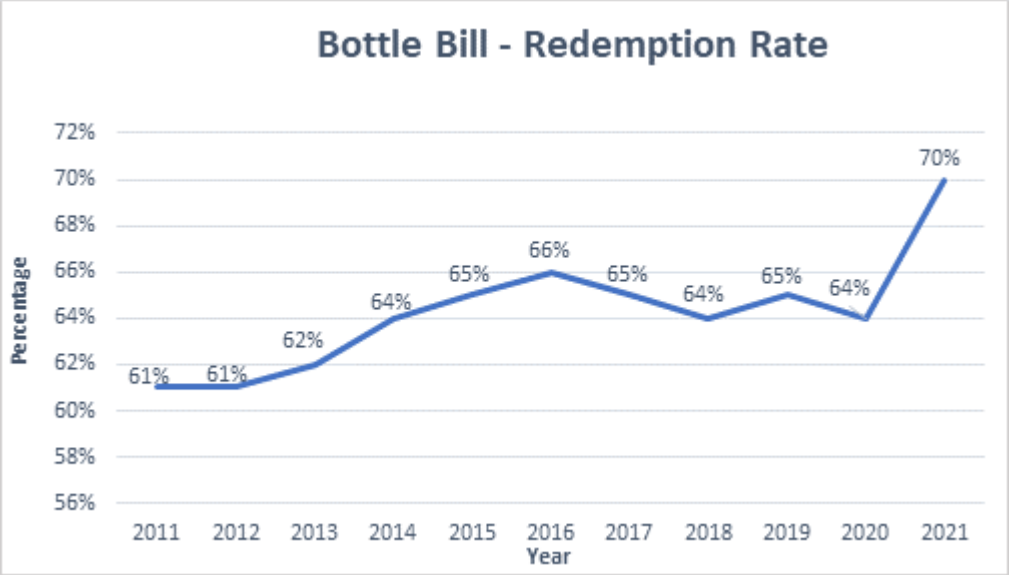


Figure B.2. Bottle Bill redemption rate from 2011–2021

New York remains committed to the Bottle Bill, with plans to update the 6 NYCRR Part 367 regulations to facilitate the redemption and recycling of beverage containers and reduce fraudulent activity. DEC will also continue working with our partners at the New York State Department of Taxation and Finance and the Office of the New York State Attorney General to ensure the integrity of the program.

Also, there have been several recommendations to expand the Returnable Container Law to include various additional beverage containers ranging from most non-carbonated, non-alcoholic beverages (such as sports drinks, energy drinks, fruit and vegetable beverages, and ready-to-drink teas and coffees) to wine and liquor. Proposals to raise the deposit from 5 cents per container to 10 cents have also been offered. While none of these proposals have passed, DEC is supportive of efforts that will enhance the recovery of additional high-quality materials for recycling.

7. Plastic Bags and Film Plastic

In March 2017, the New York State Plastic Bag Task Force was created by the Governor. The Task Force was chaired by DEC Commissioner, Basil Seggos, and met several times to develop a uniform, comprehensive, and equitable solution to the challenge of plastic bag waste. In 2017, it was estimated that New Yorkers used 23 billion bags annually—each for about 12 minutes. At that time, EPA data showed only approximately 12% of postconsumer plastic bags and other film plastics were recovered for recycling each year in the U.S., indicating that most of the material was ending up in landfills, municipal waste combustors (MWCs), waterways, and streets. In January 2018, the New York State Plastic Bag Task Force report, titled, *An Analysis of the Impact of Single-Use Plastic Bags – Options for New York State Plastic Bag Legislation*, was released. The report analyzed the impacts of single-use plastic bags and provided options for legislation that could help develop a statewide solution. As a result of the Task Force and the report, the New York State Bag Waste Reduction Act was passed in 2019 and took effect on March 1, 2020.

New York State Bag Waste Reduction Act

As of March 1, 2020, all plastic carryout bags (other than a specific list of exempt bags specified in the law) became banned from distribution by anyone required to collect New York State sales tax. The law affects anyone required to collect New York State sales tax, bag manufacturers, and consumers. Cities and counties are also involved. Under the law:

- Cities and counties are authorized to adopt a five-cent paper carryout bag reduction fee. This means that in these cities or counties, a consumer will be charged five cents for each paper carryout bag provided at checkout. In areas that have adopted the five-cent paper carryout bag reduction fee, the fee does not apply to recipients of SNAP (Supplemental Nutrition Assistance Program) and WIC (Women, Infants, and Children) nutrition program. Cities or counties that opt in to the five-cent paper carryout bag reduction fee are reimbursed an amount equal to 40% of the collected five-cent fee monies collected in that city or county, with the remaining funds deposited in the EPF. The fee monies remitted back to cities or counties that choose to opt in to the five-cent paper carryout bag reduction fee are to be used for purchasing and distributing reusable bags, with priority given to distribution to low- and fixed-income communities;
- Stores covered under the New York State Plastic Bag Reduction, Reuse and Recycling Act are still required to continue collecting plastic bags and other clean and dry film plastics from consumers for recycling (e.g., film plastics including items such as bread bags and plastic wraps that come over cases of water, paper towels, and other similar items); and

- Some bags are exempt, so plastic bags may still be distributed to consumers in a few specific circumstances, such as a bag provided by a pharmacy to carry prescription drugs, and bags for bulk items such as fruits and vegetables.

New York State Plastic Bag Reduction, Reuse and Recycling Act

In addition to the 2019 New York State Bag Waste Reduction Act, New York State's Plastic Bag Reduction, Reuse and Recycling Act has been in effect since January 1, 2009, with amendments that went into effect in March 2015. This law applies to all film plastic carryout bags and all film plastics which are defined in the law as "Uncontaminated non-rigid film plastic packaging products composed of plastic resins, which include, but are not limited to, newspaper bags, dry cleaning bags and shrink-wrap." Under the law:

- Stores with 10,000 square feet or more of retail space and chains which operate five or more stores with greater than 5,000 square feet of retail space, and which provided plastic carryout bags to its customers as a result of a product sale any time prior to March 1, 2020, are required to:
    - Establish an at-store film plastic recycling program. Stores must make collection bins for plastic bag and other film plastic recycling available to customers in a visible, easily accessible location;
    - Ensure that collected film plastic bags and other film plastics are actually recycled. Stores are required to recycle the film plastic collected and are prohibited from disposing of the collected film plastics;
    - Keep records on their program. Stores, or their agents, are required to maintain records describing the collection, transport, and recycling of film plastics for at least three years. The records must include the weight of film plastics collected and their ultimate disposition (i.e.,where they were recycled); and
    - Sell reusable bags. Stores are required to allow the use of reusable shopping bags and make them available to their customers for purchase; and
- The owner of an enclosed shopping mall is required to place recycling bins at reasonable intervals throughout the mall. Large mall stores (50,000 square feet or more of retail space) are required to establish their own plastic carryout bag recycling programs.

Following passage of the New York State Plastic Bag Waste Reduction Act, DEC held a series of meetings with industry stakeholders from across the state to invite input from the public and guide the agency's development of rules and regulations to implement the law. The Part 351 Plastic Bag Reduction, Reuse and Recycling regulations, which address the requirements of both of these laws, were adopted by DEC after a formal rulemaking process and went into effect in March 2020. These regulations address the prohibition on plastic carryout bags; allowable reusable bags; the recycling of plastic carryout bags and film plastic by stores; and the related requirements for

manufacturers. (Note: Pursuant to a court decision issued on August 20, 2020, certain portions of the regulations that authorize an additional exemption to the plastic carryout bag distribution ban of ECL §27-2803(1) for reusable bags made of non-film plastic have been declared invalid and will not be enforced: 6 NYCRR §351-1.2(f)(11) and §351-1.2 (n) (1)(ii) and (4).)

New York's ban on plastic bags went into effect as planned on March 1, 2020. Due to litigation, enforcement of the ban began on October 19, 2020. DEC has continued public education and enforcement efforts to implement the State's ban on plastic carryout bags. In conjunction with compliance and education efforts related to the Bag Waste Reduction Act, DEC has increased compliance and education efforts related to the New York State Plastic Bag Reduction, Reuse and Recycling Act. This has included the development of educational materials for consumers and regulated entities, technical assistance, and letters to regulated entities, and compliance inspections.

DEC continues to encourage New Yorkers to make the transition to reusable bags whenever and wherever they shop, and encourages anyone who witnesses violations of the plastic bag ban to fill out DEC's complaint form.

8. Expanded Polystyrene Foam Ban

In 2020, New York State adopted one of the nation's strongest statewide bans on disposable food service containers made with expanded polystyrene foam, and polystyrene foam loose fill packaging materials, commonly known as packing peanuts. Polystyrene foam is a concern for people and the environment. Foam packaging is one of the top contributors to environmental litter, causing negative impacts on wildlife, waterways, and other natural resources, as well as littering our communities and natural areas. It is lightweight, breaks apart easily, and does not readily biodegrade. When polystyrene foam ends up as litter in the environment, it can persist for a long time and may also become microplastic pollution. In addition, foam containers and loose fill packaging, such as packing peanuts, are not accepted in most recycling programs in New York State because the foam is difficult to recycle and has a low value. For these reasons, certain expanded polystyrene foam products were banned in New York State to protect the environment and our communities, and to support sustainable materials management.

Under the Expanded Polystyrene Foam Container and Polystyrene Loose Fill Packaging Ban, effective January 1, 2022:

- No covered food service provider or store (retail or wholesale) is allowed to sell, offer for sale, or distribute disposable food service containers that contain expanded polystyrene foam in New York State; and
- No manufacturer or store is allowed to sell, offer for sale, or distribute polystyrene loose fill packaging (commonly referred to as packing peanuts) in New York State.

Covered food service providers include any person engaged in the business of selling or distributing prepared food or beverages for on-premises or off-premises consumption. Examples of covered food service providers include:

- Food service establishments, caterers, temporary food service establishments, mobile food service establishments, and pushcarts as defined in the New York State Sanitary Code;
- Retail food stores as defined in article 28 of the Agriculture and Markets Law;
- Delis, grocery stores, restaurants, cafeterias, coffee shops;
- Hospitals, adult care facilities, and nursing homes; and
- Elementary and secondary schools, colleges, and universities.

Stores that are no longer allowed to sell, offer for sale, or distribute disposable food service containers or loose fill packaging that contains expanded polystyrene foam in New York State include any retail or wholesale establishment other than a covered food service provider (including non-food retail or wholesale establishments).

Manufacturers that are no longer allowed to sell, offer for sale, or distribute expanded polystyrene loose fill packaging in New York State include any person, firm, or corporation that produces or imports expanded polystyrene loose fill packaging.

Disposable food service containers made of expanded polystyrene that are banned under the law include bowls, cartons, hinged “clamshell” containers, cups, lids, plates, trays, or any other product designed or used to temporarily store or transport prepared foods or beverages, and includes any container generally recognized as designed for single use. Polystyrene loose fill packaging (commonly referred to as packing peanuts) is also banned under the law.

Exemptions include:

- Raw meat, pork, seafood, poultry, or fish sold for the purpose of cooking or preparing off-premises by the customer;
- Prepackaged food filled or sealed prior to receipt at a covered food service provider;
- Food service containers made from rigid polystyrene resin that has not been expanded, extruded, or foamed (e.g., clear plastic containers marked with a #6 resin identifier);
- A city with a population of one million or more which has a local polystyrene ban in place, including New York City; and
- Any county that enacts a polystyrene ban by local law, ordinance, or regulation that provides environmental protection equal to or greater than the state law and the county files a written declaration with DEC. All other local laws are preempted by state law.

Covered food service providers and facilities that meet certain criteria may apply for a renewable 12-month financial hardship waiver of these requirements from DEC.

Any facility, regardless of its income, operated by a not-for-profit corporation or by a federal, state, or local government agency that provides food and meals to food insecure individuals at no or nominal charge may request a financial hardship waiver of the requirements of the law. Examples include:

- Community meal programs;
- Food pantries; and
- Places of worship.

Covered food service providers that may also request a hardship waiver must meet the following criteria:

- Have an annual gross income under $500,000 per location;
- Do not operate 10 or more locations in New York State; and

- Are not operated pursuant to a franchise agreement.

Hardship waivers may be granted for one or more disposable food service containers to a covered food service provider that demonstrates that there is no alternative product of comparable cost that is not composed of expanded polystyrene foam, and the purchase or use of an alternative product would create an undue financial hardship.

The 6 NYCRR Part 353 Expanded Polystyrene Foam Container and Loose Fill Packaging Reduction regulations were adopted by DEC after a formal rulemaking process, and went into effect in April 2022. These regulations implement the provisions of the law and add a new Part 353, *Expanded Polystyrene Foam Container and Loose Fill Packaging Reduction*, that set forth the requirements of Title 30 of Article 27 of the Environmental Conservation Law. Part 353 explains the financial hardship waiver application process and how to demonstrate an undue financial hardship; provides definitions for key terms, including "comparable cost"; and provides criteria for financial hardship waiver approval, renewal, and denial.

DEC performed extensive outreach to thousands of stakeholders and created educational guidance documents in multiple languages to ensure access to information about New York State's Foam Ban. In addition, DEC has created a free social media toolkit to promote the ban and an *Alternatives to Single-Use Expanded Polystyrene Foam Food and Beverage Containers and Expanded Polystyrene Foam Loose Fill Packaging Reference Guide.* The guide provides a glossary to navigate "green terms" and explanations of the different foam-free container and packaging materials and items available, as well as descriptions, uses and end-of-life considerations for each option. An online complaint form that can be used by anyone witnessing violations of New York State's Foam Ban is also available online. For more information on New York State's Foam Ban.

9. Product Stewardship/Extended Producer Responsibility (EPR) Programs

A key strategy to achieving the 2032 and 2050 vision and Goals of the Plan is product stewardship and Extended Producer Responsibility (EPR), to minimize the environmental impacts from the improper end-of-life disposal of products and packaging. New York State has several product stewardship and EPR programs in place, including programs for electronic waste, rechargeable batteries, mercury thermostats, pharmaceuticals, paint, and carpet. In addition to the current programs, DEC staff work to provide technical assistance on the development of these programs for many products.

The most expansive foray into EPR proposals has most recently been for packaging and paper products. An EPR program for packaging and paper products could affect approximately 40% of the municipal solid waste (MSW) stream.

The overarching concept of product stewardship is a shared responsibility approach that can be either voluntary or required by law. EPR is a mandatory type of product stewardship requiring the passage of legislation to ensure a manufacturer's responsibility for its products extends to postconsumer management of those products. EPR policy shifts the financial and managerial responsibility (with government oversight) of end-of-life products upstream to the manufacturer and away from the public sector and consumers. EPR programs can also be structured to provide incentives to manufacturers to incorporate environmental considerations into the design of their products and packaging. The effects of comprehensive product stewardship and EPR can thread across waste prevention, reduction, reuse, and recycling. As the fiscal responsibility for the final management of the product or commodity becomes the manufacturer's responsibility, a manufacturer is now incentivized to move toward recycling of any end products. As end-of-life management responsibilities for the manufactured are considered as part of the overall costs of an end-product, it helps drive future product and commodity decisions toward waste prevention, reduction, and reuse ideals as part of the product or commodity design. This includes designing for better recyclability for any materials that may remain at the end of product or commodity's useful life.

Product-specific laws have passed for electronic waste (E-waste), rechargeable batteries, mercury thermostats, postconsumer paint, cell phones, pharmaceuticals, and carpet.

Status of Current New York State EPR and Product Stewardship Programs

E-waste

The New York State Electronic Equipment Recycling and Reuse Act (E-waste Law) was signed into law on May 28, 2010. The E-waste Law requires manufacturers who sell or offer for sale covered electronic equipment (CEE) (i.e., computers, computer peripherals, televisions, small scale servers, and small electronic equipment) in New York State, to register their brands and types of CEE with DEC, and establish a convenient acceptance program for the collection, handling, and recycling or reuse of electronic waste, free of charge to most consumers. DEC adopted 6 NYCRR Subpart 368-3 regulations in March 2022 to help with the implementation of the program.

Table B.4. E-waste removed from the waste stream from 2011 - 2020

E-Waste Removed from the Waste Stream by Year (Millions of lbs.)	
2011	44.8
2012	77.5
2013	99.5
2014	96.8
2015	101.2
2016	101.1
2017	106.2
2018	98.0
2019	100.2
2020	97.0
Total	922.3

From April 2011 through December 2020, over 922 million pounds of electronic waste from New York State consumers were sent for recycling or reuse, rather than by being sent to landfills or combustors, or by improper disposal methods.

The 2020 E-waste collection rate was roughly 4.8 lbs. per capita.

A one-time budget appropriation in 2016 in the EPF for electronic waste of $3 million provided funding to municipalities for a three-year period from 2016 through 2018. Through this program, approximately 100 municipalities received grants for reimbursement of 50% of their eligible expenses of managing over 45,038,648 pounds of E-waste.

While overall a successful EPR program, the E-waste Law is not without its challenges. Some of these challenges include:

- A lack of public education and outreach by manufacturers resulting in poor consumer awareness;
- The ineffectiveness of mailback return as an acceptance method;
- Manufacturers not registering with DEC;
- Bulky and difficult to manage CEE, such as cathode ray tubes (CRTs), have been discouraged from collection; and
- Manufacturers have not covered all costs associated with the implementation of their programs as the law intended, and in consequence, manufacturer program partners, including municipalities, have continued to face high costs for recycling e-waste.

To help address these challenges and to supplement DEC's experience administering the Act, DEC held several public rulemaking workshops during the fall of 2016, to help with its understanding of the issues impacting the E-waste regulated community. This effort led to the development of regulations to both strengthen and provide clarity to the existing provisions of the Act and to improve overall program performance. These regulations became effective on March 10, 2022.

More information on the E-waste Law can be found by visiting DEC's webpage at http://www.dec.ny.gov/chemical/65583.html.

Rechargeable Batteries

The New York State Rechargeable Battery Law (Rechargeable Battery Law), signed into law on December 10, 2010, requires manufacturers of rechargeable batteries to implement a statewide, manufacturer-funded program, either individually or in combination with other manufacturers, to collect and recycle rechargeable batteries at no cost to consumers. It also includes a disposal ban. Rechargeable battery chemistries covered under the Rechargeable Battery Law include nickel-cadmium, sealed lead, lithium-ion, nickel-metal hydride, or any other dry cell battery capable of being charged and weighing less than 25 pounds.

Many battery manufacturers have joined together and implemented their collection and recycling plans through the producer responsibility organization (PRO) "Call2Recycle". Call2Recycle is responsible for most rechargeable battery collections throughout New York State. From 2011 to 2021, Call2Recycle has collected over 2.8 million pounds of rechargeable batteries from consumers in New York State for safe and responsible recycling.

Table B.5 Pounds of rechargeable batteries collected from 2011 - 2021

Rechargeable Battery Collections by Year (in lbs.)	
2011	274,250
2012	242,061
2013	281,513
2014	261,231
2015	259,800
2016	277, 934
2017	280,912
2018	225,447
2019	268,751
2020	221,039
2021	225,599

In addition to a manufacturer-run recycling program, beginning June 8, 2011, the Rechargeable Battery Law required retailers who sell rechargeable batteries and rechargeable battery-containing products to post signage informing consumers they accept rechargeable batteries for recycling free of charge. Information on the Rechargeable Battery Law can be found by visiting DEC's webpage at http://www.dec.ny.gov/chemical/72065.html.

Lead-Acid Vehicle Batteries

The lead-acid battery law took effect on January 1, 1991. The law requires retailers and distributors who sell lead-acid batteries to accept used lead-acid batteries from customers. This law requires the retailer to charge a customer a $5.00 return incentive payment if a customer doesn't return an old battery at the time of purchase. The retailer who sold the battery will refund the $5.00 payment if the customer returns a battery within 30 days. Retailers may keep any unredeemed payments.

Mercury Thermostats

The New York State Mercury Thermostat Collection Act (Thermostat Law), signed into law on December 18, 2013, requires thermostat manufacturers to establish and maintain a convenient program for the collection, transport, and responsible recycling of out-of-service thermostats, free of charge to consumers. Thermostat manufacturers have collectively joined together and are represented by the PRO, Thermostat Recycling Corporation (TRC). All thermostat wholesalers are obligated to act as collection points to collect out-of-service mercury thermostats from consumers at no charge to be responsibly recycled.

From 2014 to 2021, more than 42,000 whole mercury thermostats and more than 18,800 loose mercury switches have been collected in New York State, resulting in more than 424 pounds of mercury being safely recycled and kept out of the waste stream.

Table B.6 Quantity of thermostats and switches collected in New York and the resulting pounds of mercury recycled from these products

Year	Number of Thermostats	Number of Switches	Pounds of Mercury
2014	4,786	138	40.13
2015	6,466	13,515	83.79
2016	5,857	1,882	59.8
2017	7,703	618	84.9
2018	5,619	1,400	51.8
2019	4,963	74	39.2
2020	3,384	814	30.3
2021	3,639	443	34.5

The Thermostat Law has a sunset date of January 1, 2024. DEC will recommend a legislative amendment to extend the program beyond 2024.

For more information on the Thermostat Law, please visit the DEC website at http://www.dec.ny.gov/chemical/92655.html.

Postconsumer Paint

The New York State Postconsumer Paint Collection Program was signed into law on December 16, 2019. Under the law, the paint industry is required to establish a program that “minimizes public sector involvement in the management of postconsumer paint by reducing its generation, promoting its reuse and recycling, and establishing a system to collect, transport, reuse, recycle and properly dispose of postconsumer paint using environmentally sound management practices.” Funding for the program is through an upfront consumer fee manufacturers will add to the price of paint charged to distributors and retailers, who would pass the fee on to the consumer.

Paint producers, or their representative(s), were required to submit a postconsumer paint collection plan to DEC by July 1, 2020, for review. PaintCare Inc., the PRO representing the paint industry, submitted a program plan to DEC which was conditionally approved on December 1, 2021, and the postconsumer paint collection program implementation began on May 1, 2022.

For more information on the Postconsumer Paint Collection Program, please visit the DEC website at http:www.dec.ny.gov/chemical/120606.html.

Cell Phones

The Wireless Telephone Recycling Act became effective on January 1, 2007, and requires wireless telephone service providers that offer wireless phones for sale to provide for free recycling of up to 10 cell phones from any person or provide free shipping for those phones to a recycling program. The law is applicable to all wireless service suppliers who engage in the retail sale of wireless phones, whether the sales are online or in their stores, other stores, outlets, or kiosks.

Pharmaceuticals

The New York State Drug Take Back Act became effective on January 6, 2019. The law requires manufacturers to establish, fund, and manage a State-approved drug take back program wherein pharmacies of 10 or more locations, as well as non-resident (mail-order) pharmacies, provide consumers with preapproved methods of collection, free of charge to the consumer and the pharmacy, for the safe and convenient collection and proper disposal of unused covered drugs.

The New York State Department of Health (DOH) has promulgated regulations for the program, 10 NYCRR 60-4, which became effective March 10, 2021. DEC was consulted during the review and approval process.

More information on this effort can be found on the DOH website at: Drug Take Back .

10. Organics Reduction and Recycling

In March 2015, the Organics Reduction and Recycling Section was created within DEC's Division of Materials Management. This section gives specialized attention to the management of organic materials via regulatory oversight of organics recycling facilities, implementation of legislation, development of funding opportunities, and outreach and education initiatives.

Organic wastes include a broad range of materials, such as food scraps, yard trimmings, and biosolids. Other organics in the waste stream include food processing waste, animal mortalities, fats, oils, greases, and food-soiled paper. Manure is a significant organic waste stream from agriculture but is not addressed in this Plan. From farm wastes to residential lawns, kitchen food scraps to biosolids, managing these materials through reduction, reuse, and recycling is a high priority in New York State.

Recognition of Climate Impacts

Reducing methane, a potent greenhouse gas four times stronger than CO_2, is a top Climate Leadership and Community Protection Act (CLCPA) priority. Sustainable organics management is central to reducing the climate footprint of materials

management. CLCPA's Scoping Plan takes a comprehensive look at all aspects of the State's operations and how they impact climate change. Within the waste sector, the Scoping Plan acknowledges that methane leaking from landfills is the largest contributor of harmful emissions. Removing organics, such as food scraps, from landfilling is one of the main means to reduce those emissions. Therefore, DEC's efforts to increase food donation and food scraps recycling are supportive of the State's climate goals.

Food Donation and Food Scraps Recycling Law

In 2019, New York State passed the Food Donation and Food Scraps Recycling Law. Effective January 1, 2022, large generators of food scraps (defined as generating an annual average of two tons per week or more) must donate edible food and recycle all remaining food scraps if they are within 25 miles of a viable organics recycler. This law excludes New York City, hospitals, nursing homes, adult care facilities, and K–12 schools.

To support efforts of the law, New York State has partnered with Feeding NYS to provide donation technical assistance to businesses required to comply with the Food Donation and Food Scraps Recycling law. In 2022, DEC began funding a technical assistance program in partnership with Center for EcoTechnology to expand food scraps reduction and food scraps recycling efforts. This program includes direct assistance to businesses, institutions, schools, and other entities in managing their food scraps; a hotline for any organics management-related questions; development of specialized web pages and social media campaigns; assistance to organics recyclers on operations and product marketing; expansion of compost and digestate markets; and working with transporters, depackagers, and transfer facilities to improve organics recycling effectiveness.

Funding of Grant Programs and Research

Funding is an important element of a strategy to increase both food donation efforts and food scraps recycling in New York State. DEC has been very aggressive in providing multiple funding opportunities since the issuance of the *Beyond Waste* Plan. Through these funding opportunities, DEC has been able to fund municipalities, emergency food relief organizations, food banks, and research programs at universities. DEC's funding opportunities have been successful in supporting all aspects of the organics diversion system, including the donation of wholesome food, increasing organics recycling capacity, and research on expanding markets for compost end-use.

Municipal Funding for Food Scraps Recycling Initiative ($2,000,000)

DEC is providing funds to assist municipalities in starting or expanding municipal food scraps recycling programs. Priority is being given for eligible projects serving PEJAs and DACs.

Municipal Funding for Wasted Food Reduction, Food Donation and Food Scraps Recycling ($3,300,000)

Assisted 27 municipalities in implementing wasted food reduction, food donation, and food scraps recycling programs.

Feeding NYS ($2,800,000)

- $500,000 - Funding to provide donation technical assistance for businesses that are required to comply with the Food Donation and Food Scraps Recycling law
- $1,500,000 - Funding to assist in COVID-19 relief, specifically with the movement of dairy and produce from New York State farmers to food banks.
- $800,000 - Funding for staffing and outreach and education needs at the 10 regional food banks.

Food Bank of Central New York ($75,000)

Funding to build three mobile cold-storage trailers to serve as mobile cold storage for perishable goods for various emergency feeding programs across Central New York.

Emergency Food Relief Organizations ($1,100,000)

Funding to 84 emergency food relief organizations to increase the amount of whole food to those in need.

SUNY College of Environmental Science and Forestry ($1,500,000)

DEC is funding research to identify new methods to manage non-recyclable fibrous materials via composting. This is part of a larger $5.7-million partnership with SUNY ESF to help establish the New York State Center for Sustainable Materials Management and to help reinvigorate the State's recycling industry discussed in more detail in Section 5. Recycling-Related Research.

Cornell University ($781,000)

- $276,000 - Funding to research innovative ways to utilize acid whey from Greek yogurt.
- $85,000 - Funding to research livestock mortality management and capacity in New York State and sustainable disposal methods for livestock.
- $200,000 - Funding to research the impacts of the Food Donation and Food Scraps Recycling law on farms and food processors.
- $100,000 - Funding to research the use of food scraps for animal feed.

- $120,000 - Funding to develop guidance and assistance to farms with anaerobic digesters on how to incorporate food scraps and food processing waste to their operations.

Cornell Waste Management Institute ($200,000)

Funding to research compost use on farms and as erosion control.

Additional Funding Efforts

Funding for organics management related projects has also been distributed through DEC's Climate Smart Communities Grant program and DEC's Municipal Waste Reduction and Recycling State Assistance Program.

New York State Empire State Development (ESD) provided $2,000,000 in funding to Feeding NYS for the 10 regional food banks to purchase trucks and equipment to increase their cold storage capacity. Additionally, ESD provided $4,000,000 through the New York State Pollution Prevention Institute (NYSP2I) to fund the Food Waste Reduction and Diversion Reimbursement Program. The program provides reimbursement to New York State businesses or not-for-profits that generate, transport, or recycle greater than one ton of food waste per week.

Partnership with the New York State Pollution Prevention Institute

DEC has collaborated with the NYSP2I, funded by DEC through the EPF, to provide technical assistance and practical, cost-effective solutions to businesses, municipalities, and community organizations for diverting, preventing, and managing wasted food and food scraps.

This funding has allowed NYSP2I to create their Food Waste Diversion program which serves as an online clearinghouse of resources for businesses and municipalities on how they can best manage their wasted food and food scraps via reduction, donation, and organics recycling practices. NYSP2I has developed several tools including a food waste estimator calculator, food waste self-assessment tool kits, and an online map (Organics Resource Locator) that shows food waste generators, organics recycling facilities, and other relevant entities.

Industry Collaborations to Advance Organics Diversion in New York State

DEC finds great value in playing an active role in associations related to the organics industry. Accordingly, DEC is an active member in the following organizations:

- New York State Association for Reduction, Reuse and Recycling (NYSAR^3)
- United States Composting Council (USCC)

- Compost Research and Education Foundation (CREF)
- Association of State and Territorial Solid Waste Management Officials (ASTSWMO)
- Northeast Recycling Council (NERC)
- Northeast Waste Management Officials' Association (NEWMOA)

Partnerships with Other New York State Agencies

DEC regularly works with other State agencies to assist them in organics recycling activities and to ensure consistent regulatory enforcement across agencies as it relates to organics management.

DEC worked with the New York State Department of Agriculture and Markets and the New York State Department of Health when implementing the Food Donation and Food Scraps Recycling law as it relates to the food donation aspect of the law. DEC is also a member of the Council on Hunger and Food Policy to provide updates on the law and to participate in conversations for addressing hunger in the state. DEC has also worked with the New York State Department of Agriculture and Markets to clarify the requirements for using food scraps for animal feed and to provide this information to interested parties.

In November 2015, DEC held an interagency meeting to strengthen interagency partnerships, with the goal of increasing food donation and food scraps recycling through a collaborative network for information sharing, coordination of efforts, and improved communication.

Outreach and Education

DEC is committed to growing and supporting the organics recycling industry and has undertaken extensive outreach and education efforts in this arena.

International Compost Awareness Week is an international education initiative for the compost industry. Since 2018, New York State has celebrated New York State Compost Awareness Week in alignment with International Compost Awareness Week. DEC is a partner of the New York State Compost Awareness Week work group hosted by the New York State Association for Reduction, Reuse and Recycling. This group works to develop outreach resources and programming for compost educators across the state. As part of this effort, DEC assists with updating a map of food scraps drop-off spots and residential food scraps collection services.

Starting in 2015, the New York State Organics Summit has been an annual event bringing together materials management professionals to discuss creative solutions to barriers that restrict the sustainable management of organics materials, primarily food scraps, and to share success stories and updates. DEC has played an active role in planning each of these summits.

DEC, in partnership with the Harvard Food Law and Policy Clinic and the Center for EcoTechnology, created four legal fact sheets to address common legal questions surrounding food donation and food scraps diversion in New York State. These fact sheets explain both federal and New York State-specific laws and regulations related to:

- Tax incentives for food donation
- Liability protections for food donors
- Date-labeling requirements for food packaging
- Feeding food scraps to animals

Educational resources on wasted food reduction and composting are provided to the public consistently through DEC Delivers Solid Waste and Recycling Newsletter and DEC's social media accounts.

Updated Regulations of Organics Recycling Facilities

The regulations governing organics recycling facilities are found primarily in 6 NYCRR Part 360 and Part 361. The Part 360 series revisions, a comprehensive revision to the Part 360 Series regulations, was completed in 2017. This included revisions to the organics recycling facility regulations. The regulations are designed to provide environmental protection by controlling the design and operation of facilities but also to provide exemptions and registration for those facilities that should have a lower potential for impact. There are limited regulatory criteria for smaller food scraps recycling facilities that should promote these recycling activities.

Organics recycling facilities (composting, land application and storage, anaerobic digestion, mulch processing, fermentation, animal feed, and other organics recycling technologies) are regulated under 6 NYCRR Part 361: Material Recovery Facilities in one of three ways: exempt, registered, or permitted.

The primary regulations for organics recycling facilities are found under:

- 6 NYCRR Part 360: Solid Waste Management Facilities General Requirements
- 6 NYCRR Part 361-2: Land Application and Associated Storage Facilities
- 6 NYCRR Part 361-3: Composting and Other Organics Recycling Facilities
- 6 NYCRR Part 361-4: Mulch Processing Facilities

Transporting or hauling food scraps is regulated under 6 NYCRR Part 364: Waste Transporters. This includes residential and commercial hauling of food scraps.

Food scraps drop-off spots or transfer facilities that accept food scraps are regulated under 6 NYCRR 362-3: Transfer Facilities.

View a quick summary of organics recycling facility regulations.

Learn more about organics recycling facilities in Appendix D.

11. Product Consumer Protection Laws

Disclosure of Ingredients in Cleaning Products

In June 2018, DEC issued a Program Policy with details on how manufacturers could comply with the cleaning product ingredient disclosure provisions in ECL Article 35 and NYCRR Part 659. In August 2019, the New York State Supreme Court deemed the Program Policy null and void and remitted the matter back to DEC with the directive to implement the Household Cleansing Product Information Disclosure Program through a rulemaking. DEC held a stakeholder meeting on February 24, 2020, to receive feedback on this rule and is continuing to develop regulations for this program.

Restricting the Amount of 1,4-Dioxane in Cleaning Products, Cosmetics, and Personal Care Products

This law was signed by the Governor on December 9, 2019. Restrictions on the amount of 1,4-Dioxane go into effect at the end of 2022. DEC held two stakeholder meetings, on November 18, 2020, and December 2, 2020, to get feedback on the implementation of this program. DEC also released a Program Policy on July 26, 2021, to guide the process of issuing waivers to these restrictions. DEC began accepting waivers on October 1, 2021, to give manufacturers ample time to seek waivers before the restrictions begin. Development of draft regulations is underway with a proposed rulemaking for public comment is anticipated in early 2023.

Restricting Mercury in Cosmetics and Personal Care Products

A law was passed in 2022 (with chapter amendments introduced in early 2023), which will restrict the sale of cosmetics and personal care products containing mercury. The restrictions, which will be implemented by DEC, take effect June 1, 2023.

Child Safe Products Act

This law was signed by the Governor on February 7, 2020. DEC held stakeholder meetings on May 26, 2021, and September 25, 2021, to gather input on the implementation of this law. The September 25, 2021, meeting included the release of a list of chemicals that DEC is considering for inclusion as chemicals of concern and high-priority chemicals. When the program is in place, the listed chemicals would need to be disclosed if they are present in children’s products. Stakeholders provided detailed comments on the list of chemicals and DEC is assessing these comments as well as continuing to advance a draft regulatory package.

PFAS in Food Packaging

A law was passed in 2022 expanding the existing Toxics in Packaging Act to restrict the use of intentionally added PFAS in food packaging made from paper, paperboard, or other materials originally derived from plant fibers. This restriction will take effect on December 31, 2022. DEC is currently developing communication materials to assist affected entities in understanding this restriction and steps they can take to assure compliance.

Aqueous Film-Forming Foam (AFFF) Containing PFAS

General Business Law Section 391 restricts class B firefighting foam to which PFAS chemicals have been intentionally added, by March 2022, unless New York State Fire (State Fire) at the New York State Division of Homeland Security and Emergency Services (DSHSES) exempts those uses in regulation. State Fire at DHSES is the lead in implementing this law, and DEC and DOH are required to be consulted. DEC has been participating in an interagency workgroup with State Fire and DOH to assess the PFAS levels, and performance, of fluorine-free foams on the market. The interagency workgroup has determined that AFFFs free of intentionally added PFAS are available and is not planning to provide an exemption for the continued use of AFFFs containing PFAS.

PFAS in Apparel

This law was signed by the Governor in December 2022 (with chapter amendments introduced in January 2023) and will prohibit the sale or offering for sale of apparel and outdoor apparel for severe wet conditions that contain PFAS as an intentionally added chemical. Once signed, the restrictions on the sale of apparel with intentionally added PFAS are likely to take effect on January 1, 2025. Similar restrictions for outdoor apparel for severe wet conditions are likely to take effect on January 1, 2028.

12. Part 360 Series Revisions

The Solid Waste Management Facility Regulations, 6 NYCRR Part 360, had not undergone comprehensive revision since 1993. The regulatory revision process formally began in February 2016 with an initial draft of the proposed regulations. Following extensive public outreach that included 2 public comment periods, 5 public hearings, more than 25 workshops and technical meetings with stakeholders, and careful consideration of thousands of comments, the revised Part 360 Series Regulations were promulgated on November 4, 2017.

In the process of rulemaking, DEC chose to restructure the regulations as a series, subdividing facilities/topics that were similar in nature, such as facilities that recycle and recover materials, into individual parts. These new or revised parts include the following:

- Part 360 Solid Waste Management Facilities (General Requirements)
- Part 361 Material Recovery Facilities
- Part 362 Combustion, Thermal Treatment, Transfer, and Collection Facilities
- Part 363 Landfills
- Part 364 Waste Transporters
- Part 365 Regulated Medical Waste and Other Infectious Waste
- Part 366 Local Solid Waste Management Planning
- Part 369 State Assistance Projects

The November 2017 Part 360 Series revisions include the following:

- Updating requirements for construction and operation of solid waste management facilities to better protect human health and the environment;
- Revising and updating the Beneficial Use Determination (BUD) program regulations;
- Creation of requirements for management of historic fill material, especially to protect communities of disproportionate impact;
- Revision of existing and creation of new regulations to allow expansion of composting and other organics recycling facilities;
- Restriction of disposal (or receipt for disposal) of source-separated organic wastes, through operating requirements for transfer facilities and landfills, and through expanded organic recycling facility regulations;
- Enhancing gas collection and management criteria for landfills, to help combat climate change and reduce odors;
- Updated Part 369 - State Assistance Projects, especially the addition of Subpart 369-5 for Targeted Priority Area Municipal Waste Reduction and Recycling Projects, giving DEC flexibility to help advance a wider range of projects for education, coordination, waste reduction and recycling in the State;

- Creation of regulations with design and operation criteria, and registration provisions where appropriate, for facilities that recover waste cooking oil and yellow grease for fuel and non-fuel products, and facilities that process navigational dredged material for beneficial use as aggregate, topsoil, or fill;
- Instituted tracking of C&D debris shipments to help curb illegal dumping of C&D debris, including urban soils (historic fill);
- Creation of appropriate outlets for mildly contaminated soils for use as fill, e.g., in industrial settings, following evaluation though sampling and analysis;
- Coordination between the Division of Materials Management and Division of Environmental Remediation, streamlining the procedures and established standards for materials, especially soils and dredged material, used in remediation and brownfield redevelopment projects;
- Strengthened radiation detection requirements at landfills, transfer facilities, and municipal waste processing facilities;
- Creation of more protective regulations for the practice of using waste brine from oil and gas wells and liquid gas storage facilities to treat road surfaces by imposing restrictions and prohibiting fluids other than brine from these industries and prohibiting brine from Marcellus Shale gas wells;
- Prohibition of disposal in landfills of fluids produced from oil or gas production, including flowback water and production brine;
- Creation of design and operation requirements for facilities producing mulch from clean wood debris, promoting greater diversion and use of this organic stream; and
- Creation of new comprehensive regulated medical waste regulations including standards and measures for waste generators, and for all regulated medical waste management activities that include storage, transfer, and treatment. Also, the establishment of new regulations to address “Other Infectious Waste” or incidental waste that is not regulated medical waste but that has come in contact with infectious agents (e.g., including contaminated waste from workspaces, living spaces, and other similar locations).

The following were recommended in *Beyond Waste* but not included in the November 2017 Part 360 Series revisions:

- A regulatory mechanism to allow DEC to create or rescind predetermined BUDs outside of regulation revisions. Giving DEC this ability would not allow sufficient environmental quality or public review of these actions, and therefore was not included in the revision;
- The *Beyond Waste* Plan recommended regulations to prohibit commingling of recyclables and waste in collection vehicles. This was determined to be outside the scope of the Part 360 Series; and
- Requiring source separation of recyclables in a consistent manner whether by public or private collectors, which could not be done directly through the Part 360 Series revisions. This objective may be attained, however, through clearer

requirements for source separation under operating rules for facilities and through local solid waste management plans under the Part 360 Series.

13. Inactive Landfill Initiative

The Inactive Landfill Initiative (ILI) Program encompasses all efforts undertaken by DEC to inventory and evaluate all known inactive landfills within New York State for potential drinking water and groundwater impacts, with an emphasis on emerging contaminants, including per- and polyfluoroalkyl substances (PFAS) and 1,4-Dioxane. These compounds are human-made chemicals that have been widely used in industrial and commercial processes, in commercial and residential products (e.g., firefighting foams, carpeting, waterproof clothing, etc.), and are being found in groundwater and drinking water sources across the United States. The overall goal of the ILI Program is to establish the Solid Waste Site Mitigation and Remediation Priority List and a comprehensive plan to mitigate and remediate impacted sites, which will protect nearby groundwater quality.

The ILI was launched under the authority of Title 12 of Article 27 of the Environmental Conservation Law, adopted as the Clean Water Infrastructure Act of 2017. This law established a program for the investigation and remediation of certain solid waste sites that may be impacting or contaminating drinking water supplies. The ILI focuses on drinking water contamination associated with emerging contaminants (PFAS compounds and 1,4-Dioxane) along with other chemicals of concern (i.e., organic pollutants, metals) from solid wastes disposed of at the approximately 1,900 legacy inactive landfills in New York State.

Inactive Landfill Initiative Program Plan

The evaluation and implementation process of the ILI Program began in September 2017 and included:

1. Creation of an inventory of data on the inactive solid waste disposal sites and landfills within the state, including assembling available records, conducting site visits to gather basic site information, and confirming GPS (global positioning system) coordinates;
2. Development of a priority ranking system to assess the possible likelihood that an inactive landfill could be contributing to impacts on drinking water;
3. Completion of preliminary groundwater investigations at sites determined to have the highest potential to impact drinking water resources, per the ranking system developed for the ILI Program;
4. Sampling at potential receptor points (e.g., private and public drinking water supply wells) for inactive landfills where impacts to groundwater were identified; and
5. Initiation of further investigations and mitigation/remediation activities, as warranted, based on the results of groundwater and drinking water supply sampling.

Sampling Results

Table B.7 summarizes ongoing and completed activities through April 2022 under the ILI Program.

Table B.7. Ongoing and completed inactive landfill initiative investigation activities from September 2017 - April 2022

Inactive Landfill Initiative Investigations	
Inactive Landfill Initiative Actions	**Number**
Inactive landfills identified	1,921
Inactive landfills inspected and ranked	1,884*
Groundwater investigations identified/prioritized	899
Groundwater investigations completed	385
Groundwater investigations being advanced under different programs (e.g., DER, post-closure permits)	78
Groundwater investigations upcoming/in progress	436
Monitoring wells installed	866
Landfill groundwater samples collected for laboratory analysis	4,119
Drinking water supply property owners canvassed	2,164
Drinking water supply samples collected for analysis from responsive owners	1,129

* The remaining 37 landfills are in the process of negotiating access or were recently added.

Overall, the results of the investigation activities have shown that the presence of PFAS compounds in groundwater near inactive landfill facilities is relatively common. Levels of perfluorooctanoic acid (PFOA) and/or perfluorooctane sulfonic acid (PFOS) in groundwater were found at concentrations exceeding the New York State maximum contaminant levels (MCLs) in drinking water (10 parts per trillion (ppt) for each of PFOA and PFOS) at 73% of the 385 landfills investigated through April 2022.

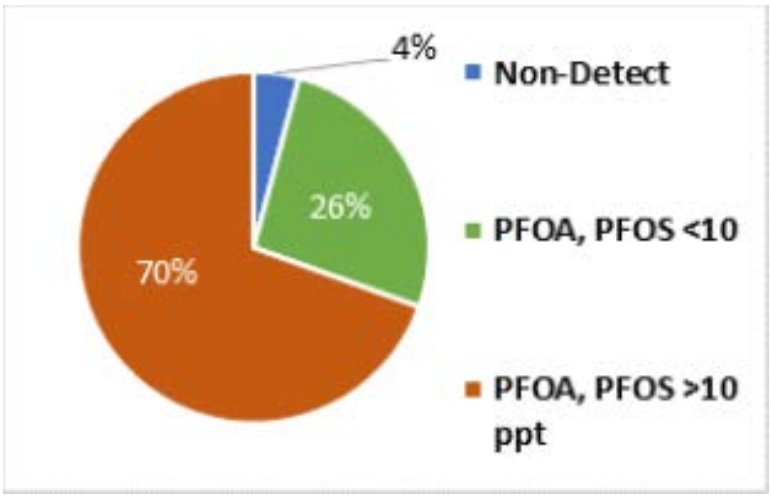


Figure B.3. Maximum PFOA/PFOS concentrations in groundwater at sampled inactive landfills

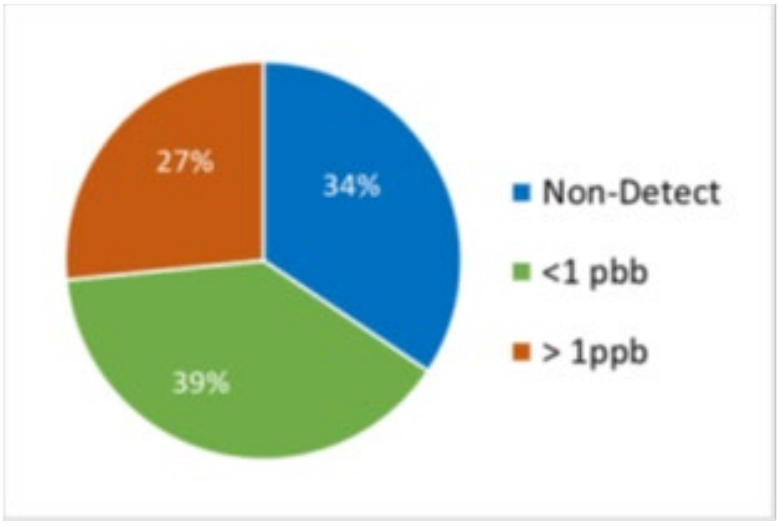


Figure B.4. Maximum 1,4-Dioxane concentrations in groundwater at sampled inactive landfills

Comparatively, the results of the investigation activities conducted under the ILI Program show a less frequent distribution of 1,4-Dioxane in groundwater. As shown in the figure above, 1,4-Dioxane was found at levels exceeding the New York State MCL (1 part per billion (ppb)) at 27% of the landfills investigated through April 2022. Overall, 1,4-Dioxane was not found above the detection limit at approximately 34% of the 385 landfills investigated through April 2022.

The statistics for PFOA/PFOS and 1,4-Dioxane indicate the potential association of these compounds with the inactive landfill sites. However, as the investigations are still underway and the landfills with the highest potential risk are being investigated first,

these statistics should not necessarily be considered representative of the overall inventory of sites. When encountered, landfill sites with concentrations of these emerging contaminants exceeding the New York State MCLs have been prioritized for immediate further actions to mitigate any potential impacts to downgradient sources of drinking water. The process for conducting sampling at potential receptor points (e.g., private and public drinking water supply wells) is initiated in the vicinity of inactive landfill sites where concentrations in groundwater samples exceeded the New York State MCLs for PFOA, PFOS, or 1,4-Dioxane. The goal of the potential receptor sampling is to assess whether contaminants detected in groundwater samples at the landfills are present in downgradient private or public supply wells.

Table B.8 presents key statistics pertaining to the potential receptor sampling that has been conducted through April 2022 under the ILI Program. This table outlines the number of drinking water receptors canvassed for sampling, the number sampled based on responsiveness, and an overview of the analytical results.

Table B.8. Inactive landfill initiative monitoring results

Inactive Landfill Initiative Monitoring Results	
Sampling Results	**Number**
Total water supply sources solicited	2,164
Water supply sources sampled	1,129*
PFOA and PFOS not detected	679
PFOA and PFOS less than 10 ppt	282
PFOA and/or PFOS greater than 10 ppt	165
1,4-Dioxane not detected	250
1,4-Dioxane less than 0.35 ppb	168
1,4-Dioxane greater than 0.35 ppb, less than 1 ppb	35
1,4-Dioxane greater than 1 ppb	27

* Based on the results of groundwater investigations at each landfill, both PFOA/PFOS and 1,4-Dioxane were not sampled at all locations.

New York's DOH reviews water supply results, communicates results to owners, and develops recommendations for further actions for each location. DEC and DOH act quickly whenever contaminants are found above acceptable levels, and advance appropriate response actions including the installation of point-of-entry treatment (POET) systems, and supplying an alternative source of drinking water (such as bottled water) or additional monitoring. In addition to the 385 sites investigated through April 2022, 436 additional sites identified for groundwater investigation were completed in 2022. In addition, water supply source sampling was initiated at over 66 more sites in 2022.

Through April 2022, 32 sites investigated under the ILI Program were found to have elevated groundwater or drinking water concentrations of PFOA, PFOS, or 1,4-Dioxane,

beyond the range of most other sites. These sites were reviewed by DEC to determine whether further investigations or actions were justified, and the most appropriate regulatory mechanisms through which actions should be completed. Based on this review, it was determined that these sites warranted transfer to the State Superfund program administered by the DEC's Division of Environmental Remediation (DER) for further site assessments and mitigation/remediation as needed. The results of the inactive landfill groundwater investigations completed through April 2022 have established that certain inactive solid waste disposal sites do have the potential to impact certain drinking water sources. Furthermore, results show that detectable levels of emerging contaminants have been found in some private wells in the vicinity of several of these sites, above existing criteria. At these locations, DEC initiated immediate response actions based on recommendations from DOH. Impacted sites identified have been elevated to the Solid Waste Site Mitigation and Remediation Priority List.

Schedule

The table below outlines the proposed schedule for the initiation of additional groundwater investigations under the ILI Program, based on the established site ranking structure.

2023

• Conduct mitigation/remediation evaluations for highest priority sites
• Implement mitigation/remediation measures for highest priority sites as warranted

2024
• Initiate investigations for sites that have a score of 40–42 points = 176 sites
• Continue mitigation/remediation evaluations for highest priority sites
• Continue implementation of mitigation/remediation measures for highest priority sites as warranted*

2025
• Initiate investigations for sites with a score of 40–42 points = 155 sites
• Continue mitigation/remediation evaluations for highest priority sites
• Continue implementation of mitigation/remediation measures for highest priority sites as warranted

Beyond 2025
* Potential future investigation list sites = 505 sites
* Sites being advanced under a separate program = 78 sites
* Sites not yet inspected/ranked due to access = 37 sites

Based on a statistical analysis conducted on the data collected to date in support of the development of this schedule, it is anticipated that the ILI Program will investigate and characterize a large majority of the higher priority sites by 2025. Work will continue at the sites until all sites have been evaluated. While conducting these investigations, recommendations will continue to be provided for mitigation/remediation for inactive sites that have the potential to impact drinking water sources. It is also anticipated that the evaluation and implementation of mitigation and/or remediation measures at any identified high-priority sites would be conducted on an expedited schedule.

Enhanced Groundwater Protection

The ILI is an important part of the strategy for meeting New York State's goal of addressing emerging threats to drinking water quality. Given the number of inactive landfills within the state, and the relative frequency of these sites being in areas where groundwater use for drinking water purposes is common, there is a legitimate potential for these sites to adversely impact drinking water quality and public health. The ILI is

furthering State efforts to protect groundwater by focusing on emerging contaminants, which are not currently subject to enforceable regulations for drinking water. In most cases, these inactive landfill sites have not been monitored for contaminants of concern, including emerging contaminants to any extent. The results of the program to date have demonstrated the potential for drinking water impacts from these landfills, supporting the continuation of the program. Future activities of the ILI program would continue to provide an increasingly comprehensive understanding of the level of risks present and allow for the proper mitigation/remediation strategies to be developed and implemented.

14. Construction and Demolition Debris Enforcement Initiatives

The illegal disposal of C&D debris has been especially acute in areas surrounding metropolitan areas like Long Island and the lower and mid-Hudson Valley, areas where a combination of rural lands and proximity to metropolitan development has led to significant amounts of illegal dumping. Illegally disposed C&D debris, including fill materials, not only exposes residents to potential contaminants but may result in significant costs passed on to taxpayers by municipalities for investigation, proper disposal of the waste, and continued long-term monitoring of the disposal site. For example, a case in the Town of Islip involving illegally disposed C&D debris at the Roberto Clemente Park cost the Town approximately $3 million to clean up.

The Part 360 solid waste regulations were revised in 2017 in part to reduce illegal disposal of C&D debris, including fill material. These revised regulations included new registration and waste-tracking document requirements for transporters of C&D debris, including fill material originating from New York City.

"Operation TrashNet": Multiagency Collaboration

In addition to regulatory changes, DEC led a multiagency initiative in 2017 that became the largest enforcement effort against illegal dumping in State history. Dubbed "Operation TrashNet," DEC's Environmental Conservation Police Officers and Division of Materials Management experts teamed with downstate district attorneys' offices, New York State Police, the State's Department of Transportation (DOT) staff, and local law enforcement agencies to launch an enforcement blitz on Long Island and in the mid-Hudson Valley on the alleged illegal disposal of C&D debris and other solid waste violations. The collaboration spearheaded dozens of undercover details and truck surveillance operations to uncover several crimes. The results of the effort included:

- Over 550 total tickets issued, and charges filed for various misdemeanors and other serious safety violations during enforcement actions;
- More than 170 tickets issued for alleged unlawful disposal of solid waste;
- More than 40 trucking companies identified as allegedly illegal dumpers;
- 81 new illegal dumping sites uncovered;
- 26 trucks seized and impounded; and
- 53 search warrants executed.

"Operation Pay Dirt"

An additional enforcement investigation, dubbed "Operation Pay Dirt," was executed by the Suffolk County District Attorney's Office in partnership with DEC, netting the following results:

- 12 corporations charged with crimes;

- 12 trucks used for alleged illegal dumping seized; and
- Dozens of new alleged illegal dump sites uncovered.

“Operation Southern District”

The most recent enforcement operation took place in spring 2022 and focused on the lower Hudson Valley, resulting in the following:

- 613 Notices of Violation for 477 alleged violations and 136 alleged misdemeanors;
- 26 identified illegal dump sites identified;
- 41 property owners and companies charged with operating a solid waste management facility without a permit;
- 19 companies and individuals charged with brokering soil to an illegal site; and
- 62 truck drivers charged with unlawful disposal of solid waste.

15. Waste Tire Abatement Program

The Waste Tire Abatement Program has been ongoing since 2004, and as of 2022, the program is funded by a $2.50 fee per each new tire sold in New York State, including tires on new cars. Retailers are allowed to retain 25 cents of that fee for management and processing requirements and must remit the remainder to the New York State Department of Taxation and Finance, to be deposited into the Waste Management and Cleanup Fund. DEC is authorized to use that funding to carry out the Waste Tire Abatement program. Since 2004, 189 non-compliant waste tire sites have been identified by DEC statewide. Of those sites, 164 (with approximately 47.9 million tires) have been abated (approximately 22.06 million since about 2010), through DEC enforcement actions, or to a much smaller extent, voluntarily cleaned up by the sites' owners.

DEC collaborated with the New York State Office of General Services (OGS) from 2004 through 2022 on the waste tire abatement effort. Through that collaboration, OGS issued waste tire abatement contracts on behalf of DEC for the clean-up of waste tires sites. The combined enforcement and abatement efforts have been effective in helping clean up 166 waste tire sites, accounting for over 99% of the waste tires reported since the inception of the program in 2004. Most of these tires removed by the State's waste tire program have been beneficially used in landfill construction and operation activities or in road construction by the DOT in the early years of the program.

Since 2010, over 22 million tires were beneficially processed or disposed in an environmentally friendly manner. While there are only 25 sites, with less than 1% of the reported total waste tires, an estimated 507,750 tires remain to be removed. Additional older small sites are discovered each year and added to the abatement list.

Increasing markets for waste tire products was a recommendation of the *Beyond Waste* Plan and continues to be a focus for DEC. Costs for the proper management of newly generated waste tires have increased. When waste tire management prices increase, the risk of illegal disposal increases. While DEC has some reports of illegal dumping of waste tires, the number of incidents and number of waste tires per incident have been small. The cleanup of small-scale illegal dumping rests with the local government as with all other forms of illegal dumping. The funding for the cleanup of small-scale illegal dumping is not provided for in the law guiding the Waste Tire Abatement Program. However, to help evaluate the current market circumstance of waste tire management and any potential opportunities for improvement, DEC is funding research by UB related to expanding markets for waste tires and tire rubber products.

16. New York City’s Fresh Kills Landfill Becomes Freshkills Park

Fresh Kills Landfill began operations on Staten Island in 1948. The approximately 2,200-acre landfill eventually became the primary disposal site for New York City’s waste for over 50 years, receiving 17,000 tons or more of waste per day. In 1996, state legislation was enacted requiring that the facility stop receiving waste no later than January 1, 2002. Though in 2002, debris from the World Trade Center was interred between layers of clean soil within a clearly marked 48-acre section of the site, Fresh Kills received its last regular delivery of residential trash in March 2001.

Both during its active life and especially after 2001, engineered landfill caps and associated support structures were constructed systematically across the site to entomb waste and protect human health and the environment. An agreement between the City of New York and DEC describing proper closure activities was first agreed to in 1990. In consultation with, and under the oversight of DEC, the New York City Department of Sanitation spent more than $1 billion on the installation of the landfill cap and associated structures, culminating in the completion of construction activities in December 2021.

After the landfill’s closure, the City of New York will continue post-closure monitoring and maintenance of the site but will also transform the site into Freshkills Park, what is likely to be the largest landfill-to-park project in the world. Portions of the park, including Schmul Park, Owl Hollow Soccer Fields, and New Springville Greenway are already open to the public. Future development will include North Park, which will be the first section of the park that will overlie the landfill itself.

Appendix C: New York State Waste Generation and Waste Imported

Appendix C provides an overview of waste generated from 2010–2018. Each table provides a yearly overview of how municipal solid waste (MSW), construction and demolition (C&D) debris, industrial waste, biosolids, and heavy metal (in 2017 and 2018) were managed and their respective quantities. Appendix C additionally provides a summary of the type of waste imported into New York State from 2010–2018. For reference, a List of Abbreviations can be found at the beginning of the Plan.

New York State Waste Generation
Total Solid Waste
Year 2010

Population Served (Statewide) **19,378,144**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	5,005,248					
In-State Long Island Landfill	0					
MWC Ash	524,499					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	320,220					Includes ash used as AOC
BUD - Landfill	253					
BUD - Tire & Tire Fill	8,903					
Subtotal Landfill	**5,859,123**	**34.95%**	**604.71**	**5,859,123**	**44.62%**	
Combustion (with Energy Recovery)						
In-State MSW	3,233,825					
Ash	(524,499)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(74,093)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(298,256)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,336,977**	**13.94%**	**241.20**	**2,336,977**	**17.80%**	
Export for Disposal						
Facility Reports	4,348,688					
Facility Report - AOC	47,906					
Out-of-State Survey Data	522,985					Data from other states that receive waste from NYS
HHW Report Data	2,733					Total HHW disposed
Export for Combustion						
Tire Fuel	12,938					
Subtotal Export for Disposal	**4,935,250**	**29.44%**	**509.36**	**4,935,250**	**37.58%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,209,146					
Direct To Mfg	174,623					
Yard Trimmings Facility Data	324,411					
Food Scraps Facility Data	20,197					
Institutional	6,229					DOCCS
Yard Trimmings Exported	65,371					
Food Scraps Exported	429					
BUD Tire Use & Fill	21					
BUD - Other Use	1,123					
Commercial Recycling Reports	65,631					Provided directly to DEC (Price Chopper, Wegmans)
Bottle Bill	274,921					
MWC Metal	74,093					From combustion above
HHW Report Data	3,510					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	1,342,399					
Export for Recovery from Planning Unit Reports	70,571					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,632,675**	**21.67%**	**374.92**			
Total MSW	**16,764,025**	**100.00%**		**13,131,350**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	230,350					
In-State MSW Landfill	838,543					
In-State Long Island Landfill	1,451,580					
MWC Ash	7,003					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	1,443,785					Includes ash used as AOC
BUD - Tire & Tire Fill	12,838					
BUD - Landfill	629,955					
Subtotal Landfill	**4,614,054**	**34.32%**	**476.21**	**4,614,054**	**75.38%**	
Combustion (with Energy Recovery)						
At MWCs	43,309					
Ash	(7,003)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(997)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	(3,982)					
BUD - Fuel	0					
Subtotal Combustion	**31,327**	**0.23%**	**3.23**	**31,327**	**0.51%**	
Export for Disposal						
Facility Reports	1,472,277					
Out-of-State Survey Data	0					Data from other states that receive waste from NYS
Planning Unit Reports	3,072					
Subtotal Export for Disposal	**1,475,349**	**10.97%**	**152.27**	**1,475,349**	**24.10%**	
Recycled/Aggregate						
In-State C&D Debris	5,998,920					
Export for Recovery from Facility Reports	302,673					
MWC Metal	997					From combustion above
BUD - Recycled	45,960					
BUD - Fill/Aggregate	976,240					
Subtotal Recycled/Aggregate	**7,324,790**	**54.48%**	**755.98**			
Total C&D Debris	**13,445,520**	**100.00%**		**6,120,730**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	1,004,648					
In-State MSW Landfill	465,224					
MWC Ash	5,763					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	463,081					Includes ash used as AOC
BUD - Landfill	0					

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Subtotal Landfill	**1,938,716**	**66.59%**	**200.09**	**1,938,716**	**95.52%**	
Combustion (with Energy Recovery)						
In-State at MWCs	35,641					
Ash	(5,763)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(3,277)					
BUD - Fuel	9,756					
Subtotal Combustion	**36,357**	**1.25%**	**3.75**	**36,357**	**1.79%**	
Export for Disposal						
Facility Reports	15,452					
Out-of-State Survey	39,103					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**54,555**	**1.87%**	**5.63**	**54,555**	**2.69%**	
Recyled/Composted						
Food Processing Land Application	33,432					
Food Processing Anaerobic Digester	2,500					
Animal Feed	130,721					
BUD - Use	553,219					
Subtotal Recycled/Composted	**719,872**	**24.73%**	**74.30**			
Fill/Aggregate						
BUD - Fill/Aggregate	161,883					
Subtotal BUD - Fill/Aggregate	**161,883**	**5.56%**	**16.71**			
Total Industrial Waste	**2,911,383**	**100.00%**		**2,029,628**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	253,268					
BUD - WWTP Sludge Ash	7,393					
Subtotal Landfill	**260,661**	**16.70%**	**26.90**	**260,661**	**25.29%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	300,000					Biosolids Report
BUD - Ash	(7,393)					
Subtotal Combustion	**292,607**	**18.75%**	**30.20**	**292,607**	**28.39%**	
Export for Disposal (Facility Report)	24,557					
Out-of-State Report	452,732					Biosolids Report
Subtotal Export for Disposal	**477,289**	**30.58%**	**49.26**	**477,289**	**46.31%**	
Recycled/Aggregate						
Recycled (Composting/Land Application)	530,000					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**530,000**	**33.96%**	**54.70**			
Total Biosolids	**1,560,557**	**100.00%**		**1,030,557**	**100.00%**	
Total Landfill	**12,672,554**	**36.71%**	**1307.92**			
Total Combustion	**2,697,268**	**7.81%**	**278.38**			
Total Export	**6,942,443**	**20.11%**	**716.52**			
Total Recycled	**12,207,337**	**35.36%**	**1259.91**			
Total Waste	**34,519,602**	**100.00%**	**3562.74**			

New York State Waste Generation
Total Solid Waste
Year 2011

Population Served (Statewide) **19,499,241**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	5,065,632					
In-State Long Island Landfill	0					
MWC Ash	519,641					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	329,999					Includes ash used as AOC
BUD - Landfill	14,039					
BUD - Tire & Tire Fill	16,683					
Subtotal Landfill	**5,945,994**	**34.22%**	**609.87**	**5,945,994**	**44.27%**	
Combustion (with Energy Recovery)						
In-State MSW	3,252,011					
Ash	(519,641)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(75,012)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(316,216)					
Tire Fuel	0					
BUD - Fuel	77					
Subtotal Combustion	**2,341,219**	**13.48%**	**240.13**	**2,341,219**	**17.43%**	
Export for Disposal						
Facility Reports	4,621,428					
Facility Report - AOC	0					
Out-of-State Survey Data	522,878					Data from other states that receive waste from NYS
HHW Report Data	357					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**5,144,663**	**29.61%**	**527.68**	**5,144,663**	**38.30%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,888,009					
Direct To Mfg	0					
Yard Trimmings Facility Data	339,115					
Food Scraps Facility Data	18,470					
Institutional	6,050					DOCCS
Yard Trimmings Exported	43,818					
Food Scraps Exported	6,152					
BUD Tire Use & Fill	0					
BUD - Other Use	1,483					
Commercial Recycling Reports	108,817					Provided directly to DEC (Price Chopper, Walmart, Wegmans)
Bottle Bill	267,749					
MWC Metal	75,012					From combustion above
HHW Report Data	1,604					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	1,185,203					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,941,482**	**22.69%**	**404.27**			
Total MSW	**17,373,358**	**100.00%**		**13,431,876**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	193,614					
In-State MSW Landfill	789,576					
In-State Long Island Landfill	1,637,791					
MWC Ash	922					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	1,111,445					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	638,842					
Subtotal Landfill	**4,372,190**	**38.97%**	**448.45**	**4,372,190**	**80.89%**	
Combustion (with Energy Recovery)						
At MWCs	5,802					
Ash	(922)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(134)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	(561)					
BUD - Fuel	0					
Subtotal Combustion	**4,185**	**0.04%**	**0.43**	**4,185**	**0.08%**	
Export for Disposal						
Facility Reports	971,822					
Out-of-State Survey Data	57,085					Data from other states that receive waste from NYS
Planning Unit Reports	0					
Subtotal Export for Disposal	**1,028,907**	**9.17%**	**105.53**	**1,028,907**	**19.04%**	
Recycled/Aggregate						
In-State C&D Debris	5,109,672					
Export for Recovery from Facility Reports	322,420					
MWC Metal	134					From combustion above
BUD-Recycled	333,805					
BUD - Fill/Aggregate	49,258					
Subtotal Recycled/Aggregate	**5,815,289**	**51.83%**	**596.46**			
Total C&D Debris	**11,220,571**	**100.00%**		**5,405,282**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	909,458					
In-State MSW Landfill	542,953					
MWC Ash	6,678					(total ash) X (in-state %) X (IND %)
Facility Report - AOC	434,167					Includes ash used as AOC
BUD - Landfill	29,020					

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Subtotal Landfill	**1,922,276**	**63.04%**	**197.16**	**1,922,276**	**88.67%**	
Combustion (with Energy Recovery)						
In-State at MWCs	48,208					
Ash	(6,678)					(total ash) X (in-state %) X (IND %)
Facility Report - MWC AOC	(4,064)					
BUD - Fuel	161,044					
Subtotal Combustion	**198,510**	**6.51%**	**20.36**	**198,510**	**9.16%**	
Export for Disposal						
Facility Reports	28,663					
Out-of-State Survey	18,474					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**47,137**	**1.55%**	**4.83**	**47,137**	**2.17%**	
Recyled/Composted						
Food Processing Land Application	33,432					
Food Processing Anaerobic Digester	2,777					
Animal Feed	218,489					
BUD - Use	625,296					
Subtotal Recycled/Composted	**879,994**	**28.86%**	**90.26**			
Fill/Aggregate						
BUD - Fill/Aggregate	1,299					
Subtotal BUD - Fill/Aggregate	**1,299**	**0.04%**	**0.13**			
Total Industrial Waste	**3,049,216**	**100.00%**		**2,167,923**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	292,014					
BUD - WWTP Sludge Ash	5,478					
Subtotal Landfill	**297,492**	**18.36%**	**30.51**	**297,492**	**50.25%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	300,000					Biosolids Report
BUD - Ash	(5,478)					
Subtotal Combustion	**294,522**	**18.18%**	**30.21**	**294,522**	**49.74%**	
Export for Disposal (Facility Report)	45,725					
Out-of-State Report	452,732					Biosolids Report
Subtotal Export for Disposal	**498,457**	**30.76%**	**51.13**	**51.13**	**0.01%**	
Recycled/Composted						
Recycled (Composting/Land Application)	530,000					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**530,000**	**32.71%**	**54.36**			
Total Biosolids	**1,620,471**	**100.00%**		**592,065**	**100.00%**	
Total Landfill	**12,537,952**	**37.69%**	**1285.99**			
Total Combustion	**2,838,436**	**8.53%**	**291.13**			
Total Export	**6,719,164**	**20.20%**	**689.17**			
Total Recycled	**11,166,765**	**33.57%**	**1145.35**			
Total Waste	**33,262,317**	**100.00%**	**3411.65**			

New York State Waste Generation
Total Solid Waste
Year 2012

Population Served (Statewide) 19,572,932

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	Disposed Per Capita (lbs)	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	4,786,843					
In-State Long Island Landfill	0					
MWC Ash	584,031					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	295,487					Includes ash used as AOC
BUD - Landfill	17,203					
BUD - Tire & Tire Fill	864					
Subtotal Landfill	**5,684,428**	**34.32%**	**580.85**	**5,684,428**	**43.00%**	
Combustion (with Energy Recovery)						
In-State MSW	3,273,015					
Ash	(584,031)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(72,858)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(232,004)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,384,122**	**14.39%**	**243.61**	**2,384,122**	**18.03%**	
Export for Disposal						
Facility Reports	4,504,693					
Facility Report - AOC	0					
Out-of-State Survey Data	644,479					Data from other states that receive waste from NYS
HHW Report Data	2,570					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**5,151,742**	**31.10%**	**526.41**	**5,151,742**	**38.97%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,646,759					
Direct To Mfg	0					
Yard Trimmings Facility Data	361,330					
Food Scraps Facility Data	28,958					
Institutional	6,164					DOCCS
Yard Trimmings Exported	38,685					
Food Scraps Exported	189					
BUD Tire Use & Fill	0					
BUD - Other Use	7,004					
Commercial Recycling Reports	57,904					Provided directly to DEC (Price Chopper, Wegmans)
Bottle Bill	286,502					
MWC Metal	72,858					From combustion above
HHW Report Data	1,453					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	827,207					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	7,292					
Subtotal Recycled/Composted	**3,342,305**	**20.18%**	**341.52**			
Total MSW	**16,562,597**	**100.00%**		**13,220,292**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	186,030					
In-State MSW Landfill	960,667					
In-State Long Island Landfill	1,682,343					
MWC Ash	9,463					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	1,018,746					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	754,786					
Subtotal Landfill	**4,612,035**	**37.259%**	**471.27**	**4,612,035**	**76.83%**	
Combustion (with Energy Recovery)						
At MWCs	53,479					
Ash	(9,463)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(1,185)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	(3,759)					
BUD - Fuel	64388					
Subtotal Combustion	**103,460**	**0.836%**	**10.57**	**103,460**	**1.72%**	
Export for Disposal						
Facility Reports	1,287,051					
Planning Unit Reports	0					
Out-of-State Survey	0					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,287,051**	**10.398%**	**131.51**	**1,287,051**	**21.44%**	
Recycled/Aggregate						
In-State C&D Debris	5,651,720					
Export for Recovery from Facility Reports	201,617					
MWC Metal	1,185					From combustion above
BUD-Recycled	338,865					
BUD - Fill/Aggregate	182,266					
Subtotal Recycled/Aggregate	**6,375,653**	**51.507%**	**651.48**			
Total C&D Debris	**12,378,199**	**100.00%**		**6,002,546**	**100.00%**	

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	Disposed Per Capita (lbs)	Comments
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	582,523					
In-State MSW Landfill	525,175					
MWC Ash	8,846					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	475,749					Includes ash used as AOC
BUD - Landfill	14,165					
Subtotal Landfill	**1,606,458**	**60.34%**	**164.15**	**1,606,458**	**95.88%**	
Combustion (with Energy Recovery)						
In-State at MWCs	49,992					
Ash	(8,846)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(3,514)					
BUD - Fuel	11,703					
Subtotal Combustion	**49,335**	**1.85%**	**5.04**	**49,335**	**2.94%**	
Export for Disposal						
Facility Reports	19,082					
Out-of-State Survey	551					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**19,633**	**0.74%**	**2.01**	**19,633**	**1.17%**	
Recyled/Composted						
RHRF/Transfer Facility Data	41,138					
Export for Recovery from Facility Reports	10,675					
Food Processing Land Application	33,432					
Food Processing Anaerobic Digester	3,828					
Animal Feed	283,872					
BUD - Use	530,616					
Subtotal Recycled/Composted	**903,561**	**33.94%**	**92.33**			
Fill/Aggregate						
BUD - Fill/Aggregate	83,286					
Subtotal BUD - Fill/Aggregate	**83,286**	**3.13%**	**8.51**			
Total Industrial Waste	**2,662,273**	**100.00%**		**1,675,426**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	287,861					
BUD - WWTP Sludge Ash	4,038					
Subtotal Landfill	**291,899**	**18.27%**	**29.83**	**291,899**	**27.33%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	300,000					Biosolids Report
BUD - Ash	(4,038)					
Subtotal Combustion	**295,962**	**18.52%**	**30.24**	**295,962**	**27.71%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	27,513					
Out-of-State Report	452,732					Biosolids Report
Subtotal Export for Disposal	**480,245**	**30.05%**	**49.07**	**480,245**	**44.96%**	
Recycled/Composted						
Recycled (Composting/Land Application)	530,000					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**530,000**	**33.16%**	**54.16**			
Total Biosolids	**1,598,106**	**100.00%**		**1,068,106**	**100.00%**	
Total Landfill	**12,194,820**	**36.73%**	**1,246.09**			
Total Combustion	**2,832,879**	**8.53%**	**289.47**			
Total Export for Disposal	**6,938,671**	**20.90%**	**709.01**			
Total Recycled	**11,234,805**	**33.84%**	**1,147.99**			
Total Generated	**33,201,175**	**100.00%**	**3,392.56**			

New York State Waste Generation
Total Solid Waste
Year 2013

Population Served (Statewide) **19,624,447**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	4,941,273					
In-State Long Island Landfill	0					
MWC Ash	425,278					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	437,850					Includes ash used as AOC
BUD - Landfill	110,718					
BUD - Tire & Tire Fill	9,149					
Subtotal Landfill	**5,924,268**	**33.81%**	**603.76**	**5,924,268**	**42.83%**	
Combustion (with Energy Recovery)						
In-State MSW	3,245,776					
Ash	(425,278)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(78,766)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(379,959)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,361,773**	**13.48%**	**240.70**	**2,361,773**	**17.07%**	
Export for Disposal						
Facility Reports	4,315,032					
Facility Report - AOC	0					
Out-of-State Survey Data	1,224,272					Data from other states that receive waste from NYS
HHW Report Data	2,157					Total HHW disposed
Export for Combustion						
Tire Fuel	5,907					
Subtotal Export for Disposal	**5,547,368**	**31.66%**	**565.35**	**5,547,368**	**40.10%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,519,884					
Direct To Mfg	0					
Yard Trimmings Facility Data	387,521					
Food Scraps Facility Data	41,592					
Institutional	6,148					DOCCS
Yard Trimmings Exported	56,738					
Food Scraps Exported	12,458					
BUD Tire Use & Fill	3,085					
BUD - Other Use	2,237					
Commercial Recycling Reports	146,081					Provided directly to DEC (Price Chopper, Target, Walmart, Wegmans)
Bottle Bill	287,067					
MWC Metal	78,766					From combustion above
HHW Report Data	1,537					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	1,141,775					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	4,182					
Subtotal Recycled/Composted	**3,689,071**	**21.05%**	**375.97**			
Total MSW	**17,522,480**	**100.00%**		**13,833,409**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	191,760					
In-State MSW Landfill	998,271					
In-State Long Island Landfill	2,065,917					
MWC Ash	16,386					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	1,261,694					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	545,939					
Subtotal Landfill	**5,079,967**	**36.62%**	**517.72**	5,079,967	**72.97%**	
Combustion (with Energy Recovery)						
At MWCs	61,563					
Ash	(16,386)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(1,358)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	(6,531)					
BUD - Fuel	0					
Subtotal Combustion	**37,288**	**0.27%**	**3.80**	37,288	**0.54%**	
Export for Disposal						
Facility Reports	1,452,482					
Planning Unit Reports	0					
Out-of-State Survey	391,923					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,844,405**	**13.29%**	**187.97**	1,844,405	**26.49%**	
Recycled/Aggregate						
In-State C&D Debris	6,203,107					
Export for Recovery from Facility Reports	237,354					
MWC Metal	1,358					From combustion above
BUD-Recycled	302,031					
BUD - Fill/Aggregate	168,012					
Sub-Total Recycled/Aggregate	**6,911,862**	**49.82%**	**704.41**			
Total C&D Debris	**13,873,522**	**100.00%**		**6,961,660**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	554,270					
In-State MSW Landfill	600,320					
MWC Ash	6,955					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	445,116					Includes ash used as AOC
BUD - Landfill	5,382					
Subtotal Landfill	**1,612,043**	**53.883%**	**164.29**	**1,612,043**	**85.20%**	
Combustion (with Energy Recovery)						
In-State at MWCs	53,495					
Ash	(6,955)					(total ash) x (in-state %) x (IND %)

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Facility Report - MWC AOC	(6,214)					
BUD - Fuel	14,282					
Subtotal Combustion	**54,608**	**1.825%**	**5.57**	**54,608**	**2.89%**	
Export for Disposal						
Facility Reports	18,505					
Out-of-State Survey	206,967					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**225,472**	**7.537%**	**22.98**	**225,472**	**11.92%**	
Recycled/Composted						
RHRF/Transfer Facility Data	11,999					
Export for Recovery from Facility Reports	9,992					
Food Processing Land Application	30,500					
Food Processing Anaerobic Digester	3,050					
Animal Feed	280,716					
BUD - Use	704,798					
Subtotal Recycled/Composted	**1,041,055**	**34.798%**	**106.10**			
Fill/Aggregate						
BUD - Fill/Aggregate	58,551					
Subtotal BUD - Fill/Aggregate	**58,551**	**1.957%**	**5.97**			
Total Industrial Waste	**2,991,729**	**100.00%**		**1,892,123**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	361,102					
BUD - WWTP Sludge Ash	3,765					
Subtotal Landfill	**364,867**	**32.70%**	**37.18**	**364,867**	**44.84%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	290,155					Biosolids Report
BUD - Ash	(3,765)					
Subtotal Combustion	**286,390**	**25.67%**	**29.19**	**286,390**	**35.20%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	26,661					
Out-of-State Report	135,800					Biosolids Report
Subtotal Export for Disposal	**162,461**	**14.56%**	**16.56**	**162,461**	**19.97%**	
Recycled/Composted						
Recycled (Composting/Land Application)	302,050					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**302,050**	**27.07%**	**30.78**			
Total Biosolids	**1,115,768**	**100.00%**		**813,718**	**100.00%**	
Total Landfill	**12,981,145**	**36.56%**	**1,322.96**			
Total Combustion	**2,740,059**	**7.72%**	**279.25**			
Total Export for Disposal	**7,779,706**	**21.91%**	**792.86**			
Total Recycled	**12,002,589**	**33.81%**	**1,223.23**			
Total Generated	**35,503,499**	**100.00%**	**3,618.29**			

New York State Waste Generation
Total Solid Waste
Year 2014

Population Served (Statewide) **19,651,049**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	5,108,051					
In-State Long Island Landfill	0					
MWC Ash	502,517					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	287,531					Includes ash used as AOC
BUD - Landfill	56,919					
BUD - Tire & Tire Fill	25,777					
Subtotal Landfill	**5,980,795**	**34.01%**	**608.70**	**5,980,795**	**43.08%**	
Combustion (with Energy Recovery)						
In-State MSW	3,233,249					
Ash	(502,517)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(80,794)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(259,936)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,390,002**	**13.59%**	**243.24**	**2,390,002**	**17.21%**	
Export for Disposal						
Facility Reports	4,324,626					
Facility Report - AOC	0					
Out-of-State Survey Data	1,184,681					Data from other states that receive waste from NYS
HHW Report Data	4,483					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**5,513,790**	**31.35%**	**561.17**	**5,513,790**	**39.71%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,574,900					
Direct To Mfg	0					
Yard Trimmings Facility Data	399,719					
Food Scraps Facility Data	44,880					
Institutional	5,955					DOCCS
Yard Trimmings Exported	52,883					
Food Scraps Exported	2,245					
BUD Tire Use & Fill	583					
BUD - Other Use	1,110					
Commercial Recycling Reports	175,925					Provided directly to DEC (Price Chopper, Target, Walmart, Wegmans)
Bottle Bill	228,280					
MWC Metal	80,794					From combustion above
HHW Report Data	2,200					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	1,132,700					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,702,174**	**21.05%**	**376.79**			
Total MSW	**17,586,761**	**100.00%**		**13,884,587**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	296,195					
In-State MSW Landfill	779,329					
In-State Long Island Landfill	2,039,833					
MWC Ash	24,381					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	351,730					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	516,519					
Subtotal Landfill	**4,007,987**	**29.22%**	**407.92**	**4,007,987**	**75.13%**	
Combustion (with Energy Recovery)						
At MWCs	92,239					
Ash	(24,381)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(1,971)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	(6,262)					
BUD - Fuel	65726					
Subtotal Combustion	**125,351**	**0.91%**	**12.76**	**125,351**	**2.35%**	
Export for Disposal						
Facility Reports	1,150,806					
Facility Reports - AOC	1,354					
Planning Unit Reports	0					
Out-of-State Survey	49,509					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,201,669**	**8.76%**	**122.30**	**1,201,669**	**22.52%**	
Recycled/Aggregate						
In-State C&D Debris	6,737,803					
Export for Recovery from Facility Reports	175,686					
MWC Metal	1,971					From combustion above
BUD-Recycled	7,680					
BUD - Fill/Aggregate	1,456,896					
Subtotal Recycled/Aggregate	**8,380,036**	**61.10%**	**852.88**			
Total C&D Debris	**13,715,043**	**100.00%**		**5,335,007**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	552,063					
In-State MSW Landfill	571,042					
MWC Ash	7,228					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	431,670					Includes ash used as AOC
BUD - Landfill	52,217					
Subtotal Landfill	**1,614,220**	**56.92%**	**164.29**	**1,614,220**	**90.24%**	
Combustion (with Energy Recovery)						
In-State at MWCs	46,794					
Ash	(7,228)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(3,739)					
BUD - Fuel	17,219					
Subtotal Combustion	**53,046**	**1.87%**	**5.40**	**53,046**	**2.97%**	
Export for Disposal						
Facility Reports	20,017					
Out-of-State Survey	101,513					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**121,530**	**4.29%**	**12.37**	**121,530**	**6.79%**	
Recycled/Composted						
RHRF/Transfer Facility Data	51,093					
Export for Recovery from Facility Reports	15,254					

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Food Processing Land Application	30,500					
Food Processing Anaerobic Digester	3,200					
Animal Feed	293,976					
BUD - Use	560,790					
Subtotal Recycled/Composted	**954,813**	**33.67%**	**97.18**			
Fill/Aggregate						
BUD - Fill/Aggregate	92,224					
Subtotal BUD - Fill/Aggregate	**92,224**	**3.25%**	**9.39**			
Total Industrial Waste	**2,835,833**	**100.00%**		**1,788,796**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	396,406					
BUD - WWTP Sludge Ash	5,593					
Subtotal Landfill	**401,999**	**32.58%**	**40.91**	**401,999**	**43.14%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	290,155					Biosolids Report
BUD - Ash	(5,593)					
Subtotal Combustion	**284,562**	**23.06%**	**28.96**	**284,562**	**30.54%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	20,017					
Out-of-State Survey	225,295					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**245,312**	**19.88%**	**24.97**	**245,312**	**26.32%**	
Recycled/Composted						
Recycled (Composting/Land Application)	302,050					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**302,050**	**24.48%**	**30.74**			
Total Biosolids	**1,233,923**	**100.00%**		**931,873**	**100.00%**	
Total Landfill	**12,005,001**	**33.94%**	**1,221.82**			
Total Combustion	**2,852,961**	**8.07%**	**290.36**			
Total Export for Disposal	**7,082,301**	**20.02%**	**720.81**			
Total Recycled	**13,431,297**	**37.97%**	**1,366.98**			
Total Generated	**35,371,560**	**100.00%**	**3,599.97**			

New York State Waste Generation
Total Solid Waste
Year 2015

Population Served (Statewide) **19,654,666**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	5,617,058					
In-State Long Island Landfill	0					
MWC Ash	477,143					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	333,972					Includes ash used as AOC
BUD - Landfill	53,290					
BUD - Tire & Tire Fill	54,333					
Subtotal Landfill	**6,535,796**	**37.65%**	**665.06**	**6,535,796**	**46.93%**	
Combustion (with Energy Recovery)						
In-State MSW	3,218,289					
Ash	(477,143)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(84,318)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(311,668)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,345,160**	**13.51%**	**238.64**	**2,345,160**	**16.84%**	
Export for Disposal						
Facility Reports	3,672,340					
Facility Report - AOC	0					
Out-of-State Survey Data	1,369,334					Data from other states that receive waste from NYS
HHW Report Data	3,492					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**5,045,166**	**29.07%**	**513.38**	**5,045,166**	**36.23%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,586,550					
Direct To Mfg	0					
Yard Trimmings Facility Data	400,154					
Food Scraps Facility Data	45,724					
Institutional	6,215					DOCCS
Yard Trimmings Exported	57,706					
Food Scraps Exported	130					
BUD Tire Use & Fill	3					
BUD - Other Use	9,229					
Commercial Recycling Reports	178,569					Provided directly to DEC (Home Depot, Price Chopper, Target, Walmart, Wegmans)
Bottle Bill	225,350					
MWC Metal	84,318					From combustion above
HHW Report Data	1,723					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	835,404					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,431,075**	**19.77%**	**349.14**			
Total MSW	**17,357,197**	**100.00%**		**13,926,122**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	571,176					
In-State MSW Landfill	822,403					
In-State Long Island Landfill	1,897,824					
MWC Ash	28,474					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	872,946					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	24,505					
Subtotal Landfill	**4,217,328**	**25.11%**	**429.14**	**4,217,328**	**75.83%**	
Combustion (with Energy Recovery)						
At MWCs	98,823					
Ash	(36,215)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(2,118)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	7,742					
BUD - Fuel	7,384					
Subtotal Combustion	**75,616**	**0.45%**	**7.69**	**75,616**	**1.36%**	
Export for Disposal						
Facility Reports	1,163,651					
Facility Reports - AOC	0					
Planning Unit Reports	0					
Out-of-State Survey	104,885					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,268,536**	**7.55%**	**129.08**	**1,268,536**	**22.81%**	
Recycled/Aggregate						
In-State C&D Debris	9,988,497					
Export for Recovery from Facility Reports	258,671					
MWC Metal	2,118					From combustion above
BUD-Recycled	17,386					
BUD - Fill/Aggregate	966,339					
Subtotal Recycled/Aggregate	**11,233,011**	**66.89%**	**1,143.04**			
Total C&D Debris	**16,794,491**	**100.00%**		**5,561,480**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State at Industrial Landfill	421,071					
In-State MSW Landfill	485,647					
MWC Ash	10,694					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	379,451					Includes ash used as AOC
BUD - Landfill	36,351					
Subtotal Landfill	**1,333,214**	**48.69%**	**135.66**	**1,333,214**	**88.48%**	
Combustion (with Energy Recovery)						
In-State at MWCs	72,696					
Ash	(10,694)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(6,986)					
BUD - Fuel	23,734					
Subtotal Combustion	**78,750**	**2.88%**	**8.01**	**78,750**	**5.23%**	
Export for Disposal						
Facility Reports	15,424					
Out-of-State Survey	79,350					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**94,774**	**3.46%**	**9.64**	**94,774**	**6.29%**	
Recycled/Composted						
RHRF/Transfer Facility Data	73,788					

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Export for Recovery from Facility Reports	5,643					
Food Processing Land Application	30,500					
Food Processing Anaerobic Digester	4,006					
Animal Feed	600,917					
BUD - Use	332,840					
Subtotal Recycled/Composted	**1,047,694**	**38.26%**	**106.61**			
Fill/Aggregate						
BUD - Fill/Aggregate	183,564					
Subtotal BUD - Fill/Aggregate	**183,564**	**6.70%**	**18.68**			
Total Industrial Waste	**2,737,996**	**100.00%**		**1,506,738**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	387,973					
BUD - WWTP Sludge Ash	4,836					
Subtotal Landfill	**392,809**	**31.20%**	**39.97**	**392,809**	**41.05%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	290,155					Biosolids Report
BUD - Ash	(4,836)					
Combustion (w/Energy Recovery)						
In-State Facility Report	665					
Subtotal Combustion	**285,984**	**22.71%**	**29.10**	**285,984**	**29.88%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	104,107					
Out-of-State Survey	174,069					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**278,176**	**22.09%**	**28.31**	**278,176**	**29.07%**	
Recycled/Composted						
Recycled (Composting/Land Application)	302,050					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**302,050**	**23.99%**	**30.74**			
Total Biosolids	**1,259,019**	**100.00%**		**956,969**	**100.00%**	
Total Landfill	**12,479,147**	**32.71%**	**1,269.84**			
Total Combustion	**2,785,510**	**7.30%**	**283.45**			
Total Export for Disposal	**6,686,652**	**17.53%**	**680.41**			
Total Recycled	**16,197,394**	**42.46%**	**1,648.20**			
Total Generated	**38,148,703**	**100%**	**3,881.90**			

New York State Waste Generation
Total Solid Waste
Year 2016

Population Served (Statewide) **19,633,428**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	6,068,546					
In-State Long Island Landfill	0					
MWC Ash	512,391					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	337,200					Includes ash used as AOC
BUD - Landfill	23,210					
BUD - Tire & Tire Fill	26,227					
Subtotal Landfill	**6,967,574**	**39.47%**	**709.77**	**6,967,574**	**49.69%**	
Combustion (with Energy Recovery)						
In-State MSW	3,293,041					
Ash	(512,391)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(95,378)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(272,419)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,412,853**	**13.67%**	**245.79**	**2,412,853**	**17.21%**	
Export for Disposal						
Facility Reports	3,487,366					
Facility Report - AOC	0					
Out-of-State Survey Data	1,149,019					Data from other states that receive waste from NYS
HHW Report Data	3,937					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**4,640,322**	**26.29%**	**472.70**	**4,640,322**	**33.10%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,639,158					Does not include RCA tonnage from RHRFs
Direct To Mfg	0					
Yard Trimmings Facility Data	530,274					
Food Scraps Facility Data	46,111					
Institutional Food Scraps	7,932					DOCCS, SUNY, etc
Institutional Yard Trimmings	3,987					DOCCS, SUNY, etc
Yard Trimmings Exported	58,884					
Food Scraps Exported	35					
BUD Tire Use & Fill	17,735					
BUD - Other Use	50,245					
Commercial Recycling Reports	182,184					Provided directly to DEC (Home Depot, Target, Walmart/Sam's Club, Wegmans)
Bottle Bill	246,612					
MWC Metal	95,378					From combustion above
HHW Report Data	1,736					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	752,676					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,632,947**	**20.58%**	**370.08**			
Total MSW	**17,653,696**	**100.00%**		**14,020,749**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	683,714					
In-State MSW Landfill	900,790					
In-State Long Island Landfill	1,512,321					
MWC Ash	27,625					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	1,256,982					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	81,342					
Subtotal Landfill	**4,462,774**	**24.39%**	**454.61**	**4,462,774**	**74.88%**	
Combustion (with Energy Recovery)						
At MWCs	105,513					
Ash	(34,428)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(2,414)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	6,803					
BUD - Fuel	14,135					
Subtotal Combustion	**89,609**	**0.49%**	**9.13**	**89,609**	**1.50%**	
Export for Disposal						
Facility Reports	1,291,211					
Facility Reports - AOC	0					
Planning Unit Reports	0					
Out-of-State Survey	116,040					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,407,251**	**7.69%**	**143.35**	**1,407,251**	**23.61%**	
Recycled/Aggregate						
In-State C&D Debris	11,021,262					
Export for Recovery from Facility Reports	284,652					
MWC Metal	2,414					From combustion above
BUD-Recycled	25,293					
BUD - Fill/Aggregate	1,005,009					
Sub-Total Recycled/Aggregate	**12,338,630**	**67.43%**	**1,256.90**			
Total C&D Debris	**18,298,264**	**100.00%**		**5,959,634**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	195,433					
In-State MSW Landfill	470,133					
MWC Ash	17,038					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	367,107					Includes ash used as AOC
BUD - Landfill	29,557					
Subtotal Landfill	**1,079,268**	**41.91%**	**109.94**	**1,079,268**	**85.70%**	
Combustion (with Energy Recovery)						
In-State at MWCs	110,507					
Ash	(17,038)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(9,058)					
BUD - Fuel	86					
Subtotal Combustion	**84,497**	**3.28%**	**8.61**	**84,497**	**6.71%**	
Export for Disposal						
Facility Reports	21,857					
Out-of-State Survey	73,767					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**95,624**	**3.71%**	**9.74**	**95,624**	**7.59%**	
Recycled/Composted						
RHRF/Transfer Facility Data	87,242					
Export for Recovery from Facility Reports	6,674					

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Food Processing Land Application	17,658					
Food Processing Anaerobic Digester	3,108					
Food Processing Composting	2,782					
Animal Feed	688,206					
BUD - Use	277,060					
Subtotal Recycled/Composted	**1,082,730**	**42.05%**	**110.29**			
Fill/Aggregate						
BUD - Fill/Aggregate	232,989					
Subtotal BUD - Fill/Aggregate	**232,989**	**9.05%**	**23.73**			
Total Industrial Waste	**2,575,108**	**100.00%**		**1,259,389**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	412,947					
BUD - WWTP Sludge Ash	3,398					
Subtotal Landfill	**416,345**	**30.50%**	**42.41**	**416,345**	**39.17%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	290,155					Biosolids Report
BUD - Ash	(3,398)					
Combustion (w/Energy Recovery)						
In-State Facility Report	5,206					
Subtotal Combustion	**291,963**	**21.39%**	**29.74**	**291,963**	**27.47%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	157,452					
Out-of-State Survey	197,196					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**354,648**	**25.98%**	**36.13**	**354,648**	**33.36%**	
Recycled/Composted						
Recycled (Composting/Land Application)	302,050					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**302,050**	**22.13%**	**30.77**			
Total Biosolids	**1,365,006**	**100.00%**		**1,062,956**	**100.00%**	
Total Landfill	**12,925,961**	**32.40%**	**1,316.73**			
Total Combustion	**2,878,922**	**7.22%**	**293.27**			
Total Export for Disposal	**6,497,845**	**16.29%**	**661.92**			
Total Recycled	**17,589,346**	**44.09%**	**1,791.78**			
Total Generated	**39,892,074**	**100.00%**	**4,063.69**			

New York State Waste Generation
Total Solid Waste
Year 2017

Population Served (Statewide) **19,589,572**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	6,203,113					
In-State Long Island Landfill	0					
MWC Ash	517,738					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	469,850					Includes ash used as AOC
BUD - Landfill	51,908					
BUD - Tire & Glass	22,511					
Subtotal Landfill	**7,265,120**	**40.54%**	**741.73**	**7,265,120**	**49.44%**	
Combustion (with Energy Recovery)						
In-State MSW	3,359,126					
Ash	(517,738)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(52,517)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(587)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,788,284**	**15.56%**	**284.67**	**2,788,284**	**18.97%**	
Export for Disposal						
Facility Reports	3,464,487					
Facility Report - AOC	0					
Out-of-State Survey Data	1,173,908					Data from other states that receive waste from NYS
HHW Report Data	3,094					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**4,641,489**	**25.90%**	**473.87**	**4,641,489**	**31.59%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,194,793					Does not include RCA tonnage from RHRFs
Direct To Mfg	0					
Yard Trimmings Facility Data	561,868					
Food Scraps Facility Data	61,566					
Institutional Food Scraps	7,792					DOCCS, SUNY, etc
Institutional Yard Trimmings	4,081					DOCCS, SUNY, etc
Yard Trimmings Exported	9,083					
Food Scraps Exported	1,420					
BUD Tire Use & Fill	3,887					
BUD - Other Use	67,450					
Commercial Recycling Reports	165,974					Provided directly to DEC (Home Depot, Walmart/Sam's Club, Wegmans)
Bottle Bill	248,739					
MWC Metal	52,517					From combustion above
HHW Report Data	1,813					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	843,762					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,224,745**	**18.00%**	**329.23**			
Total MSW	**17,919,638**	**100.00%**		**14,694,893**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	647,492					
In-State MSW LF	963,005					
In-State Long Island Landfill	1,440,945					
MWC Ash	28,620					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	994,359					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	26,453					
Subtotal Landfill	**4,100,874**	**23.68%**	**418.68**	**4,100,874**	**73.24%**	
Combustion (with Energy Recovery)						
At MWCs	112,421					
Ash	(35,236)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(1,304)					(total metal recovered) x (in-state %) X (C&D Debris %)
Facility Report - MWC AOC	(6,615)					
BUD - Fuel	3,020					
Subtotal Combustion	**72,286**	**0.42%**	**7.38**	**72,286**	**1.29%**	
Export for Disposal						
Facility Reports	1,361,738					
Facility Reports - AOC	0					
Planning Unit Reports	0					
Out-of-State Survey	64,371					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,426,109**	**8.24%**	**145.60**	**1,426,109**	**25.47%**	
Recycled/Aggregate						
In-State C&D Debris	11,163,406					
Export for Recovery from Facility Reports	151,430					
MWC Metal	1,304					From combustion above
BUD-Recycled	3,159					
BUD - Fill/Aggregate	396,414					
Sub-Total Recycled/Aggregate	**11,715,713**	**67.66%**	**1,196.12**			
Total C&D Debris	**17,314,982**	**100.00%**		**5,599,269**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	102,009					
In-State MSW Landfill	497,575					
MWC Ash	21,670					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	266,523					Includes ash used as AOC
BUD - Landfill	25,047					
Subtotal Landfill	**912,824**	**44.83%**	**93.19**	**912,824**	**78.73%**	
Combustion (with Energy Recovery)						
In-State at MWCs	141,440					
Ash	(21,670)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(11,277)					
BUD - Fuel	0					
Subtotal Combustion	**108,493**	**5.33%**	**11.08**	**108,493**	**9.36%**	

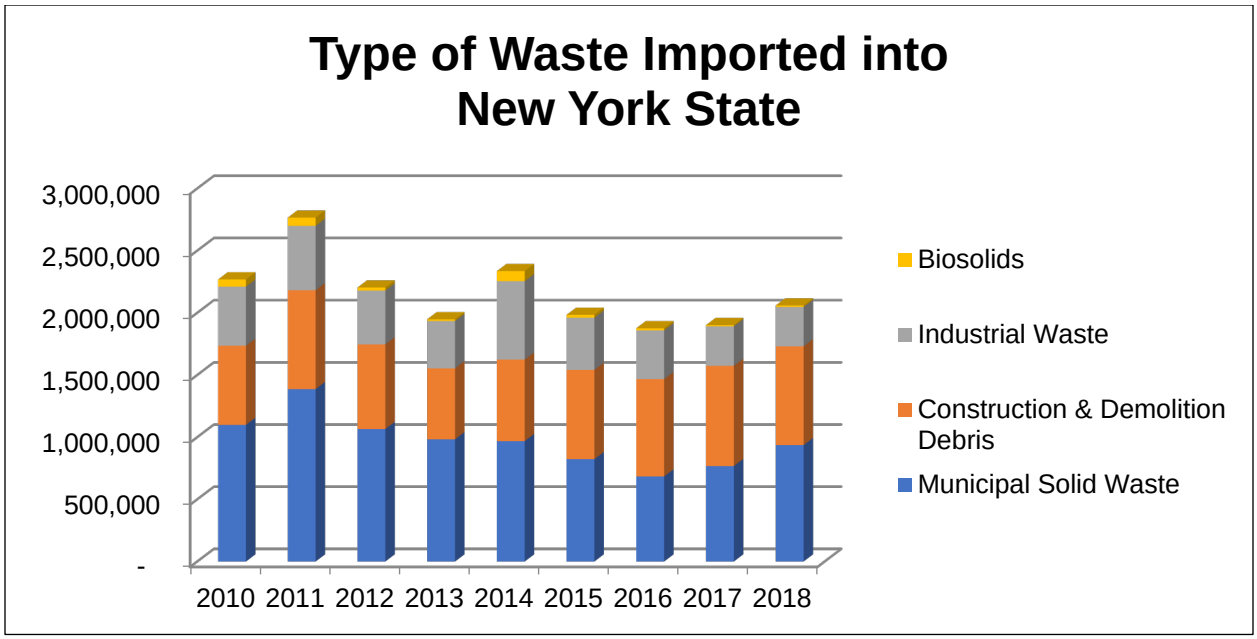
Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Export for Disposal						
Facility Reports	16,757					
Out-of-State Survey	121,348					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**138,105**	**6.78%**	**14.10**	**138,105**	**11.91%**	
Recycled/Composted						
RHRF/Transfer Facility Data	7,246					
Export for Recovery from Facility Reports	26,135					
Food Processing Land Application	16,452					
Food Processing Anaerobic Digester	4,951					
Food Processing Composting	3,564					
Animal Feed	380,059					
BUD - Use	281,919					
Subtotal Recycled/Composted	**720,326**	**35.38%**	**73.54**			
Fill/Aggregate						
BUD - Fill/Aggregate	156,402					
Subtotal BUD - Fill/Aggregate	**156,402**	**7.68%**	**15.97**			
Total Industrial Waste	**2,036,150**	**100.00%**		**1,159,422**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	413,921					
BUD - WWTP Sludge Ash	0					
Subtotal Landfill	**413,921**	**32.36%**	**42.26**	**413,921**	**42.36%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	290,155					Biosolids Report
BUD - Ash	0					
Combustion (w/Energy Recovery)						
In-State Facility Report	7,360					
Subtotal Combustion	**297,515**	**23.26%**	**30.37**	**297,515**	**30.45%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	153,255					
Out-of-State Survey	112,452					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**265,707**	**20.77%**	**27.13**	**265,707**	**27.19%**	
Recycled/Composted						
Recycled (Composting/Land Application)	302,050					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**302,050**	**23.61%**	**30.84**			
Total Biosolids	**1,279,193**	**100.00%**		**977,143**	**100.00%**	
Heavy Metal (VDFs and SMPs)						
Landfill						Data From Annual Facility Reports
Facility Report - MSW Landfill AOC	217,219					Auto Shredder Residue
Subtotal Landfill	**217,219**	**10.46%**	**22.18**	**217,219**	**100.00%**	
Recycled						
VDF/SMP Data	1,860,221					
Subtotal Recycled	**1,860,221**	**89.54%**	**189.92**			
Total Heavy Metal	**2,077,440**	**100.00%**		**217,219**	**100.00%**	
Total Landfill	**12,909,958**	**31.90%**	**1,318.04**			
Total Combustion	**3,266,578**	**8.07%**	**333.50**			
Total Export for Disposal	**6,471,410**	**15.99%**	**660.70**			
Total Recycled	**17,823,055**	**44.04%**	**1,819.65**			
Total Generated	**40,471,001**	**100.00%**	**4,131.89**			

New York State Waste Generation
Total Solid Waste
Year 2018

Population Served (Statewide) **19,530,351**

Material Managed	Generated (tons)	% of Total Generated	Generated Per Capita (lbs)	Disposed (tons)	% of Total Disposed	Comments
Municipal Solid Waste (MSW)						
						Data From Annual Facility Reports and BUD Reports
Landfill						
In-State MSW Landfill	5,998,326					
In-State Long Island Landfill	0					
MWC Ash	540,711					(total ash) x (in-state %) x (MSW %)
Facility Report - MSW AOC	273,213					
BUD - Landfill	75,331					
BUD - Tire & Glass	20,417					
Subtotal Landfill	**6,907,998**	**38.61%**	**707.41**	**6,907,998**	**47.38%**	
Combustion (with Energy Recovery)						
In-State MSW	3,356,508					
Ash	(540,711)					(total ash) x (in-state %) x (MSW %)
Metal Recovered	(97,087)					(total metal recovered) x (in-state %) x (MSW %)
Facility Report - MWC AOC	(443)					
Tire Fuel	0					
BUD - Fuel	0					
Subtotal Combustion	**2,718,267**	**15.19%**	**278.36**	**2,718,267**	**18.64%**	
Export for Disposal						
Facility Reports	3,793,687					
Facility Report - AOC	0					
Out-of-State Survey Data	1,154,337					Data from other states that receive waste from NYS
HHW Report Data	5,645					Total HHW disposed
Export for Combustion						
Tire Fuel	0					
Subtotal Export for Disposal	**4,953,669**	**27.69%**	**507.28**	**4,953,669**	**33.98%**	
Recycled/Composted						
RHRF/Transfer Facility Data	1,311,242					Does not include RCA tonnage from RHRFs
Direct To Mfg	0					
Yard Trimmings Facility Data	593,442					
Food Scraps Facility Data	77,020					
Institutional Food Scraps	7,201					DOCCS, SUNY, etc
Institutional Yard Trimmings	6,251					DOCCS, SUNY, etc
Yard Trimmings Exported	11,935					
Food Scraps Exported	2,635					
BUD Tire Use & Fill	10,827					
BUD - Other Use	3,237					
Commercial Recycling Reports	177,016					Provided directly to DEC (Home Depot, Walmart/Sam's Club, Wegmans)
Bottle Bill	223,897					
MWC Metal	97,087					From combustion above
HHW Report Data	2,549					Electronics, auto batteries, fluorescent bulbs, mercury
Export for Recovery from Facility Reports	785,708					
Export for Recovery from Planning Unit Reports	0					
Export for Compost from RHRF/TF Facility Reports	0					
Subtotal Recycled/Composted	**3,310,047**	**18.50%**	**338.96**			
Total MSW	**17,889,981**	**100.00%**		**14,579,934**	**100.00%**	
Construction and Demolition (C&D) Debris						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State C&D Debris Landfill	696,965					
In-State MSW Landfill	1,352,675					
In-State Long Island Landfill	1,434,260					
MWC Ash	26,584					(total ash) x (in-state %) x (C&D Debris %)
Facility Report - AOC	1,311,666					Includes ash used as AOC
BUD - Tire & Tire Fill	0					
BUD - Landfill	25,268					
Subtotal Landfill	**4,847,418**	**26.40%**	**496.40**	**4,847,418**	**73.44%**	
Combustion (with Energy Recovery)						
In-state C&D Debris	130,379					
Ash	(31,798)					(total ash) x (in-state %) x (C&D Debris %)
Metal Recovered	(2,424)					(total metal recovered) x (in-state %) x (C&D Debris %)
Facility Report - MWC AOC	(5,214)					
BUD - Fuel	8,949					
Subtotal Combustion	**99,892**	**0.54%**	**10.23**	**99,892**	**1.51%**	
Export for Disposal						
Facility Reports	1,535,574					
Facility Reports - AOC	0					
Planning Unit Reports	0					
Out-of-State Survey	117,605					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**1,653,179**	**9.00%**	**169.29**	**1,653,179**	**25.05%**	
Recycled/Aggregate						
In-State C&D Debris	10,321,837					
Export for Recovery from Facility Reports	839,903					
MWC Metal	2,424					From combustion above
BUD-Recycled	350,294					
BUD - Fill/Aggregate	246,039					
Subtotal Recycled/Aggregate	**11,760,497**	**64.05%**	**1,204.33**			
Total C&D Debris	**18,360,986**	**100.00%**		**6,600,489**	**100.00%**	
Industrial Waste (IND)						
Landfill						Data From Annual Facility Reports and BUD Reports
In-State Industrial Landfill	221,455					
In-State MSW Landfill	528,579					
MWC Ash	25,518					(total ash) x (in-state %) x (IND %)
Facility Report - AOC	161,820					Includes ash used as AOC
BUD - Landfill	22,137					
Subtotal Landfill	**959,509**	**49.66%**	**98.26**	**959,509**	**69.72%**	
Combustion (with Energy Recovery)						
In-State at MWCs	159,484					
Ash	(25,518)					(total ash) x (in-state %) x (IND %)
Facility Report - MWC AOC	(9,927)					
BUD - Fuel	0					
Subtotal Combustion	**124,039**	**6.42%**	**12.70**	**124,039**	**9.01%**	
Export for Disposal						
Facility Reports	22,105					
Out-of-State Survey	270,596					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**292,701**	**15.15%**	**29.97**	**292,701**	**21.27%**	
Recycled/Composted						
RHRF/Transfer Facility Data	26,096					
Export for Recovery from Facility Reports	13,534					

Food Processing Land Application	15,245					
Food Processing Anaerobic Digester	6,793					
Food Processing Composting	4,347					
Animal Feed	252,898					
BUD - Use	144,188					
Subtotal Recycled/Composted	**463,101**	**23.97%**	**47.42**			
Fill/Aggregate						
BUD - Fill/Aggregate	92,947					
Subtotal BUD - Fill/Aggregate	**92,947**	**4.81%**	**9.52**			
Total Industrial Waste	**1,932,297**	**100.00%**		**1,376,249**	**100.00%**	
Biosolids (All tonnages converted to as received at landfill weights - 20% total solids)						
Landfill						Data From Annual Facility and BUD Reports and Biosolids Report
In-State - Facility Report	518,104					
BUD - WWTP Sludge Ash	7,708					
Subtotal Landfill	**525,812**	**38.30%**	**53.85**	**525,812**	**49.10%**	
Combustion (w/o Energy Recovery)						
In-State Facility Report	290,155					Biosolids Report
BUD - Ash	(7,708)					
Combustion (w/Energy Recovery)						
In-State Facility Report	7,119					
Subtotal Combustion	**289,566**	**21.09%**	**29.65**	**289,566**	**27.04%**	
Export for Disposal (Facility Report)						
Export for Disposal (Facility Report)	157,717					
Out-of-State Survey	97,710					Data from other states that receive waste from NYS
Subtotal Export for Disposal	**255,427**	**18.61%**	**26.16**	**255,427**	**23.85%**	
Recycled/Composted						
Recycled (Composting/Land Application)	302,050					
BUD - Use	0					
BUD - Fill	0					
Subtotal Recycled/Composted	**302,050**	**22.00%**	**30.93**			
Total Biosolids	**1,372,855**	**100.00%**		**1,070,805**	**100.00%**	
Heavy Metal (VDFs and SMPs)						
Landfill						Data From Annual Facility Reports
Facility Report - MSW Landfill AOC	317,609					Auto Shredder Residue
Subtotal Landfill	**317,609**	**11.80%**	**32.52**	**317,609**	**100.00%**	
Recycled						
VDF/SMP Data	2,374,552					
Subtotal Recycled	**2,374,552**	**88.20%**	**243.17**			
Total Heavy Metal	**2,692,161**	**100.00%**		**317,609**	**100.00%**	
Total Landfill	**13,558,346**	**32.09%**	**1,388.44**			
Total Combustion	**3,231,764**	**7.65%**	**330.95**			
Total Export for Disposal	**7,154,976**	**16.94%**	**732.70**			
Total Recycled	**18,303,194**	**43.32%**	**1,874.33**			
Total Generated	**42,248,280**	**100.00%**	**4,326.42**			


Type of Waste Imported into New York State
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2010 2011 2012 2013 2014 2015 2016 2017 2018
Biosolids
Industrial Waste
Construction & Demolition Debris
Municipal Solid Waste

Appendix D – Solid Waste Management Facilities and Transporters

Appendix D provides an overview of the Part 360 series, *Solid Waste Management Facilities*, discussed throughout the New York State Department of Environmental Conservation's (DEC) *Solid Waste Management Plan* (Plan).

Types of Facilities

- Anaerobic digestion facilities
- Combustion and thermal treatment facilities
- Composting facilities
- Construction and demolition debris handling and recovery facilities
- Household hazardous waste collection facilities and events
- Land application operations
- Landfills
- Metal processing and vehicle dismantling facilities
- Mulch processing facilities
- Municipal solid waste processing facilities
- Navigational dredged material handling and recovery facilities
- Recyclables handling and recovery facilities
- Regulated medical waste and other infectious waste facilities
- Transfer facilities
- Used cooking oil and yellow grease processing facilities
- Waste tire handling and recovery facilities
- Waste transporters

Anaerobic Digestion Facilities

Anaerobic digestion is a degradation process that converts organic materials into biogas in the absence of oxygen. Once the biogas has been extracted, the remaining slurry may be separated into liquids and solids. The liquid portion can be used as a fertilizer and the solids can be directly applied to the soil or further processed through composting.

Common materials fed into anaerobic digesters across New York State include food scraps, manure, biosolids, FOG (fats, oils, and greases), and food processing waste.

Anaerobic digestion operations in New York State are regulated by 6 New York Codes, Rules and Regulations (NYCRR) 361-3.3 in one of three ways: exempt, registered, or permitted. Regulation of anaerobic digestion facilities and their resulting digestate depend on the location, quantity, and type of material fed into the anaerobic digester.

Summary of anaerobic digestion regulations (by quantity and type of material)

Anaerobic digesters located on Concentrated Animal Feeding Operations (CAFOs) must adhere to additional National Resource Conservation Service (NRCS) standards as required by the State Pollutant Discharge Elimination System (SPDES) CAFO general permit.

Type of Facility	Number of Regulated Facilities as of June 2022
Anaerobic Digestion	4 Permits
	1 Registration

DEC Region	Number of Regulated Anaerobic Digestion Facilities	
	2018	2022
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	1	1
7	1	1
8	0	0
9	3	3
Total	**5**	**5**

Quantity of Waste Treated by Anaerobic Digestion in 2018*		
DEC Region	**Food Processing Waste (tons)**	**Source Separated Organics (tons)**
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	3,347	0
7	964	836
8	0	0
9	2,481	0
Total	6,792	836
Total Organics Anaerobically Digested in 2018	**7,628**	

* from regulated facilities

Learn more about anaerobic digestion in New York State.

Combustion and Thermal Treatment Facilities

Thermal treatment is a process that uses elevated temperatures or chemicals to change the chemical, physical, or biological character or composition of waste. Examples of thermal treatment technologies include plasma arc, pyrolysis, gasification, thermal desorption, and combustion.

Combustion is one type of thermal treatment that uses elevated temperatures and oxygen to reduce the volume of waste and generate electricity. The waste that remains from the combustion process is an ash residue. If the ash residue is found to be non-hazardous, it can be used in a productive manner if a case-specific beneficial use request is approved by DEC, used as alternate operating cover (AOC) at a landfill, or disposed of at a permitted Part 360 landfill that is authorized to take this waste. Processing the ash residue offers another opportunity to recover metals from the waste stream before the residue either is further beneficially used or is disposed of.

Combustion and thermal treatment operations in New York State are regulated by 6 NYCRR Subpart 362-1 in one of three ways: exempt, registered, or permitted. Regulation of combustion and thermal treatment depends on type of waste received, quantity of waste received and stored, process feed rate, and type of operation.

Summary of regulatory requirements for combustion and thermal treatment facilities:

As of June 2022, there are 15 active combustion and thermal treatment facilities operating across New York State. Of these, 4 are registered and 11 are permitted. The DECinfo Locator interactive mapping tool can be used to locate the combustion and thermal treatment facilities in New York State.

DEC Region	Number of Permitted Municipal Waste Combustion Facilities	Number of Other Permitted Facilities	Number of Registered Facilities
1	4	0	0
2	0	0	0
3	2	0	0
4	0	0	0
5	1	0	2
6	0	1	0
7	2	0	0
8	0	0	0
9	1	0	2
Total	**10**	**1**	**4**

The following table summarizes the data from the 2018 solid waste management facility annual reports for the 10 combustion facilities that are permitted to accept municipal solid waste.

DEC Region	Facility Name	Permitted Capacity (tons/year)	Waste Processed (tons)	Ash Residue Produced (tons)	Electricity Generated (megawatt-hours)	Metals Recovered (tons)
1	Babylon Resource Recovery Facility	287,442	243,446	52,412	132,941	6,434
1	Covanta MacArthur Renewable Energy	177,025	174,111	57,604	70,328	5,367
1	Hempstead Resource Recovery Facility	1,040,250	1,037,652	217,475	665,691	45,235
1	Huntington Resource Recovery Facility	350,400	341,931	78,508	215,256	9,640
3	Dutchess County Resource Recovery Facility	164,250	122,784	49,574	34,113	4,326
3	WM Wheelabrator (RESCO)	710,000	702,017	159,620	450,435	12,990
5	Wheelabrator Hudson Falls	219,000	158,907	48,934	91,532	2,409
7	Onondaga County Resource Recovery Facility	361,350	352,453	77,189	245,628	13,581
7	Oswego County Energy Recovery Facility	73,000	56,246	20,161	14,554	1,407
9	Covanta Niagara I; LLC	821,250	781,974	172,700	215,276	21,513
	Total	**4,203,967**	**3,971,521**	**934,177**	**2,135,754**	**122,902**

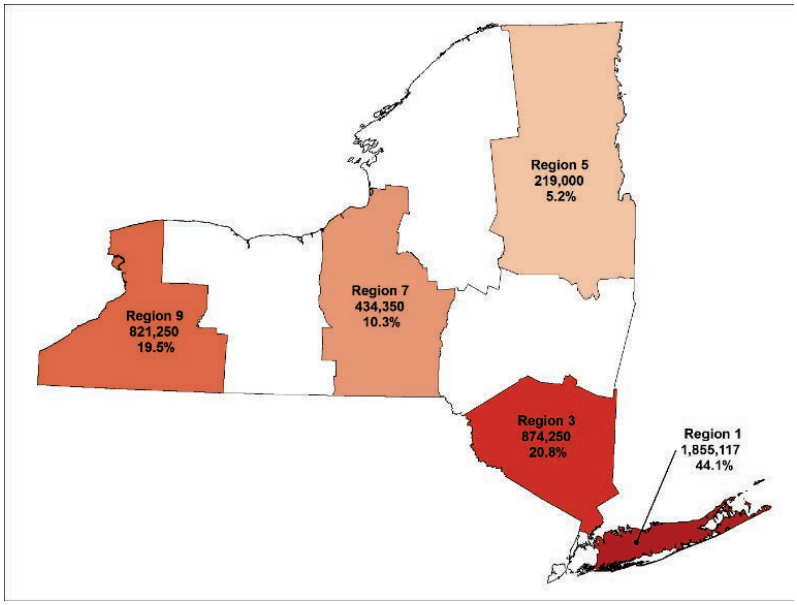


Figure D.1. Distribution of the permitted capacity of the 10 municipal waste combustion facilities across New York State

Composting Facilities

Composting is the controlled aerobic decomposition of organic materials to produce a stable, humus-like material called compost. Some of the common materials composted across New York State include source-separated organics (including food scraps), biosolids, yard trimmings, food processing waste, animal manure, and animal mortalities.

Composting operations in New York State are regulated by 6 NYCRR Part 361-3.2 in one of three ways: exempt, registered, or permitted. Regulation of composting facilities depends on the location, quantity, and type of material being composted.

Summary of composting regulations (by quantity and type of material):

View a map of regulated composting facilities in New York State.

Type of Facility	Number of Regulated Facilities as of June 2022
Composting – Biosolids	27 Permits
Composting – Source Separated Organics	7 Permits
	51 Registrations
Composting – Yard Trimmings	32 Permits
	89 Registrations

DEC Region	Number of Regulated Composting Facilities – Yard Trimmings and/or Source-Separated Organics		Number of Regulated Composting Facilities – Biosolids	
	2018	2022	2018	2022
1	25	40	0	0
2	9	8	0	0
3	23	33	2	2
4	14	20	3	3
5	5	11	4	2
6	5	6	1	1
7	12	15	6	5
8	17	19	10	9
9	20	27	6	5
Total	**130**	**179**	**32**	**27**

DEC Region	Source Separated Organics (tons)	Food Processing Waste (tons)	Yard Trimmings (tons)	Biosolids (tons)
1	6,369	0	210,597	0
2	34,084	3	28,522	0
3	7,138	126	162,593	27,502
4	19,735	115	50,164	8,602
5	0	0	17,216	54,605
6	210	119	22,321	88
7	4,488	3,680	20,828	4,041
8	876.00	304	35,739	4,904
9	3,284	0	45,462	4,599
Total	**76,184**	**4,347**	**593,442**	**104,341**
Total Organics Composted in 2018		**778,314**		

Learn more about composting in New York State.

Construction and Demolition Debris Handling and Recovery Facilities

Construction and Demolition Debris Handling and Recovery Facilities (CDDHRFs)—also referred to as C&D Debris Processing Facilities—encompass public and private facilities that receive, store, and process C&D debris for the purpose of recovering recyclable or beneficially usable materials. CDDHRFs are regulated pursuant to 6 NYCRR 361-5.

Summary of regulatory requirements for CDDHRFs:

CDDHRFs may be exempt, registered, or permitted. Due to DEC enforcement discretion, many CDDHRFs in operation prior to November 4, 2017, have been allowed to continue under registration where current regulations would otherwise require a permit until updated regulations are adopted. As of June 2022, 926 authorized CDDHRFs are active in New York State.

Based on data from the 2018 solid waste management facility annual reports, CDDHRFs managed 15.7 million tons of C&D debris in 2018.

DEC Region	Number of Regulated CDDHRFs	
	Registered	Permitted
1	112	36
2	25	23
3	43	14
4	48	6
5	25	3
6	31	0
7	55	2
8	56	4
9	69	5
Total	**464**	**93**

DEC Region	C&D Debris Managed at CDDHRFs in 2018 (tons)	
	Registered	Permitted
1	2,686,149	1,604,122
2	3,837,020	2,462,065
3	1,126,953	508,732
4	1,180,805	727,395
5	72,286	63,884
6	79,541	0
7	257,953	7,209
8	358,952	42,990
9	555,594	122,207
Total	**10,155,253**	**5,538,604**

Household Hazardous Waste Collection Facilities and Events

Household hazardous waste (HHW) is waste that is generated by households that should be managed with special care. These wastes can be flammable, toxic, corrosive, or reactive, and can be dangerous if handled improperly. These materials are subject to stringent hazardous waste management standards when generated outside of a household. However, when generated by a household, they are exempt from state and federal hazardous waste regulations. Examples of HHW include, but are not limited to, automotive fluids, pesticides, cleaning products, compact fluorescent light bulbs, oil-based paint, lead-acid batteries, electronics, and mercury-containing devices. More information on HHW, including safe alternatives, can be found on DEC's HHW webpage.

Household hazardous waste collection facilities and events offer safe outlets for recycling and disposal of HHW. HHW collection operations in New York State are regulated by 6 NYCRR Subpart 362-4 in one of two ways: registered or permitted. Regulation of HHW collection operations depends on the number of days of operation per year.

HHW collection facilities are permanent permitted solid waste management facilities that accept household hazardous waste from residents and hazardous waste from conditionally exempt small quantity generators (CESQGs). These facilities are typically open to residents on a regular basis.

Summary of regulatory requirements for HHW collection facilities:

The DECinfo Locator interactive mapping tool can be used to locate the permitted HHW collection facilities in New York State.

As of June 2022, there were 17 permitted facilities operating in New York State.

DEC Region	Number of Permitted HHW Collection Facilities
1	5
2	0
3	2
4	2
5	0
6	1
7	4
8	1
9	2
Total	**17**

Local governments often hold HHW collection events as an alternative outlet for these wastes. These events provide residents and CESQGs of hazardous waste an opportunity to manage these wastes when a permanent HHW collection facility is not located in their area. HHW collection events are registered events that can be held by a municipality for no more than 24

days within a calendar year and no more than two consecutive days in a row. These are typically one- or two-day events that are held by municipalities throughout the year to allow residents to bring HHW to a centralized location. In 2018, 84 HHW collection events were held in New York State.

DEC Region	Number of HHW Collection Events
1	25
2	1
3	20
4	8
5	7
6	0
7	1
8	0
9	22
Total	**84**

Summary of regulatory requirements for HHW collection events:

The best contact for information on upcoming HHW collection events is a resident's local municipality.

The following table provides information on HHW collection facilities and events based on 2018 solid waste management facility annual report data.

HHW Collection Type	Number of Households Serviced	Number of CESQGs Serviced	HHW Collected in 2018 (tons)
HHW Collection Facilities	103,006	721	5,655
HHW Collection Events	58,042	107	2,540
Total	**161,048**	**828**	**8,195**

Land Application Operations

Land application is the management of organic wastes where the material is applied directly to agricultural fields as a source of nutrients and/or to improve soil quality, reducing the need for commercial fertilizers. Methods include direct application to the soil surface or injection to the upper layer of the soil.

Land application operations in New York State are regulated by 6 NYCRR Subpart 361-2 in one of three ways: exempt, registered, or permitted. Regulation of land application facilities depends on the location, quantity, and type of material land applied.

Summary of land application regulations (by quantity and type of material):

Type of Facility	Number of Regulated Facilities as of June 2022
Land Application – Biosolids	19 Permits
Land Application – Food Processing Waste	90 Registrations

DEC Region	Number of Regulated Land Application Facilities – Biosolids		Number of Regulated Land Application Facilities – Food Processing Waste	
	2018	2022	2018	2022
1	0	0	0	0
2	0	0	0	0
3	1	0	0	1
4	0	0	8	14
5	2	2	6	5
6	4	3	4	5
7	6	4	10	9
8	8	8	30	35
9	3	2	20	21
Total	**24**	**19**	**78**	**90**

Quantity of Waste Land Applied in 2018*		
DEC Region	**Biosolids (tons)**	**Food Processing Waste (tons)**
1	0	0
2	0	0
3	510	0
4	0	823
5	341	1,377
6	3,777	654
7	4,190	2,427
8	1,213	6,658
9	220	3,307
Total	**10,251**	**15,246**
Total Organics Land Applied in 2018	**25,497**	

* from regulated facilities

Learn more about land application in New York State.

Landfills

The least preferred method of New York State's solid waste management hierarchy is land burial, more commonly referred to as landfilling. Active and inactive landfill operations in New York State are regulated by 6 NYCRR Subpart 363 in one of two ways: exempt or permitted. Regulation of landfilling depends on the type of waste received for disposal, the location of the landfill, and the status of the landfill operations.

Summary of regulatory requirements for landfills:

The DECinfo Locator interactive mapping tool can be used to locate the landfills in New York State.

As of June 2022, there are 141 active landfills operating in New York State. There are 25 municipal solid waste (MSW) landfills, 11 construction and demolition debris (C&D debris) landfills, five Long Island landfills (which cannot accept MSW for disposal), nine industrial landfills, and no ash monofill landfills operating in New York State. In addition, there are 91 land clearing debris (LCD) landfills in operation.

DEC Region	Number of Permitted MSW Landfills	Number of Permitted C&D Debris Landfills	Number of Permitted Industrial Landfills	Number of Permitted Ash Monofill Landfills	Number of Permitted Long Island Landfills	Number of LCD Landfills
1	0	0	0	0	5	0
2	0	0	0	0	0	0
3	0	0	1	0	0	0
4	3	3	1	0	0	4
5	4	2	1	0	0	41
6	2	0	0	0	0	33
7	5	1	0	0	0	5
8	6	2	3	0	0	5
9	5	3	3	0	0	3
Total	**25**	**11**	**9**	**0**	**5**	**91**

While the 25 MSW landfills in the state have available permitted disposal capacity, several factors must be taken into consideration when calculating the available remaining disposal capacity for New York State. Limitations at the local municipal level may restrict the acceptance of waste from areas outside of the municipality where the landfill is located. Additionally, landfills must operate within their permit limits, limiting the amount of waste that can be disposed of on an annual basis. Collectively, the 25 MSW landfills in the state have a combined site life of between approximately 16 and 25 years. Twenty-five years is the full remaining capacity of all the landfills using their waste acceptance rate in 2018. If the full permitted limit for each was

used instead, there would be a remaining capacity of 19 years. If local restrictions on waste acceptance are factored in, the remaining site life would be 16 years.

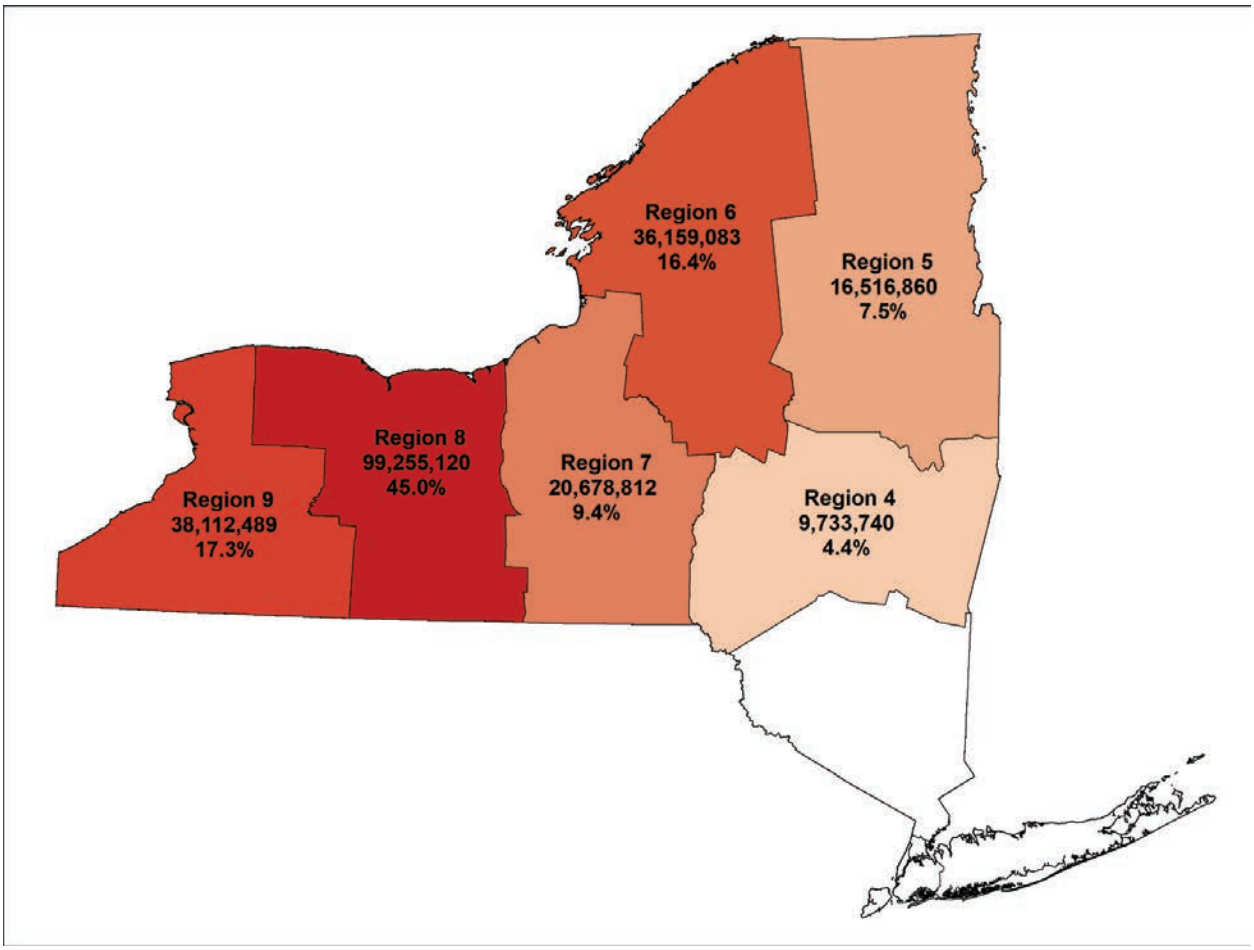


Figure D.2. Distribution of remaining permitted landfill capacity in New York State DEC Regions 4–9

In 2018, New York State landfilled 12.5 million tons of waste. Municipal solid waste landfills accepted the largest portion of waste—9.4 million tons of waste, or 75%. Despite only being able to accept limited types of waste, Long Island landfills accepted the second highest amount of waste, landfilling 1.8 million tons of waste (approximately 15% of all waste, including all of the municipal waste combustor ash generated on Long Island). Construction and demolition debris landfills and industrial landfills make up smaller portions with 1 million tons (8%) and 221,455 tons (2%), respectively. The LCD landfills accepted less than 48,000 tons of waste, which was less than 0.5% of all waste disposed in 2018.

Waste Disposed in 2018						
DEC Region	**MSW Landfills (tons)**	**C&D Debris Landfills (tons)**	**Industrial Landfills (tons)**	**Long Island Landfills (tons)**	**LCD Landfills (tons)**	**Total Waste Disposed in NYS Landfills in 2018 (tons)**
1	0	0	0	1,842,570	0	1,842,570
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	372,543	512,155	118,241	0	550	1,003,489
5	641,141	554	80,235	0	15,938	737,868
6	479,411	0	0	0	21,584	500,995
7	420,932	80,128	7,914	0	1,272	510,246
8	5,096,216	411,323	3,723	0	6,906	5,518,168
9	2,371,308	554	11,342	0	1,570	2,384,774
Total	**9,381,551**	**1,004,714**	**221,455**	**1,842,570**	**47,820**	**12,498,110**

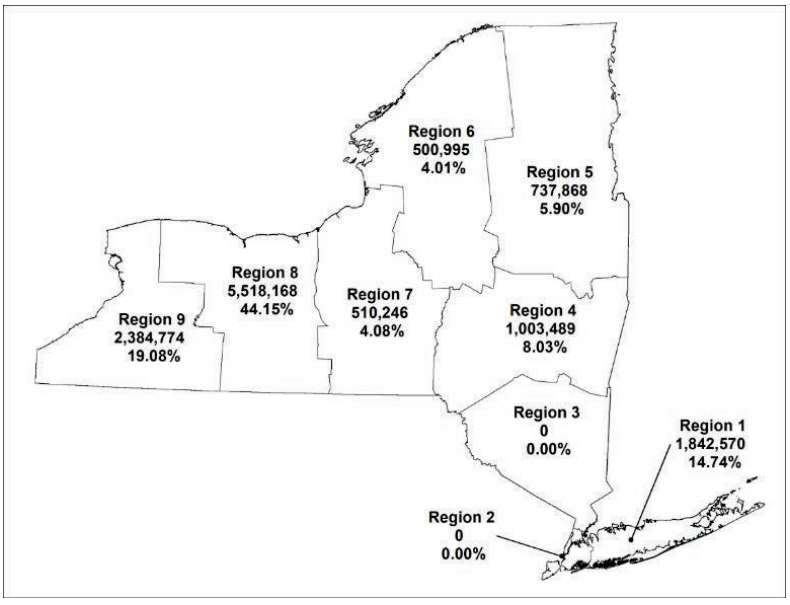


Figure D.3. Distribution of all the waste disposed of in New York State in 2018

Capacity Data for Municipal Solid Waste Landfills

Name	County	2018 Waste Quantity (tons per year)	Existing Annual Permit Limits (tons per year)	Existing and Entitled Capacity under Permit (tons)
Privately owned/privately operated landfills:				
Allied Waste Niagara Falls Landfill	Niagara	455,465	800,000	4,115,890
Chaffee Landfill	Erie	507,546	600,000	4,347,000
Greenridge RDF	Saratoga	222,952	375,500	3,879,151
High Acres Western Expansion Landfill	Monroe	986,473	1,074,500	41,480,000
Hyland Landfill	Allegany	464,640	465,000	6,661,122
Modern Landfill	Niagara	688,771	815,000	15,773,600
Seneca Meadows Landfill	Seneca	2,174,684	2,190,000	14,375,530
Subtotals		5,500,531	6,320,000	90,632,293
Municipally owned/privately operated landfills:				
Chemung County Sanitary Landfill	Chemung	276,065	417,000	6,090,818
Clinton County Landfill	Clinton	200,365	250,000	3,440,162
Colonie (T) Solid Waste Management Facility (SWMF)	Albany	251,465	255,840	7,883,471
Mill Seat Landfill	Monroe	587,635	598,650	28,907,100
Ontario County Sanitary Landfill	Ontario	920,635	1,200,000	7,460,144
Subtotals		2,236,165	2,721,490	53,781,695
Municipally/municipally operated owned landfills:				
Albany (City) SWMF	Albany	102,865	275,100	1,758,652
Auburn Landfill No. 2	Cayuga	60,791	96,000	105,728
Ava Landfill	Oneida	280,963	312,000	23,572,567
Bath Landfill	Steuben	150,724	151,500	941,528
Bristol Hill SLF	Oswego	50,923	100,000	2,308,250
Broome County Landfill	Broome	184,337	232,000	9,479,741
Chautauqua Landfill	Chautauqua	254,887	408,000	7,214,877
Chenango County Landfill	Chenango	40,780	41,550	1,527,951
Cortland County Landfill Westside Extension	Cortland	31,630	44,500	665,012
Delaware County SWMF	Delaware	18,213	52,800	91,616
Development Authority of the North Country Landfill	Jefferson	198,448	346,320	12,586,516
Franklin County Regional Landfill	Franklin	79,340	125,000	1,591,812
Fulton County Landfill	Fulton	138,484	180,000	7,605,735
Madison County West Side Extension Landfill	Madison	52,472	61,000	6,592,131
Subtotals		1,644,857	2,425,770	76,042,116
Totals		**9,381,553**	**11,467,260**	**220,456,104**

"Existing/Proposed Annual Permit Limit" based on limits set in current permits.

"Existing & Entitled Capacity Under Permit" is the total capacity for which a facility has undergone environmental review and permitting; use of this capacity may require construction of additional cells.

In 2018, a total of 735.4 million gallons of leachate were collected in landfills across New York State. In addition, 8.5 cubic feet of landfill gas were flared, 16 billion cubic feet of landfill gas were recovered for energy, 708,768 megawatt-hours of electricity were generated, and 3.02 billion cubic feet of high BTU gas were produced.

DEC Region	Landfill Name	Amount Gas Flared (cubic feet)	Amount of Gas Recovered for Energy (cubic feet)	Total Amount of Electricity Generated (megawatt-hours)	Gas Processed for Use Other Than Electricity Generation (cubic feet)
Active Landfills					
1	110 Sand	613,043,400	-	-	-
4	Albany Rapp Road	304,432,807	664,203,765	30,861	-
9	Allegany County	-	-	-	-
9	Allied Waste Niagara Falls	406,923,937	-	-	-
7	Auburn Landfill No. 2	147,873,780	-	-	-
6	Oneida-Herkimer SWMA	174,130,000	578,584,000	27,099	-
8	Bath	8,442,840	318,534,663	16,598	-
7	Bristol Hill	36,231,790	-	-	-
1	Brookhaven	828,464,108	-	-	-
7	Broome County	54,443,267	671,601,240	26,007	-
9	Chaffee	528,000	1,263,656,900	52,577	-
9	Chautauqua	-	1,003,977,363	45,293	-
8	Chemung County	441,535,659	-	-	-
7	Chenango County	-	-	-	-
5	Clinton County	1,117,176	728,082,282	30,017	-
4	Colonie	13,616,977	708,782,843	35,433	-

7	Cortland County Westside Extension	27,594,000	-	-	-
6	DANC	12,579,840	776,024,733	34,946	-
4	Delaware County SWMF	676,200	-	-	-
5	Franklin County Regional	32,791,640	-	-	-
5	Fulton County	-	311,591,954	14,473	-
8	High Acres Western Expansion	2,247,561,822	1,113,885	49,312	-
9	Hyland	211,290,348	718,063,149	37,372	-
7	Madison County West Side Extension	9,869,600	123,858,219	4,968	-
8	Mill Seat	36,753,669	1,196,751,144	54,923	-
9	Modern	3,830,000	1,430,832,491	59,264	1,201,600
8	Ontario County	18,574,142	1,815,407,003	75,636	-
8	Seneca Meadows	2,870,122,612	2,597,570,983	113,989	2,463,848,024
	Total	**8,502,427,614**	**14,908,636,662**	**708,768**	**2,465,049,624**
Inactive Landfills					
2	Fresh Kills	15,599,000	1,140,012,000	-	555,381,000
	Total	**15,599,000**	**1,140,012,000**	**0**	**555,381,000**

Metal Processing and Vehicle Dismantling Facilities

Metal processing facilities—also termed scrap metal processors (SMPs)—and vehicle dismantling facilities (VDFs) are regulated pursuant to 6 NYCRR 361-7. SMPs and VDFs share many similar operations, but VDFs are also subject to the operating requirements in ECL Article 27, Title 23. Subpart 361-7 requires registration of SMPs and VDFs storing more than minimum quantities or numbers of end-of-life vehicles as specified in the regulation.

Registered SMPs and VDFs require recordkeeping, reporting, and measures to prevent receipt of unauthorized materials. Both types of facilities require collection, storage, and proper disposal or recycling of fluids and non-metal components of end-of-life vehicles and old appliances or machines prior to crushing or shredding. VDFs must remove or deactivate lead-acid batteries, fuels, oil and other fluids, refrigerants, and airbags from vehicles. Registration rules also apply to mobile vehicle crushers. All fluids must be contained to prevent release into the environment, and fire prevention measures must be in place.

Summary of regulatory requirements for VDFs:

As of June 2022, there are 516 registered VDFs and SMPs in New York State. In 2018, these facilities received 2.5 million tons of end-of-life vehicles and scrap for recycling, based on 2018 annual facility reporting.

DEC Region	Number of Facilities (VDF & SMP)	Tons Received in 2018
1	66	90,626
2	70	385,974
3	68	149,470
4	59	626,834
5	61	26,740
6	59	50,814
7	70	616,874
8	93	124,517
9	107	480,576
Total	**653**	**2,552,425**

Mulch Processing Facilities

Mulch processing facilities create a product derived from tree debris, yard trimmings, and other suitable woody material, which is intended for use on soil surfaces to prevent the growth of weeds and minimize erosion. This differs from compost, which is a humus-like soil amendment used as a source of nutrients, organic matter, and liming value.

As of November 2017, mulch processing facilities are regulated under 6 NYCRR Part 361-4.

Summary of mulch processing facilities (by quantity and type of material):

Type of Facility	Number of Regulated Facilities as of June 2022
Mulch Processing	6 Permits
	31 Registrations

DEC Region	Number of Regulated Mulch Processing Facilities	
	2018	2022
1	1	14
2	0	0
3	1	5
4	0	2
5	0	1
6	0	0
7	5	5
8	0	2
9	0	8
Total	**7**	**37**

Municipal Solid Waste Processing Facilities

Municipal solid waste processing is the separation and processing of post-collection MSW. This processing is done to either provide an opportunity to recover recyclables from the waste stream that were not correctly source-separated or to produce a refuse-derived fuel for use as a feedstock in a thermal treatment facility.

MSW processing operations are permitted solid waste management facilities regulated by 6 NYCRR Subpart 362-2.

Summary of regulatory requirements for municipal solid waste processing facilities:

As of June 2022, no active, permitted MSW processing facilities are operating in New York State.

Navigational Dredged Material Handling and Recovery Facilities

Navigational dredged material (NDM) handling and recovery facilities receive, store, and process NDM. NDM, as defined in 6 NYCRR Part 360, is sediment and other material dredged from a waterway to increase its depth or for aesthetic reasons, versus dredging performed to remove chemical contamination. NDM may or may not be contaminated and must be characterized through laboratory analysis and measurements of grain-size distribution, organic carbon, and other tests as needed to determine if the material can be used beneficially as fill, topsoil, or aggregate. A NDM handling and recovery facility is a registered or permitted facility that receives NDM for testing, if needed, dewatering, amendment with Portland cement or other materials, and storage prior to use pursuant to use.

For facilities using passive dewatering and/or Portland cement amendment, a registration under Subpart 361-9 is necessary, regardless of quantity throughput or storage capacity. Use of other amendment materials that are solid wastes, such as coal-combustion fly ash or cement kiln dust, may trigger the requirement for a facility permit.

As of June 2022, no NDM handling and recovery facility has been authorized in New York State. While many dredging projects occur every year, handling and processing of NDM has taken place on properties under the same ownership or control of the entity dredging the waterbody, and therefore has been subject to the general exemption for solid waste management activities in 6 NYCRR 360.14(b)(1).

Recyclables Handling and Recovery Facilities

Recyclables handling and recovery facilities (RHRFs) receive source-separated, non-putrescible containers, and packaging or other materials from residences and businesses. Materials, which are often commingled, are sorted and separated for consolidation into bales or shipment containers and sent on to secondary processors or manufacturers.

Pursuant to 6 NYCRR 361-1, RHRFs do not receive organic waste; construction and demolition debris; end-of-life motor vehicles; waste tires; electronic waste; municipal waste; or universal waste (6 NYCRR 374-3). In addition, "Bottle Bill" (ECL Article 27, Title 10) beverage container centers are not RHRFs for purposes of the Part 361 regulations.

Under Subpart 361-1, RHRFs can be exempt, registered, or permitted.

This link provides further information on the regulation of RHRFs.

There are 504 active, regulated (non-exempt) RHRFs operating in New York State. The DECinfo Locator interactive mapping tool can be used to locate these RHRFs.

DEC Region	Number of Regulated RHRFs	
	Registered	**Permitted**
1	20	57
2	39	1
3	22	10
4	26	4
5	46	7
6	29	1
7	78	13
8	31	6
9	145	5
Total	**436**	**104**

Based on data from the 2018 solid waste management facility annual reports, RHRFs managed 2.8 million tons of source-separated recyclables in 2018.

DEC Region	Source Separated Recyclables Received at RHRFs in 2018 (tons)	
	Registered	**Permitted**
1	47,562	281,436
2	1,148,268	17,448
3	272,656	79,138
4	191,311	3,172
5	22,372	50,974
6	64,788	6,275
7	52,588	120,947
8	166,132	3,885
9	195,694	78,052
Total	**2,161,371**	**641,327**

Regulated Medical Waste (RMW) and Other Infectious Waste (OIW) Facilities

Management of certain wastes from health clinics, hospitals, doctor and dentist offices, veterinarians, and research institutions poses special concerns. New York State law and 6 NYCRR Part 365 require waste materials containing or contaminated with pathogenic organisms, or which are radioactive, to be rendered safe to handle by waste transporters and personnel at disposal facilities (including combustors and landfills). In addition, facilities that treat medical and infectious wastes must meet design and operation requirements and treatment criteria in Part 365.

Added to the concern of medical waste generated by treatment of humans and animals is that of infectious waste from outbreaks of serious illness, or from accidental or deliberate release of infectious agents. In these instances, large volumes of everyday items such as clothing, furniture, bedding, building materials, or food may be impacted and require treatment or removal and disposal. Subpart 365-3 *Other Infectious Wastes* (OIW) addresses facilities that might be set up to aggregate, test, and handle these materials.

More information on RMW:

Part 365 is unique in the Part 360 series regulations applicable to generators of waste as well as solid waste management facilities, since generators of RMW must ensure safety of personnel handling wastes at the generation facility and in transport to RMW treatment/disposal facilities. Part 365 and DEC do not have jurisdiction over most hospitals in New York State, which are instead regulated by the New York State Department of Health (DOH). DOH has similar requirements for generator handling and treatment of RMW at hospitals. Where RMW may include radioactive materials for clinical treatment or research, regulations in 6 NYCRR Part 380 *Prevention and Control of Environmental Pollution by Radioactive Materials* also apply.

Part 365 also regulates, through permitting, facilities that receive and treat RMW and other infectious wastes from off-site sources.

As of June 2022, there are 51 authorized RMW facilities across New York State and no OIW facilities. Of these, 20 are generators of RMW, 11 are radiological storage facilities or radiopharmacies, 14 are RMW treatment facilities, and six are RMW transfer facilities.

DEC Region	Number of RMW Facilities
1	13
2	7
3	2
4	13
5	1
6	1
7	6
8	3
9	5
Total	**51**

Transfer Facilities

Transfer facilities (TF) are solid waste management facilities that receive waste for consolidation and subsequent transfer to another facility for processing, treatment, transfer, or disposal. Often, residents or local private waste collectors will bring waste to transfer facilities where the waste will be consolidated in larger vehicles and transported to larger facilities—such as landfills—or other transfer facilities.

Transfer facility operations in New York State are regulated by 6NYCRR Subpart 362-3 in one of three ways: exempt, registered, or permitted. Regulation of transfer facilities depends on the type of waste received, the quantity of waste received and stored, the type of facility owner, and the type of operation.

Summary of regulatory requirements for transfer facilities:

As of June 2022, there are 504 active transfer facilities operating across New York State. The DECinfo Locator interactive mapping tool can be used to locate transfer facilities in New York State.

DEC Region	Number of Regulated Transfer Facilities	
	Registered	**Permitted**
1	19	47
2	4	24
3	54	29
4	42	19
5	55	10
6	38	11
7	26	14
8	48	13
9	29	22
Total	**315**	**189**

Based on data from the 2018 solid waste management facility annual reports, transfer facilities managed 13,812,363 tons of waste in 2018. Of that waste, 4,497,232 tons were exported from transfer facilities to out-of-state destinations.

DEC Region	Waste Transferred in 2018 (tons)	
	Registered	**Permitted**
1	29,944	3,165,975
2	8,565	5,286,843
3	134,035	2,060,049
4	38,942	521,999
5	77,830	212,371
6	22,791	325,155
7	77,078	327,624
8	55,567	744,793
9	25,678	697,124
Total	**470,430**	**13,341,933**

Used Cooking Oil and Yellow Grease Processing Facilities

Used cooking oil (UCO) and yellow grease processing facilities receive and process cooking oil and grease from restaurants, food manufacturers, or rendering facilities, to remove food particles and water. Yellow grease differs from UCO in that it is solid at room temperature. Processed UCO can be further processed into fuels, including biodiesel; oils and greases can be shipped to makers of animal feed, cosmetics, "green" machine oils and lubricants, and other products. UCO and yellow grease processing facilities are regulated pursuant to 6 NYCRR 361-8.

UCO and yellow grease processors can be exempted from Subpart 361-8 if receiving less than 1,000 gallons per year of oil or grease that is processed and used on site or in the facility's own vehicles as a fuel (not offered or sold to others).

Processors can obtain a registration if they meet the operating requirements in Subpart 361-8 and receive no more than 500,000 gallons per year of UCO and/or yellow grease.

Design and operating requirements for UCO and yellow-grease processors focus on adequate storage capacity with secondary spill containment for unprocessed and processed materials. Fire suppression and vector controls must be in place. Wastewater must be properly disposed of as well as filtrates and any spent process regents or by-products. The facility must take measures to prevent receipt of brown grease (grease trap waste).

As of June 2022, there are 54 active registered and permitted UCO and yellow grease processing facilities in New York State.

DEC Region	**Number of Regulated UCO and Yellow Grease Processing Facilities**	
	Registered	**Permitted**
1	22	16
2	0	13
3	0	1
4	0	0
5	0	0
6	0	1
7	0	0
8	0	1
9	0	0
Total	**22**	**32**

Based on data from the 2018 solid waste management facility annual reports, UCO and yellow grease facilities managed 220,745 tons of UCO and yellow grease in 2018.

DEC Region	UCO and Yellow Grease Managed at Processing Facilities in 2018 (tons)	
	Registered	**Permitted**
1	62,813	49,617
2	0	43,493
3	0	59,362
4	0	0
5	0	0
6	0	1,444
7	0	0
8	0	4,016
9	0	0
Total	**62,813**	**157,932**

Waste Tire Handling and Recovery Facilities

Waste tire handling and recovery facilities (WTHRFs) include any facility storing, handling, and/or processing more than 1,000 waste tires. WTHRFs are regulated pursuant to 6 NYCRR 361-6. Some facilities who only store tires, sell tires in reusable condition, or retread tires are subject to registration, while other WTHRFs must obtain a permit.

WTHRF design and operation requirements in Subpart 361-6, for permitted facilities, focus on minimizing fire danger from outdoor storage (registered facilities require an enclosed building or trailer). All WTHRFs must maintain financial assurance for closure of the facility.

There are 47 active WTHRFs operating in New York State. The DECinfo Locator interactive mapping tool can be used to locate WTHRFs in New York State.

DEC Region	Number of Regulated WTHRFs	
	Registered	**Permitted**
1	0	5
2	1	0
3	1	0
4	1	4
5	2	0
6	0	0
7	5	1
8	0	15
9	6	6
Total	**16**	**31**

Based on data from the 2018 solid waste management facility annual reports, WTHRFs managed 186,490 tons of waste tires (the equivalent of approximately 19 million passenger car tires) in 2018.

DEC Region	Waste Tires Managed at WTHRFs in 2018 (tons)	
	Registered	**Permitted**
1	0	17,368
2	153	0
3	5	0
4	52,308	36,884
5	237	0
6	0	0
7	140	1,302
8	0	27,460
9	4,800	45,833
Total	**57,643**	**128,847**

Waste Transporters

As required by Article 27, Title 3, transporters of certain regulated wastes are required to receive authorization from the DEC. Regulated wastes include hazardous waste, non-hazardous commercial/industrial waste, WWTP sludge, septage, sewage, waste tires, low-level radioactive waste, and C&D debris, among other wastes.

The structure of these authorizations is like that used for solid waste management facilities:

- Exemptions allow transport of regulated wastes without additional authorization or annual reporting;
- Registrations allow transport of regulated wastes through a streamlined authorization process and are restricted to regulated wastes of smaller amounts or with low potential environmental impacts; and
- Permits are the default authorization for all other transportation of regulated wastes.

For solid waste, beyond the permit or registration, transportation of some regulated wastes including C&D debris, some fill material, regulated medical waste, and some drilling and productions wastes, requires a waste tracking document. This document identifies the type of waste, the generator, and the destination facility, and must travel with each waste load. Waste tracking documents are used to help ensure that wastes are delivered to the proper destination facility. Waste travel documents also provide law enforcement information that can help identify illegally transported loads.

Approximately 2,283 permits and 952 registrations, which include more than 24,571 vehicles, are currently active in the program. Total net receipts received from waste transporter permit fees for 2021 was $5,954,785.48.

Appendix E: Regional Solid Waste Management and Planning Unit Summaries

This appendix is intended to provide a snapshot of solid waste management in New York State (NYS). The appendix starts with an overview of the statewide waste flow and is followed by a discussion for each region and planning unit in NYS. This is intended to convey information relevant to local solid waste management planning and to serve as a planning tool for municipalities as Local Solid Waste Management Plans (LSWMPs) and Comprehensive Recycling Analyses (CRAs) are developed and updated. Materials and waste management methods are described, along with waste flow information and waste generation estimates based on 2018 data. The data used to prepare the appendix was the best information available to NYS Department of Environmental Conservation (DEC) at the time of writing. The descriptions and data were compiled from facility annual report data, LSWMPs and Biennial Updates, CRAs and related annual reports, and information available from planning unit and municipality webpages.

The regional discussions describe the planning units and non-affiliated municipalities and map the location of the combustion facilities and landfills located within the regional boundaries. Also included are population estimates and demographics based on annual data published by the U.S. Census Bureau for 2018, as of July 1, 2019. The discussions include waste flow maps that describe the flow of all waste generated in the region, including exported and imported waste. Waste generated is discussed as a total and as separate streams. The total waste stream consists of the sum of municipal solid waste (MSW), construction and demolition (C&D) debris, industrial waste, and biosolids. When discussed as separate streams, the waste flow maps and analyses include three of the main waste streams; MSW, C&D Debris, and Industrial Waste. The regional discussion concludes with a waste summary table describing the tons of waste destined to be processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through recyclables handling and recovery facilities (RHRFs), construction and demolition debris handling and recovery facilities (CDDHRFs), or organics recycling facilities.

The planning unit discussions include a description of the planning unit and any non-affiliated municipalities within its boundaries, including population estimates, demographics, and available information on solid waste management. The discussion includes a waste flow map that explains the flow of the total waste generated in the planning unit, including exported and imported waste, and a waste flow map and analysis for the MSW stream. The planning unit portion concludes with a waste summary table that describes the tons of waste destined to be processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs. With the exception of NYC and Delaware County because of their unique programs, the planning unit waste summary tables do not include the tons of material recovered through organic recycling facilities.

The solid waste management efforts in each planning unit and any non-affiliated municipalities are critical for the state to achieve its solid waste management goals. As a result, the status of planning units and non-affiliated municipalities regarding LSWMPs and CRAs are highlighted in the discussion and are current as of June 2022. The current LSWMP and CRA status can be found on DEC's Status of LSWMPs webpage.

On the waste flow maps provided for each region and planning unit, circles are used to symbolize the amount of waste in tonnages; arrows are used to show the movement of waste in and out of the regions, planning units, and non-affiliated municipalities as imported or exported waste; and squares are used to show the destination of generated ash residue. The circles, squares, and arrows do not indicate a specific location or facility on the map but the direction in which waste was moved for processing or disposal. The tonnages on the waste flow maps do not include recovered materials but focus on the waste that was processed at combustion facilities or disposed of at landfills. The waste flow maps also include the destination of ash residue that occurs from the processing of waste at combustion facilities. Waste that was sent to a combustion facility is processed and reduced to ash which then has to be beneficially used or disposed of. The ash residue is attributed to the region or planning unit that generated the waste. Ash is present on the maps for any region or planning unit that sends waste to a combustion facility regardless of whether the combustion facility is located in the planning unit. The squares show the destination of the ash residue on the maps. Ash is only shown on the individual waste flow maps if waste from that waste stream was sent to a combustion facility. Ash residue can be either beneficially used through a case-specific beneficial use determination, used as Alternative Operating Cover (AOC) material at landfills, or disposed of at a landfill.

Waste generated may be processed or disposed of within the same area of generation if there are facilities and sufficient capacity. However, any waste generated that is sent to another region or planning unit or sent outside of the state is symbolized in the waste flow maps as exported waste. Likewise, imported waste is also shown on the waste flow maps and includes waste that entered a region or planning unit to be processed or disposed of in that region or planning unit or to be consolidated and transferred to facilities in other areas. As a result, the movement of waste on these waste flow maps may seem counterintuitive and the waste flow maps will depict some regions or planning units importing waste from an area while also exporting waste to that same area. The flow of waste is complex, as it is impacted by factors such as distance, tipping fees, intermunicipal agreements, private waste collector and facility contracts, ownership of facilities, and facility capacity, among other factors.

While this appendix attempts to quantify waste generation for the state, additional waste is likely generated and recovered in the state. However, since these materials do not pass through a permitted or registered solid waste management facility, those quantities are not provided to DEC and are not included in this analysis. An example of this is a business directly sending recyclables to an out-of-state recycling facility or directly to a

paper mill for processing. The facility information presented in the descriptions is not intended to comprehensively identify every type of facility or provide a complete list of all solid waste management facilities in the region or planning unit. Additional information related to facilities across the state is presented in Appendix D: Solid Waste Management Facilities & Transporters.

An organics recycling summary table is included for each region. This table shows the type and quantity of organic material recycled in a particular region and the type of facility where they were recycled (composting facility, anaerobic digester, or land application operation). The types of organic materials discussed include biosolids, source-separated organics (which includes food scraps), yard trimmings, and food processing waste. This data is derived from 2018 annual reports for organics recycling facilities regulated under Part 361. There are some organics recycling facilities that may be exempt from regulation under the Part 360 solid waste program due to size, waste handled, or location. For example, anaerobic digestion facilities located on farms, even if they accept food scraps, may be exempt from Part 361 and not included in the analysis.

A waste summary table is included for each region and most planning units in NYS. The waste summary tables show the amount of waste generated in a particular region or planning unit. The table differentiates between the tons of waste processed at combustion facilities, the tons disposed at landfills, and the tons of materials recovered. At the bottom of each waste summary table, the MSW disposal/processing rate is shown with units of pounds of MSW/per person/per day. To calculate this value, the tonnages shown in the table and the estimated 2018 population were used.

A full summary of waste generation can be found in Appendix C: Waste Generation & Waste Imported.

New York State Overview and Waste Flow Information

NYS had an estimated population of 19,530,351 in 2018 (Census, 2019). There are 69 planning units in the state and 41 municipalities that are non-affiliated or not part of a planning unit. The demographics of municipalities across the state vary widely. While there are urban, suburban, and rural municipalities in most regions of the state, it is helpful to consider the dominant population density demographics in each region. DEC Region 1 is considered suburban. DEC Region 2, which contains only New York City, is urban. The counties in DEC Region 3 are a mix of suburban and rural areas, with some urban centers. In DEC Region 4, some of the planning units and non-affiliated municipalities have suburban population densities, while the rest of the region is made up of mostly rural areas. DEC Regions 5 and 6 are made up of planning units that are largely rural. DEC Regions 7, 8, and 9 are mostly rural areas, although one planning unit in each region is considered suburban.

A table detailing the waste generated in NYS in 2018 by waste type (including recovered materials) called 2018 New York Solid Waste Generation can be found in Appendix C.

The following figures depict the flow of waste, not including recovered materials, generated in and imported into NYS in 2018. Figure E.1 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.5, Figure E.7, Figure E.8, and Figure E.9 show the flow of waste by type - MSW, C&D debris, industrial waste, and biosolids, respectively.

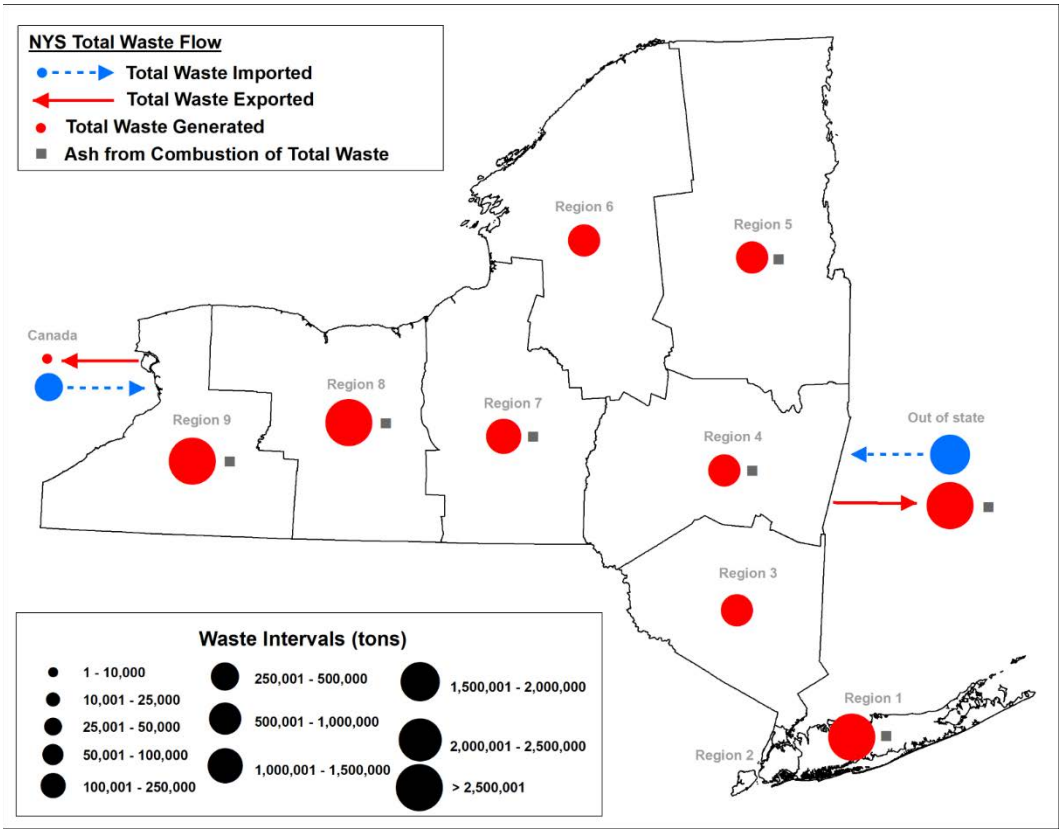


Figure E.1. New York's Annual total waste flow

The figure above shows where waste generated in the state was processed or disposed of in 2018. Waste generated in NYS was processed at combustion facilities or disposed of at landfills in every DEC Region of the state except for Region 2. In 2018, there were 26 active MSW landfills, 10 industrial waste landfills, 12 C&D debris landfills, and 5 Long Island landfills operating in the state. Since that time, one 1 MSW landfill and 1 industrial waste landfill have stopped accepting waste. In addition, there are a total of 11 combustion facilities that process waste before sending the remaining ash residue for disposal.

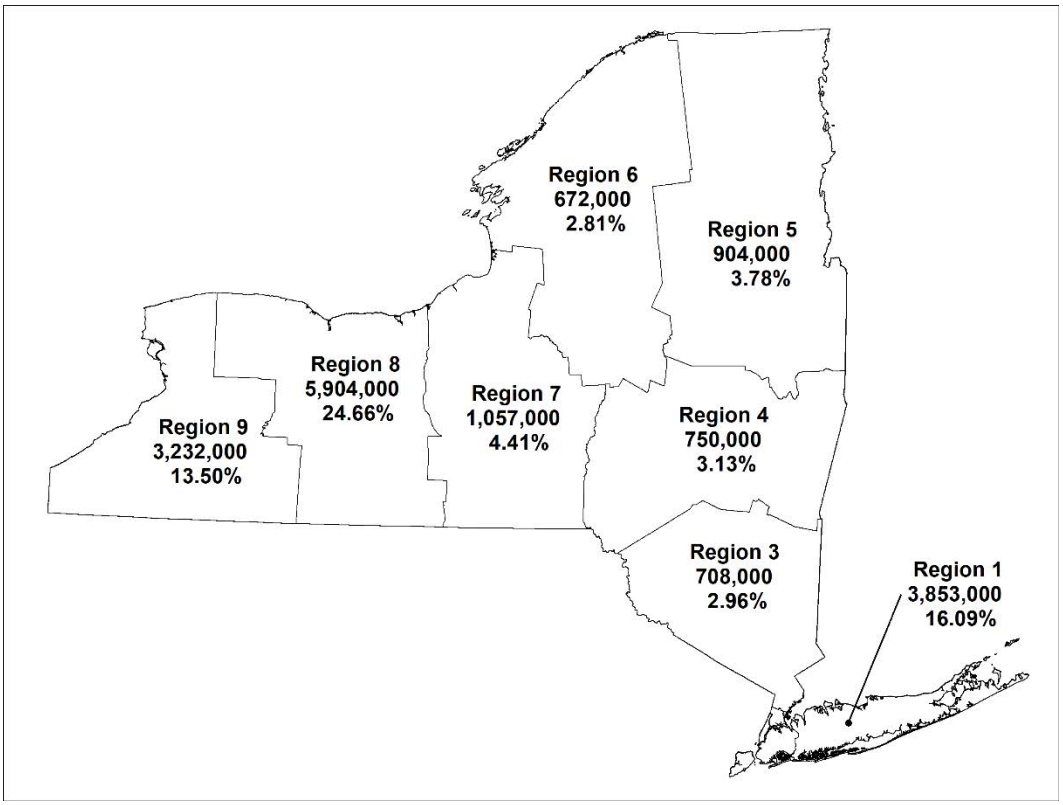


Figure E.2. Distribution of disposal locations in New York for waste generated in New York

Table E.1. Distribution of disposal locations for waste generated in New York

Destination	Waste (tons)	%
NYS	17,080,000	71.33
Canada	10,000	0.04
CT	204,000	0.85
MA	75,000	0.31
NJ	1,338,000	5.59
OH	1,568,000	6.55
PA	2,092,000	8.74
SC	213,000	0.89
VA	1,310,000	5.47
Other States	55,000	0.23
Total	**23,946,000**	**100.0**

Figure E.2 and Table E.1, show the distribution of disposal locations of the total waste generated in NYS. In 2018, 71% of the total waste generated in NYS was managed in the state, with the remaining 29% exported to other states for disposal or combustion. Approximately 25% of the waste generated in NYS was disposed of in landfills in Region 8. About 16% and 14% of the waste generated in NYS was processed in combustion facilities or disposed of in landfills in Regions 1 and 9, respectively. The rest of the regions each managed between 2% and 5% of the total waste stream.

As shown in Figure E.1, waste was imported into NYS from other states and from Canada in 2018. Region 9 imported the greatest amount of waste from outside NYS, accounting for about 37% of the total waste imported to the state. By tonnage, Region 9 imported twice as much waste from outside of NYS as Region 8, the next highest importer, which received about 18% of waste imported from outside NYS. Regions 3, 4, and 5 each received between 14% and 15% of the total imported waste. Regions 1, 2, 6, and 7 each received less than 1%.

Waste was also exported from NYS to other states or to Canada. The amount of waste exported from NYS was nearly three times larger than the amount imported. Region 2, due to its high population density and lack of processing or disposal facilities, exported the greatest amount of waste outside of NYS. About 77% of waste that was sent outside of the state originated in Region 2. Region 1 accounted for about 15% of the waste sent to facilities outside the state. Region 3 accounted for about 8% of the state's exports. Regions 4, 5, 6, 7, 8, and 9 all exported minimal amounts of waste outside of NYS in comparison to other regions. These six regions accounted for 0.25% of the waste sent outside NYS.

The state's 11 combustion facilities are located in Regions 1, 3, 5, 6, 7, and 9. All of the combustion facilities, except the facility in Region 6, are MWC facilities. After waste is combusted at these facilities, the ash residue remaining needs to be managed, typically through disposal in a landfill. Figure E.1 shows where ash residue is disposed of. Ash residue from combustion facilities in NYS was landfilled in Regions 1, 4, 5, 7, 8, and 9 in 2018. Ash residue was sent to landfills for use as alternate operating cover (AOC) or for disposal. Some ash residue was also exported to other states.

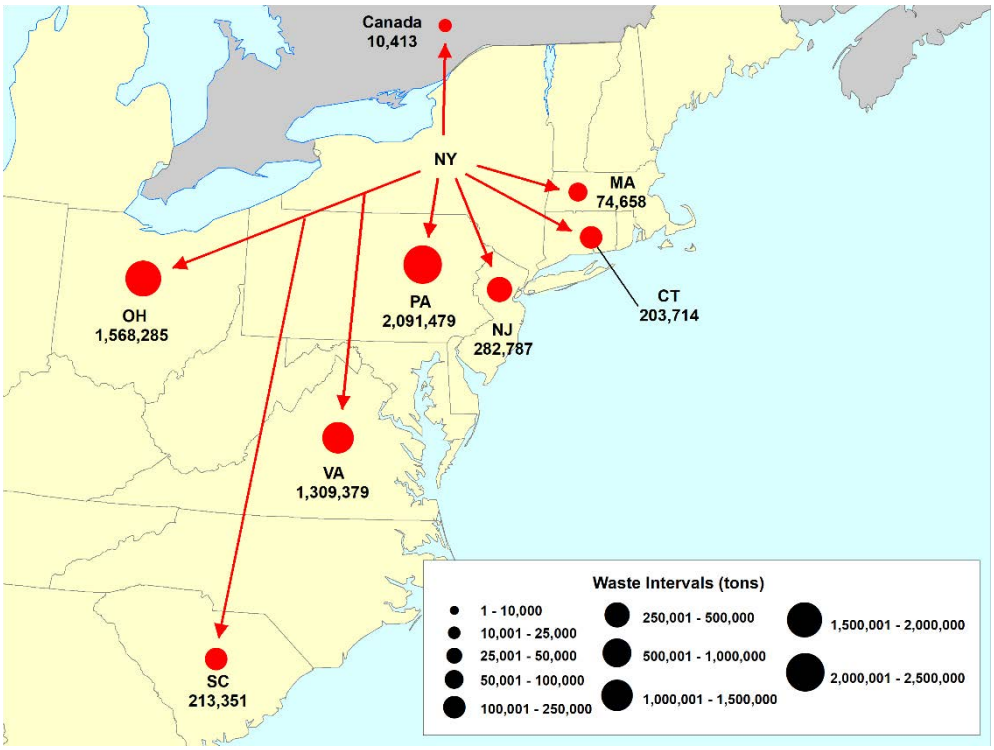


Figure E.3 Waste exports from New York

As mentioned above, NYS exports 30% of the total waste generated to other states. Figure E.3 from NYS shows the locations that receive most of the exported waste from the NYS. Pennsylvania receives the most waste, accounting for approximately 9% of the total waste generated. New Jersey, Ohio, and Virginia receive approximately 7%, 6%, and 5%, respectively. Several other states, including several that aren't shown in the figure, receive the remaining 3% of waste generated.

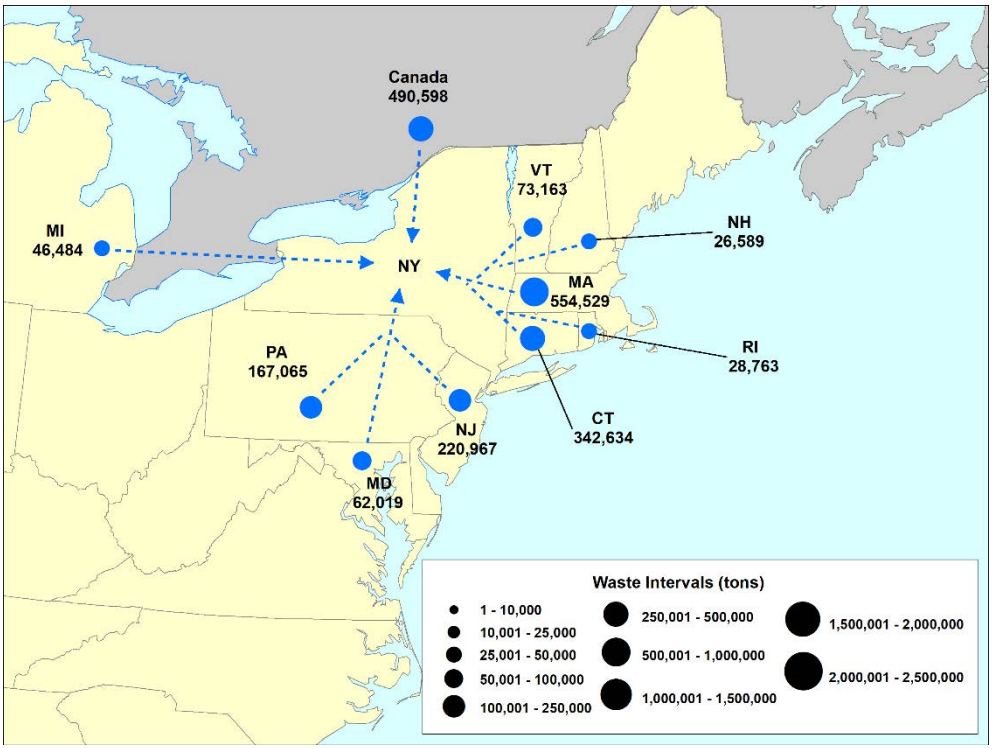


Figure E.4. Waste imports to New York

Figure E.4 shows the places sending the most waste to NYS. About 46% of the total waste imported to NYS in 2018 was MSW, 36% was C&D debris, 18% was industrial waste, and the remaining 1% was biosolids. Several other states, including several that aren't shown in the figure, send smaller amounts of waste to NYS for processing or disposal.

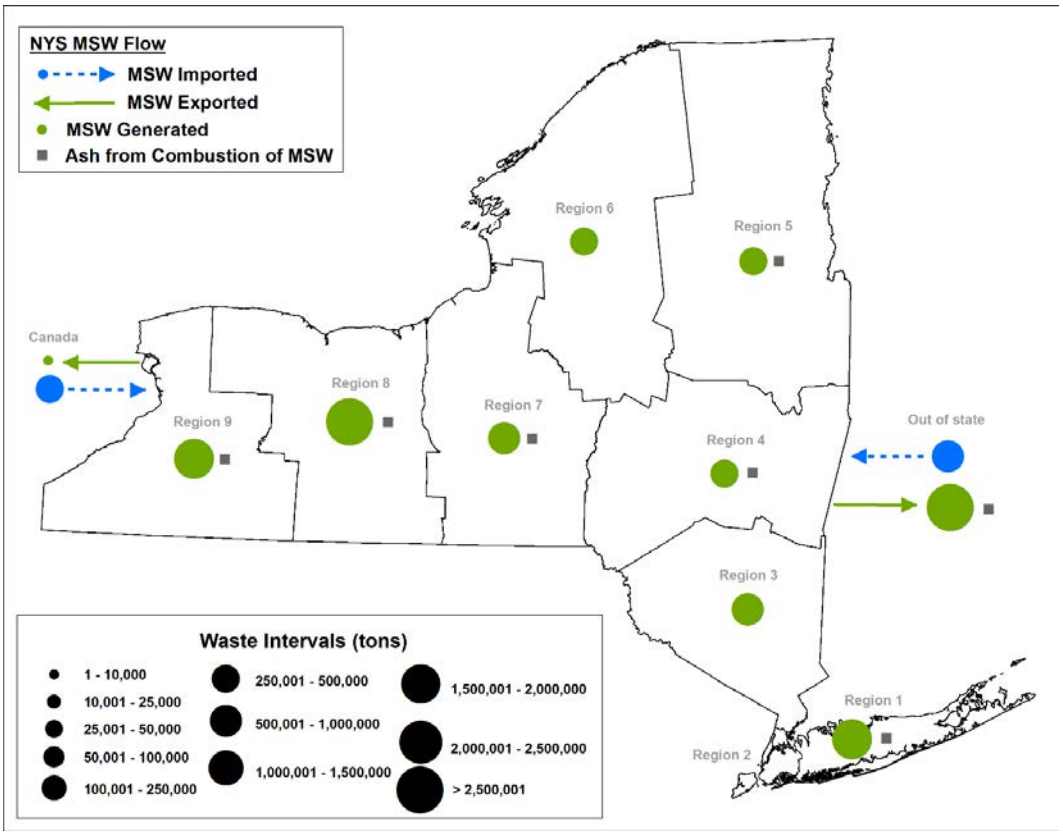


Figure E.5. New York MSW flow

Figure E.5 shows where MSW (as opposed to the total waste stream) generated in NYS was disposed of in landfills or processed at combustion facilities in 2018. MSW generated was processed at combustion facilities or disposed of in landfills in every DEC Region of the state except for Region 2.

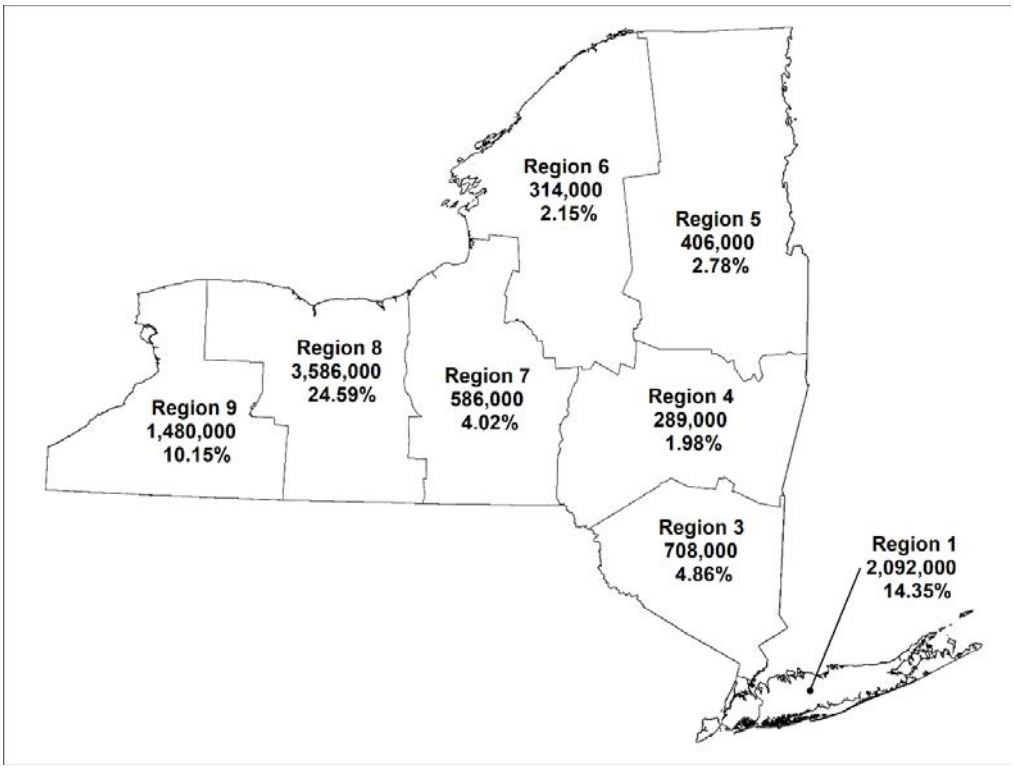


Figure E.6. Distribution of disposal locations in New York for MSW generated in New York

Table E.2. Distribution of disposal locations for MSW generated in New York

Destination	Waste (tons)	%
NYS	9,461,000	64.88
Canada	10,000	0.07
CT	147,000	1.01
MA	67,000	0.46
NJ	933,000	6.40
OH	464,000	3.18
PA	1,999,000	13.71
SC	213,000	1.46
VA	1,286,000	8.82
Other States	1,000	<0.01
Total	14,581,000	**100.0**

Figure E.6 and Table E.2, show the distribution of disposal locations of the MSW waste generated in NYS. In 2018, 65% of the MSW generated in NYS was managed in the state, with the remaining 35% exported to other states for disposal. Approximately 25% of waste generated in NYS was disposed of in landfills in Region 8. About 14% and 10% of waste generated in NYS was processed in combustion facilities or disposed of in landfills in Regions 1 and 9, respectively. About 5% was processed at combustion facilities in Region 3. The remaining DEC Regions each managed between 2% and 4% of the MSW waste stream.

MSW accounted for about 45% of the waste that was imported into NYS. Of the MSW imported, Region 9 accepted the greatest amount, about 32%. DEC Region 3 also received a significant portion of the MSW imported into the state, about 26%. About 21% and 19% of the MSW imported into NYS in 2018 went to Regions 8 and 3, respectively. Regions 2 and 6 each took in no MSW from out of state.

Approximately 68% of waste exported from NYS was MSW. Region 2 accounted for most of the exported MSW, about 79%. Region 1 exported the second-most MSW, accounting for about 11% of the state's MSW exports. MSW that originated in Region 3 accounted for about 9% of the MSW exported.

Regions 4–9 exported much smaller amounts of MSW. Regions 4–9 accounted for 0.33% of the MSW that was exported out of NYS in 2018. Regions 5 and 8 exported minimal amounts of MSW, and Region 6 exported no MSW.

Combustion facilities in NYS that can accept MSW are located in Regions 1, 3, 5, 7, and 9. There are 10 MWC facilities in the state. Figure E.5 shows the destinations of the ash residue from the combustion of MSW. Ash residue from other waste types is not shown in the figure. Ash residue from the combustion of MSW was disposed of in Regions 1, 4, 5, 7, 8, and 9. Ash residue was sent to landfills for use as AOC or for disposal. A portion of the ash residue resulting from the combustion of the state's MSW was also exported to other states.

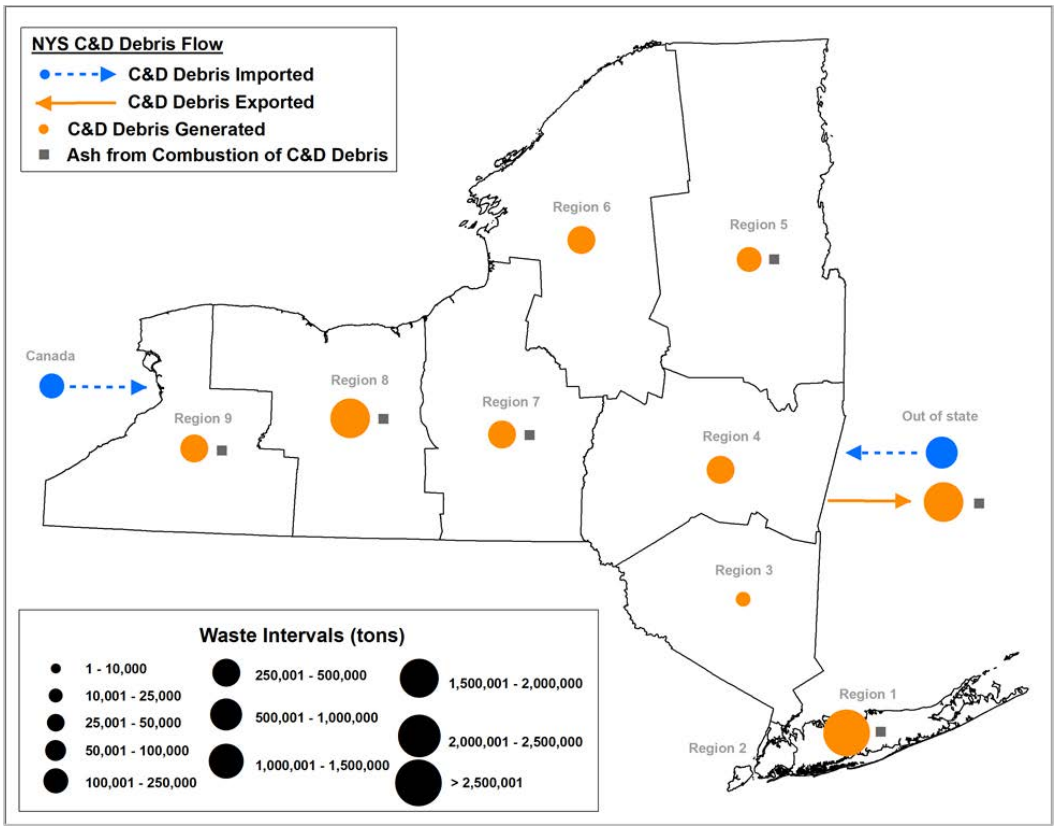


Figure E.7. New York C&D debris flow

Figure E.7. NYS C&D Debris Flowshows where the C&D debris that was generated in NYS in 2018 was disposed of in landfills or processed at combustion facilities. This waste type was processed or disposed of in every DEC region of the state except Region 2.

C&D debris accounted for about 36% of the waste that was imported into NYS. Region 4 accepted the greatest amount of the state's C&D debris imports, about 39%. About 33% of the C&D debris imported to the state was sent to Region 9. Region 8 accepted the third-highest tonnage of C&D debris imports from outside of NYS, at 11%

Region 6 processed or disposed of about 2% of the C&D debris that was imported.

Region 2 also accepted about 2% of the C&D debris imported, although no C&D debris was disposed of in that region. The C&D debris imported to Region 2 was brought in for consolidation and transfer to facilities outside region. Regions 1 and 7 imported minimal amounts of C&D debris from outside NYS.

Approximately 29% of the waste that was exported from NYS in 2018 was C&D debris. Most of this exported C&D debris, about 69%, was generated in Region 2. The amount of C&D debris exported out of NYS from Region 2 was twice as much as the amount exported from all other regions. Region 1 was the second-highest exporter of C&D

debris, accounting for 25%. About 5% of the C&D debris that was exported originated in Region 3.

Regions 4, 5, 6, 7, 8, and 9 exported much less C&D debris out of NYS than Regions 1, 2, and 3. In 2018, all C&D debris generated in Regions 5, 6, and 8 was processed or disposed of within NYS, so no C&D debris was exported out of state from these regions. Summed together, Regions 4, 7, and 9 accounted for about 0.05% of C&D debris exported outside of NYS.

C&D debris was combusted at combustion facilities located throughout the state and at the combustion facility in Region 6. The disposal destinations for ash residue are shown on Figure E.7. Ash residue resulting from the combustion of other waste types is not shown in Figure E.7. In 2018, ash residue from the combustion of C&D debris was disposed of in Regions 1, 5, 7, 8, and 9. Ash residue from the combustion of C&D debris was also exported to other states.

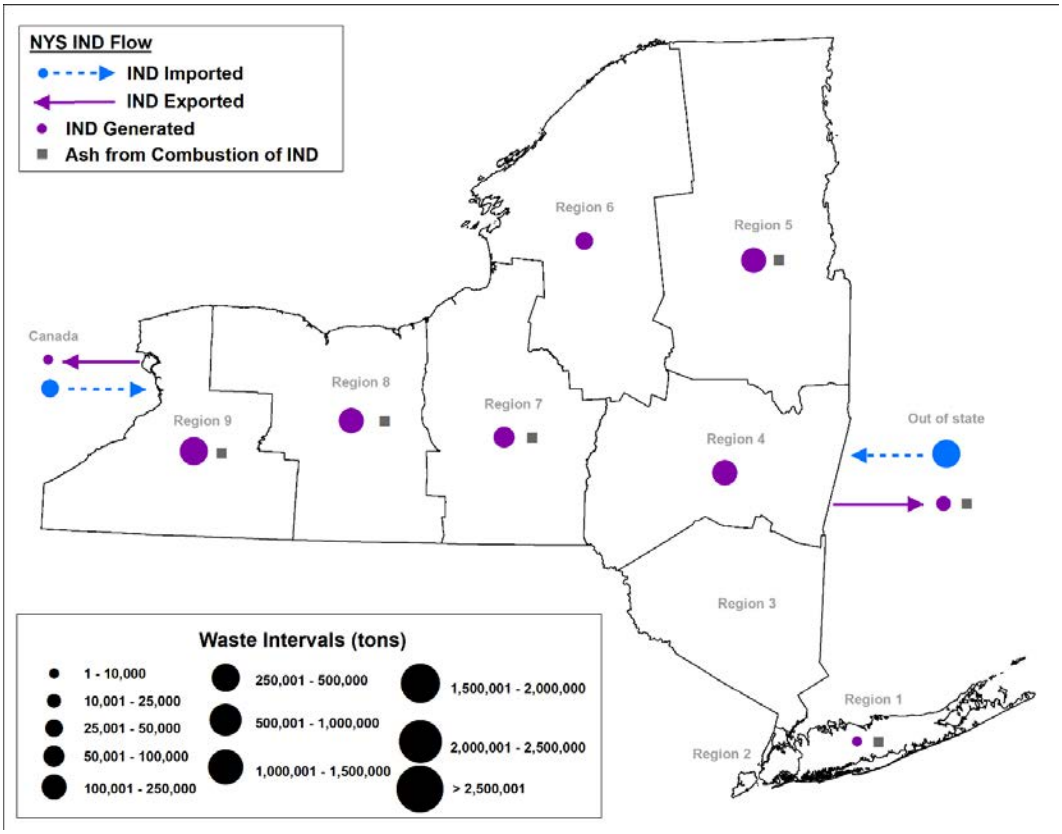


Figure E.8. New York industrial waste flow

Figure E.8 shows where industrial waste generated in NYS was disposed of in landfills or processed at combustion facilities in 2018. Industrial waste was disposed of or processed in every region of the state except for DEC Regions 2 and 3.

Industrial waste made up about 18% of the waste imported into NYS in 2018. Region 9 imported about 56% of the industrial waste. This was about twice as much as the next highest importer, Region 8, which imported about 25% of the total industrial waste that was imported to the state. Region 5 processed or disposed of about 16% of the industrial waste that was imported. Together, Regions 4 and 7 accepted about 3% of the industrial waste. Regions 1, 2, 3, and 6 imported no industrial waste from outside of the state in 2018.

Industrial waste accounted for less than 1% of the total waste exported from NYS in 2018. About 74% of the industrial waste exported from NYS originated in Region 2. Region 1 accounted for about 12% of the industrial waste exported and Region 3 accounted for 11%. Regions 7 and 9 exported about 2% and 1%, respectively, of industrial waste generated. The remaining DEC regions (4, 5, 6, and 8) did not export any industrial waste.

Industrial waste was combusted at combustion facilities throughout the state in 2018. The destinations of ash residue that remained after industrial waste was combusted are shown on Figure E.8. Ash residue from other waste types is not shown in the figure. Ash residue from the combustion of industrial waste was disposed of in Regions 1, 5, 7, 8, and 9. Ash residue that was not disposed of in those regions was exported to other states.

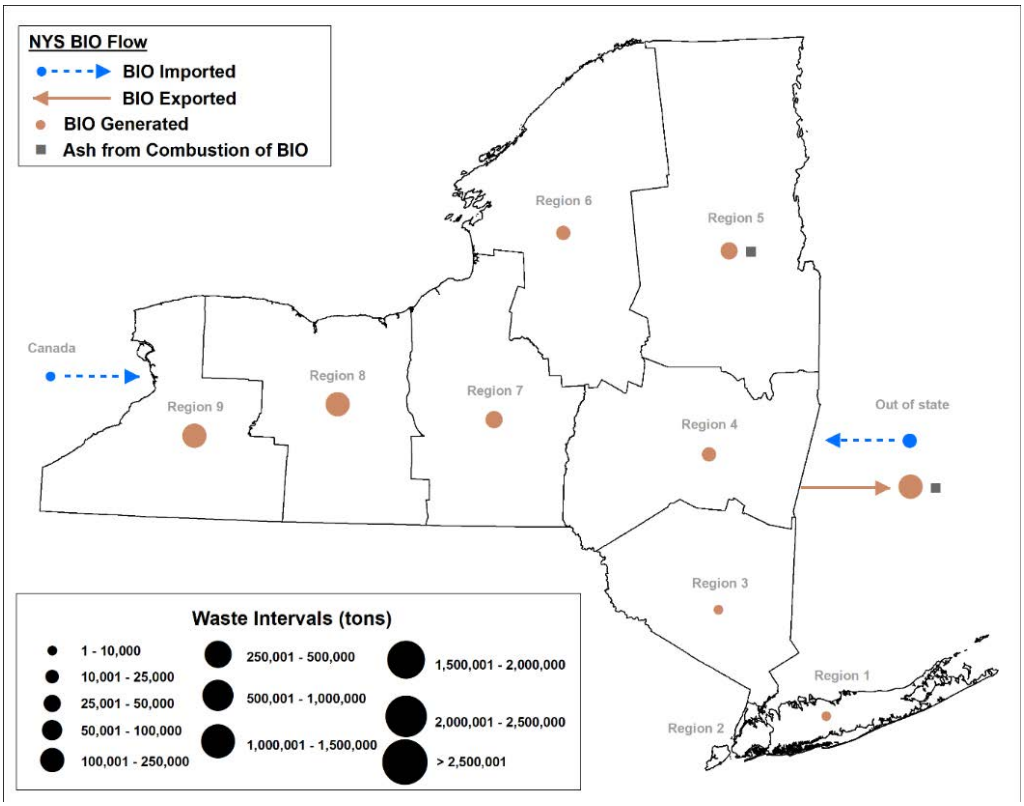


Figure E.9. New York biosolids flow

Figure E.9 shows where the biosolids generated in NYS in 2018 were disposed of in landfills or processed at combustion facilities. Biosolids were disposed of or combusted in every DEC Region of the state except for Region 2.

Biosolids made up about 1% of the total waste that was imported to NYS in 2018. Region 5 imported the greatest amount of biosolids from outside of NYS, about 37%. Approximately 27% of the imported biosolids went to Region 8. Region 3 accepted about 21% of the biosolids that were imported from outside the state.

Some regions did not import any biosolids, including Regions 1, 2, 4, and 6. Only about 1% of the biosolids imported were sent to Region 7. The remaining imported biosolids, about 15%, were sent to Region 9.

Biosolids made up about 3% of all waste exported out of NYS in 2018. Region 2 accounted for about 80% of the biosolids exported out of NYS. Nearly 20% of biosolids exported out of NYS originated in Region 3. Regions 1 and 4 accounted for about 0.15% of biosolids exported in 2018. Regions 5–9 did not export any biosolids out of state.

Some biosolids were also combusted within New York in 2018. The destinations of the ash residue that remained after biosolids were combusted are shown in Figure E.9. Ash residue from other waste types is not shown in the figure. The only DEC region that accepted ash residue from the combustion of biosolids for disposal was Region 5. Ash residue from the combustion of biosolids was also exported to other states.

In the following, regional summaries' references to Regions 1–9 are in reference to all DEC Regions, 1–9.

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Regional and Planning Unit Summary Table

By DEC Region

DEC Region	2018 Populaton	Area (square miles)*	Population Density (Population per square mile)	Median Household Income in 2020	Per Capita Income in 2020 dollars	Households*	Persons per Household*	Persons in Poverty (%)*	MSW processing/disposal rate	MSW	C&DD	Total Waste	MSW	CDD	IND	BIO
1	2,833,381	1,196	2,370	112,522	49,746	945,634	3	5.8	4.5	20%	60%	43%	41%	58%	-	1%
2	8,390,081	303	27,722	68,535	41,296	3,191,691	3	16.1	3.54	19%	66%	43%	46%	52%	1%	1%
3	2,322,431	4,534	512	89,967	46,795	828,940	3	9.6	4.06	22%	61%	38%	57%	40%	1%	2%
4	912,989	5,643	162	65,218	34,870	300,235	2	11.3	4.02	28%	66%	40%	51%	38%	9%	2%
5	581,970	9,182	63	68,884	37,005	239,427	2	9.6	3.75	21%	4%	22%	54%	20%	15%	11%
6	537,866	7,848	69	56,572	29,075	211,137	2	12.9	3.24	20%	1%	12%	51%	34%	12%	3%
7	1,165,354	6,168	189	59,436	32,329	443,286	2	13.4	3.35	22%	25%	21%	51%	38%	6%	4%
8	1,326,787	6,856	194	60,454	33,478	574,075	2	12.6	3.61	19%	38%	26%	46%	42%	6%	6%
9	1,420,330	4,896	290	58,948	32,206	588,161	2	13.7	4.31	20%	65%	32%	49%	32%	14%	5%

By Planning Unit

										Recycling Rate (%)			Waste Composition (%)			
DEC Region	Planning Unit	2018 Populaton	Area (square miles)*	Population Density (Population per square mile)	Median Household Income in 2020 dollars ($)*	Per Capita Income in 2020 dollars ($)*	Households*	Persons per Household*	Persons in Poverty (%)*	MSW processing/disposal rate (lbs/person/day)	MSW	C&DD	Total Waste	MSW	CDD	IND	BIO
2	NYC	8,390,081	303	27,722	68,535	41,296	3,191,691	3	16.1	3.54	19%	66%	43%	46%	52%	1%	1%
3	Dutchess	293,939	795.6	369	81,842	42,309	110,095	3	8.3	4.15	18%	79%	45%	52%	43%	2%	3%
3	Orange	382,126	812.3	470	80,816	35,616	130,428	3	10.6	4.14	10%	75%	39%	54%	44%	1%	2%
3	Putnam	98,814	230.3	429	107,246	47,533	34,915	3	5.7	4.55	2%	99%	58%	37%	58%	-	5%
3	RCSWMA	325,522	173.4	1,877	94,840	39,923	101,167	3	14.4	4.31	14%	36%	22%	61%	38%	0.50%	0.50%
3	Sullivan	75,399	968.1	78	60,433	32,346	28,762	2	12.7	5.24	6%	1%	6%	77%	19%	3%	1%
3	UCRRA	178,418	1,124.2	159	65,306	35,816	70,088	2	12.7	4.07	11%	16%	13%	62%	35%	-	3%
3	Westchester	968,213	431	2,249	99,489	57,953	353,485	3	7.6	3.77	19%	56%	34%	56%	42%	1%	1%
4	CRSWMP	215,142	444.1	484	68,327	38,592	92,693	2	11.3	5.2	32%	67%	42%	59%	35%	5%	1%
4	Colonie	109,690	55.9	1,961	83,314	40,747	2,860	2	6.3	3.22	27%	24%	24%	50%	42%	5%	3%
4	Columbia	58,167	634.7	92	68,750	40,475	25,323	2	10.2	3.17	15%	58%	38%	45%	53%	-	2%
4	Delaware	44,526	1,442.5	31	49,495	28,139	18,930	2	12.8	2.45	33%	27%	27%	48%	45%	3.50%	3.50%
4	ERCSWMA	22,553	177.5	127	80,225	36,393	8,872	3	6.5	4.17	13%	29%	16%	70%	24%	6%	-
4	Greene	47,381	647.2	73	56,681	30,970	17,681	2	11.2	6.58	16%	-	12%	77%	22%	0.50%	0.50%
4	Montgomery	49,394	403.0	123	50,146	27,346	19,621	2	11.9	4.5	21%	89%	66%	33%	66%	0.50%	0.50%
4	Otsego	59,810	1,001.7	60	56,171	30,223	23,768	2	12.8	3.88	15%	-	12%	81.5%	16%	0.50%	2%
4	Schoharie	31,146	621.8	50	58,926	32,352	12,780	2	11.0	3.52	11%	35%	15%	70%	21%	1%	8%
4	Schenectady	155,079	204.5	758	66,488	33,379	57,479	3	10.9	4.2	21%	46%	24%	76%	17%	7%	1%
4	City of Troy	49,354	10.4	4,764	48,834	27,529	20,228	2	23.1	4.77	6%	-	4%	69%	30%	0.50%	0.50%
5	Clinton	80,679	1,037.9	78	59,510	29,960	31,557	2	11.1	3.55	11%	1%	6%	49%	45%	2%	5%
5	Essex	37,288	1,794.2	21	58,109	33,906	16,182	2	10.2	3.97	11%	1%	2%	20%	13%	66%	1%
5	CFSWMA	50,279	1,629.1	31	52,905	26,886	18,880	2	15.9	2.9	8%	-	6%	79%	16%	-	5%
5	Fulton	53,633	495.3	108	51,663	29,984	22,406	2	13.9	4.65	24%	12%	16%	56%	19%	6%	19%
5	Hamilton	4,432	1,717.4	3	60,625	28,758	1,416	3	8.7	11.2	8%	-	6%	78%	22%	-	-
5	Saratoga	230,170	810.0	284	85,224	45,624	95,898	2	6.3	3.65	23%	11%	20%	80%	16%	1%	3%
5	Warren	64,215	867.0	74	64,658	38,740	29,034	2	8.9	3.91	18%	1%	10%	57%	14%	21%	9%
5	Washington	61,274	831.2	74	59,613	29,014	24,054	2	11.2	3.41	13%	1%	8%	54%	33%	12%	1%
6	DANC	246,679	5,223.8	47	53,738	27,461	95,369	2	13.6	3.01	18%	-	9%	47%	29%	22%	2%
6	OHSWA	291,187	2,623.9	111	58,974	30,443	115,768	2	12.3	3.44	15%	1%	8%	54%	40%	3%	3%
7	Broome	191,925	705.8	272	52,237	29,721	52,237	2	18.4	3.02	24%	46%	29%	66%	30%	1%	3%
7	Cayuga	77,121	691.6	112	57,985	30,996	30,870	2	11.7	4.07	12%	-	7%	55%	32%	6%	6%
7	Chenango	47,445	893.6	53	51,756	28,780	20,834	2	11.5	5.14	6%	-	5%	77%	11%	9%	3%
7	Cortland	47,722	498.8	96	59,194	28,407	17,980	2	11.7	3.27	14%	87%	53%	34%	55%	6%	5%
7	Madison	71,117	654.8	109	61,176	32,443	25,959	3	10.4	2.95	14%	-	9%	60%	18%	15%	7%
7	Onondaga	454,475	778.4	584	62,668	34,600	187,349	2	12.8	3.11	29%	21%	22%	40%	50%	6%	4%
7	Oswego	117,515	951.7	123	59,070	30,026	46,597	2	14.2	2.67	28%	-	19%	65%	24%	8%	4%
7	Tioga	48,441	518.8	93	61,965	32,298	20,643	2	9.3	7.27	8%	2%	7%	80%	15%	5%	-
7	Tompkins	102,419	474.6	216	61,361	34,194	40,817	2	12.4	3.03	19%	-	13%	70%	15%	9%	6%
8	Chemung	83,935	407.3	206	54,883	29,959	34,328	2	14.5	3.63	18%	5%	12%	62%	13%	20%	4%
8	GLOW	160,723	1,717.5	94	60,008	30,440	64,725	2	10.1	2.57	9%	9%	7%	62%	25%	12%	1%
8	Monroe	742,864	656.9	1,131	62,087	35,339	305,210	2	13.9	3.79	17%	38%	25%	47%	44%	2%	7%
8	Ontario	109,738	644.1	170	64,795	37,044	45,711	2	8.8	3.69	12%	37%	24%	33%	55%	9%	2%
8	Orleans	40,655	391.3	104	52,598	26,894	16,634	2	13.2	2.74	16%	46%	25%	58%	33%	9%	-
8	Schuyler	17,884	382.3	47	53,291	28,844	7,402	2	11.8	1.9	24%	20%	31%	64%	25%	11%	-
8	Seneca	34,179	323.7	106	53,865	28,703	13,784	2	12.1	2.69	14%	33%	19%	49%	37%	13%	-
8	Steuben	95,860	1,390.5	69	55,349	30,844	40,099	2	12.1	3.29	17%	28%	18%	33%	45%	18%	4%
8	Wayne	90,200	603.8	149	62,003	32,513	37,281	2	9.7	2.14	29%	75%	55%	40%	58%	2%	-
8	Yates	24,951	338.1	74	55,307	28,001	8,901	3	12.9	3.52	10%	1%	7%	77%	14%	4%	4%
9	Allegany	46,332	1,029.4	45	51,227	26,030	18,028	2	15.1	2.88	21%	7%	18%	84%	9%	5%	2%
9	Cattaraugus	76,726	1,308.2	59	50,700	26,797	31,999	2	16.3	3.05	14%	2%	10%	68%	26%	3%	3%
9	Chautauqua	127,472	1,060.4	120	48,315	27,061	53,625	2	14.8	3.8	8%	58%	29%	42%	45%	6%	7%
9	Niagara	210,060	522.4	402	57,252	31,762	90,022	2	11.7	4.59	27%	81%	27%	33%	23%	39%	5%
9	NEST	427,813	830.0	515	69,386	35,050	181,319	2	7.8	5.62	13%	56%	29%	50%	41%	6%	3%
9	NWCB	234,109	105.3	2,224	72,472	40,362	102,272	2	8.7	2.04	19%	97%	54%	46%	38%	14%	2%
9	City of Buffalo	255,781	40.4	6,334	39,677	25,654	110,896	2	28.3	5.1	21%	67%	30%	66%	23%	-	11%

* Data from U.S. Census Bureau

Region 1 Overview and Waste Flow Information

Region 1 consists of 16 planning units and 24 non-affiliated municipalities located within Nassau and Suffolk counties. The planning units include Fishers Island Waste Management District; the cities of Glen Cove and Long Beach; the towns of Babylon, Brookhaven, East Hampton, Hempstead, Huntington, Riverhead, Shelter Island, Smithtown, and Southampton; the Islip Resource Recovery Agency; the Town of North Hempstead Solid Waste Management Authority (TNHSWMA); the Town of Oyster Bay Solid Waste Disposal District (TOBSWDD); and the Southold Solid Waste Management District.

There are 16 municipalities in the Town of Oyster Bay and 8 municipalities in the Town of North Hempstead that are not affiliated with a planning unit in this region. Both counties in this region have a population characteristic of a suburban population density distribution, as their average population densities are between 325 and 5,000 people per square mile. There are also urban and rural areas within the boundaries of both counties. Region 1 had an estimated population of 2,832,331 in 2018 (Census, 2019).

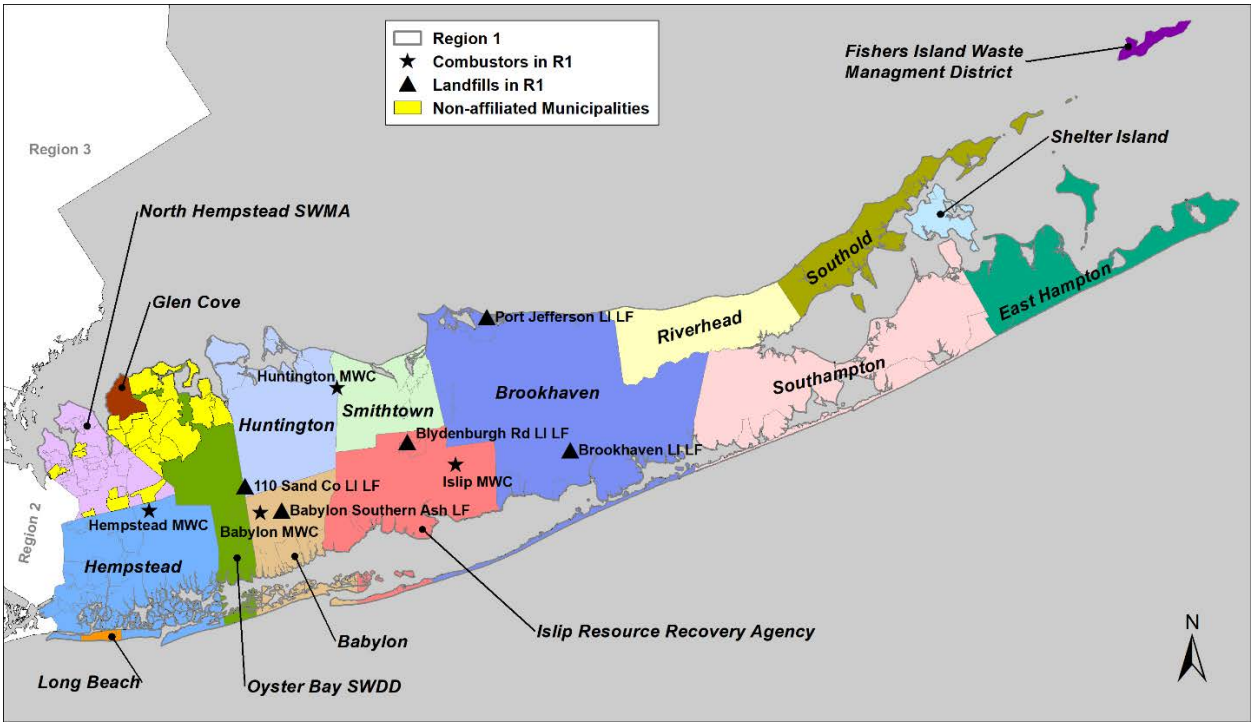


Figure E.10. Region 1 planning units

Figure E.10 shows that this region has 16 planning units and 24 non-affiliated municipalities. The figure shows four combustion facilities and five landfills in Region 1. The Hempstead Resource Recovery Facility (Hempstead MWC) is in the Town of Hempstead, in Nassau County. The other three combustion facilities are in Suffolk County. The Covanta MacArthur Renewable Energy Facility (Islip MWC) is in the Town of Islip, the Babylon Resource Recovery Facility (Babylon MWC) is in the Town of

Babylon, and Huntington Resource Recovery Facility (Huntington MWC) is in the Town of Huntington. The Long Island Landfill Law restricts the types of waste that can be landfilled on Long Island and, for the most part, prohibits the disposal of MSW. The landfills are all located in Suffolk County. The Babylon Ashfill is a MWC ash disposal site in the Town of Babylon. The other four landfills in this region are clean fill sites authorized to accept inert C&D debris. The 110 Sand Company Landfill is in the Town of Huntington; the Blydenburgh Road Landfill is in the Town of Islip; and both the Port Jefferson Village Landfill and Brookhaven Landfill are in the Town of Brookhaven. The Brookhaven Landfill is also authorized to accept MWC ash.

Significant seasonal tourism creates unique circumstances for managing the waste stream in some of the planning units. While a substantial portion of waste generated in Region 1 is processed at the combustion facilities located within the region, the remaining waste is exported by train or truck to in-state and out-of-state disposal facilities.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 1 in 2018. Figure E.11 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.12, Figure E.13, Figure E.14 show the flow of waste by type for MSW, C&D debris, and Industrial waste, respectively.

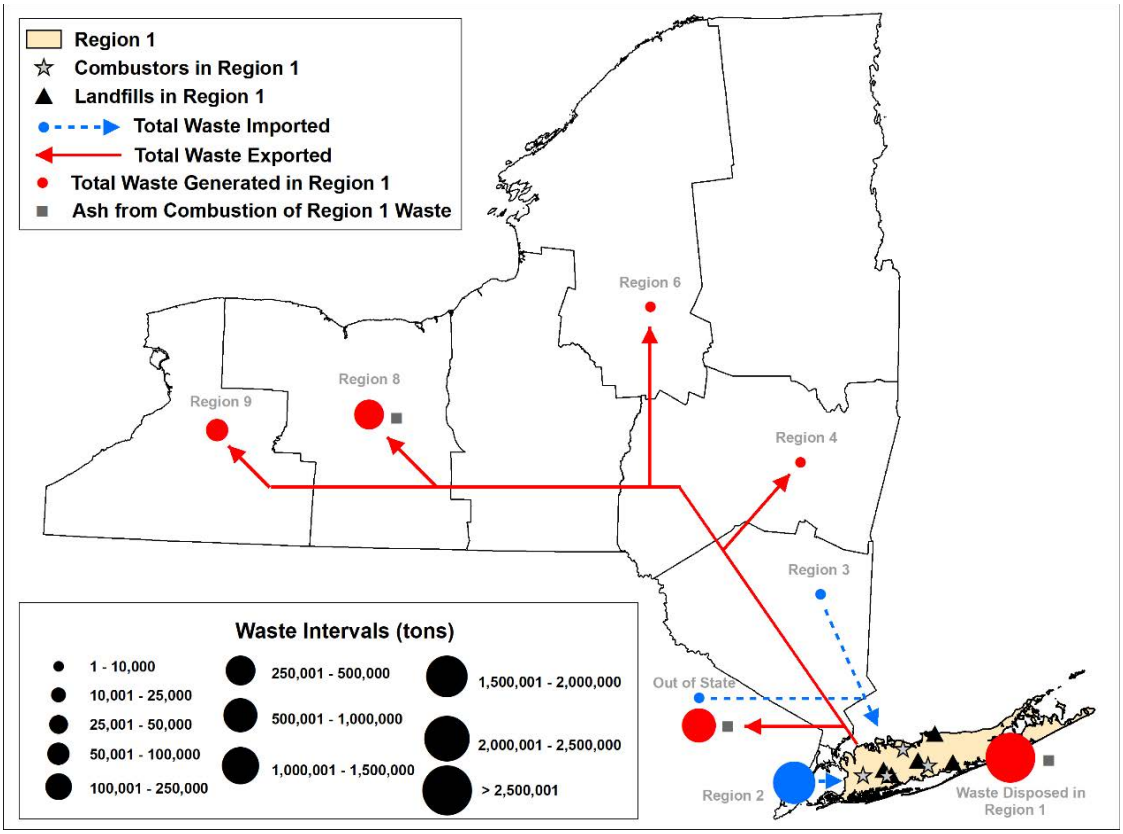


Figure E.11. Region 1 total waste flow

Figure E.11 shows that approximately 67% of waste generated in Region 1 in 2018, not including recovered materials, was processed at local combustion facilities or disposed of in the region's landfills. The remainder of the waste was exported for processing or disposal at facilities in other regions or facilities in other states. Region 8 accepted about 8% of this waste, 23% was sent to out-of-state facilities, and minimal amounts were sent to Regions 4, 6, and 9. Most waste exported out of state in 2018 was shipped to Ohio, Virginia, and Pennsylvania, which received 59%, 23%, and 17%, respectively. About 51% of waste exported to out-of-state facilities was MSW, 48% was C&D debris, and the remaining 1% was industrial waste and biosolids.

In addition, Figure E.11 shows that waste was imported into Region 1 for processing at combustion facilities or for disposal at landfills. More than 99% of imported waste came from Region 2; minimal amounts were received from Region 3 and from out of state. Of the nine regions in NYS, Region 1 had the second-highest tonnage of waste imports, behind only Region 8. The most significant portion of waste imported to Region 1 was C&D debris. About 83% was C&D debris destined for disposal at landfills in the region, 17% was MSW, and minimal amounts were industrial waste and biosolids.

Figure E.11 also shows the movement of the ash waste stream. The ash represented in the figure only accounts for ash resulting from the combustion of waste generated in the region. As waste was processed at the combustion facilities in Nassau and Suffolk

counties, and the combustion facility in Region 6, ash residue generated was transported for disposal. The majority of ash residue was sent to landfills within Region 1, and minimal amounts were sent to a landfill in Region 8 for disposal.

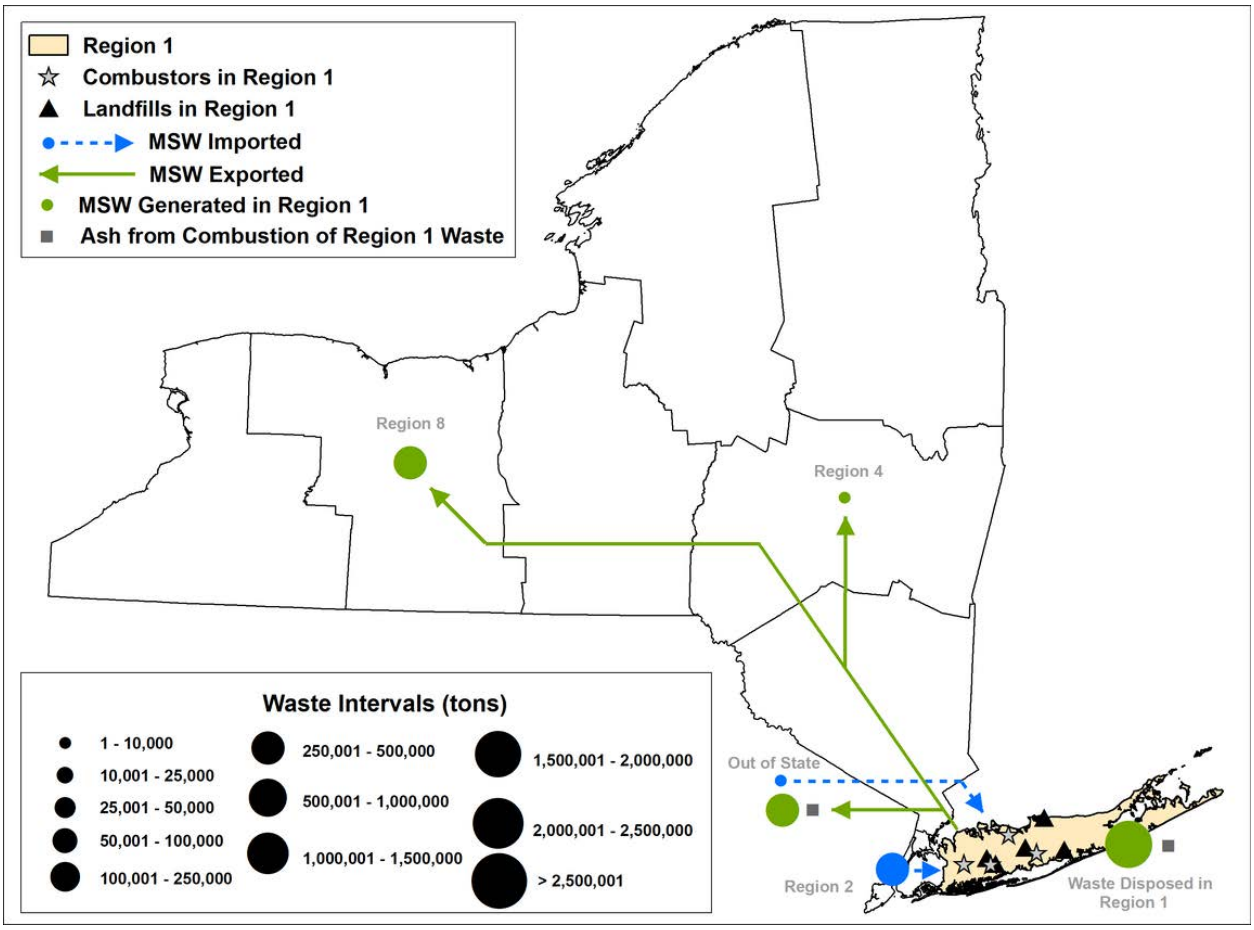


Figure E.12. Region 1 MSW flow

Figure E.12 represents the flow of MSW in Region 1 in 2018 that was destined for processing or disposal. A substantial portion of MSW, about 68%, was processed locally at the region's combustion facilities. About 20% of MSW from Region 1 was sent to out-of-state facilities, 11% was transported to Region 8, and minimal amounts were taken to Region 4.

Most of the MSW exported out of state in 2018 was shipped to Virginia, Ohio, and Pennsylvania. Virginia received 45%, Ohio received 43%, and Pennsylvania accepted 12% of the MSW exported out of state from Region 1.

Region 1 also accepted MSW from out of state and from Region 2 in 2018. Figure E.12 shows this as imported waste. Approximately 98% of the imported MSW originated in Region 2; the remainder was imported from out of state. MSW was imported for processing at the region's combustion facilities or for consolidation and transfer to other

facilities outside of Region 1 for processing or disposal. At least 65% of MSW imported in 2018 was processed at the region's combustion facilities.

Figure E.12 shows the movement of the ash waste stream, generated from processing the region's MSW at the four regional combustion facilities. More than 99% of ash residue was disposed of in the region at the Babylon Ashfill and the Brookhaven Landfill. A small amount was exported to out-of-state facilities.

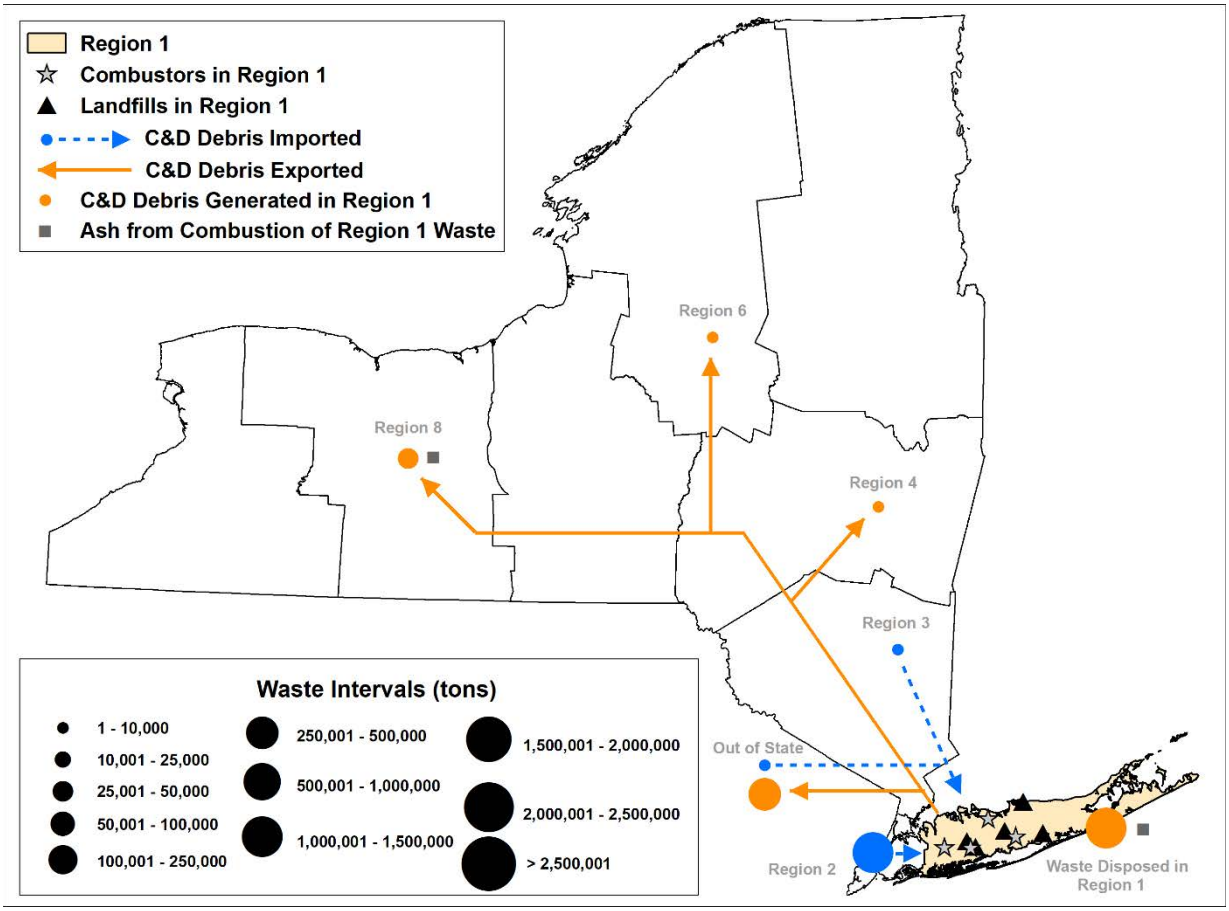


Figure E.13. Region 1 C&D debris flow

Figure E.13 depicts the C&D debris stream flow in Region 1 and its movement into and out of the planning unit for processing and disposal. As shown in Figure E.13, approximately 69% of the C&D debris generated in Region 1 in 2018was processed or disposed of within the region. About 3% was sent to Region 8, and approximately 27% was exported to out-of-state facilities. Minimal amounts were taken to Regions 4 and 6. The C&D debris exported out of state was destined for facilities in Ohio and New Jersey, which received 76% and 21%, respectively.

Figure E.13 also shows the movement of ash residue generated from processing Region 1-generated C&D debris at combustion facilities within the region and also in Region 6. The ash residue was transported to the Brookhaven Landfill in Region 1 and a landfill in Region 8, accounting for 23% and 77%, respectively.

Figure E.13 shows C&D debris imported from out of state and from Regions 2 and 3. More than 99% of imported C&D debris originated in Region 2, while minimal amounts came from Region 3 and from out-of-state facilities.

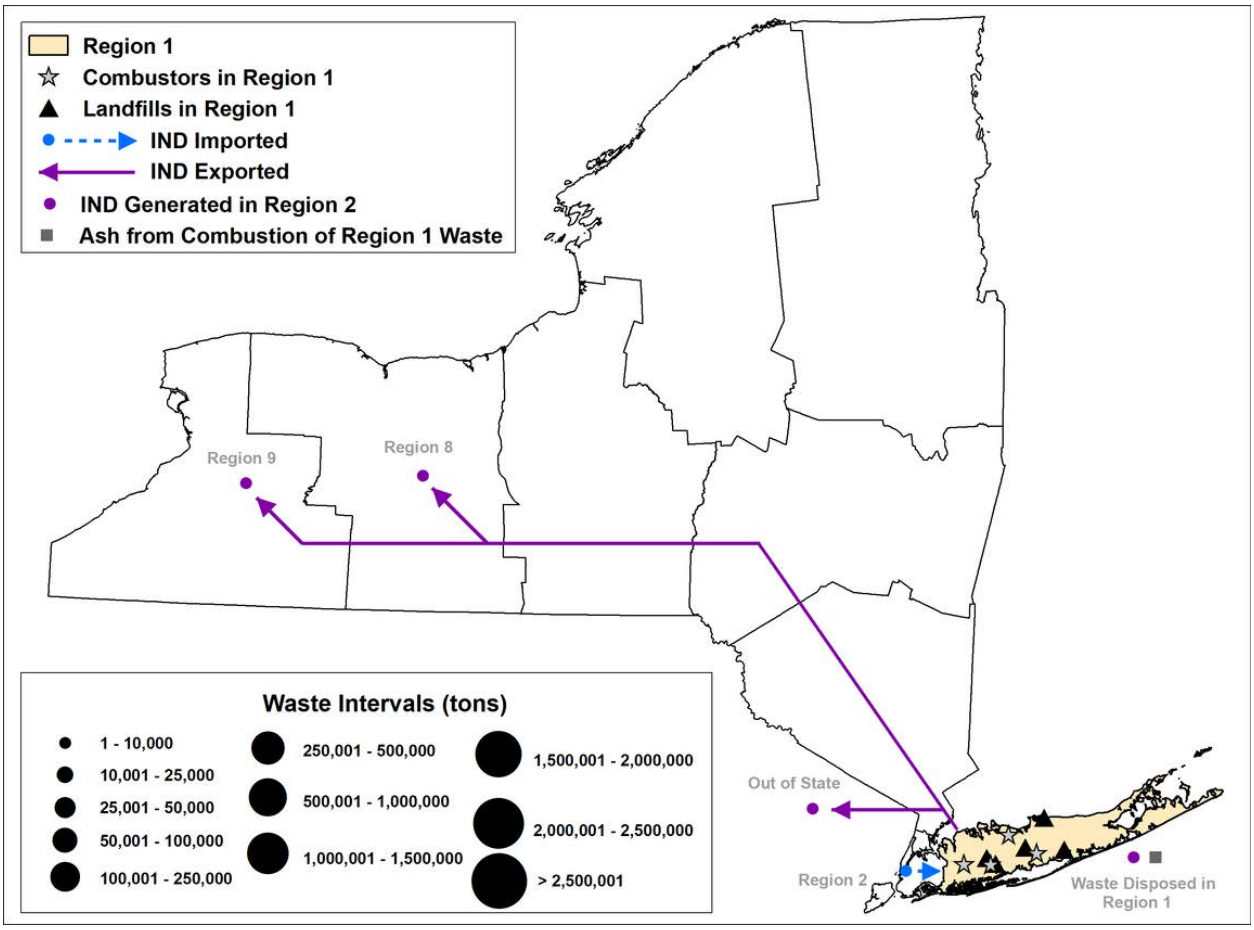


Figure E.14 Region 1 industrial waste flow

Figure E.14 shows the movement of industrial waste in Region 1. Fifty-eight percent of industrial waste generated in Region 1 in 2018 was processed or disposed of within the region. Approximately 25% was sent to Region 8 and 16% was exported to out-of-state facilities. Region 9 received minimal amounts of industrial waste in 2018.

Industrial waste was imported to Region 1, as shown in Figure E.14. A full 100% of the imported industrial waste came from Region 2 to be processed at one of the Region 1's combustion facilities and the ash residue generated was transported to the Brookhaven Landfill in Region 1 for disposal.

Figure E.14 also shows the movement of ash residue generated from the processing of industrial waste.

Table E.3. Region 1 organics recycling summary

Anaerobic Digestion - No facilities	
Composting	
Source-Separated Organics	6,369 tons
Food Processing Waste	0 tons
Yard Trimmings	210,597 tons
Biosolids	0 tons
Land Application - No facilities	

There are 25 compost operations located in Region 1 that primarily compost yard trimmings. There are no operating anaerobic digesters and no land application operations. Table E.3 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all the waste and recovered materials generated in Region 1 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs, RHRFs, and composting facilities.

Table E.4. Region 1 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	2,330,000	573,966
C&D Debris	1,650,000	2,430,000
Industrial	16,300	270
Biosolids	66,800	0
Total	4,063,100	3,004,236
MSW disposal rate	4.5 lbs/person/day	
* The heavy metal category is not included in the values in this table.		

Table E.4 shows that about 7.07 million tons were processed, disposed of, or recovered in 2018. Three million tons were recovered through CDDHRFs, RHRFs, and composting facilities, accounting for 43% of total waste generated. About 4.06 million tons of waste were destined for processing at a combustion facility or for disposal at a landfill, accounting for 57% of all waste generated.

As shown in Table E.4, in 2018 the MSW stream accounted for 41% of waste generated in the region, C&D debris accounted for 58%, biosolids for 1%, and industrial waste for a fraction of a percent.

Table E.4 shows that approximately 2.90 million tons of MSW were generated within the planning unit in 2018. About 80% of the MSW was processed or disposed of, and 20% was recovered through RHRFs and composting facilities. Similarly, about 4.08 million tons of C&D debris were generated in the region. Approximately 40% was to be processed at a combustion facility or disposed of at a landfill, and 60% was recovered through CDDHRFs.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 1. The overview presents the planning units in alphabetical order by county. The figures show the waste flow of the MSW and C&D debris generated in each planning unit. This section also includes information about the municipalities in this region that are not currently affiliated with a recognized planning unit. There are 24 non-affiliated municipalities in this region, located in the Town of Oyster Bay and the Town of North Hempstead. They are discussed after the sections of the document dedicated to TOBSWDD and TNHSWMA.

Nassau County

City of Glen Cove

The planning unit covers the entire City of Glen Cove. It is operated by the Department of Public Works, which collects MSW, recyclables, yard trimmings (strictly excluding grass clippings), and commercial and institutional waste. Businesses requiring consistent large-scale collection are required to contract with a private hauler, as are those needing C&D debris collection. While the city owns a transfer facility, it subcontracts its operation to a private company.

The City of Glen Cove has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 27,218 (Census, 2019).

LSWMP Status	The planning unit's approved LSWMP expired in 2006. The planning unit is working with DEC to develop a new LSWMP.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.15 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

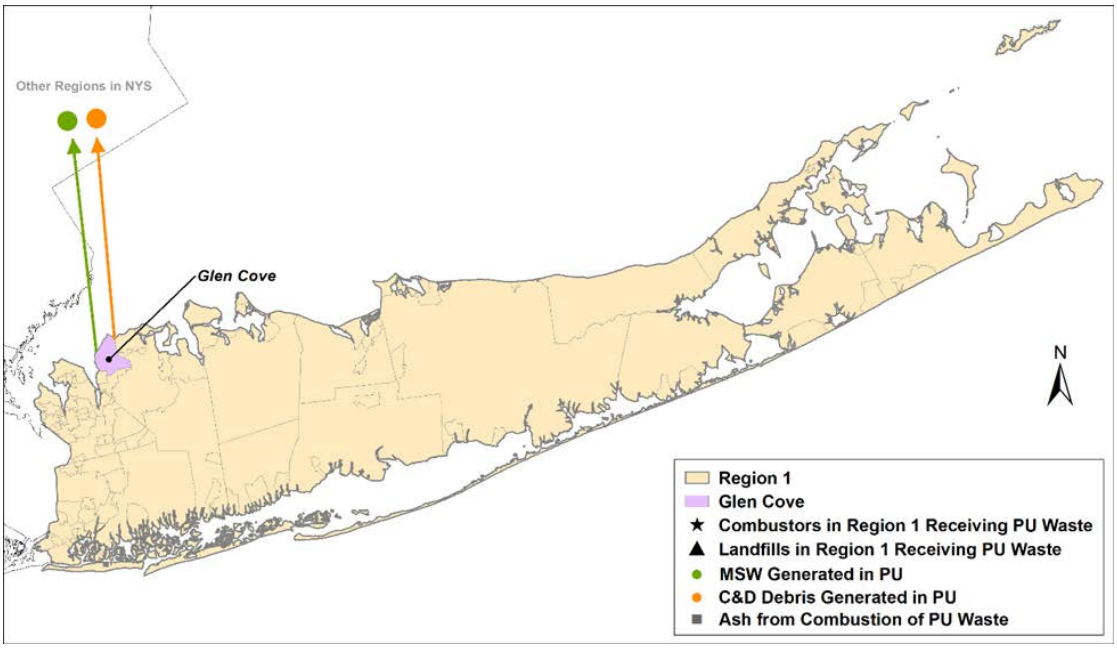


Figure E.15. City of Glen Cove MSW and C&D debris flow

As shown in Figure E.15, the MSW and C&D debris generated in the City of Glen Cove planning unit were transported to facilities in other regions of the state.

Town of Hempstead

The Town of Hempstead is in the southwestern part of Nassau County. It serves as the solid waste planning unit for all 22 incorporated villages within its boundaries, and in 2018, it serviced an estimated population of 767,547 (Census, 2019). The Town of Hempstead has an average population density of more than 5,000 people per square mile, characteristic of an urban population density distribution.

While the Town, through the Department of Sanitation, is responsible for the disposal of solid waste generated within its boundaries, the collection of this waste is divided among various government jurisdictions. The Department of Sanitation collects waste and recyclables from Barnum Isle, Bay Park, Bellmore, Bethpage, East Meadow, Harbor Isle, Levittown, Lido Beach, Merrick, North Lynbrook, Point Lookout, Salisbury, South Westbury, Seaford, Uniondale, and Wantagh. Other areas are serviced either by 5 special sanitation collection districts or the 14 local village sanitation districts.

The Town implements a HHW collection program and holds 10 collection events a year at various locations around the town. Yard trimmings collection is dependent on the sanitation district servicing the area.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.16 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

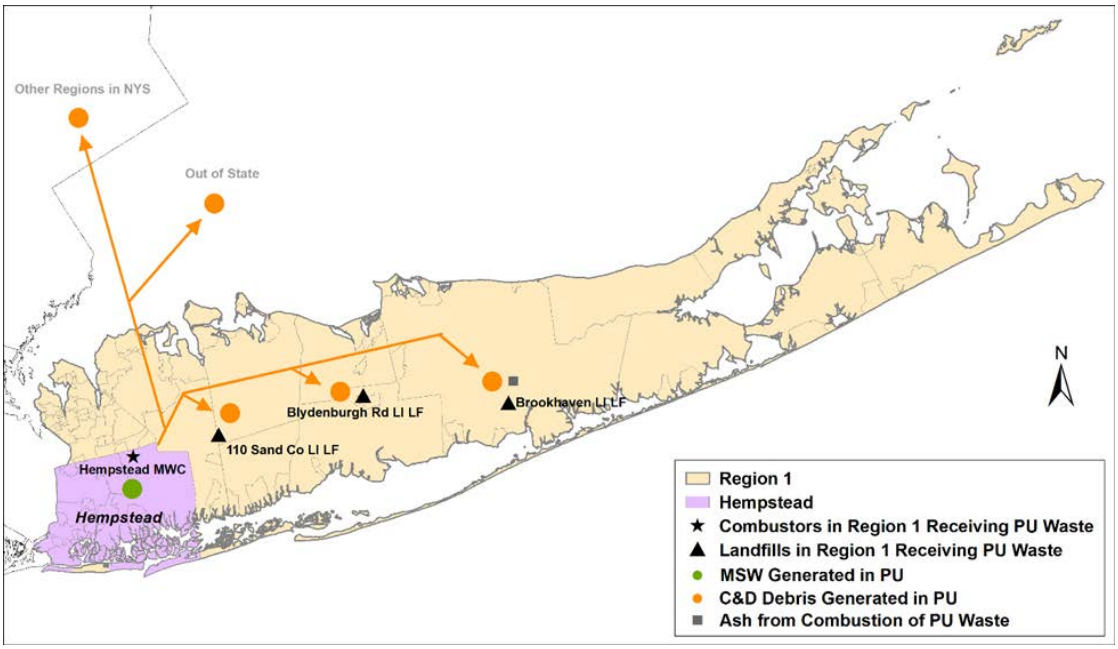


Figure E.16. Town of Hempstead MSW and C&D debris flow

As shown in Figure E.16, the waste generated in the Town of Hempstead planning unit was transported to in-state and out-of-state facilities. The MSW was processed at the Hempstead MWC. The ash residue remaining after combustion of this waste was disposed of at the Brookhaven Landfill, located in Yaphank, as part of an inter-municipal agreement between the Town of Hempstead and the Town of Brookhaven. The C&D debris stream was destined for in-state and out-of-state facilities. Some of the C&D debris was transported to landfills in Region 1, such as 110 Sand Company Landfill, Blydenburgh Road Landfill, and Brookhaven Landfill. The rest of the C&D debris was exported to facilities out of state or in other regions.

City of Long Beach

The City of Long Beach is in Nassau County and serves as its residents' solid waste planning unit. In 2018, it serviced an estimated population of 33,497 (Census, 2019). The city has a population characteristic of an urban population density distribution, as the average population density is more than 5,000 people per square mile.

The planning unit carries out sanitation services, including the management and collection of MSW and recyclables throughout the city through the Long Beach Department of Public Works and the Sanitation and Recycling Division. Recyclables are collected on a dual-stream alternating recycling schedule and are minimally processed at the city's facility before being hauled to facilities in other areas of Region 1.

The influence of the city's residential population has limited the industrial and commercial development within the city. As a result, the MSW stream consists primarily of residential and institutional sources.

Long Beach does not currently operate a yard trimmings program other than a holiday tree collection. The city offers a collection of HHW at an annual collection event. In collaboration with the Town of Hempstead, residents can also attend the Town of Hempstead Collection events.

LSWMP Status	The planning unit's LSWMP is approved through 2026.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.17 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

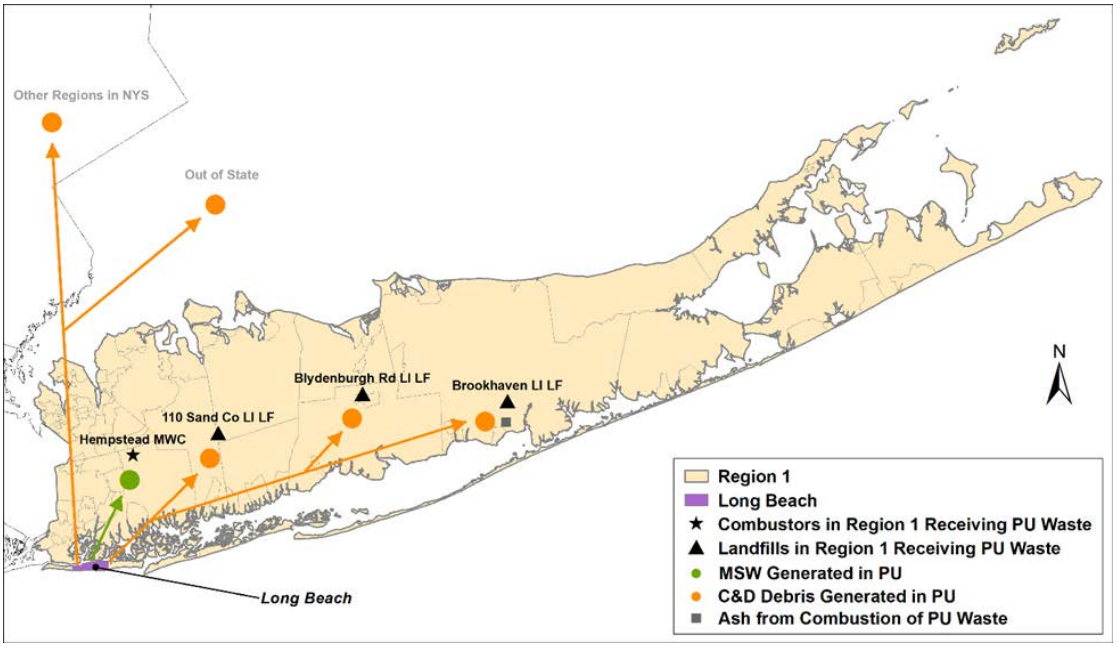


Figure E.17. City of Long Beach MSW and C&D debris flow

As shown in Figure E.17, waste generated in the City of Long Beach planning unit was transported to in-state and out-of-state facilities. The MSW stream was transported to the Hempstead MWC to be processed. The ash residue generated was determined to be disposed of at the Brookhaven Landfill. C&D debris was destined for landfills in Region 1, such as 110 Sand Company, Blydenburgh Road, and Brookhaven landfills; along with facilities in other regions of the state and in other states.

Town of North Hempstead Solid Waste Management Authority (TNHSWMA)

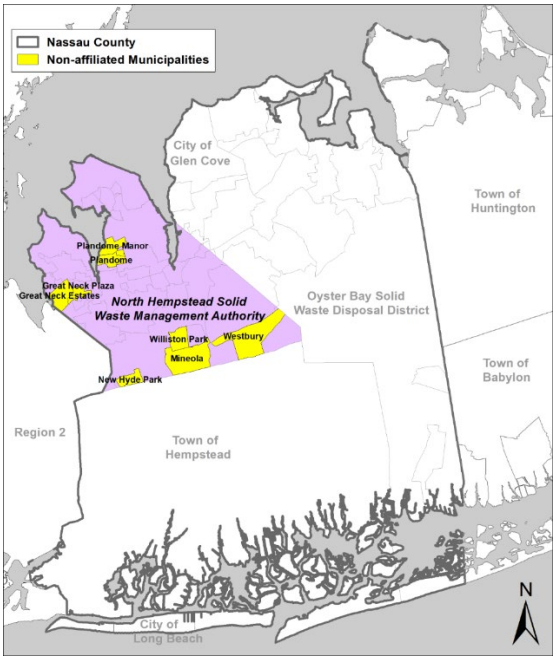


Figure E.18. NHSWMA Planning unit and non-affiliated municipalities

The TNHSWMA serves as the planning unit for all but eight municipalities located within the Town of North Hempstead boundaries. The planning unit includes unincorporated hamlets, incorporated villages, Town-run garbage districts, and independent garbage districts. The eight municipalities that have elected not to participate in the planning unit are considered non-affiliated municipalities. These non-affiliated municipalities are the villages of Great Neck Estates, Great Neck Plaza, Mineola, New Hyde Park, Plandome, Plandome Manor, Westbury, and Williston Park. Both the municipalities that are part of the TNHSWMA as well as the non-affiliated municipalities are shown in Figure E.18.

The Town of North Hempstead has a flow control law that mandates all municipal solid waste generated in the Town must be brought to the town-owned transfer facility. The local government composition of the Town of North Hempstead is comprised of various administrative divisions and jurisdictions, which is reflected in the different methods of collection and management of MSW and recyclables within the municipalities of the planning unit.

The TNHSWMA has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 167,079 (Census 2019). The TNHSWMA, as a division of the Town of North Hempstead's government, is responsible for soliciting and managing MSW and recycling services on behalf of the local governments listed below:

- Albertson, Searingtown, and Herricks
- Great Neck - Great Neck Gardens

- Great Neck - University Gardens West
- Great Neck - University Gardens East
- Manhasset and Manhasset Hills
- New Cassel
- New Hyde Park, Garden City Park, and Floral Park Center
- Harbor Hills

Most of the other local governments in the TNHSWMA procure services from private companies specializing in providing collection services for residents. Some exceptions to this general rule are village employees performing the collection of municipal solid waste and recyclables in the incorporated villages of East Hills, Floral Park, and Great Neck.

The TNHSWMA develops residential and commercial waste reduction and recycling programs and holds several HHW collection events for its residents. The Town has a designated Homeowner Disposal Area where most residents can drop off e-waste, waste oil, tires, propane tanks, and automobile parts. However, this service is not available for residents from specific unincorporated areas and incorporated villages within the town that have not elected to participate in the TNHSWMA.

The planning unit also offers a Boat Shrink Wrap Recycling Program and several "clean up days" to their residents and commercial marinas.

The non-affiliated municipalities within the Town of North Hempstead encompass a population of close to 63,885 (Census, 2019). These municipalities have opted to administer their solid waste management programs separately.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.19 also show the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

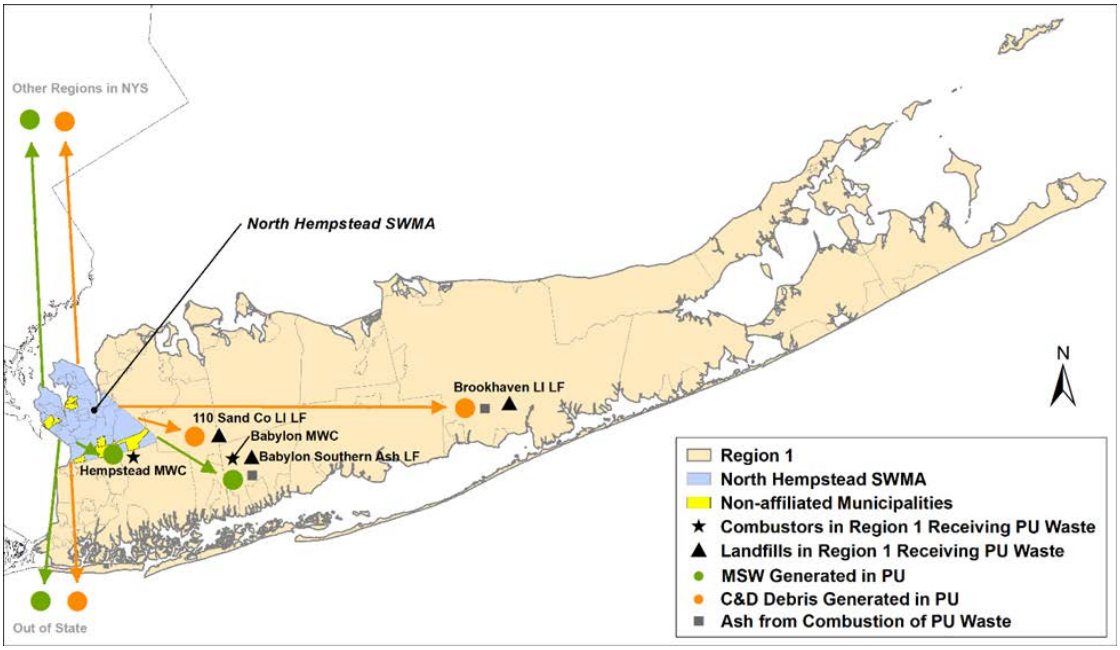


Figure E.19. TNHSWMA MSW and C&D debris flow

As shown in Figure E.19, the waste generated in the planning unit was transported to in-state and out-of-state facilities. A portion of the MSW was transported to the Hempstead and the Babylon MWCs to be processed, and the rest was transported to facilities in other regions of the state and out of state. The C&D debris was destined for landfills in Region 1, such as 110 Sand Company and Brookhaven landfills, as well as facilities located in other regions of the state and out of state.

Town of North Hempstead - Non-affiliated municipalities

Eight municipalities have opted out of the TNHSWMA and are designated as non-affiliated to the planning unit. This is shown in Figure E.19. None of these non-affiliated municipalities has a CRA, and waste flow information is limited.

Village of Great Neck Estates

The Village of Great Neck Estates is one of nine villages that (together with several unincorporated areas) make up Great Neck. The village procures the service of curbside collection of MSW and recyclables with a private hauler. Additional information regarding solid waste management is not available. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 2,873 (Census, 2019).

Village of Great Neck Plaza

The Village of Great Neck Plaza Public Works Department handles the collection of MSW and recyclables from its residents. Additional information regarding solid waste management is not available. The village has a population characteristic of an urban

population density distribution, as the average population density is more than 5,000 people per square mile. In 2018, it serviced an estimated population of 6,956 (Census, 2019).

Village of New Hyde Park

The Village of New Hyde Park Division of Public Works performs the collection of MSW, recyclables, yard trimmings, and electronic waste for its residents. Additional information regarding solid waste management is not available. The village has a population characteristic of an urban population density distribution, as the average population density is more than 5,000 people per square mile. In 2018, it serviced an estimated population of 9,831 (Census, 2019).

Village of Mineola

Information regarding solid waste management in the Village of Mineola is not available. The village has a population characteristic of an urban population density distribution, as the average population density is more than 5,000 people per square mile. In 2018, it serviced an estimated population of 19,237 (Census, 2019).

Village of Plandome

The Village of Plandome procures the service of curbside collection of MSW and recyclables with a private hauler for its residents. Additional information regarding solid waste management is not available. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 1,472 (Census, 2019).

Village of Plandome Manor

The Village of Plandome Manor procures the service of curbside collection of MSW and recyclables with a private hauler for its residents. Additional information regarding solid waste management is not available. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 895 (Census, 2019).

Village of Westbury

The Village of Westbury's Department of Public Works performs the collection of MSW and recyclables for its residents. Additional information regarding solid waste management is not available. The village has a population characteristic of an urban population density distribution, as the average population density is more than 5,000 people per square mile. In 2018, it serviced an estimated population of 15,349 (Census, 2019).

Village of Williston Park

The Village of Willison Park Department of Public Works performs the collection of MSW and recyclables for its residents. Additional information regarding solid waste management is not available. The village has a population characteristic of an urban population density distribution, as the average population density is more than 5,000 people per square mile. In 2018, it serviced an estimated population of 7,272 (Census, 2019).

Oyster Bay Solid Waste Disposal District (OBSWDD)

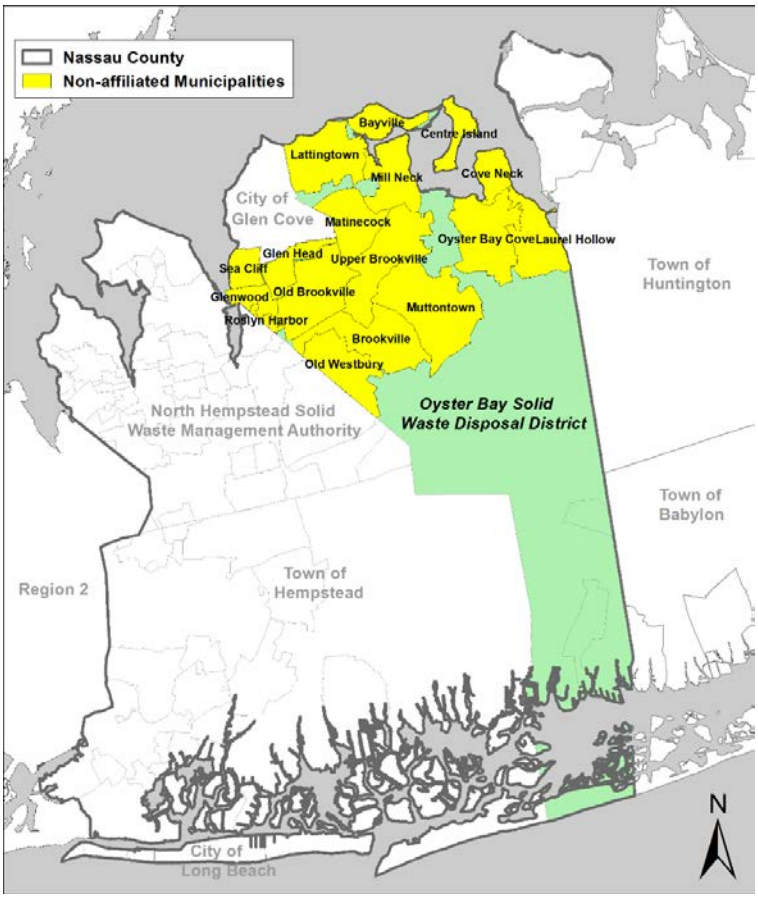


Figure E.20. TOBSWDD Planning unit and non-affiliated municipalities

The Town of Oyster Bay is the easternmost town in Nassau County. The New York State Legislature officially authorized the planning unit in January 1986 to address the solid waste disposal needs of the area. The Town of Oyster Bay has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. It was estimated that the planning unit in 2018 served a population of 247,184 (Census, 2019).

As shown in Figure E.20, the planning unit consists of 20 unincorporated and 2 incorporated municipalities, accounting for almost 90% of the town's population and 57% of its land area. The remainder of the population and land area is part of the other

municipalities located within the Town borders. These are mostly incorporated villages located toward the north shore. They are considered non-affiliated municipalities because they are not part of the TOBSWDD.

The municipalities not affiliated with the planning unit are highlighted in yellow in Figure E.20. There are a total of 16, including the villages of Bayville, Brookville, Centre Island, Cove Neck, Lattingtown, Laurel Hollow, Matinecock, Mill Neck, Muttontown, Old Brookville, Old Westbury, Oyster Bay Cove, Roslyn Harbor, Sea Cliff, Upper Brookville, and the Garbage District of Glenwood-Glen Head. Since these communities have opted out of the TOBSWDD, they have made alternate arrangements to handle MSW disposal and recycling.

The planning unit manages a Household Hazardous Waste Collection Facility and an Electronic Collection Facility open year-round for residents. Moreover, the Town of Oyster Bay sponsors recycling programs such as HHW collection events and other special drop-off events that are open to all Town residents, regardless of whether they live in an affiliated or non-affiliated community of the TOBSWDD.

LSWMP Status	The planning unit's LSWMP is approved through 2029.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.21 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

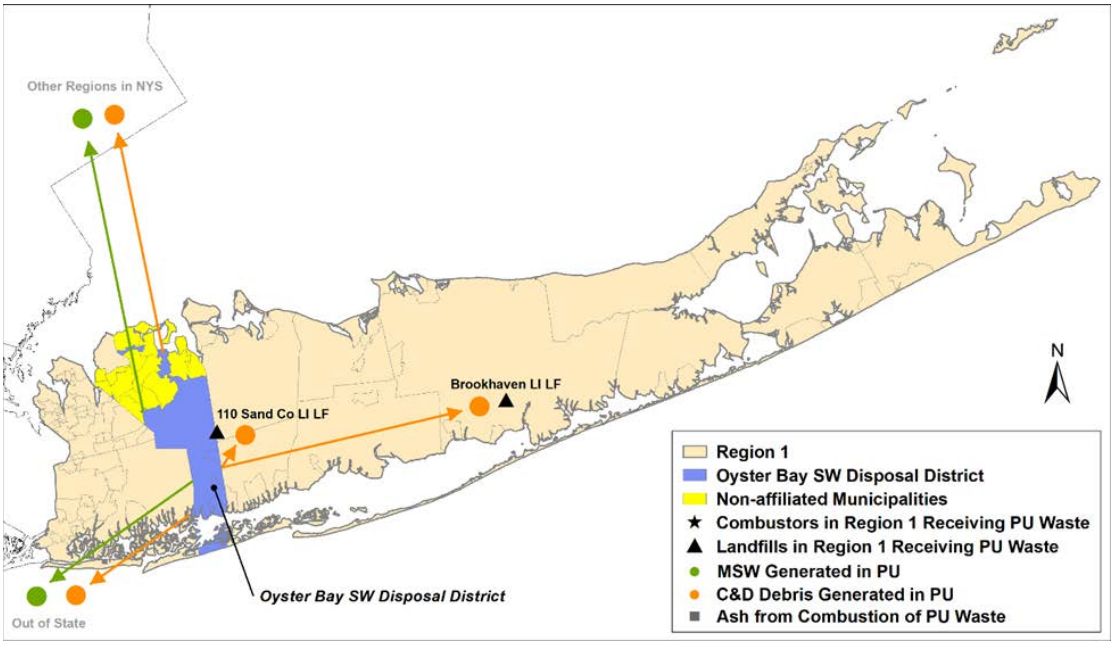


Figure E.21. TOBSWDD MSW and C&D debris flow

As shown in Figure E.21, the waste generated in the planning unit was transported to in-state and out-of-state facilities. The MSW was transported to facilities in other regions of the state and facilities outside of the state. The C&D debris stream was destined for landfills in Region 1, such as 110 Sand Company and Brookhaven landfills, as well as facilities located in other regions of the state and facilities located in other states.

OBSWDD - Non-affiliated municipalities

There are 16 non-affiliated municipalities within the Town of Oyster Bay planning unit as they have opted out of the OBSWDD. None of these non-affiliated municipalities has a CRA in place, and waste flow information is limited. Figure E.20 depicts the location of these non-affiliated municipalities.

Village of Bayville

The Village of Bayville has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 6,742 (Census, 2019). Due to being a non-affiliated municipality from the Town of Oyster Bay, the Village of Bayville has made alternate arrangements to handle solid waste and recyclables. The Bayville Environmental Conservation Commission handles MSW and recyclable collection.

Village of Brookville

Information regarding solid waste management from the Village of Bayville is not available. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 3,609 (Census, 2019).

Village of Centre Island

The Village of Centre Island is the second smallest village in Nassau County, with just over 200 households. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 410 (Census, 2019). Information regarding solid waste management from the Village of Centre Island is not available.

Village of Cove Neck

Information regarding solid waste management from the Village of Cove Neck is not available. It has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. In 2018, it serviced an estimated population of 301 (Census, 2019).

Glenwood-Glen Head, Garbage District

The Glenwood-Glen Head Garbage District provides solid waste and recyclables curbside collection for Glen Head and Glenwood Landing residents. This garbage district was created in 1927 when the Town of Oyster Bay did not provide sanitation or

waste removal services for its residents. The garbage district is administered by commissioners who procure curbside collection and disposal services for residents. Each year, a special program is offered for the seasonal collection of leaves in November. This special leaf collection program is in addition to the year-round yard trimmings collection available to residents. The Glenwood-Glen Head garbage district serviced an estimated population of 8,893 (Census, 2019). It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution.

Village of Lattingtown

In the Village of Lattingtown, MSW collection is licensed by the village and is provided by four different waste haulers hired directly by the residents. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 1,768 (Census, 2019). Additional information regarding solid waste management is not available.

Village of Laurel Hollow

The Village of Laurel Hollow does not provide MSW collection and recycling services for its residents; each resident must contract this service with a private company. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 2,022 (Census, 2019). Additional information regarding solid waste management is not available.

Village of Matinecock

The Village of Matinecock contracts out the collection services for MSW and recyclables for its residents. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 832 (Census, 2019). Additional information regarding solid waste management is not available.

Village of Mill Neck

In the Village of Mill Neck, curbside collection of MSW and recyclables is performed by municipal staff. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 969 (Census, 2019).

Village of Muttontown

The Village of Muttontown licenses private haulers, and each resident procures the curbside collection of their MSW and recyclables. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban

population density distribution. In 2018, it serviced an estimated population of 3,660 (Census, 2019).

Village of Old Brookville

Information regarding solid waste management in the Village of Old Brookville is not available. The Old Brookville Village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 2,186 (Census, 2019).

Village of Old Westbury

The Village of Old Westbury is a village in the towns of North Hempstead and Oyster Bay. The portion of the village that is located within the Town of Oyster Bay has opted out of the Town of Oyster Bay Solid Waste Disposal District and is considered a non-affiliated municipality of the planning unit. Information regarding solid waste management is not available. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 4,610 (Census, 2019).

Village of Oyster Bay Cove

The Village of Oyster Bay Cove procures curbside collection of MSW and recyclables with a private hauler for its residents. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 2,261 (Census, 2019). Additional information regarding solid waste management is not available.

Village of Roslyn Harbor

The Village of Roslyn Harbor is located in the towns of North Hempstead and Oyster Bay. The portion of the village that is located within the Town of Oyster Bay has opted out of the Town of Oyster Bay Solid Waste Disposal District. The village procures the service of curbside collection of MSW and recyclables with a private hauler for its residents. The village has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 1,107 (Census, 2019). Additional information regarding solid waste management is not available.

Village of Sea Cliff

The Village of Sea Cliff manages the collection of MSW and recycling from residences and commercial properties through the Department of Public Works (DPW). The DPW yard is open once a week to residents for drop-off of assorted debris (yard trimmings, C&D debris, metal, e-waste). The Village of Sea Cliff has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 5,029 (Census, 2019).

Village of Upper Brookville

The Village of Upper Brookville procures MSW, recyclables, and yard trimmings collection services with a private hauler for its residents. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 1,742 (Census, 2019).

Suffolk County

Town of Babylon

The Town of Babylon and the three incorporated villages of Amityville, Babylon, and Lindenhurst form the planning unit. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, the planning unit serviced an estimated population of 210,570 (Census, 2019).

The Department of Environmental Control manages the solid waste management and recycling program. It provides technical support associated with the operation and permit requirements for the town's solid waste management facilities.

The Town of Babylon has a residential garbage district that serves residents and a commercial garbage district that serves industrial sites, commercial establishments, apartments, and condominiums.

The town provides curbside collection of MSW, recyclables, yard trimmings, and other materials for residential households in the unincorporated areas of the town as part of the residential garbage district. The Town of Babylon does not provide collection to households within most gated communities or multi-residential developments. The villages of Lindenhurst and Babylon collect MSW from residents through their village sanitation departments. The Village of Amityville procures the collection of MSW through a private hauler for its residents.

The Town offers two annual HHW collection days and clean-up days on which residents can properly dispose of household chemicals, yard trimmings, and household debris free of charge. Yard trimmings are collected year-round.

LSWMP Status	The planning unit's approved LSWMP expired in 2012. The planning unit is working with DEC to develop a new LSWMP.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.22 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

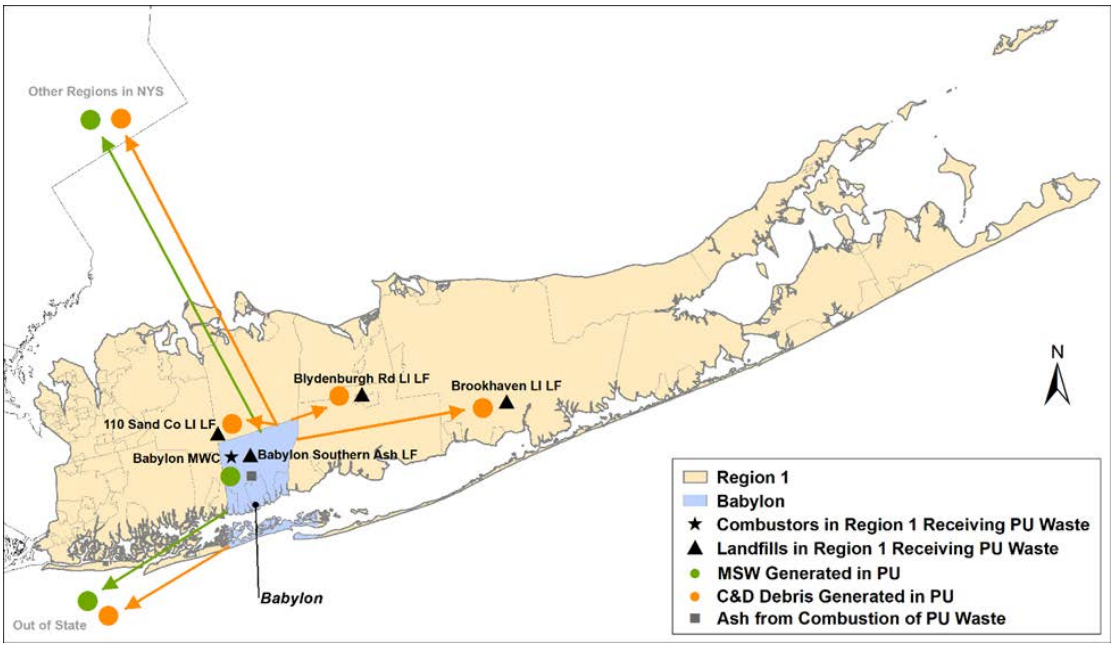


Figure E.22. Town of Babylon MSW and C&D debris flow

As shown in Figure E.22, the waste generated in the Town of Babylon planning unit was transported to in-state and out-of-state facilities. A portion of the MSW was transported to the Babylon MWC to be processed, and the rest was transported to facilities in other regions and out of state. The ash residue generated from the combustion of MSW was disposed of at the Babylon Ashfill. The C&D debris stream was destined for Region 1 landfills-110 Sand Company, Blydenburgh Road, and Brookhaven; facilities in other regions of the state; and facilities out of state.

Town of Brookhaven

The Town of Brookhaven is in central Suffolk County. The Department of Recycling and Sustainable Materials Management serves as the planning unit for all municipalities within the Town of Brookhaven's boundaries, which is comprised of the Town of Brookhaven and eight incorporated villages. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, the planning unit serviced an estimated population of 482,655 (Census, 2019).

The Department of Recycling and Sustainable Materials Management contracts with private haulers for the curbside collection of MSW and recyclables from one-, two-, or three-family homes. It also offers curbside yard trimmings pick-up for 20 weeks each year, during which small brush, branches, and leaves are accepted; grass clippings are prohibited. Residents of apartment buildings, condos, and other private communities and commercial and institutional generators must contract with private haulers for waste collection, recycling, and disposal services.

The town offers HHW collection that accepts these materials from their residents once or twice a week and operates waste-oil drop-off locations.

LSWMP Status	The planning unit's approved LSWMP expired in 2009. The planning unit is working with DEC to develop a new LSWMP.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.23 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

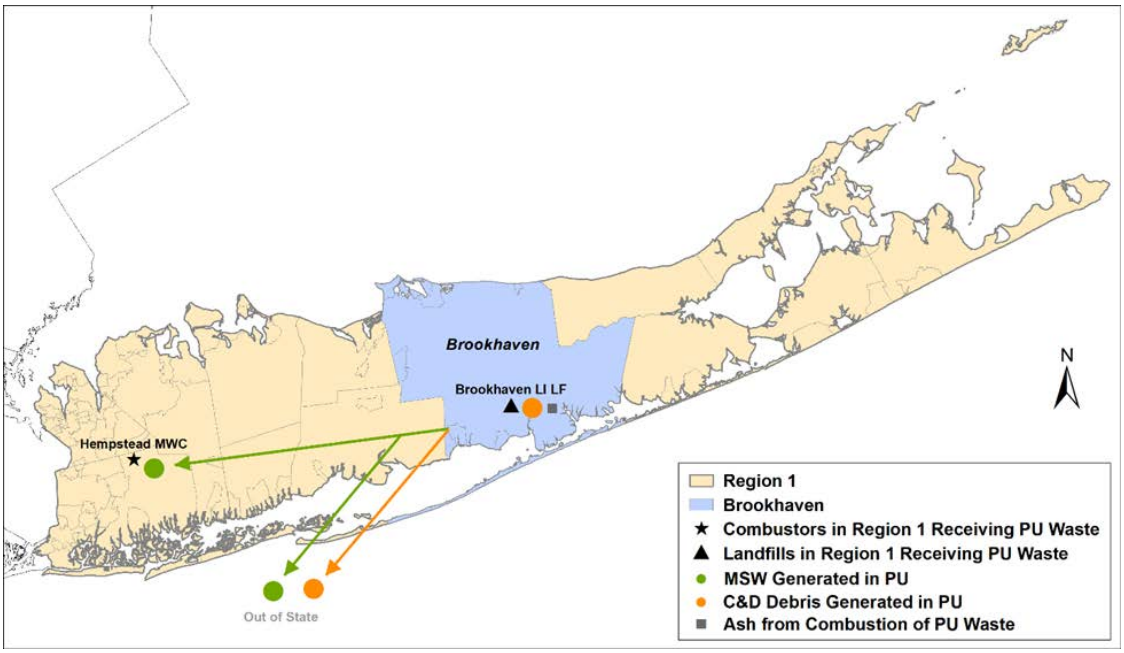


Figure E.23. Town of Brookhaven MSW and C&D debris flow

As shown in Figure E.23, waste generated in the Town of Brookhaven planning unit was transported to in-state and out-of-state facilities. A portion of the MSW was transported to the Hempstead MWC to be processed, and the ash residue generated was disposed of at the Brookhaven Landfill. The rest of the MSW was transported to facilities out of state. The C&D debris stream was destined for the Brookhaven Landfill and facilities located in other states.

Town of East Hampton

The Town of East Hampton is in southeastern Suffolk County. The Town serves as the planning unit for all municipalities within its boundaries. It has a population characteristic of a rural population density distribution, as its average population density is less than 325 people per square mile. In 2018, it serviced an estimated population of 22,020

(Census, 2019). The town's population increases during the summer months, impacting solid waste management.

All waste handled by the Town of East Hampton is self-hauled to the disposal centers by residents and small businesses. The town is not responsible for curbside collection of solid waste. Town residents and businesses may elect to have waste collected by private haulers through individual contracts. The town licenses private haulers.

The Town of East Hampton utilizes two facilities to achieve its solid waste management objectives: the East Hampton Recycling Center and the Montauk Transfer Facility. It offers its residents two HHW collection days per year.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.24 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

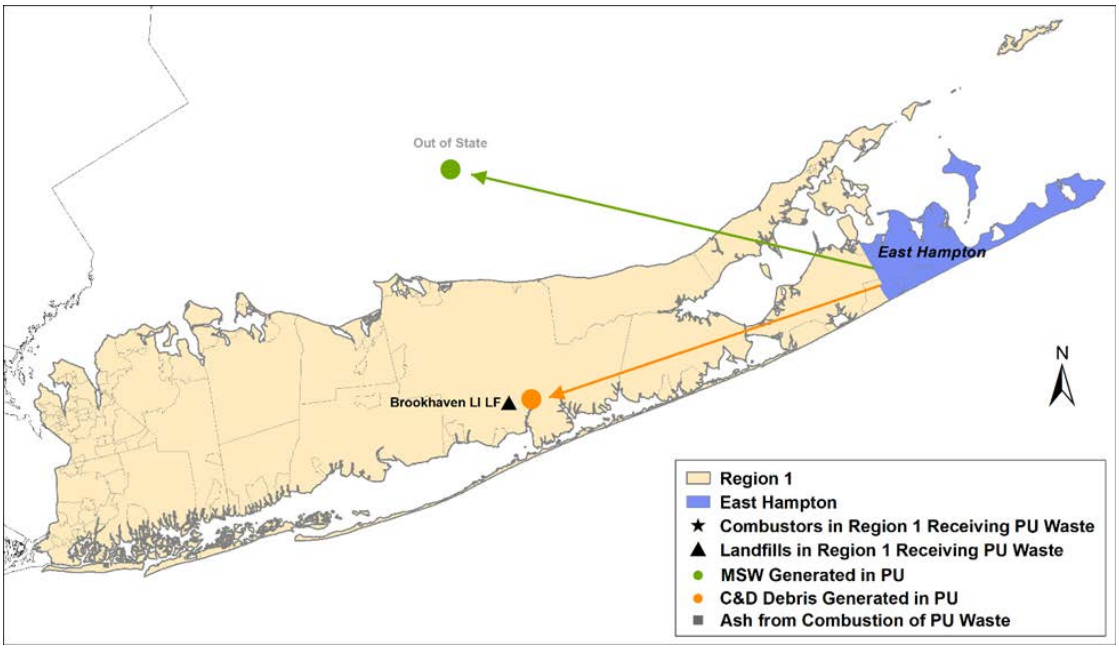


Figure E.24. Town of East Hampton MSW and C&D debris flow

As shown in Figure E.24, the waste generated in the Town of East Hampton planning unit was transported to in-state and out-of-state facilities. MSW was transported to other states. The C&D debris stream was destined for the Brookhaven Landfill in Region 1.

Town of Huntington

The Town of Huntington serves as a planning unit for the town itself and four incorporated villages located within its boundaries. In 2018, it serviced an estimated population of 201,185 (Census, 2019). It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. The Town of Huntington Department of Environmental Waste Management is responsible for solid waste planning and management. The department is also responsible for the oversight of the Huntington Resource Recovery Facility, one of the four combustion facilities on Long Island and through which the Town of Huntington disposes of waste generated within the planning unit. Since 1989, the town has had a Municipal Cooperative Agreement with the Town of Smithtown to dispose of Smithtown's waste at the combustion facility.

Through the Consolidated Refuse District, the Town of Huntington offers MSW, recycling, and yard trimmings (excluding grass) collection through municipal employees and private contractors. The four incorporated villages located within the town's boundaries are responsible for managing waste and recyclables programs. The Town provides resources to the villages, such as the option to join recycling contracts, and annual waste data consolidation. Recyclables are collected as dual stream, with each material collected on alternating weeks.

The Town of Huntington has a HHW Facility and a Recycling Center open year-round for residents,

LSWMP Status	The planning unit has a plan effective through 2026.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.25 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

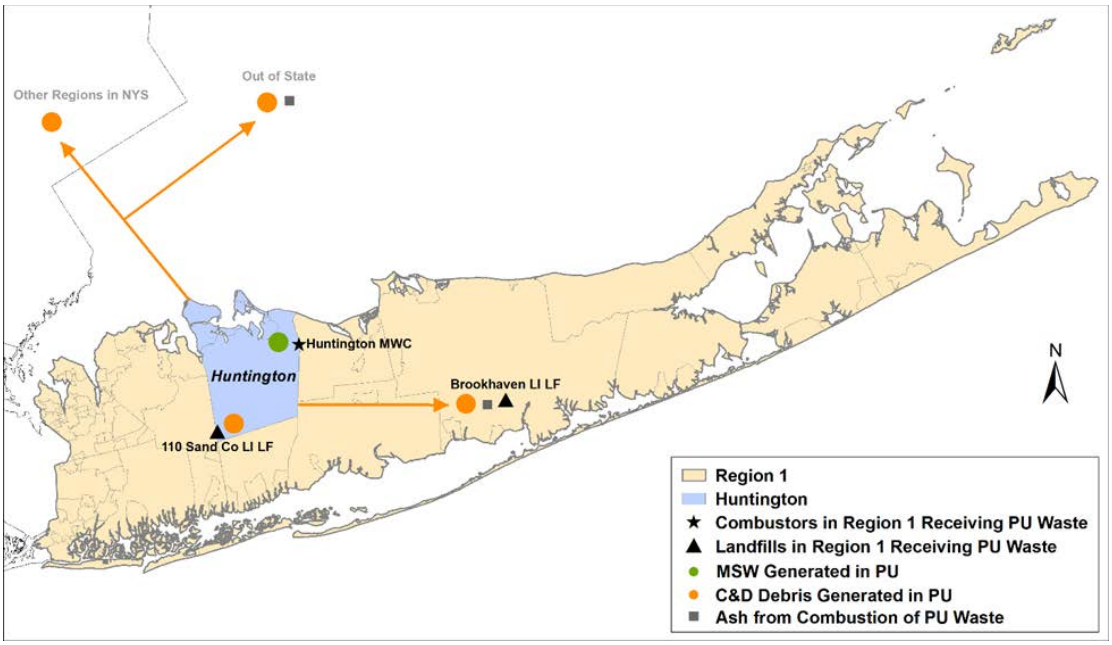


Figure E.25. Town of Huntington MSW and C&D debris flow

Figure E.25 shows that the waste generated in the Town of Huntington planning unit was transported to in-state and out-of-state facilities. The MSW was transported to the Huntington MWC to be processed, and the ash residue generated from the combustion was transported to Brookhaven Landfill and out-of-state facilities. The C&D debris stream was destined for the 110 Sand Company and Brookhaven landfills. C&D debris was also sent to facilities in other regions of the state and in other states.

Islip Resource Recovery Agency (IRRA)

The New York State Legislature authorized the Islip Resource Recovery Agency (IRRA) in 1982 as a public benefit corporation and a public authority of the state. The IRRA was authorized to finance, acquire, construct, operate, and maintain the solid waste management system in the town, which includes a combustion facility and a clean-fill landfill, among other facilities. The IRRA serves as the planning unit for the Town of Islip and the villages and hamlets within its boundaries. In 2018, it serviced an estimated population of 330,619 (Census, 2019). It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution.

The IRRA is segmented into 70 Contract Bid Areas (CBAs). Waste collection from 63 of these areas is contracted to the private sector, while collection from the other 7 areas is accomplished by municipal collection. These 70 CBAs exclude the 4 incorporated villages, Fire Island, and the Seaview-Ocean Bay Park Special Garbage District. Waste collection for the incorporated villages varies between municipal collection and private companies procured by the municipality.

Residents of the planning unit can drop off HHW year-round at a collection co-located with the combustion facility. Once a year, the planning unit holds a HHW collection event.

LSWMP Status	The planning unit's LSWMP is approved through 2028.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.26 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

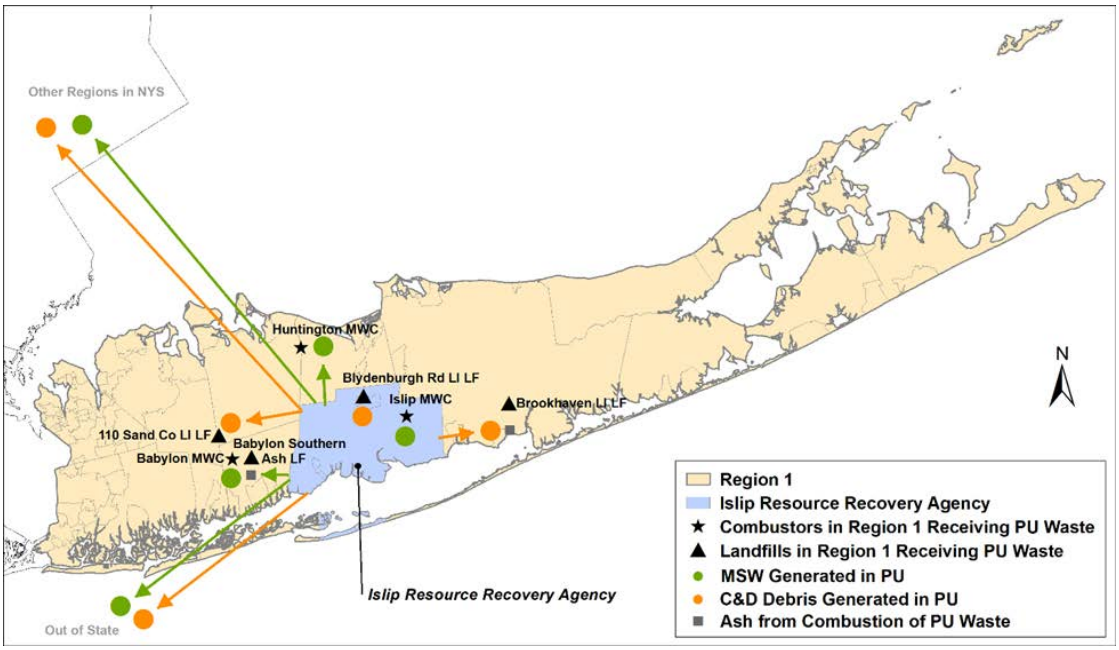


Figure E.26. IRRA MSW and C&D debris flow

As shown in Figure E.26, waste generated in the Town of Islip planning unit was transported to in-state and out-of-state facilities. A portion of the MSW was transported to the Huntington, Islip, and Babylon MWCs to be processed, while the rest was transported to facilities in other regions and out of state. The ash residue generated from the combustion was transported to the Babylon Ashfill and the Brookhaven Landfill for disposal. The C&D debris stream was destined for the Brookhaven Landfill, facilities in other regions of the state, and facilities in other states.

Town of Riverhead

The Town of Riverhead serves as the planning unit for all municipalities within its boundaries. In 2018, it serviced an estimated population of 33,510 (Census, 2019). It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution.

The Town of Riverhead Sanitation Department is responsible for the management and disposal of the solid waste generated within the town. It provides collection for all residential waste through a private company and is responsible for licensing all solid waste haulers providing collection services to condominiums, apartments, mobile homes, commercial businesses, and other institutions. The collection of recyclables is dual stream, with each stream being collected on alternating weeks. The Town Sanitation Department holds HHW collection events each year.

LSWMP Status	The planning unit's LSWMP is approved through 2029.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.27 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

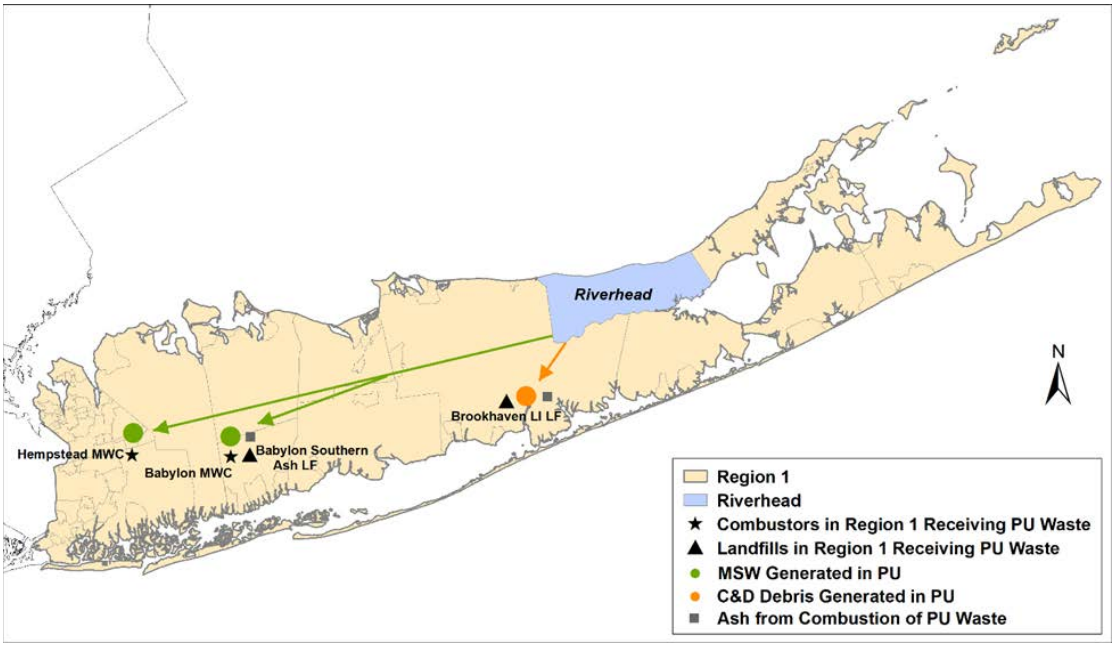


Figure E.27. Town of Riverhead MSW and C&D debris flow

As shown in Figure E.27, waste generated in the Town of Riverhead planning unit was transported to facilities outside the planning unit. The MSW was transported to the Hempstead and the Babylon MWCs to be processed. Ash residue generated from the combustion was transported to the Babylon Ashfill and Brookhaven Landfill for disposal. The C&D debris stream was destined for the Brookhaven Landfill.

Town of Shelter Island

The Town of Shelter Island serves as the planning unit for all incorporated and unincorporated areas of the town. In 2018, it serviced an estimated population of 2,420 (Census, 2019). It has an average population density of less than 325 people per square mile, characteristic of rural population density distribution.

Shelter Island does not provide a curbside collection service. Residents must use the recycling center and pay-per-bag system to discard waste or contract with a private hauler. The town has an extensive yard trimmings management program, including a composting operation and a chipping process for woody materials. The Town offsets waste management-related costs through a pay-per-bag system as residents use prepaid bags or pay by net material weight across the scale.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.28 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

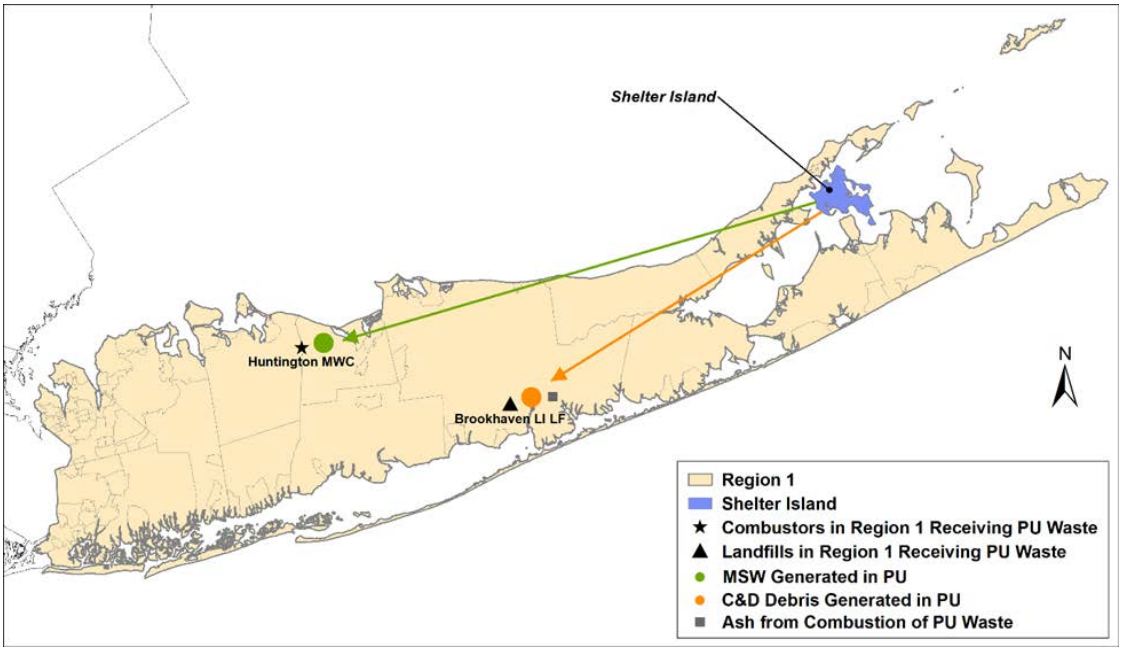


Figure E.28. Town of Shelter Island MSW and C&D debris flow

As shown in Figure E.28, waste generated in the Town of Shelter Island planning unit was transported to facilities outside the planning unit. The MSW was transported to the Huntington MWC to be processed. Ash residue generated was transported to Brookhaven Landfill for disposal. The C&D debris stream was destined for the Brookhaven Landfill.

Town of Smithtown

The Town of Smithtown is situated in the northwestern portion of Suffolk County. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. It serves as the solid waste planning unit for the Town residents and the residents of three incorporated villages located within its boundaries (Village of the Branch, Village of Nissequogue, and Village of Head of the Harbor). In 2018, it serviced an estimated population of 116,399 (Census, 2019).

Since 1991, Smithtown has maintained a cooperation agreement with the Town of Huntington to send waste to the Huntington Resource Recovery Facility. This agreement has been extended until 2024.

The Department of Environment and Waterways (DEW) is the Town of Smithtown's municipal department charged with the primary responsibility for solid waste planning and management. The collection of residential solid waste and recyclables is contracted with private haulers by the DEW, which is also responsible for administering solid waste management facilities and a HHW collection program.

Rental apartment developments, co-op apartment complexes, and commercial and institutional solid waste collection are provided by commercial haulers who contract directly with businesses and institutions for collection, recycling, and disposal services.

LSWMP Status	The planning unit's LSWMP is approved through 2025.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.29 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

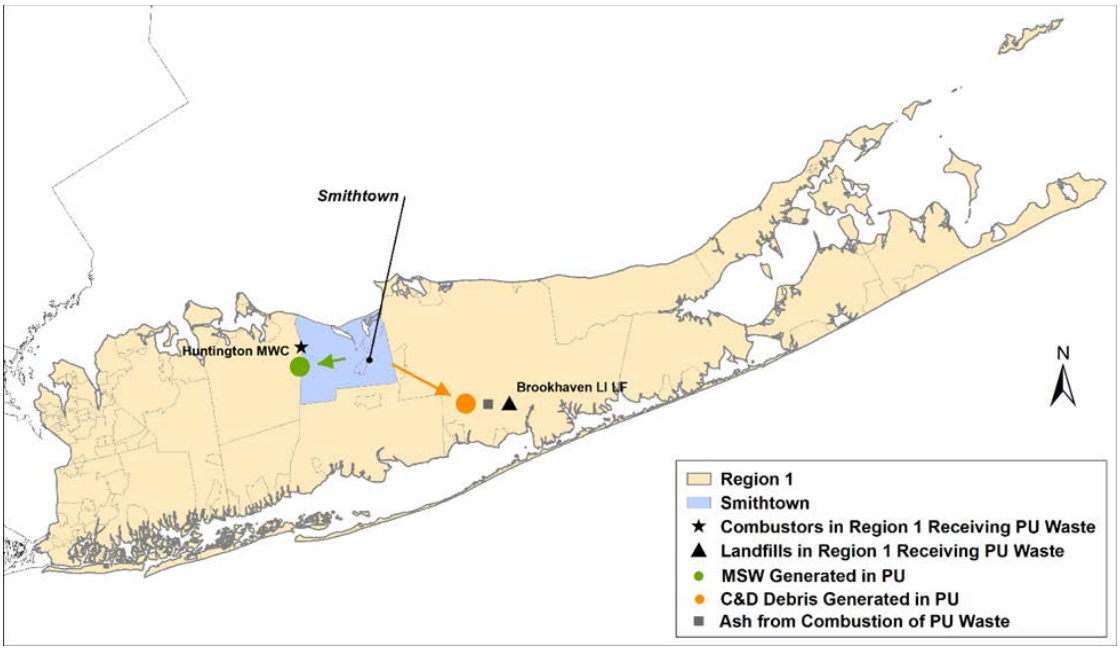


Figure E.29. Town of Smithtown MSW and C&D debris flow

As shown in Figure E.29, waste generated in the Town of Smithtown planning unit was transported to facilities outside the planning unit. MSW was transported to the Huntington MWC to be processed. Ash residue generated from the combustion was transported to Brookhaven Landfill for disposal. The C&D debris stream was destined for the Brookhaven Landfill.

Town of Southampton

The Town of Southampton serves as the solid waste planning unit for all its municipalities. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, the planning unit serviced an estimated population of 58,089 (Census, 2019).

The Town Waste Management Division is not responsible for the curbside collection of MSW. A portion of the residents procure collection services from private companies. The rest choose to participate in the self-hauler program, which includes using official town garbage bags and accessing the transfer facilities. The town offers HHW collection events and encourages waste reduction, recycling, and backyard composting. Since 2002, the town has run a yard trimmings recycling program that processes the yard trimmings into commercial-grade unscreened compost and mulch products available to residents at no cost.

LSWMP Status	The planning unit's LSWMP is approved through 2026.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.30 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

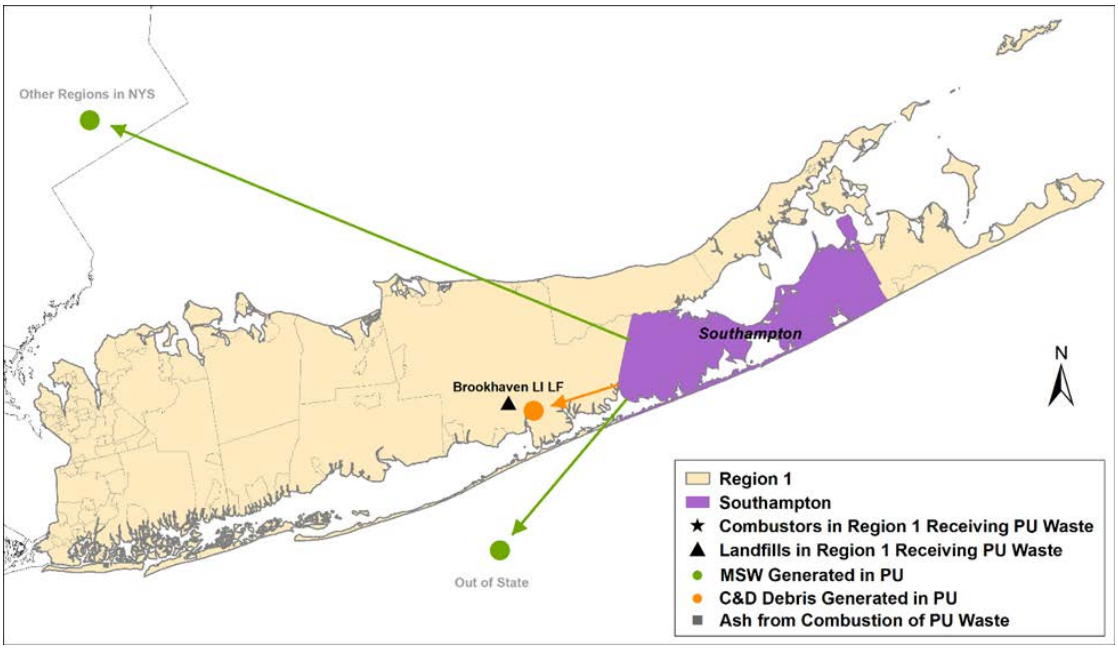


Figure E.30. Town of Southampton MSW and C&D debris flow

As shown in Figure E.30, waste generated in the Town of Southampton planning unit was transported to in-state and out-of-state facilities. The MSW stream was transported to facilities in other regions of the state as well as to out-of-state facilities. The C&D debris stream was destined for Brookhaven Landfill.

Town of Southold Solid Waste Management District (SSWMD)

Since 1993, the Town of Southold Solid Waste Management District (SSWMD) has served as the planning unit for the incorporated Village of Greenport and the Town of Southold (except for Fishers Island). In 2018, it serviced an estimated population of 22,130 (Census, 2019). It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution.

The hamlet of Fishers Island is located within the town's geographic boundaries. Solid waste generated in the hamlet is managed separately by the Fishers Island Solid Waste Management District.

The SSWMD is responsible for ensuring the proper management of solid waste and recyclables generated by Town residents. The town does not have curbside collection for either solid waste or recyclable materials. Residents in both the unincorporated portion of the town and the Village of Greenport must either self-haul or contract with

private haulers for collection. The town has implemented a bag-based pay-as-you-throw system for self-haulers and curbside residential generators.

The SSWMD owns a 17-acre compost site for yard trimmings only. The compost site is open to self-haulers and commercial landscapers for the disposal of leaves and brush. Each year, the SSWMD holds four HHW events for its residents.

LSWMP Status	The planning unit's LSWMP is approved through 2025.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.31 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

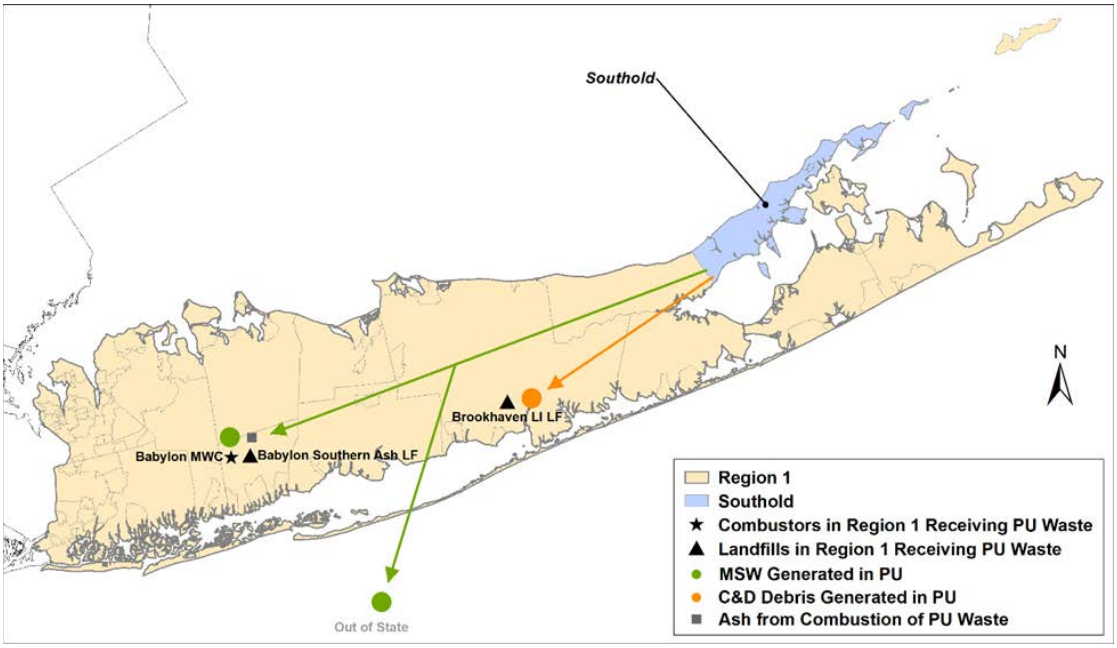


Figure E.31. SSWMD MSW and C&D debris flow

As shown in Figure E.31, waste generated in the Town of Smithtown planning unit was transported to facilities outside the planning unit. A portion of the MSW was transported to the Babylon MWC to be processed. The rest of the MSW was exported to out-of-state facilities. Ash residue generated from processing MSW was transported to Babylon Ashfill for disposal. The C&D debris stream was destined for the Brookhaven Landfill

Fishers Island Waste Management District (FIWMD)

Fishers Island is located on the eastern part of Long Island. Fishers Island is part of the Town of Southold; however, its isolation from Long Island prompted the Town to form a special district to manage solid waste generated on Fishers Island in 1952. The special waste district is referred to as the FIWMD. A five-member Board of Commissioners,

elected by the registered voters on Fishers Island, operates, manages, and controls the solid waste management activities, including establishing waste hauling and disposal contracts, establishing user fees, and implementing the district's programs and policies.

The FIWMD serves as the planning unit, and in 2018, it was estimated to have serviced a population of 183 (Census, 2019). It has an average population density of less than 325 people per square mile, characteristic of rural population density distribution.

With no disposal facilities on the island, the FIWMD relies upon various handling and disposal facilities in Connecticut. The planning unit operates two facilities on Fishers Island, a transfer facility and a compost facility. The FIWMD also now provides containers for wood waste and oversized MSW and has implemented a composting program.

LSWMP Status	The planning unit's LSWMP is approved through 2028.

The following figure depicts the flow of MSW and C&D debris generated in the planning unit in 2018, not including recovered materials. Figure E.32 also shows the Region 1 combustion facilities and landfills used to process waste and dispose of solid waste generated by the planning unit.

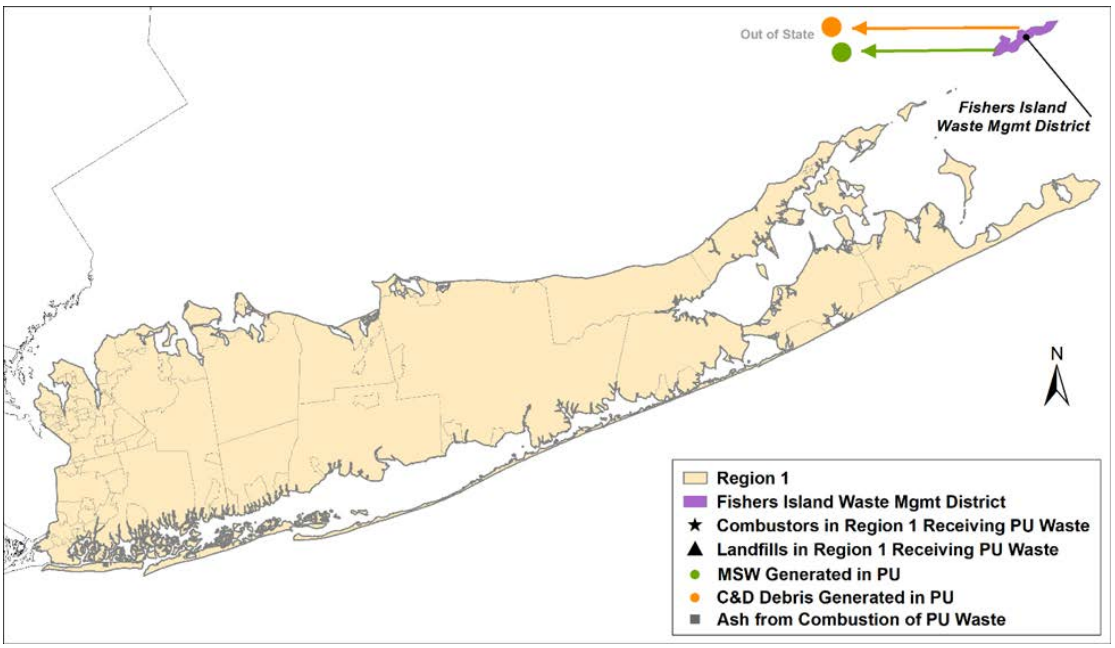


Figure E.32. FIWMD MSW and C&D debris flow

Figure E.32 shows that the MSW and C&D debris generated in the planning unit were transported outside the planning unit for processing and disposal. MSW and C&D debris were transported via ferry to facilities in Connecticut.

Region 2 Overview and Waste Flow Information

The City of New York is composed of five boroughs: Manhattan (New York County), Queens (Queens County), Brooklyn (Kings County), Staten Island (Richmond County), and the Bronx (Bronx County). Region 2 had an estimated population of 8,390,081 in 2018 (Census, 2019) and has a population characteristic of an urban population density distribution, as the average population density is more than 5,000 people per square mile. The City of New York serves as the planning unit for all municipalities within the five boroughs. Figure E.33 shows the planning unit boundaries.

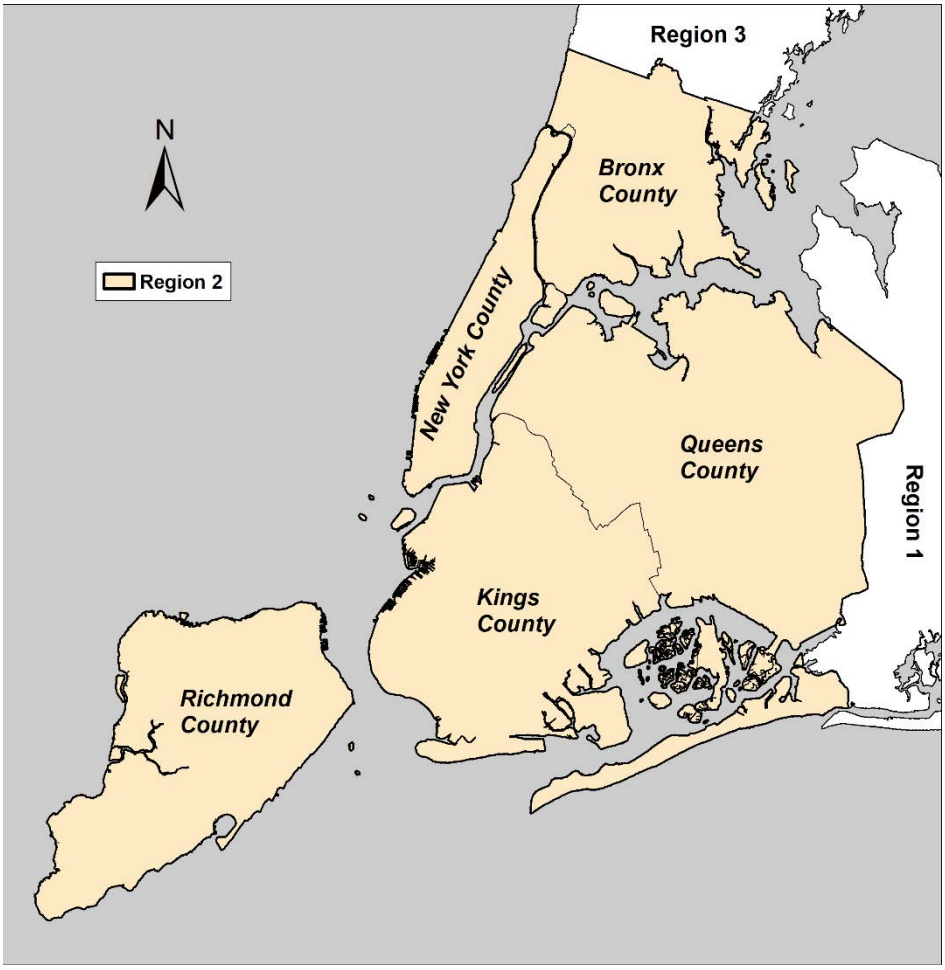


Figure E.33. Region 2 planning unit

The New York City Department of Sanitation (DSNY) is the agency responsible for managing solid waste generated within the planning unit. DSNY has divided the planning unit into 59 collection districts from which MSW and recyclables are collected from residents and institutions, while private haulers collect MSW from commercial generators. DSNY and private haulers perform the collection of MSW and recyclables.

The City of New York relies on Marine Transfer Stations (MTSs) and the Staten Island Transfer Station (SITS) to transport DSNY-managed waste from the city for processing

at combustion facilities or for disposal at landfills. The four MTSs, located in Manhattan, Brooklyn, and Queens, are a crucial component of the solid waste management program and have significantly reduced the number of truck trips associated with MSW disposal. The planning unit does not have any disposal facilities within its boundaries. As a result, the waste is transported to combustion facilities or landfills in other areas of the state and facilities in other states, as shown in Figure E.36.

The DSNY-managed MSW is transported out of the planning unit in three ways. MSW from eight Manhattan Collection Districts is delivered by collection truck to an out-of-state combustion facility in New Jersey. MSW from the remaining 51 collection districts is containerized at the MTSs and shipped by barge to intermodal facilities. The containerized waste is either railed out directly to be processed or disposed of at landfills or is hauled by truck to an intermodal rail facility for rail transport to combustion facilities or landfills. Lastly, MSW containerized at the SITS leaves the facility by rail and goes to an intermodal rail facility in Staten Island that transports the waste to be processed or disposed of.

Because there are no active landfills or combustion facilities located in this planning unit, all waste generated in NYC in 2018 was exported for processing or disposal to facilities in other states or to facilities in other regions in NYS. The following figure and table show the in-state and out-of-state destinations of NYC waste in 2018.

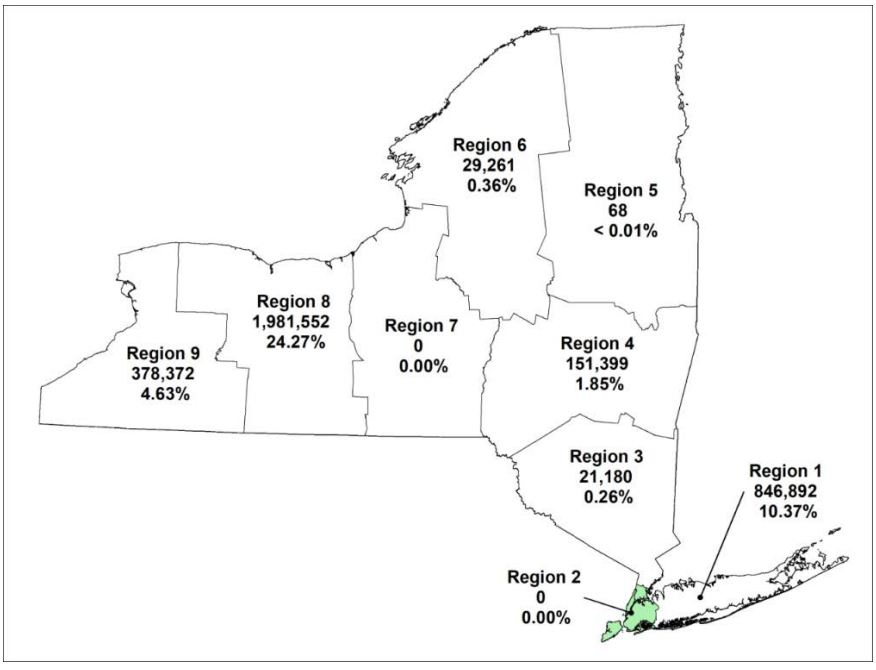


Figure E.34. Distribution of disposal locations for region 2 waste in New York

About 42% of the total waste generated in NYC in 2018 was sent to other regions in the state for disposal, while 58% of waste generated was exported to other states. As shown in Figure E.34, approximately 24% of the total waste generated in NYC was sent to

Region 8, 10% to Region 1, 5% to Region 9, 2% to Region 4, and minimal amounts were sent to Regions 3, 5, and 6.

Table E.5. Distribution of disposal locations for region 2 waste

Destination	Waste (tons)	%
NYS	3,408,700	41.8
NJ	604,700	7.4
OH	1.179,200	14.4
PA	1,599,200	19.6
SC	213,300	2.6
VA	1,117,600	13.7
Other States	41,300	0.5
Total	**8,164,000**	**100.0**

Of the nine regions in NYS, Region 2 exports the highest tonnage of waste. Table E.1 shows the tonnages and distribution of the disposal locations. Approximately 20% of waste exported from NYC was sent to Pennsylvania, 14% to Ohio, 14% to Virginia, 7% to New Jersey, and 3% to South Carolina. Minimal amounts of waste were exported to other states, such as Connecticut.

The following figures represent the flow of waste, not including recovered materials, generated in and imported to Region 2 in 2018. Figure E.35 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.36, Figure E.37, Figure E.38 show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

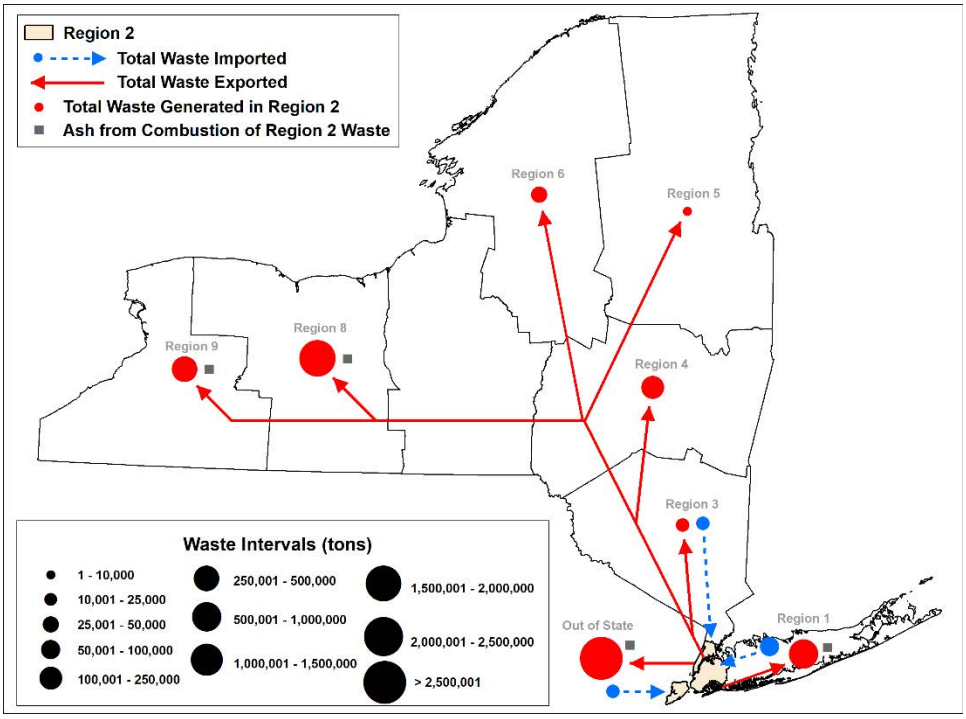


Figure E.35. Region 2 total waste flow

Figure E.35 shows that in 2018 all waste generated in Region 2 was exported for processing or disposal to facilities in other states and other regions within NYS. Approximately 71% of the total waste exported from the planning unit for processing at a combustion facility or disposal at a landfill was MSW, 26% was C&D debris, less than 1% was industrial waste, and 3% was biosolids.

Region 2 also accepted waste imported from other states and Regions 1 and 3, as shown in Figure E.35. Some of the imported waste was sent to recovery facilities in the planning unit. These facilities recovered material before transferring the remaining waste to combustion facilities or landfills outside the planning unit. The rest of the imported waste went to facilities in the planning unit for consolidation and transfer to processing or disposal facilities outside the planning unit.

Figure E.35 also shows the movement of the ash waste stream. As waste was generated in the planning unit and processed at combustion facilities in Regions 1, 3, 6, and 9, ash residue was generated and transported to in-state and out-of-state landfills for disposal. About 60% of the ash generated as a result of the combustion of NYC waste was used as AOC at Region 9 landfills, while the remainder was disposed of in Regions 1 and 8, and out-of-state landfills, accounting for 33%, 3 %, and 5%, respectively, of the ash waste stream.

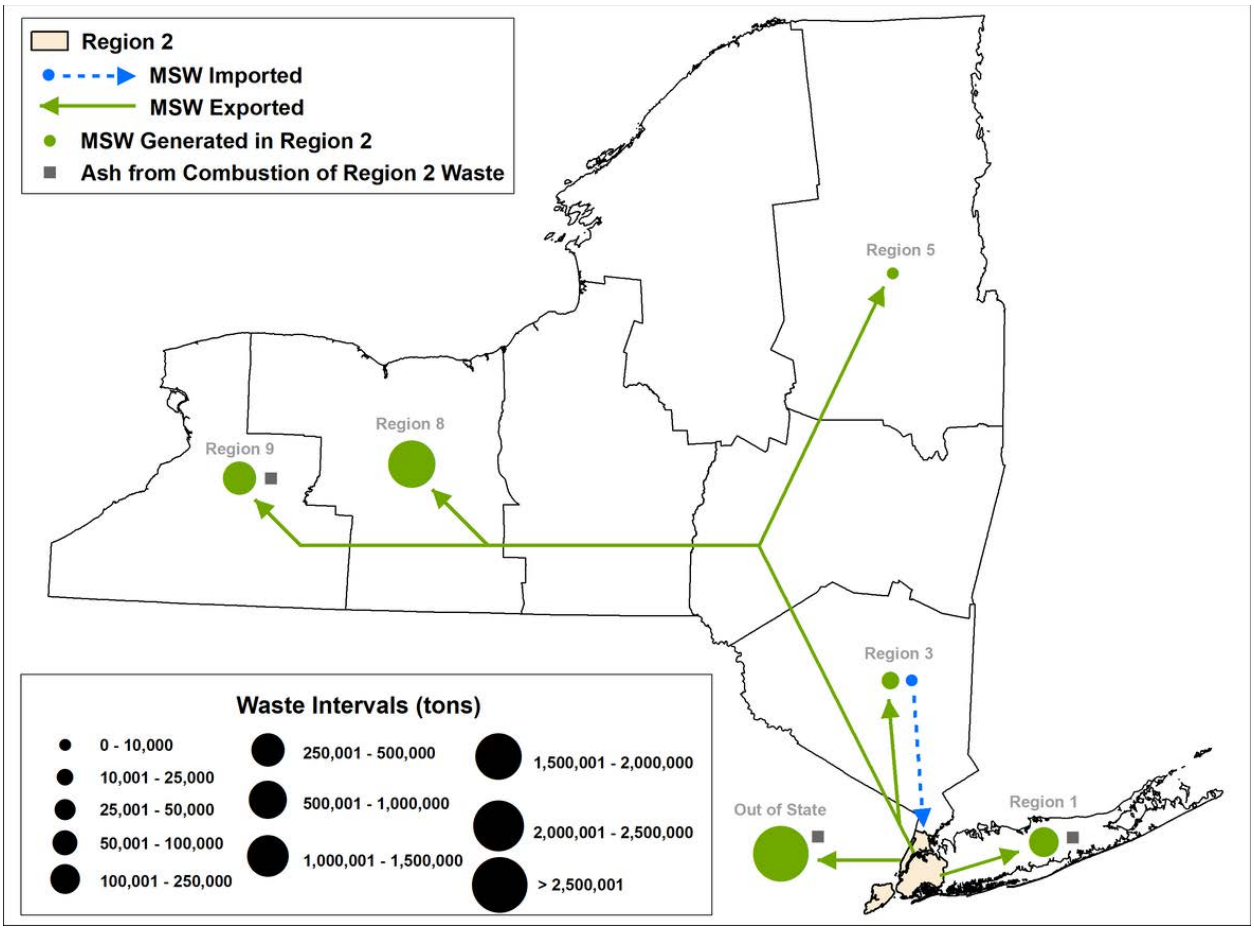


Figure E.36. Region 2 MSW flow

Figure E.36 represents the flow of MSW into and out of NYC in 2018. About 38% of MSW was transported to combustion facilities and landfills in NYS for processing or disposal. About 62% of the MSW stream was exported to nearby states. Of the MSW generated in the planning unit that was processed or disposed of at in-state facilities, about 29% was shipped to Region 8, 5% to Region 9, and 3% to Region 1. Minimal amounts were sent to Regions 3 and 5. MSW exported out of state was mainly transported to Pennsylvania, Virginia, and New Jersey, accounting for 41%, 33%, and 13%, respectively. Ohio and South Carolina received the remainder of the out-of-state exported waste.

In addition, as imports, Region 2 received MSW from Region 3, shown in Figure E.36. This waste went through the planning unit only to be consolidated and transferred to facilities outside the planning unit for processing or disposal.

Figure E.36 also shows the movement of the ash waste stream. As MSW was generated in the planning unit and processed at combustion facilities in Regions 1, 3, and 9, ash residue was generated and transported out of state or disposed of in other regions within the state. It was estimated that about 61% of ash generated as a result of the combustion of NYC waste was used in Region 9 as AOC at landfills, 34% was disposed of in Region 1, and the remainder was disposed of in out-of-state landfills.

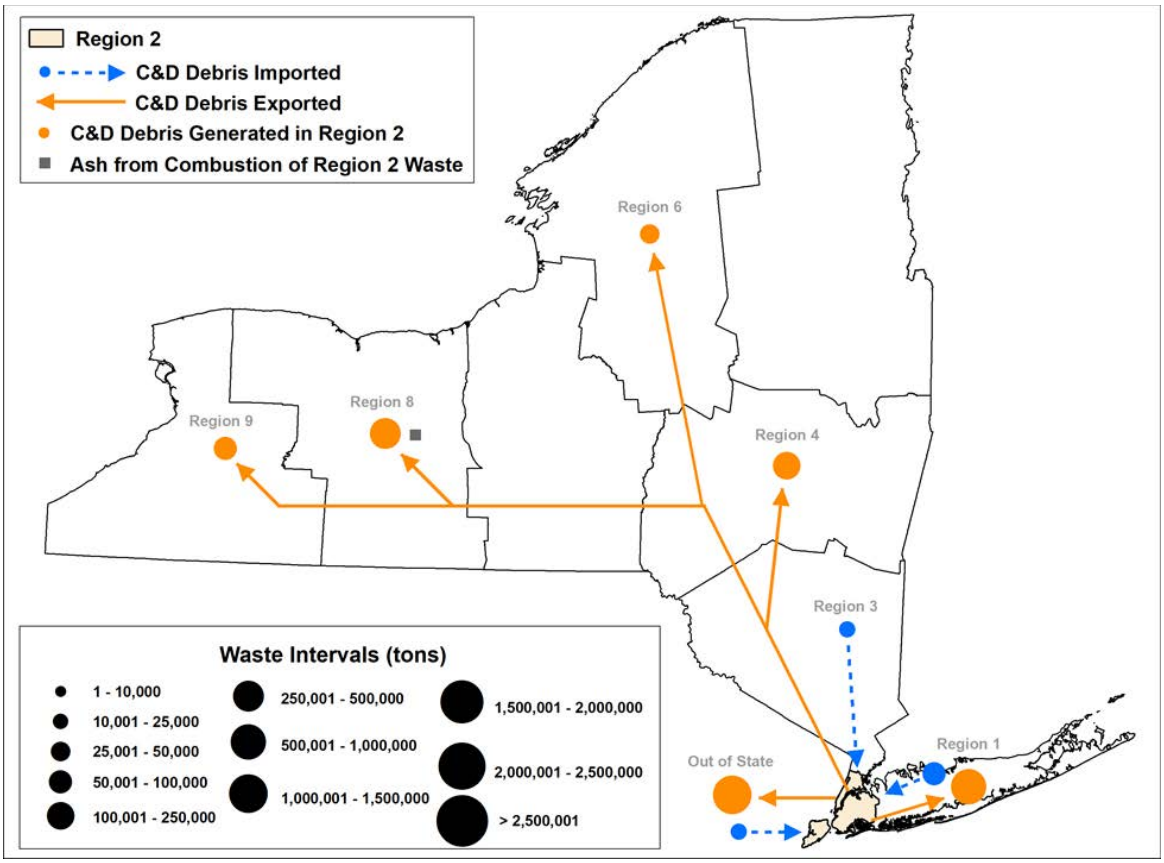


Figure E.37. Region 2 C&D debris flow

Figure E.37 represents the C&D debris flow in the City of New York and its flow into and out of the planning unit for processing and disposal. It was estimated that 49% of the C&D debris generated in NYC was exported to other states for processing and disposal. The remaining C&D debris was taken to other regions within the state, with Region 1 receiving 26%, Region 8 15%, Region 4 6%, and Region 9 about 3%. Region 6 received a minimal amount. The C&D debris exported out of state was mainly destined for Ohio, Pennsylvania, and New Jersey facilities, which accepted 64%, 17%, and 15%, respectively. Connecticut and Virginia received a minimal amount of out-of-state C&D debris waste.

Region 2 also accepted C&D debris imports from other states and Regions 1 and 3, shown in Figure E.37. This waste went to CDDHRFs in the region where materials were recovered. The remaining waste was sent out of the region for processing at combustion facilities or to landfills for disposal.

Figure E.37 also shows the movement of ash generated from the processing of NYC-generated C&D debris at a combustion facility in Region 6. Only 3% of all the ash residue generated from processing NYC waste at combustion facilities in 2018 was from the C&D debris waste stream. Ash residue was transported to Region 8 for disposal.

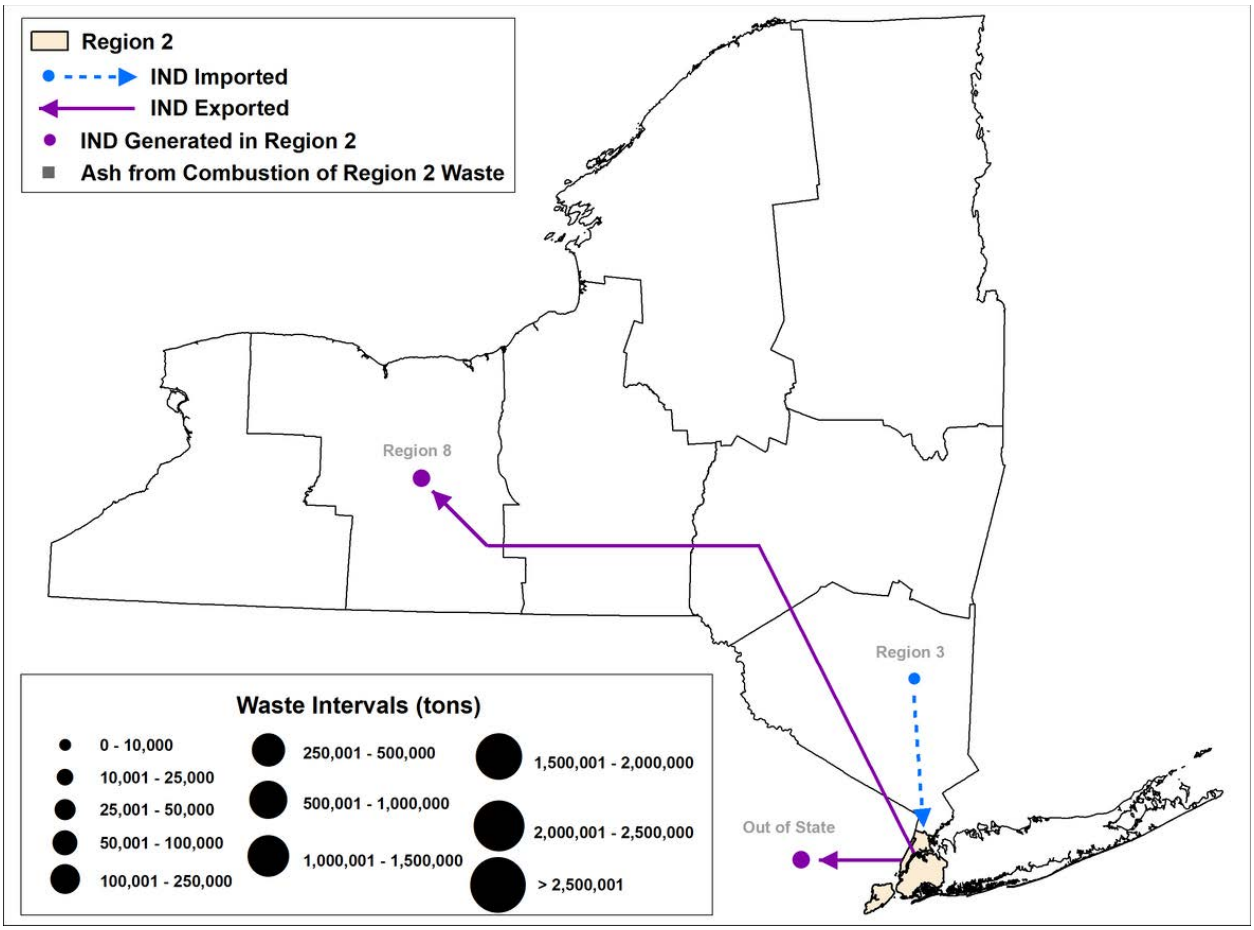


Figure E.38. Region 2 industrial waste flow

The figure above represents the flow of industrial waste into and out of the NYC. Although there were no industrial disposal options within the city, Figure E.38 shows that some industrial waste passed through NYC before being sent elsewhere for disposal. According to estimates, the amount of industrial waste exported to other states was about the same as the waste taken to Region 8 for processing and disposal, accounting for 51% and 49%, respectively.

Table E.6. Region 2 organics recycling summary

Anaerobic Digestion - No facilities	
Composting	
Source-Separated Organics	34,084 tons
Food Processing Waste	3 tons
Yard Trimmings	28,522 tons
Biosolids	0 tons
Land Application - No facilities	

The following table provides information on all the waste and recovered materials generated in Region 2 by waste type. It differentiates between tons of waste processed at combustion facilities or disposed of at landfills, and tons of materials recovered through CDDHRFs, RHRFs, and composting facilities.

Table E.7. Region 2 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	5,413,000	1,254,606
C&D Debris	2,523,000	4,930,000
Industrial	31,000	3
Biosolids	197,000	0
Total	8,164,000	6,184,609
MSW disposal rate	3.54 lbs/person/day	
* The heavy metal category is not included in the values in this table.		

As shown in Table E.7, about 14,348,609 tons of waste generated in NYC in 2018 were processed, disposed of, or recovered. Of all waste generated in the region, approximately 6.18 million tons were recovered through CDDHRFs, RHRFs, or composting facilities, accounting for 43%. About 8.16 million tons of waste were destined for processing or disposal. Approximately 6.7 million tons of MSW accounted for 46% of all waste generated in the region in 2018. About 5.41 million tons, or 82%, of

the MSW stream, were processed at combustion facilities or disposed of at landfills; the remaining 19% was recovered through RHRFs and composting facilities.

As shown in Table E.7, an estimated 7.45 million tons of C&D debris were generated in the planning unit in 2018, accounting for 52% of all waste generated. Approximately 2.52 million tons, or 34%, were destined for disposal, while 4.93 million tons, or 66%, of all C&D debris waste generated in the planning unit were recovered.

As shown in Table E.7, about 31,000 tons of industrial waste and 197,000 tons of biosolids were generated in 2018 within the planning unit; these waste streams account for less than 2% of all waste generated by the planning unit.

About 1.19 million tons were recovered from the MSW stream in the planning unit. The recovered materials from the MSW stream consist of recyclables such as paper marketed to paper processors and a paper mill under long-term contracts, and metal, glass, and plastic.

NYC has committed to implementing several new initiatives to send zero waste to landfills by 2030 and reduce greenhouse gas emissions. One of these initiatives is a Commercial Waste Zone Plan (CWZ), which divides the city into 20 zones, each served by up to three waste carters selected through a competitive request for the proposal procurement process. The CWZ program was established by Local Law 199 of 2019 in November 2019. The CWZ program also includes five citywide contracts that will be awarded to collect containerized waste and compactors.

Because organics make up more than a third of NYC's DSNY-managed waste stream, DSNY is working on a strategy for the residential curbside organics collection for food and yard trimmings. The program is voluntary and remains limited in scope, based on the number of sign-ups in each neighborhood. DSNY plans to add more communities to the residential curbside organics collection based on demand as the program rolls out and residents sign-up for it.

Yard trimmings are collected as MSW for all households and institutions in all 59 collection districts. DSNY plans to offer fall leaf collections in all collection districts with substantial leaf generation, covering 38 collection districts. DSNY also provides a Christmas tree collection at the beginning of the year in all 59 collection districts.

There are nine compost operations located in Region 2 that compost source-separated organics and yard trimmings. Table E.6, shows the type and quantity of materials recycled at these facilities. In July 2015, the Commercial Organics Diversion Mandate took effect in NYC. Starting in July 2016, this three-phase mandate required NYC establishments of various sizes to separate their organic waste for recycling. NYC is also the home to an expansive network of food scraps drop-off programs and a strong network of community composters that process small quantities of food scraps across the city. Food scraps from the Commercial Organics Diversion mandate and the food

scraps drop-off programs are recycled both inside and outside of NYC. There are no operating anaerobic digesters and no land application operations.

DSNY expanded its platform for donations—donate NYC—to include food donations. The planning unit features a website tool that matches businesses with extra food to groups that feed hungry New Yorkers. This initiative leans toward hyper-local contributions. In 2019, DSNY began enforcing a city law requiring some larger restaurants, chain restaurants, and grocery stores to manage food preparation waste separately from trash and ensure it is beneficially reused—and is not sent to a landfill.

DSNY has some additional initiatives like the Special Waste and Electronic Recycling Events. DSNY holds two Electronic Recycling Events per year in each of the five boroughs, and the Special Waste Drop-off Sites are open one day per week to residents. In addition, ReFashion Week NYC is a weeklong event focused on sustainability and reuse in fashion.

LSWMP Status	The planning unit's LSWMP is approved through 2026.

Region 3 Overview and Waste Flow Information

Region 3 consists of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester counties, and each county serves as an individual planning unit for all its municipalities. As a result, Region 3 has seven planning units and no non-affiliated municipalities, as shown in Figure E.39. Region 3 had an estimated population of 2,322,431 in 2018 (Census, 2019).

Independent of each planning unit's average population density distribution, urban, suburban, and rural areas may exist within its boundaries. Sullivan and Ulster counties have a population characteristic of a rural population density distribution as their average population density is less than 325 people per square mile. Dutchess, Orange, Putnam, Rockland, and Westchester counties have a population characteristic of a suburban area as their average population density is between 325 and 5,000 people per square mile.

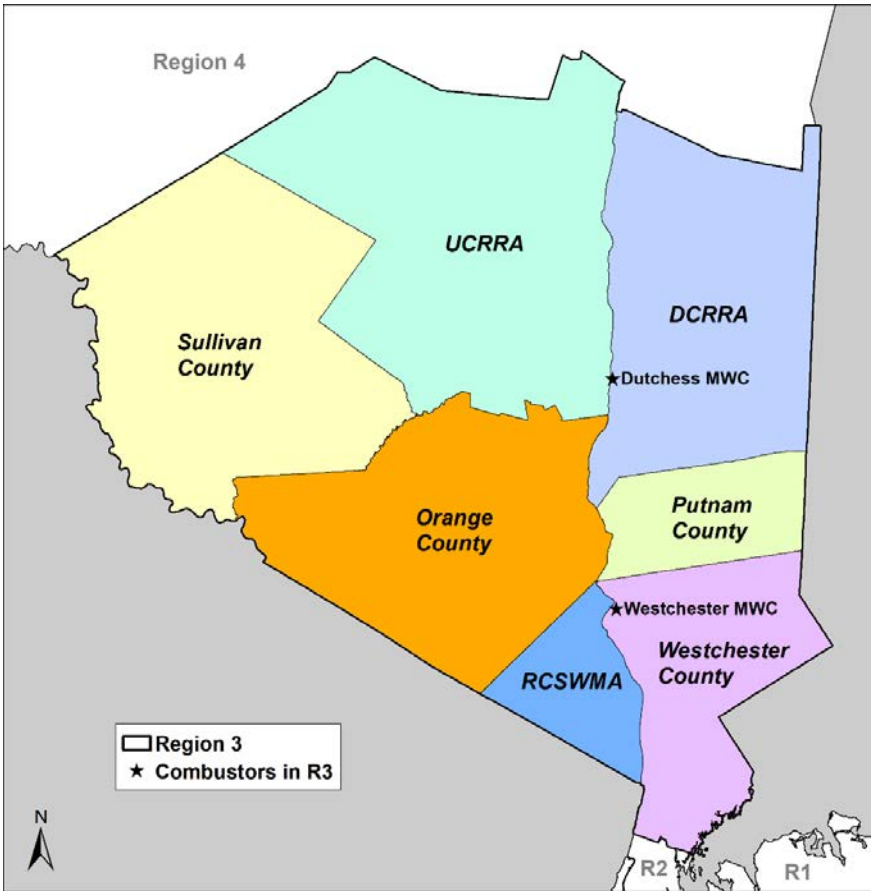


Figure E.39. Region 3 planning units

Waste Flow

This region has two combustion facilities: Dutchess County Resource Recovery Facility (Dutchess MWC) and the Charles Point Facility Resource Recovery Facility

(Westchester MWC). There are no active landfills in this region. As a result, waste generated in the region that is not handled at the combustion facilities and all ash residue resulting from combustion of waste at the combustion facilities is transferred to landfills in other areas in NYS or to out-of-state landfills for disposal.

The following figures represent the flow of waste, not including recovered materials, generated in and imported to Region 3 in 2018. Figure E.40 displays the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figures E.41 - Region 3 MSW Flow, E.42 - Region 3 C&D Debris Flow, and E.43 - Region 3 Industrial Waste Flow show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

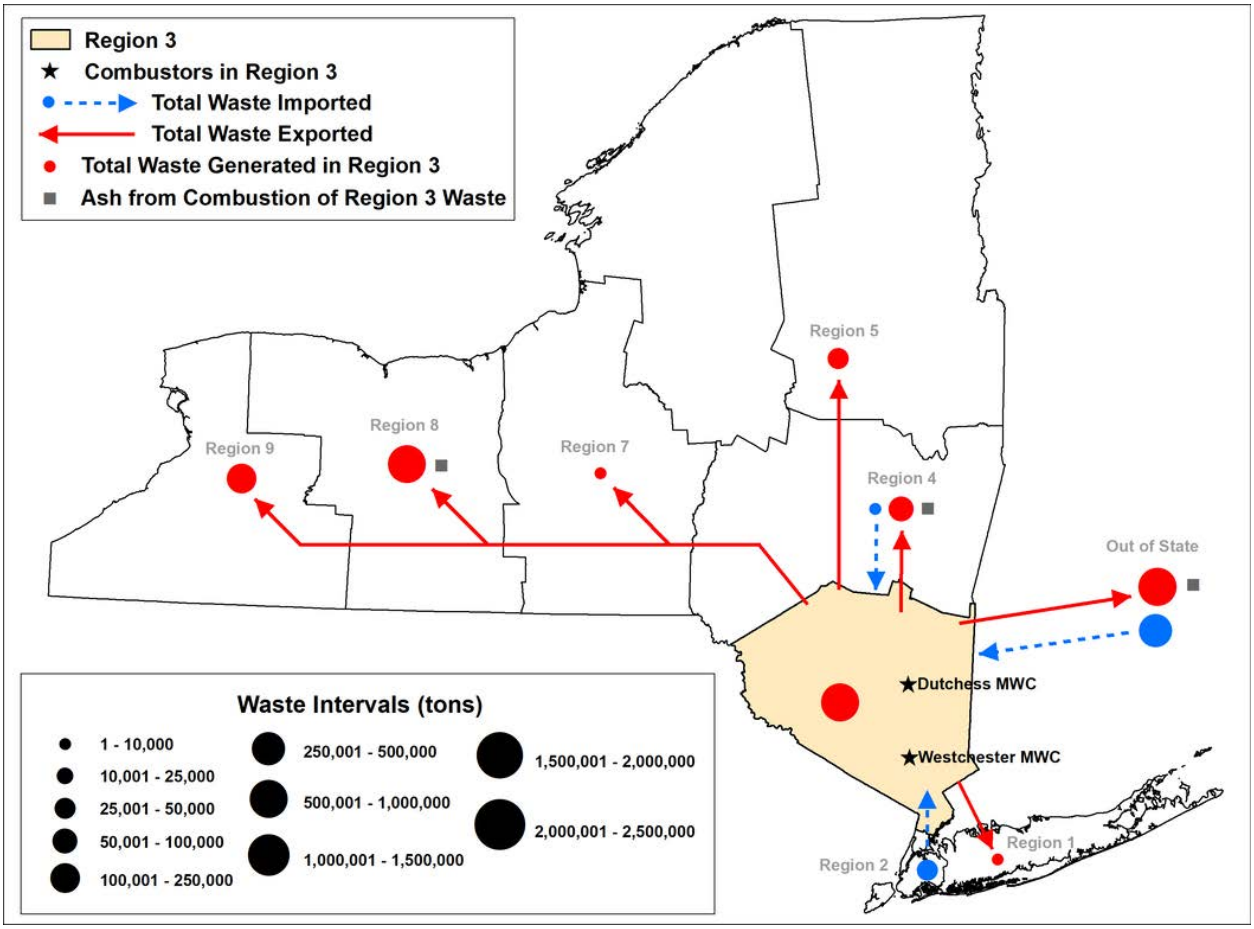


Figure E.40. Region 3 total waste flow

Figure E.40 shows that a portion of the region's generated waste was processed locally at the combustion facilities, accounting for 29% of waste generated in 2018. The remainder of the waste was exported for processing or disposal at facilities in other regions of NYS or in other states. Region 8 accepted about 40% of the waste and minimal amounts were disposed of in Regions 1, 4, 5, 7, and 9. Twenty-one percent of waste generated in 2018 was exported to out-of-state facilities. Most of the waste

exported out of state in 2018 was shipped to Pennsylvania, Connecticut, and New Jersey, which received 81%, 9%, and 8%, respectively. The remaining waste was sent to Ohio and Massachusetts. About 75% of waste exported to out-of-state facilities was MSW, 18% was C&D debris, and 7% was biosolids.

Figure E.40 also shows waste imported into the region in 2018. According to estimates, about 82% of imported waste imported was MSW, 17% was C&D debris, and 1% was biosolids. It was estimated that around 12% was imported from Region 2 and 1% from Region 4. Much of the imported waste in 2018 originated outside NYS, accounting for 87%. The out-of-state imported waste was mainly shipped from New Jersey and Connecticut, accounting for 60% and 33%, respectively.

Figure E.40 also shows the movement of the ash waste stream. The ash in the figure represents ash generated as a result of processing the region's waste at combustion facilities. As MSW and C&D debris generated in Region 3 was processed at combustion facilities, ash residue was generated and transported to out-of-state landfills or landfills in other NYS regions for use as AOC or for disposal. Ash produced from the combustion of waste imported to Region 3 is discussed in the section for the region where the waste originated from.

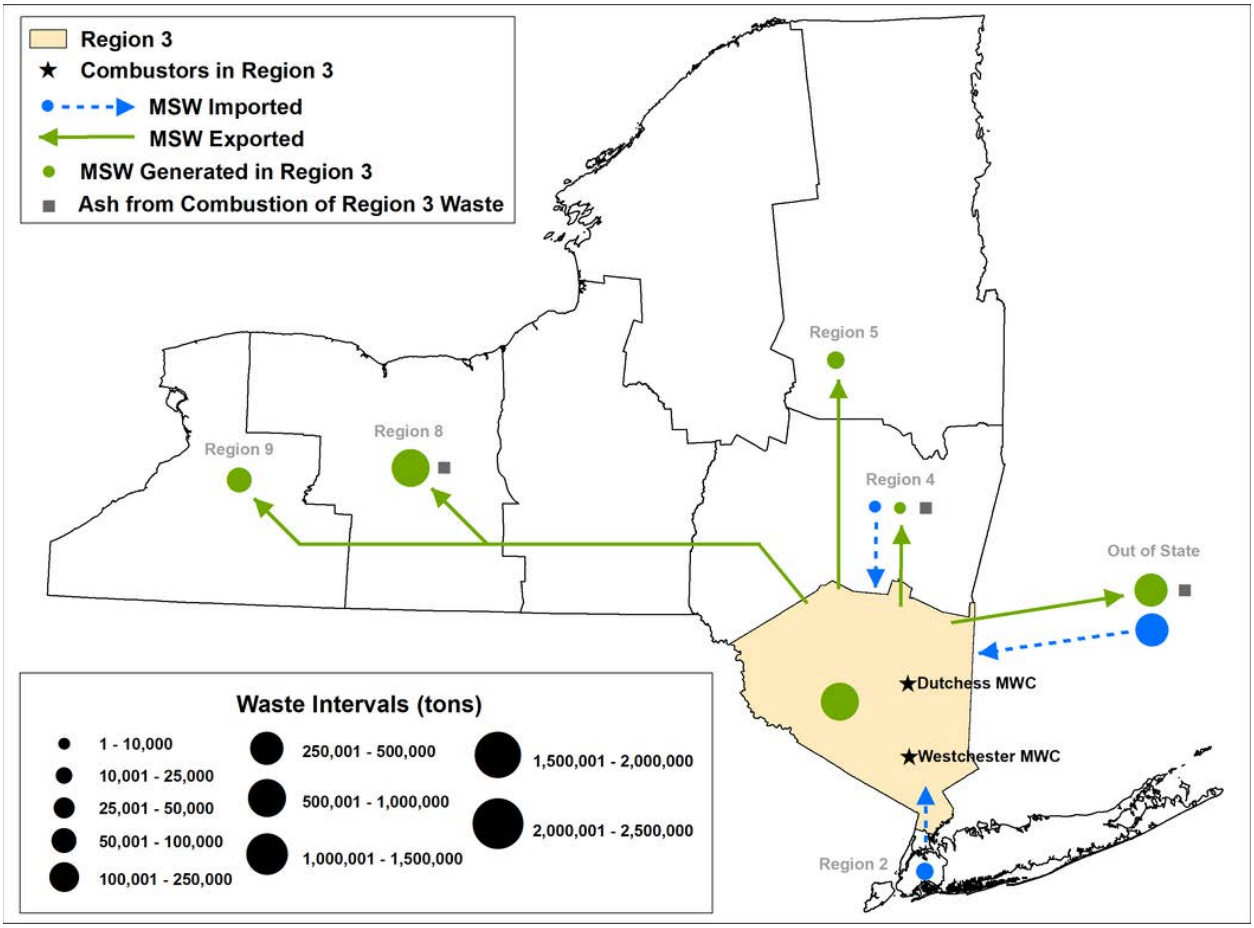


Figure E.41. Region 3 MSW flow

Figure E.41 represents the flow of MSW in Region 3 in 2018. It was estimated that a substantial portion of the MSW, about 41%, was processed locally at combustion facilities in the region. A large portion of MSW was transported to Region 8 and out-of-state facilities for processing or disposal, accounting for 32% and 22%, respectively. Minimal amounts of waste were transported to Regions 4, 5, and 9.

Most MSW exported out of state in 2018 was shipped to Pennsylvania, New Jersey, and Connecticut. Pennsylvania received 89%, Connecticut received 6%, and New Jersey accepted 4% of the MSW exported out of state from Region 3. Minimal amounts of MSW were also sent to Ohio and Massachusetts.

Region 3 accepted MSW from out of state and from Regions 2 and 4 in 2018; Figure E.41 shows this as imported waste. Approximately 92% of this MSW was imported from out of state, 7% from Region 2, and the remaining 1% from Region 4. Imported waste went through the region for processing at combustion facilities or for consolidation and transfer to other facilities outside the region, for processing or disposal. About 38% of imported MSW was processed at combustion facilities in the region.

Similarly, Figure E.41 also shows the movement of the ash waste stream. As a portion of the region's MSW was processed at combustion facilities, ash residue was generated. It was estimated that 72% of ash residue was disposed of in out-of-state landfills. The remaining 28% was used as AOC at landfills in Regions 4 and 8. Most ash residue disposed of out of state was destined for facilities in Connecticut, and small amounts were taken to Massachusetts.

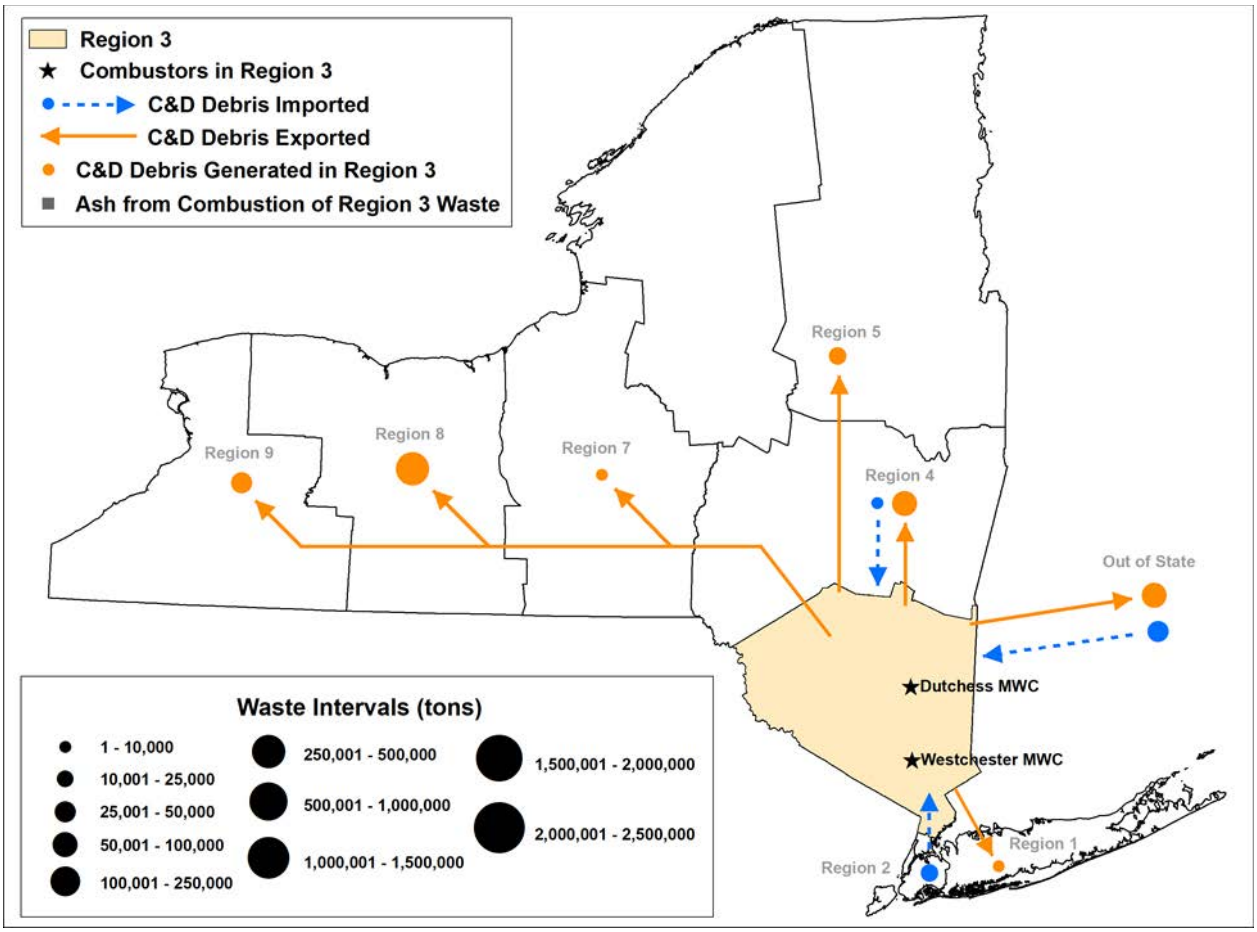


Figure E.42. Region 3 C&D debris flow

Figure E.42 depicts the C&D debris waste stream and its movement into and out of Region 3 in 2018. Most of the region's C&D debris destined for disposal was exported to other regions within the state. Approximately 62% was sent to Region 8, 12% to Region 4, and 6% to Region 9. Regions 5 and 7 received 3% and 2%, respectively. About 16% of the C&D debris transported out of Region 3 was taken to out-of-state facilities. About 81% of the exported C&D debris was destined for facilities in Pennsylvania, while the remainder was transported to Connecticut.

Figure E.42 also shows C&D debris imported from out of state and from Regions 2 and 4. About 34% of the C&D debris imported was received from Region 2, and minimal amounts were received from Region 4. About 65% of the imported C&D debris originated out of state, primarily in New Jersey.

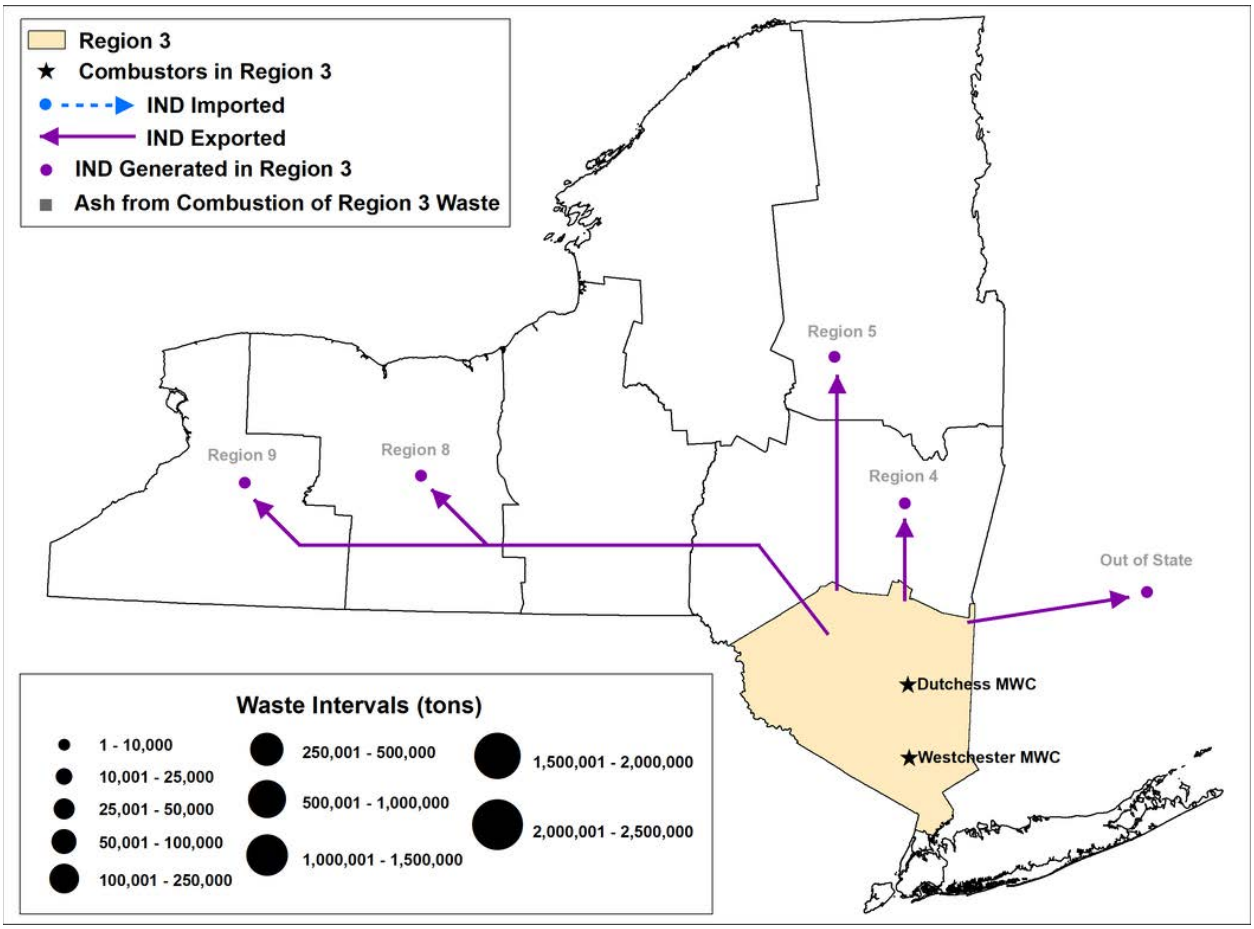


Figure E.43. Region 3 industrial waste flow

Figure E.43 shows the movement of industrial waste in Region 3. According to estimates, 21% of industrial waste generated in Region 3 in 2018 was exported to other states, and approximately 63% was sent to Region 8. Regions 4 and 5 accepted 6% each, and Region 9 received about 4%.

Table E.8. Region 3 organics recycling summary

Anaerobic Digestion - No facilities	
Composting	
Source-Separated Organics	7,138 tons
Food Processing Waste	126 tons
Yard Trimmings	162,593 tons
Biosolids	27,502 tons
Land Application	
Biosolids	510 tons
Food Processing Waste	0 tons

There are 23 composting operations in Region 3 that compost source-separated organics and yard trimmings, 2 biosolids composting operations, one biosolids land application operation, no food processing waste land application operations, and no anaerobic digesters operations. Table E.8 shows the type and quantity of materials recycled at these facilities. In 2019, Ulster County enacted the Food Waste Prevention and Recovery Act, requiring large food scraps generators in a multiphase approach to separate food scraps for recycling.

The following table provides information on all waste and recovered materials generated in Region 3 by waste type. It differentiates between tons of waste processed at combustion facilities or disposed of at landfills, and tons of materials recovered through CDDHRFs, RHRFs, composting facilities, and land application facilities.

Table E.9. Region 3 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	1,720,050	475,731
C&D Debris	592,000	922,000
Industrial	11,300	11,196
Biosolids	68,600	28,012
Total	2,391,950	1,436,939
MSW disposal rate	4.06 lbs/person/day	

* The heavy metal category is not included in the values in this table.

Table E.9 shows that about 3.83 million tons were processed, disposed of, or recovered in 2018. An estimated 1,436,939 tons were recovered through CDDHRFs, RHRFs, or organics processing, accounting for 38% of total waste generated. About 2,391,950 million tons of waste were destined for processing or disposal, accounting for 62% of all waste generated. As shown in Table E.9, in 2018, the MSW stream accounted for 57% of waste generated in the region, C&D debris for 40%, industrial waste for 1%, and biosolids for 2%.

Table E.9 shows that approximately 2,195,781 tons of MSW were generated within the planning unit in 2018. About 78% of MSW was processed or disposed of, and 22% was recovered through RHRFs and composting facilities. About 1.51 million tons of C&D debris were generated in the region. Approximately 39% was destined for disposal and 61% was recovered through CDDHRFs.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 3. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit.

Dutchess County Resource Recovery Agency

The Dutchess County Resource Recovery Agency (DCRRA) was created in 1983 to provide solid waste management services for the county and currently serves as a planning unit for all its municipalities.

While the DCRRA planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are urban and rural areas within the planning unit. In 2018, DCRRA serviced an estimated population of 293,939 (Census, 2019).

The DCRRA planning unit licenses all haulers that collect, transfer, transport, store, dispose of, or deliver solid waste in the planning unit. While there is a recycling mandate in the planning unit (Local Law No. 3 of 2014) and an enforcement collection program, materials accepted for recycling vary depending upon the hauling company hired to provide these services. Curbside collection is performed by a municipality or private hauler depending on member municipality.

MSW generation in the planning unit is greater than the permitted capacity of the Dutchess MWC. As a result, a portion of the waste stream is taken to combustion

facilities and landfills in other areas of the state and to out-of-state facilities. Similarly, C&D debris is also disposed of at landfills outside the county's boundaries.

The planning unit has an education and outreach program, for which educational videos and presentations are used to educate residents on different aspects of waste reduction, recycling, and reuse. The program also encourages residents to practice backyard composting. Other noteworthy initiatives of the planning unit are a recycling encyclopedia and HHW and electronics collection events.

LSWMP Status	The planning unit's LSWMP expired in 2021. The planning unit is working with DEC to develop a new plan.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.44 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.45 shows the flow of waste for the MSW stream.

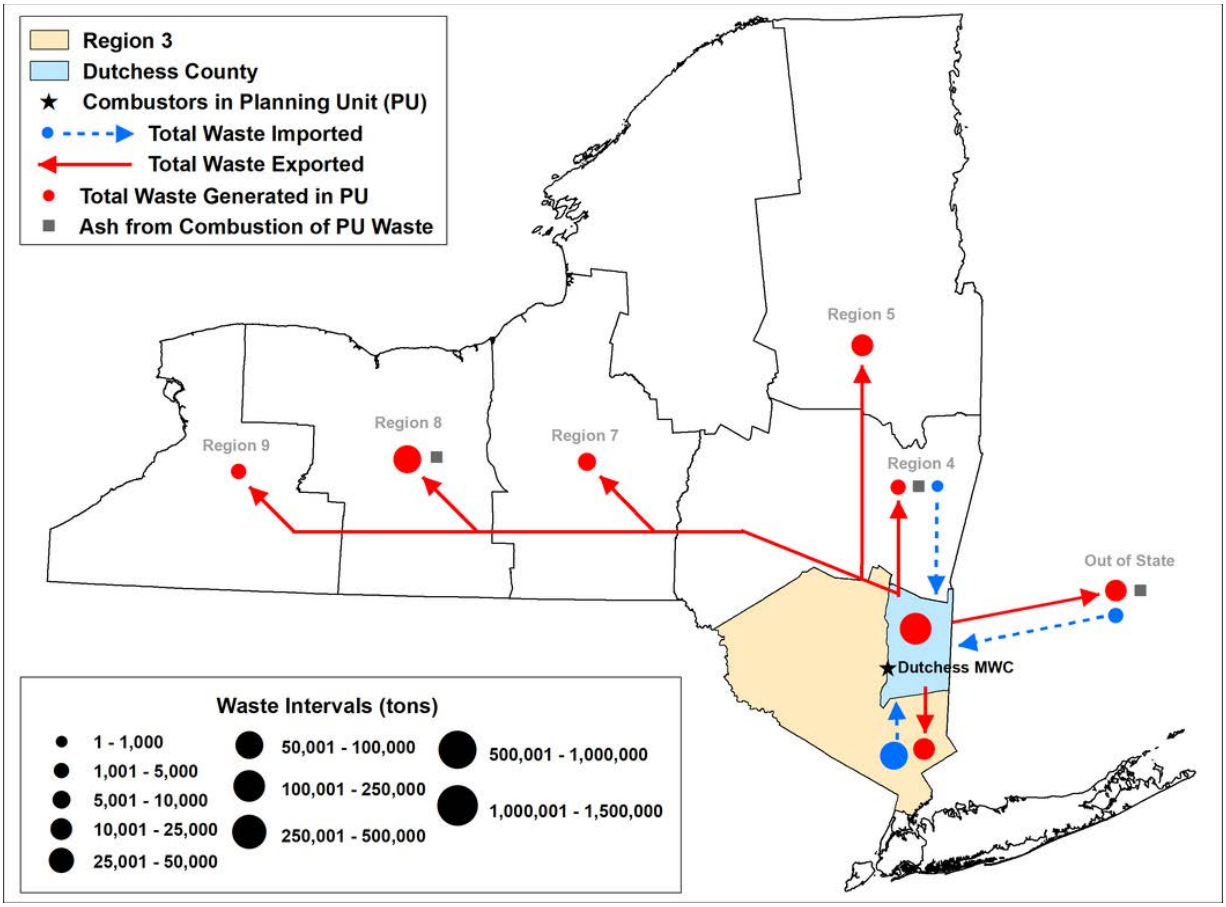


Figure E.44. DCRRA total waste flow

Figure E.44 represents the flow of waste in the DCRRA planning unit in 2018. About 46% of the generated waste was processed within the planning unit boundaries at the Dutchess MWC. The remaining 54% of waste was exported to other planning units in Regions 3, 4, 5, 7, 8, and 9, and to out-of-state facilities. It was estimated that about 32% of waste generated was exported to Region 8 facilities, 8% to Region 5, 5% to Region 3, and 4% to out-of-state facilities—mainly in New Jersey and Pennsylvania.

The planning unit accepted imported waste from other areas, as shown in Figure E.44. Approximately 99% of imported waste was received from other planning units within Region 3. The remaining 1% was imported from out-of-state facilities in New Jersey.

Figure E.44 also shows the movement of the ash waste stream. The ash in the figure only represents ash generated as a result of processing the MSW generated within the planning unit. All ash generated at the Dutchess MWC was from the processing of MSW. As MSW was processed at the combustion facility, ash residue was generated and transported to in- and out-of-state landfills. An equal 42% was estimated to be sent to landfills in Regions 4 and 8 to be used as AOC. The remaining 16% was disposed of at out-of-state landfills. An estimated 96% of exported ash residue was sent to Connecticut, and the remaining 4% was sent to Massachusetts.

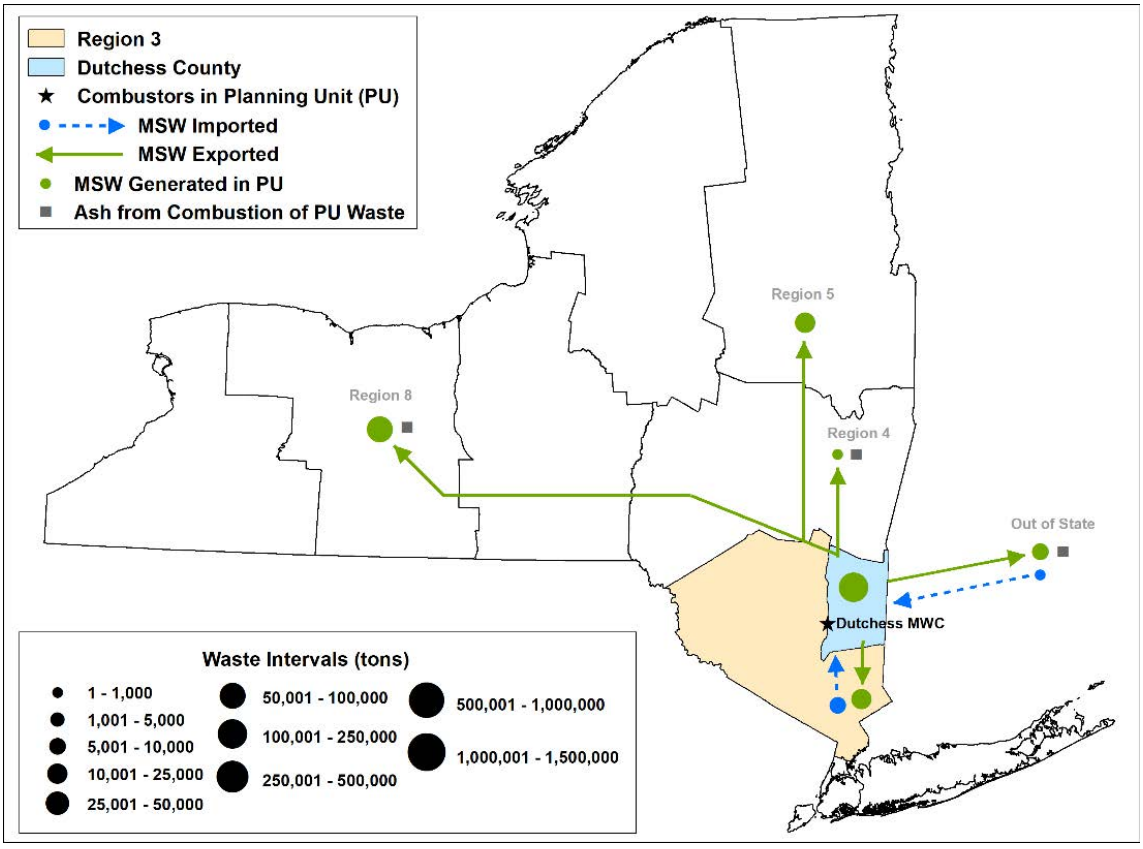


Figure E.45. DCRRA MSW flow

Figure E.45 shows the flow of MSW into and out of the planning unit in 2018. Approximately 58% of the MSW generated in 2018 stayed in the planning unit for processing at the Dutchess MWC, an equal 7% of the MSW was exported to Region 5 and to the other combustion facility in Region 3, 25% was destined for Region 8 facilities, and a minimal amount was taken to Region 4. The remaining MSW, about 3%, was exported to facilities out of state. Approximately 88% of the waste sent out of state went to Pennsylvania, 10% to Massachusetts, and the remainder was destined for Connecticut.

Shown as imports in Figure E.45, the DCRRA planning unit accepted MSW waste from other planning units within Region 3, accounting for 98% of the imports. The remaining MSW was accepted from out-of-state facilities in New Jersey.

Similarly, Figure E.45 shows the ash residue waste stream flow. Ash residue was generated at the Dutchess MWC and the other Region 3 combustion facility from processing the planning unit's MSW. An estimated 100% of ash generated from the planning unit's waste at the Dutchess MWC was used as AOC at in-state landfills; Region 4 and Region 8 accepted equal amounts. This accounted for 84% of total ash residue. The remaining 16% of ash residue was generated at the other combustion facility in Region 3 and was disposed of at out-of-state landfills in Pennsylvania and Connecticut.

The following table provides information on all the waste and recovered materials generated in the DCRRA planning unit by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.10. DCRRA waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	222,800	50,200**
C&D Debris	46,500	176,000
Industrial	1,300	9,280
Biosolids	14,600	0
Total	285,200	235,480
MSW disposal rate	4.15 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.10 shows that approximately 520,680 tons of waste generated in 2018 were processed, disposed of, or recovered. About 45% was recovered through CDDHRFs or RHRFs, accounting for 253,480 tons, while the remaining 55% was processed at combustion facilities or disposed of at landfills. Approximately 273,000 tons of MSW were generated in the planning unit, accounting for 52% of waste generated in 2018. About 222,800 tons, or 82% of the MSW, was processed at combustion facilities or disposed of at landfills, while the remaining 18% was recovered through RHRFs.

As shown in Table E.10, it was estimated that 222,500 tons of C&D debris were generated in the planning unit, accounting for 43% of all the waste generated in 2018. It was estimated that 21% of the C&D debris waste stream was disposed of, with 79% recovered through CDDHRFs. The industrial waste and biosolids waste stream made up 2% and 3%, respectively, of all waste generated in 2018.

Orange County

Orange County serves as the planning unit for all its municipalities through the Orange County Department of Public Works Division of Environmental Facilities and Services (OCDPW DEFS). While the planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are urban and rural areas within the planning unit. In 2018, Orange County serviced an estimated population of 382,126 (Census, 2019).

The Orange County planning unit is responsible for operating transfers facilities where residents and municipal and private haulers drop off MSW and recyclables. There are no in-county combustion facilities or disposal facilities. Waste generated in Orange County is exported to in-state and out-of-state facilities.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.46 represents all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.47 shows the flow of waste for the MSW stream.

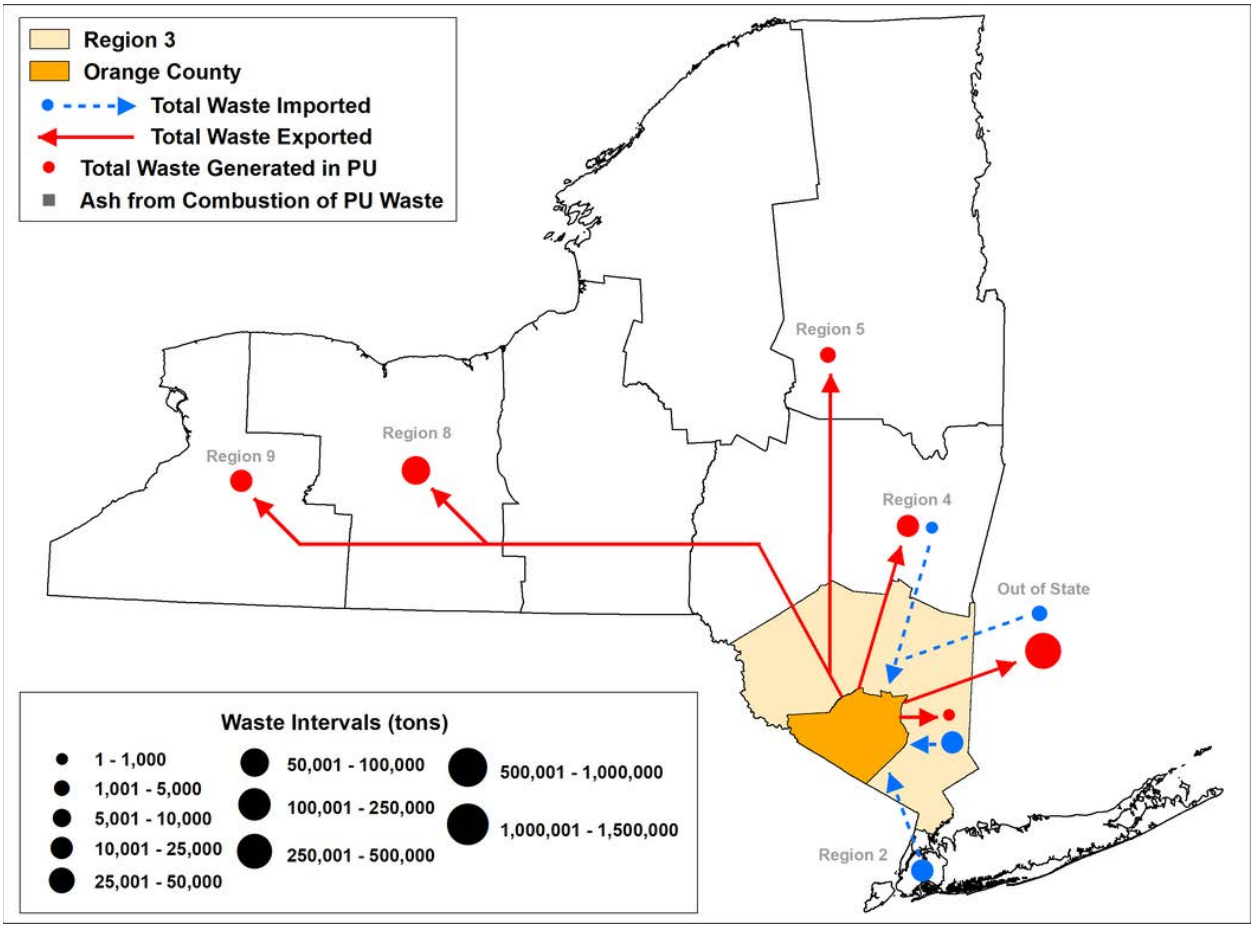


Figure E.46. Orange County total waste flow

Figure E.46 represents the flow of waste within the Orange County planning unit in 2018. As shown in the figure, 100% of waste generated in Orange County was exported to facilities outside of the planning unit. About 73% was exported out of state, mainly to Pennsylvania; 19% was sent to Region 8; and the remaining 8% went to other planning units within Region 3 or to facilities in Regions 4, 5, and 9.

The planning unit also accepted waste from out of state, from Regions 2 and 4, and from other planning units within Region 3; this is shown in Figure E.46. Approximately 95% of the imported waste was C&D debris and the remaining 5% was MSW. The imported waste went to facilities in the planning unit for consolidation and transfer to facilities outside the planning unit for processing or disposal. About 50% of imported waste came from other planning units in Region 3, 45% originated in Region 2, and the remainder was accepted from out-of-state facilities and facilities in Region 4.

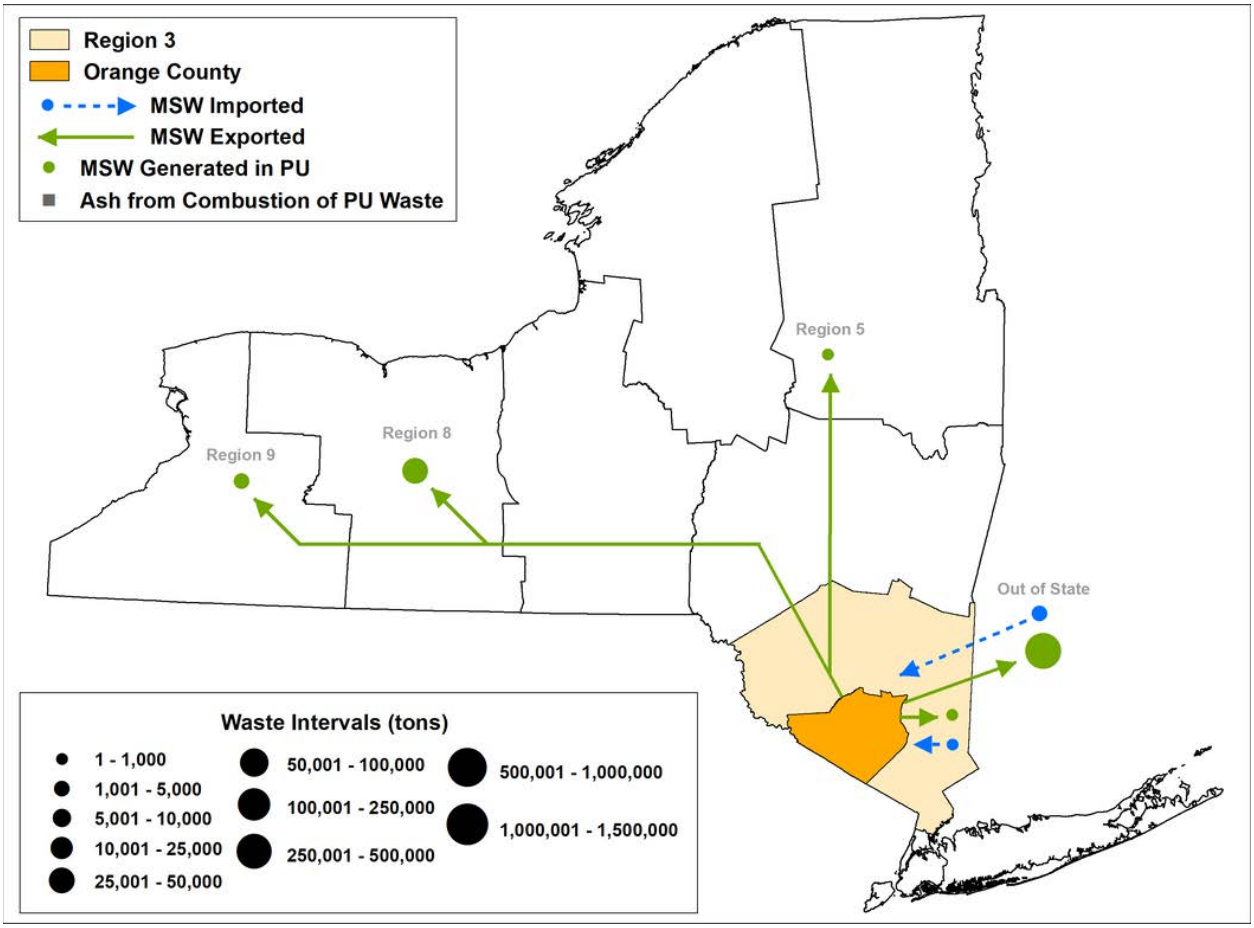


Figure E.47. Orange County MSW flow

Figure E.47 shows the flow of MSW into and out of the planning unit in 2018. As seen in the figure, 100% of the MSW generated in the county was exported to facilities outside of the planning unit. Approximately 87% of the MSW was sent to facilities out of state, primarily in Pennsylvania, and 12% was sent to disposal facilities in Region 8. The remainder of MSW was sent to Regions 5 and 9.

MSW imported into the planning unit was accepted for subsequent transfer to other facilities for processing or disposal. Figure E.47 also shows that imported MSW, about 62%, was received mainly from out-of-state facilities. The remaining 38% was accepted from other planning units within the region.

The following table provides information on all waste and recovered materials generated in Orange County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.11. Orange County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	288,400	33,200**
C&D Debris	65,600	199,000
Industrial	2,990	30
Biosolids	10,800	0
Total	367,790	232,230
MSW disposal rate	4.14 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.11 shows that approximately 600,020 tons of waste generated in 2018 were processed, disposed of, or recovered by the planning unit. According to estimates, about 39% of waste generated was recovered through CDDHRFs or RHRFs. The remaining 61% was processed at combustion facilities or disposed of at landfills.

Approximately 321,600 tons of MSW were generated in 2018 by the planning unit. About 288,400 tons, or 90% of the MSW, were disposed of, and 33,200 tons, or 10%, were recovered through RHRFs. Of the C&D debris generated in the planning unit, 75% was recovered, with the remaining 25% disposed of at landfills.

As shown in Table E.11, in 2018, the MSW stream accounted for 54% of waste generated in the planning unit, C&D debris for 44%, industrial waste for 1%, and biosolids for the remaining 2%.

Putnam County

Putnam County serves as the planning unit for all its municipalities. In 2018, it serviced an estimated population of 98,814 (Census, 2019). While the planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban density distribution, there are urban or rural areas within the planning unit. Even though the county serves as the planning unit, curbside collection of MSW and recyclables programs are managed by each town.

Putnam County uses the "Recycle Coach Free Waste and Recycling" application as part of its education program to improve waste sorting practices and boost recycling. The program holds two HHW collection events per year and encourages backyard composting. The planning unit exports all solid waste for processing or disposal outside its boundaries.

LSWMP Status	The planning unit's LSWMP expired in 2020. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.48 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.49 shows the flow of waste for the MSW stream.

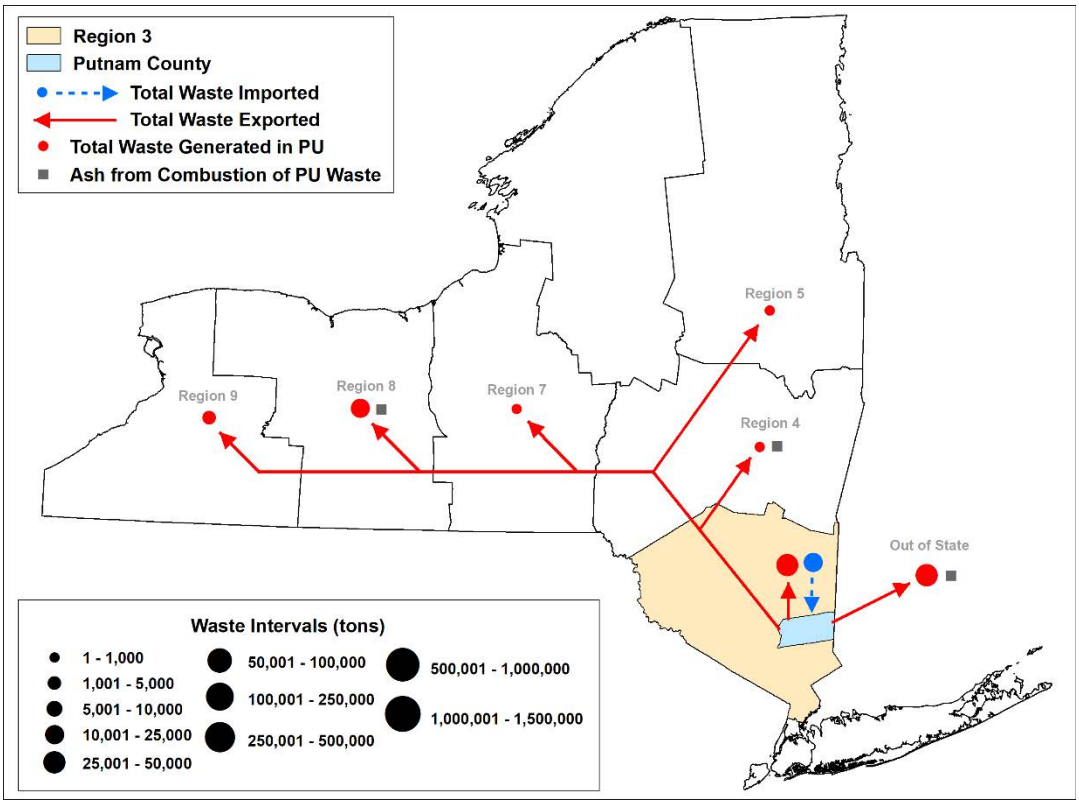


Figure E.48. Putnam County total waste flow

Figure E.48 represents the flow of all waste from the Putnam County planning unit in 2018. As shown in the figure, 100% of waste generated in Putnam County was exported to facilities outside of the planning unit. According to estimates, about 47% of all waste generated in 2018 was sent to other planning units within Region 3. This waste was destined for the combustion facilities in DCRRA and Westchester County. Similarly, about 10% of the total waste generated was sent to Region 8, and 3% was sent to facilities in Regions 4, 5, 7, and 9. The remaining 40% of all waste generated was exported out of state.

The waste exported out of state was destined primarily for disposal facilities in Connecticut, accounting for 63%, with the remaining 37% sent to New Jersey. It was

calculated that about 71% of waste exported to out-of-state facilities was MSW, 4% was C&D debris, and 26% biosolids.

As imports, the planning unit accepted waste from other planning units within Region 3, shown in Figure E.48. This waste went through the planning unit for consolidation and transfer to facilities outside the planning unit for processing or disposal.

Figure E.48 also shows the movement of ash generated from the processing of the planning unit waste in 2018 at combustion facilities in other planning units in Region 3. As waste was processed at the combustion facility, ash residue was generated and transported to in- and out-of-state landfills. An equal 6% was estimated to be sent to landfills in Regions 4 and 8 to be used as AOC. About 85% was sent to Connecticut, and the remainder was sent to facilities in Massachusetts.

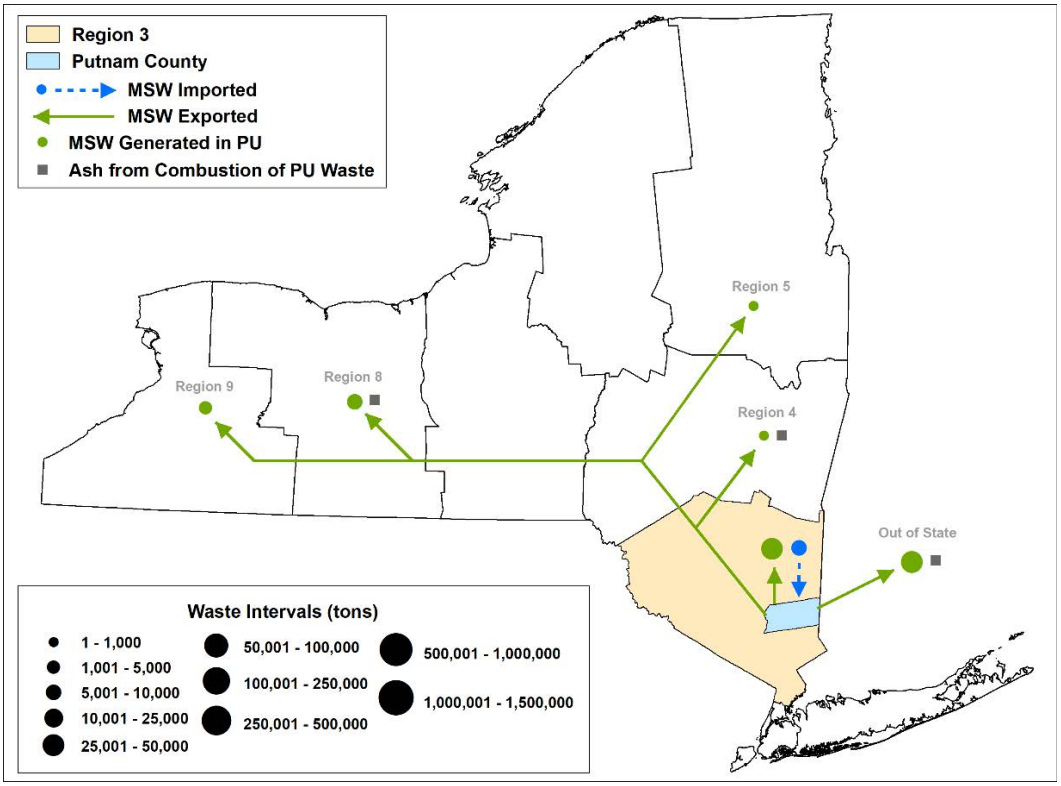


Figure E.49. Putnam County MSW flow

Figure E.49 shows the flow of MSW in the planning unit in 2018. The figure shows that 100% of MSW generated in this planning unit was exported to facilities outside the planning unit. Approximately 54% was estimated to be sent to facilities in other planning units within the region for processing at the region's combustion facilities. About 11% of the MSW was sent to Region 8, 33% was exported to out-of-state facilities, and minimal waste was sent to Regions 5 and 9. MSW exported out of state was destined mainly for Connecticut and New Jersey facilities, accounting for 68% and 32%, respectively.

Imported MSW from other planning units in Region 3 is also shown in Figure E.49. Imported MSW went to facilities in the planning unit to be consolidated and then transferred to facilities outside the planning unit for processing or disposal.

Similarly, Figure E.49 shows the ash residue waste stream flow. As waste was processed at the combustion facilities located within Region 3, ash residue was generated and transported to out-of-state landfills for use as AOC or disposal. The ash represented in the figure is a result of the processing of MSW generated within the planning unit. Approximately 85% of ash residue was sent to landfills in Connecticut, 3% was sent to Massachusetts, and an equal 6% was sent to landfills in Regions 4 and 8. Ash residue sent to in-state landfills was used as AOC.

The following table provides information on all waste and recovered materials generated in Putnam County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.12. Putnam County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	82,000	1,600**
C&D Debris	1,800	127,500
Industrial	150	0
Biosolids	10,900	0
Total	94,850	129,100
MSW disposal rate	4.55 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.12 shows that approximately 223,950 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. It was estimated that about 129,100 tons, or 58%, were recovered through CDDHRFs or RHRFs. The remaining 42% was processed or disposed of at landfills.

Approximately 83,600 tons of MSW were generated by the planning unit in 2018. About 82,000 tons, or 98% of the MSW, were processed at combustion facilities or disposed of in landfills, and 1,600 tons, or 2%, were recovered through RHRFs. Of the C&D debris generated, 99% was recovered through CDDHRFs, with the remaining 1% disposed of at landfills.

Table E.12 shows the MSW stream accounted for 37% of waste generated in 2018 in this planning unit, C&D debris for 58%, and biosolids for 5%. Minimal amounts of industrial waste were reported in 2018.

Rockland County

The management of solid waste is administered by the Rockland County Solid Waste Management Authority (RCSWMA), formed in 1994 to manage waste materials generated, processed, or disposed of within the county's boundaries.

Rockland County serves as the planning unit for all its municipalities. In 2018, it serviced an estimated population of 325,522 (Census, 2019). While the planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are urban areas within the planning unit.

The planning unit owns a co-composting facility where bio-solids from wastewater treatment plants in Rockland County and wood waste are mixed and composted. Additionally, grass, leaves, and brush are collected, composted, mulched, and marketed for public works projects and distribution to county residents.

As part of its education and outreach program, the RCSWMA uses a mobile application that offers residents guidance on recycling or disposing of different materials. The RCSWMA also encourages backyard composting of yard and food wastes and offers HHW collection at a drop-off facility.

The planning unit also offers special programs such as Repair Cafes and tours of facilities. It offers on-site and virtual presentations to educate groups about recycling in Rockland County.

LSWMP Status	The planning unit's LSWMP is approved through 2023.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.50 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.51 shows the flow of waste for the MSW stream.

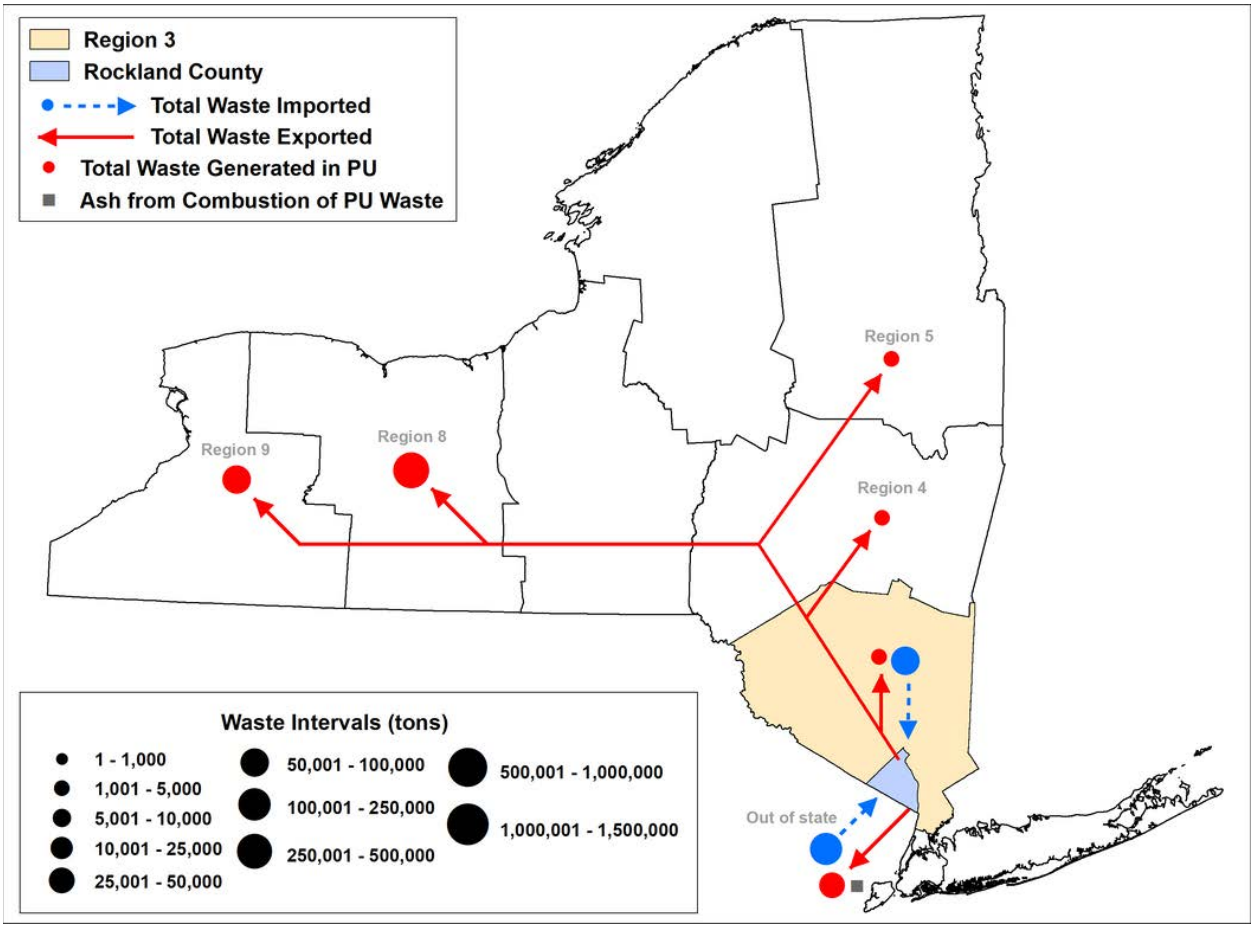


Figure E.50. RCSWMA total waste flow

Figure E.50 represents the flow of waste from the planning unit in 2018. Of the waste generated in Rockland County, 100% was exported to facilities outside the planning unit. About 70% was sent to Region 8, 15% to Region 9, and 13% to out-of-state facilities; the remaining waste was sent to facilities in Regions 3, 4, and 5.

The waste exported out of state was destined primarily for disposal facilities in Pennsylvania, accounting for 92%. The remaining waste was transported to New Jersey and Ohio. About 84% of the waste exported to out-of-state facilities was MSW, 10% was C&D debris, and 6% was biosolids.

As imports, the planning unit also accepted waste from other planning units, as shown in Figure E.50. This waste went through the planning unit to be consolidated for subsequent transfer to facilities outside the planning unit for processing or disposal. Most of the waste, 74%, came from out-of-state facilities in New Jersey, and the remaining 26% came from other planning units within the region.

Figure E.50 also shows the movement of ash generated from processing the planning unit's waste in 2018 at one of the region's combustion facilities. Waste generated within RCSWMA was exported to another planning unit within Region 3 to be processed at its

combustion facility. According to estimates, 97% of ash residue was exported to facilities in Connecticut, and the remaining ash was transported to facilities in Massachusetts.

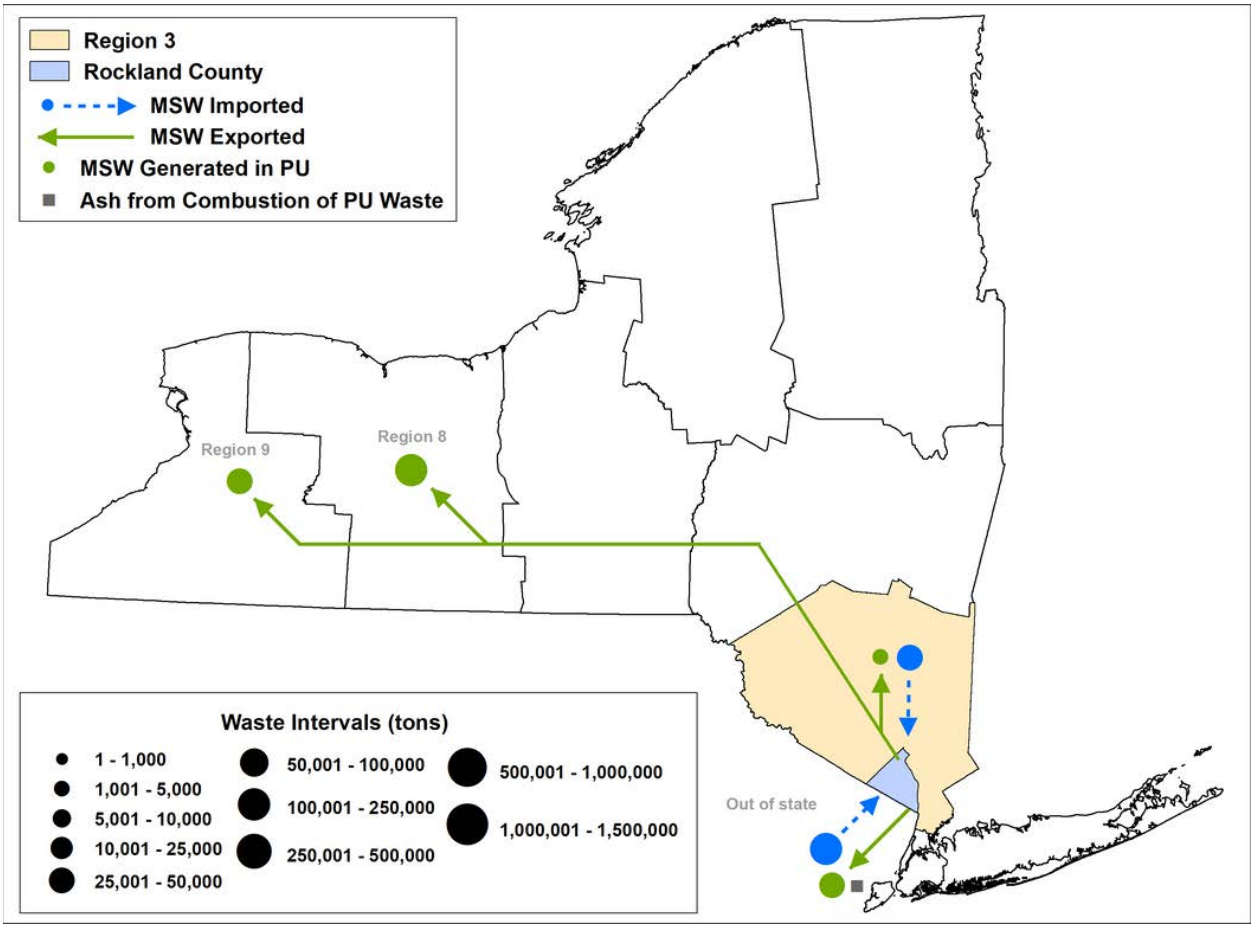


Figure E.51. RCSWMA MSW flow

Figure E.51 shows the flow of MSW into and out of the planning unit in 2018. As seen in the figure, 100% of MSW generated in Rockland County was exported to facilities outside the planning unit. Approximately 68% of MSW was sent to Region 8, 17% to out-of-state facilities, 14% to Region 9, and the remainder was destined for other planning units within Region 3. Approximately 98% of MSW exported out of state was destined for facilities in Pennsylvania.

Similarly, Figure E.51 shows the ash residue waste stream flow. As waste was processed at combustion facilities, ash residue was generated and transported to out-of-state landfills for use as AOC or for disposal. The ash represented in the figure only accounts for the MSW generated within the planning unit, with 97% sent to landfills in Connecticut and the remainder sent to Massachusetts.

Shown as imports in Figure E.51 the RCSWMA planning unit imported MSW from out-of-state facilities, primarily from New Jersey, accounting for 72%. The remaining 28%

was received from other planning units within the region. All imported MSW went to facilities in the planning unit to be consolidated for transfer to facilities outside the planning unit for processing or disposal.

The following table provides information on all waste and recovered materials generated in the RCSWMA planning unit by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.13 RCSWMA waste summary .

Type of Waste*	Tons Disposed	Tons Recovered
MSW	256,200	43,000**
C&D Debris	118,800	67,000
Industrial	200	0
Biosolids	2,900	0
Total	379,083	110,006
MSW disposal rate	4.31 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.13 shows that about 489,089 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. According to estimates, around 110,006 tons, or 22%, were recovered through CDDHRFs or RHRFs. The remaining 78% was processed or disposed of at landfills.

The planning unit generated approximately 299,200 tons of MSW in 2018. About 86% of the MSW was processed or disposed of, and 14% was recovered through RHRFs. Of the C&D debris generated in the planning unit, 36% was recovered through CDDHRFs, with the remaining 63% disposed of at landfills.

According to estimates, and as shown in Table E.13, in 2018, the MSW stream accounted for 61% of waste generated in the planning unit, C&D debris for 38%, and industrial waste and biosolids for the remainder.

Sullivan County

Sullivan County serves as the planning unit for all its municipalities. Through the Department of Solid Waste & Recycling, the planning unit manages the waste disposal program and operates transfer facilities throughout the planning unit. Each resident

procures MSW collection through private haulers. All waste generated in Sullivan County is exported and disposed of outside its boundaries.

While the Sullivan County planning unit has an average population density of less than 325 people per square mile, characteristic of rural population density distribution, there are suburban areas within the planning unit. In 2018, it serviced an estimated population of 75,399 (Census, 2019).

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.52 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.53 shows the flow of waste for the MSW stream.

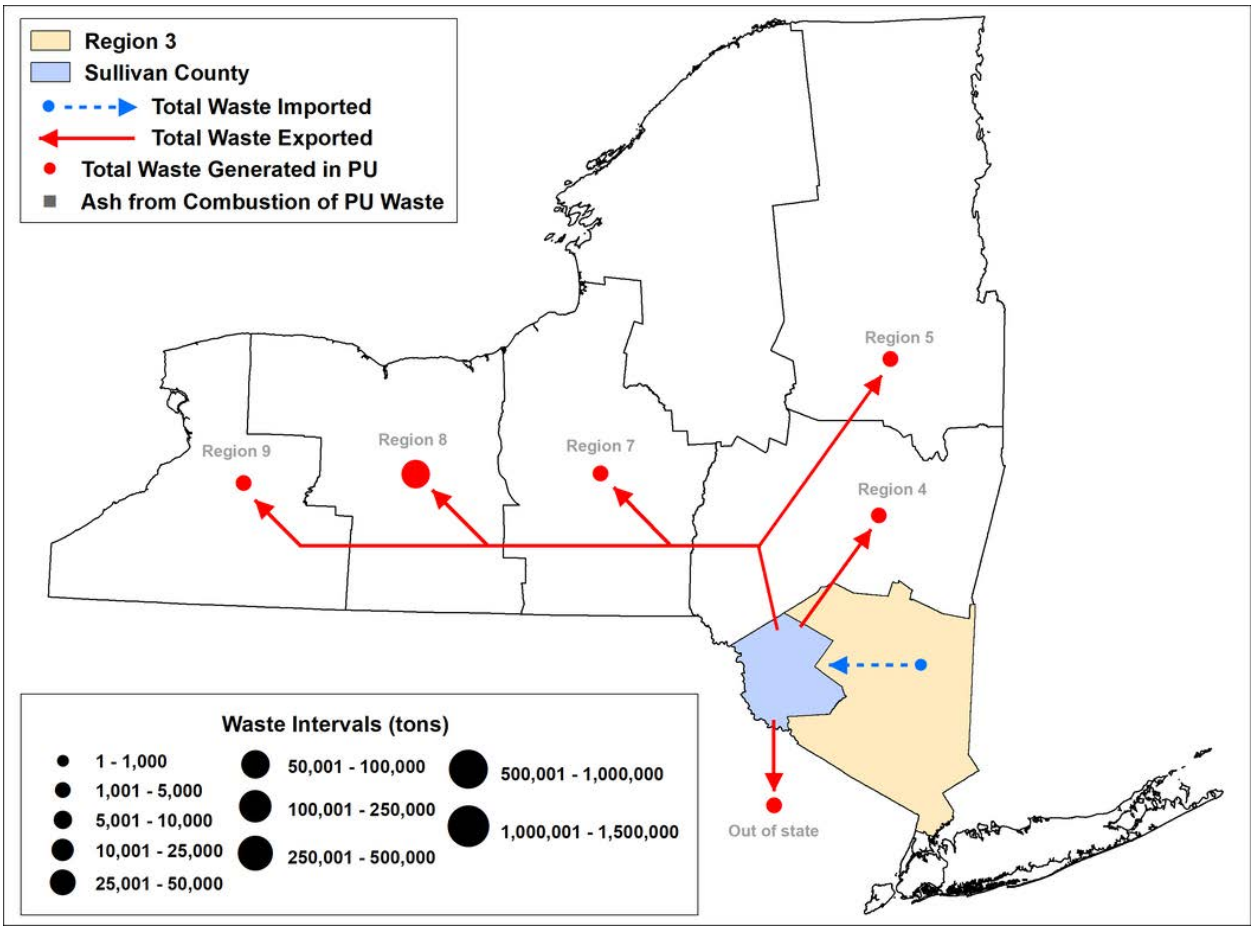


Figure E.52. Sullivan County total waste flow

Figure E.52 represents the flow of waste from the Sullivan County planning unit in 2018. As shown in the figure, 100% of waste generated was exported to facilities outside the planning unit. About 89% of waste was sent to Region 8. The remaining 11% was sent to facilities in Regions 4, 5, 7, and 9, and to out-of-state facilities in Pennsylvania. About 69% of waste exported out of state was MSW, 8% was C&D debris, and 24% was biosolids.

The planning unit also accepted waste from other areas, as shown in Figure E.52. An estimated 100% of imports came from other planning units within the region. This waste went through the planning unit to be consolidated and transferred to other facilities outside Sullivan County for processing or disposal.

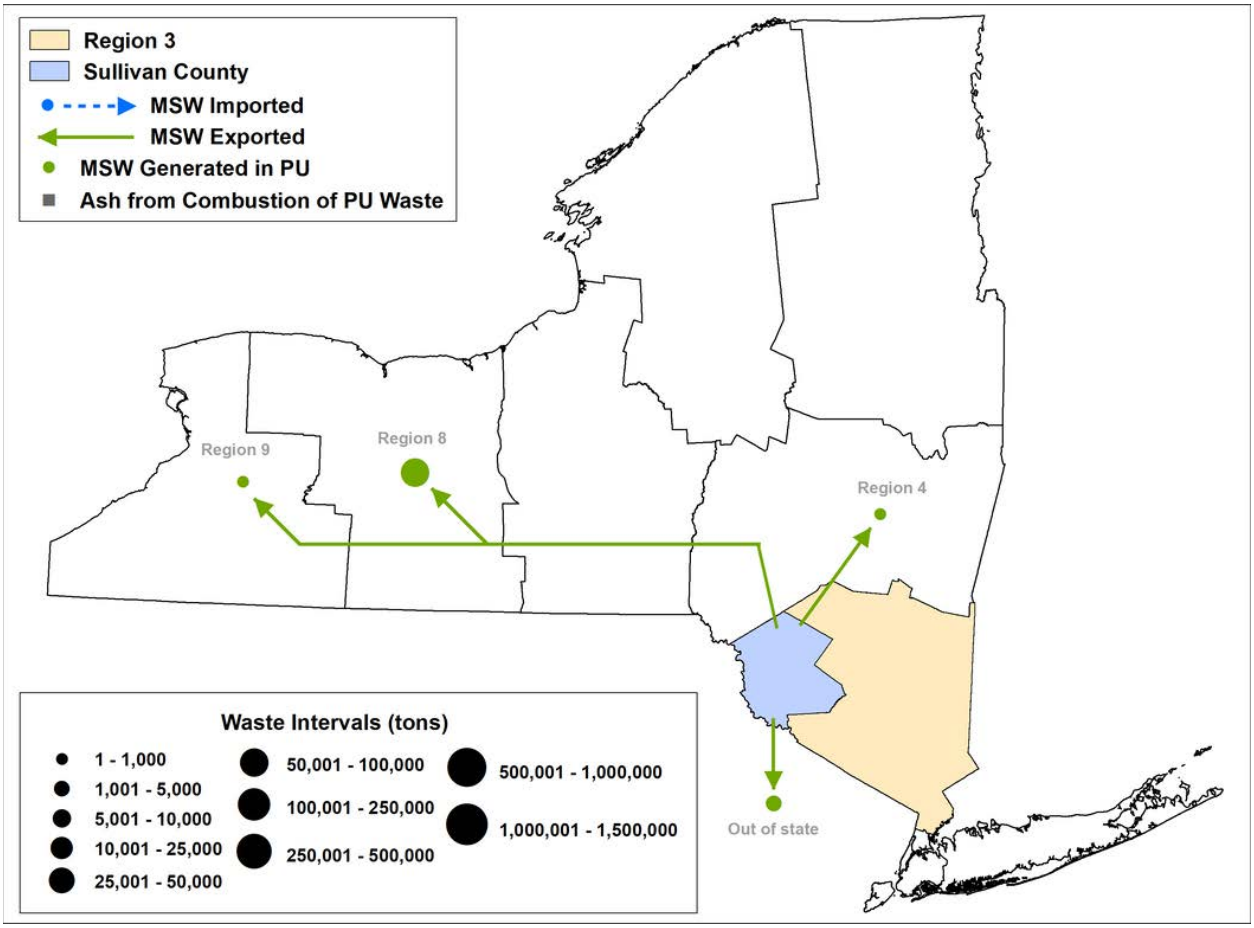


Figure E.53. Sullivan County MSW flow

Figure E.53 shows the flow of MSW in the planning unit in 2018. As shown in the figure, 100% of MSW was exported to facilities outside the planning unit. Approximately 96% of MSW generated was sent to Region 8, and the remainder was exported to Regions 4 and 9, and to out-of-state facilities. Facilities in Sullivan County did not import MSW in 2018.

The following table provides information on all waste and recovered materials generated in Sullivan County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.14. Sullivan County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	72,050	4,500**
C&D Debris	18,400	300
Industrial	1,800	680
Biosolids	1,300	0
Total	93,550	5,480
MSW disposal rate	5.24 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.14 shows that approximately 99,030 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. About 93,550 tons, or 6%, were recovered through CDDHRFs or RHRFs, while 94% was processed or disposed of at landfills.

Approximately 76,550 tons of MSW were generated in 2018 by the planning unit. About 72,050 tons, or 94%, were disposed of at in-state and out-of-state landfills; and 4,500 tons, or 6%, were recovered through RHRFs. Additionally, 18,700 tons of C&D debris were generated. About 99% of the C&D debris was disposed of at landfills, and 1% was recovered through CDDHRFs.

Table E.14 shows that the MSW stream accounted for 77% of waste generated in 2018 in this planning unit, C&D debris for 19%, industrial waste for 3%, and biosolids for the remainder.

Ulster County

Ulster County is the planning unit for all municipalities within its boundaries through the Ulster County Resource Recovery Agency (UCRRA), which was formed over 30 years ago to promote sustainable management of solid waste in the county. UCRRA is a solid waste authority and a public benefit corporation.

Even though the Ulster County planning unit has an average population density of less than 325 people per square mile, characteristic of a rural population density distribution, there are suburban areas within the planning unit. In 2018, it serviced an estimated population of 178,4189 (Census, 2019).

In 2012, the flow control law was signed requiring that all MSW generated in Ulster County is transported to a UCRRA facility for consolidation. Also in 2012, the UCRRA Organics Recovery Facility was constructed as a small pilot project. In 2016, the facility was expanded, and additional improvements were added in 2020.

C&D debris, organics, and recyclables are not regulated through flow control and can be managed by other facilities within or outside Ulster County.

The Organics Recovery Facility processes source separated organics from commercial partners to manufacture an STA (Seal of Testing Assurance)-certified compost product that the agency sells in bulk. In 2019, Ulster County enacted the Food Waste Prevention and Recovery Act, requiring large food scraps generators in a multiphase approach to separate their food scraps for recycling.

Residents of the county have access to recyclable drop-off facilities called Municipal Recycling Drop-Off Centers (MRDC), where they can dispose of recyclable materials, yard trimmings, white goods, and other materials. These facilities have implemented a Pay As You Throw (PAYT) Program. Residents can also hire a private hauler for the collection of MSW and recyclables curbside. Local haulers must apply for an annual license with the planning unit.

LSWMP Status	The planning unit's LSWMP is approved through 2029.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.54 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.55 shows the flow of waste for the MSW stream.

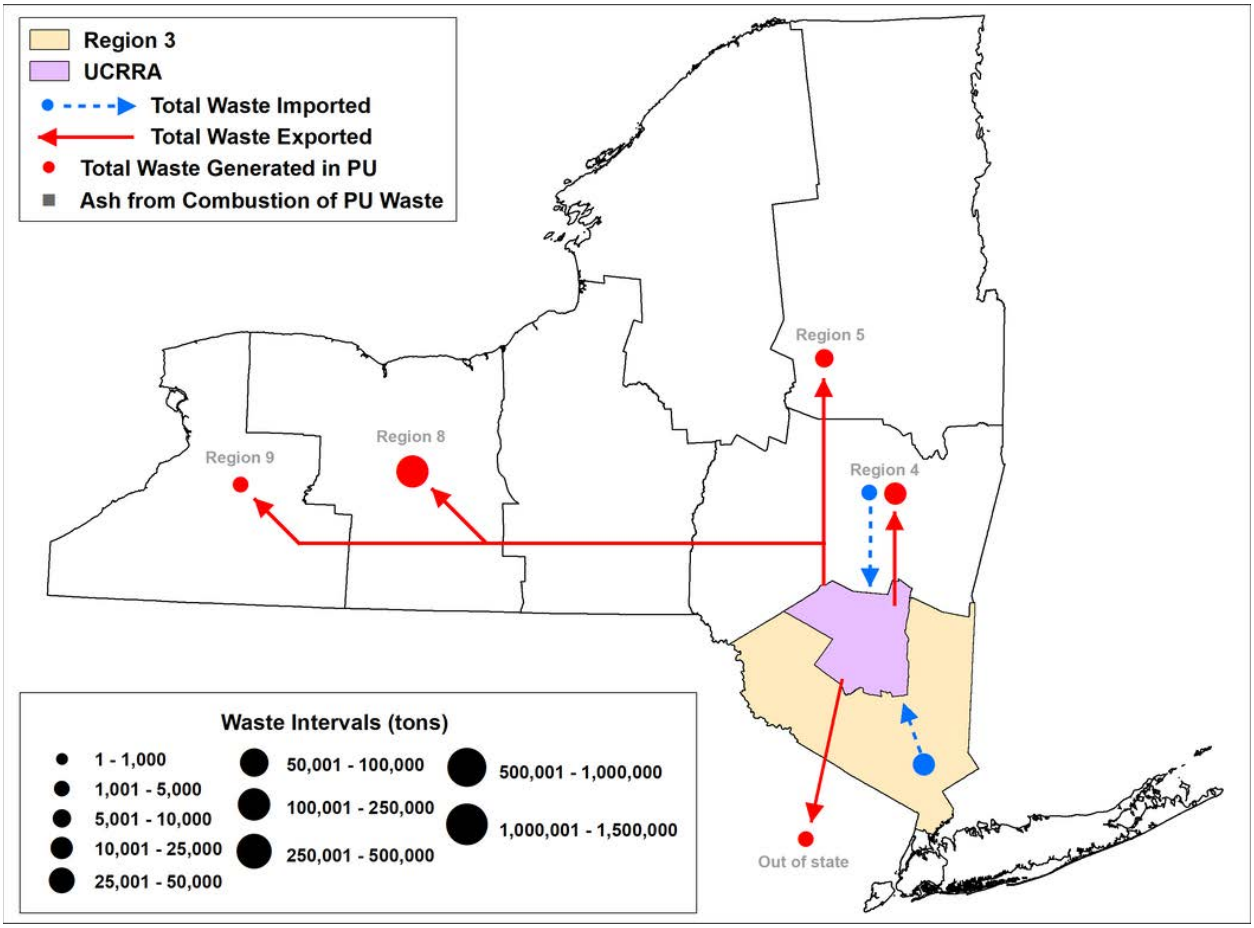


Figure E.54. UCRRA total waste flow

Figure E.54 represents the flow of waste in the UCRRA planning unit in 2018. As seen in the figure, 100% of waste generated in Ulster County was exported to facilities outside the planning unit. About 86% of waste was sent to Region 8 with the remaining 14% sent to out-of-state facilities and facilities in Regions 4, 5, and 9. Of the waste exported out of state, biosolids sent to facilities in New Jersey accounted for 92%, 6% was C&D debris, and 2% was MSW. Both the C&D debris and MSW were destined for facilities in Pennsylvania.

The planning unit also imported waste from other planning units in the state, as shown in Figure E.54. This waste went through the planning unit to be consolidated for transfer to facilities outside of Ulster County for processing or disposal. About 86% of the imports came from other planning units within the region. The remaining 14% was imported from Region 4.

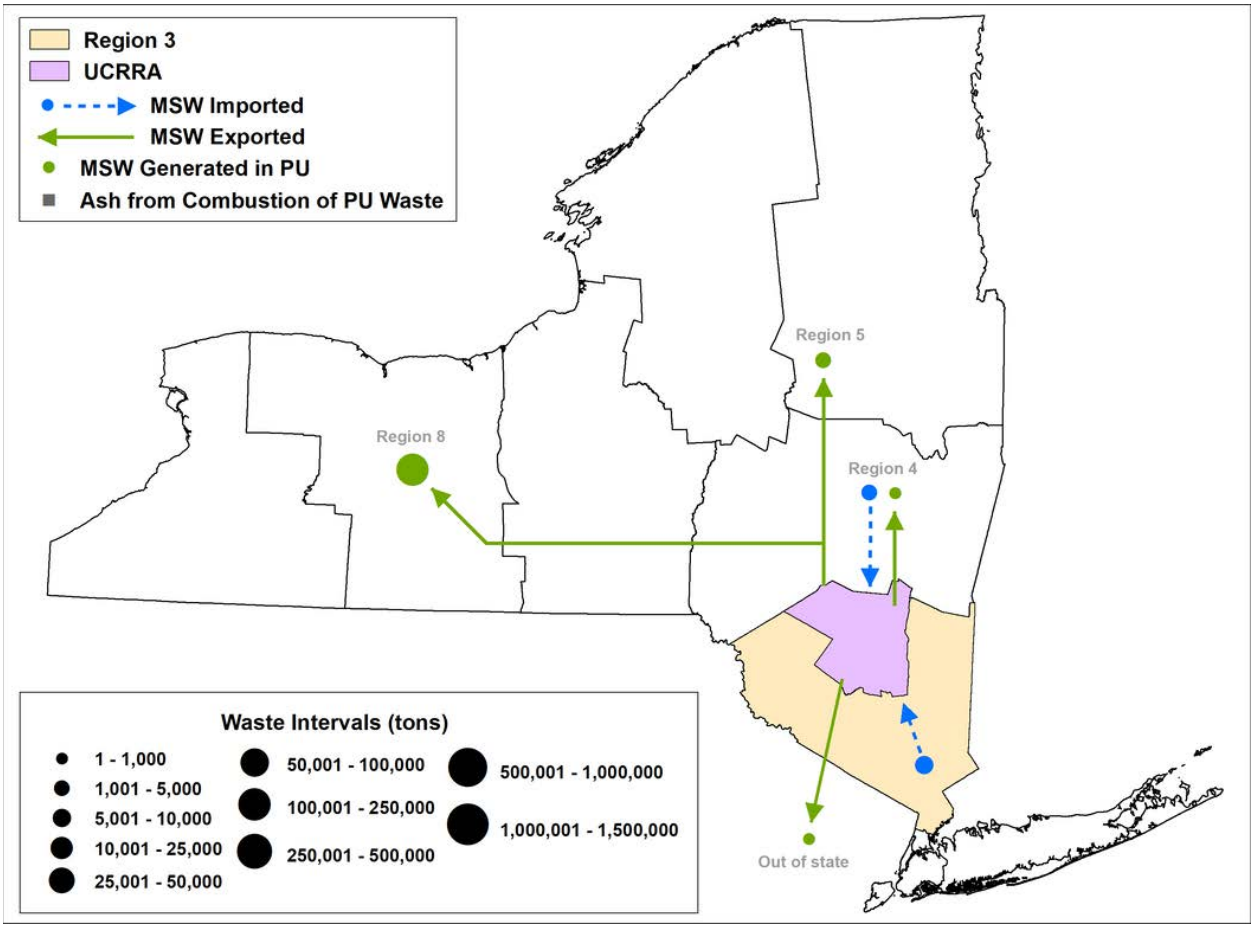


Figure E.55. UCRRA MSW flow

Figure E.55 shows the flow of MSW into and out of the planning unit in 2018. As seen in the figure, 100% of MSW was exported to facilities outside of the planning unit. Approximately 98% of MSW generated was sent to Region 8, and the remainder was exported to out-of-state facilities and to Regions 4 and 5. MSW received from other planning units within Region 3 accounted for 82% of imports; the remaining 18% originated in Region 4. Imported MSW went to facilities in the planning unit to be consolidated and then transferred to facilities outside the planning unit for processing or disposal.

The following table provides information on all waste and recovered materials generated in UCRRA by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.15. UCRRA waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	132,400	16,000**

C&D Debris	70,600	13,750
Industrial	160	1,080
Biosolids	6,200	0
Total	209,360	30,830
MSW disposal rate	4.07 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.15 shows that approximately 240,190 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. According to estimates, about 30,830 tons, or 13%, were recovered through CDDHRFs or RHRFs while 87% was processed or disposed of at landfills.

Approximately 148,400 tons of MSW were generated. An estimated 89% of MSW was disposed of and 11% was recovered through RHRFs. Sixteen percent of the C&D debris generated in the planning unit was recovered through CDDHRFs, with the remaining 84% disposed of at landfills.

Table E.15 shows the MSW stream accounted for 62% of waste generated in 2018 in this planning unit; C&D debris for 35%; biosolids for 3%; and industrial waste for the remainder.

Westchester County

Westchester County serves as the designated planning unit for the county's 43 municipalities. The County oversees several solid waste and recycling facilities, which handle about 90% of the county's residential waste stream through the Department of Environmental Facilities (DEF).

While the Westchester County planning unit has a population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are rural and urban areas within the planning unit. In 2018, it serviced an estimated population of 968,213 (Census, 2019).

The planning unit manages Refuse Disposal District (RDD) No. 1, created in 1982 by 36 of the 43 municipalities which joined the district through Inter-municipal Agreements (IMAs) with the County. District No. 1 also enabled the construction of the Charles Point Resource Recovery Facility (CPRRF), which began operations in 1984. CPRRF is also referred to as the Westchester MWC.

Under the agreements, the municipalities committed their municipally collected MSW and recycling to the planning unit's solid waste management system. These

municipalities currently deliver MSW to one of the planning unit's transfer facilities or directly to the combustion facility. The county contracts with Wheelabrator, the operator of the CPRRF, for the disposal of MSW.

The planning unit permits private carters operating in the county and, through an allocation system, apportions access to the CPRRF. The capacity of the CPRRF is reserved for municipalities that joined the RDD. Other private carters throughout the county seek alternative disposal means for their waste stream.

In 1998, the county legislature authorized the county to enter IMAs with RDD municipalities to operate the Organic Yard Trimmings Transfer Facility Program. The program allows participating municipalities to increase local recycling rates by diverting yard trimmings from the waste stream. Participating municipalities collect yard trimmings at a municipal depot. The planning unit arranges collection from the depot and transport to commercial composting facilities. As an economic incentive to divert yard trimmings from the solid waste stream, RDD member municipalities pay less per ton for collected yard trimmings than MSW disposal.

Currently, 21 municipalities host an Organic Yard Trimmings Transfer Facility. These municipalities also agree to accept yard trimmings from neighboring municipalities by hosting these facilities.

In fall 2020, the RDD established the Residential Food Scrap Transportation and Disposal program (RFSTAD) to assist local municipalities seeking to start or maintain programs designed to divert food scraps from the waste stream. Under the RFSTAD, participating municipalities operating either a food scrap drop-off or curbside collection program can transport and dispose of food scraps at a subsidized rate. Participating municipalities can choose to have residential food scraps collected from a residential drop-off collection site by the planning unit's contractor or deliver the food scraps to the contractor's transfer facility directly at a lower rate. The contractor then arranges the transportation and disposal of residential food scraps to an organics recycler. The RFSTAD program began in January 2021. To date, 17 municipalities have fully executed IMAs for the program.

The seven municipalities that are not part of the RDD each have responsibility for managing their solid waste.

The planning unit also offers management of HHW and other waste requiring special handling at its Household Material Recovery Facility by appointment.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.56 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills,

including MSW, C&D debris, industrial waste, and biosolids. Figure E.57 shows the flow of waste for the MSW stream.

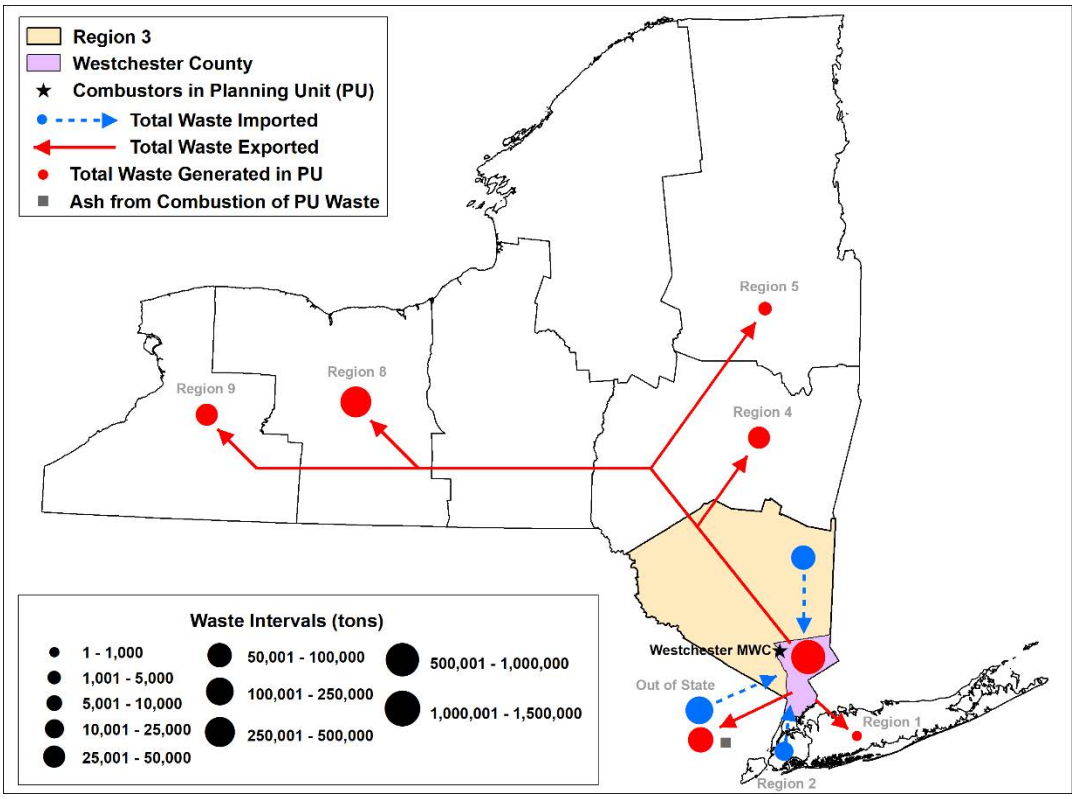


Figure E.56. Westchester County total waste flow

Figure E.56 represents the flow of waste within the Westchester County planning unit in 2018. About 52% of waste generated in the county was processed or disposed of within the planning unit. Approximately 27% of exported waste was sent to Region 8 facilities, about 14% was exported to out-of-state facilities, and the remainder was sent to facilities in Regions 1, 4, 5, and 9.

The waste exported out of state was destined primarily for disposal facilities in Pennsylvania, accounting for 73%. The remaining waste was transported to Connecticut, New Jersey, and Ohio, accounting for 16%, 10%, and 2%, respectively. About 39% of waste exported to out-of-state facilities was MSW, 54% was C&D debris, 5% was biosolids, and 2% was industrial waste.

The planning unit imported waste from other areas, as shown in Figure E.56. Approximately 60% of imported waste was received from out-of-state facilities, 30% from other planning units within Region 3, and the remainder was accepted from Region 2.

Figure E.56 also shows the movement of the ash waste stream. The ash in the figure only represents ash generated as a result of processing MSW generated within the planning unit. All ash generated at the Westchester MWC was from the processing of

MSW. As MSW was processed at the combustion facility, ash residue was generated and transported out of state for disposal. An estimated 96% of ash was sent to Connecticut and the remainder to Massachusetts.

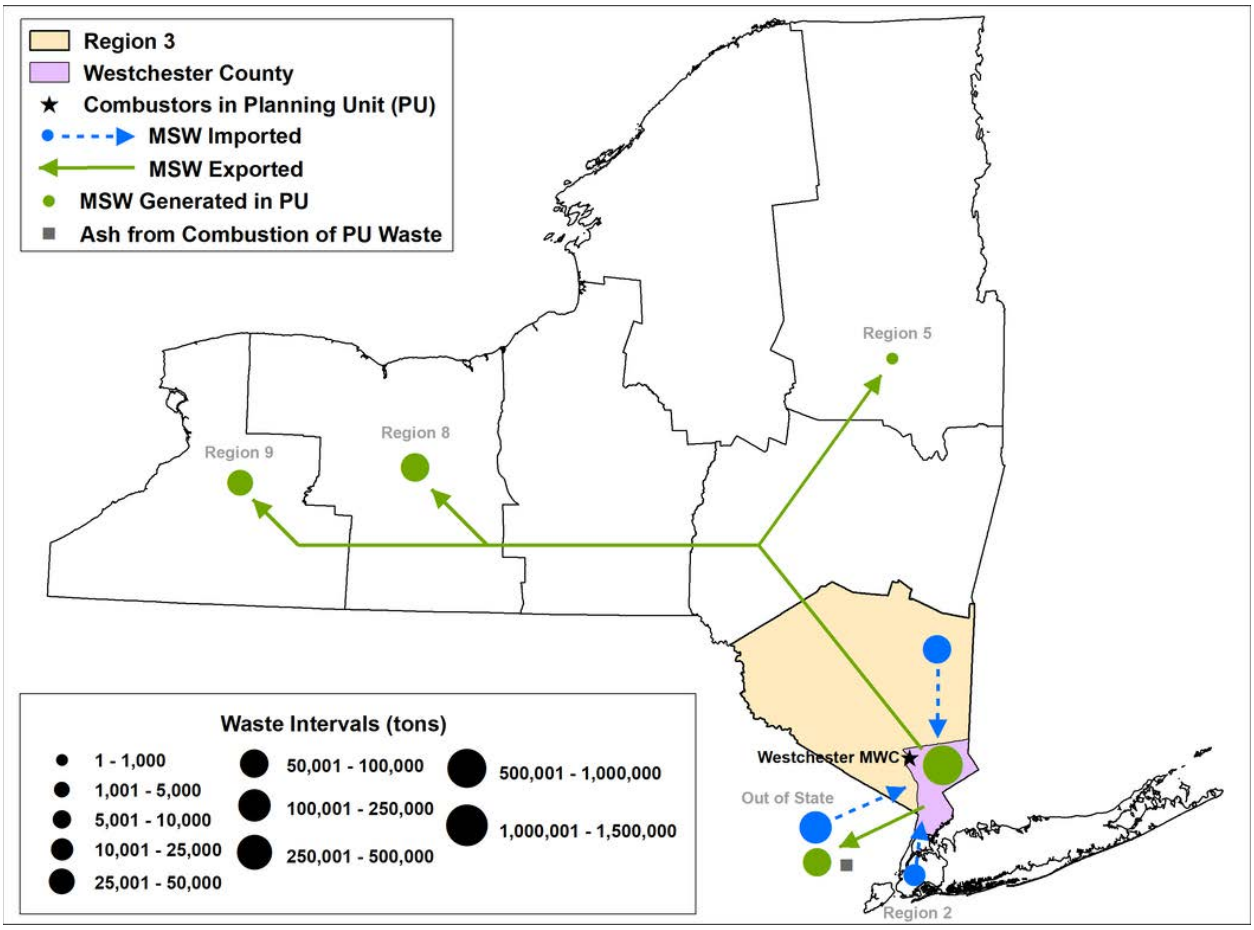


Figure E.57. Westchester County MSW flow

Figure E.57 shows the flow of MSW in the planning unit in 2018. Approximately 76% of the MSW generated in 2018 stayed in the planning unit for processing at the Westchester MWC. The remaining 24% was exported to other planning units or to out-of-state facilities. About 12% was sent to facilities in Region 8, 4% sent to Region 9, and a minimal amount was transported to Region 5. The remaining 8% of MSW exported from the planning unit was shipped to out-of-state facilities in Pennsylvania, which accepted 77%, and New Jersey, which received 11%. Connecticut and Ohio received the remainder of the out-of-state exported MSW.

The ash that resulted from processing the MSW generated by the planning unit at the Westchester MWC is shown in Figure E.57. Ash residue was disposed of at out-of-state landfills, primarily in Connecticut, which accepted 96% of the ash stream, while Massachusetts accepted the remainder.

Figure E.57 also shows that about 60% of imported MSW was received mainly from out of state. MSW from Region 3 accounted for about 30% of the imported MSW and Region 2 accounted for the remaining 10% of imported MSW About 80% of MSW imported into the planning unit was sent to the Westchester MWC for processing, while the remainder was transported to facilities in the planning unit to be consolidated and transferred outside the planning unit for processing or disposal.

The following table provides information on all waste and recovered materials generated in Westchester County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.16. Westchester County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	666,200	157,500**
C&D Debris	270,300	338,500
Industrial	4,700	0
Biosolids	21,900	0
Total	963,100	496,000
MSW disposal rate	3.77 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.16 shows that approximately 1,459,100 tons of waste generated in the planning unit were processed, disposed of, or recovered in 2018. About 496,000 tons, or 34%, were recovered through CDDHRFs or RHRFs, while the remaining 66% was processed or disposed of at landfills.

It was estimated that 823,700 tons of MSW accounted for 56% of all waste generated in the planning unit. About 157,000 tons, or 19%, were recovered through RHRFs, and the remaining 81% of MSW was processed at combustion facilities or disposed of at landfills.

As shown in Table E.16, an estimated 608,800 tons of C&D debris were generated in the planning unit, accounting for 42% of all waste generated in 2018. An estimated 44% of the C&D debris was disposed of, and the remainder was recovered through CDDHRFs. The industrial and biosolids waste streams made up 2% of all waste generated in 2018.

Region 4 Overview and Waste Flow Information

Region 4 consists of 10 planning units and 14 non-affiliated municipalities. The planning units include the Capital Region Solid Waste Management Partnership (CRSWMP), Town of Colonie, Columbia County (except Town of Canaan), Delaware County, Eastern Rensselaer County Solid Waste Management Authority (ERCSWMA), Greene County, Montgomery County, Otsego County, Schenectady County, and Schoharie County. The non-affiliated municipalities are the towns of Berlin, Brunswick, Canaan, Coeymans, Grafton, Hoosick, Nassau, North Greenbush, Petersburg, Poestenkill, Sand Lake, and Schodack; Village of Ravena; and the City of Troy. Region 4 had an estimated population of 912,989 in 2018 (Census, 2019).

The CRSWMP, Town of Colonie, and Schenectady County planning units have a population characteristic of a suburban population density distribution, as their average population density is between 325 and 5,000 people per square mile. Every other planning unit in the region has a population characteristic of a rural population density distribution, as their average population density is less than 325 people per square mile. Independent of each planning unit's average population density distribution, urban, suburban, and rural areas might be within each planning unit's boundaries.

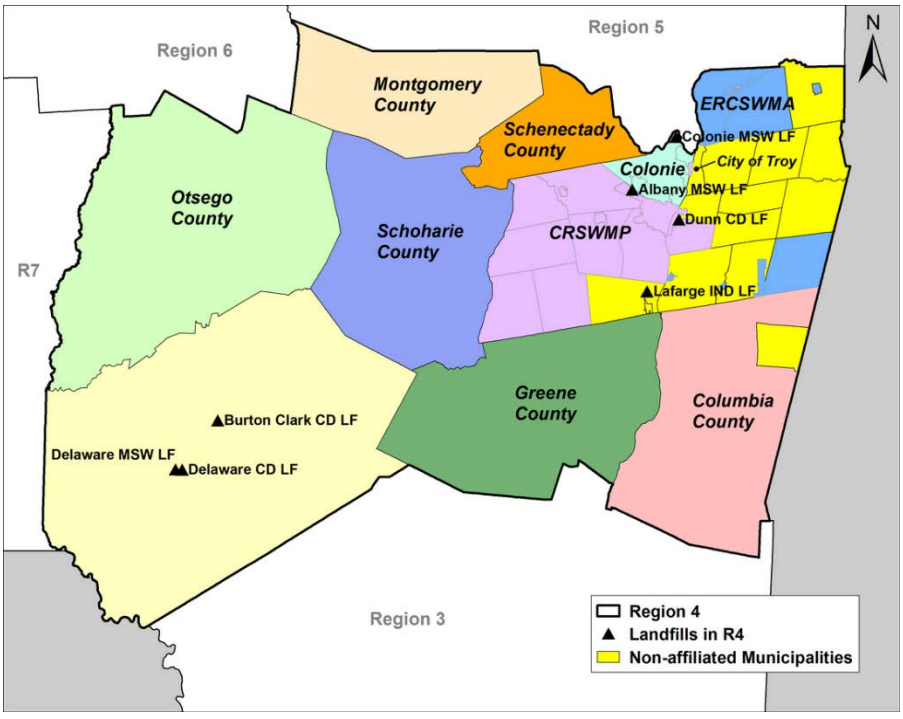


Figure E.58. Region 4 planning units

The figure above shows that Region 4 has MSW, industrial, and C&D debris landfills. The region has three C&D debris landfills, Dunn Landfill, Delaware County C&D Debris Landfill, and Burton Clark Landfill. Also, in Region 4 are three MSW landfills, Albany Landfill, Colonie Landfill, and Delaware County; and one industrial landfill, the Lafarge

Industrial Landfill the Town of Coeymans. Not all the MSW generated within the region is disposed of at the MSW landfills in Region 4. Some waste is exported for disposal to other facilities in and out of state. This region also has a unique composting facility in Delaware County. The composting facility is one of only a dozen such facilities in the U.S. and Canada, as it is operated as a mixed waste plant. It receives and processes dewatered biosolids from wastewater treatment plants and the non-separated portion of the MSW waste stream.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 4 in 2018. Figure E.59 represents the flow of all waste destined for processing at combustion facilities and disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Similarly, Figure E.60, Figure E.61, Figure E.62 show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

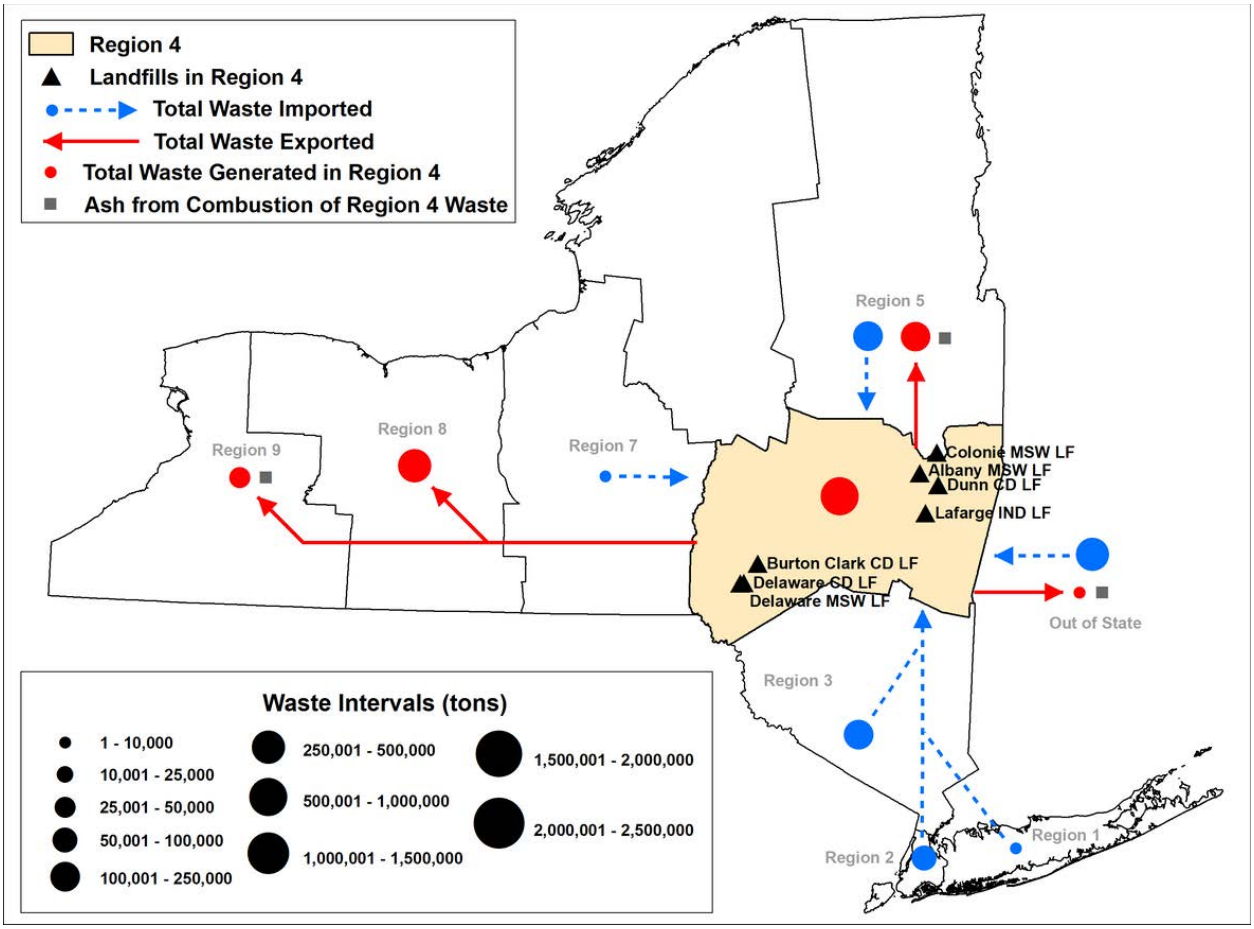


Figure E.59. Region 4 total waste flow

Figure E.59 shows that a substantial portion of the region's generated waste in 2018 was disposed of locally in the landfills, accounting for 47%. The remaining waste was exported to in-state and out-of-state facilities for processing or disposal. Only 1% was exported to other states, mainly to Massachusetts. Regions 5, 8 and 9 accepted about

11%, 38%, and 3%, respectively, of the waste. About 61% of waste exported to out-of-state facilities was MSW, 22% was C&D debris, 15% was industrial waste, and 2% was biosolids.

Figure E.59 also shows that waste is imported from other regions and states for disposal at the local landfills or to be transferred to other facilities for processing or disposal outside of the region. About 76% of waste imported was C&D debris and 18% was MSW. Regions 2, 3, 5, and 7 were responsible for an estimated 16%, 16%, 18%, and 1%, respectively, of waste imported into Region 4 in 2018. Minimal amounts were imported from Region 1. All waste imported from Regions 1 and 2 was C&D debris.

About 53% of waste imported into the region in 2018 came from other states. Waste imported from Massachusetts accounted for 60% of all out-of-state imported waste, Connecticut for 27%, and Rhode Island for 8%. The remaining waste was imported from Vermont and New Hampshire.

Figure E.59 also shows the movement of the ash waste stream. The ash in the figure represents ash generated as a result of the processing of waste from the region at combustion facilities in Regions 5 and 9. About 61% of ash generated as a result of the combustion of the region's generated waste was used as AOC at in-state landfills in Regions 5 and 9; the remaining 39% was sent to out-of-state landfills in Massachusetts.

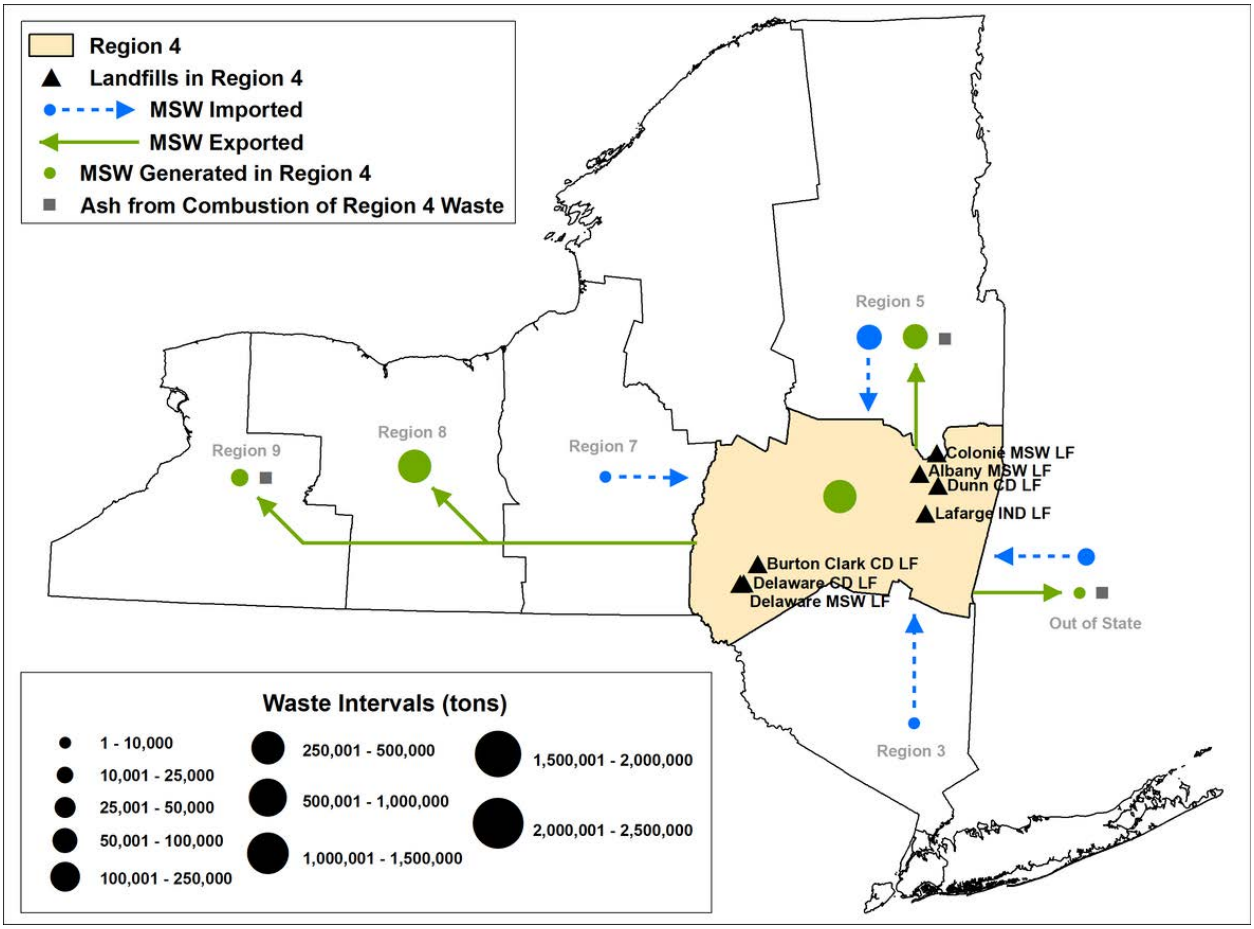


Figure E.60. Region 4 MSW flow

Figure E.60 represents the flow of MSW in Region 4. About 39% of MSW was disposed of locally, while 46%, 12%, and 2% of the waste was transported to be processed or disposed of in Regions 8, 5, and 9, respectively. Only 1% of waste was transported to out-of-state facilities, mainly to Massachusetts.

Region 4 also accepted MSW waste from out of state and Regions 3, 5, and 7 in 2018; Figure E.60 shows this as imported waste. Approximately 79% of MSW imported into the region originated in Region 5. Waste imported from Region 7 accounted for 3%, and minimal amounts were accepted from Region 3. Around 18% of imported waste came from out of state, primarily from Massachusetts. This waste went through the region to be consolidated and transferred to other facilities outside the region for processing or disposal

Figure E.60 also shows the movement of the ash waste stream. As MSW was generated in the planning unit and processed at combustion facilities in Regions 5 and 9, ash residue was generated and transported for disposal or use as AOC at landfills within the same regions and out of state. About 61% of ash generated as a result of the combustion of the region's waste was used as AOC at landfills in Regions 5 and 9, the remaining 39% was sent to out-of-state landfills in Massachusetts.

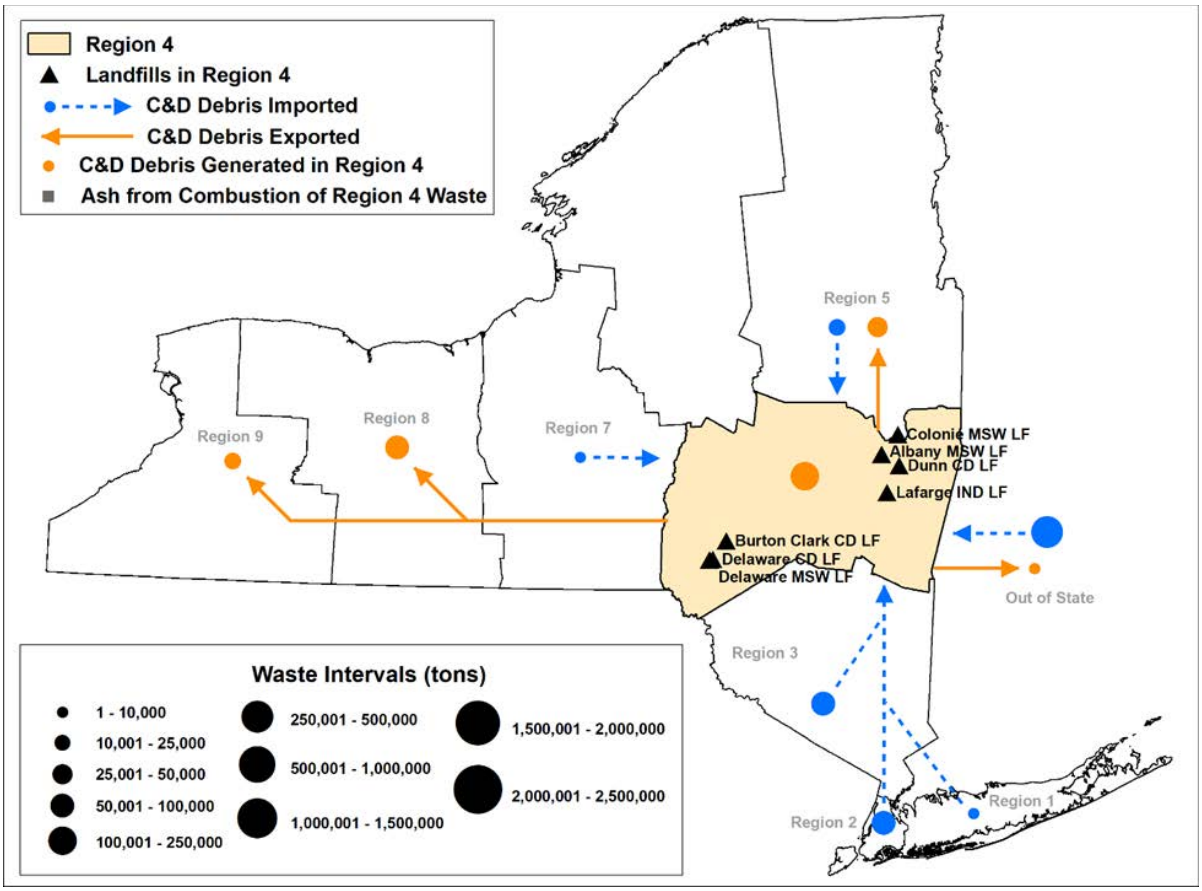


Figure E.61. Region 4 C&D debris flow

Figure E.61 represents the C&D debris flow for processing or disposal into and out of the region. An estimated 46% of the C&D debris waste stream generated in Region 4 was disposed of at local C&D debris landfills. Region 8 received about 35%, 11% was exported to Region 5, and Region 9 accepted 8%. Minimal amounts were sent out of state.

About 76% of all waste imported into the region in 2018 was C&D debris. Figure E.61 shows C&D debris imported from out of state and Regions 1, 2, 3, 5, and 7. About 63% of the imported C&D debris originated outside of of state, primarily in Massachusetts and Connecticut. An equal 16% of C&D debris imported was received from Regions 2 and 3, and about 4% was accepted from Region 5. Minimal amounts were received from Regions 1 and 7.

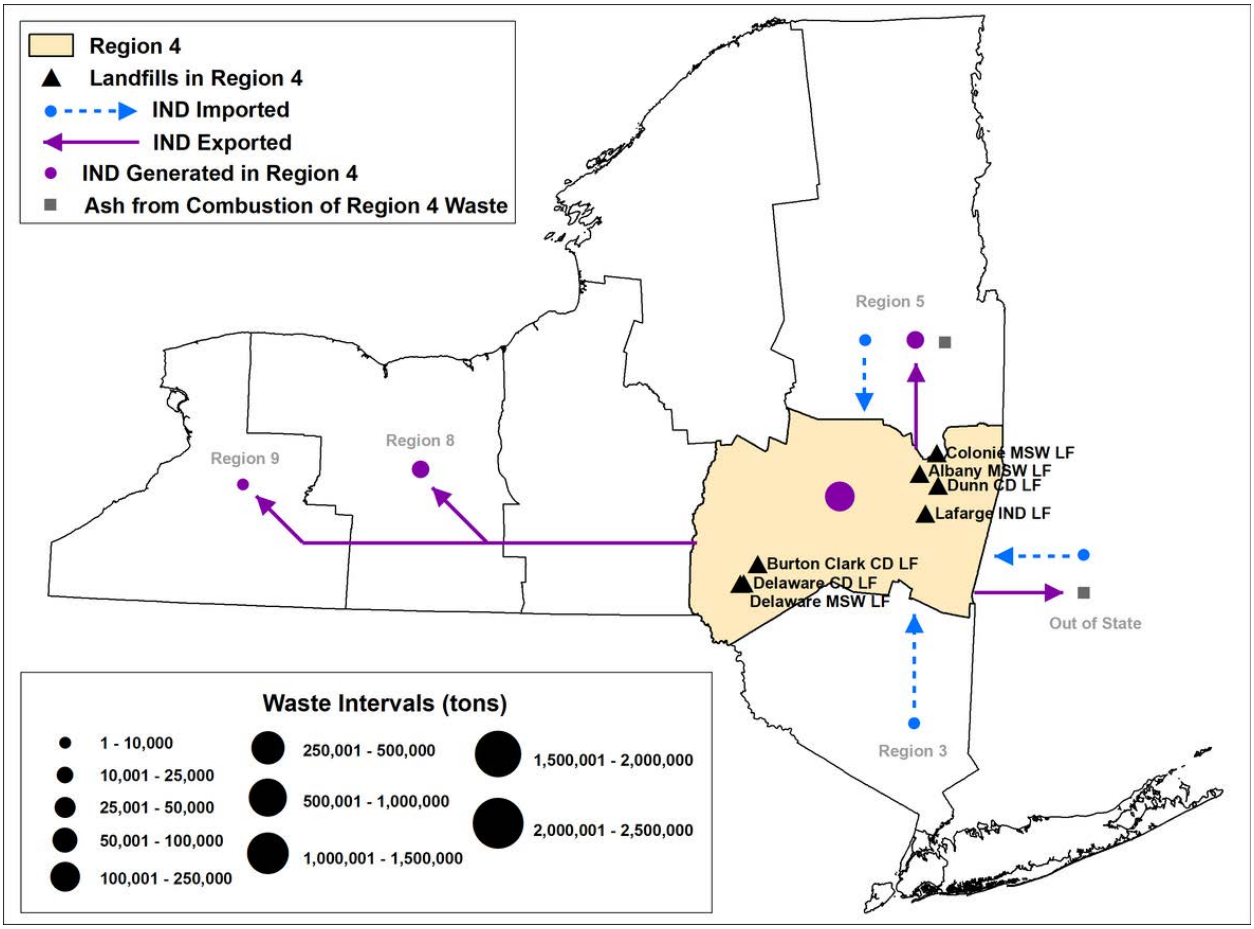


Figure E.62. Region 4 industrial waste flow

Figure E.62 shows the movement of industrial waste into and out of Region 4. An estimated 79% of industrial waste generated in Region 4 was disposed of at the local industrial landfill. Approximately 12% was sent to Region 8, 9% was exported to Region 5 to be combusted in the combustion facility, and small amounts were sent to Region 9.

Figure E.62 shows that industrial waste was also imported into the region. According to estimates, only 1% of imported waste was industrial waste, of which approximately 90% originated out of state. Other imported industrial waste came from Regions 3 and 5.

Figure E.62 also shows the movement of the ash waste stream. As industrial waste was generated in the planning unit and processed at an combustion facility in Region 5, ash residue was generated and transported for disposal or use as AOC at landfills within the same region and out of state, in Massachusetts. An estimated 88% of the ash residue was destined for landfills in Massachusetts, and the remaining 12% was used as AOC at Region 5 landfills.

Table E.17. Region 4 organics recycling summary

Anaerobic Digestion - No facilities	
Composting	
Source-Separated Organics	19,735 tons
Food Processing Waste	115 tons
Yard Trimmings	50,164 tons
Biosolids	8,602 tons
Land Application	
Biosolids	0 tons
Food Processing Waste	823 tons

There are 14 composting operations in Region 4 that compost source-separated organics and yard trimmings, 3 biosolids composting operations, 8 food-processing waste land-application operations, no operating anaerobic digesters, and no biosolids land application operations. Table E.17 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all the waste and recovered materials generated in Region 4 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs, RHRFs, composting facilities, and land application facilities.

Table E.18. Region 4 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	699,900	267,899
C&D Debris	251,100	479,000
Industrial	168,500	2,768
Biosolids	25,210	8,602
Total	1,144,710	758,269
MSW disposal rate	4.02 lbs/person/day	

* The heavy metal category is not included in the values in this table.

Table E.18 shows that about 1.9 million tons were processed, disposed of, or recovered in 2018. An estimated 758,269 tons were recovered through CDDHRFs, RHRFs, composting facilities, or land application facilities, accounting for 40% of total waste generated. About 1.14 million tons of waste were destined for processing or disposal, accounting for 60% of all waste generated.

According to estimates, and as shown in Table E.18, in 2018, the MSW stream accounted for approximately 51% of waste generated in the region, C&D debris for 38%, industrial waste for about 9%, and biosolids for the remaining 2%.

Table E.18 shows that approximately 967,799 tons of MSW were generated within the planning unit in 2018. About 72% of MSW was processed or disposed of, and 28% was recovered through RHRFs and composting facilities. About 730,100 tons of C&D debris were generated in the region. Approximately 34% was destined for disposal and 66% was recovered through CDDHRFs.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 4. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit. This section also includes information about municipalities in this region that are not currently affiliated with a recognized planning unit. The non-affiliated municipalities are discussed after the planning unit where the municipality is located.

Capital Region Solid Waste Management Partnership

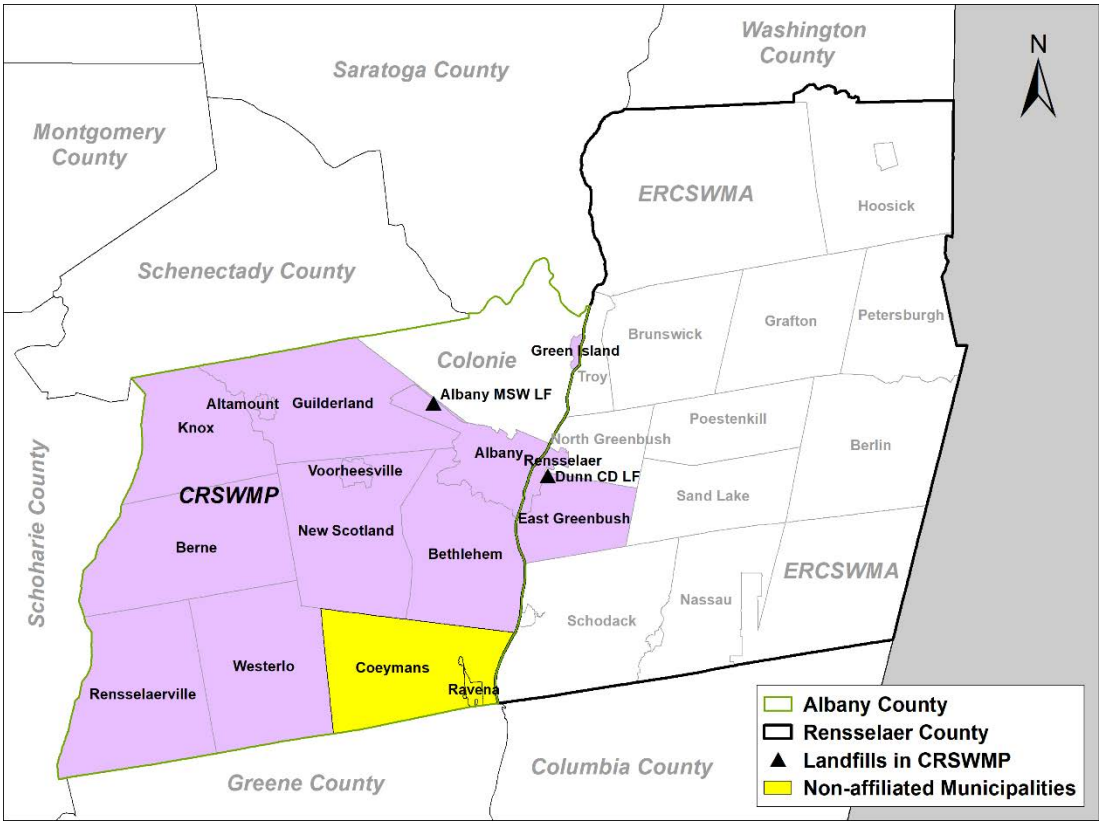


Figure E.63. CRSWMP planning unit

The Capital Region Solid Waste Management Partnership (CRSWMP) serves as the planning unit for the cities of Albany and Rensselaer; the towns of Berne, Bethlehem, East Greenbush, Guilderland, Knox, and New Scotland; and the villages of Rensselaerville, Westerlo, Altamont, Green Island, and Voorheesville, as shown in Figure E.63. While the CRSWMP planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are rural areas within the planning unit. In 2018, it serviced an estimated population of 215,142 (Census, 2019). CRSWMP, formerly known as ANSWERS, has operated a regional waste system serving these communities since 1981.

The City of Albany has functioned as the host community and lead municipality for the CRSWMP. Each planning unit member manages its solid waste program separately. Each planning unit member offers its residents solid waste and recycling guidelines and ancillary programs such as HHW collection events. The collection method of MSW varies per member of the planning unit and type of generator. MSW can be collected by the local municipality or a private waste collection company, or self-hauled by the waste generator to a transfer site or disposal facility.

The City of Albany Department of General Services is responsible for day-to-day operations of the Rapp Road Landfill, which serves as a disposal site for some of the waste generated by members of the CRSWMP. There is also the Dunn Landfill, a privately owned and operated C&D debris landfill in the City of Rensselaer.

LSWMP Status	The planning unit's LSWMP is approved through 2023.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.64 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.65 shows the flow of waste for the MSW stream.

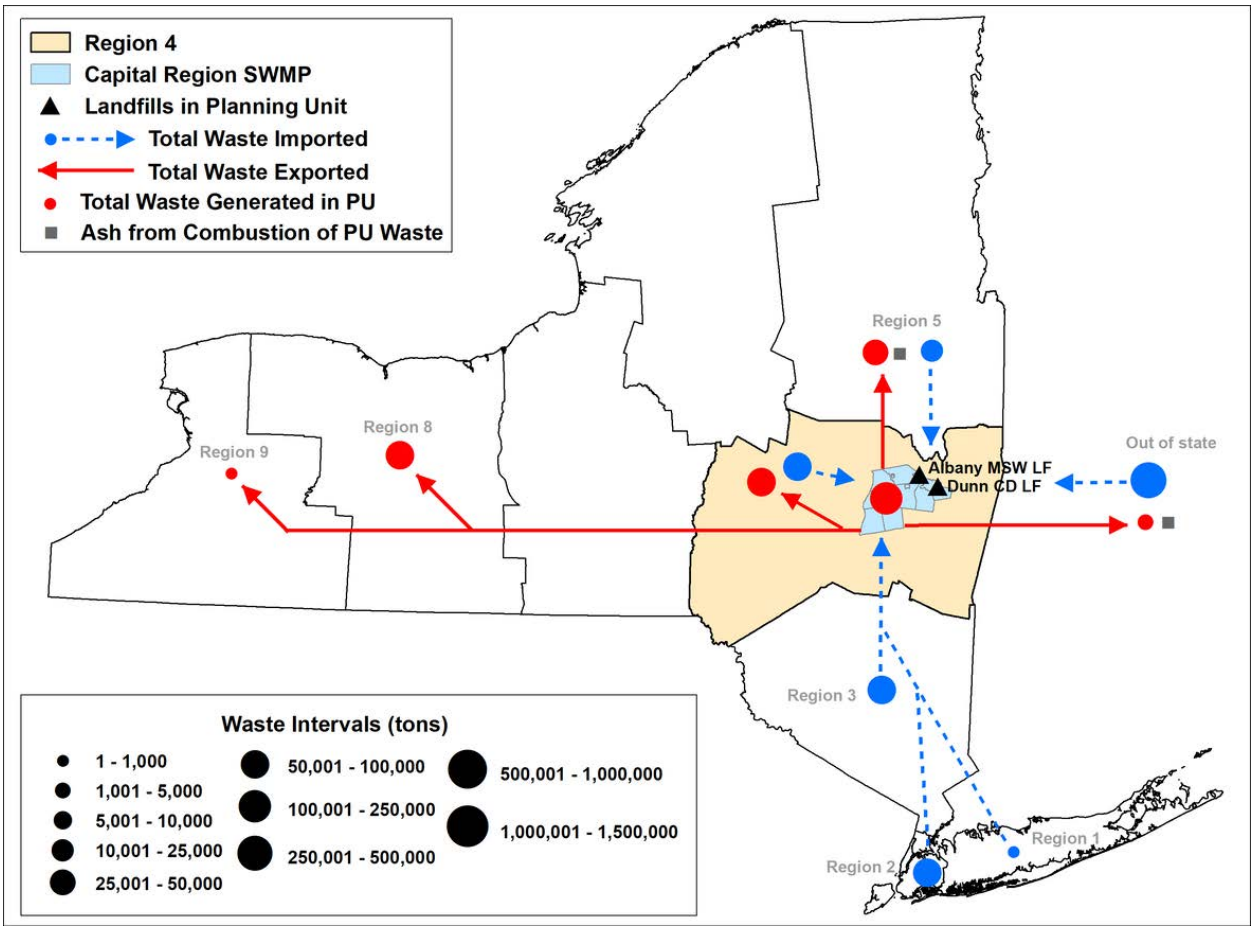


Figure E.64. CRSWMP total waste flow

Figure E.64 represents the flow of waste in the CRSWMP planning unit in 2018. Around 37% of waste was disposed of in the planning unit at the Rapp Road and Dunn landfills. About 31% was sent to other planning units in the region, and the remainder was exported to Regions 5, 8, and 9, and to out-of-state facilities. Most of the exported

waste was sent to Region 5 and 8 facilities, accounting for approximately 12% and 19%, respectively. Minimal amounts were exported to Region 9 and to out-of-state facilities.

Figure E.64 also shows the movement of the ash waste stream. As MSW and industrial waste generated in the planning unit was processed at a combustion facility in Region 5, ash residue was generated and transported to in-state and out-of-state landfills for disposal. About 12% of ash generated as a result of the combustion of CRSWMP waste stayed in Region 5 for use as AOC at landfills, while the remaining 88% was sent to out-of-state landfills in Massachusetts.

Waste was also imported to the CRSWMP planning unit, as shown in Figure E.64. About 55% of imported waste in 2018 originated in other states. Waste was also imported from other planning units in the region and from Regions 1, 2, 3, and 5. Waste from Regions 2 and 3 and from other planning units in Region 4 accounted for 15%, 14%, and 13%, respectively. Minimal amounts were imported from Regions 1 and 5. According to estimates, about 99% of imported waste was C&D debris disposed of at the Dunn Landfill.

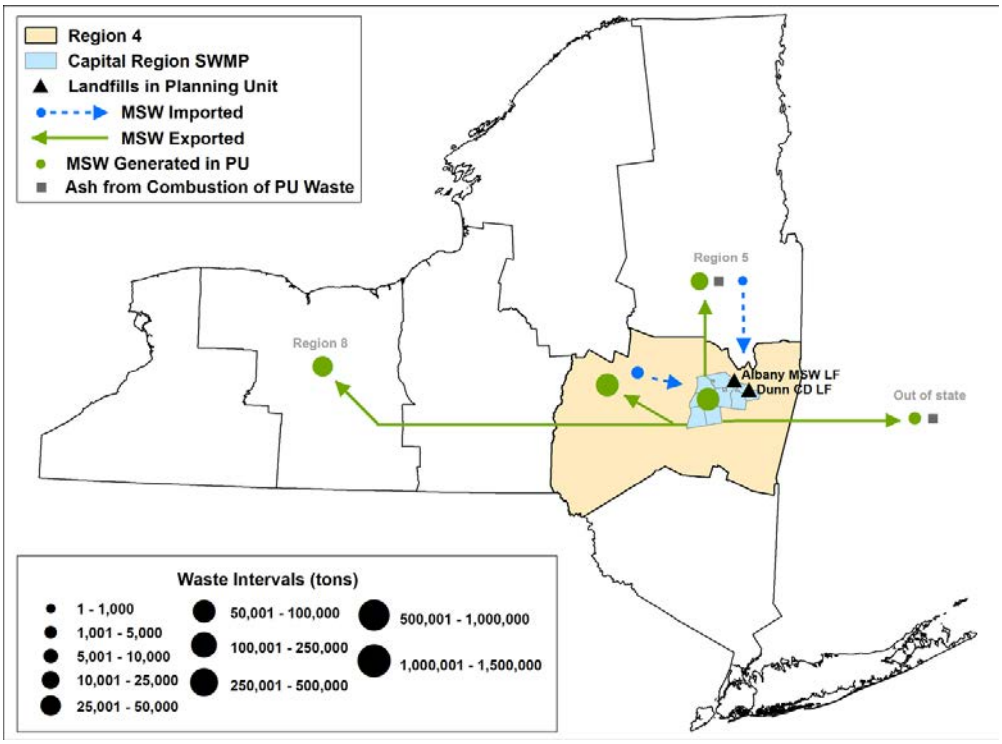


Figure E.65. CRSWMP MSW flow

Figure E. 65 shows the movement of MSW into and out of the planning unit in 2018. Approximately 39% of MSW generated was disposed of in the planning unit at the Rapp Road Landfill, and about 35% was disposed of at other planning units within Region 4. MSW was also exported to be processed at combustion facilities or disposed of at landfills outside Region 4. Region 5 received 8% of the MSW and Region 8 accepted

18%. Small amounts, accounting for the remaining MSW, were exported to out-of-state facilities, primarily in Massachusetts.

A portion of the MSW that was generated in the planning unit was exported to Region 5 for processing at a combustion facility. Figure E.65 also shows the movement of the ash residue stream generated through the processing of MSW. Ash residue generated from the combustion of Region 4 MSW was transported to in- and out- of-state landfills for disposal or use as AOC. About 88% of the ash was sent to out-of-state landfills in Massachusetts, while the remaining 12% was used as AOC at a Region 5 landfill.

Figure E.65 also shows that imported MSW was received mainly from other planning units within the region, which accounted for 87%. The remaining 13% was accepted from Region 5. MSW only accounted for 1% of all waste imported into the planning unit in 2018.

The following table provides information on all waste and recovered materials generated in CRSWMP by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E. 19. CRSWMP waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	204,200	98,000**
C&D Debris	59,300	118,000
Industrial	22,900	50
Biosolids	7,030	0
Total	293,430	216,050
MSW disposal rate	5.20 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E. 19 shows that approximately 509,480 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. About 42% were recovered through CDDHRFs or RHRFs, accounting for 216,050 tons, while the remaining 58% was sent for processing at combustion facilities or disposal at landfills. Approximately 302,200 tons of MSW were generated in the planning unit, accounting for 59% of waste generated in 2018. About 204,200 tons, or 68% of the MSW, were processed or disposed of, and 98,000 tons, or 32%, were recovered through RHRFs.

As shown in Table E. 19, an estimated 177,300 tons of C&D debris were generated in the planning unit, accounting for 35% of all the waste generated in 2018. An estimated 33% of the C&D debris waste stream was disposed of, with 67% recovered through CDDHRFs. The industrial waste and biosolids waste stream made up 5% and 1%, respectively, of all waste generated in 2018.

Town of Colonie

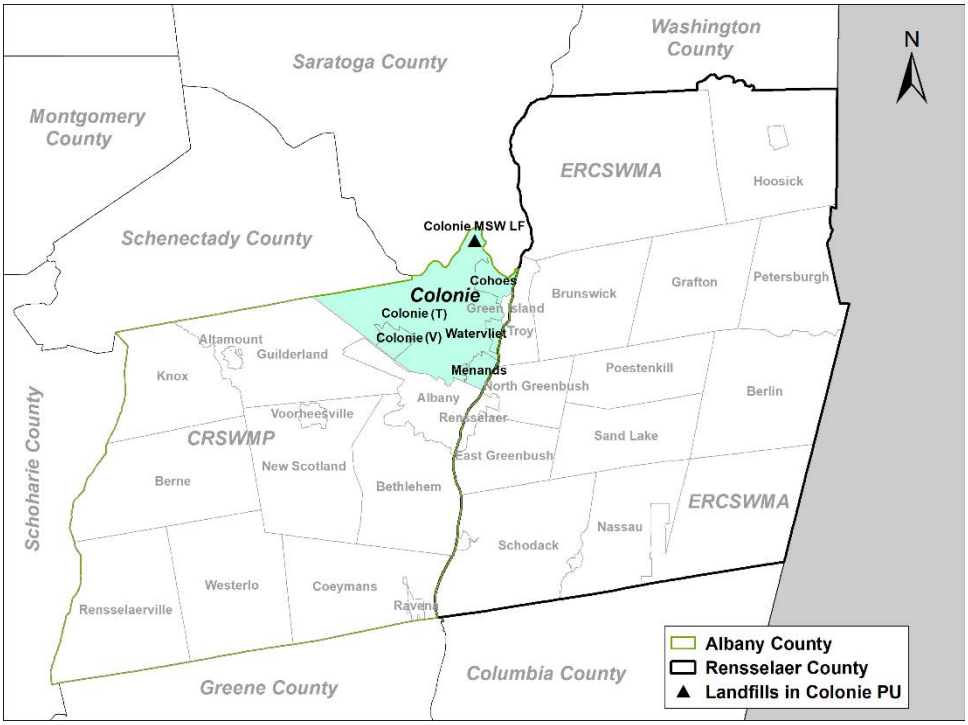


Figure E.66. Town of Colonie planning unit

As shown in Figure E.66, the Town of Colonie serves as the planning unit for the cities of Cohoes and Watervliet, the villages of Colonie and Menands, and the Town of Colonie. While the planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are urban areas within its boundaries. In 2018, it serviced an estimated population of 109,690 (Census, 2019).

There is no formal agreement between planning unit members as to the administration of the planning unit, though the Town of Colonie leads the efforts of administering the planning unit. Collection of MSW and recyclables is performed by the member municipalities' workforce, except for the Town of Colonie, where its residents procure this service through a private hauler. Residents of the planning unit can also opt to drop off waste at a residential drop-off facility. The planning unit members continue to engage in education, program promotion, and public outreach, which are publicized through municipal publications and websites.

The Town of Colonie owns the Colonie Landfill, which is operated privately under contract and serves as the planning unit's primary MSW disposal facility. The Town of Colonie runs a HHW storage and transfer facility at the landfill site and holds drop-off days three times a year. The City of Cohoes also offers its residents an annual HHW collection day.

LSWMP Status	The planning unit's LSWMP is approved through 2027.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.67 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E. 68 shows the flow of waste for the MSW stream.

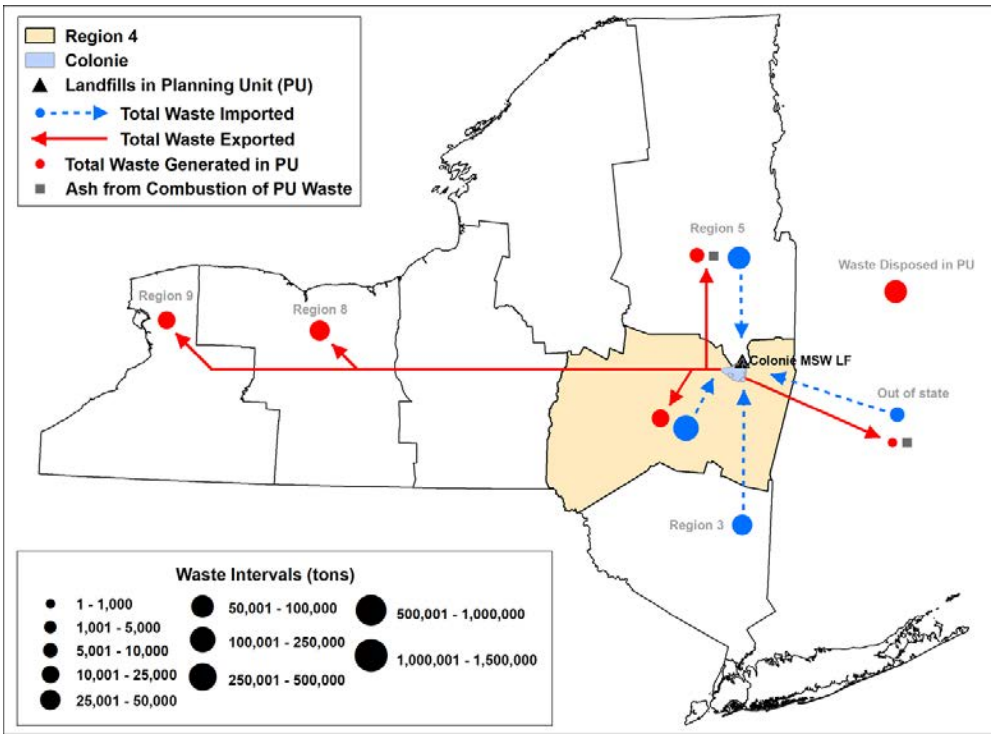


Figure E.67. Town of Colonie total waste flow

Figure E.67 represents the flow of waste within the Town of Colonie planning unit in 2018. About 45% of waste generated by the planning unit was disposed of within the planning unit. About 10% was disposed of at facilities within the region, and the remainder was exported to facilities outside the planning unit. The majority of exported waste, 25%, was destined for facilities in Region 8. Region 5 and 9 accepted about 6% and 14%, respectively. Small amounts of waste were exported to out-of-state facilities in Massachusetts. An estimated 48% of exported waste was MSW, 42% was C&D debris, 6% was industrial waste, and 4% was biosolids.

Figure E.67 shows the movement of ash generated from processing planning unit waste in 2018 at combustion facilities. Waste generated within the planning unit was exported to be processed at a combustion facility in Region 5. Ash residue generated from the combustion of planning unit waste was destined for out of state and Region 5 landfills, accounting for 88% and 12%, respectively. Ash residue was used as AOC at Region 5 landfills. The planning unit also accepted waste from other planning units within the region, out of state, and Regions 3 and 5; this is shown in Figure E.67 - Town of Colonie Total Waste Flow. An estimated 53% of imported waste originated in other planning units within the region. About 33% was imported from Region 5 and 11% from Region 3. A minimal amount, 3%, was imported from out of state.

Approximately 79% of imported waste was MSW, 7% was C&D debris, 4% was industrial waste, and 2% was biosolids. The remainder was ash residue imported from Region 3.

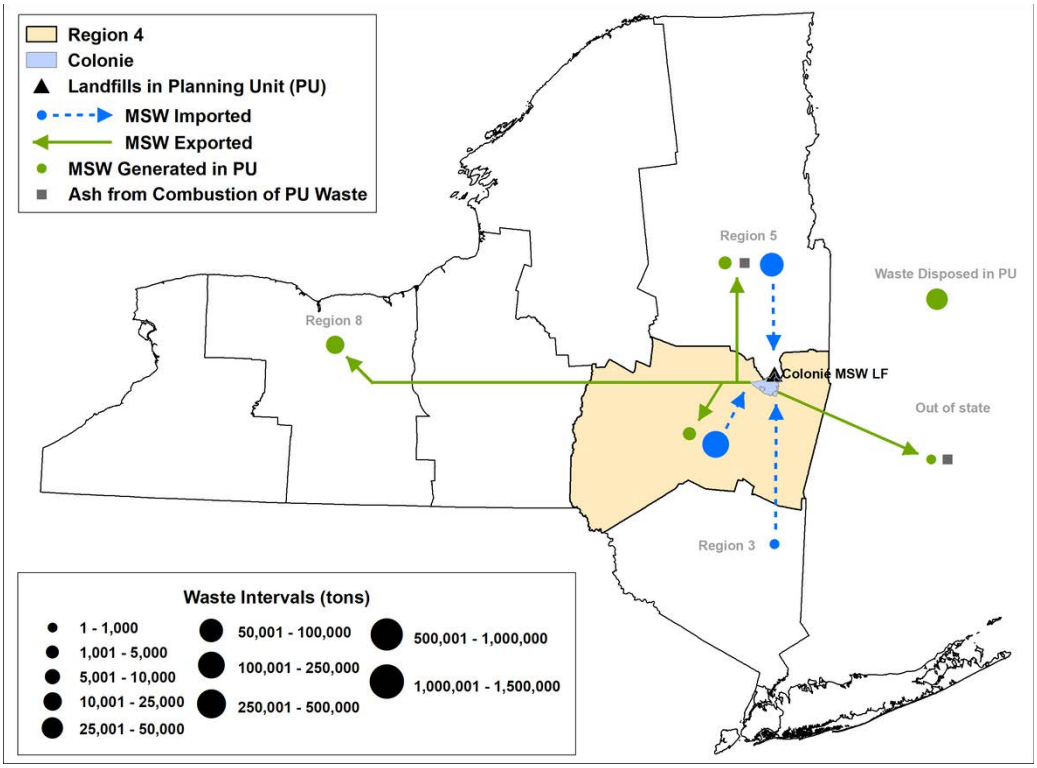


Figure E.68. Town of Colonie MSW flow

Figure E. 68 shows the flow of MSW in the planning unit in 2018. As shown in the figure, around 59% of MSW was disposed of within the planning unit at the Town of Colonie Landfill. Approximately 36% of MSW was sent to disposal facilities in Region 8, and minimal amounts were sent to other planning units in Regions 4 and 5, and out of state.

Figure E. 68 also shows movement of the ash waste stream, which was generated from processing of the planning unit's MSW at a combustion facility in Region 5. Ash residue

was determined to be transported to out-of-state and Region 5 landfills, accounting for 88% and 12%, respectively. Ash residue was used as AOC at a Region 5 landfill.

Figure E. 68 also shows that 60% of imported MSW was received from other planning units within the region. The remaining 40% of imported MSW was accepted from Region 5. A negligible amount of MSW was accepted from Region 3.

The following table provides information on all waste and recovered materials generated in the Town of Colonie by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.20. Town of Colonie waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	64,500	23,800**
C&D Debris	56,500	18,100
Industrial	8,100	0
Biosolids	4,800	0
Total	133,900	41,900
MSW disposal rate	3.22 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E. 20 shows that approximately 175,800 tons of waste generated in the planning unit were processed, disposed of, or recovered. It was estimated that of all waste generated in the planning unit, about 41,900 tons, or 24%, were recovered through RHRFs or CDDHRFs. The remaining 76% was sent for processing at combustion facilities or for disposal at landfills. Approximately 88,300 tons of MSW were generated. About 64,500 tons, or 73%, of MSW were disposed of; and 23,800 tons, or 27%, were recovered through RHRFs. Of the C&D debris generated in the planning unit, 24% was recovered through CDDHRFs, with the remaining 76% disposed of at landfills.

Table E. 20 shows the MSW stream accounted for 50% of waste generated in 2018 in this planning unit; C&D debris for 42%; industrial waste for 5%; and biosolids for the remainder.

Albany County - Non-affiliated municipalities

There are two non-affiliated municipalities within Albany County: the Town of Coeymans and the Village of Ravena. Neither of these non-affiliated municipalities has a CRA in place, and waste flow information is limited. Figure E.63 also depicts the location of these two non-affiliated municipalities.

Town of Coeymans

The Town of Coeymans is a town in the southeastern part of Albany County. It has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. In 2018, it serviced an estimated population of 4,115 (Census, 2019). The town holds an annual Recycle Day, and its residents must procure the collection of MSW and recyclables from private haulers.

Village of Ravena

Ravena is a village in Albany County located in the southeast part of the Town of Coeymans. It has an average population density of between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. In 2018, it serviced an estimated population of 3,188 (Census, 2019).

Columbia County

Columbia County is located in eastern New York and is primarily a rural, agricultural community. The county serves as the planning unit for 18 towns, 4 villages, and 1 city. While the Columbia County planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are rural areas within the planning unit. In 2018, it serviced an estimated population of 58,167 (Census, 2019). The county has several residential convenience facilities where planning unit residents are charged per bag through a "bags and punch cards" system that encourages waste reduction and promotes reuse, recycling, and material diversion from the waste stream. Columbia County has an agreement with a third-party company to transport and dispose of non-recyclable MSW and C&D debris at upstate landfills.

LSWMP Status	The planning unit's approved LSWMP expired in 2015. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.69 represents the flow of all waste destined for processing at combustion facilities and disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.70 shows the flow of waste for the MSW stream.

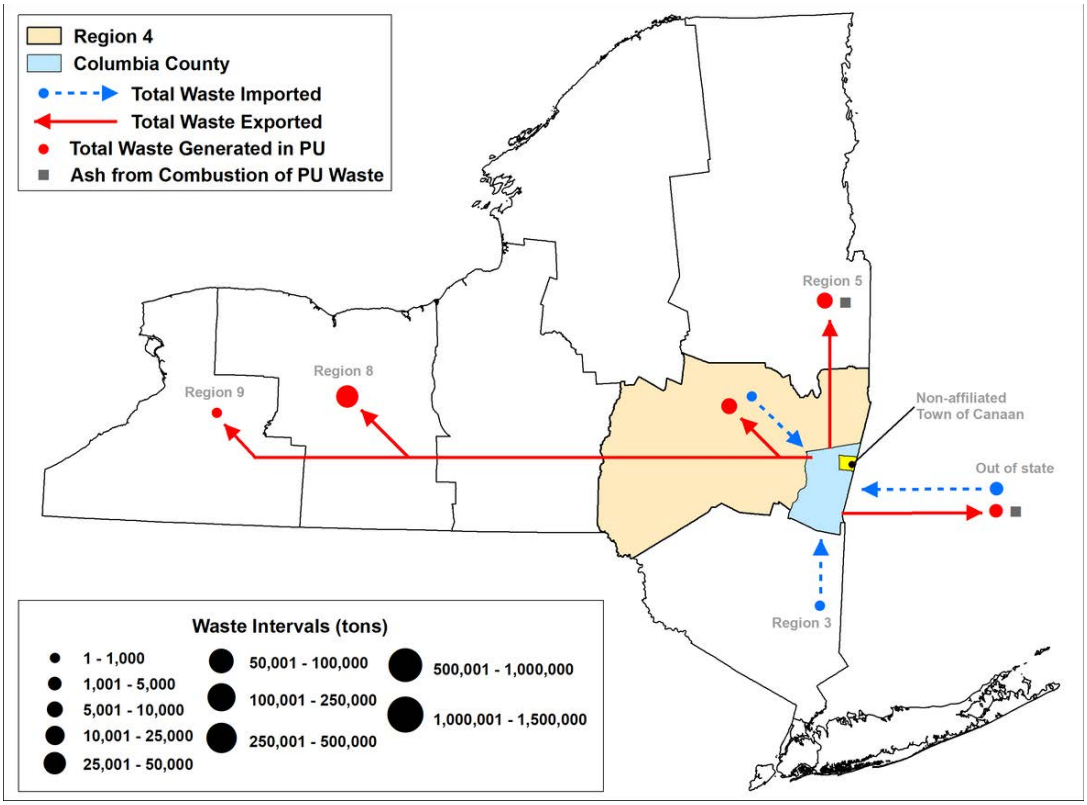


Figure E.69. Columbia County total waste flow

Figure E.69 represents the flow of waste in the Columbia County planning unit in 2018. As shown in the figure, 100% of waste is exported to facilities outside the planning unit. Most waste was sent to in-state facilities as about 69% was sent to Region 8 and 14% to Region 5. Other planning units within the region received 10% and negligible amounts went to Region 9. The remaining 7% was sent to out-of-state facilities in Massachusetts.

Figure E.69 also shows the movement of ash generated from the processing of waste in 2018 at combustion facilities. Waste generated within the planning unit was exported to Region 5 to be processed at a combustion facility. According to estimates, 12% of ash generated from the processing of the planning unit's waste at the combustion facility in Region 5 was used as AOC within the same region, while the rest was exported out of state to facilities in Massachusetts.

The planning unit also accepted waste from out of state, from Region 3, and from other planning units within Region 4; this is shown in Figure E.69. Imported waste went to facilities in the planning unit for consolidation and transfer to be processed at combustion facilities or disposed of at landfills outside the planning unit.

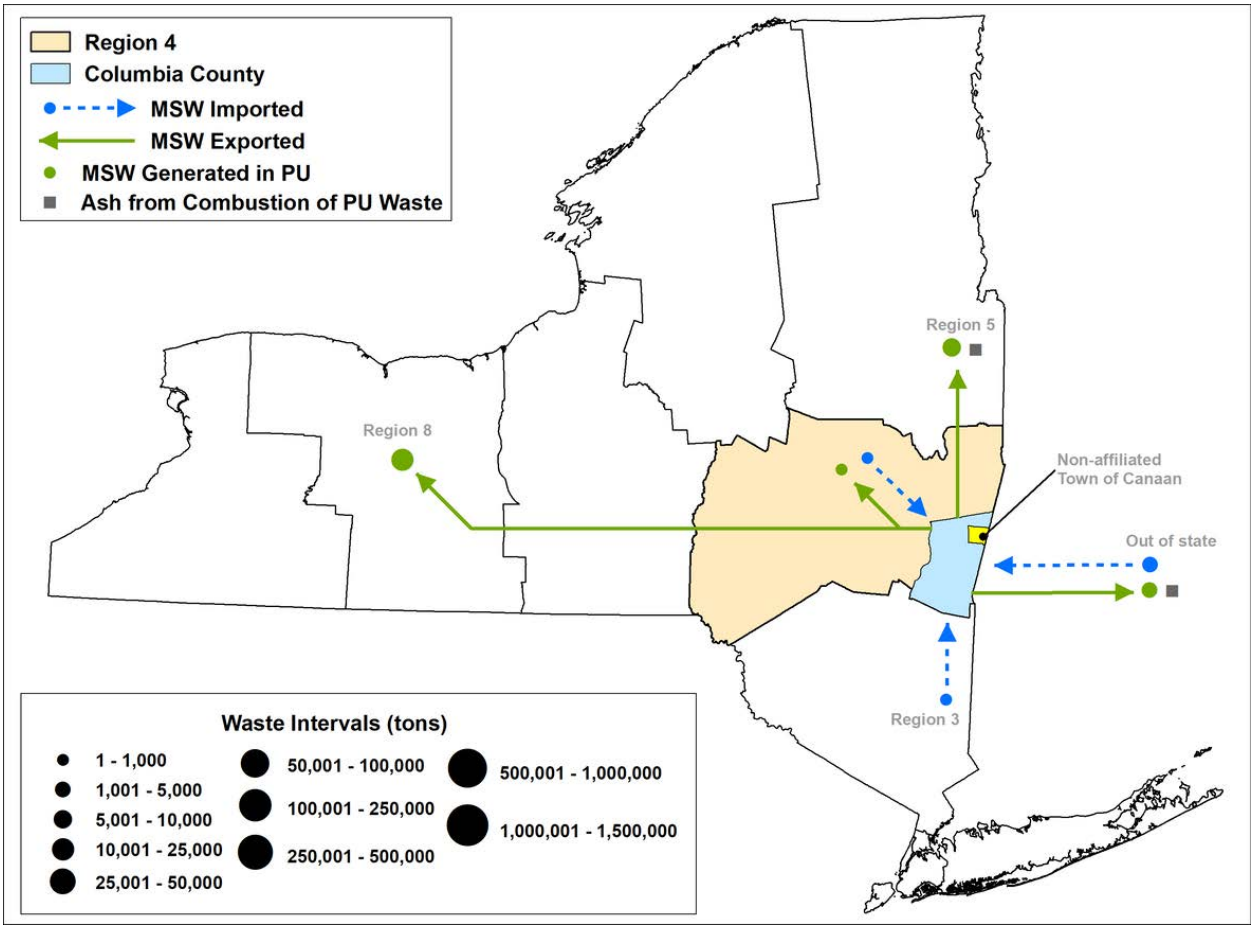


Figure E.70. Columbia County MSW flow

Figure E.70 shows the flow of MSW into and out of the planning unit in 2018. As seen in the figure, 100% of MSW generated in this planning unit was exported to facilities outside the planning unit. Approximately 72% of the MSW generated was sent for disposal to Region 8, about 16% to Region 5, and around 11% to out-of-state facilities in Massachusetts. Small amounts were sent to other planning units within Region 4.

Figure E.70 also shows the movement of the ash waste stream, which was generated from the processing of MSW at a municipal combustor in Region 5. Ash residue generated was sent to in- and out-of-state landfills. Ash residue transported to Region 5 landfills was used as AOC and was estimated to represent 12% of ash residue generated. The remaining 88% was transported to out-of-state landfills in Massachusetts.

Figure E.70 also shows that about 95% of imported MSW was received from out-of-state facilities in Massachusetts. The remaining 5% was accepted from other planning units in Regions 4. Minimal amounts of MSW were received from Region 3. The imported waste went to facilities in the planning unit for consolidation and was transferred to facilities outside the planning unit for processing or disposal.

The following table provides information on all the waste and recovered materials generated in Columbia County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.21. Columbia County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	33,700	6,000**
C&D Debris	19,900	27,500
Industrial	20	0
Biosolids	1,820	0
Total	55,440	33,500
MSW disposal rate	3.17 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.21. Columbia County waste summary shows that approximately 88,940 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. According to estimates, about 33,500 tons, or 38%, were recovered through CDDHRFs and RHRFs. The remaining 62% was processed or disposed of at landfills.

Approximately 39,700 tons of MSW were generated. About 33,700 tons, or 85%, were disposed of, and 6,000 tons, or 15%, were recovered through RHRFs. Of the C&D debris generated in the planning unit, 58% was recovered, with the remaining 42% disposed of at landfills.

About 53% of all waste generated in Columbia County in 2018 was C&D debris, 45% was MSW, 2% was biosolids, and a negligible amount was industrial waste.

Columbia County - Non-affiliated municipality

There is one non-affiliated municipality in Columbia County, the Town of Canaan. Even though this town is located within the boundaries of Columbia County, it is not part of the planning unit. The town does not have a CRA in place and waste flow information is not available. Figure E.69 also depicts the location of this non-affiliated municipality.

Town of Canaan

The Town of Canaan is located in the northeastern part of Columbia County and borders Massachusetts. It has an average population density of less than 325 people per square

mile, characteristic of rural population density distribution. In 2018, it serviced an estimated population of 1,618 (Census, 2019).

Canaan residents may dispose of MSW at a transfer facility using a sticker system issued annually from the town at no cost to the residents. Similarly, recyclable materials can be disposed of at the Chatham and New Lebanon Residential Convenience facilities in Columbia County.

Delaware County

Delaware County serves as the planning unit for all municipalities within its boundaries. In 2018, it serviced an estimated population of 44,526 (Census, 2019). While the Delaware County planning unit has an average population density of less than 325 people per square mile, characteristic of rural population density distribution, there are suburban areas within the planning unit.

Delaware County's solid waste program is a combination of county owned facilities and private waste haulers. The planning unit owns and operates transfer facilities and the Solid Waste Management Center (SWMC) infrastructure that includes an MSW landfill, a C&D debris landfill, an RHRF, and a unique composting facility operated as a mixed waste plant. The composting facility receives and processes dewatered biosolids from wastewater treatment plants and the non-separated portion of the MSW stream. Private waste haulers provide for the collection of MSW and recyclables. Some of the planning unit towns and villages rely upon the service of the private hauler for the curbside collection of MSW and recyclables. Residents must procure the service themselves. Some residents rely on self-hauling their MSW and recyclables to the planning unit transfer facilities.

The planning unit offers an annual HHW collection event to residents within the county. Public education and outreach are accomplished by maintaining a solid waste and recycling program website, including information regarding the type of solid wastes and recyclables managed through the county's program; specific information on customer guidelines; prohibited items; and options for HHW. The planning unit also supplements the web-based information by working with the member towns' transfer facilities to develop flyers for the towns and participate in other outreach efforts on an ad hoc basis.

LSWMP Status	The planning unit's LSWMP is approved through 2027.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.71 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.72 shows the flow of waste for the MSW stream.

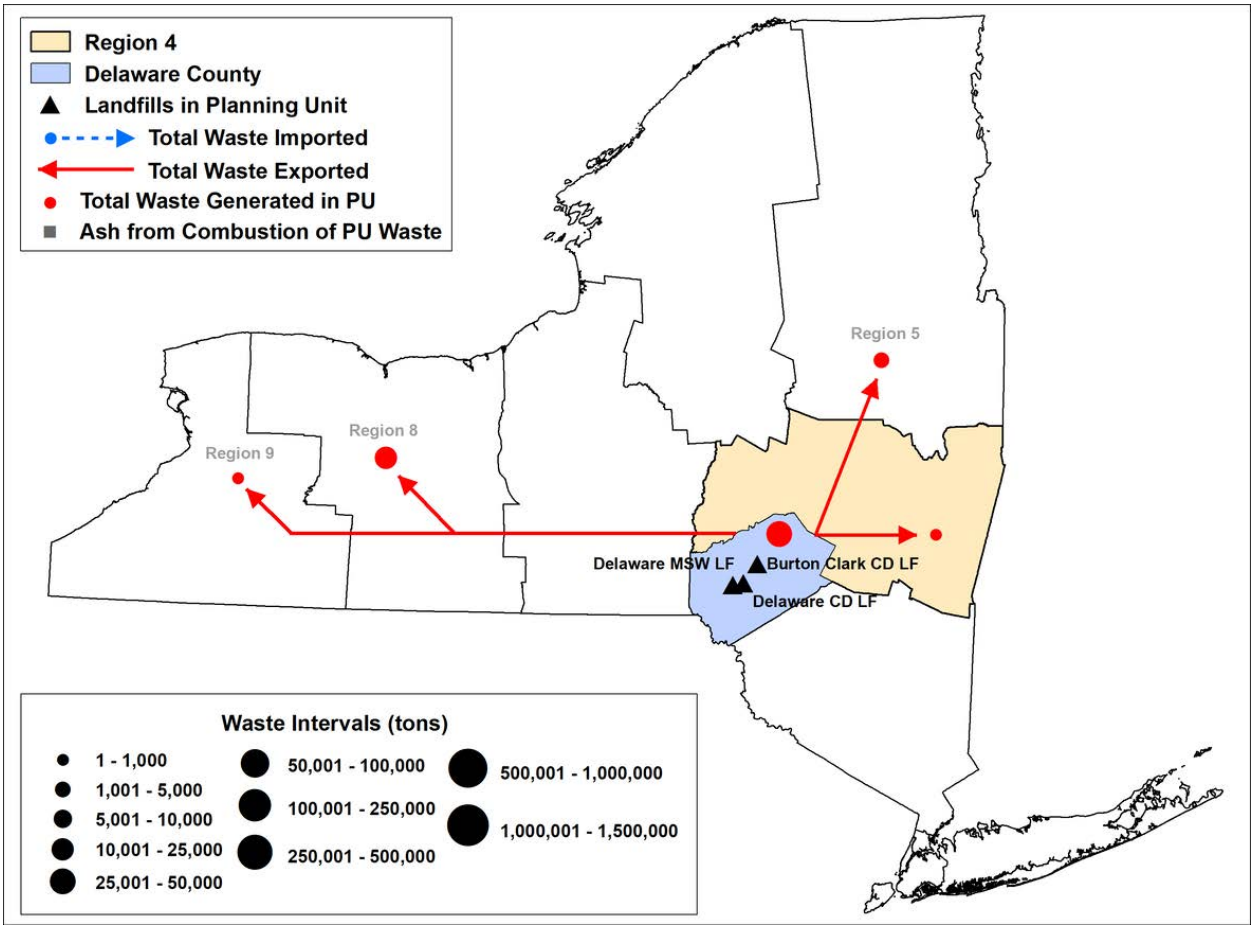


Figure E.71. Delaware County total waste flow

Figure E.71 represents the flow of waste from the Delaware County planning unit in 2018. It was estimated that 58% of waste was disposed of within the planning unit. The remaining waste was exported out of the planning unit. Region 8 accepted 34% and Region 5 about 7%. Small amounts of waste were sent to Region 9 and other planning units in Region 4. An estimated 42% of exported waste was MSW, 48% was C&D debris, 5% was industrial waste, and 5% was biosolids. Facilities in Delaware County did not import waste.

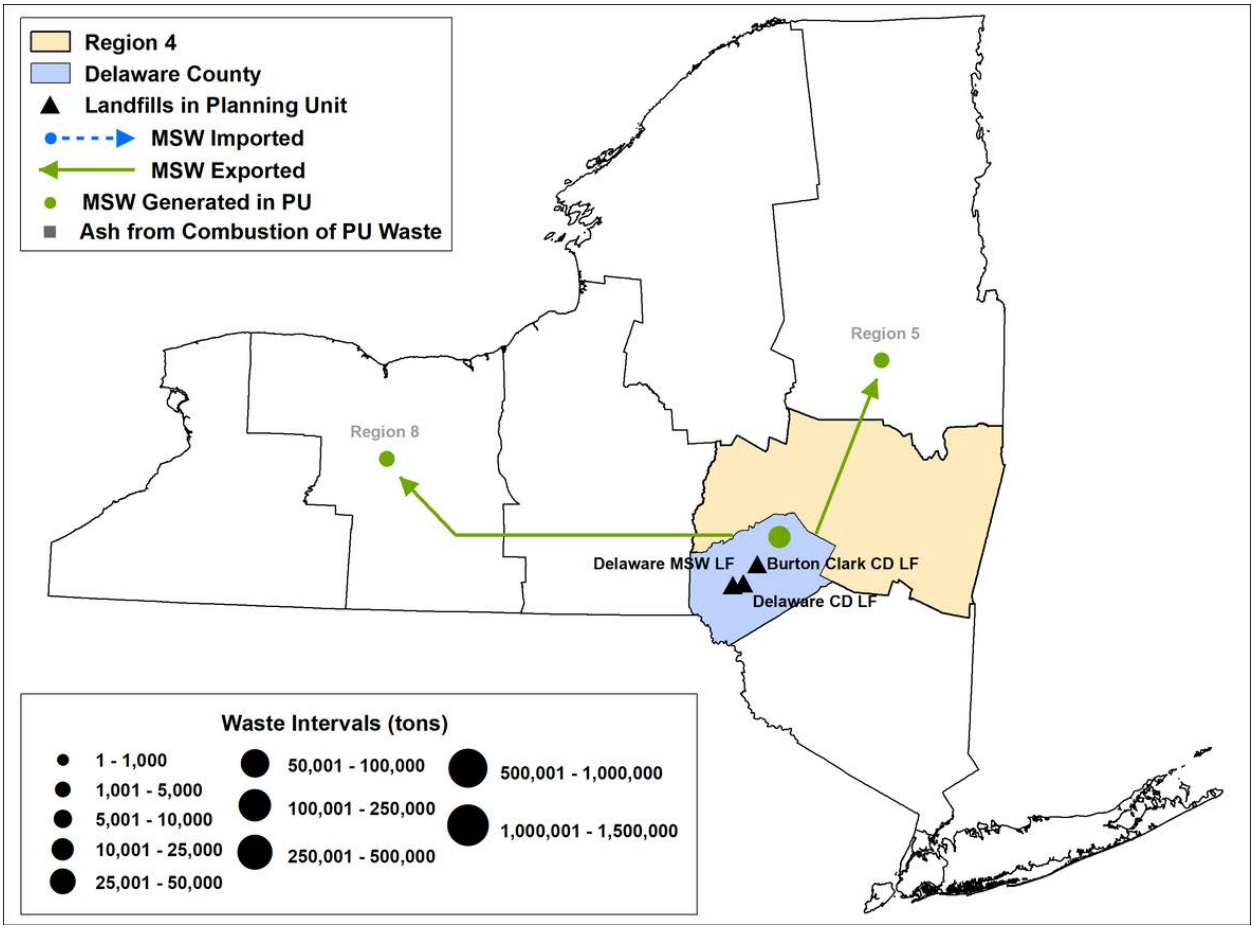


Figure E.72. Delaware County MSW flow

Figure E.72 shows the flow of MSW in the planning unit in 2018. Approximately 74% of MSW generated in 2018 stayed in the planning unit for disposal at the Delaware Landfill. The remaining MSW was exported to Regions 5 and 8, approximately 14% and 12%, respectively. Facilities in Delaware County did not import MSW from outside the planning unit.

The following table provides information on all waste and recovered materials generated in Delaware County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.22. Delaware County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	19,900	9,613**
C&D Debris	22,700	8,300
Industrial	2,200	0

Biosolids	2,500	0
Total	47,300	17,913
MSW disposal rate	2.45 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW includes 8,213 tons recovered from the MSW Composting Facility

Table E.22 shows that approximately 65,213 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. Around 17,913 tons, or 27%, were recovered through the MSW composting facility, CDDHRFs, or RHRFs. The remaining 73% was sent for disposal at landfills.

Approximately 29,513 tons of MSW were generated. About 19,900 tons, or 67%, were disposed of; and 13,179 tons, or 33%, were recovered through RHRFs and the MSW composting facility.

Of the C&D debris generated in the planning unit, 73% was disposed of at landfills and 27% was recovered through CDDHRFs.

About 45% of all waste generated in Delaware County in 2018 was C&D debris, 48% was MSW, and 7% was equally distributed between industrial waste and biosolids.

Greene County

Greene County serves as the planning unit for all municipalities within its boundaries. While the Greene County planning unit has an average population density of less than 325 people per square mile, characteristic of rural population density distribution, there are suburban areas within the planning unit. In 2018, it serviced an estimated population of 47,381 (Census, 2019).

The county owns and operates four transfer facilities, in the towns of Catskill, Coxsackie, Hunter, and Windham. These facilities support the planning unit's solid waste management program through tipping fees. Waste collected at transfer facilities is delivered to landfills outside the planning unit for disposal. Greene County does not collect or transport waste from any generator. Residents can drop off MSW and recyclables at transfer facilities using a per-bag system or procure a private hauler's services to collect the waste. Residents of the county and haulers are not required to deliver waste to the county facilities, and businesses may self-market their wastes. Recyclables are not required to pass through the county facilities. The Greene County Highway Department is charged with operating the county's solid waste facilities and implementing activities related to solid waste management, such as HHW collection events.

LSWMP Status	The planning unit's LSWMP is approved through 2030.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.73 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.74 shows the flow of waste for the MSW stream.

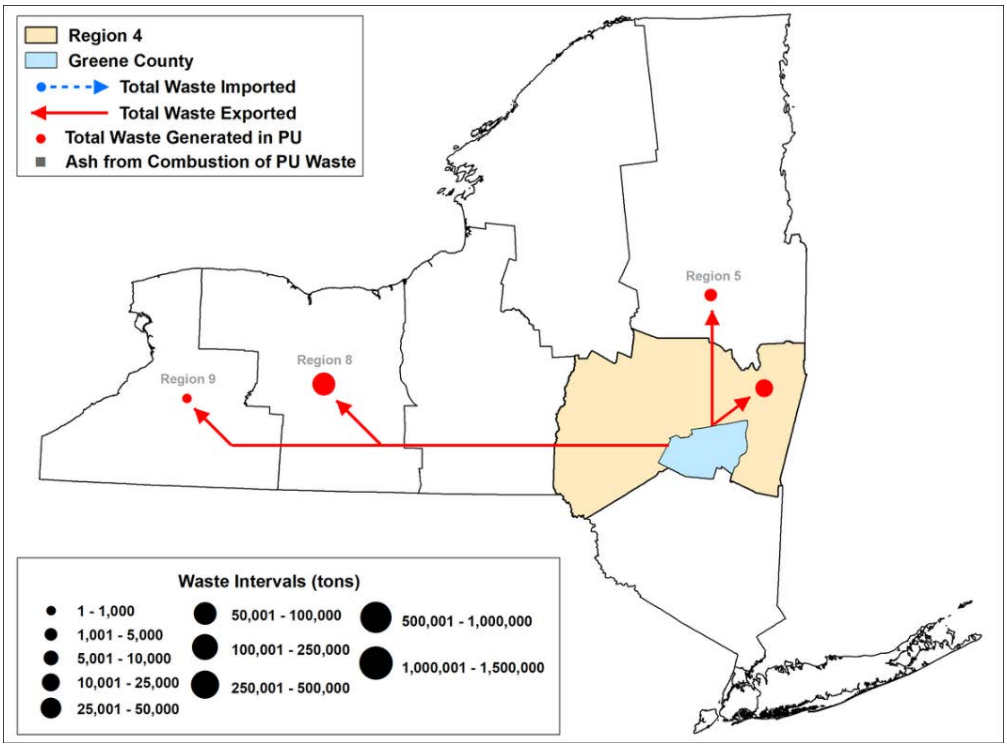


Figure E.73. Greene County total waste flow

Figure E.73 represents the flow of waste in the Greene County planning unit in 2018. The waste was estimated to be sent to in-state landfills; about 79% was sent to Region 8, 16% to other planning units within Region 4, 6% to Region 5, and negligible amounts to Region 9. As shown in the figure, 100% of waste is exported to facilities outside the planning unit, and facilities in Greene County did not import waste.

About 74% of all waste exported from Greene County in 2018 was MSW and 25% was C&D debris. A minimal amount of industrial waste and biosolid waste were exported outside the planning unit.

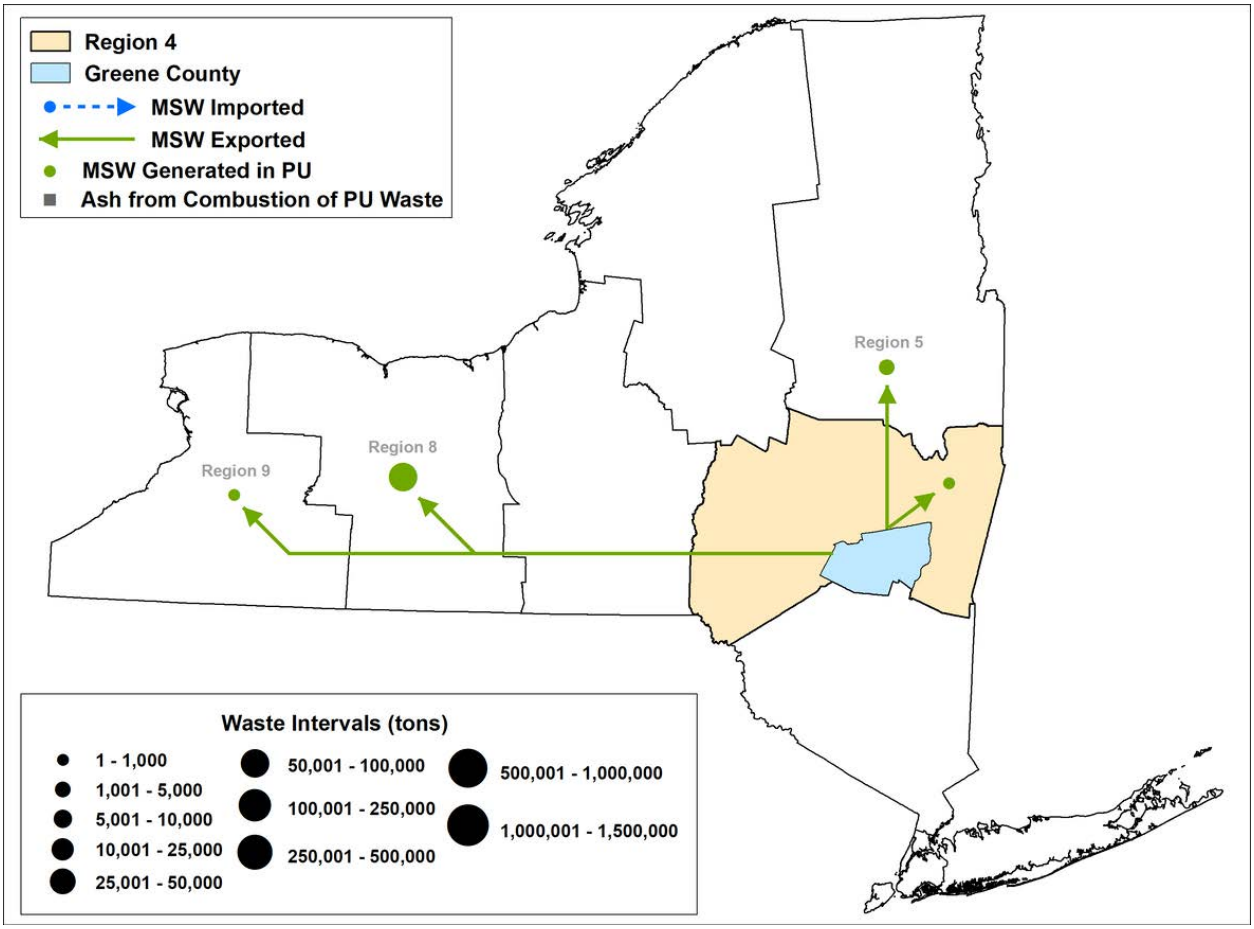


Figure E.74. Greene County MSW flow

Figure E.74 shows the flow of MSW out of the planning unit in 2018. As shown in the figure, 100% of MSW generated was exported to facilities outside the planning unit. Approximately 97% of MSW generated was sent for disposal to Region 8, and about 3% was sent to Region 5. Negligible amounts were sent to other planning units within Regions 4 and 9. Facilities in Greene County did not import MSW from outside the planning unit.

The following table provides information on all waste and recovered materials generated in Greene County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.23. Greene County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	56,900	10,600**
C&D Debris	19,300	0

Industrial	200	0
Biosolids	300	0
Total	76,700	10,600
MSW disposal rate	6.58 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.23 shows that approximately 87,300 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. About 10,600 tons, or 12%, were recovered through CDDHRFs and RHRFs. The remaining 88% was processed or disposed of at landfills.

Approximately 67,000 tons of MSW were generated. About 56,900 tons, or 84%, were disposed of, and 10,600 tons, or 16%, were recovered through RHRFs. One hundred percent of C&D debris generated in the planning unit was disposed of at landfills.

About 77% of all waste generated in Greene County in 2018 was MSW 22% was C&D debris, and the remainder was industrial waste and biosolids.

Otsego County

Otsego County serves as the solid waste planning unit for all municipalities within its boundaries. In 2018, it serviced an estimated population of 59,810 (Census, 2019). While the Otsego County planning unit has an average population density of less than 325 people per square mile, characteristic of a rural population density distribution, there are suburban areas within the planning unit.

Otsego County residents can procure a local hauler for curbside collection of MSW and recyclables or dispose of solid waste and recyclables at one of 2 transfer facilities, or 12 recycling collection facilities in the county through a pay-per-bag system. In addition, the planning unit runs a mattress recycling program and HHW collection events.

LSWMP Status	The planning unit's LSWMP is approved through 2027.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.75 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.76 shows the flow of waste for the MSW stream.

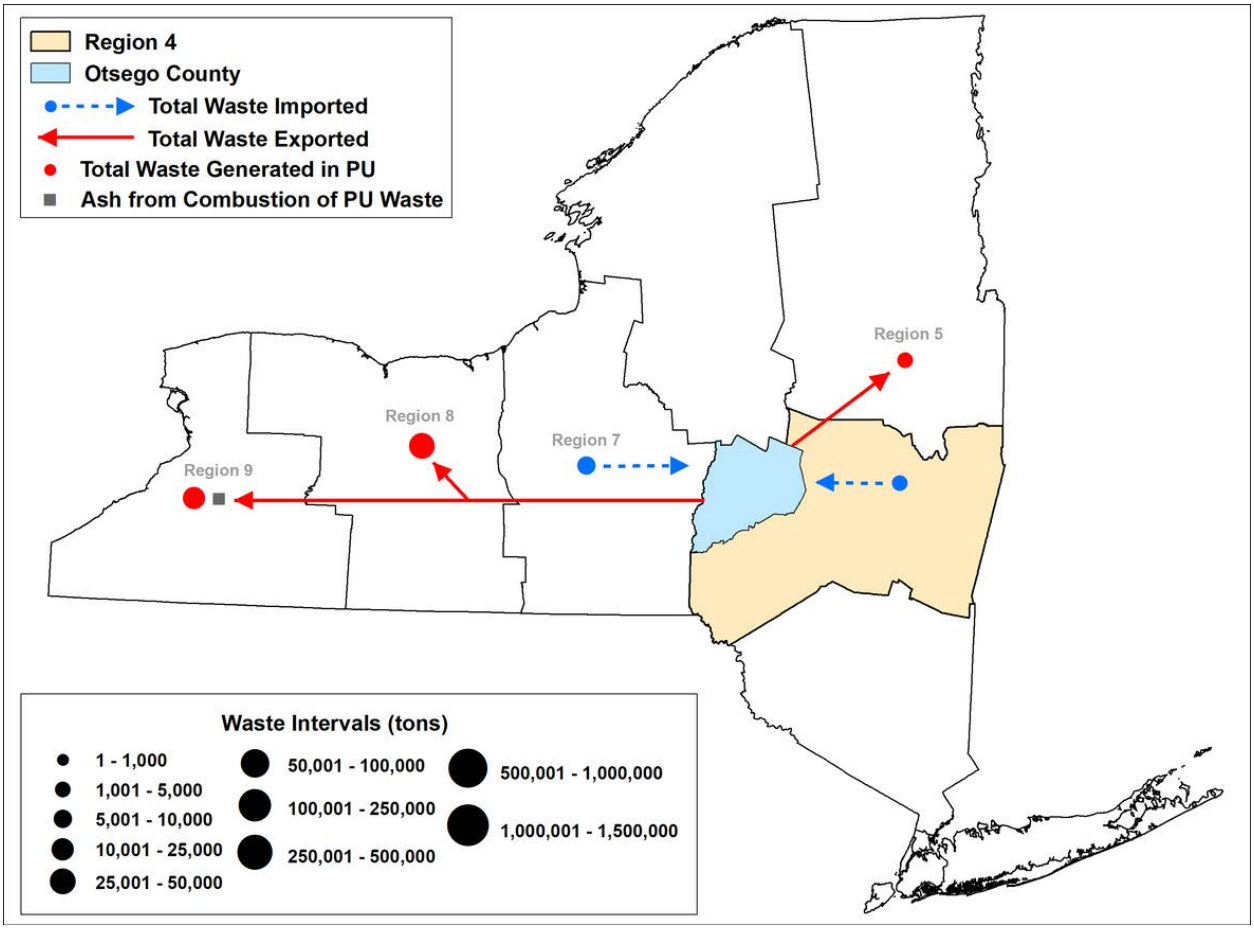


Figure E.75. Otsego County total waste flow

Figure E. 75 represents the flow of waste into and out of the planning unit in 2018. An estimated 100% of waste was exported to facilities in other regions. Most of the exported waste was sent to Regions 8 and 9, accounting for approximately 62% and 33%, respectively. Region 5 accepted minimal amounts of waste.

Figure E. 75 also shows the movement of the ash waste stream. As waste was generated in the planning unit and processed at a combustion facility in Region 9, ash residue was generated and transported to in-state landfills. About 100% of ash generated as a result of the combustion of Otsego County waste was used as AOC at Region 9 landfills.

Waste was also imported to the Otsego County planning unit, as shown in Figure E. 75. About 58% of imported waste in 2018 originated in Region 7, while the rest was transported from other planning units within the region. About 69% of waste imported was MSW, and the remaining 31% was C&D debris. Imported waste went to facilities in the planning unit for consolidation and transfer for processing at combustion facilities or for disposal at landfills outside of the planning unit.

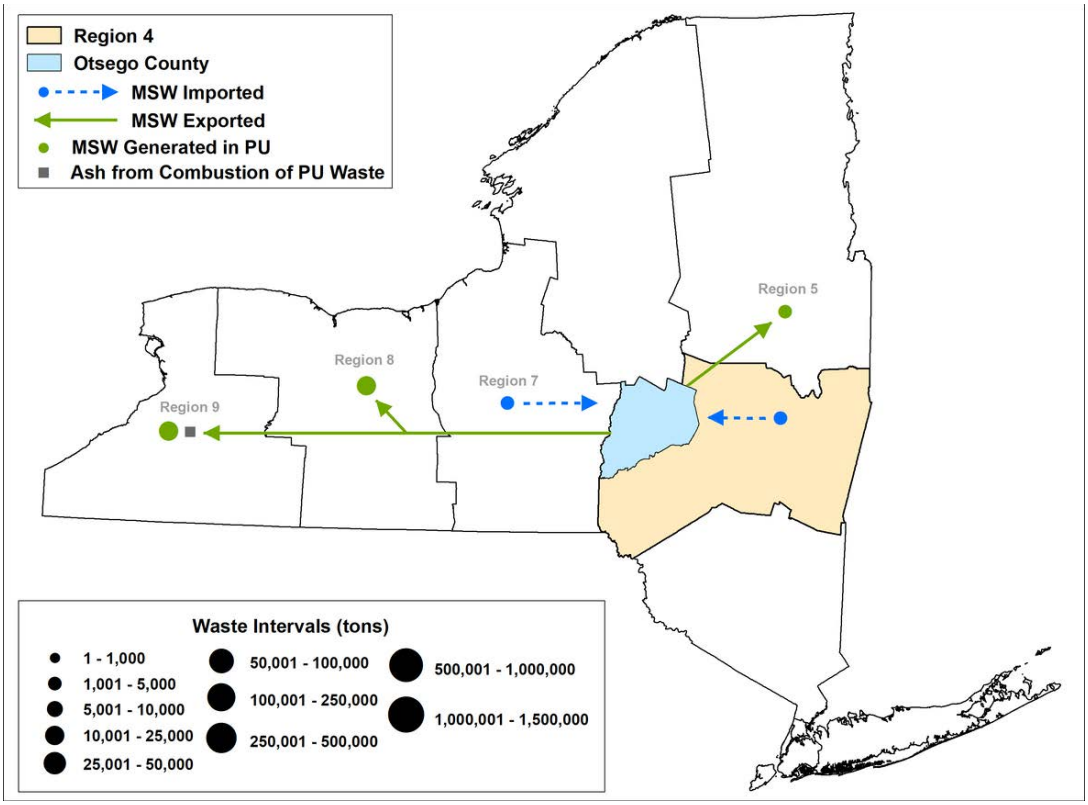


Figure E.76. Otsego County MSW flow

Figure E.76 shows the flow of MSW in the planning unit in 2018. Most MSW was exported to Regions 8 and 9, around 56% and 41%, respectively. The remaining waste was taken to Region 5 facilities.

Figure E.76 also shows the movement of the ash waste stream, which was generated from the processing of MSW from the planning unit at a combustion facility in Region 9. Ash residue generated was determined to be used at in-state landfills in Region 9 as AOC.

Figure E.76 also shows that 57% of the imported MSW was received from Region 7. The remaining 43% of the imported MSW was from other planning units within the region.

The following table provides information on all waste and recovered materials generated in Otsego County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.24. Otsego County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	42,400	7,200**

C&D Debris	9,700	10
Industrial	320	0
Biosolids	1,460	0
Total	53,878	7,210
MSW disposal rate	3.88 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.24 shows that approximately 61,088 tons of waste generated in the planning unit were processed, disposed of, or recovered. Of all waste generated in the planning unit, about 7,210 tons, or 12%, were recovered through RHRFs or CDDHRFs. The remaining 88% was sent for processing at combustion facilities or for disposal at landfills. Approximately 49,600 tons of MSW were generated. About 42,400 tons, or 85%, were disposed of, and 7,200 tons, or 15%, were recovered through RHRFs. An estimated 100% of the C&D debris generated was disposed of at landfills.

Table E.24 shows the MSW stream accounted for approximately 82% of waste generated in 2018, C&D debris for 16%, industrial waste for less than 1%, and biosolids for approximately 2%.

Eastern Rensselaer County Solid Waste Management Authority (ERCSWMA)

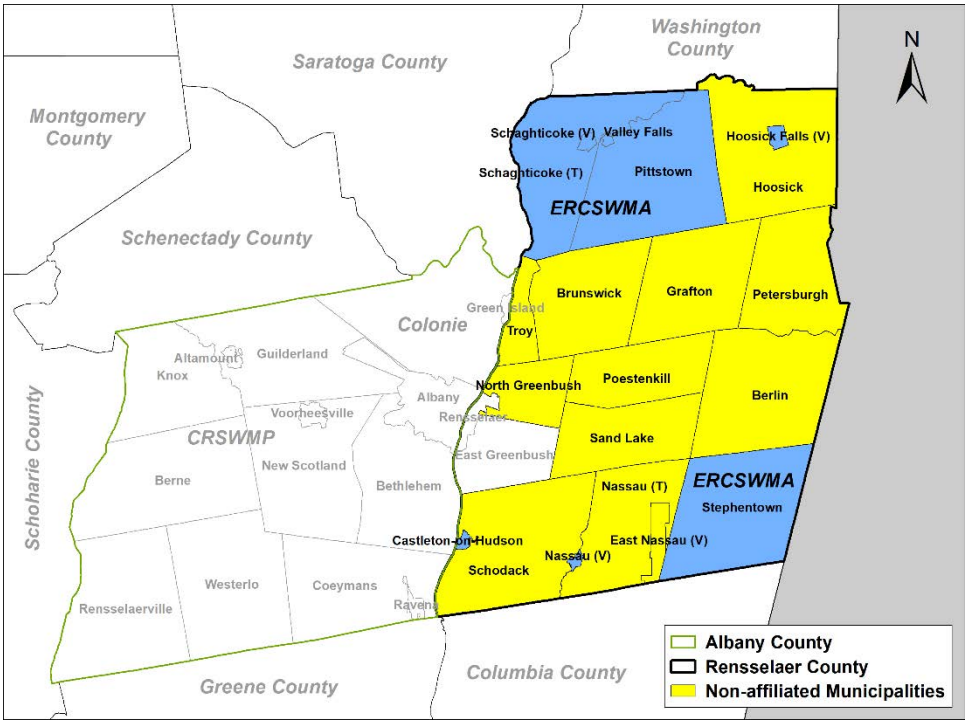


Figure E.77. ERCSWMA planning unit

The Eastern Rensselaer County Solid Waste Management Authority (ERCSWMA) is a public benefits corporation established in 1989 by a NYS legislative act. The authority was created to provide environmentally sound solid waste management services to its member municipalities. Since its creation, its members have been reduced from 13 to 7 municipalities, currently comprising 5 villages and 3 towns: the villages of Castleton, Hoosick Falls, Nassau, Schaghticoke, and Valley Falls, and the towns of Pittstown, Schaghticoke, and Stephentown, as shown in Figure E.77. While the ERCSWMA planning unit has an average population density of less than 325 people per square mile, characteristic of rural population density distribution, there are suburban areas within the planning unit. In 2018, the ERCSWMA serviced an estimated population of 22,553 (Census, 2019).

The ERCSWMA provides long-term waste disposal and transportation contracts for its residents and businesses of member communities. It also offers an annual HHW collection day, waste reduction and recycling programs, and an outlet for reusable goods and other materials that are not collected curbside through the Eastern Rensselaer County Community Warehouse program.

The ERCSWMA established the Community Warehouse program in 1995. The Community Warehouse is a nonprofit reuse center established to divert reusable discards from waste disposal. Although the two organizations are now separate entities, they work together on various projects.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E. 78 represents the flow of all waste destined for processing at combustion facilities and disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.79 shows the flow of waste for the MSW stream.

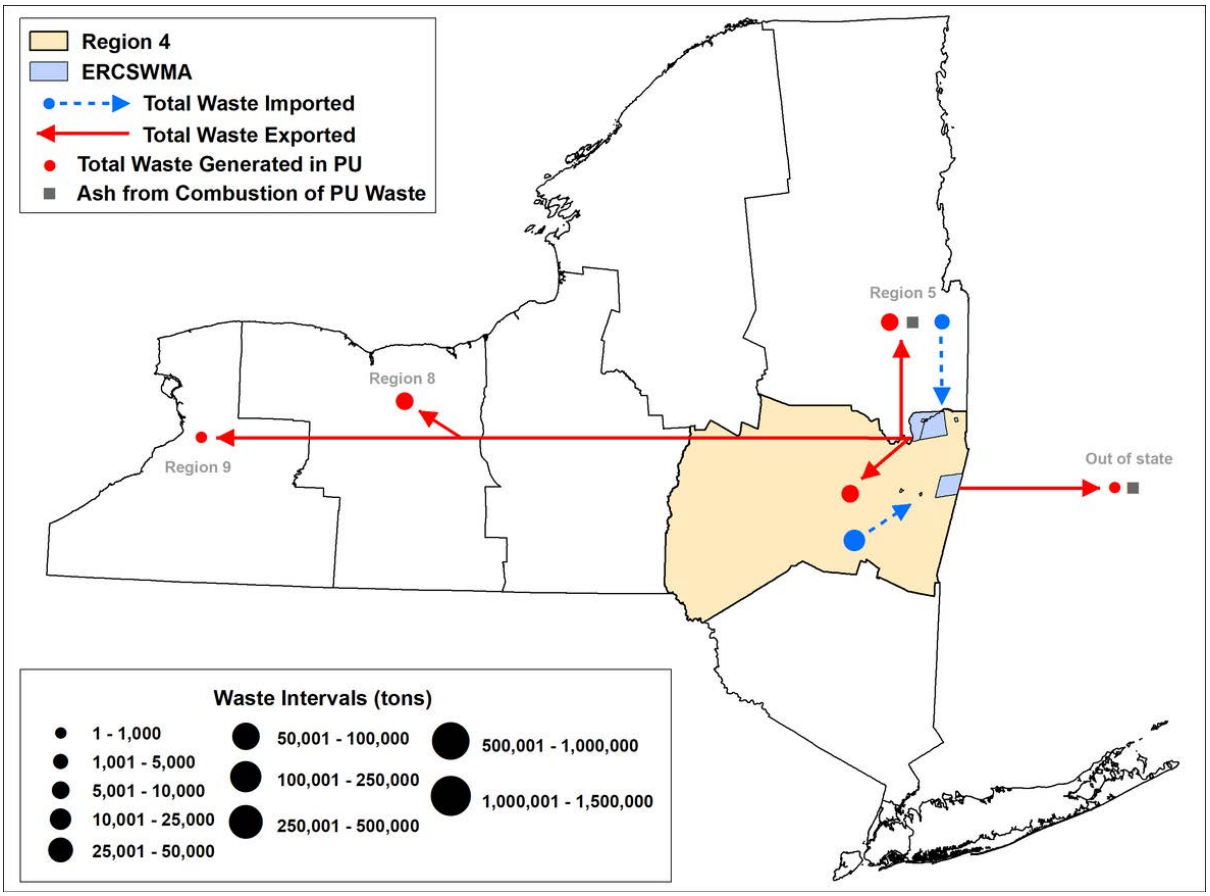


Figure E. 78. ERCSWMA total waste flow

Figure E. 78 represents the flow of waste from the ERCSWMA planning unit in 2018. As shown in the figure, 100% of the waste generated in the planning unit was exported to facilities outside of the planning unit. Most of the waste was sent to Regions 5 and 8 and to other planning units within Region 4, accounting for 37%, 36%, and 23%, respectively. Minimal amounts of waste were sent to facilities out of state and to Region 9.

Figure E. 78 also shows the movement of ash generated from the processing of the planning unit waste in 2018 at combustion facilities. Waste generated within the planning unit was exported to Region 5 to be processed at a combustion facility.

According to estimates, 12% of the ash generated at the combustion facility in Region 5 was used as AOC within the same region, while the rest was exported to out-of-state landfills in Massachusetts.

The planning unit also accepted waste from Region 5 and from other planning units within Region 4; this is shown in Figure E. 78 as imports. This waste went to facilities in the planning unit for consolidation and transfer to facilities outside the planning unit for processing or disposal.

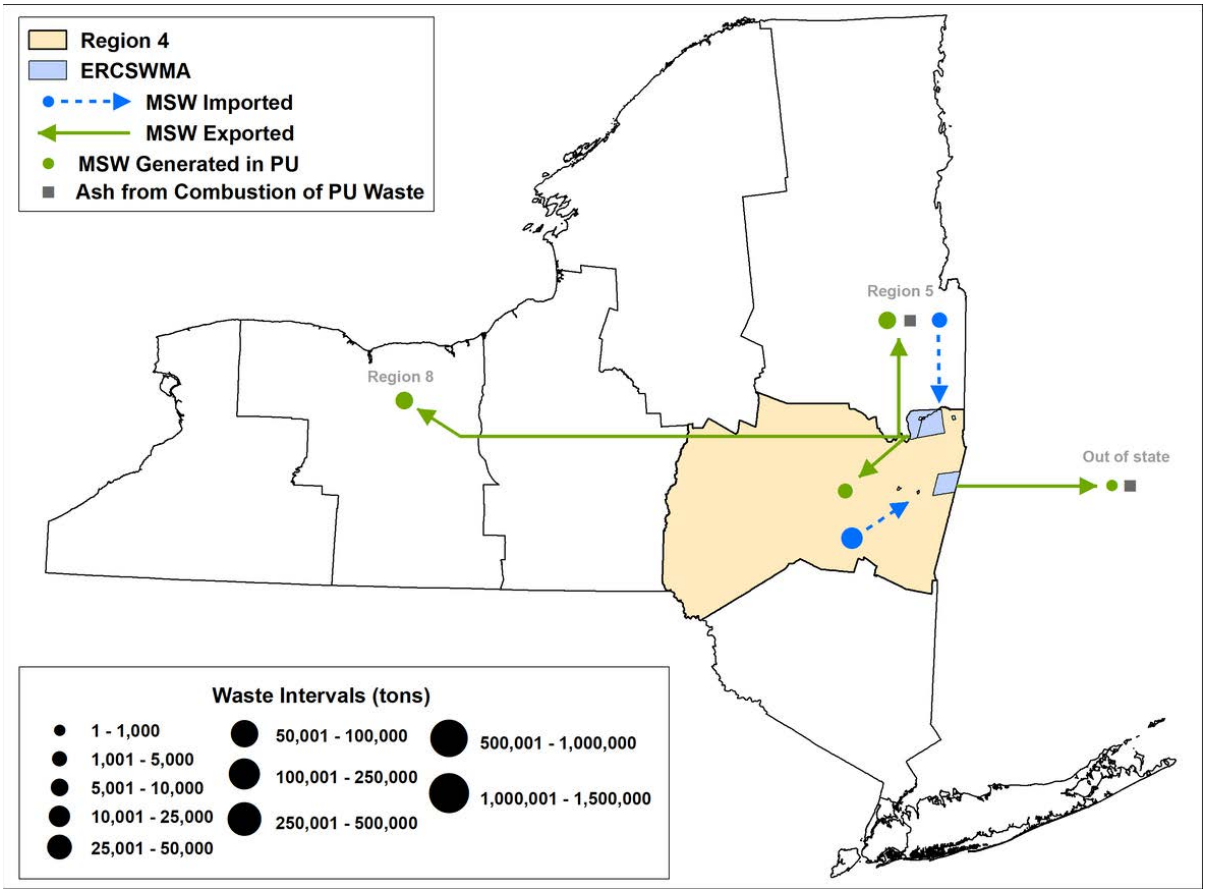


Figure E.79. ERCSWMA MSW flow

Figure E.79 shows the flow of MSW in the planning unit in 2018. As shown in the figure, 100% of the MSW generated in the planning unit was exported to outside facilities. Approximately 37% of the MSW generated was sent to Region 5, 36% to Region 8, and about 23% to other planning units within Region 4. Minimal amounts of waste were exported to Massachusetts.

The ash residue generated as a result of the processing of planning unit MSW at combustion facilities is shown in Figure E.79. According to estimates, 12% of ash generated at the combustion facility in Region 5 was used as AOC within the same region, while the remaining 88% was exported to out-of-state landfills in Massachusetts.

Imported MSW, shown in Figure E.79, was estimated to come from other planning units in Regions 4 and 5, accounting for 87% and 13%, respectively. Imported waste went to facilities in the planning unit to be consolidated with other MSW and then transferred to other facilities outside the planning unit for processing or disposal.

The following table provides information on all waste and recovered materials generated in ERCSWMA by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.25. ERCSWMA waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	17,150	2,500**
C&D Debris	4,800	2,000
Industrial	1,700	0
Biosolids	0	0
Total	23,650	4,500
MSW disposal rate	4.17 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.25 shows that approximately 28,150 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. About 4,500 tons, or 16%, were recovered through CDDHRFs or RHRFs. The remaining 23,650 tons, or 86%, were processed or disposed of at landfills.

Approximately 25,441 tons of MSW were generated. About 17,150 tons, or 87%, were disposed of, and 2,500 tons, or 13%, were recovered through RHRFs. Additionally, 71% of the C&D debris generated in the planning unit was disposed of at landfills, and 29% was recovered through CDDHRFs.

Table E.25 shows that the MSW stream accounted for 70% of the waste generated in 2018 in this planning unit, C&D debris for 24%, and industrial waste for the remaining 6%.

Rensselaer County - Non-affiliated municipalities

As shown in Figure E.77, there are 11 non-affiliated municipalities in Rensselaer County, the Towns of Berlin, Brunswick, Grafton, Hoosick, Nassau, Petersburgh,

Poestenkill, North Greenbush, Sand Lake, Schodack, and the City of Troy. Even though these municipalities are located within the boundaries of Rensselaer County, they are not part of a planning unit. None of the non-affiliated municipalities have waste flow information available or a CRA in place, except for the City of Troy.

Town of Berlin

The Town of Berlin is located on the Rensselaer County eastern border and has a population of 1,810 (Census, 2019). It has an average population density of less than 325 people per square mile, characteristic of rural population density distribution.

Residents of the town may dispose of MSW and recyclables at a transfer facility using a permit issued from the town and a ticket system that charges per bag or item. Town residents can also drop off C&D debris, scrap metal, tires, used oil filters, antifreeze, and car batteries for a fee associated with a number of tickets per item. Yard trimmings are not accepted at the transfer facility at this time.

Town of Brunswick

Brunswick is a town centrally located in Rensselaer County. It comprises a population of 12,969 (Census, 2019), and has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. The Town of Brunswick funds a recycling center by charging residents a nominal fee per bag of MSW, per item, and the revenue from the sales of recyclable materials brought to the center.

Town of Grafton

Grafton is a town in the eastern portion of Rensselaer County, with a population of 2,160 (Census, 2019). It has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. Residents of the town have access to a transfer facility to self-haul MSW and recyclables for a nominal cost per bag and item.

Town of Hoosick

The Town of Hoosick is in the northeastern corner of Rensselaer County. It comprises a population of 6,767 (Census, 2019), and has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. The town offers year-round complimentary recycling services for residents at the Town Garage. Residents also have access to the transfer facility in Jackson, N.Y., where dump stickers are required for MSW and non-recyclable items, Recyclables are free of cost.

Town of Nassau

The Town of Nassau is at the southern border of Rensselaer County. It comprises a population of 4,780 (Census, 2019), and has an average population density of less than 325 people per square mile, characteristic of rural population density distribution.

Residents of the town have access to a transfer facility if they obtain a permit. The town provides an area for residents to drop off yard trimmings at the transfer facility. MSW is charged per bag, while recyclables are free of cost.

Town of Petersburgh

Petersburgh is a town located in the northeast section of Rensselaer County. It comprises a population of 1,481 (Census, 2019), and it has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. Residents of the town have access to the Town of Berlin transfer facility, where MSW is charged for using transfer tickets, while recyclables are free of cost.

Town of Poestenkill

The Town of Poestenkill is centrally located in Rensselaer County. It comprises a population of 4,501 (Census 2019), and it has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. Town of Poestenkill residents may drop off MSW and recyclables at a private transfer facility where they are charged a per-bag fee for MSW.

Town of North Greenbush

The Town of North Greenbush is centrally located in Rensselaer County. It comprises a population of 12,243 (Census, 2019), and has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. Town of North Greenbush residents receive curbside collection of yard trimmings and hire a private hauler for the curbside collection of MSW and recyclables.

Town of Sand Lake

The Town of Sand Lake is in the south-central part of Rensselaer County. It comprises a population of 8,460 (Census, 2019), and has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. Residents have access to a convenience facility if they obtain a permit from the town. Residents must procure the service of a private hauler for the curbside collection of MSW and recyclables. Yard trimmings can be dropped off at the Highway Public Works Department.

Town of Schodack

Schodack is a town in the southwestern part of Rensselaer County. It comprises a population of 13,174 (Census, 2019), and has an average population density of less than 325 people per square mile, characteristic of rural population density distribution. The Town of Schodack Transfer/Recycling Facility is available for use by town residents for the disposal of MSW. A resident of the town must procure the service of a private hauler for curbside collection of MSW and recyclables.

City of Troy

Troy is the largest city located within Rensselaer County by size and population. It comprises a population of 43,354 (Census, 2019), and has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution. The Bureau of Sanitation collects the City of Troy MSW and recyclables from residential households and business properties. It also collects yard trimmings from residential properties. The city offers an annual collection of HHW.

At the end of 2021, the City of Troy started a two-year composting pilot program where food scraps are collected curbside and brought to the Town of Bethlehem's composting facility every other week. The program began with collecting food scraps from 75 houses and is expected to expand to 250 households in the third and final phase of the two-year pilot program. There are additional community efforts for food waste diversion and collection. Several community gardens throughout the city have on-site compost piles. Troy Zero Waste, a local community organization, offers a weekly food waste drop-off site at the Troy Waterfront Farmers Market every Saturday. This organization transports this material to one of Troy's local community compost piles. Market vendors and city residents utilize this free service.

CRA Status	The municipality's CRA is approved through 2028.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the City of Troy in 2018. Figure E.80 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.81 shows the flow of waste for the MSW stream.

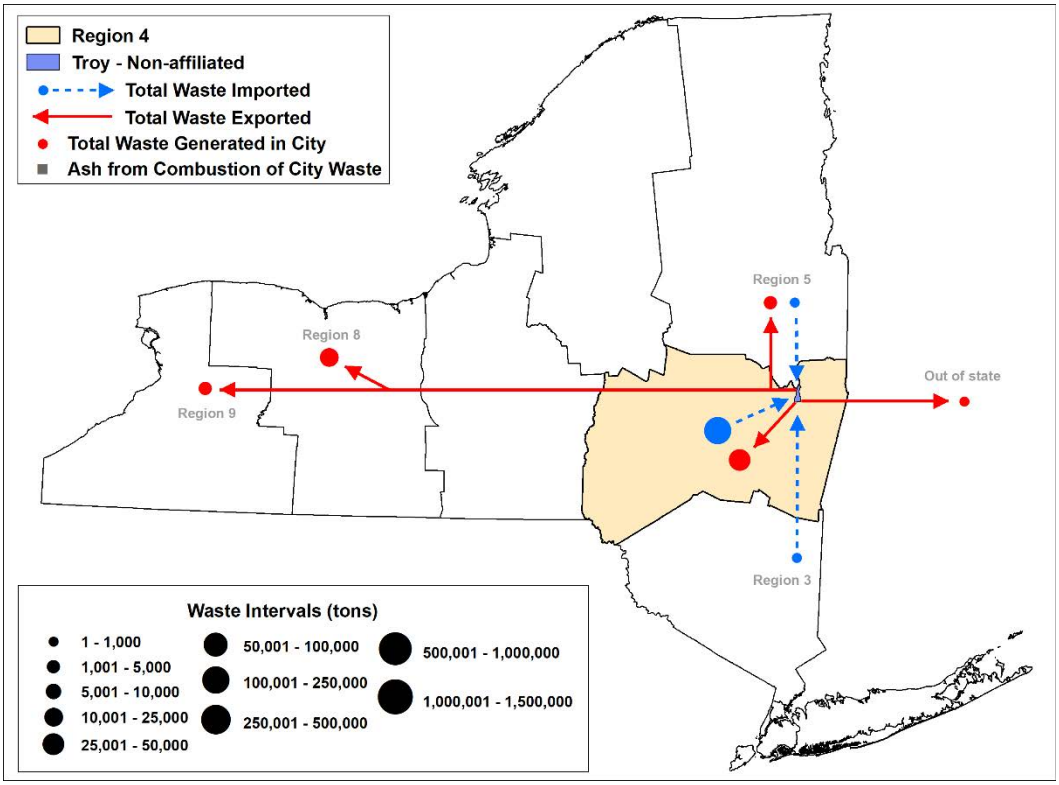


Figure E.80. City of Troy total waste flow

Figure E.80 represents the flow of waste within the City of Troy in 2018. About 65% of the waste generated was exported to planning units in Region 4 for disposal. About 32% was transported to Region 8, while minimal amounts were destined for Regions 5 and 9, and to out-of-state facilities in Massachusetts.

The City of Troy also accepted waste from planning units within the region. This is shown in Figure E.80. The waste imported went to facilities located in the City of Troy for consolidation and transfer to be processed at combustion facilities or disposed of at landfills outside the city limits. It was estimated that 100% of imported waste originated in other planning units within the region. A minimal amount of waste was imported from Regions 3 and 5.

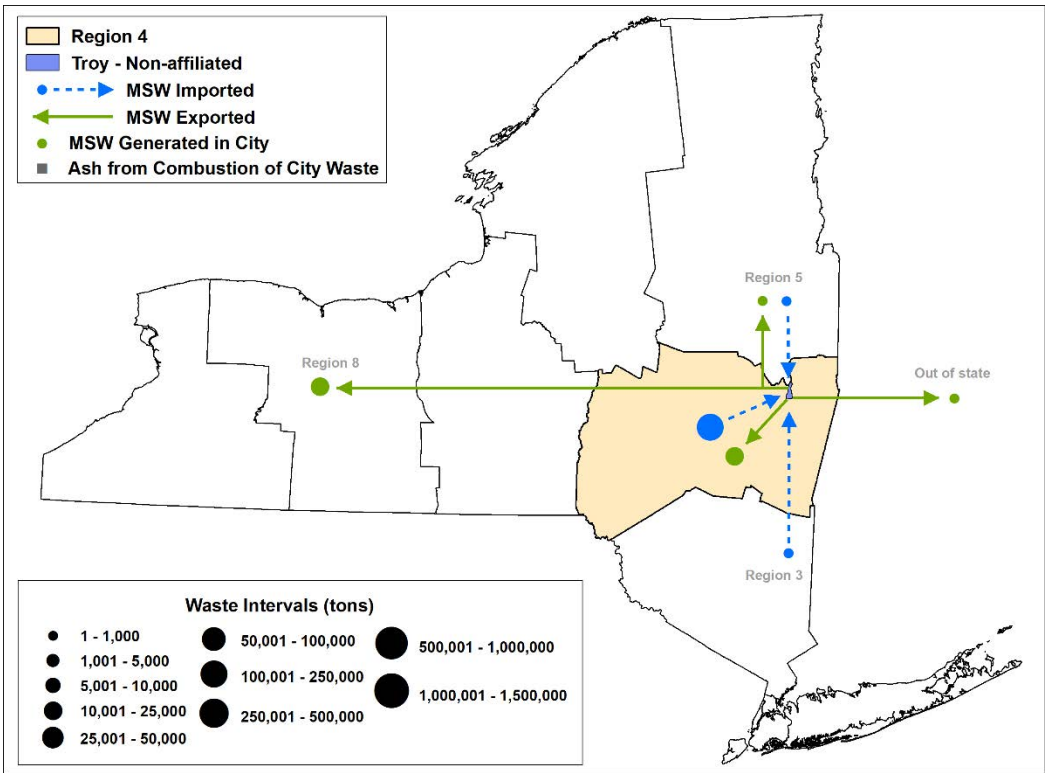


Figure E.81. City of Troy MSW flow

Figure E.81 shows the flow of MSW into and out of the City of Troy in 2018. As seen in the figure, 100% of MSW generated in the city was exported to facilities outside the city limits. Approximately 55% of MSW was sent for disposal at planning units within the region, and about 43% was sent to Region 8. Minimal amounts were sent to other planning units in Region 5 and out-of-state facilities in Massachusetts.

Figure E.81 also shows that about 99% of imported MSW was received from planning units in Region 4. A minimal amount of MSW was imported from Regions 3 and 5. Imported waste went to facilities in the city to be consolidated before it was transferred to combustion facilities for processing or to landfills for disposal.

The following table provides information on all waste and recovered materials generated in the City of Troy by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.26. City of Troy waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	43,000	2,750**
C&D Debris	19,800	0

Industrial	680	0
Biosolids	440	0
Total	63,920	2,750
MSW disposal rate	4.77 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.26 shows that approximately 66,670 tons of waste generated in the city during 2018 were processed, disposed of, or recovered. About 4% was recovered through CDDHRFs or RHRFs, accounting for 2,750 tons, while the remaining 96% was sent for processing at combustion facilities or for disposal at landfills. Approximately 45,750 tons of MSW were generated in the planning unit, accounting for 69% of waste generated in 2018. About 43,000 tons, or 94%, of MSW were processed or disposed of, and 2,750 tons, or 6%, were recovered through RHRFs.

As shown in Table E.26, an estimated 19,800 tons of C&D debris were generated in the city, accounting for 30% of all waste generated in 2018. An estimated 100% of the C&D debris was disposed of at landfills. The industrial waste and biosolids waste streams accounted for 1% each of all waste generated in 2018.

Montgomery County

Montgomery County serves as the planning unit for all municipalities within the county, including 1 city, 10 towns, and 10 villages. In 2018, it serviced an estimated population of 49,394 (Census, 2019). While the Montgomery County planning unit has an average population density of less than 325 people per square mile, characteristic of rural population density distribution, there are suburban areas within the planning unit.

The collection of MSW and recyclables is provided through a combination of a private collection, self-hauling, and a municipally sponsored collection for recyclables and municipal collection of waste in the City of Amsterdam. The county holds a biannual HHW collection day, and, given that much of the planning unit is rural, residents tend to manage yard trimmings on their property.

LSWMP Status	The planning unit's approved LSWMP expired in 2016. The planning unit is working with DEC to develop a new plan LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.82 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills,

including MSW, C&D debris, industrial waste, and biosolids. Figure E.83 shows the flow of waste for the MSW stream.

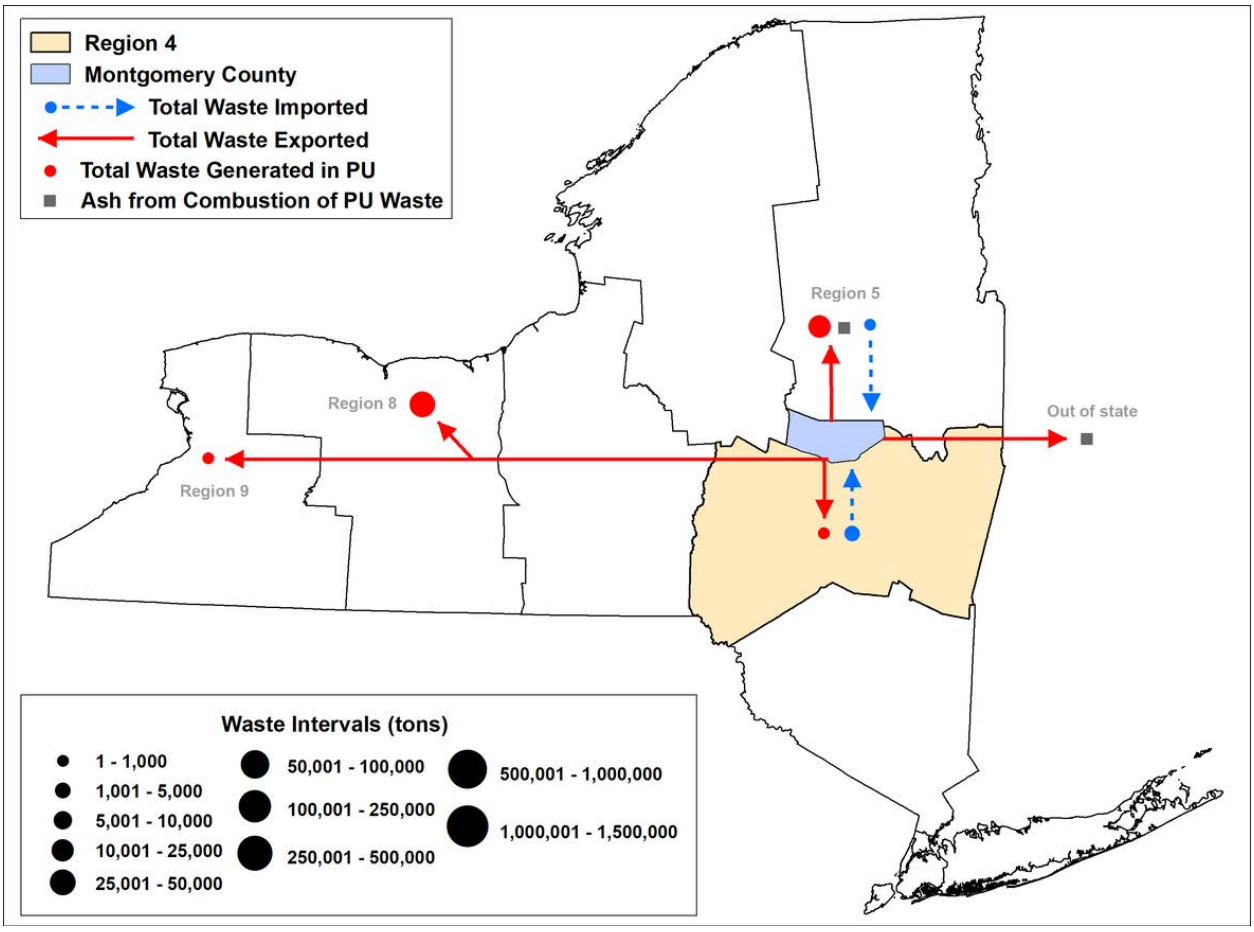


Figure E.82. Montgomery County total waste flow

Figure E.82 represents the flow of all waste within the planning unit in 2018. As shown in the figure, 100% of waste generated in the planning unit was exported to facilities outside the planning unit. About 58% of the waste was exported to Region 8, 41% to Region 5, and minimal amounts of waste were sent to other planning units within Regions 4 and 9. An estimated 75% of exported waste was MSW, 21% was C&D debris, 4% was biosolids, and the remainder was a minimal amount of industrial waste.

The figure shows waste was imported into the planning unit from other planning units, including about 86% from Region 4 with the remainder from Region 5. Imported waste went to facilities in the planning unit for consolidation and was transferred to other facilities for processing or disposal.

Figure E.82 also shows the movement of ash generated from processing the planning unit's waste in 2018 at combustion facilities. Waste generated within the planning unit was exported out to Region 5 to be processed at a combustion facility. An estimated 12% of ash generated at the combustion facility in Region 5 was used as AOC within

the same region, while the rest was exported to out-of-state disposal facilities in Massachusetts.

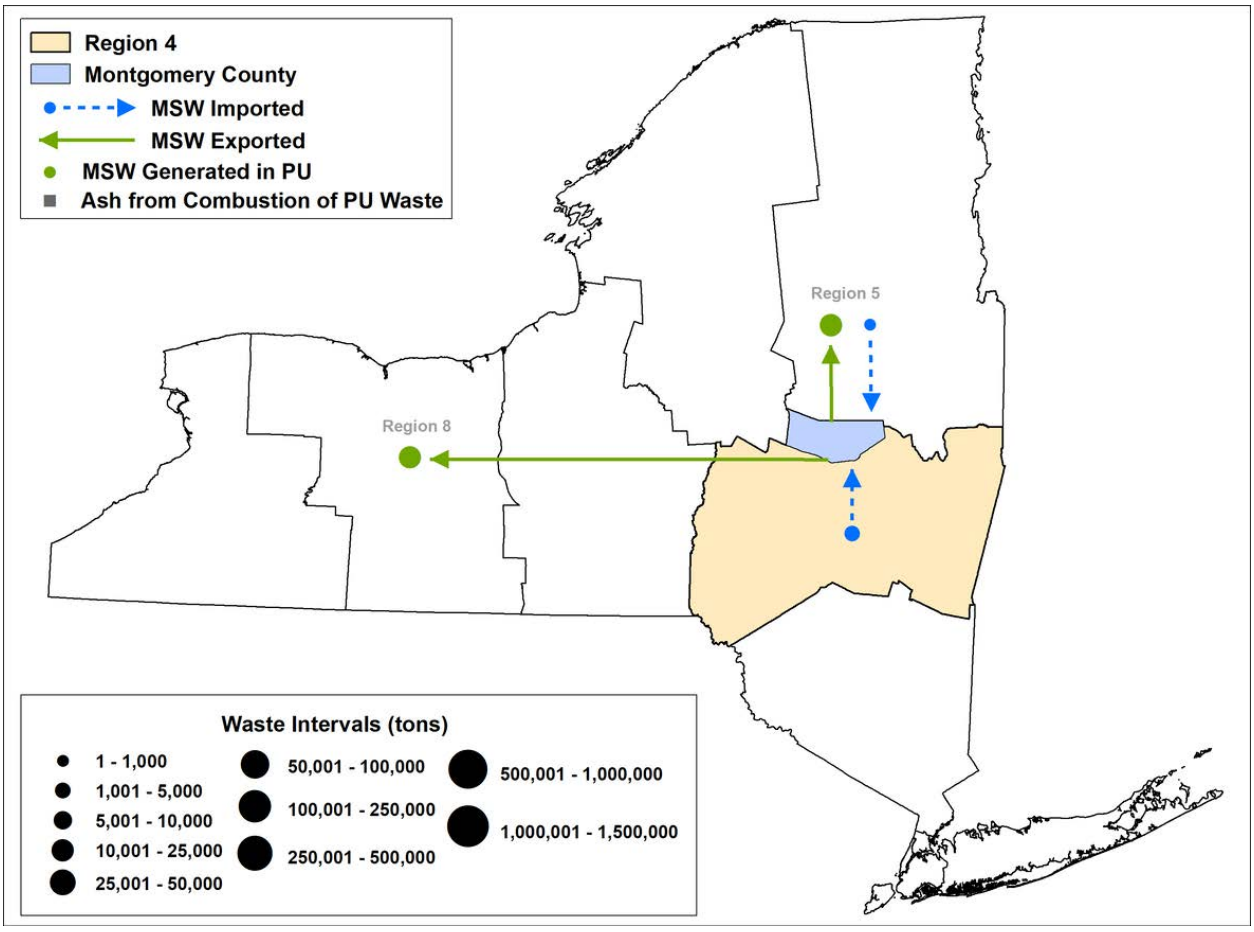


Figure E.83. Montgomery County MSW flow

Figure E.83 shows the flow of MSW in the planning unit in 2018. As shown in the figure, 100% of MSW generated in this planning unit was exported to facilities outside the planning unit. According to estimates, the exported waste was equally distributed between Regions 8 and 5.

A portion of the MSW generated in the planning unit was exported to Region 5 to be processed at a combustion facility. Figure E.83 also shows the movement of the ash waste stream generated from the processing of MSW. The ash residue generated was transported to in- and out-of-state landfills. About 88% of ash was sent to out-of-state landfills in Massachusetts, while the remaining 12% was used as AOC at Region 5 landfills.

The following table provides information on all waste and recovered materials generated in Montgomery County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.27. Montgomery County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	40,600	10,500**
C&D Debris	11,500	93,600
Industrial	70	0
Biosolids	2,120	0
Total	54,290	104,100
MSW disposal rate	4.5 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.27 shows that approximately 158,390 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. Around 104,100 tons, or 66%, were recovered through CDDHRFs or RHRFs. The remaining 34% was sent to be processed or disposed of at landfills. Large amounts of asphalt were recovered and recycled back into asphalt product. This process contributed to the high percentage of C&D debris that was recovered in this planning unit.

About 66% of all waste generated in Montgomery County in 2018 was C&D debris, 33% was MSW, and the remainder was industrial waste and biosolids.

Approximately 51,100 tons of MSW were generated. About 40,600 tons, or 79%, were disposed of, and 10,500 tons, or 21%, were recovered through RHRFs. Additionally, 11% of C&D debris generated in the planning unit was disposed of at landfills, and 89% was recovered through CDDHRFs.

Schenectady County

Schenectady County serves as the planning unit for all municipalities within its boundaries. In 2018, it serviced an estimated population of 155,079 (Census, 2019). While the planning unit has an average population density between 325 and 5,000 people per square mile, characteristic of a suburban population density distribution, there are urban and rural areas within the planning unit.

Residents of the county have access to a compost and recycling facility and the Schenectady County Conservation District provides conservation education and assistance to residents regarding composting. The planning unit also offers HHW collection events for residents.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.84 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.85 shows the flow of waste for the MSW stream.

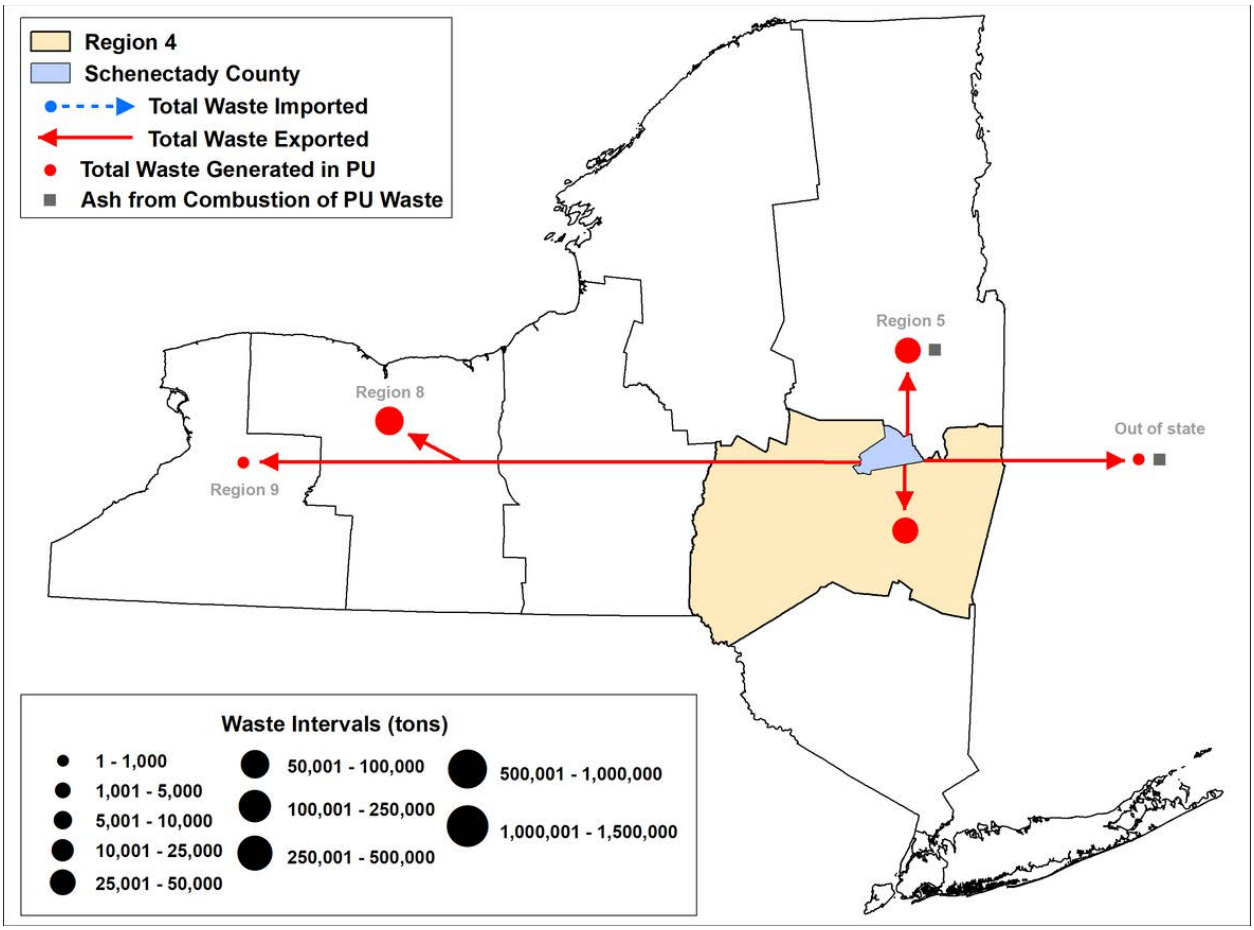


Figure E.84. Schenectady County total waste flow

Figure E.84 represents the flow of all waste within the planning unit in 2018. As seen in the figure, 100% of waste generated in the planning unit was exported to facilities outside the planning unit, and no waste was imported. About 61% of the waste was exported to Region 8, 18% to Region 5, and 20% to other planning units within Region 4. Negligible amounts of waste were sent to Region 9 and to out-of-state facilities.

An estimated 78% of exported waste was MSW, 12% was C&D debris, 9% was industrial waste, and the remainder was biosolids.

Figure E.84 also shows the movement of ash generated from processing the planning unit's waste in 2018 at combustion facilities. Waste generated within the planning unit was exported to Region 5 to be processed at a combustion facility. An estimated 12% of ash generated at the combustion facility in Region 5 was used as AOC within the same region, while the rest was exported out of state to Massachusetts.

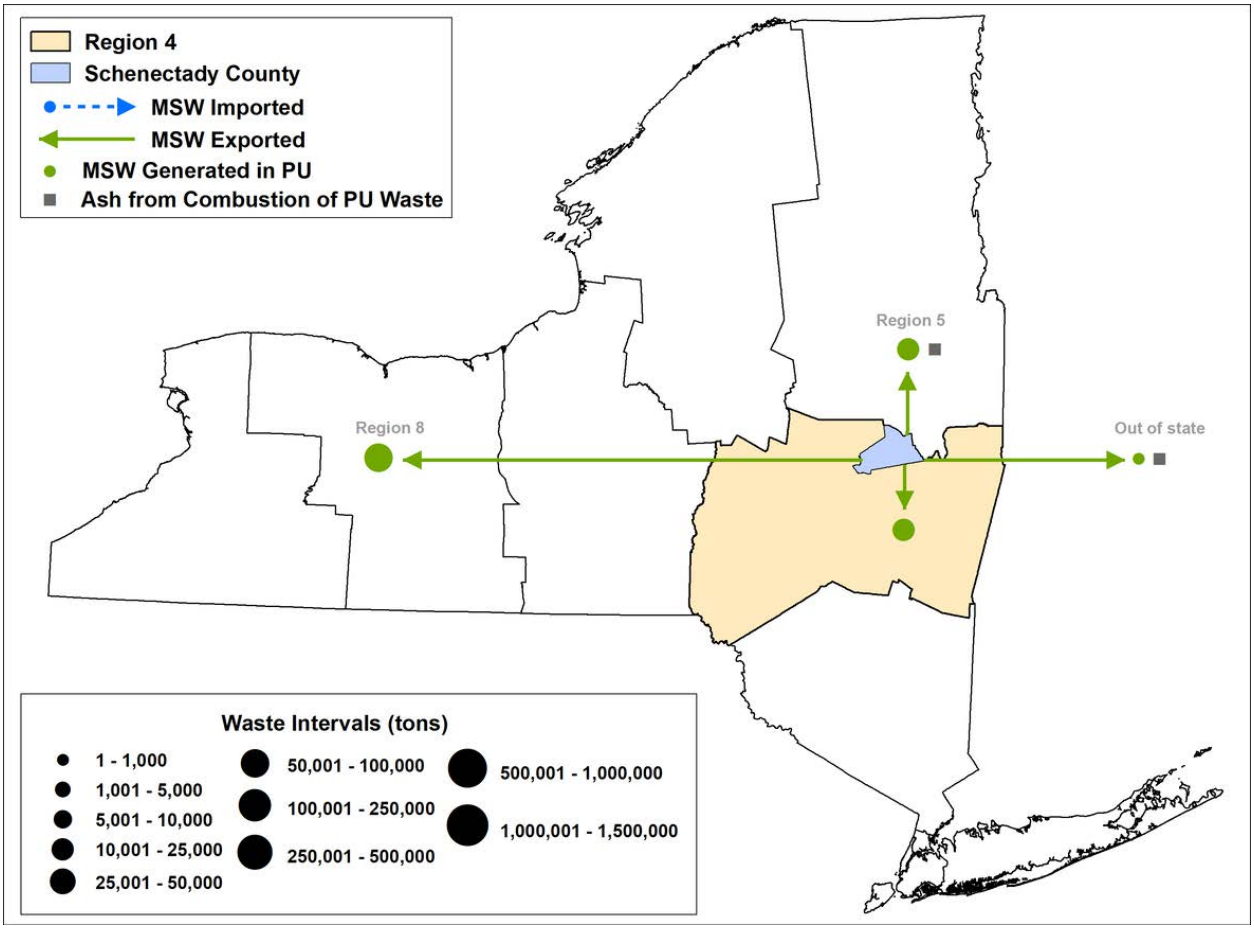


Figure E.85. Schenectady County MSW flow

Figure E.85 shows the flow of MSW into and out of the planning unit in 2018. As shown in the figure, 100% of the MSW generated in the county was exported to facilities outside of the planning unit, and no MSW was imported. About 63% of MSW was exported to Region 8, 19% to Region 5, and 18% to other planning units within Region 4. Small amounts of MSW were sent to out-of-state facilities.

A portion of MSW generated in the planning unit was exported to Region 5 to be processed at a combustion facility. Figure E.85 also shows the movement of the ash waste stream generated through the processing of MSW. The ash residue generated was transported to in- and out-of-state landfills for disposal; about 88% of the ash was sent to out-of-state landfills in Massachusetts, while the remaining 12% was sent to Region 5 landfills to be used as AOC.

The following table provides information on all waste and recovered materials generated in Schenectady County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.28. Schenectady County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	119,000	32,000**
C&D Debris	18,000	15,400
Industrial	13,000	0
Biosolids	2,100	0
Total	152,100	47,400
MSW disposal rate	4.20 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.28 shows that approximately 199,500 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. About 24% was recovered through CDDHRFs or RHRFs, accounting for 47,400 tons, while the remaining 76% was sent for processing at combustion facilities or for disposal at landfills. Approximately 151,000 tons of MSW were generated in the planning unit, accounting for 76% of waste generated in 2018. About 119,000 tons, or 79%, were processed or disposed of, and 32,000 tons, or 21%, were recovered through RHRFs.

As shown in Table E.28, an estimated 33,400 tons of C&D debris were generated in the planning unit, accounting for 17% of all waste generated in 2018. An estimated 54% of the C&D debris waste stream was disposed of, with 46% recovered through CDDHRFs. The industrial waste and biosolids waste stream made up 7% and 1%, respectively, of all waste generated in 2018.

Schoharie County

Schoharie County serves as the solid waste planning unit for all municipalities within the county. The planning unit is characterized as mainly rural, with the southern portion lying within the Catskill Mountains. While the Schoharie County planning unit has an average population density of less than 325 people per square mile, characteristic of rural population density distribution, there are suburban areas within the planning unit. In 2018, it serviced an estimated population of 31,146 (Census, 2019).

The county relies on residents either procuring private haulers to collect and transport MSW and recyclables or utilizing the residential drop-off at the transfer facility or other drop-off locations. Since much of the planning unit is rural, residents tend to manage

yard trimmings on their property. The planning unit holds an annual HHW collection event.

LSWMP Status	The planning unit's LSWMP is approved through 2026.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.86 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.87 shows the flow of waste for the MSW stream.

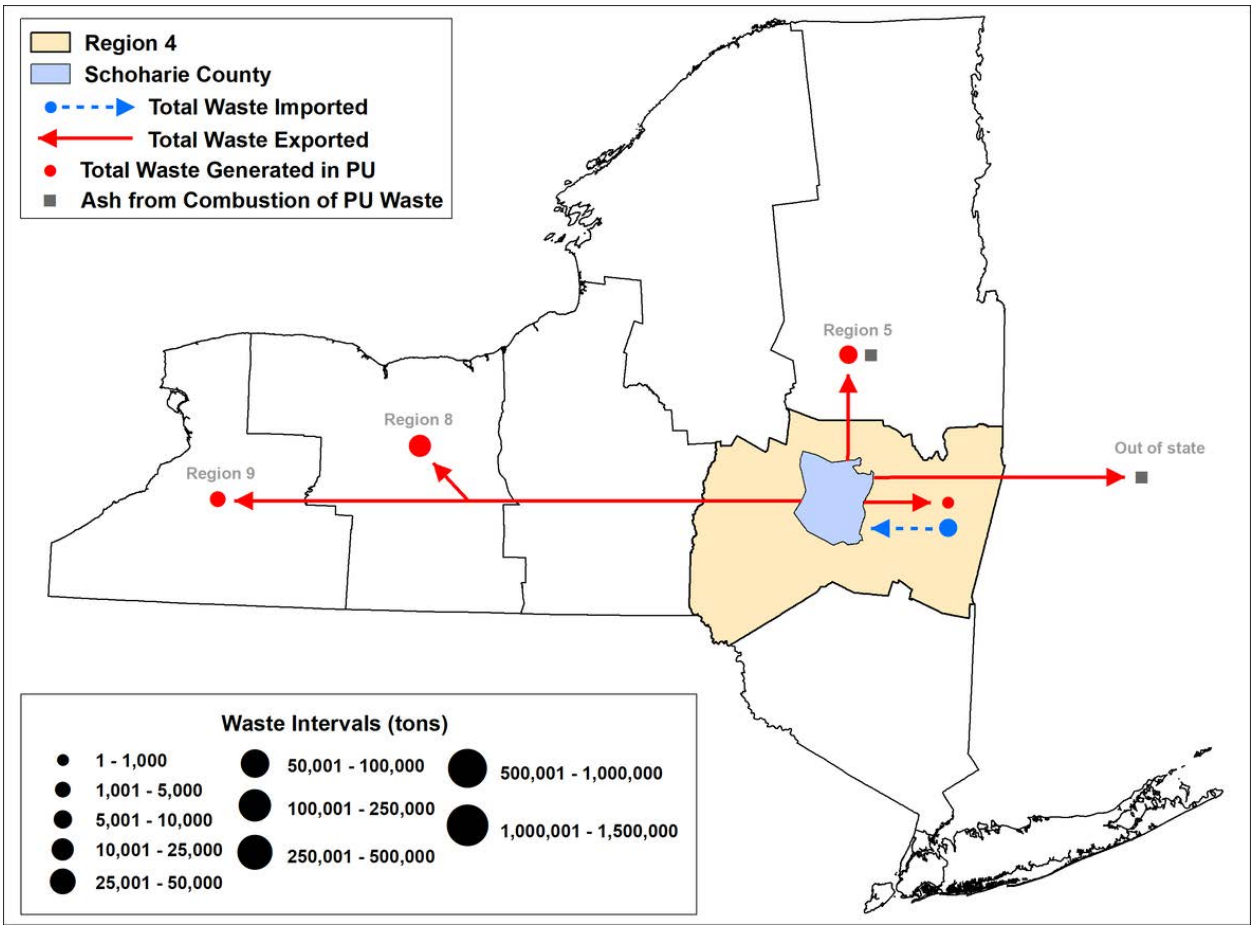


Figure E.86. Schoharie County total waste flow

Figure E.86 represents the flow of all waste from the planning unit in 2018. As shown in the figure, 100% of the waste was exported to facilities outside the planning unit. About 75% was sent to Region 8, 19% was sent to Region 5, 6% to Region 9, and minimal amounts to facilities in other planning units within Region 4. About 74% of waste exported to out-of-state facilities was MSW, 16% was C&D debris, and 10% was biosolids.

The planning unit accepted waste from other planning units within Region 4, shown in Figure E.86. This waste went to facilities in the planning unit for consolidation and was transferred to facilities outside the planning unit for processing or disposal.

Figure E.86 also shows the movement of ash generated from the processing of the planning unit waste in 2018 at combustion facilities. Waste generated within the planning unit was exported to Region 5 to be processed at a combustion facility. An estimated 12% of ash generated at the combustion facility in Region 5 was used as AOC within the same region, while the rest was exported to out-of-state landfills in Massachusetts.

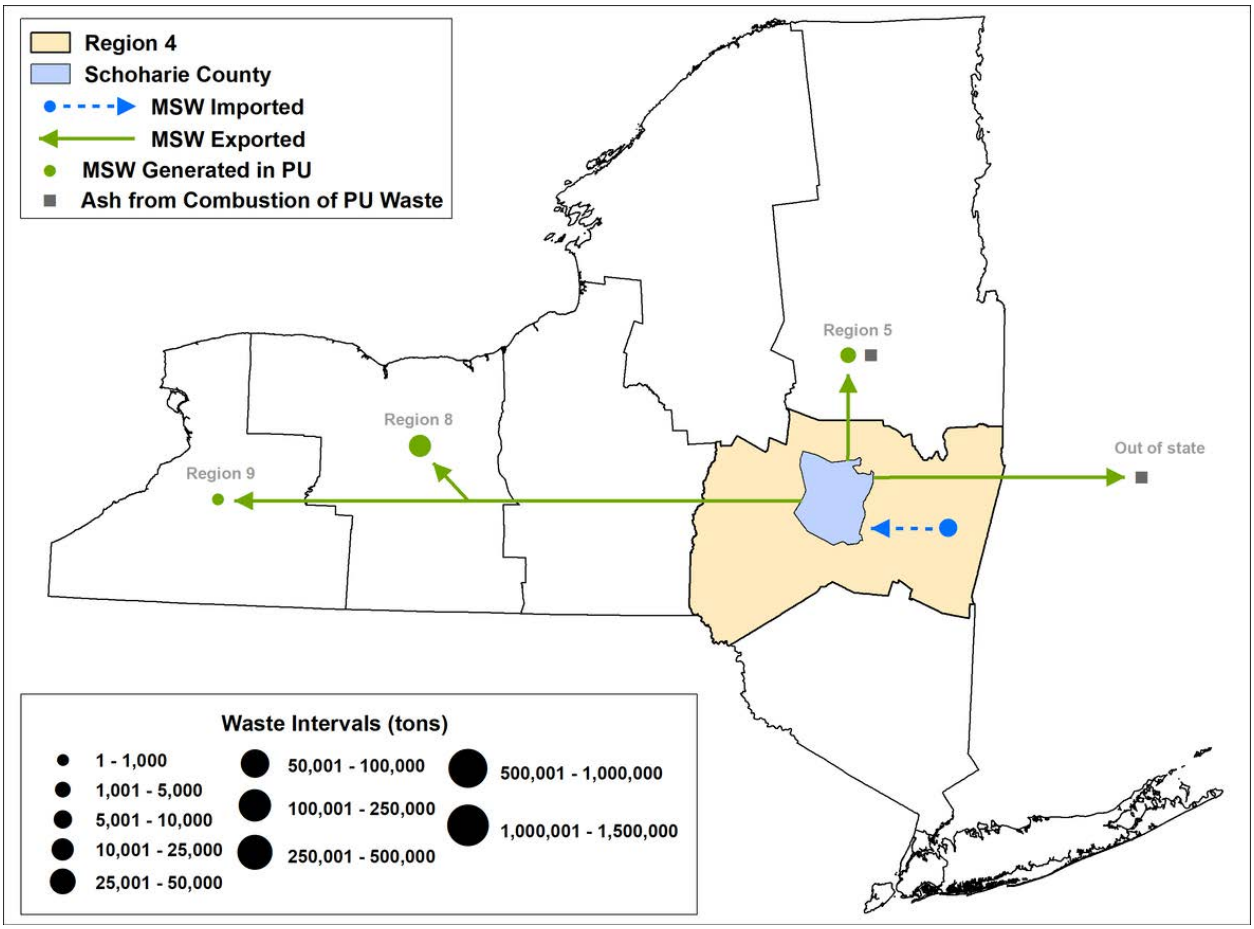


Figure E.87. Schoharie County MSW flow

Figure E.87 shows the flow of MSW in the planning unit in 2018. As shown in the figure, 100% of MSW generated in this planning unit was exported to facilities outside the planning unit. About 85% was sent to Region 8, 15% to Region 5, and minimal waste was sent to Region 9.

A portion of the MSW generated in the planning unit was exported to Region 5 to be processed at a combustion facility. Figure E.87 also shows the movement of the ash waste stream generated through the processing of this MSW. The ash residue generated

was transported to in- and out-of-state landfills. About 88% of the ash was sent for disposal to out-of-state landfills in Massachusetts, while the remaining 12% was used as AOC at Region 5 landfills.

The following table provides information on all waste and recovered materials generated in Schoharie County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.29. Schoharie County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	20,000	2,500**
C&D Debris	4,400	2,400
Industrial	120	0
Biosolids	2,600	0
Total	27,120	4,900
MSW disposal rate	3.52 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.29 shows that approximately 32,020 tons of waste generated in the planning unit during 2018 were processed, disposed of, or recovered. About 4,900 tons, or 15%, were recovered through CDDHRFs or RHRFs, while the remaining 27,120 tons, or 85%, were sent for processing at combustion facilities or for disposal at landfills. Approximately 22,500 tons of MSW were generated in the planning unit, accounting for 70% of waste generated in 2018. About 20,000 tons, or 89%, were processed or disposed of, and 2,500 tons, or 11%, were recovered through RHRFs.

As shown in Table E.29, an estimated 6,800 tons of C&D debris were generated in the planning unit, accounting for 21% of all waste generated in 2018. An estimated 65% of the C&D debris waste stream was disposed of, with 35% recovered through CDDHRFs. The biosolids waste stream made up 8% of all waste generated in 2018, while minimal amounts of industrial waste were generated.

Region 5 Overview and Waste Flow Information

Region 5 consists of Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren, and Washington counties. In this region, each county is a planning unit and there are no non-affiliated municipalities. Region 5 had an estimated population of 581,970 in 2018 (Census, 2019). While there are urban and suburban areas within the region, the average population density is less than 325 people per square mile. All counties in this region have a population characteristic of a rural population density distribution.

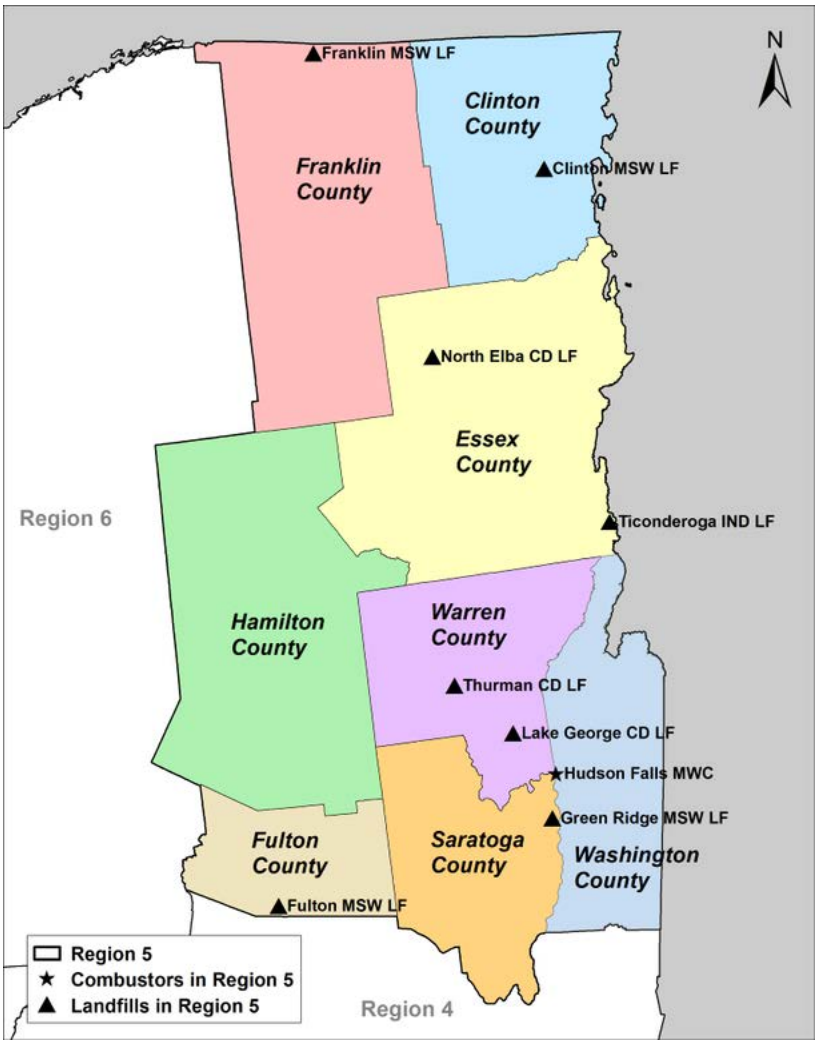


Figure E.88. Region 5 planning units

As shown in Figure E.88, there are four active MSW landfills, three C&D debris landfills, one industrial waste landfill, and one combustion facility. The MSW landfills are in Franklin, Clinton, Fulton, and Saratoga counties. The C&D debris landfills are in Warren County and Essex County and the industrial waste landfill is located in Essex County.

The Wheelabrator Hudson Falls Municipal Waste Combustor (Hudson Falls MWC) is in Washington County. Although this is the only combustion facility in this area, other

planning units in this region will have ash attributed to them on the planning unit waste flow maps. This is because waste that was sent to the combustion facility from those planning units became ash which then had to be disposed of. Ash is attributed to planning units without a combustion facility because it was derived from waste originally generated in those planning units.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 5 in 2018. Figure E.89 represents the flow of all waste destined for processing at combustion facilities or for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.90, Figure E.91, Figure E.92 show the flow of waste by type for MSW, C&D debris, and Industrial waste, respectively.

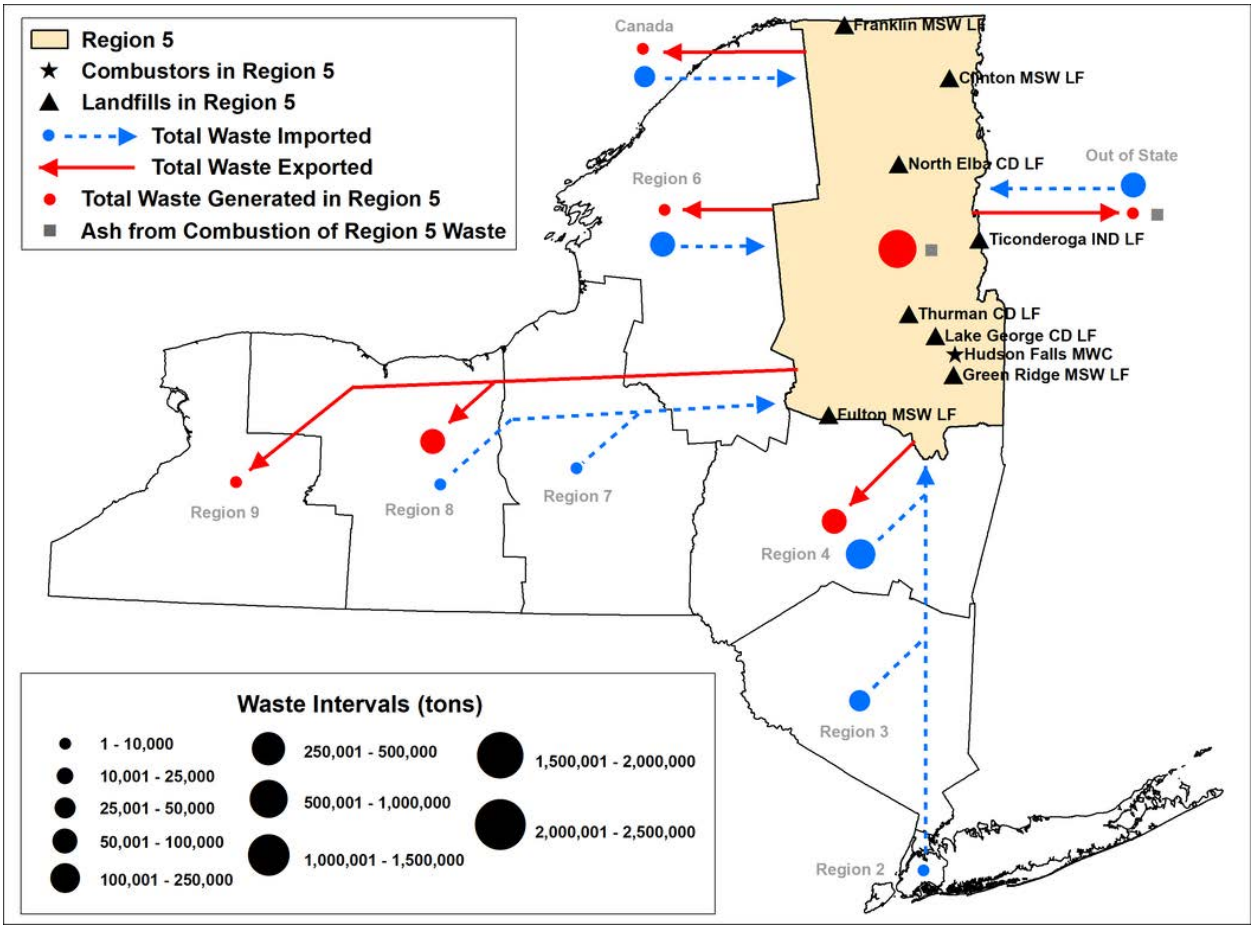


Figure E.89. Region 5 total waste flow

Figure E.89 shows that about 81% of the total waste generated in Region 5 in 2018 was processed at combustion facilities or disposed of at landfills within Region 5. The remaining waste was exported to other regions in NYS, to other states, or to Canada. Region 5 exported waste to Regions 4, 6, 8, and 9. Regions 4 and 8 received the greatest portion of waste exported from Region 5, as each received about 9% of the waste generated in Region 5. Minimal amounts were sent to Regions 6 and 9, to Massachusetts, and to Canada.

Waste was imported to Region 5 from Regions 2, 3, 4, 6, 7, and 8. Waste was also imported from Canada and from other states. MSW accounted for the largest portion of the waste imported to Region 5. About 46% of waste imported to Region 5 came from Region 4, and 16% came from Region 6, while Region 3 provided 10% of imported waste. Regions 2, 7, and 8 each contributed less than 1% of the imported waste to Region 5. Finally, 28% of the waste imported to Region 5 originated in other states or Canada. Of waste imported from other states and Canada, Vermont accounted for approximately 50% and Canada accounted for 33%. The rest of the out-of-state imports came from Massachusetts, Connecticut, and Ohio.

The combustion facility in Washington County accepted waste from Region 5 as well as from other regions in New York. The ash shown on Figure E.89 resulted from the combustion of waste generated in Region 5. Ash that resulted from the combustion of waste generated in other regions is shown and discussed in the section for the region the waste was generated in.

Ash residue resulting from the combustion of Region 5 waste was disposed of either within the region or outside of NYS. About 88% of the ash was sent to Massachusetts. The remaining ash was sent to the Clinton County Landfill for use as AOC.

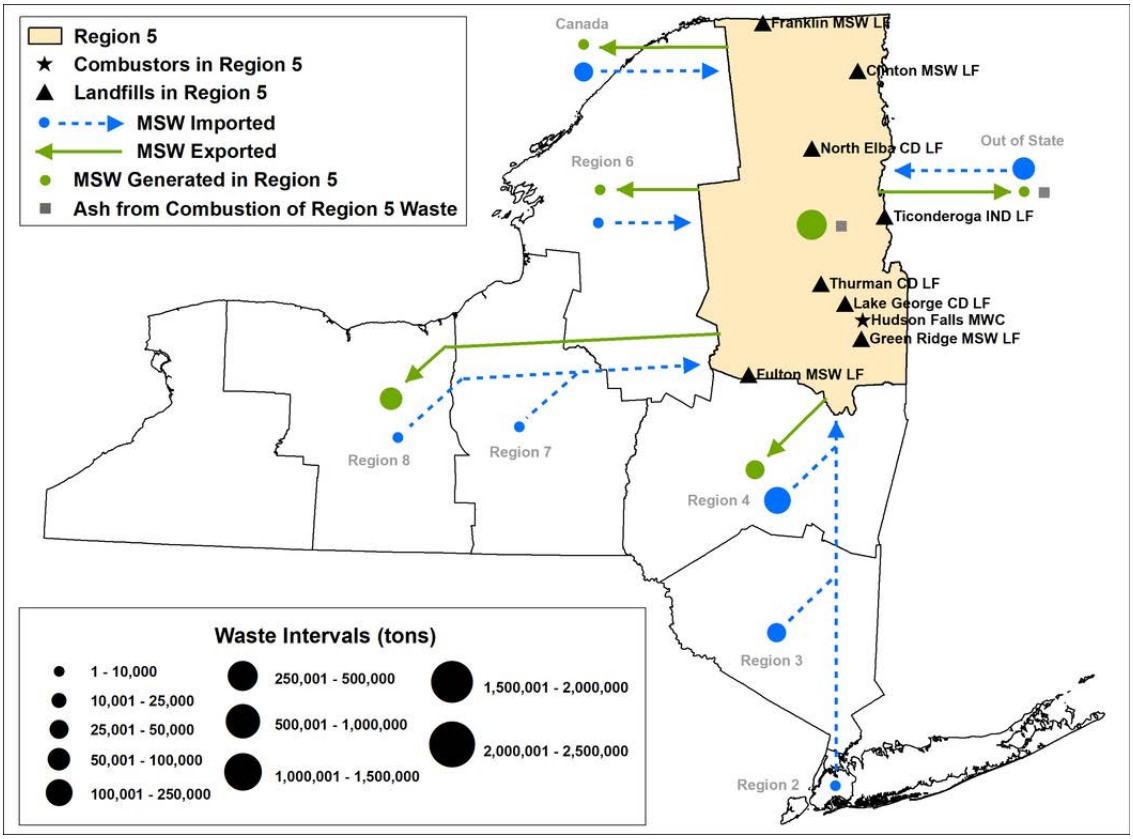


Figure E.90. Region 5 MSW flow

Figure E. 90 shows the flow of the MSW waste stream that was destined for processing at combustion facilities or for disposal at landfills. About 72% of MSW generated in

Region 5 in 2018 was processed or disposed of within the region. The remaining MSW was exported to Regions 4, 6, and 8, to out of state, and to Canada. About 12% and 15% of MSW generated in Region 5 was exported to Regions 4 and 8, respectively. Summed together, Region 6, Canada, and Massachusetts received about 1% of MSW generated in Region 5.

Approximately 67% of waste imported to Region 5 was MSW in 2018. MSW was imported to Region 5 from Regions 2, 3, 4, 6, 7, and 8. MSW was also imported from other states and from Canada. About 51% of MSW imported to Region 5 came from Region 4. An additional 26% came from other states, and 12% came from Canada. Region 3 facilities sent about 10% of MSW imported to this region. The other NYS regions listed sent small amounts of MSW to Region 5. Of the MSW imported from other states, about 73% was imported from Vermont and nearly 27% was imported from Massachusetts. Less than 1% was imported from Ohio.

In 2018, MSW that was generated in Region 5 was combusted at the Hudson Falls MWC in Washington County. Of the ash that resulted from the combustion of this MSW, 12% was sent to Clinton County Landfill for use as AOC and 88% was exported to Massachusetts.

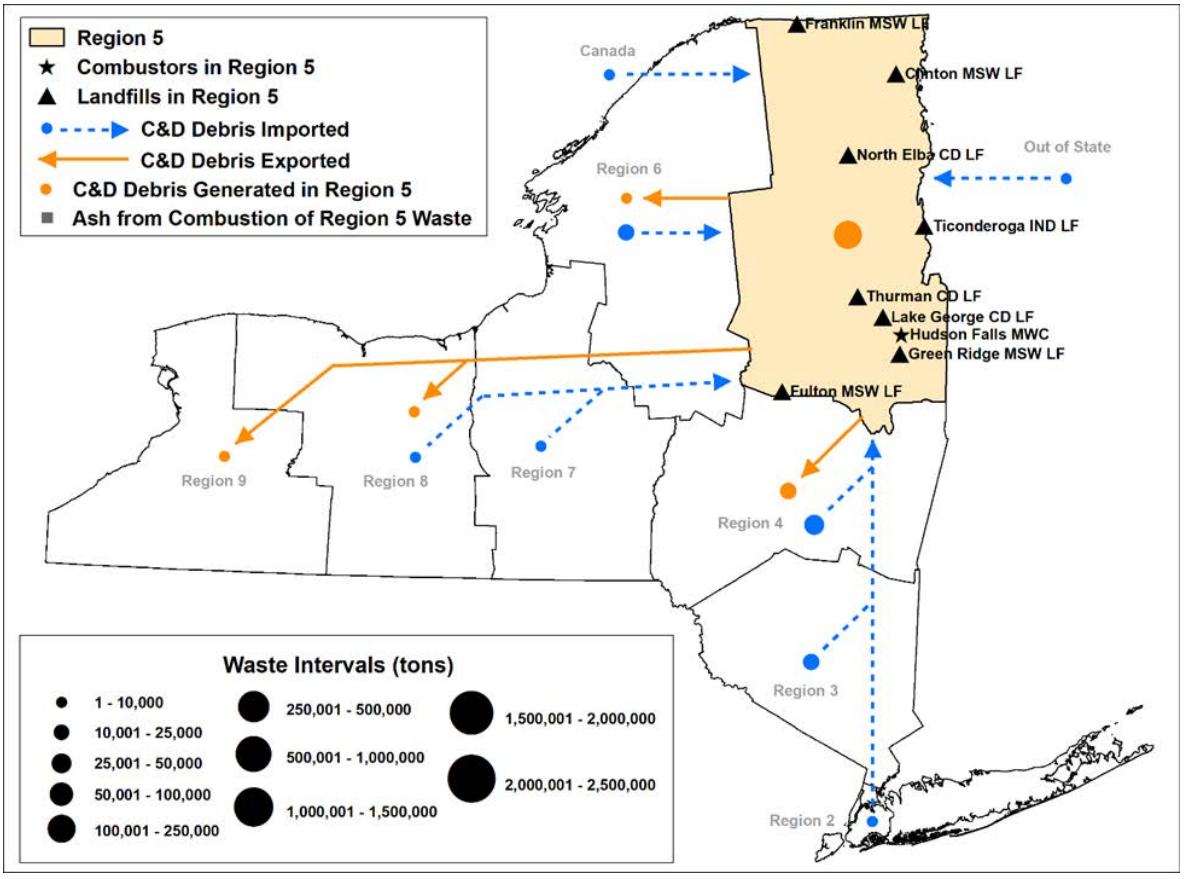


Figure E.91. Region 5 C&D Debris flow

Figure E.91 shows the flow of C&D debris that was destined for processing or disposal. In 2018, about 87% of C&D debris generated in Region 5 was disposed of in Region 5. About 12% of C&D debris was sent to Region 4. The remaining portion of the C&D debris waste stream from Region 5 was exported to Regions 6, 8, and 9.

C&D debris was imported to this region from Regions 2, 3, 4, 6, 7, and 8. C&D debris was also imported from out of state and from Canada. About 51% of C&D debris waste imported to Region 5 came from Region 4. Another 20% of imported C&D debris originated in Region 6, and 16% originated in Region 3. About 7% of C&D debris imported to Region 5 originated in Canada and 6% originated in Vermont. Less than 1% of C&D debris was imported from Regions 7 and 8.

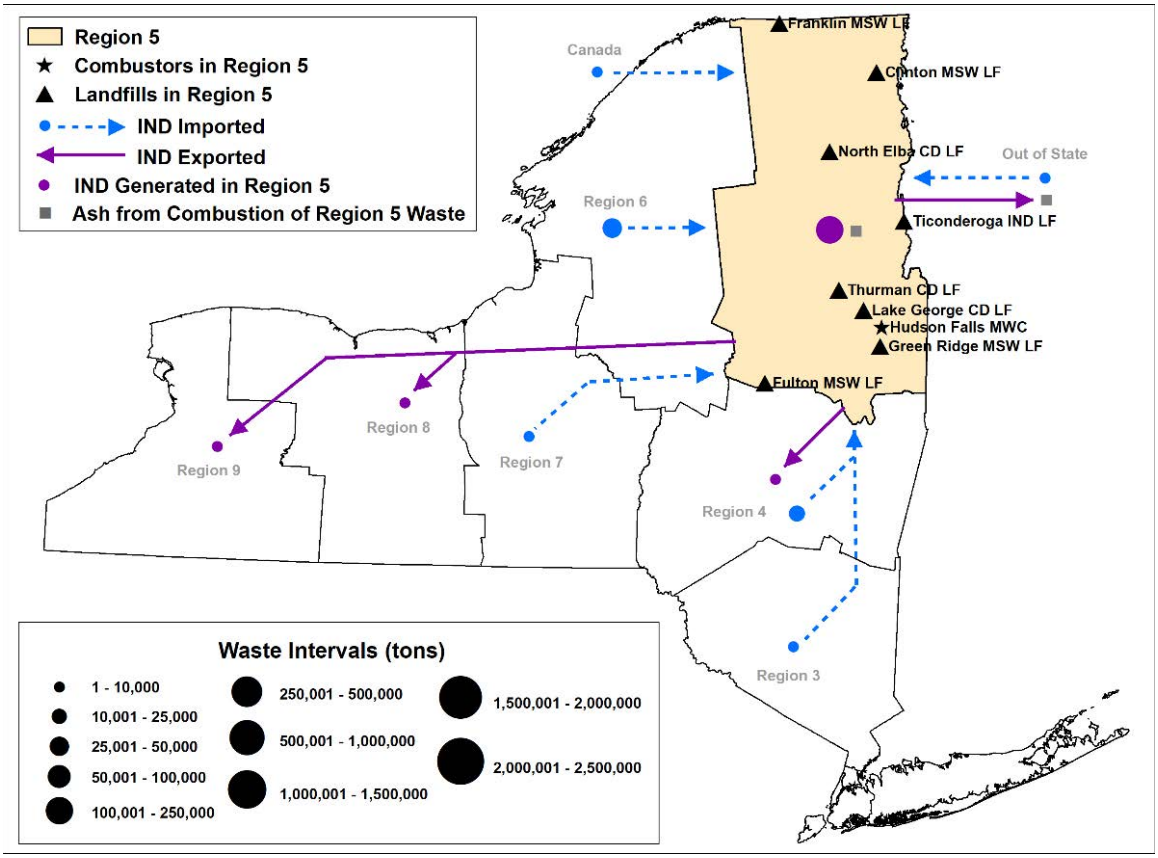


Figure E.92. Region 5 industrial waste flow

The movement of industrial waste in 2018 is shown in Figure E.92. About 98% of industrial waste from Region 5 that was destined for disposal or processing was disposed or processed within the region. The remaining portion of the industrial waste stream from Region 5 was exported to Regions 4, 8, and 9.

In 2018, industrial waste was also imported to Region 5 from Canada, from out of state, and from Regions 3, 4, 6, and 7. About 73% of imported industrial waste came from Region 6 and 22% of industrial waste imported to Region 5 originated in Region 4. Summed together, Regions 3, 7, and Canada contributed just over 2% of imported

industrial waste to Region 5. Industrial waste imported from Connecticut and Vermont accounted for about 2% of industrial waste imported in 2018. Of the industrial waste imported from other states, Vermont contributed 70% with the remaining 30% from Connecticut.

A small amount of industrial waste from Region 5 was combusted at the Hudson Falls MWC in Washington County in 2018. An estimated 2% of all the ash residue generated from processing of Region 5 waste at combustion facilities in 2018 was from the industrial waste stream. The resulting ash was either exported to facilities in Massachusetts or sent to Clinton County Landfill where it was used as AOC. About 88% of ash residue was sent to Massachusetts and 12% was sent to Clinton County Landfill.

Table E.30. Region 5 organics recycling summary

Anaerobic Digestion - No facilities	
Composting	
Source-Separated Organics	0 tons
Food Processing Waste	0 tons
Yard Trimmings	17,216 tons
Biosolids	54,605 tons
Land Application	
Biosolids	341 tons
Food Processing Waste	1,377 tons

There are five composting operations in Region 5 that compost yard trimmings, four biosolids composting operations, two biosolids land application operations, six food processing waste land application operations, and no operating anaerobic digesters. Table E.30 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all waste and recovered materials generated in Region 5 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs, RHRFs, composting facilities, and land application facilities.

Table E.31. Region 5 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	397,800	105,366
C&D Debris	175,000	7,400

Industrial	138,900	1,527
Biosolids	45,067	54,946
Total	756,767	169,239
MSW disposal rate	3.75 lbs/person/day	
* The heavy metal category is not included in the values in this table.		

As shown in Table E.31, about 926,006 tons of waste generated in 2018 were processed, disposed of, or recovered. Approximately 169,239 tons were recovered by CDDHRFs, RHRFs, composting facilities, and land application facilities, which accounts for 18% of the generated waste. The remaining waste, about 756,767 tons, or 82%, was processed or disposed.

MSW accounted for about 54% of waste generated in Region 5 in 2018 with about 503,166 tons. Approximately 21% of MSW was recovered at RHRFs and composting facilities. The remaining MSW, about 397,800 tons, was processed at combustion facilities or disposed of at landfills.

Table E.31 also shows that 182,400 tons of C&D debris was generated in 2018. This accounted for 20% of waste generated in Region 5. An estimated 96% of the C&D debris waste stream was disposed of and the remaining 4% of C&D debris was recovered through CDDHRFs. Industrial waste and biosolids made up 15% and 11%, respectively, of all waste generated in 2018.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 5. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit.

Clinton County

Clinton County serves as the planning unit for all municipalities within the county. This county had an estimated population of 80,679 in 2018 (Census, 2019). While there are urban and suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Clinton County owns the Clinton County MSW Landfill and a Materials Recovery Facility (MRF), which are both operated by a private company. Transfer facilities throughout the county allow residents to drop off their household MSW and recyclables. These transfer facilities utilize the Pay As You Throw (PAYT) system that charges residents to dispose of MSW but accepts most

recyclables for free. This incentivizes residents to recycle as much of their waste stream as they can and minimize the amount destined for disposal in the landfill. The County also engages in yard-trimmings composting at the landfill site; community outreach and education programs; and HHW collection events.

LSWMP Status	The planning unit's LSWMP is approved through 2028.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.93 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E. 94 shows the flow of waste for the MSW stream.

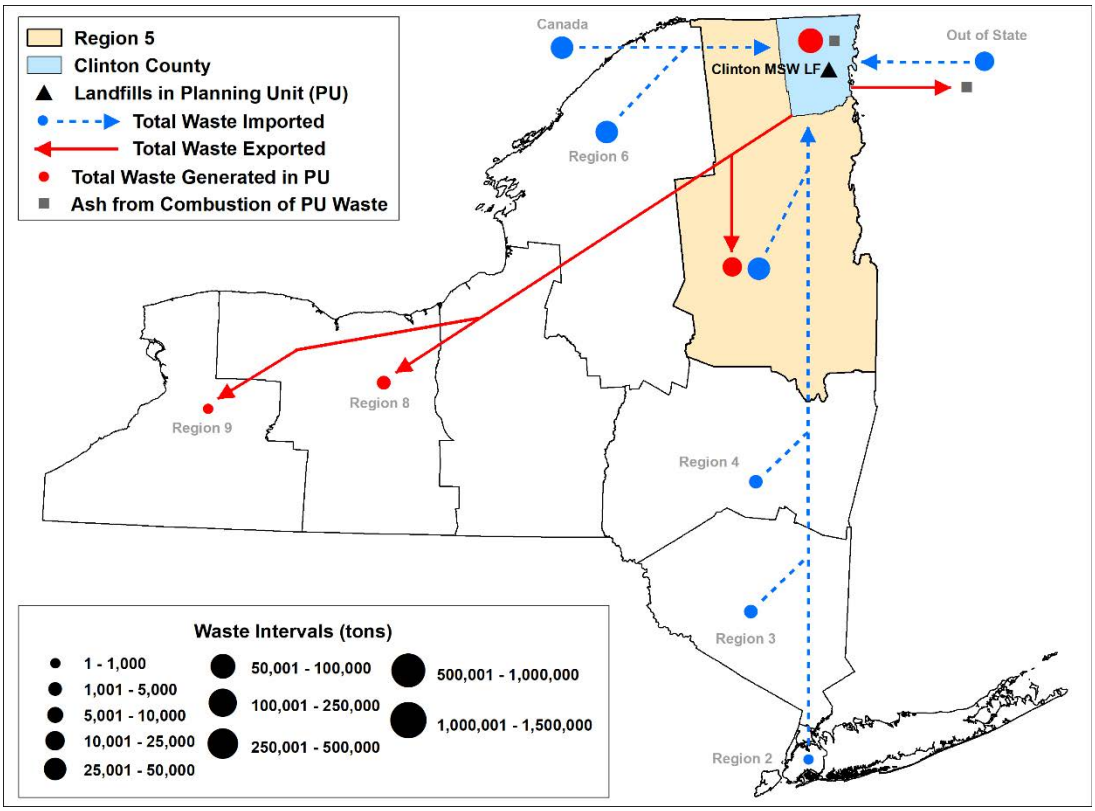


Figure E.93. Clinton County total waste flow

Figure E.93 shows the flow of all waste streams, not including recovered materials, within the Clinton County planning unit in 2018. Approximately 88% of waste generated in Clinton County from all waste streams was disposed of within the county. About 11% of waste generated in Clinton County was sent to other planning units in Region 5 for processing or disposal. Small amounts of waste were also exported to Regions 8 and 9.

Figure E.93 also shows that waste was imported from Regions 2, 3, 4, and 6. Waste was also imported from other planning units in Region 5, from Canada, and from out of state. Region 6 accounted for the greatest portion of imported waste, about 34%. Approximately 29% of waste imported to Clinton County came from Canada and an additional 21% originated in other planning units in Region 5. About 13% of imported waste originated out of state. Regions 2, 3, and 4 each contributed to a small percentage of Clinton County's imported waste. Of the waste that was imported from other states, about 97% originated in Massachusetts and 3% originated in Vermont.

Although there are no combustion facilities in Clinton County, some MSW from the planning unit was exported and processed at a combustion facility in another planning unit within Region 5. Of the ash residue resulting from the combustion of Clinton County waste, 12% was used as AOC at the Clinton County Landfill. The other 88% was exported to Massachusetts.

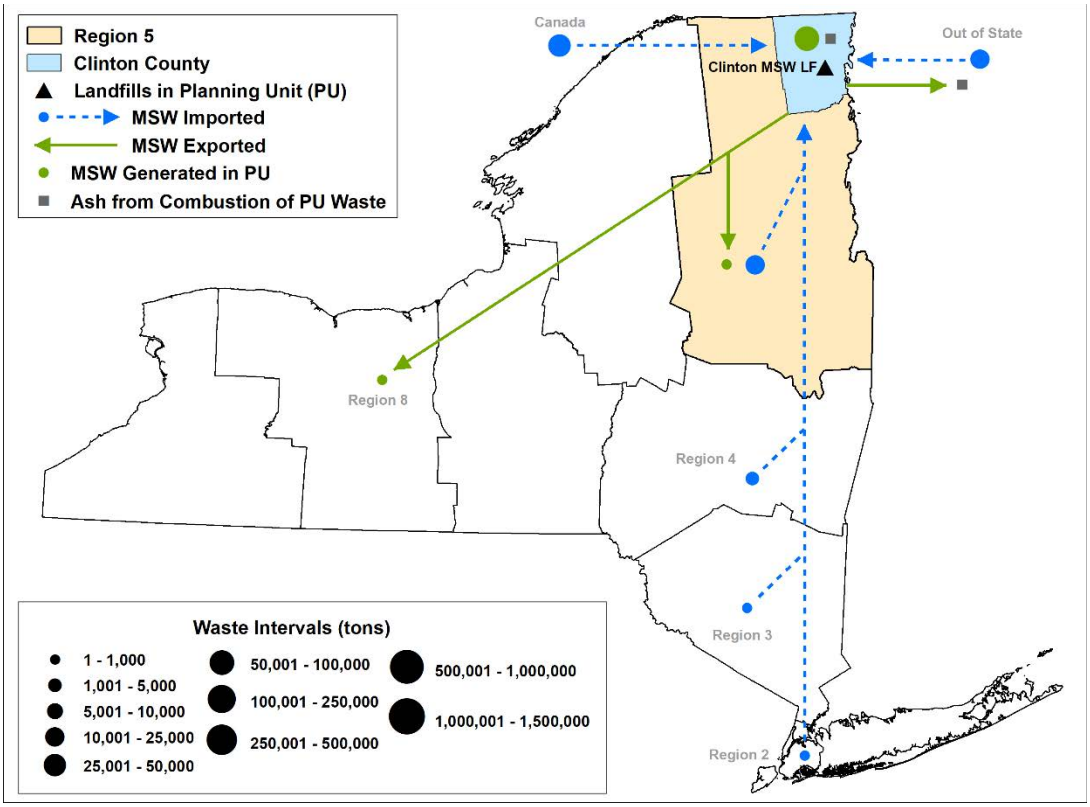


Figure E. 94. Clinton County MSW flow

Figure E. 94 shows the flow of MSW into and out of the planning unit in 2018. Approximately 98% of the MSW generated in Clinton County was disposed of within the county. Minimal amounts of MSW were exported to other planning units in Regions 5 and 8.

MSW was imported to Clinton County from Regions 2, 3, and 4, other planning units in Region 5, other states, and Canada in 2018. Canada accounted for 49% of MSW

imports. Other planning units in Region 5 accounted for 25% of imports, while other states accounted for approximately 23% of the imported MSW. An additional 2% was imported from Region 4, and minimal amounts were imported from Region 2. The majority of the MSW imported from other states was from Massachusetts while a fraction of a percent was imported from Vermont.

Some MSW from Clinton County was processed at a combustion facility in another planning unit in Region 5, resulting in ash residue. Of this ash residue, 88% was exported to Massachusetts. The remaining 12% was used as AOC at the Clinton County Landfill.

The following table provides information on all waste and recovered materials generated in Clinton County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.32. Clinton County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	52,300	6,600**
C&D Debris	53,200	100
Industrial	1,800	0
Biosolids	5,600	0
Total	112,900	6,700
MSW disposal rate	3.55 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.32, about 119,600 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 112,900 tons, or 94%, were processed or disposed of. The remaining 6,700 tons, or 6%, were recovered by CDDHRFs or RHRFs.

Table E.32 shows that about 58,900 tons of MSW were generated in 2018, which accounted for 49% of all waste generated in the planning unit that year. Of that 58,900 tons of MSW, 11% was recovered through RHRFs and the remaining 89% was processed or disposed of.

C&D debris accounted for 45% of the total waste from 2018. Over 99% of C&D debris generated in 2018 was disposed of or processed and the remainder was recovered

through CDDHRFs. Industrial waste and biosolids made up 2% and 5%, respectively, of all waste generated in 2018.

Essex County

The Essex County planning unit consists of all municipalities within the county. This county was estimated to have a population of 37,288 in 2018 (Census, 2019) and has a low average population density. While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. There are two landfills in this planning unit: the North Elba Landfill, which is a C&D debris landfill, and the Ticonderoga Landfill, which is an industrial waste landfill.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.95 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.96 shows the flow of waste for the MSW stream.

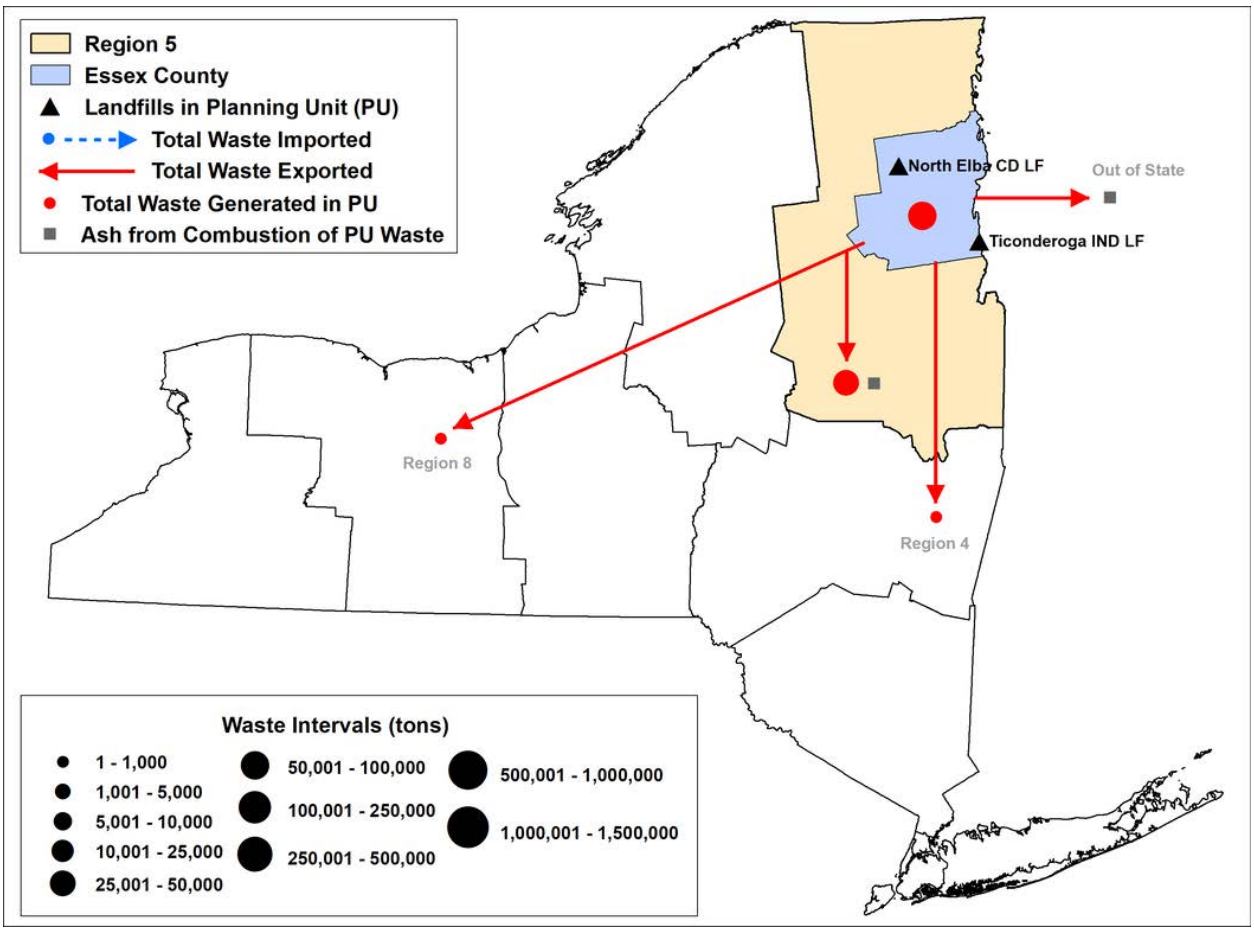


Figure E.95. Essex County total waste flow

Figure E.95 shows the flow of all waste types, not including recovered materials, into and out of Essex County in 2018. About 65% of waste generated in this planning unit was disposed of within the planning unit in 2018. Approximately 96% of waste generated and disposed of within the planning unit was industrial waste that was disposed of at the Ticonderoga industrial landfill. C&D debris made up the remaining 4% of waste disposed of within the planning unit, at the North Elba C&D debris landfill. The remaining waste generated in this planning unit, including all MSW, was exported to other planning units in Regions 5, 4 or 8. Other planning units in Region 5 received 33% of Essex County's total waste. Small amounts of waste were exported to the other regions.

Figure E.95 shows that no waste was imported to this planning unit in 2018.

Although there are no combustion facilities in Essex County, some MSW from the planning unit was exported and processed at a combustion facility within another planning unit in Region 5. About 88% of ash remaining after the combustion of waste from Essex County was sent to Massachusetts and 12% was used as AOC at the Clinton County Landfill.

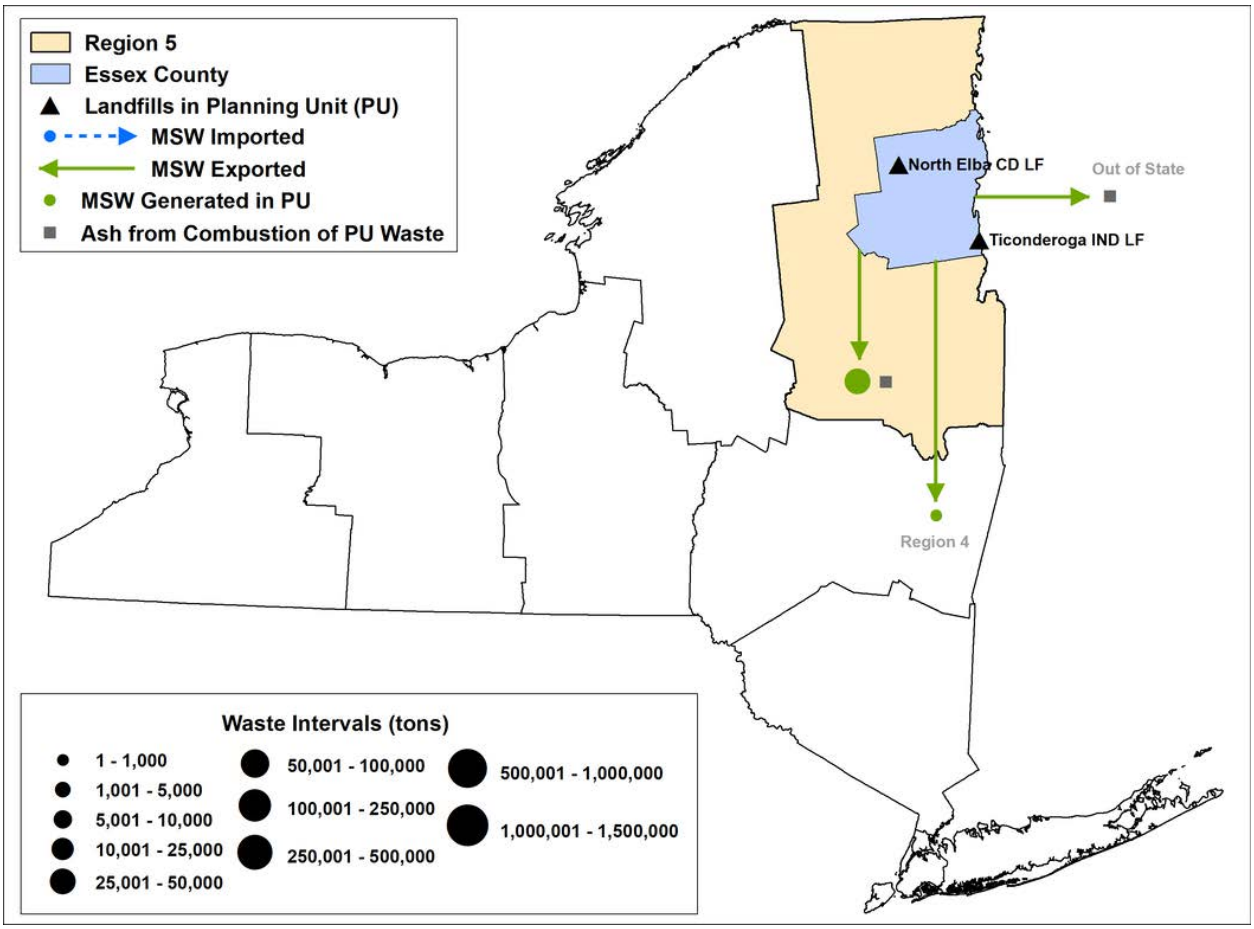


Figure E.96. Essex County MSW flow

Figure E.96 shows that in 2018 no MSW was disposed of in this planning unit. All MSW generated in Essex County was exported for processing or disposal. Approximately 99% of MSW from this planning unit was sent to other planning units in Region 5. Minimal amounts of MSW were also exported to Region 4.

Figure E.96 shows that no MSW was imported to this planning unit in 2018.

MSW from Essex County was processed at a combustion facility within another planning unit in Region 5, resulting in ash. About 88% of the ash remaining after the combustion of this MSW was sent to Massachusetts while about 12% was sent to Clinton County Landfill. Ash sent to Clinton County Landfill was used as AOC.

The following table provides information on all waste and recovered materials generated in Essex County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.33. Essex County waste summary

Type of Waste*	Tons Disposed	Tons Recovered

MSW	27,000	3,500**
C&D Debris	19,800	10
Industrial	98,930	0
Biosolids	900	0
TOTAL	146,630	3,510
MSW disposal rate	3.97 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.33, about 150,140 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 146,630 tons, or 98%, were processed or disposed of,. The remaining 3,510 tons, or 2%, were recovered by CDDHRFs or RHRFs.

Table E.33 shows that about 30,500 tons of MSW were generated in 2018, which accounted for 20% of all waste generated in the planning unit that year. Of that 30,500 tons of MSW, 11% was recovered through RHRFs, and the remaining 89% was processed or disposed of.

C&D debris accounted for 13% of the total waste from 2018. Over 99% of C&D debris generated in 2018 was disposed of or processed. Minimal amounts were recovered through CDDHRFs. Industrial waste and biosolids made up 66% and 1%, respectively, of all waste generated in 2018.

County of Franklin Solid Waste Management Authority (CFSWMA)

The County of Franklin Solid Waste Management Authority (CFSWMA) is the planning unit for all municipalities in Franklin County. Franklin County had an estimated population of 50,279 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The CFSWMA owns the Franklin County Regional Landfill as well as three transfer facilities located throughout the planning unit. County residents can drop off their recyclables at any of the three transfer facilities or at a fourth location that serves as a dedicated recycling collection site. Recyclables are then brought to the county's Materials Recovery Facility. The CFSWMA also offers other services to residents, such as yard-trimmings composting and brush clipping.

LSWMP Status	The planning unit's LSWMP is approved through 2022.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.97 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.98 shows the flow of waste for the MSW stream.

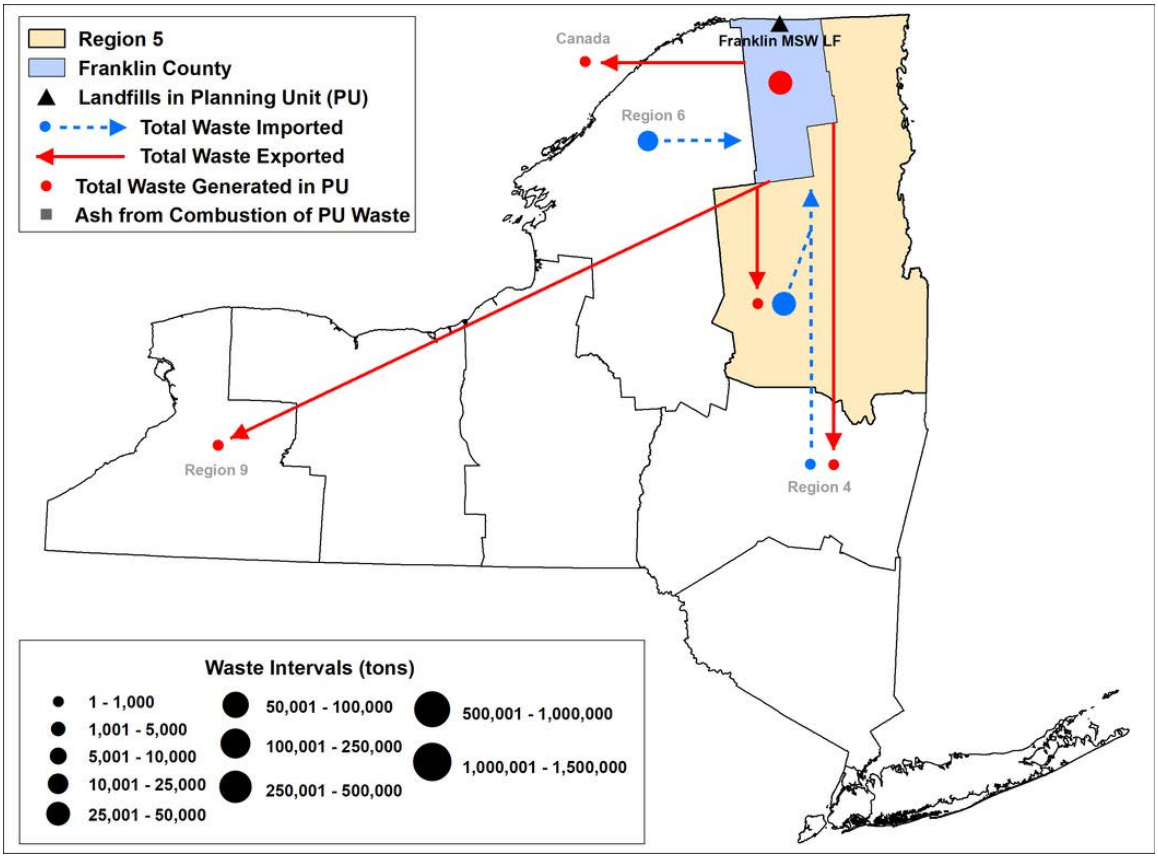


Figure E.97. CFSWMA total waste flow

Figure E.97 shows the flow of all waste streams, not including recovered materials, into and out of the CFSWMA planning unit in 2018. Over 99% of waste that was generated in Franklin County from all waste streams was disposed of within the county. The remaining waste was exported to other planning units in Regions 5, 4, and 9, or to Canada.

Figure E.97 also shows waste was imported from Region 4, Region 6, and other planning units in Region 5. Other planning units in Region 5 accounted for 66% of imported waste. About 34% of waste imported to Franklin County came from Region 6 and minimal amounts were imported from Region 4.

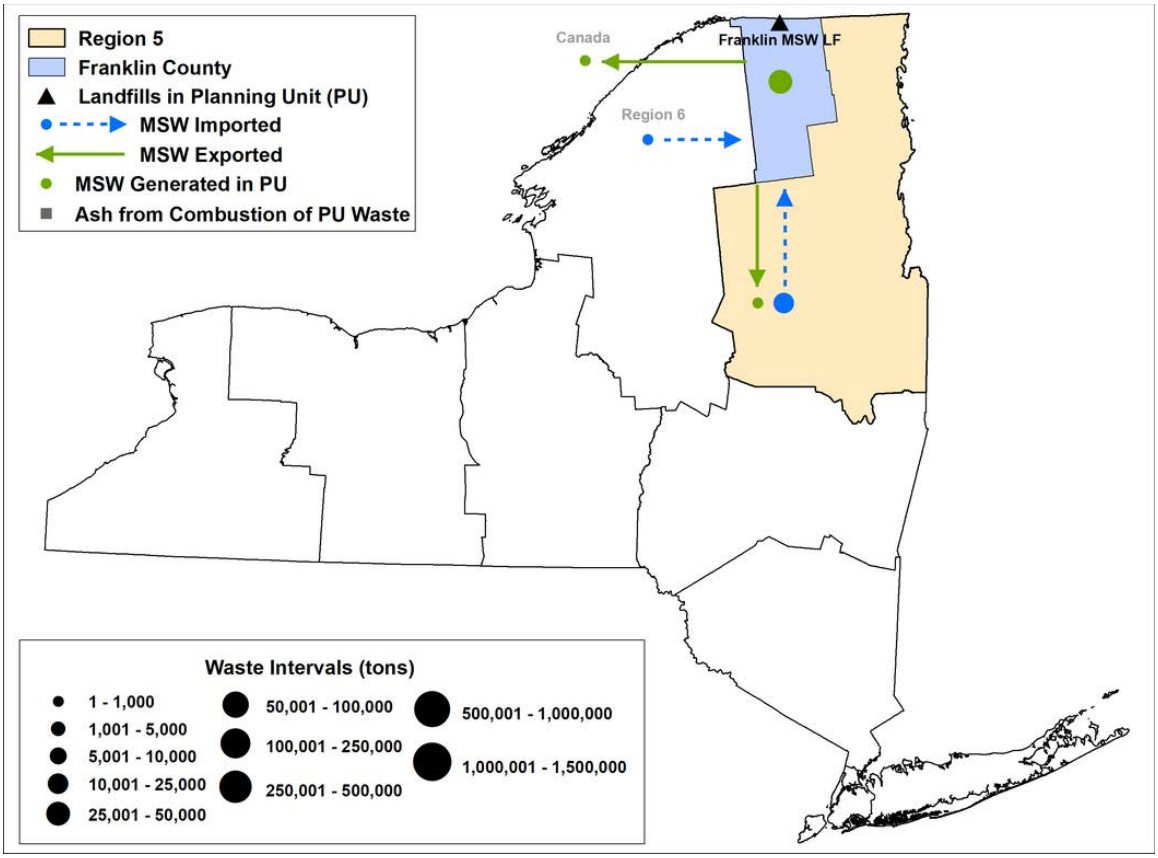


Figure E.98. CFSWMA MSW flow

Figure E.98 shows the flow of MSW into and out of the planning unit in 2018. About 99% of Franklin County's MSW was disposed of within the planning unit. Small amounts of waste were also exported to other planning units in Region 5 and to Canada.

MSW was imported to Franklin County from other planning units in Region 5 and Region 6 in 2018. About 96% of MSW imported into Franklin County came from other planning units in Region 5. The remaining 4% originated in Region 6.

The following table provides information on all waste and recovered materials generated in CFSWMA by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.34. CFSWMA waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	26,590	2,300**
C&D Debris	6,000	0
Industrial	10	0

Biosolids	1,897	0
TOTAL	34,497	2,300
MSW disposal rate	2.90 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.34, about 36,797 tons of waste generated in 2018 were processed, disposed of, or recovered. RHRFs recovered approximately 2,300 tons, or 6%, of that waste. The remaining 34,497 tons, about 94%, was processed or disposed of. Table E.34 also indicates that about 28,890 tons of MSW was generated in this planning unit in 2018. MSW made up 79% of CFSWMA's waste that year. Of that amount, 2,300 tons, or 8%, was recovered through RHRFs.

C&D debris made up about 16% of Franklin County's waste in 2018. None of the C&D debris waste stream was recovered through CDDHRFs. Industrial waste only accounted for a fraction of a percent of the waste stream. Biosolids accounted for about 5% of the total waste in 2018.

Fulton County

The Fulton County planning unit provides solid waste management options for all municipalities in the county. An estimated 53,633 residents resided in the county in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. This planning unit is home to the Fulton County Sanitary Landfill. The county has enacted flow-control legislation, which ensures all waste produced within the county is disposed of through the Fulton County waste management system. The Fulton County Department of Solid Waste also runs single stream residential recycling, small business and nonprofit recycling, yard-trimmings composting, electronics collection, textile collection, and other programs for residents and businesses in the county.

LSWMP Status	The planning unit's LSWMP is approved through 2025.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.99 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.100 shows the flow of waste for the MSW stream.

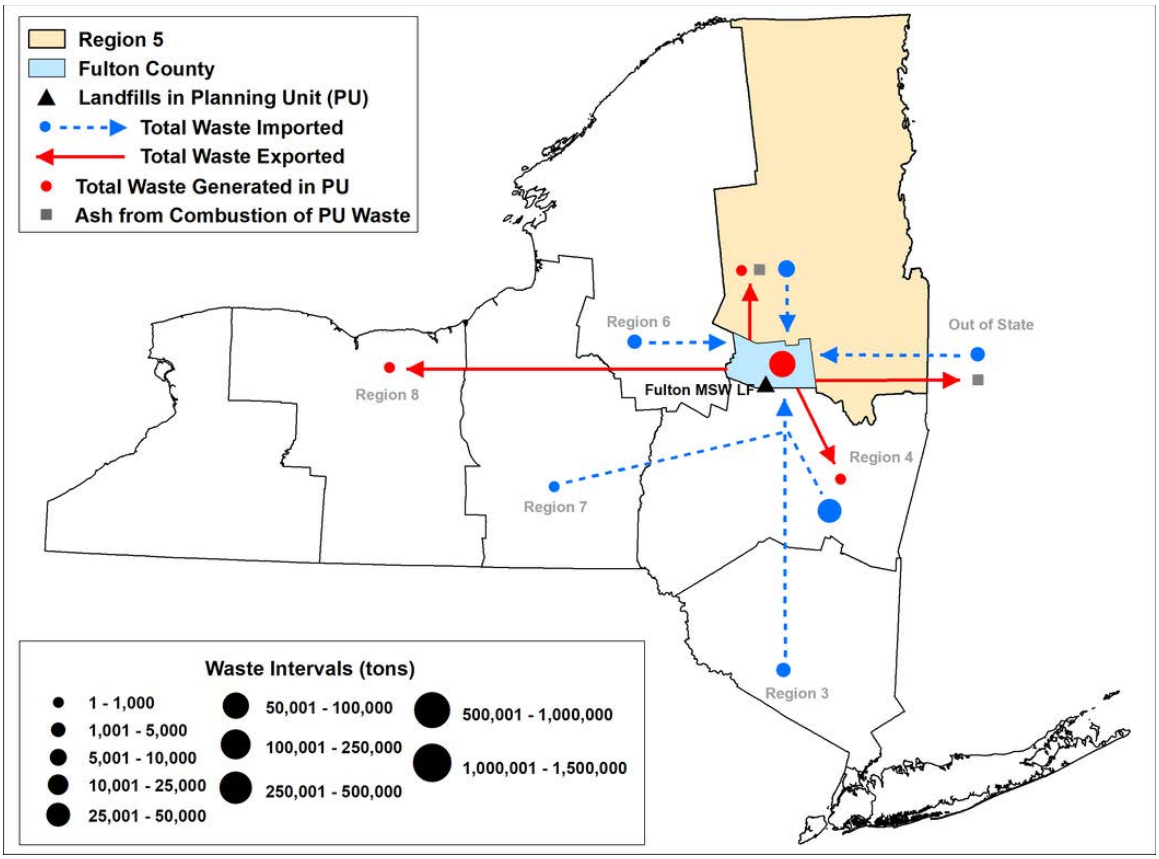


Figure E.99. Fulton County total waste flow

Figure E.99 shows the flow of all waste streams in Fulton County from 2018. As shown, about 99% of waste generated, not including recovered materials, was disposed of within the planning unit. Small amounts of waste were also sent to other planning units in Regions 5,4, and 8.

As shown in Figure E.99, waste was imported to Fulton County in 2018. Approximately 71% of imported waste came from Region 4. About 16% of imported waste originated in other planning units in Region 5, and 5% each was imported from Regions 3 and 6. A fraction of a percent of imported waste originated in Region 7. Imports from Massachusetts accounted for about 3% of waste imported to Fulton County.

There are no combustion facilities in Fulton County. However, MSW from Fulton County that was exported was processed at a combustion facility in another planning unit in Region 5. About 88% of ash that remained after the combustion of waste generated in Fulton County was disposed of in Massachusetts. The remaining ash was used as AOC at the Clinton County Landfill.

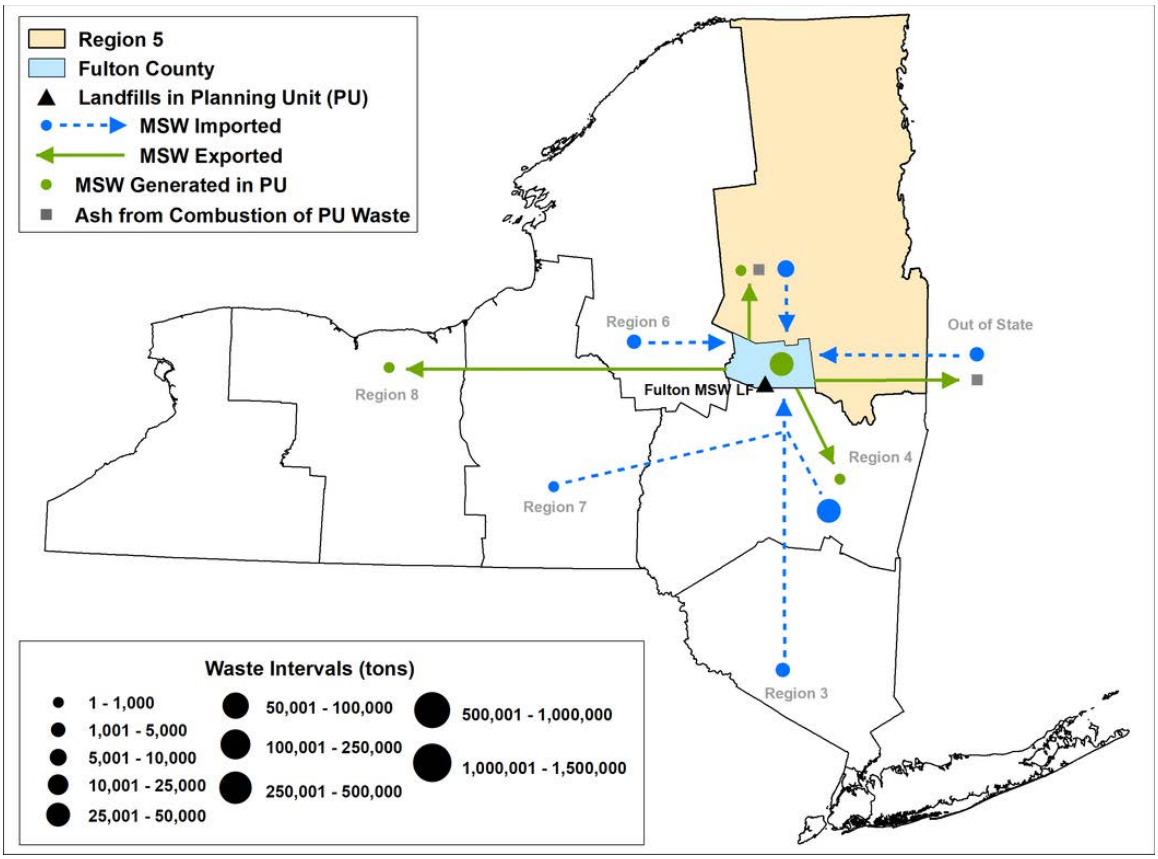


Figure E.100. Fulton County MSW flow

Figure E. 100 shows the movement of MSW, not including recovered materials, generated in or imported to Fulton County in 2018. The MSW waste flow shows the vast majority of Fulton County's MSW was disposed of within the planning unit. About 98% of the MSW generated in the planning unit was disposed of at the Fulton County Sanitary Landfill. The remaining MSW was exported to other planning units in Region 5, or to Regions 4 or 8 for processing or disposal.

Figure E. 100 also shows that waste was imported to this planning unit from Regions 3, 4, 6, and 7 in 2018. Additional MSW was imported from other planning units in Region 5 and from out of state. About 71% of the MSW imported to Fulton County originated in Region 4. Approximately 14% of waste imported to this planning unit in 2018 was from other planning units in Region 5, and 6% each was imported from Regions 3 and 6. Minimal amounts were imported from Region 7. About 4% of imported MSW came from Massachusetts.

MSW from Fulton County was processed at a combustion facility within another planning unit in Region 5, resulting in ash. Of this ash, 88% was exported to Massachusetts and the remaining 12% was used as AOC at the Clinton County Landfill.

The following table provides information on all waste and recovered materials generated in Fulton County by waste type. It differentiates between the tons of waste processed at

combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.35. Fulton County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	45,510	14,600**
C&D Debris	18,400	2,500
Industrial	6,500	10
Biosolids	20,450	0
Total	90,860	17,110
MSW disposal rate	4.65 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.35, it was estimated that about 107,970 tons of waste generated in 2018 were processed, disposed of, or recovered. About 17,110 tons, or 16%, were recovered through CDDHRFs or RHRFs. The remaining 90,860 tons, or 84%, were processed at combustion facilities or disposed of at landfills.

Table E.35 shows that MSW made up about 56% of waste generated in this planning unit in 2018. Of the 60,110 tons of MSW generated, about 24% was recovered through RHRFs. The remaining 76% was combusted or disposed of.

C&D debris made up 19% of waste generated in 2018. Approximately 12% of the C&D debris waste stream was recovered, while 88% was disposed of at landfills. Industrial waste and biosolids made up 6% and 19%, respectively, of the total waste stream.

Hamilton County

The Hamilton County planning unit includes all municipalities in that county. With an estimated population of 4,432 in 2018, this planning unit had a very low population density Census, 2019). The average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. During the warm weather months, the county experiences drastic increases in population as tourists visit. Due to its location within the Adirondack Park, it is difficult for Hamilton County to site and develop large municipal waste management facilities. However, residents, businesses, and tourists visiting the

Adirondacks generate waste within Hamilton County. MSW generated within the county is brought to one of the municipal transfer facilities in the county and hauled to another planning unit. Those transfer facilities also serve as recycling and residential drop-off facilities.

LSWMP Status	The planning unit's approved LSWMP expired in 2000. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.101 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.102 shows the flow of waste for the MSW stream.

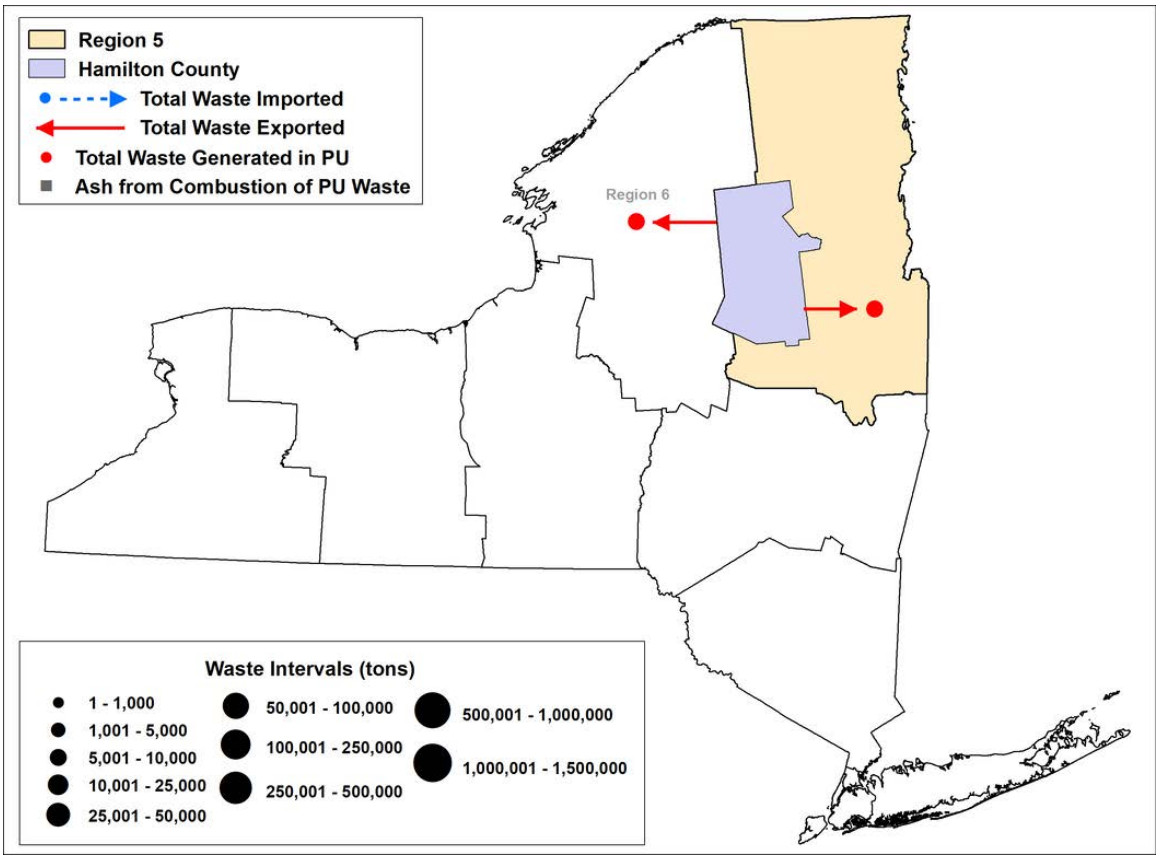


Figure E.101. Hamilton County total waste flow

Figure E. 101 shows the flow of waste, not including recovered materials, generated in this planning unit in 2018. All waste generated in Hamilton County was sent elsewhere for disposal. About 54% of Hamilton County's waste was sent to other planning units in Region 5, and the other 46% was sent to Region 6 for disposal.

Hamilton County did not import any waste in 2018.

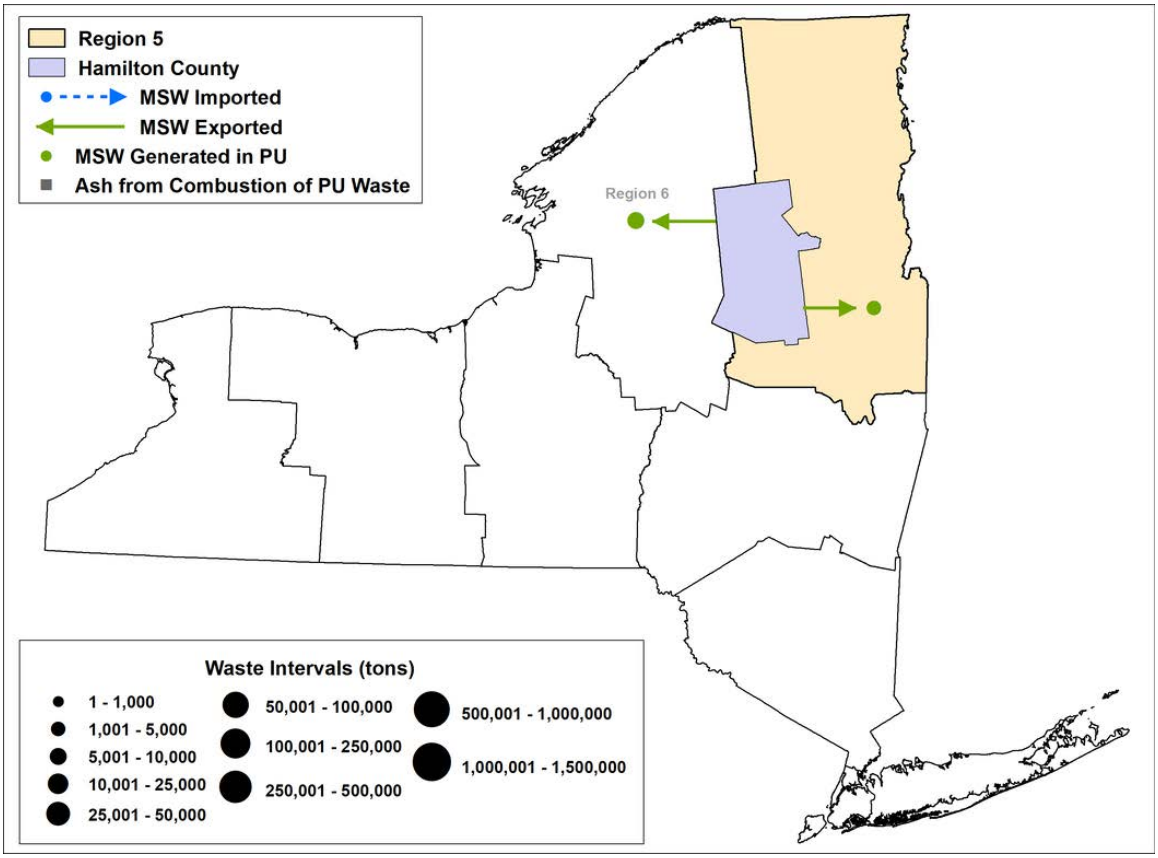


Figure E.102. Hamilton County MSW flow

Figure E.102 shows the flow of MSW generated in Hamilton County in 2018. Like Figure E.101, it shows that all MSW generated in Hamilton County was hauled out of the planning unit. About 41% of Hamilton County's MSW was sent to other planning units in Region 5 and 59% was sent to Region 6 for disposal.

Figure E.100 shows that no MSW was imported to this planning unit in 2018.

The following table provides information on all waste and recovered materials generated in Hamilton County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.36. Hamilton County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	9,060	760**
C&D Debris	2,800	0

Industrial	0	0
Biosolids	20	0
Total	11,880	760
MSW disposal rate	11.20 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.36, about 12,640 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that waste, 11,880 tons, or about 94%, were processed or disposed of. The remaining 760 tons, or 6% were recovered through RHRFs.

Table E.36 shows that MSW made up nearly 78% of waste generated in the planning unit in 2018. About 8% of MSW from Hamilton County was recovered through RHRFS in 2018. Ninety-two percent of Hamilton County's MSW was processed or disposed of. C&D debris accounted for 22% of the waste produced in this planning unit. None of the C&D debris was recovered through CDDHRFs in 2018. There was no industrial waste produced in Hamilton County in 2018. Biosolids made up a fraction of a percent of Hamilton County's waste.

Hamilton County has a very high MSW disposal rate compared to other planning units in NYS. This is due to the large volume of tourists that are drawn to this area because of its location in the Adirondack Park. From May to September, an estimated 120,000 people visit Hamilton County. Waste generated by people visiting the area is included in the tons of MSW generated within the county even though those tourists do not live there. This waste is then counted toward Hamilton County's MSW disposal rate. The MSW disposal rate would be much lower if it was only based on the tons of MSW generated by the year-round residents. Hamilton County accounted for only 2% of the MSW produced in Region 5 in 2018.

Saratoga County

Saratoga County serves as the planning unit for all municipalities in the county. In 2018, the total population of Saratoga County was estimated to be 230,170. While there are urban and suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Green Ridge Landfill, which is owned and operated by a private company, is located in this planning unit.

LSWMP Status	The planning unit's LSWMP is approved through 2028.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.103 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.104 shows the flow of waste for the MSW stream.

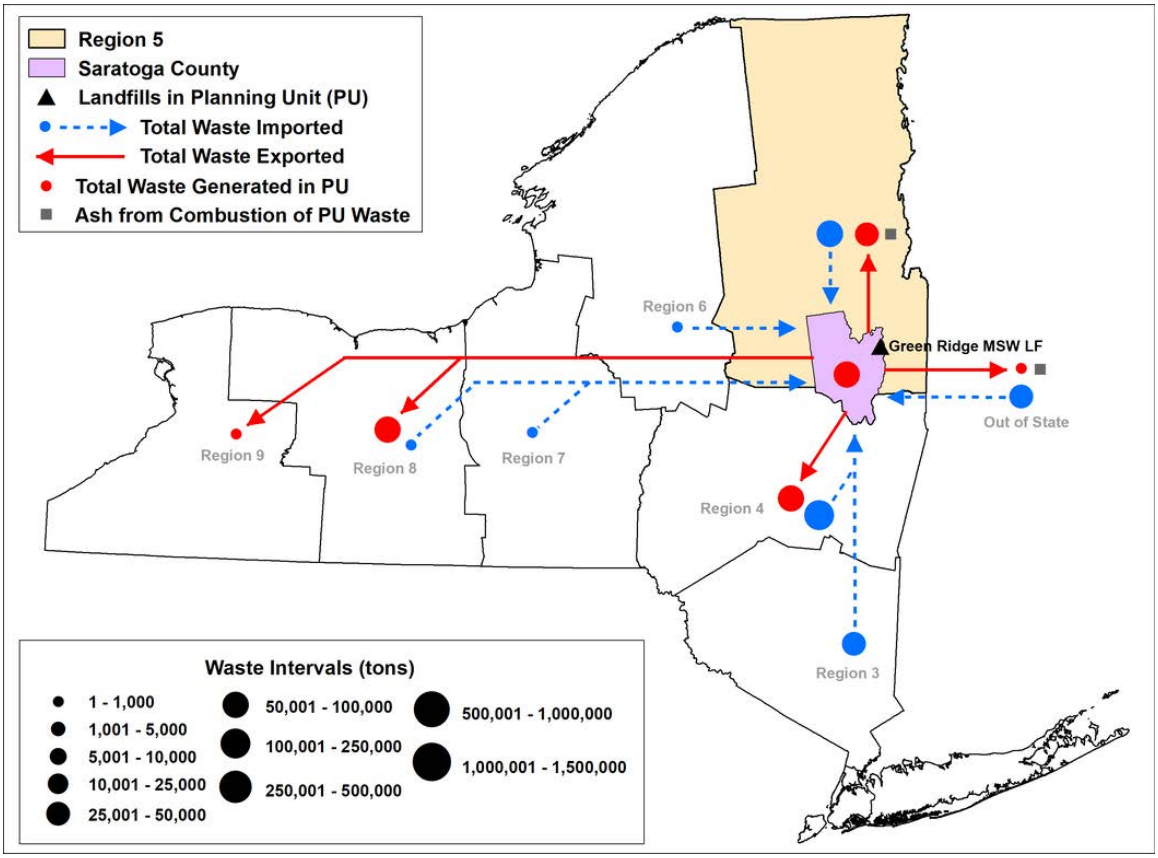


Figure E.103. Saratoga County total waste flow

Figure E. 103 shows the flow of waste generated in or imported to Saratoga County, not including recovered materials, in 2018. The landfill in this planning unit accepted about 26% of waste generated in 2018 for disposal. The remaining waste was exported out of the planning unit. About 31% of Saratoga County's waste was sent to Region 8 in 2018. An additional 27% was sent to Region 4. Other planning units in Region 5 accepted nearly 16% of waste generated in Saratoga County. Small amounts of waste were sent to Region 9 or out of state to Massachusetts.

Waste was also imported to Saratoga County, as shown in Figure E. 103. Approximately 53% of waste imported to this planning unit came from Region 4, and

22% originated in other planning units in Region 5. Region 3 accounted for about 13% of waste imported to this planning unit. About 12% of imported waste came from other states, and small amounts came from Regions 6, 7, and 8. Out-of-state imports came from Connecticut, Massachusetts, New Hampshire, and Vermont. Vermont accounted for about 80% of the out-of-state imports and Massachusetts accounted for about 17%. Minimal amounts came from Connecticut and New Hampshire.

There are no combustion facilities in Saratoga County. Exported MSW and industrial waste from Saratoga County was processed at a combustion facility elsewhere in Region 5. An estimated 99% of ash residue generated from the processing of Saratoga County waste in 2018 was from the MSW stream. The other 1% was generated from the combustion of industrial waste. Of the ash that remained after the combustion of this waste, about 88% was sent to Massachusetts, and about 12% was sent to the Clinton County Landfill. At the Clinton County Landfill this ash was used as AOC.

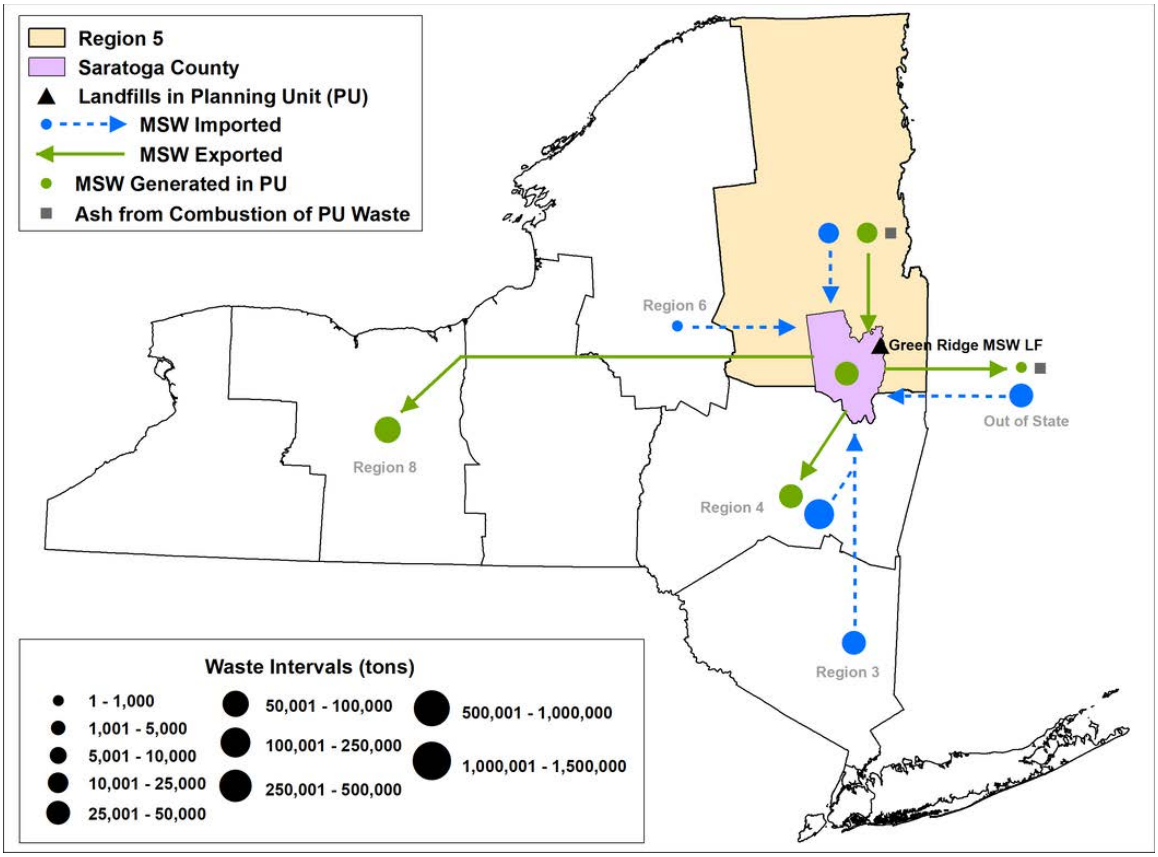


Figure E.104. Saratoga County MSW flow

Figure E.104 focuses on the MSW portion of Saratoga County's waste stream. Nearly 20% of MSW generated in this planning unit, not including recovered materials, was disposed of at the Green Ridge MSW Landfill in 2018. The rest of the MSW was exported. About 36% of Saratoga County's MSW was hauled to Region 8. Another 29% of MSW was sent to Region 4. Other planning units in Region 5 accepted 15% of waste

generated in this planning unit. Minimal amounts of MSW were exported to Massachusetts.

Figure E.104 shows waste was imported to this planning unit from Regions 3, 4, and 6; from other planning units in Region 5; and from out of state. Approximately 61% of MSW imported to Saratoga County in 2018 came from Region 4, 15% from Region 3, 8% from other planning units in Region 5, and minimal amounts came from Region 6. The remaining 16% of MSW imported in 2018 came from outside NYS. Vermont accounted for the greatest portion of the out-of-state MSW imports, about 78%. Massachusetts and Connecticut contributed to the MSW imports with 18% and 4%, respectively.

MSW from Saratoga County was processed at a combustion facility within another planning unit in Region 5, resulting in ash. Ash resulting from the combustion of MSW that was generated in this planning unit was sent to the Clinton County Landfill and out of state. About 12% of ash was used as AOC at the Clinton County Landfill and 88% of ash was exported to Massachusetts.

The following table provides information on all waste and recovered materials generated in Saratoga County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.37. Saratoga County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	153,300	44,690**
C&D Debris	35,100	4,300
Industrial	2,100	110
Biosolids	7,000	0
Total	197,500	49,100
MSW disposal rate	3.65 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.37, about 246,600 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that waste, 49,100 tons, or about 20%, were recovered through RHRFs and CDDHRFs. The remaining waste, 197,500 tons, or about 80%was processed at combustion facilities or disposed of at landfills.

Table E.37 also shows that in 2018 about 197,990 tons of MSW were generated. MSW accounted for approximately 80% of waste generated in Saratoga County. About 77% of MSW generated in 2018 was processed or disposed of and the remaining 23% was recovered through RHRFs.

C&D debris accounted for about 16% of the total waste stream. An estimated 11% of C&D debris was recovered through CDDHRFs in 2018. Industrial waste and biosolids accounted for 1% and 3%, respectively, of the waste generated in 2018.

Warren County

The Warren County planning unit serves as the planning unit for all municipalities in the county. The total estimated population of Warren County was 64,215 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. There are two C&D debris landfills in this planning unit, the Thurman C&D Debris Landfill and the Lake George C&D Debris Landfill. There are no MSW landfills within this planning unit, but many of the municipalities within the planning unit operate a transfer facility. Warren County provides roll-off containers to those municipally owned transfer facilities that can be used to collect waste for transport out of the planning unit for processing or disposal. Many of these transfer facilities also collect recyclables and C&D debris. The county also runs a HHW collection event each year for its residents.

LSWMP Status	The planning unit's LSWMP is approved through 2028.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.105 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.106 shows the flow of waste for the MSW stream.

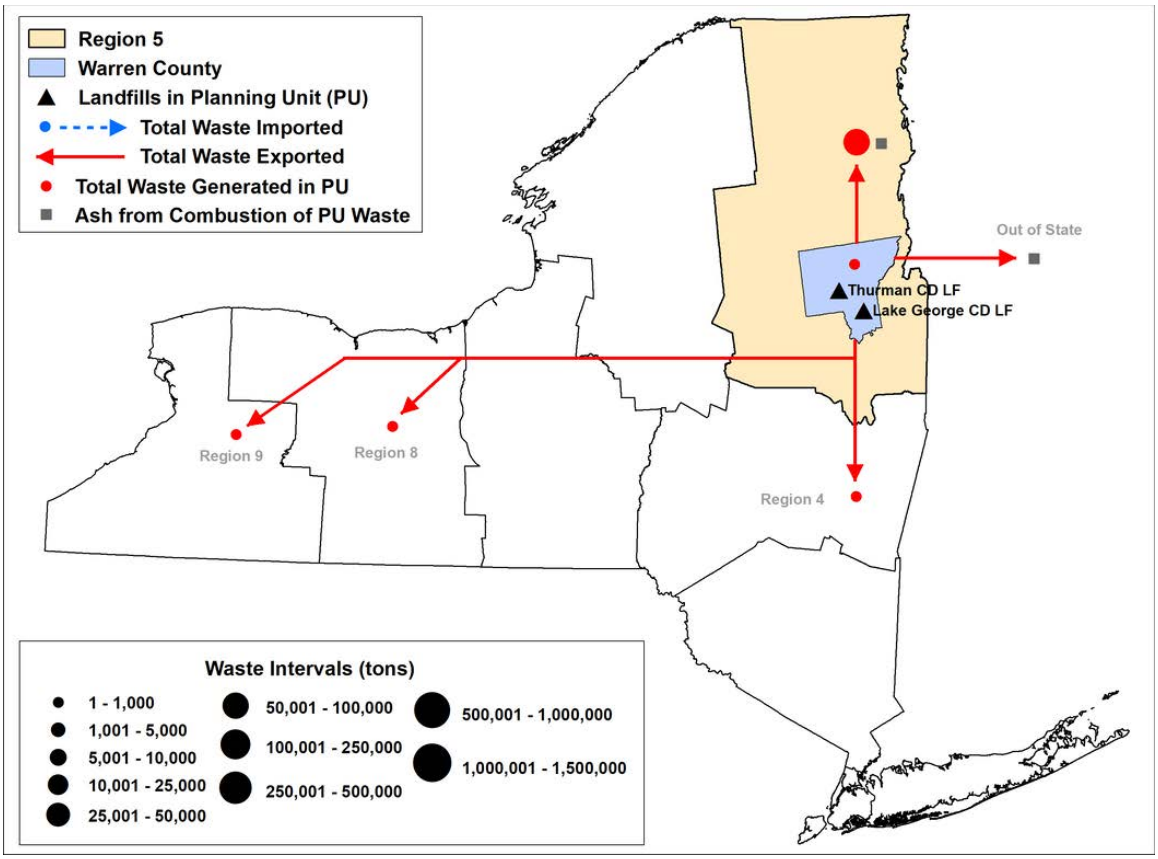


Figure E.105. Warren County total waste flow

Figure E. 105 shows the flow of waste, not including recovered materials, generated in Warren County in 2018. As shown on the map, the two C&D landfills in the county were able to accept some of the waste generated in this planning unit. This waste was strictly C&D debris and totaled less than 1% of the total waste generated in the county in 2018. Most of Warren County's waste, about 97%, was sent to other planning units in Region 5 for processing or disposal. Minimal amounts of waste were also exported to Regions 4, 8, and 9.

As shown on Figure E. 105, no waste was imported to this planning unit in 2018.

Although there are no combustion facilities in Warren County, some MSW and industrial waste from the planning unit was exported and processed at a combustion facility in another planning unit in Region 5. More than 99% of ash residue generated from the processing of Warren County waste in 2018 was from the MSW stream. The remaining ash residue was generated from the combustion of industrial waste. The resulting ash was sent to the Clinton County Landfill and out of state. Of ash sent to the Clinton County landfill, about 12% was used as AOC at the facility. The other 88% of ash attributed to this planning unit was exported to Massachusetts.

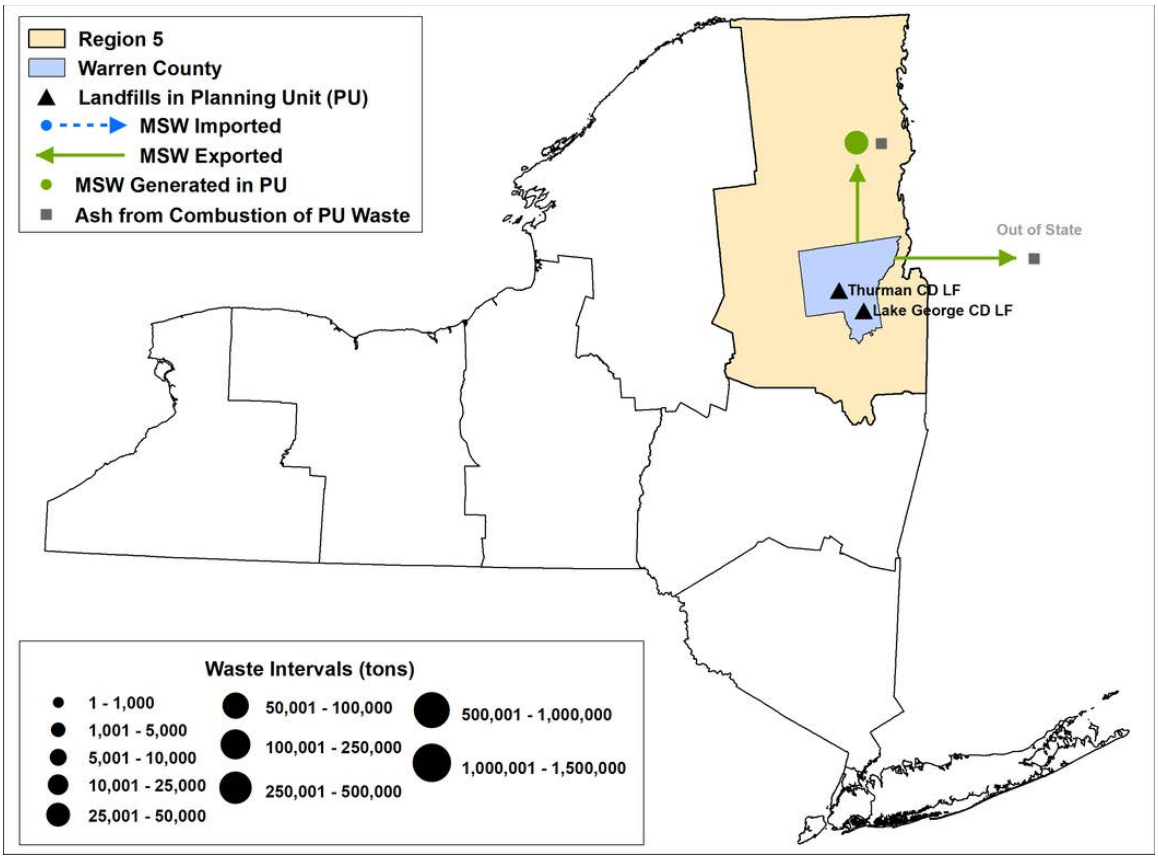


Figure E.106. Warren County MSW flow

Figure E.106 shows where MSW generated in Warren County, not including recovered materials, was exported. All MSW generated in Warren County was sent to other planning units in Region 5 for processing or for disposal.

In 2018, no MSW was imported to Warren County, as shown in Figure E.106.

MSW from Warren County was processed at a combustion facility within another planning unit, resulting in ash. About 12% of ash remaining after combustion was sent to Clinton County Landfill for use as AOC. The other 88% was sent to Massachusetts.

The following table provides information on all waste and recovered materials generated in Warren County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.38. Warren County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	45,880	9,900**
C&D Debris	13,100	160

Industrial	20,230	0
Biosolids	8,700	0
Total	87,910	10,060
MSW disposal rate	3.91 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.38, about 97,970 tons of waste generated in 2018 were processed, disposed of, or recovered through RHRFs and CDDHRFs. Of that amount, 10,060 tons, or about 10%, were recovered through CDDHRFs and RHRFs. The remaining waste, about 87,910 tons, was processed at combustion facilities or disposed of at landfills.

Table E.38 also shows that about 55,780 tons of MSW were generated in 2018. This amount accounted for approximately 57% of the total waste stream. About 18% of MSW generated was recovered.

C&D debris made up about 14% of Warren County's waste stream, of which about 1% was recovered. Industrial waste and biosolids made up 21% and 9%, respectively, of the waste stream.

Washington County

The Washington County planning unit encompasses all municipalities within the county. This planning unit had an estimated population of 61,274 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Some parts of the county fall within the Adirondack Park. In Washington County, solid waste management is largely handled by private businesses. The Hudson Falls MWC facility is a privately owned facility in the county. Hudson Falls MWC accepts industrial and municipal solid waste as well as biosolids.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.107 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.108 shows the flow of waste for the MSW stream.

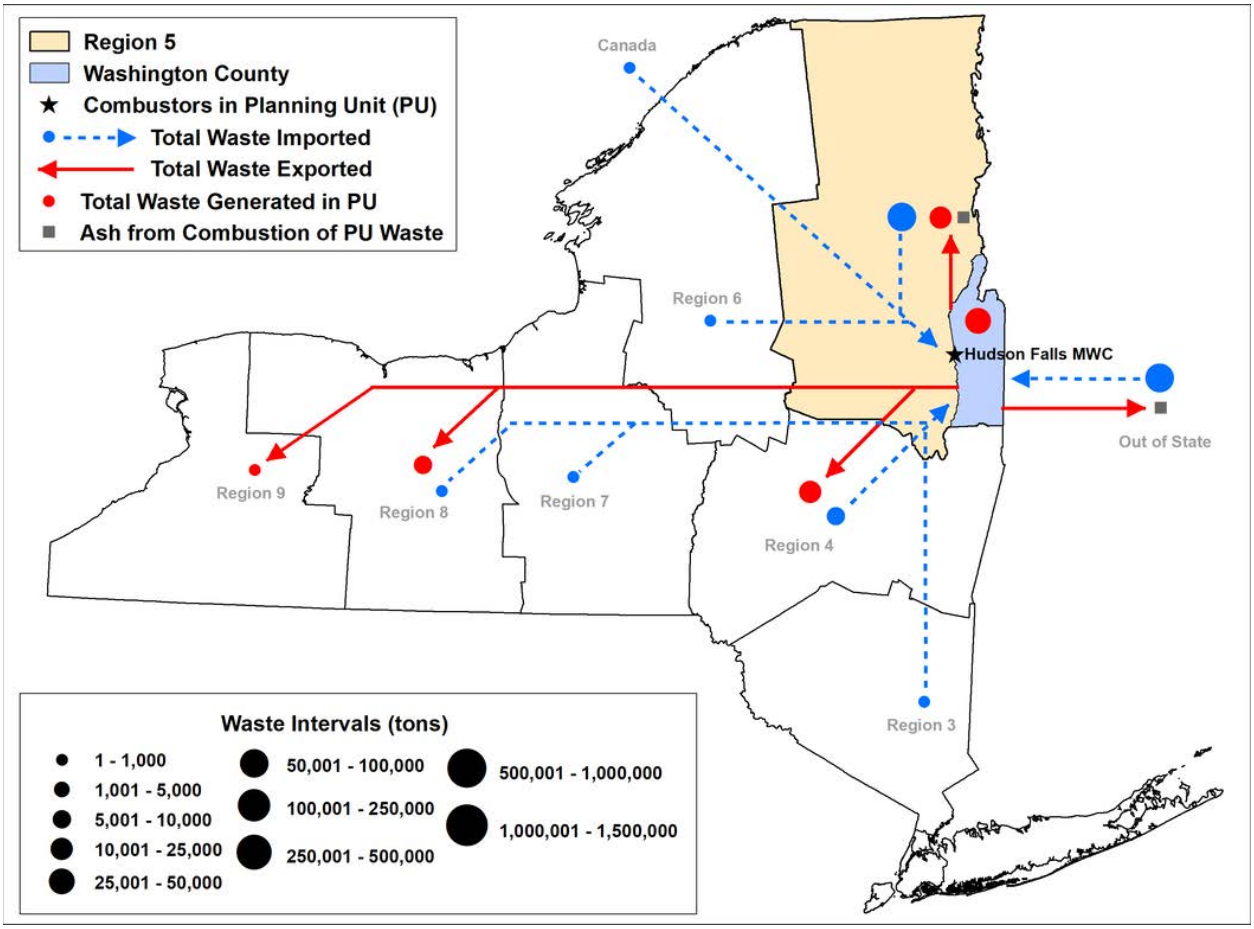


Figure E.107. Washington County total waste flow

Figure E. 107 shows the flow of all waste generated in and imported to Washington County, not including recovered materials. About 46% of waste generated in the planning unit was processed at the Hudson Falls MWC facility. The remaining waste was exported outside the planning unit. About 26% of Washington County's waste was sent to other planning units in Region 5 for disposal. An additional 20% of this planning unit's waste was sent to Region 4, about 7% was sent to Region 8, and minimal amounts were sent to Region 9.

Waste was imported to this planning unit from Regions 3, 4, 6, 7, and 8. Waste was also imported from other planning units in Region 5, out of state, and Canada. Other planning units in Region 5 accounted for 54%of Washington County's imports. Region 4 contributed about 5% of imported waste, and Region 3 contributed about 1%. About 39% of waste imported to this planning unit came from other states. The rest of the

imported waste came from Regions 6, 7, and 8, and Canada. Massachusetts and Vermont accounted for over 99% of Washington County's out-of-state imports, with minimal amounts imported from Connecticut and Ohio.

Approximately 46% of waste generated in this planning unit was combusted at the Wheelabrator Hudson Falls combustion facility. An estimated 76% of all ash residue generated from the processing of Washington County waste in 2018 was from the MSW stream. Another 4% was generated from the combustion of industrial waste. About 12% of ash generated from the combustion of this waste was sent to the Clinton County Landfill for use as AOC. The other 88% was exported to Massachusetts.

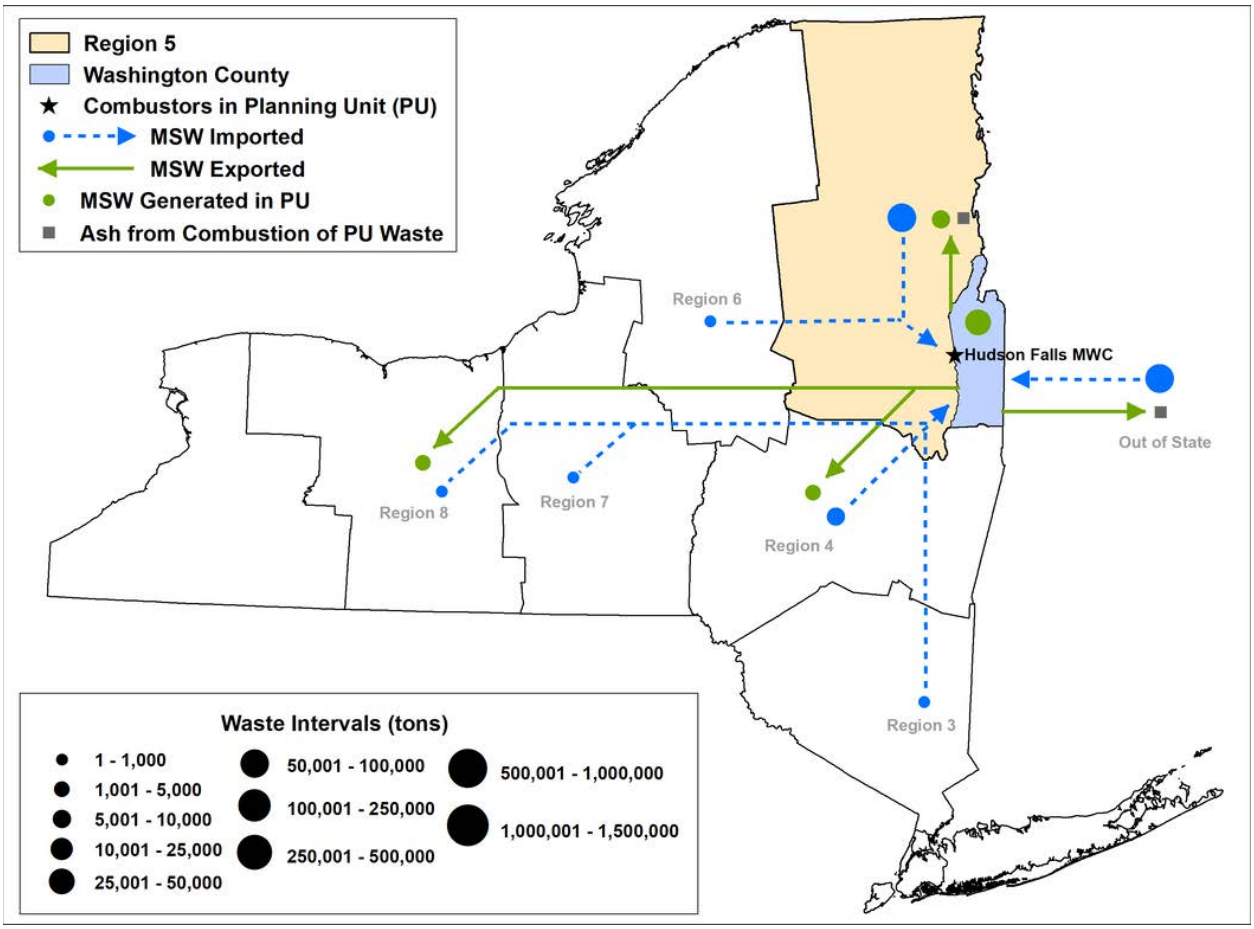


Figure E.108. Washington County MSW flow

Figure E.108 shows the destinations of MSW generated in Washington County and the MSW imported to Washington County. The figure does not include recovered materials. About 69% of MSW from this planning unit was processed within the planning unit at Hudson Falls MWC. The remaining MSW was exported, with 18% of Washington County's MSW sent to other planning units in Region 5. Region 4 accepted 7% of MSW generated in Washington County and Region 8 accepted 6%.

About 52% of MSW imported to this planning unit was from other planning units in Region 5. MSW from other states made up 43% of Washington County's imported MSW. Minimal amounts of MSW were also imported from Regions 3, 4, 6, 7, and 8. Of the MSW imported from other states, about 61% came from Vermont and about 39% came from Massachusetts. Minimal amounts were imported from Ohio.

Ash generated as a result of processing MSW at the Hudson Falls MWC is shown in Figure E.108. About 12% of ash resulting from the combustion of MSW generated in Washington County was used as AOC at the Clinton County Landfill. The other 88% was sent to Massachusetts. The following table provides information on all waste and recovered materials generated in Washington County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.39. Washington County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	38,150	5,800**
C&D Debris	26,600	330
Industrial	9,330	30
Biosolids	500	0
Total	74,580	6,160
MSW disposal rate	3.41 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.39, it was estimated that about 80,740 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 6,160 tons, or about 8%, were recovered by CDDHRFs and RHRFs. The remaining 74,580 tons of waste, or about 92%, were processed at combustion facilities or sent to landfills for disposal.

Table E.39 shows that in 2018 about 43,950 tons of MSW were generated in this planning unit, which accounted for about 54% of the total waste stream. This planning unit recovered about 13% of the MSW in 2018.

C&D debris made up about 33% of Washington County's waste stream in 2018. Only about 1% of C&D debris generated in Washington County was recovered. In 2018, industrial waste and biosolids made up 12% and 1%, respectively, of the waste stream.

Region 6 Overview and Waste Flow Information

Region 6 consists of two planning units. The region includes the Oneida-Herkimer Solid Waste Authority (OHSWA), which encompasses Herkimer and Oneida counties, and the Development Authority of the North Country (DANC), which consists of St. Lawrence, Jefferson, and Lewis counties. All counties in this region have a population characteristic of a rural population density distribution. While there are suburban areas within the region, the average population density is less than 325 people per square mile. Region 6 had an estimated population of 537,866 in 2018 (Census, 2019).

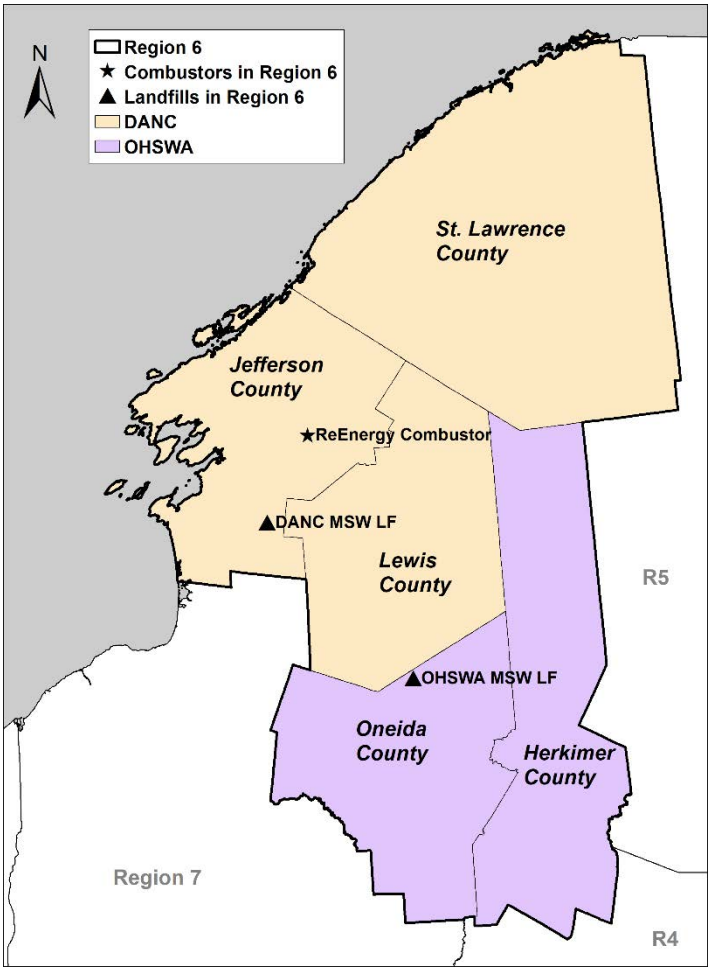


Figure E.109. Region 6 planning units

Figure E. 109 shows two planning units and no non-affiliated municipalities in this region. There are two MSW landfills: the Ava Landfill in Oneida County, and the Development Authority of the North Country (DANC) Landfill in Jefferson County. Unique to this region is the ReEnergy Combustor, a combustion facility located at Fort Drum that processes tire chips and biomass from C&D debris to generate electricity.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 6 in 2018. Figure E.110 represents the flow of all

waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.111, Figure E.112 and Figure E.113 show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

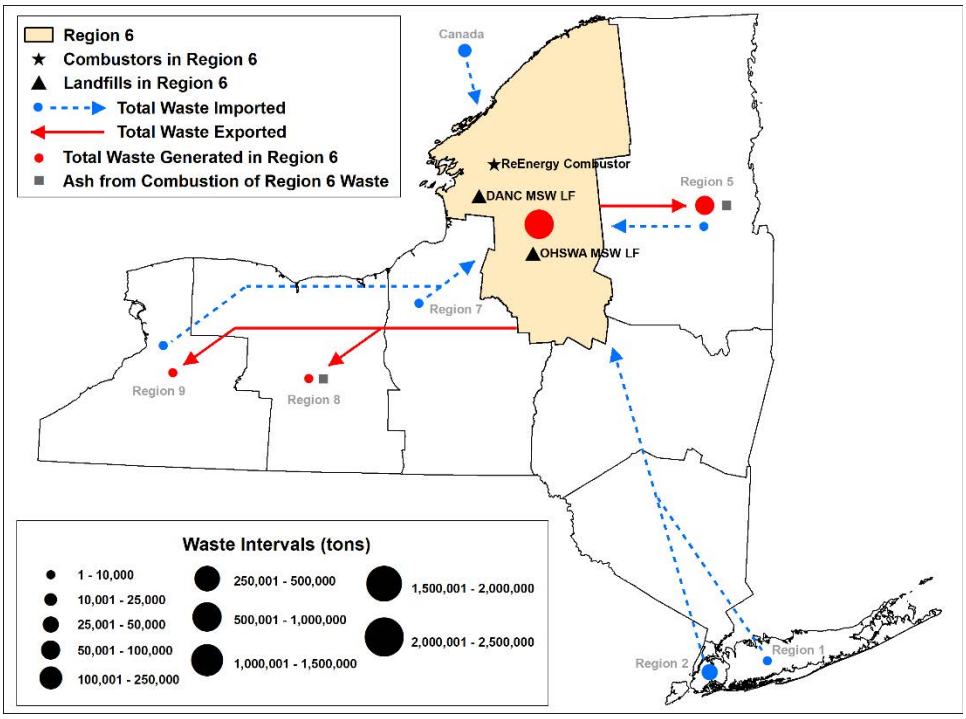


Figure E.110. Region 6 total waste flow

Figure E.110 shows that approximately 89% of waste generated in Region 6 in 2018 was processed or disposed of in the two MSW landfills and the ReEnergy Combustor located in the region. The remainder was exported for processing or disposal at facilities in NYS. Region 5 accepted about 10% of the waste, and minimal amounts of waste were sent to Regions 7, 8, and 9. Figure E.110 shows that waste was imported into Region 6 from Regions 1, 2, 5, 7, and 9, and from Canada for processing at the ReEnergy Combustor or for disposal at landfills. Approximately 48% of waste imported into the region in 2018 came from Region 2, 21% from Canada, and 13% from Region 7. About 78% of imported waste was C&D debris going to the ReEnergy Combustor, and the remaining 22% was MSW, industrial waste, and biosolids going to the landfills. The entirety of the waste imported from Canada and Regions 1, 2, and 9 was C&D debris destined for the ReEnergy Combustor.

Figure E.110 also shows the movement of the ash waste stream. Ash represented in the figure only accounts for ash resulting from the combustion of waste generated within the region. As waste was processed at the ReEnergy Combustor, ash residue was generated and transported to other regions for disposal. Approximately 16% of ash residue was sent to landfills in Region 5 and 84% was sent to landfills in Region 8.

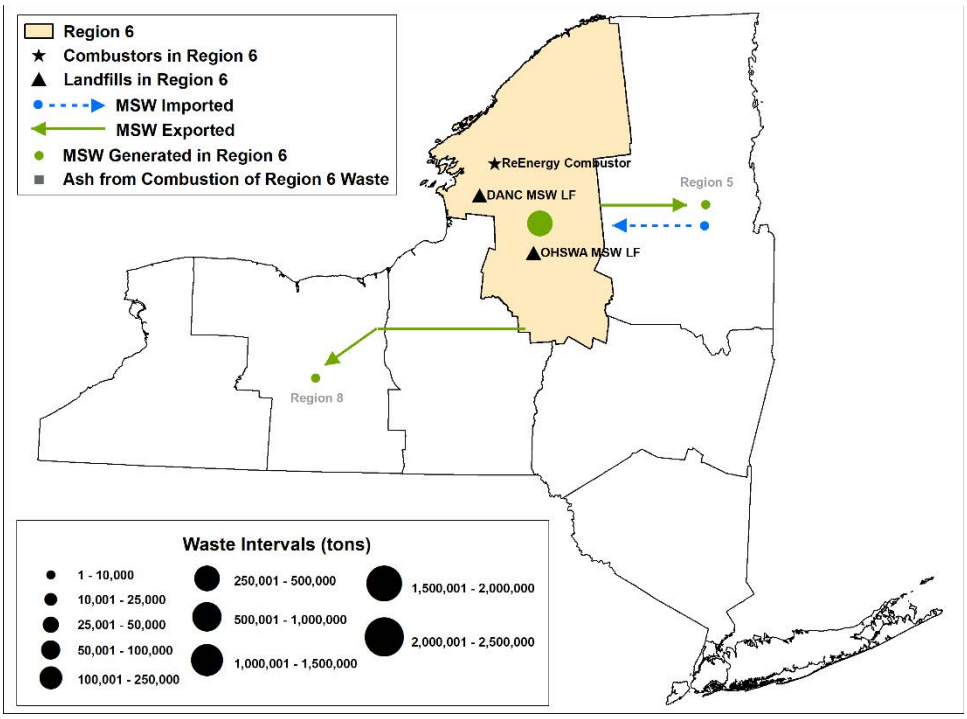


Figure E.111. Region 6 MSW flow

Figure E.111 represents the flow of MSW in Region 6 in 2018. Since the region has two MSW landfills, an estimated 98% of MSW generated in the region was disposed of within the region. The remaining 2% was exported to Regions 5 and 8.

As shown in Figure E.111, Region 6 accepted MSW from Region 5. Imported MSW only accounted for 9% of all waste imported into the region in 2018.

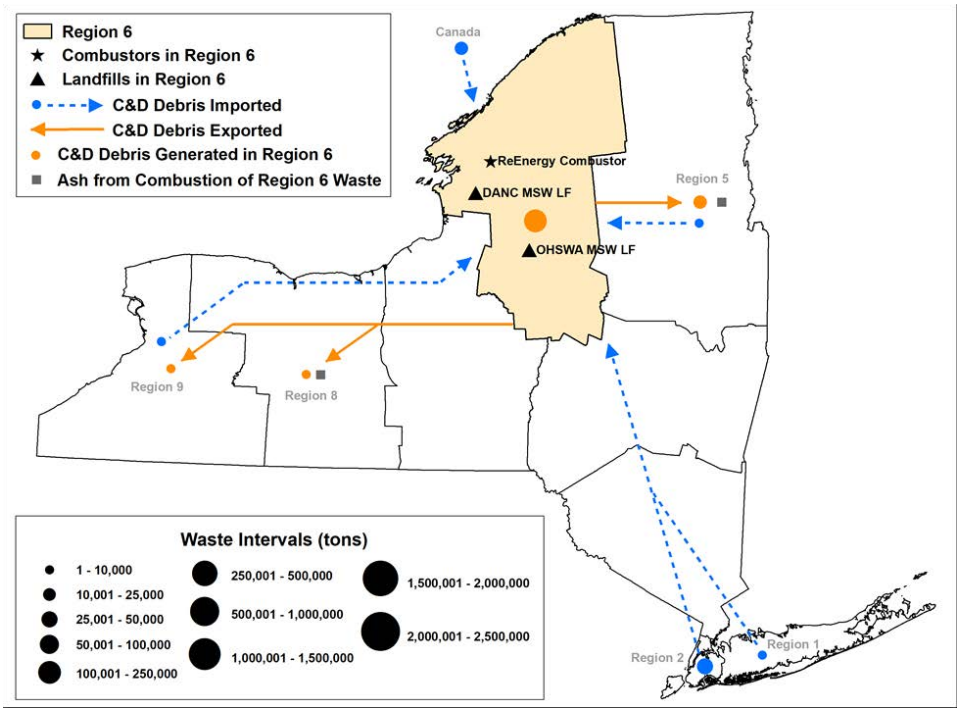


Figure E.112. Region 6 C&D debris flow

Figure E.112 depicts the C&D debris waste stream flow in Region 6 and its movement into and out of the region for processing and disposal in 2018. Approximately 94% of the waste stream was processed or disposed of in the region, while minimal amounts of C&D debris were sent to Regions 5, 8, and 9. The figure shows C&D debris was imported into the region. Approximately 61% of imported C&D debris was from Region 2, 27% was from Canada, 8% was from Region 1, and 5% was from Region 9. About 78% of waste imported into the region in 2018 was C&D debris to be processed at the ReEnergy Combustor.

Figure E.112 also shows the movement of ash generated from processing C&D debris waste generated within the region at the ReEnergy Combustor in 2018. All ash generated was exported to be disposed of at landfills in Regions 5 and 8, accounting for 14% and 86%, respectively.

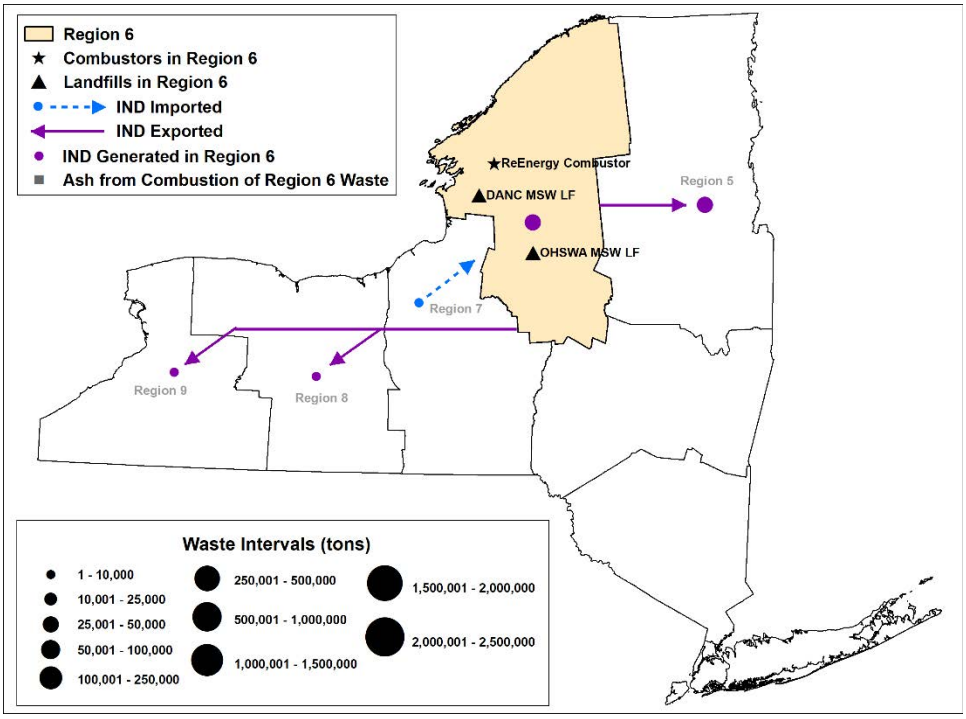


Figure E.113. Region 6 industrial waste flow

Figure E.113 shows the movement of industrial waste in Region 6 in 2018. An estimated 39% of the region's industrial waste was landfilled locally, with the remaining industrial waste sent to other regions within the state. Region 5 accepted 55% of the region’s industrial waste, and Regions 8 and 9 accepted the remaining 6%. Small amounts of industrial waste were imported from Region 7.

Table E.40. Region 6 organics recycling summary

Anaerobic Digestion - No facilities	
Source-Separated Organics	0 tons
Food Processing Waste	3,347 tons
Composting	
Source-Separated Organics	210 tons
Food Processing Waste	119 tons
Yard Trimmings	22,321 tons
Biosolids	88 tons
Land Application	
Biosolids	3,777 tons
Food Processing Waste	654 tons

There are five composting operations in Region 6 that compost source-separated organics and yard trimmings, one biosolids composting operation, four biosolids land application operations, four food processing waste land application operations, and one operating anaerobic digester. Table E.40 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all waste and recovered materials generated in Region 6 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs, RHRFs, composting facilities, anaerobic digestors, and land application facilities.

Table E.41. Region 6 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	318,100	79,741
C&D Debris	264,300	1,570
Industrial	86,490	4,690
Biosolids	21,370	3,865
Total	690,260	89,866

MSW disposal rate	3.24	lbs/person/day

* The heavy metal category is not included in the values in this table.

As shown in Table E.41, about 780,126 tons of waste generated in 2018 were processed, disposed of, or recovered. Approximately 89,866 tons were recovered through CDDHRFs, RHRFs, composting facilities, and land application facilities, accounting for 12% of all waste generated in the region.

An estimated 397,841 tons of MSW accounted for 51% of all waste generated in the region. Approximately 20% was recovered through RHRFs, composting facilities, anaerobic digestors, and land application facilities and the remaining 318,100 tons were processed at combustion facilities or disposed of at landfills.

As shown in Table E.41, an estimated 265,870 tons of C&D debris waste were generated in the region, accounting for 34% of all waste generated in 2018. An estimated 99% of the C&D debris waste stream was disposed of, with only 1% recovered through CDDHRFs. The industrial waste and biosolids waste stream made up 12% and 3%, respectively, of all waste generated in 2018.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 6. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit.

Oneida-Herkimer Solid Waste Authority (OHSWA)

The OHSWA is a NYS public benefit corporation that was established in 1988 and also the planning unit that encompasses all towns, cities, and villages within the counties of Oneida and Herkimer. OHSWA serviced an estimated population of 291,187 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Through a solid waste management agreement between OHSWA and Oneida and Herkimer counties, OHSWA agreed to manage all the solid waste generated within the two counties. As a result, OHSWA owns and operates a recycling facility, a HHW collection facility, a composting facility, a pallet-processing facility, three transfer facilities, the Ava Landfill, and several other authorized solid waste management facilities within the planning unit. These solid waste management facilities provide a comprehensive waste management system for Oneida and Herkimer counties.

The Ava Landfill accepts waste mostly from Oneida and Herkimer counties. OHSWA also runs a variety of education and outreach programs, such as the “Am I Recyclable?” campaign, the RecycleOne campaign, and Go Green school recycling programs.

OHSWA's efforts in waste reduction, recycling, sustainability, and public outreach earned it the EPA Environmental Champion Award and the DEC Environmental Excellence Award in 2017.

LSWMP Status	The planning unit's LSWMP is approved through 2024.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.114 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.115 shows the flow of waste for the MSW stream.

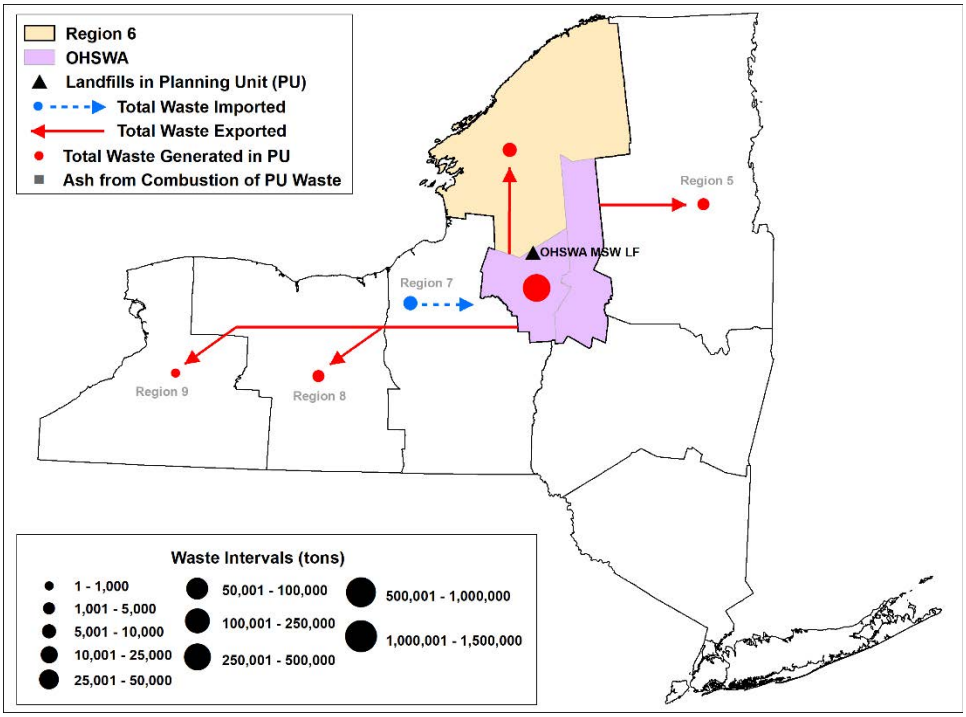


Figure E.114. OHSWA total waste flow

Figure E.114 shows the flow of all waste streams, not including recovered materials, within the OHSWA planning unit in 2018. It shows that approximately 95% of waste generated in OHSWA was disposed of within the planning unit. This is due, in part, to flow control laws that ensure that MSW, C&D debris, and industrial waste generated within the planning unit are disposed of at facilities designated by one of the counties or by OHSWA. No waste was imported from or exported to facilities located outside of NYS.

In 2018, waste was imported into the OHSWA planning unit from Region 7. Small amounts of waste were also exported to Regions 5, 8, 9, and to the DANC—the other

planning unit in Region 6. Waste exported from the planning unit accounted for 5% of total waste generated in the planning unit in 2018. C&D debris made up about 53% of waste exported from this planning unit.

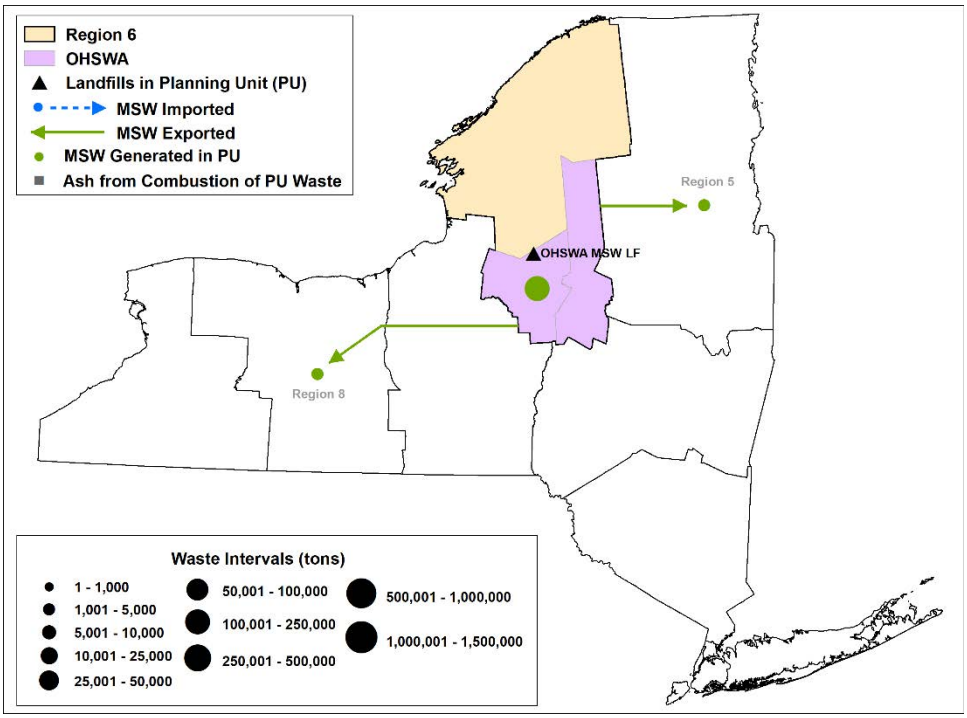


Figure E.115. OHSWA MSW flow

Figure E.115 shows the flow of MSW into and out of the planning unit in 2018. Approximately 98% of the MSW generated in 2018 was disposed of within the planning unit at Ava Landfill. The remaining MSW was sent to Regions 5 and8. Facilities in OHSWA did not import MSW from outside the planning unit.

The following table provides information on all waste and recovered materials generated in the OHSWA planning unit by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.42. OHSWA waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	182,600	31,000**
C&D Debris	159,300	1,550
Industrial	9,820	560
Biosolids	13,140	0

Total	364,860	33,110
MSW disposal rate	3.44 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.42, about 397,970 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 92% was processed or disposed. The remaining 8% was recovered by CDDHRFs or RHRFs.

Table E.42 also shows that approximately 213,600 tons of MSW were generated in 2018, which accounted for 54% of all waste generated in the planning unit that year. Of that 200,300 tons of MSW, 15% was recovered through RHRFs, and the remaining 85% was disposed.

C&D debris accounted for 40% of the total waste in 2018. About 99% of the C&D debris generated in 2018 was disposed of, with the remaining 1% recovered through CDDHRFs. In 2018, industrial waste and biosolids each accounted for 3% of the total waste stream.

Development Authority of the North Country (DANC)

The Development Authority of the North Country is a three-county regional authority created in 1985 that encompasses all municipalities within Jefferson, Lewis, and St. Lawrence counties. The DANC combined its solid waste management efforts into a single regional planning unit in 2010, which serviced an estimated population of 246,679 in 2018 (Census, 2019). While the three-member counties have a population density of less than 325 people per square mile, characteristic of a rural population density distribution, there are suburban areas within the planning unit. The planning unit operates as a revenue-based public benefit corporation that owns and operates several solid waste management facilities, including the DANC landfill. The landfill accepts waste from all three counties and a minimal portion from nearby planning units and municipalities. The ReEnergy Black River Facility at Fort Drum uses biomass to produce electricity through the generation of steam during the combustion process. The DANC has the North Country Recycles program for education and outreach; has pilot programs for books, mattresses, and waste tire recycling; and permits private and public recyclables and solid waste haulers in the area.

Lewis and St. Lawrence counties have flow control laws for municipal solid waste and C&D debris, while Jefferson County does not have flow control legislation. As a result of the flow control legislation instituted by two of the member counties of the planning unit, minimal amounts of waste are exported outside the planning unit's boundaries, as shown in Figure E.116. The importation of waste is kept to a minimum to ensure sustainable waste disposal for the three member counties.

LSWMP Status	The planning unit's LSWMP is approved through 2025.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.116 represents the flow of all waste destined for processing at combustion facilities and disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.117 shows the flow of waste for the MSW stream.

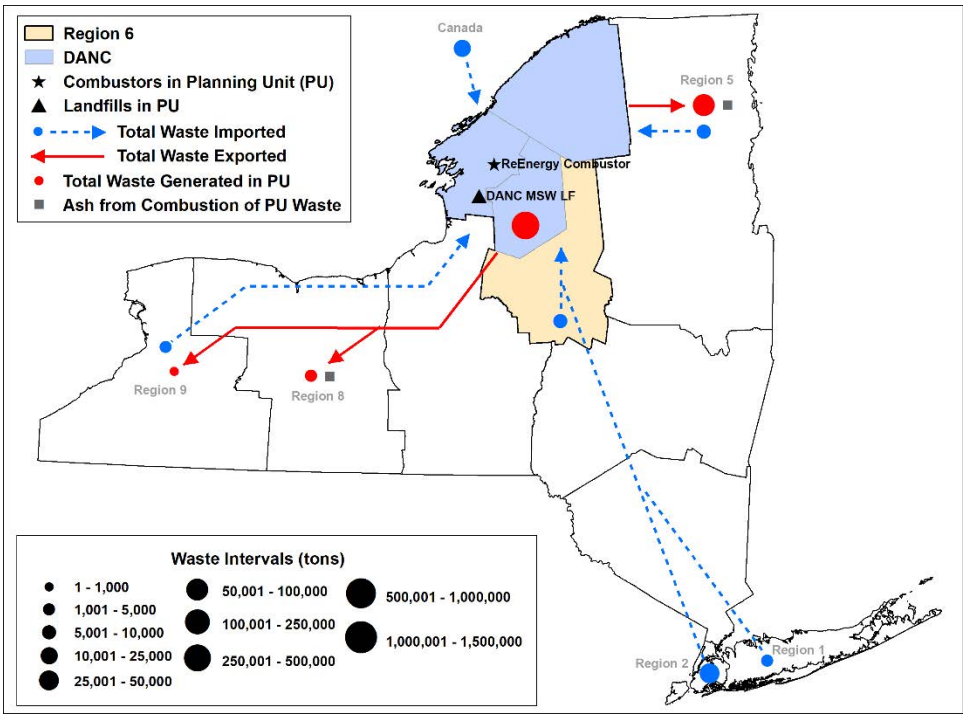


Figure E.116. DANC total waste flow

Figure E.116 represents the flow of all waste within the DANC planning unit. As shown, minimal amounts of waste are exported to other regions in the state, and nothing is exported to out-of-state facilities.

About 79% of waste generated was disposed of at the DANC landfill and the ReEnergy Combustor, and 20% was exported to Region 5 facilities. Minimal amounts of waste were transported to Regions 8 and 9.

The planning unit accepted waste from other areas, shown in Figure E.116. The waste imported came from facilities in NYS or Canada. Approximately 52% came from Region 2, 23% from Canada, 14% from the OHSWA planning unit, and minimal amounts from Regions 1, 5, and 9. Approximately 9% of waste that was imported into the planning unit in 2018 was MSW from Region 5. The remaining 91% was C&D debris that went to the ReEnergy Black River Facility for combustion.

Figure E.116 also shows the movement of the ash waste stream. As MSW and C&D debris generated in Region 6 were processed at combustion facilities and at the ReEnergy Combustor, ash residue was generated and transported for disposal. The ash represented in the figure only accounts for ash resulting from the combustion of waste generated within the region, with 16% sent to landfills in Region 5 and 84% sent to landfills in Region 8.

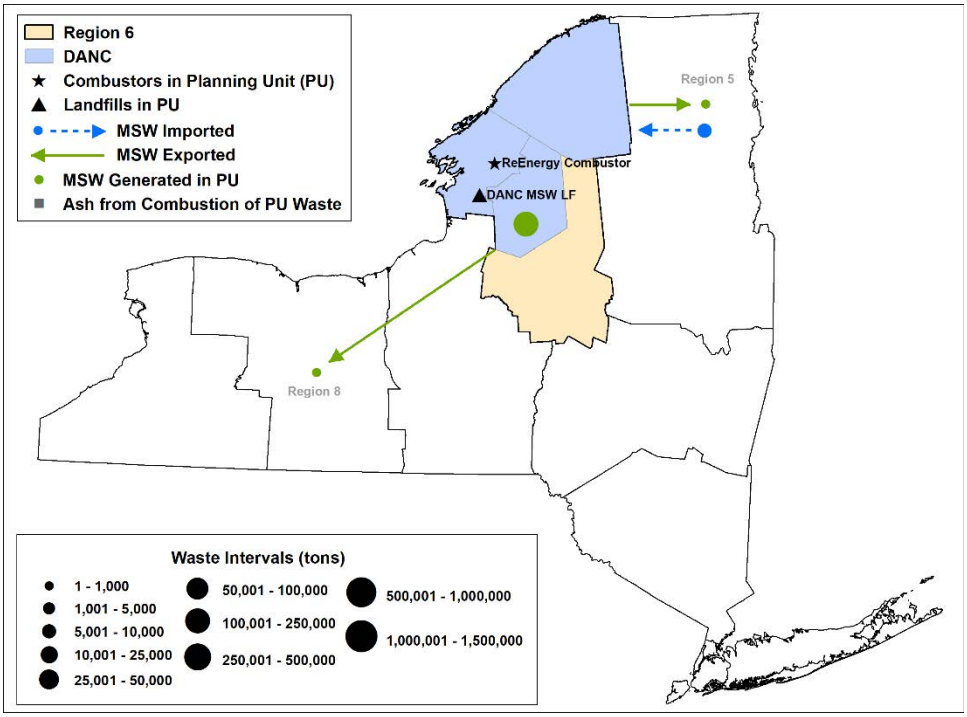


Figure E.117. DANC MSW flow

Figure E.117 represents the flow of MSW into and out of the planning unit in 2018. Approximately 99% of the MSW generated stayed in the planning unit for disposal at the DANC landfill; the remainder was exported to Regions 5 and 8. The figure also shows that MSW was imported into the region; 100% of imported MSW came from Region 5 and was sent to the DANC landfill for disposal.

The following table provides information on all waste and recovered materials generated in the DANC planning unit by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.43. DANC waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	135,500	30,750**
C&D Debris	105,000	20

Industrial	76,670	10
Biosolids	8,230	0
Total	325,400	30,780
MSW disposal rate	3.01 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.43 shows that approximately 356,180 tons of waste generated in 2018 were processed, disposed of, or recovered. An estimated 91% of waste generated was destined for processing or disposal, and 9% was recovered through CDDHRFs or RHRFs.

Table E.43 shows that approximately 166,250 tons of MSW were generated within the planning unit in 2018. About 135,500 tons, or 82%, were disposed of, and 30,750 tons, or 18%, were recovered through RHRFs. The MSW stream accounted for an estimated 47% of waste generated in 2018 in this planning unit.

As shown in Table E.43, an estimated 105,020 tons of C&D debris were generated in the planning unit in 2018, accounting for 29% of all waste generated. An estimated 20 tons, essentially 0%, were recovered, while 105,000 tons were destined for disposal.

Similarly, Table E.43 shows that Industrial waste and biosolids accounted for 22% and 2%, respectively, of all waste generated.

Region 7 Overview and Waste Flow Information

Region 7 consists of Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, and Tompkins counties. This Region had an estimated population of 1,165,354 in 2018 (Census, 2019). Each county in this Region, except for Onondaga County, has a population characteristic of a rural population density distribution. While there are urban and suburban areas within the rural counties, the average population density is less than 325 people per square mile. Despite containing some rural areas, Onondaga County had an average population density between 325 and 5,000 people per square mile, and therefore was considered suburban. In this region, there are nine planning units, each corresponding to one county. The Town and Village of Skaneateles are the only non-affiliated municipalities in this region.

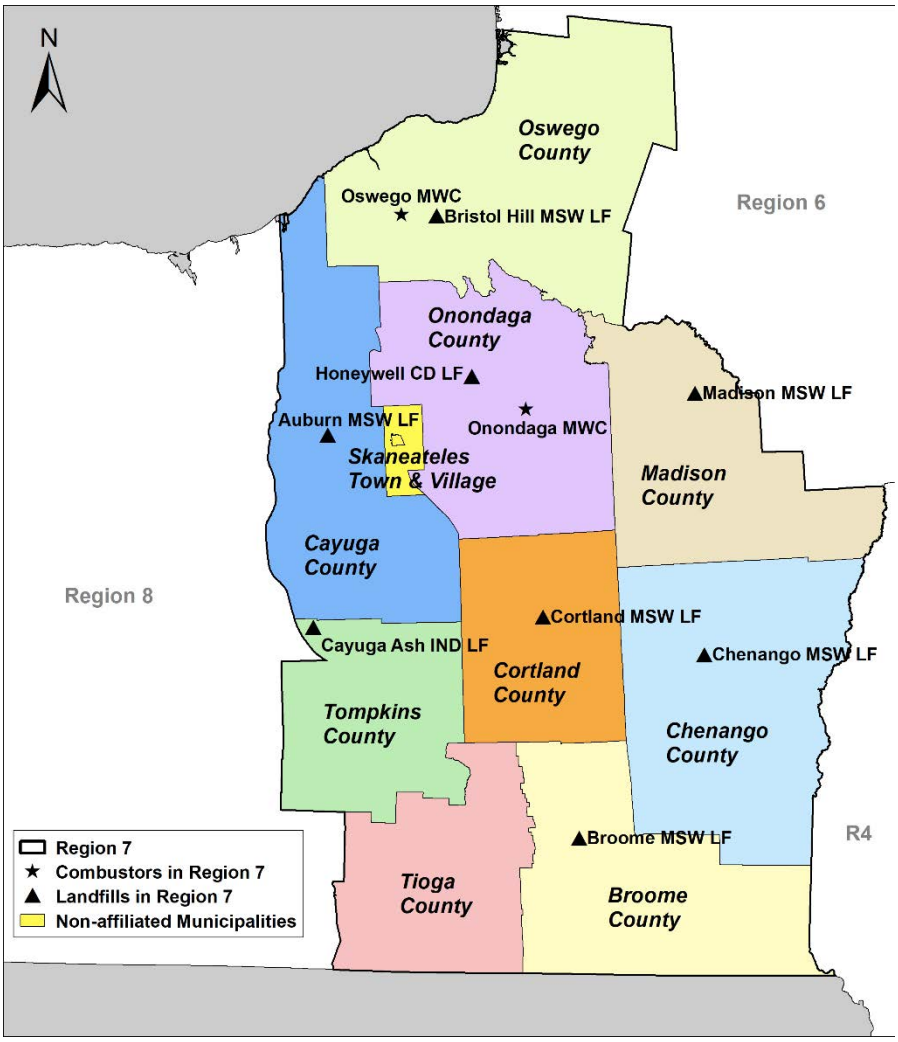


Figure E.118. Region 7 planning units

As shown in Figure E.118, there are five active MSW landfills, located in Broome, Chenango, Cortland, Madison, and Oswego counties. These landfills are Broome Landfill, Chenango Landfill, Cortland Landfill, Madison Landfill, and Bristol Hill Landfill. In 2018, there was also an active MSW landfill in Cayuga County, the Auburn MSW Landfill. This facility has since completed final closure and is no longer accepting waste. In addition, to the MSW landfills, there is an active C&D debris landfill in Onondaga County, the Honeywell/Camillus Bed #15 Landfill. Like the Auburn MSW Landfill, the Cayuga Ash industrial waste landfill in Tompkins County was operating in 2018 but has since stopped accepting waste.

There are also two combustion facilities in this region. The Onondaga County Resource Recovery Facility (Onondaga MWC) and the Oswego County Energy Recovery Facility (Oswego MWC), located in Onondaga County and Oswego County, respectively. These combustion facilities, in addition to the landfills discussed previously, make this region unique in that six out of the nine planning units in this region have a landfill, a combustion facility, or both within the planning unit to manage their waste.

Even though only two planning units in this region have a combustion facility located within their boundaries, other planning units in this region will have ash attributed to them on the planning unit waste flow maps. This is because the waste that was sent to one of the regional combustion facilities from those planning units became ash which then had to be disposed of. The ash is attributed to planning units without a combustion facility because it was derived from waste that was originally generated in those planning units.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 7 in 2018. Figure E.119 represents the flow of all waste destined for processing at combustion facilities or for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Similarly, Figure E.120, Figure E.121 and Figure E.122 show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

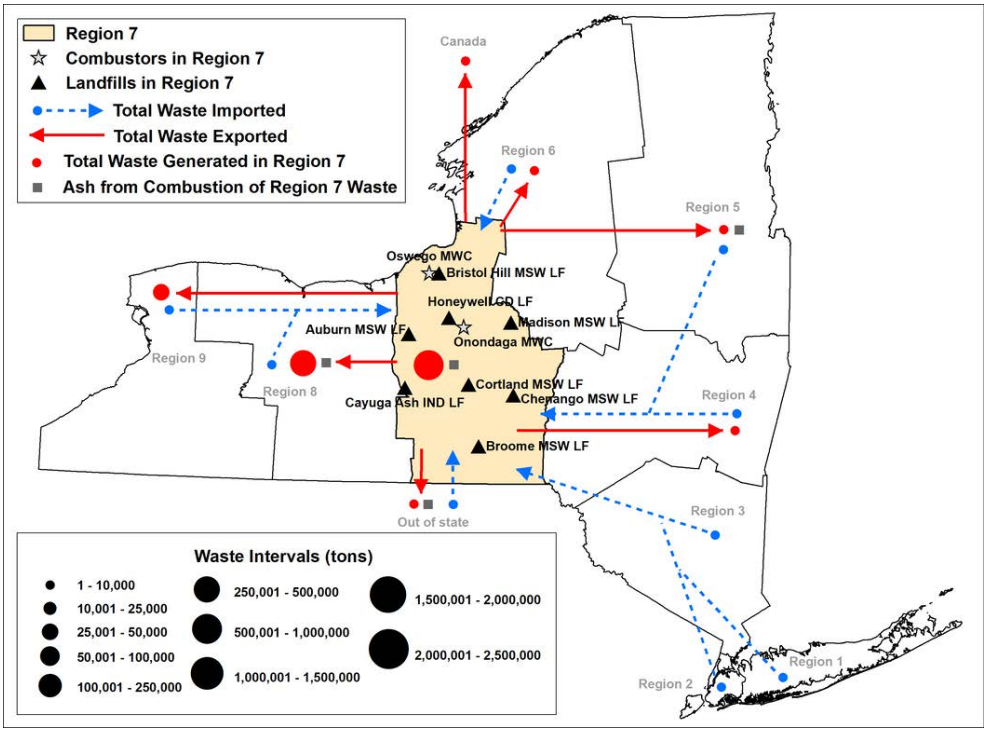


Figure E.119. Region 7 total waste flow

Figure E.119 shows the flow of all waste streams, not including recovered materials, to and from Region 7. As shown, about 67% of waste generated within Region 7 in 2018 was disposed of or processed within the region. The remaining waste was exported to Regions 4, 5, 6, 8, and 9, other states, and Canada. About 29% of waste generated in Region 7 was exported to Region 8 in 2018. An additional 1% and 3% were sent to Regions 6 and 9, respectively. Minimal amounts of waste were sent to Regions 4 and 5, to other states, and to Canada. Waste exported out of state was destined for Maryland, Ohio, and Pennsylvania.

Figure E.119 also shows the waste imported to this region in 2018. Waste was imported from all other regions in NYS and from other states. About 76% of imported waste originated in Region 3, and about 19% came from other states. An additional 2% came from Region 4, and Regions 6 and 8 each contributed 1%. Minimal amounts of waste were imported from Regions 1, 2, 5, and 9. Breaking down the out-of-state imports by state, waste was imported from more than 10 states. About 84% of the imported waste came from Pennsylvania, 9% from Vermont, and New Jersey and Ohio each contributed about 2%.

By tonnage, about 78% of imported waste was C&D debris. About 20% of imported waste was industrial waste, and minimal amounts were biosolids. Of all waste imported to Region 7, about 76% was imported for use as AOC at landfills within the region. One transfer facility accounted for about 21% of imports to Region 7 in 2018. This facility imported waste from all other regions and from other states, consolidated the waste, then exported it out of the region for processing or disposal.

The combustion facilities in Onondaga County and Oswego County accepted waste from Region 7 as well as from other regions in NYS. The ash shown on Figure E.119 resulted from the combustion of waste that was generated in Region 7. Ash that resulted from the combustion of waste that was generated elsewhere and only combusted in Region 7 is shown and discussed in the section for the region in which the waste was generated.

In 2018, waste from Region 7 was combusted at the Onondaga MWC, the Oswego MWC, and at a combustion facility in Region 5. Ash residue resulting from the combustion of Region 7 waste went to landfills in Regions 5, 7, and 8, and out of state. About 88% of waste combusted from this region was processed at the Onondaga MWC. Ash residue from this facility was sent to the Madison County West Side Extension Landfill (Madison MSW LF) or to landfills in Region 8. About 12% of the waste that was combusted in this region was sent to the Oswego MWC. All ash residue from the Oswego MWC was sent to Bristol Hill Landfill (Bristol Hill MSW LF). Minimal amounts of waste were combusted at a combustion facility in Region 5.

About 35% of ash residue from the combustion of Region 7 waste was used as AOC or disposed of at landfills in the region. Approximately, 65% was sent to landfills in Region 8 where it was either used as AOC or disposed of. Minimal amounts of ash from the combustion of Region 7 waste at the combustion facility in Region 5 were used as AOC at a landfill in that region or were sent to Massachusetts.

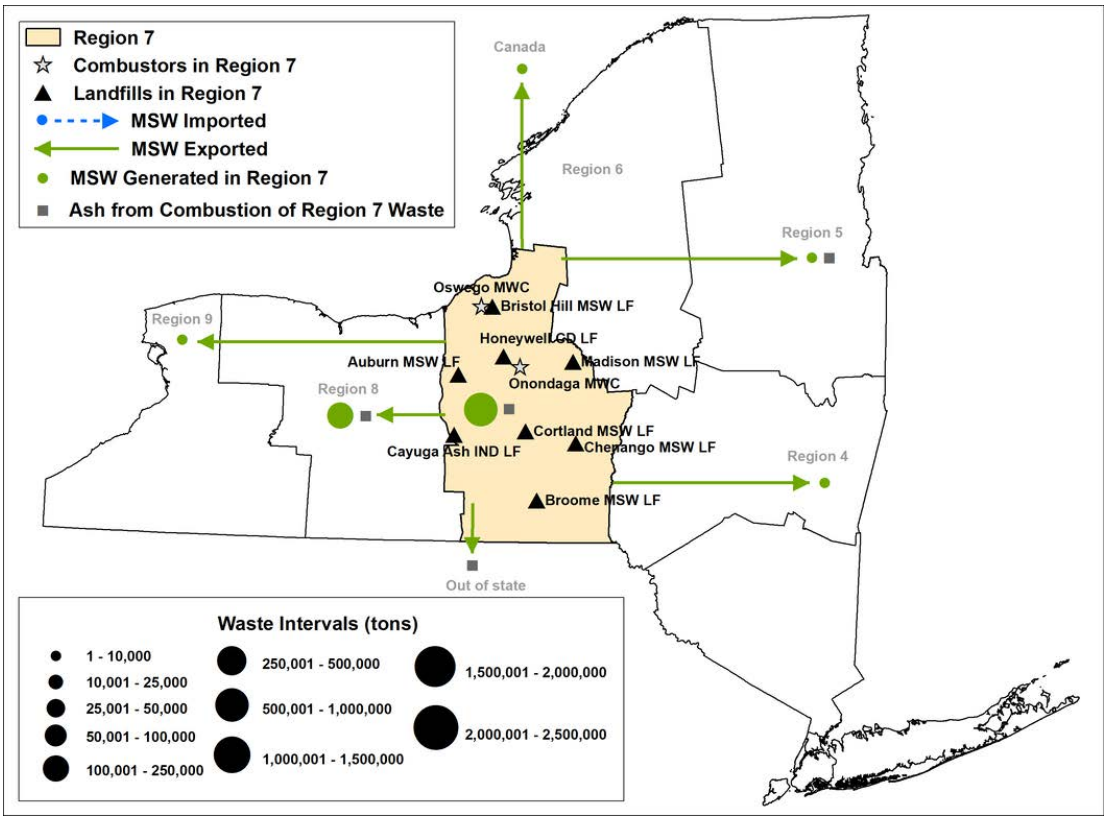


Figure E.120. Region 7 MSW flow

Figure E.120 shows the flow of the MSW stream that was destined for processing at combustion facilities or for disposal at landfills. It shows that about 83% of MSW generated in this Region in 2018 was processed or disposed of within the region. About 16% was exported to Region 8, and about 1% was sent to Region 9. Minimal amounts of MSW were exported to Regions 4 and 5, and to Canada.

No MSW was imported to this Region for processing or disposal.

In 2018, about 71% of waste that was combusted from Region 7 was MSW. In 2018, MSW was processed at the Onondaga MWC, the Oswego MWC, and at a combustion facility in Region 5. Ash residue resulting from the combustion of Region 7 MSW went to landfills in Regions 5, 7, and 8, and to out of state. Of the MSW combusted from this region, about 85% was combusted at the Onondaga MWC. The Onondaga MWC sent ash residue to the Madison MSW LF for use as AOC and to landfills in Region 8 for use as AOC or for disposal. About 15% of MSW combusted from this region was sent to Oswego MWC, which sent all the ash residue to the Bristol Hill MSW LF for use as AOC or for disposal. Minimal amounts of MSW were sent to Region 5 for combustion. Ash residue from Region 5 was sent to a landfill in Region 5 for use as AOC or exported to Massachusetts.

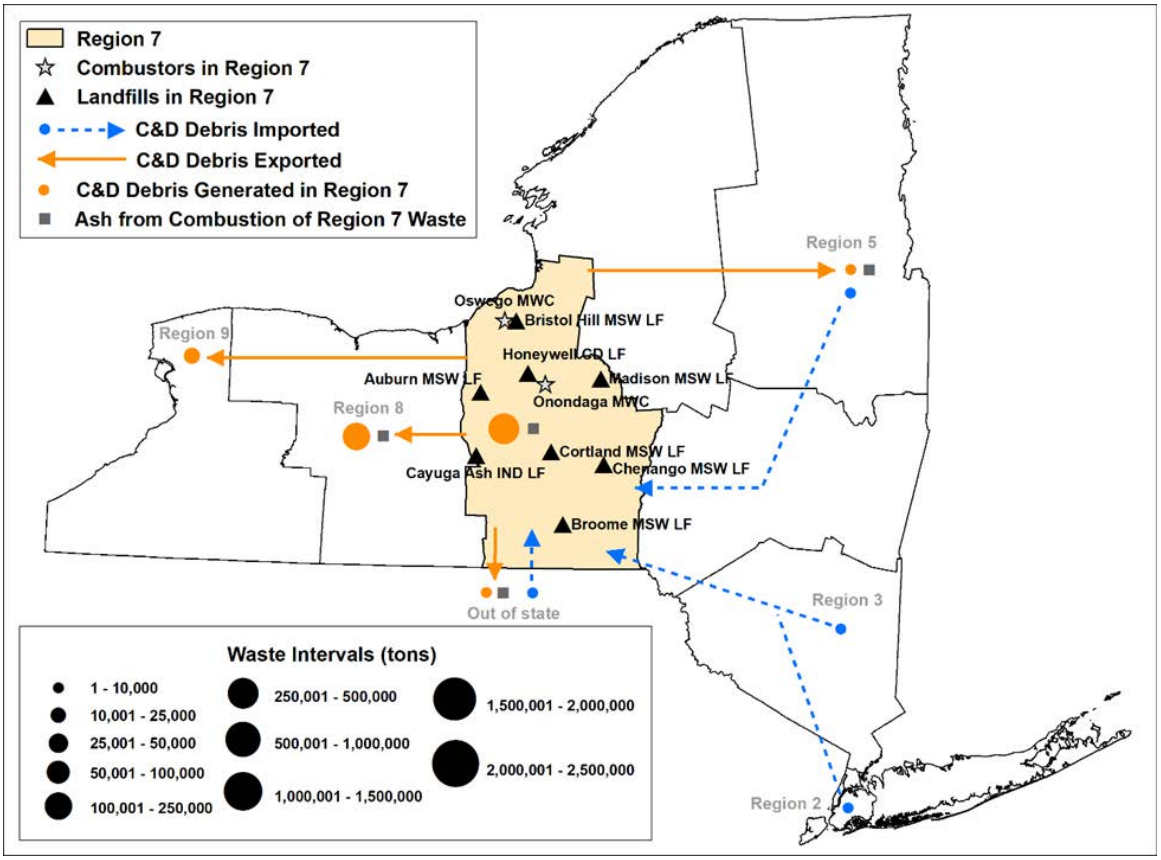


Figure E.121. Region 7 C&D debris flow

Figure E.121 shows the flow of C&D debris that was generated in 2018 and destined for processing at combustion facilities or for disposal at landfills. About 54% of the C&D debris generated in this region was disposed of or processed within the region. About 43% of the C&D debris was sent to Region 8 and about 3% was sent to Region 9. Minimal amounts of waste were sent to Region 5, and out of state to Pennsylvania and Maryland.

Figure E.121 also shows C&D debris that was imported to this region. C&D debris accounted for about 78% of the waste that was imported to this region in 2018. C&D debris was imported from Regions 2, 3, and 5, and from out of state. About 97% of C&D debris imported in 2018 originated in Region 3 and was used as AOC at landfills in Region 7. About 3% of imported C&D debris came from other states, and minimal amounts were from Regions 2 and 5. Of the C&D debris that was imported from other states, about 75% came from Pennsylvania,19% originated in Ohio, and 2% was from Vermont. Minimal amounts came from several other states.

In 2018, C&D debris from this region was also combusted at the Onondaga MWC and the Oswego MWC. Of the C&D debris from this region that was combusted, about 94% went to the Onondaga MWC. The Onondaga MWC sent ash residue to the Madison MSW LF and landfills in Region 8. Ash residue that was sent to Madison MSW LF was used as AOC and ash residue that was sent to Region 8 facilities was either disposed of or used as AOC. About 6% of the C&D debris that was combusted from Region 7 went to the Oswego MWC. All the ash residue from that facility was used as AOC or disposed of at the Bristol Hill MSW LF.

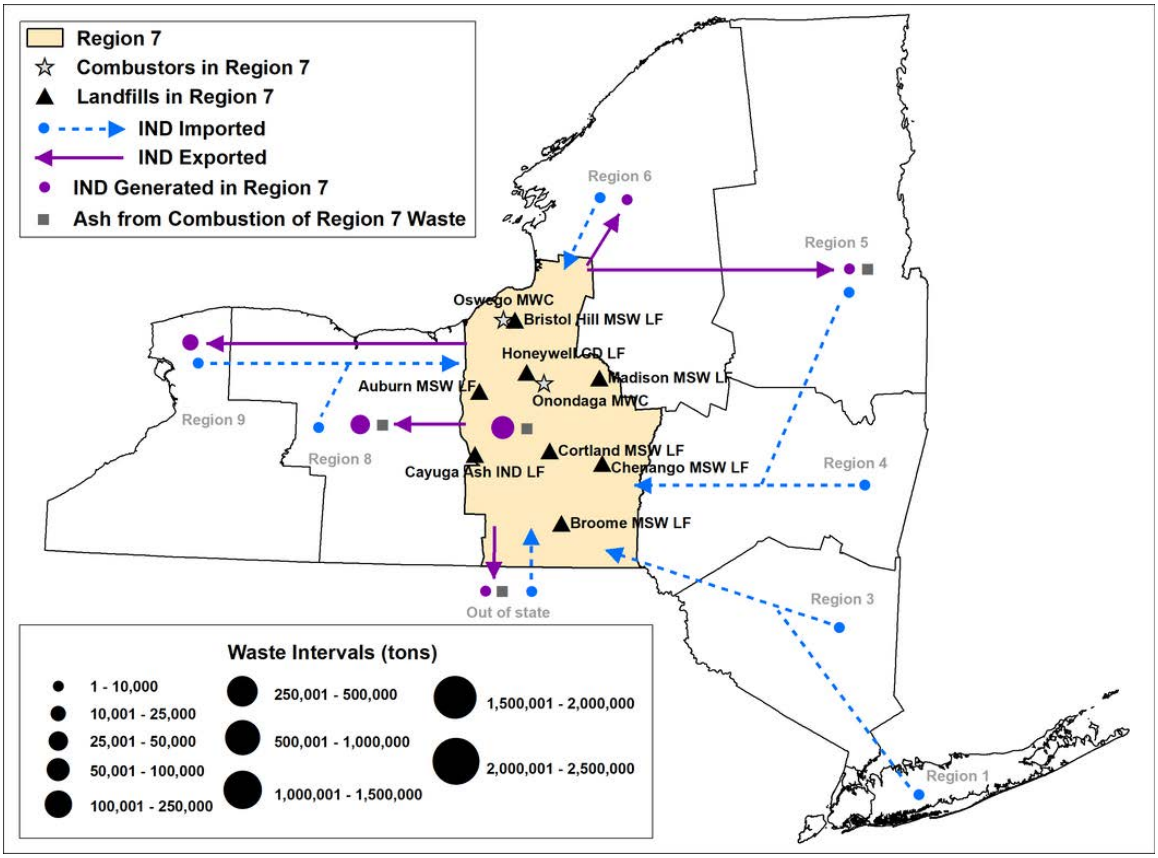


Figure E.122. Region 7 industrial waste flow

The flow of industrial waste destined for processing or disposal in 2018 is shown in Figure E.122. As shown, about 50% of the industrial waste that was generated in Region 7 was also processed or disposed of in the region. About 29% of the industrial waste was exported to Region 8, 13% to Region 9, and 8% to Region 6. Minimal amounts of industrial waste were sent to Region 5 and to other states. Of the industrial waste sent to other states, about 58% was sent to Maryland. Industrial waste was also sent to Pennsylvania.

Figure E.122 also shows that Region 7 imported industrial waste from Regions 1, 3, 4, 5, 6, 8, and 9, as well as from other states. All industrial waste that was imported to this region passed through one transfer facility in Onondaga County. About 20% of waste that was imported to this region in 2018 was industrial waste. Out-of-state imports accounted for about 76% of imported industrial waste. About 11% of industrial waste imported to this region originated in Region 4, about 4% was from Region 6, and 3% was from Region 8. Regions 3, 5, and 9 contributed 1%, 2%, and 2%, respectively, of the imported industrial waste. Minimal amounts of industrial waste were imported from Region 1. Industrial waste accounted for approximately 82% of out-of-state waste imports for this region in 2018. Of the industrial waste imported from other states, about 84% came from Pennsylvania, 11% from Vermont, 3% from New Jersey, and 2% from Massachusetts. Other states contributed minimal amounts of industrial waste.

In 2018, industrial waste from this region was also combusted at the Onondaga MWC, the Oswego MWC, and a combustion facility in Region 5. Approximately 99% of industrial waste from Region 7 that was combusted was sent to Onondaga MWC. The Onondaga MWC sent the ash residue to Madison MSW LF for use as AOC and to landfills in Region 8 for disposal or use as AOC. About 1% of the combusted industrial waste was processed at the Oswego MWC. All the ash residue from the combustion of Region 7 waste at the Oswego MWC was sent to Bristol Hill MSW LF for use as AOC or for disposal. Minimal amounts of industrial waste were sent to a combustion facility in Region 5. Ash residue from the combustion of Region 7 waste in Region 5 was used as AOC at a landfill in Region 5 or exported to Massachusetts.

Table E.44. Region 7 organics recycling summary

Anaerobic Digestion	
Food Processing Waste	964 tons
Source-Separated Organics	836 tons
Composting	
Source-Separated Organics	4,488 tons
Food Processing Waste	3,680 tons
Yard Trimmings	20,828 tons
Biosolids	4,041 tons
Land Application	
Biosolids	4,190 tons
Food Processing Waste	2,427 tons

There are 12 composting operations in Region 7 that compost source-separated organics and yard trimmings, 6 biosolids composting operations, 6 biosolids land application operations; 10 food processing waste land application operations, and 1 operating anaerobic digester. Two larger compost facilities, Onondaga County Resource Recovery Agency and Cayuga Compost, are responsible for the majority of food scraps (SSO) composting in this region. Table E.44 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all waste and recovered materials generated in Region 7 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs, RHRFs, composting facilities, anaerobic digestors, and land application facilities.

Table E.45. Region 7 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	712,750	227,502
C&D Debris	514,450	172,010
Industrial	109,230	7,451
Biosolids	73,740	8,231
Total	1,410,170	415,194
MSW disposal rate	3.35 lbs/person/day	
* The heavy metal category is not included in the values in this table.		

As shown in Table E.45, about 1,825,364 tons of waste generated in 2018 were processed, disposed of, or recovered. Of all waste generated in the region, approximately 415,194 tons were recovered by CDDHRFs, RHRFs, composting facilities, anaerobic digestors, and land application facilities, which accounts for 23% of the generated waste. The remaining waste, about 1,410,170 tons, or 77%, was processed at combustion facilities or disposed of at landfills.

MSW accounted for about 51% of waste generated in Region 7 in 2018 with about 940,252 tons. Of MSW generated in 2018, approximately 24% was recovered at RHRFs, composting facilities, and anaerobic digestors. The remaining MSW, about 712,750 tons, or 76%, was processed at combustion facilities or disposed of at landfills.

Table E.45 also shows that 686,460 tons of C&D debris were generated in 2018. This accounted for 38% of waste generated in Region 7. An estimated 75% of the C&D debris waste stream was disposed of at landfills or processed at combustion facilities, with the remaining 25% of the C&D debris recovered through CDDHRFs. Industrial waste and biosolids made up 6% and 4%, respectively, of all waste generated in 2018.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 7. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit. This section also includes information about the municipalities in this region that are not currently affiliated with a recognized planning unit. The town and village of Skaneateles are non-affiliated municipalities located in Onondaga County. They are discussed after the portion dedicated to the Onondaga Resource Recovery Agency.

Broome County

Broome County serves as the planning unit for all municipalities within the county. This county had a 2018 estimated population of 191,925 (Census, 2019). While there are urban and suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Broome County owns the Broome County Landfill. The landfill location includes a variety of other services that play a key part in the planning unit's solid waste management system. Local law bans the disposal of leaf and yard trimmings, so the landfill site includes a compost facility for management of these wastes. There are also areas at the site for processing white goods to recover refrigerant and scrap metal, and for storing waste tires until they can be transported offsite for recycling. There is also a permanent HHW facility that is open to Broome County residents year-round and nearby Tioga County residents from April to November. In addition to the Broome County Landfill and the services provided at that site, there are privately owned transfer facilities and recycling facilities within the planning unit. The Broome County planning unit also engages in education and public outreach efforts related to recycling, composting, and waste reduction.

LSWMP Status	The planning unit's LSWMP is approved through 2029.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.123 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.124 shows the flow of waste for the MSW stream.

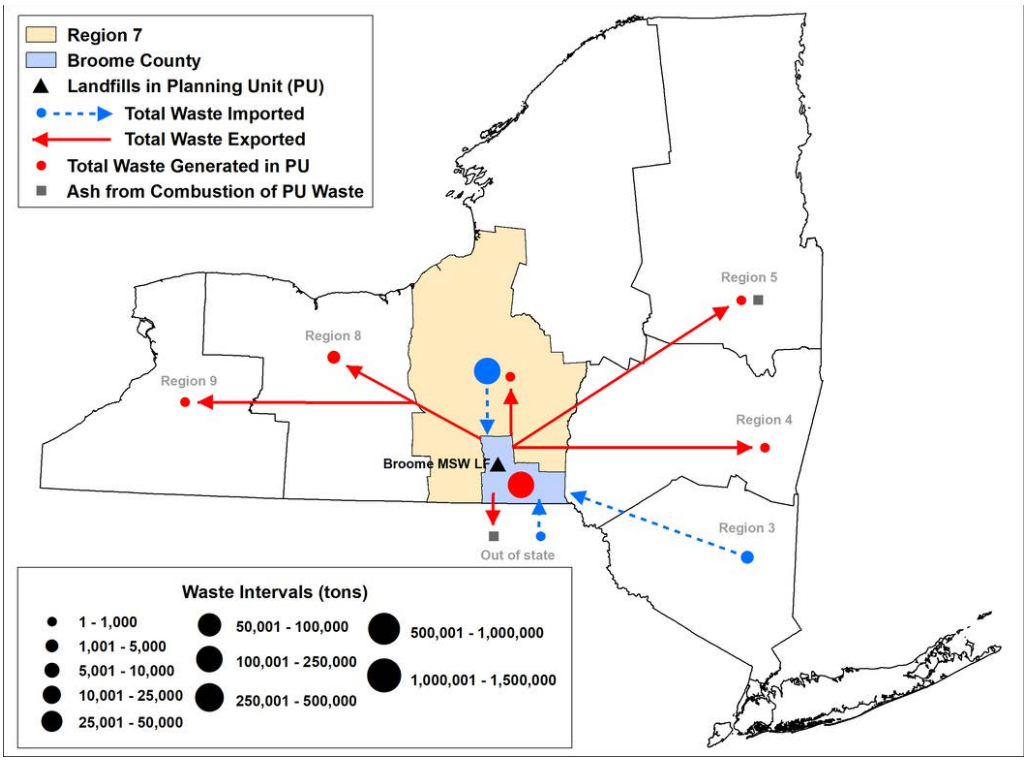


Figure E.123. Broome County total waste flow

Figure E.123 shows the flow of all waste streams, not including recovered materials, within Broome County in 2018. As shown, about 97% of the waste generated in this planning unit was disposed of within the planning unit in 2018. Approximately 2% of the waste generated in Broome County was sent to Region 8. The remaining waste was exported for processing or disposal to Regions 4, 5, and 9, and other planning units in Region 7.

Figure E.123 also shows waste imported to this planning unit in 2018. About 98% of imported waste originated in other planning units in Region 7. About 2% of imported waste came from Region 3, and minimal amounts of waste were imported from other states. Of the waste imported from other states, Pennsylvania and Ohio contributed most of the tonnage, about 85% and 13%, respectively.

Although there are no combustion facilities in Broome County, some industrial waste from the planning unit was exported and processed at a combustion facility in Region 5. About 12% of ash residue resulting from the combustion of Broome County waste was used as AOC at a landfill in Region 5. The other 88% was exported to Massachusetts.

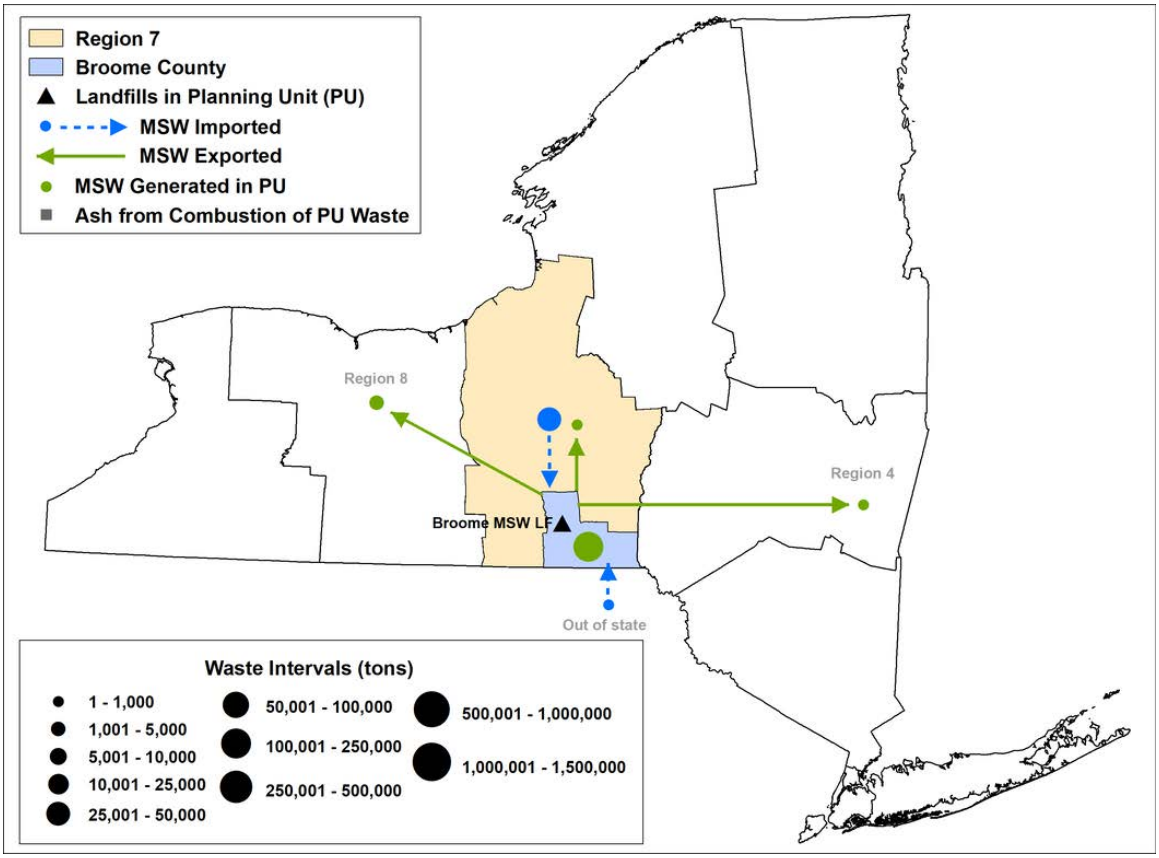


Figure E.124. Broome County MSW flow

Figure E.124 shows the MSW generated in this planning unit in 2018 that was destined for disposal. As shown, about 98% of MSW generated in Broome County was disposed of within the planning unit. About 1% was sent to Region 8 and the remainder was sent to other planning units in Regions 7 and 4.

Figure E.124 also shows MSW imported to this planning unit. About 99% of MSW imported to Broome County in 2018 originated in other planning units in Region 7, with minimal amounts of waste imported from Pennsylvania.

The following table provides information on all waste and recovered materials generated in Broome County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.46. Broome County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	105,800	32,700**
C&D Debris	35,000	29,300

Industrial	2,400	0
Biosolids	6,000	0
Total	149,200	62,000
MSW disposal rate	3.02 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.46, about 211,200 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 149,200 tons, or 71%, were processed at a combustion facility or disposed of at a landfill. The remaining 62,000 tons, or 23%, were recovered by CDDHRFs or RHRFs.

Table E.46 shows that about 138,500 tons of MSW were generated in 2018, which accounted for 66% of all waste generated in the planning unit that year. Of that 138,500 tons of MSW, 24% was recovered through RHRFs, and the remaining 76% was processed or disposed of.

C&D debris accounted for 30% of the total waste from 2018. About 54% of the C&D debris generated in 2018 was destined for disposal at a landfill or for processing at a combustion facility. The remaining 46% was recovered through CDDHRFs. Industrial waste and biosolids made up 1% and 3%, respectively, of all waste generated in 2018.

Cayuga County

The Cayuga County planning unit covers all municipalities within the county. As of 2018, Cayuga County had an estimated population of 77,121 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. There was one MSW landfill in this planning unit, Auburn Landfill No 2, that accepted waste in 2018. Auburn Landfill No 2 is owned by the City of Auburn and has since completed final closure and is no longer accepting waste. The County and the City of Auburn run electronics recycling events, a HHW collection day, a waste tire collection event, and an Earth Week event that targets items such as fluorescent light bulbs, home electronics, and old propane tanks. The County also offers residents a year-round drop-off site for medication disposal. The County engages in public outreach and education efforts about collection events, relevant laws, and recycling and composting.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.125 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.126 shows the flow of waste for the MSW stream.

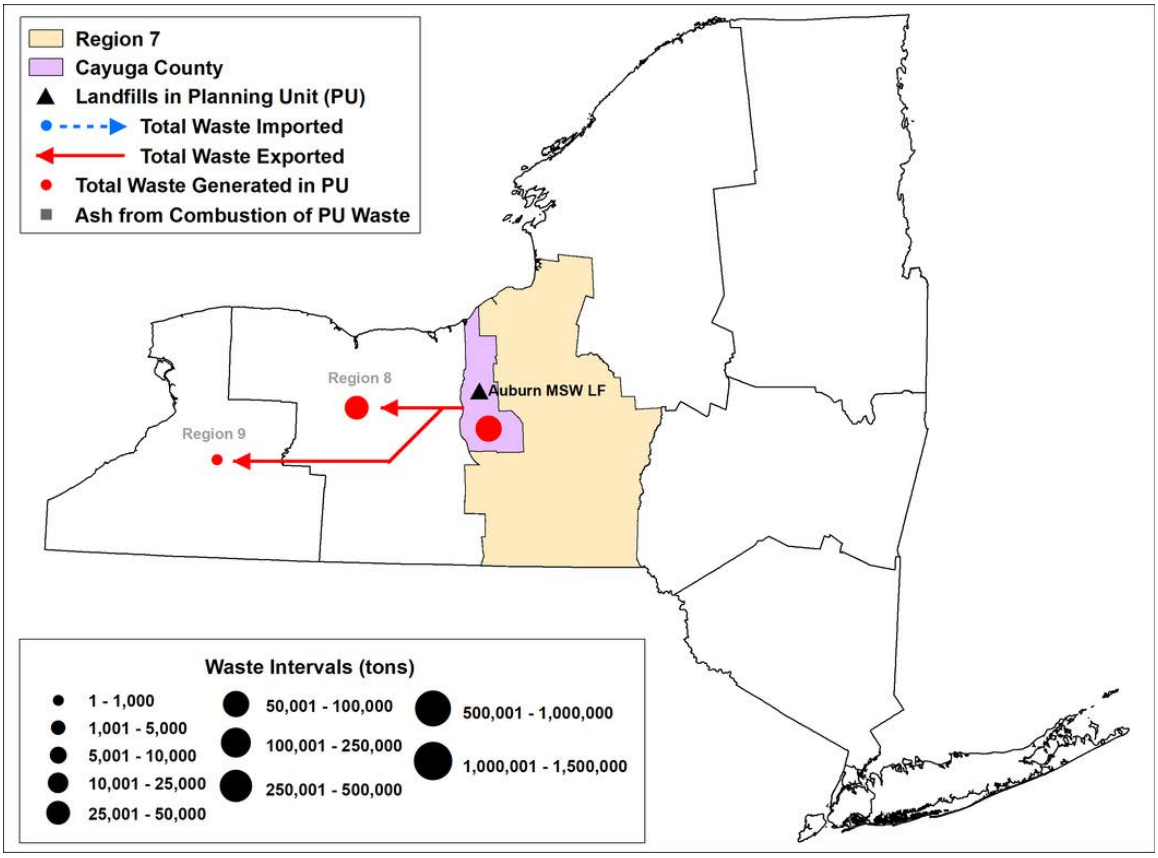


Figure E.125. Cayuga County total waste flow

Figure E.125 shows the flow of waste from this planning unit destined for disposal. About 67% of waste generated in this planning unit was disposed of within the planning unit in 2018. About 32% of waste generated was sent to Region 8. Minimal amounts of waste were also sent to Region 9. No waste was imported to Cayuga County in 2018.

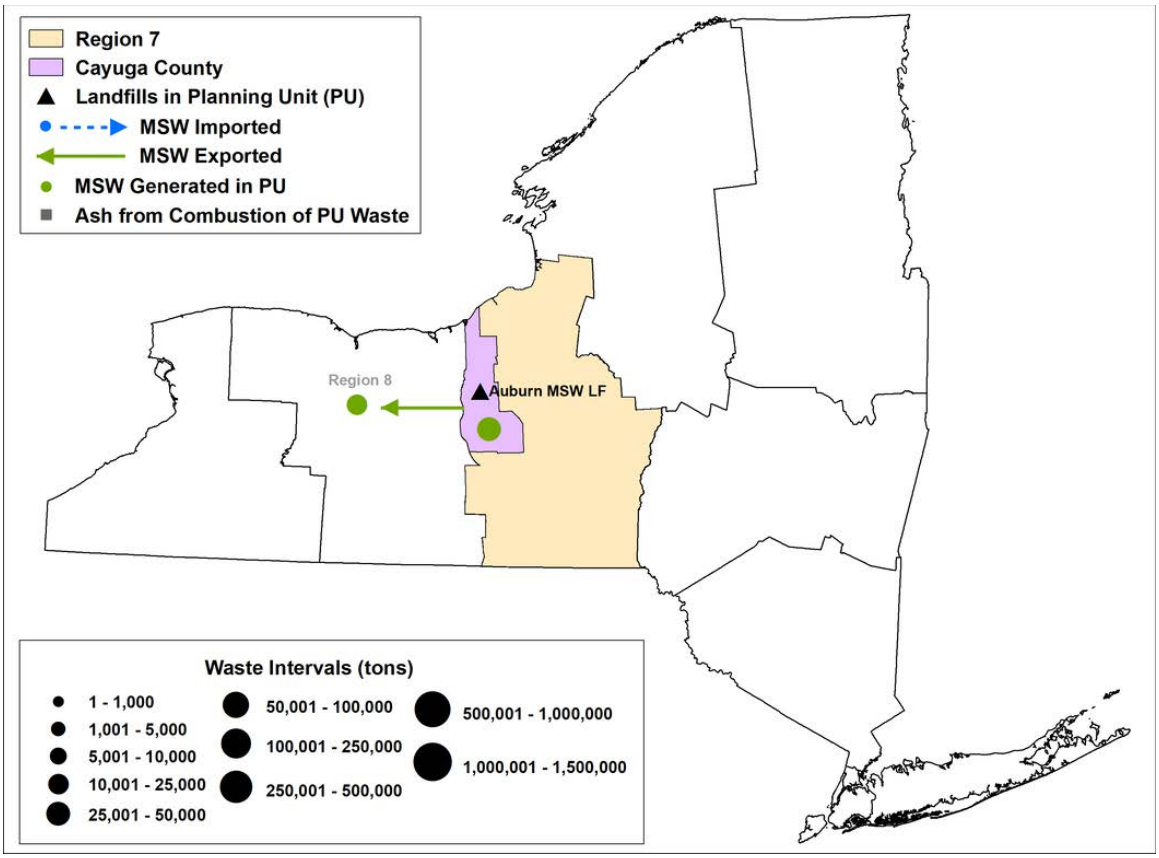


Figure E.126. Cayuga County MSW flow

Figure E.126 shows the flow of MSW from this planning unit in 2018. About 81% of MSW generated in this planning unit was disposed of within the planning unit. The remaining MSW was exported to Region 8. No MSW was imported to this planning unit in 2018.

The following table provides information on all waste and recovered materials generated in Cayuga County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.47. Cayuga County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	57,300	7,800**
C&D Debris	38,000	0
Industrial	7,500	0
Biosolids	7,500	0

TOTAL	110,300	7,800
MSW disposal rate	4.07 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.47, about 118,100 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 110,300 tons, or 93%, were destined for processing at a combustion facility or for disposal at a landfill. The remaining 7,800 tons, or 7%, were recovered by CDDHRFs or RHRFs.

Table E.47 shows that about 65,100 tons of MSW were generated in 2018, which accounted for 55% of all waste generated in the planning unit that year. Of that 65,100 tons of MSW, 12% was recovered through RHRFs and the remaining 88% was processed or disposed of.

C&D debris accounted for 32% of the total waste from 2018. All C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. Industrial waste and biosolids each made up 6% of all waste generated in 2018.

Chenango County

All municipalities within Chenango County are part of the Chenango County planning unit. This planning unit had an estimated population of 47,445 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The county owns and operates the Chenango County Landfill, an MSW landfill located in Norwich. While this landfill accepts some of the MSW generated in the planning unit, other nearby landfills also accept waste generated in this area. There are two transfer facilities in this planning unit that are operated by Chenango County and one transfer facility that is privately owned and operated. The landfill and the transfer facilities in the county accept recyclables at no charge. The transfer facilities can also handle bulk items, such as appliances, and scrap metal. The Norwich Transfer Facility holds a latex paint exchange from May through September which allows residents to drop off unwanted latex paints and pick up those left by other residents. This program reduces the amount of latex paint brought to the HHW collection events the County runs every other year. The County also participates in an education program targeted toward children in school.

LSWMP Status	The planning unit's LSWMP is approved through 2028.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.127 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.128 shows the flow of waste for the MSW stream.

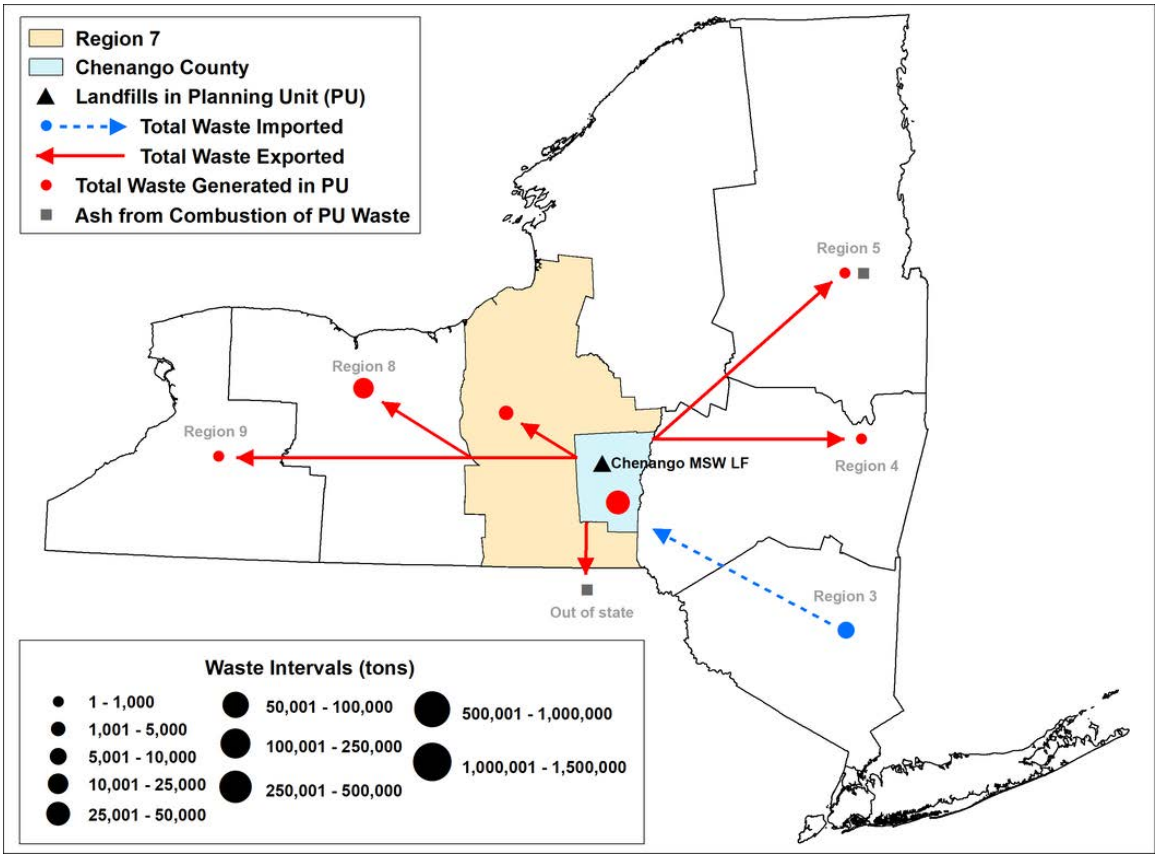


Figure E.127. Chenango County total waste flow

Figure E.127 shows waste generated in this planning unit in 2018 that was destined for processing or for disposal. About 70% of MSW generated in Chenango County was disposed of within the planning unit. About 25% of waste generated in this planning unit was sent to Region 8, approximately 4% was sent to other planning units in Region 7, and 1% was sent to Region 5. Minimal amounts of waste were exported to Regions 4 and 9.

Figure E.127 also shows waste imported to this planning unit, which all originated in Region 3.

Although there are no combustion facilities in Chenango County, some waste from the planning unit was exported and processed at a combustion facility in Region 5. An estimated 12% of ash residue resulting from the combustion of this waste was used as AOC at a landfill in Region 5. The other 88% was exported to Massachusetts.

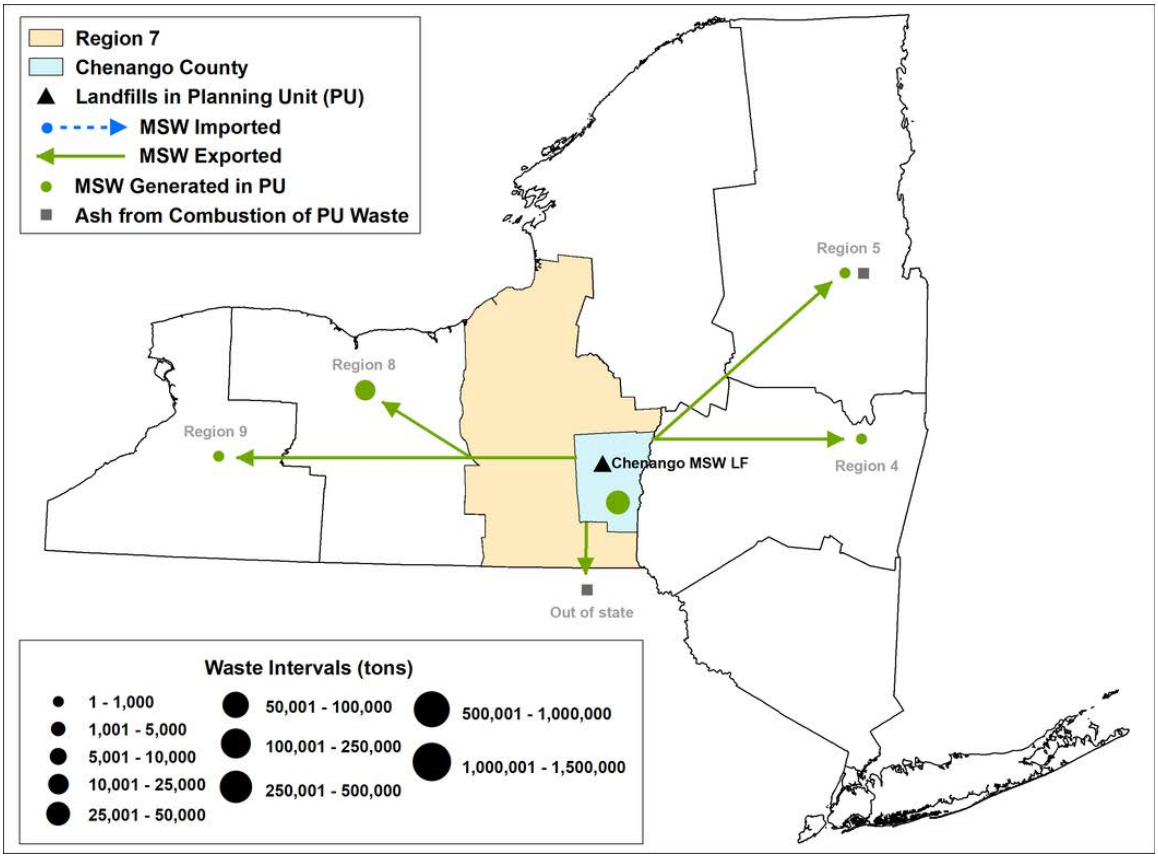


Figure E.128. Chenango County MSW flow

Figure E.128 shows the flow of MSW generated in this planning unit in 2018. As shown, approximately 73% of MSW generated in Chenango County was disposed of within the planning unit in 2018. About 25% of MSW generated in 2018 was exported to Region 8, 1% was sent to Region 5, and minimal amounts of MSW were sent to Regions 4 and 9.

As shown in Figure E.128, no MSW was imported to this planning unit in 2018.

MSW that was generated in Chenango County was processed at a combustion facility in Region 5. About 12% of the ash residue resulting from the combustion of this MSW was used as AOC at a landfill in Region 5. The other 88% was exported to Massachusetts.

The following table provides information on all waste and recovered materials generated in Chenango County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.48. Chenango County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	44,500	3,000**

C&D Debris	7,000	0
Industrial	5,200	30
Biosolids	1,600	0
Total	58,300	3,030
MSW disposal rate	5.14 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.48, about 61,330 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 58,300 tons, or 95%, were destined for processing at a combustion facility or for disposal at a landfill. The remaining 3,030 tons, or 5%, were recovered by CDDHRFs or RHRFs.

Table E.48 shows that about 47,500 tons of MSW were generated in 2018, which accounted for 77% of all waste generated in the planning unit that year. Of that 47,500 tons of MSW, 6% was recovered through RHRFs and the remaining 94% was processed or disposed of.

C&D debris accounted for 11% of the total waste from 2018. All C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. Industrial waste and biosolids made up 9% and 3%, respectively, of all waste generated in 2018.

Cortland County

The Cortland County planning unit includes all municipalities within the county. As of 2018, this area had an estimated population of 47,722 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. There is one MSW landfill within this planning unit. The Cortland County Landfill Westside Extension is owned by the county and only accepts waste generated within Cortland County. Several towns in the county operate transfer facilities and there is also one privately owned transfer facility in this planning unit. The transfer facilities and the Materials Recovery Facility, located in the City of Cortland, will accept recyclables from residents at no charge. There are also education and outreach efforts that take place in the planning unit to encourage recycling.

LSWMP Status	The planning unit's LSWMP is approved through 2024.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.129 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.130 shows the flow of waste for the MSW stream.

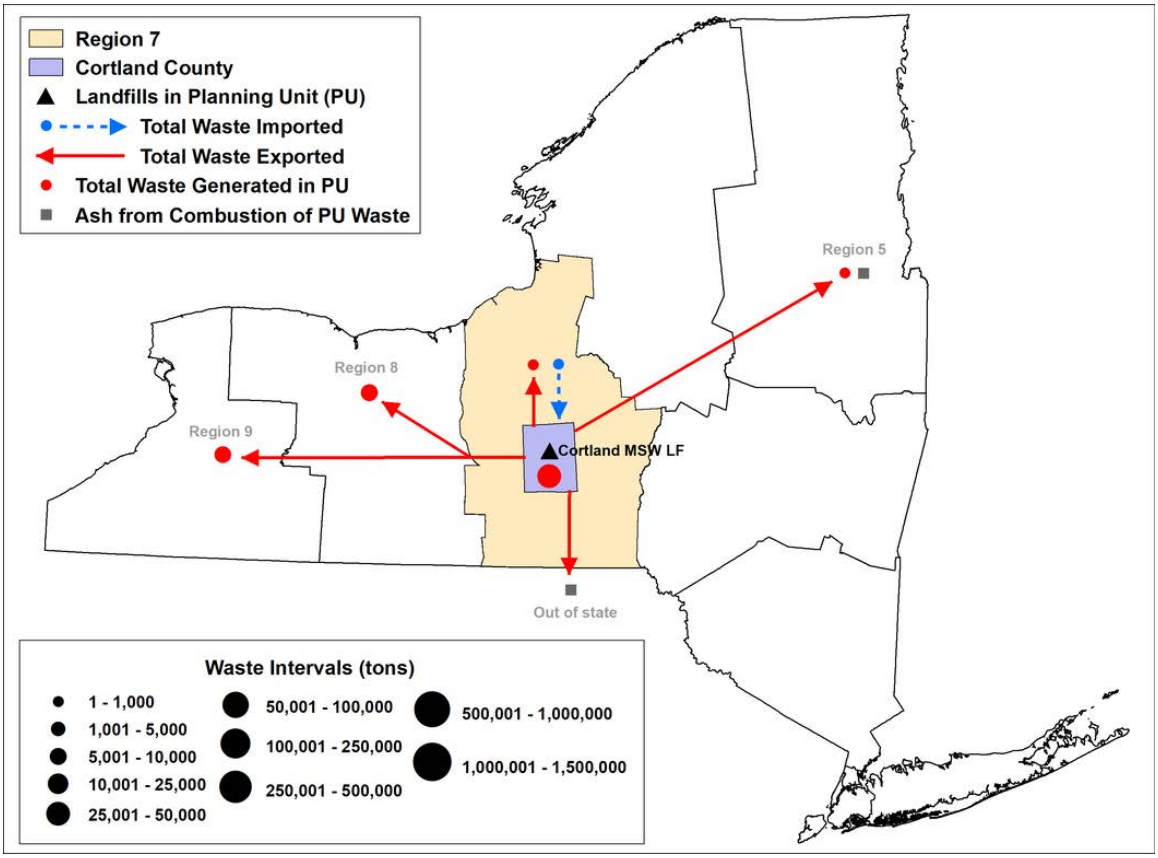


Figure E.129. Cortland County total waste flow

Figure E.129 shows the flow of waste destined for processing or disposal in 2018. As shown, about 68% of waste generated in this planning unit was disposed of within the planning unit. Region 8 and Region 9 received about 18% and 13%, respectively, of the waste generated in this region. Minimal amounts of waste were exported to Region 5 and to other planning units in Region 7.

Figure E.129 also shows that some waste was imported to this planning unit in 2018. All of the imported waste originated in other planning units in Region 7.

Although there are no combustion facilities in Cortland County, some waste from the planning unit was exported and processed at a combustion facility in Region 5. An estimated 12% of ash residue resulting from the combustion of this waste was used as AOC at a landfill in Region 5. The other 88% was exported to Massachusetts.

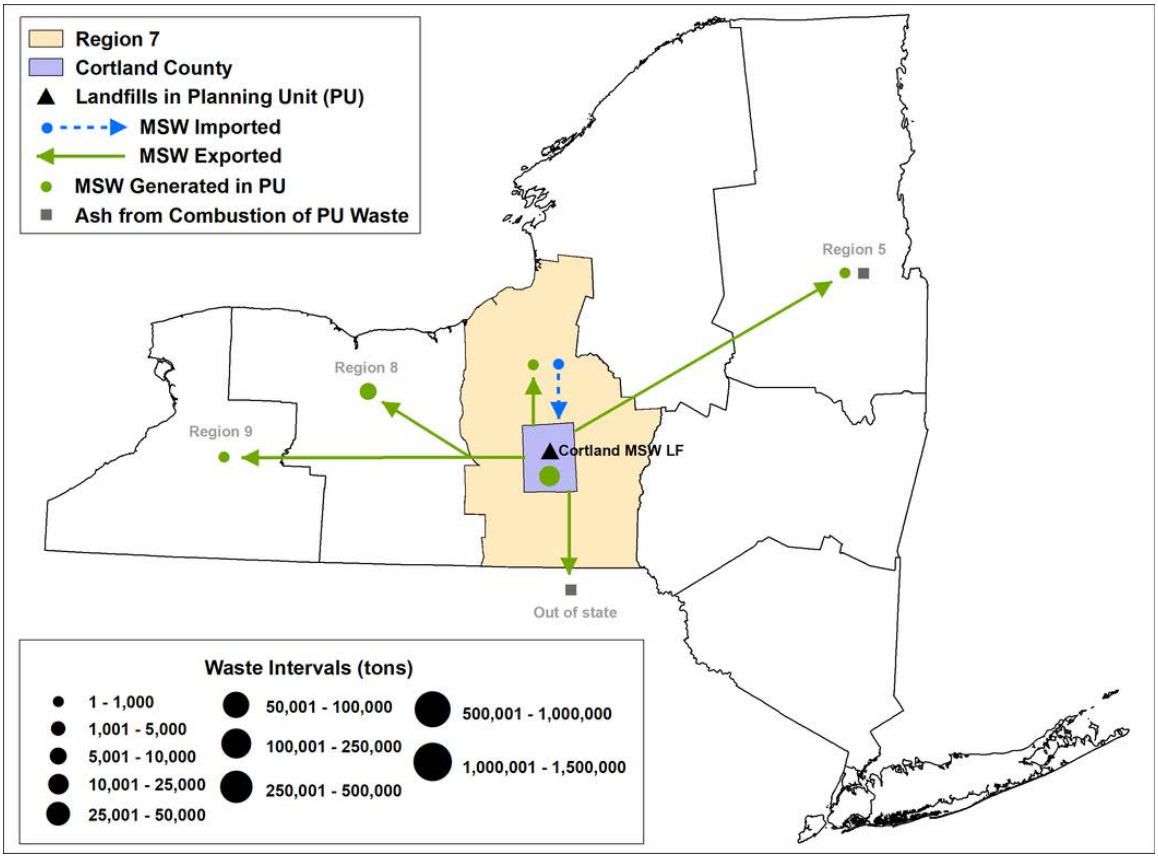


Figure E.130. Cortland County MSW flow

As shown in Figure E.130, about 77% of MSW generated in this planning unit was disposed of within the planning unit. Some MSW was exported to Region 8, accounting for 22% of MSW generated in 2018. About 1% of MSW generated in this planning unit was sent to Region 9, and minimal amounts were sent to Region 5 and to other planning units in Region 7.

Figure E.130 also shows MSW that was imported into Cortland County. All imported MSW originated in other planning units in Region 7.

MSW that was generated in Cortland County was processed at a combustion facility in Region 5. About 12% of ash residue resulting from the combustion of this MSW was used as AOC at a landfill in Region 5. The other 88% was exported to Massachusetts.

The following table provides information on all waste and recovered materials generated in Cortland County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.49. Cortland County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	28,500	4,800**
C&D Debris	6,700	46,600
Industrial	6,100	0
Biosolids	5,000	0
Total	46,300	51,400
MSW disposal rate	3.27 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.49, about 97,700 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 46,300 tons, or 47%, were destined for processing at a combustion facility or for disposal at a landfill. The other 51,400 tons, or 53%, were recovered by CDDHRFs or RHRFs.

Table E.49 shows that about 33,300 tons of MSW were generated in 2018, which accounted for 34% of all waste generated in the planning unit that year. Of that 33,300 tons of MSW, 14% was recovered through RHRFs, and the remaining 86% was processed or disposed of.

C&D debris accounted for 55% of the total waste from 2018. About 13% of the C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. The other 87% of the C&D debris stream was recovered through CDDHRFs. Industrial waste and biosolids made up 6% and 5%, respectively, of all waste generated in 2018.

Madison County

The municipalities in Madison County are all part of the Madison County planning unit. This planning unit had an estimated population of 71,117 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Madison County West Side Extension Landfill is a MSW landfill in this planning unit owned by the county. The County has implemented a flow control law which ensures that, with the exception of prohibited materials, all non-hazardous and non-recyclable waste generated in the county is disposed of in the county's landfill. The landfill site includes a privately

operated Materials Recovery Facility that collects dual-stream recyclables. There are several transfer and recycling facilities located throughout the county that accept MSW, recyclables, C&D debris, and yard trimmings. A transfer facility, located near the landfill, also offers additional recycling programs such as battery, textile, and scrap metal collection. The County runs a number of education and outreach efforts, including classroom presentations, social media campaigns, print and digital advertising, and the Department of Solid Waste website. These education and outreach programs focus on waste reduction, opportunities for reuse or upcycling, and recycling.

LSWMP Status	The planning unit's LSWMP is approved through 2030.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.131 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.132 shows the flow of waste for the MSW stream.

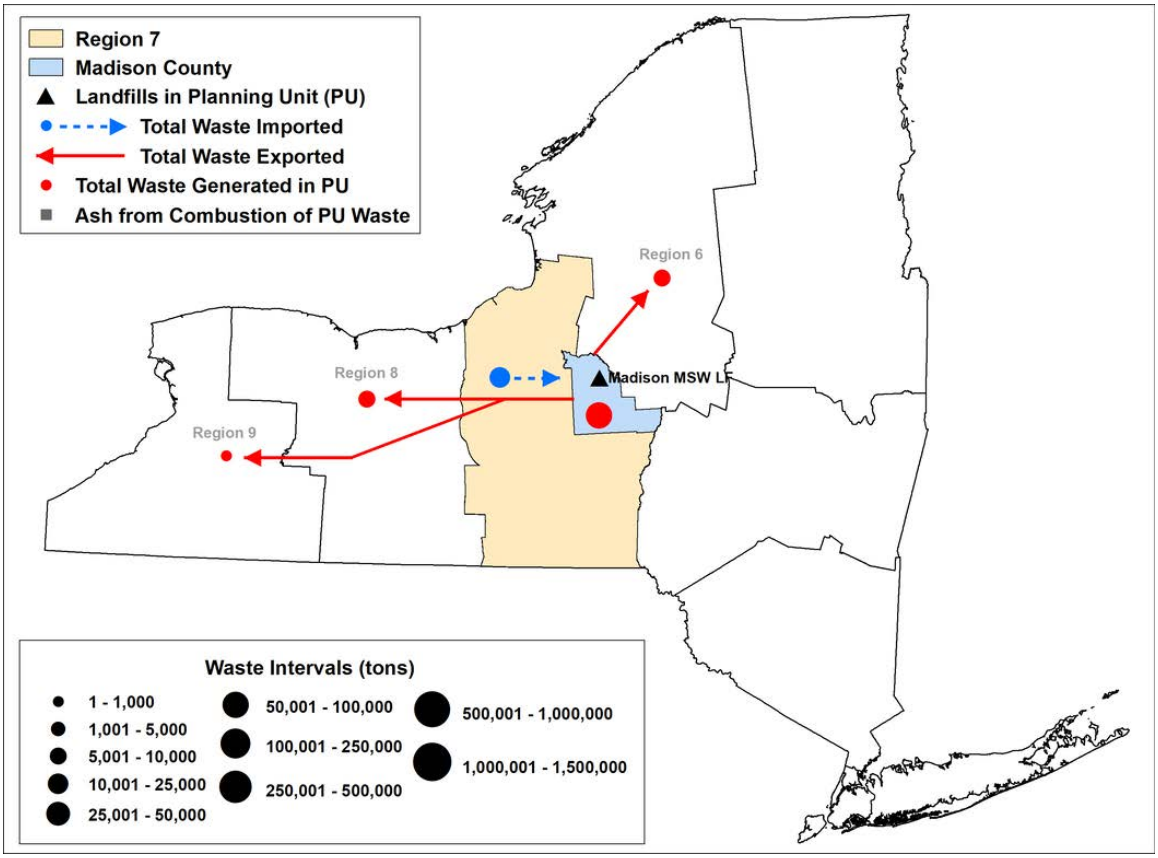


Figure E.131. Madison County total waste flow

Figure E. 131 shows the flow of all waste destined for disposal in 2018. About 79% of waste generated in this planning unit was disposed of within the planning unit. Approximately 12% of waste generated in Madison County was exported to Region 6,

9% was exported to Region 8, and a minimal amount was sent to Region 9. All waste exported from the planning unit was C&D debris or industrial waste.

Figure E. 131 also shows waste that was imported into Madison County. In 2018, all waste imported to Madison County was ash residue from the Onondaga MWC and was used as AOC at the Madison MSW Landfill.

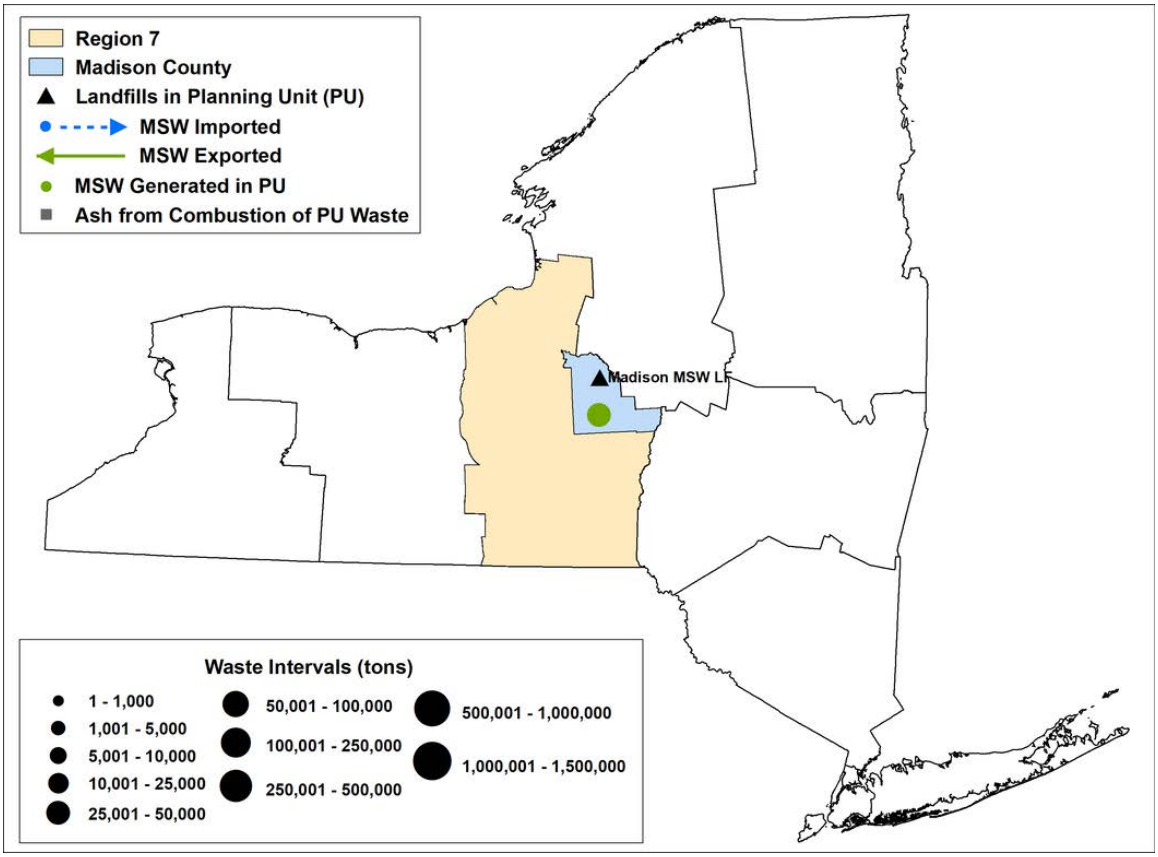


Figure E.132. Madison County MSW flow

Figure E.132 shows the flow of waste generated in 2018 that was destined for disposal. In 2018, all MSW generated in Madison County was disposed of in Madison County. No MSW was imported to this planning unit in 2018.

The following table provides information on all waste and recovered materials generated in Madison County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.50. Madison County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	38,300	6,400**

C&D Debris	13,400	40
Industrial	10,800	50
Biosolids	5,240	0
TOTAL	67,740	6,490
MSW disposal rate	2.95 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.50, about 74,230 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 67,740 tons, or 91%, were destined for processing at a combustion facility or for disposal at a landfill The other,490 tons, or 9%, were recovered by CDDHRFs or RHRFs.

Table E.50 shows that about 44,700 tons of MSW were generated in 2018, which accounted for 60% of all waste generated in the planning unit that year. Of that 44,700 tons of MSW, 14% was recovered through RHRFs and the remaining 86% was disposed of.

C&D debris accounted for 18% of the total waste from 2018. Nearly 100% of C&D debris generated in 2018 was disposed of at landfills or processed at combustion facilities. Minimal amounts of C&D debris were recovered through CDDHRFs. Industrial waste and biosolids made up 15% and 7%, respectively, of all waste generated in 2018.

Onondaga County Resource Recovery Agency (OCRRA)

OCRRA is the planning unit that covers almost all municipalities in Onondaga County. The only municipalities within the county that are not a part of the OCRRA planning unit are the Town and Village of Skaneateles. In 2018, the municipalities that are part of the OCRRA planning unit had an estimated population of 454,475 (Census, 2019). This planning unit is more densely populated than other planning units in this region. While there are rural areas within the planning unit, the average population density was between 325 and 5,000 people per square mile, meaning this planning unit had a population characteristic of a suburban population density distribution. The Onondaga County Resource Recovery Facility is a combustion facility located in this planning unit. In addition, the Honeywell/Camillus Bed #15 C&D debris landfill accepts only C&D debris. The Onondaga County Resource Recovery Facility is in Jamesville and is owned by a private company. OCRRA invests significant funding and effort into public education. These efforts include paid advertising in physical and digital media, maintaining a website and social media presence, outreach to schools, and sending out

quarterly newsletters. HHW is collected from residents year-round by appointment. OCRRA also partners with local businesses to collect items such as batteries and fluorescent light bulbs for recycling. The planning unit operates two yard-trimmings sites that allow residents to drop off yard trimmings to be composted. Food waste can be dropped off for composting at one of these sites, the Amboy Compost Site, which accepts food scraps from a number of commercial and institutional generators, as well as from residents. It earned OCRRA an Environmental Excellence Award from the DEC for organics recovery efforts.

LSWMP Status	The planning unit's LSWMP is approved through 2024.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.133 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.134 shows the flow of waste for the MSW stream.

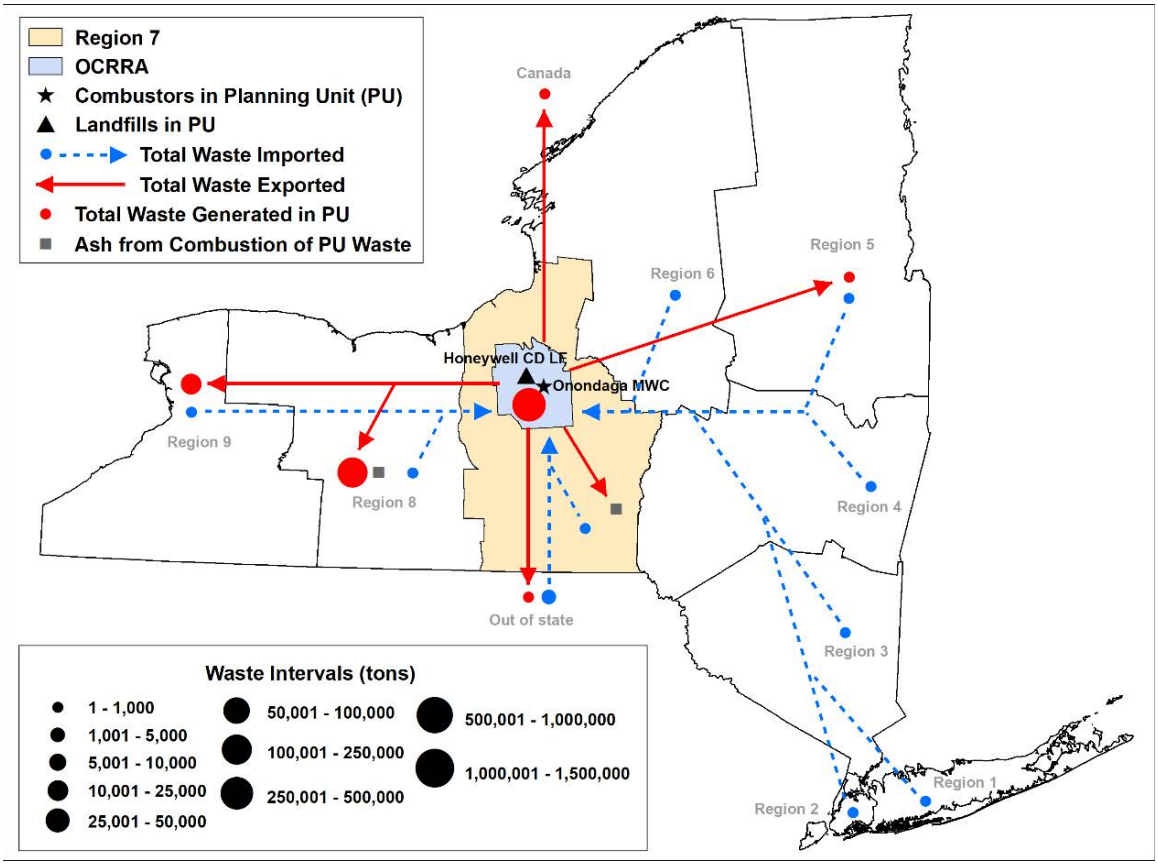


Figure E.133. OCRRA total waste flow

Figure E.133 shows the flow of waste in this planning unit destined for processing or disposal in 2018. About 64% of waste generated in OCRRA was processed or disposed of within the planning unit. About 33% of waste was sent to Region 8, about 3% was sent to Region 9, and a minimal amount was exported to Region 5, other states, and Canada. An estimated 84% of waste exported to out-of-state facilities was industrial waste, and 16% was C&D debris. The majority of this waste was exported to Maryland and Pennsylvania.

As shown in Figure E.133, waste was also imported to OCRRA in 2018. Waste was imported from all regions in NYS as well as from other states. Out-of-state waste accounted for the greatest portion of imports, about 67%. Approximately 11% of imported waste originated in other planning units in Region 7, 10% came from Region 4, and 4% from Region 6. Regions 5, 8, and 9 each contributed about 2%, for a total of 6% of imported waste. Minimal amounts of waste were imported from Regions 1, 2, and 3. Of the waste imported from other states, about 84% came from Pennsylvania, 11% from Vermont, 3% from New Jersey, and 2% from Massachusetts. About seven other states each contributed minimal amounts of waste. More than 99% of waste imported into the planning unit from other states in 2018 was industrial waste.

Approximately 52% of waste generated in this planning unit was combusted at combustion facilities. Over 99% of combusted waste was processed at the Onondaga MWC and minimal amounts of waste were processed at a combustion facility in Region 5. An estimated 69% of all ash residue generated from the processing of Onondaga County waste in 2018 was from the MSW stream; 22% was generated from the combustion of C&D debris; and 9% was generated from the combustion of industrial waste. About 82% of ash residue generated from processing OCRRA waste was sent to landfills in Region 8 for use as AOC or for disposal. About 18% of ash residue was used as AOC at the Madison County West Side Extension Landfill.

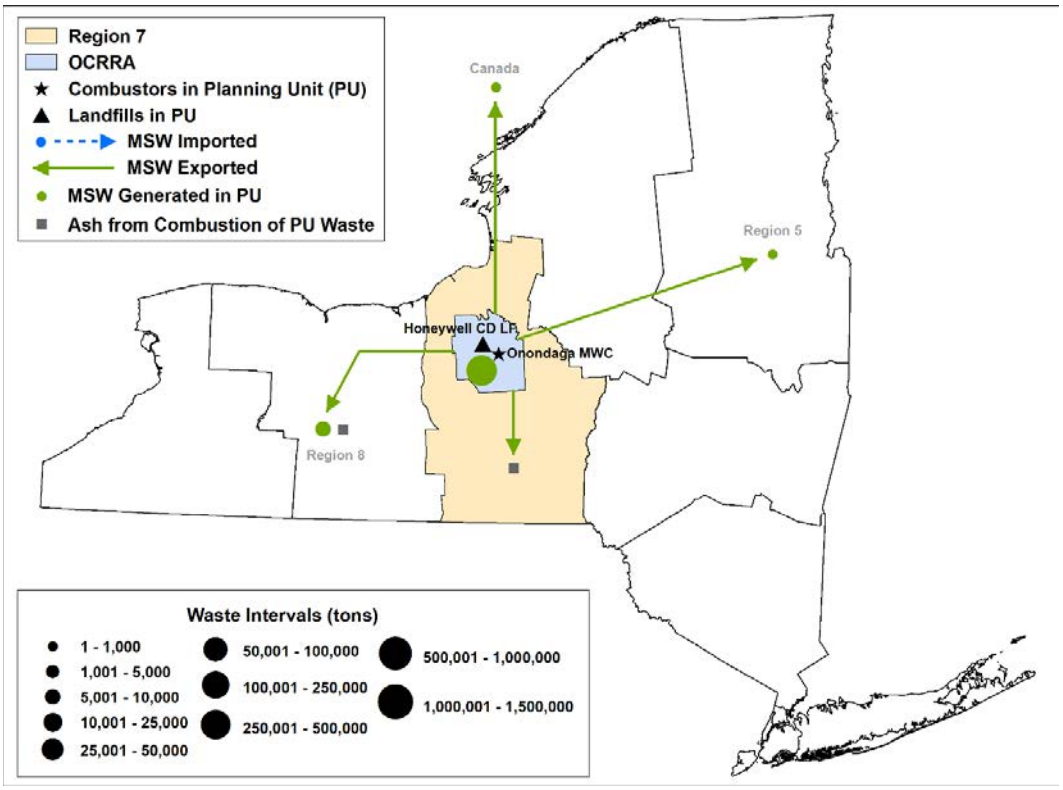


Figure E.134. OCRRA MSW flow

Figure E.134 shows the flow of MSW generated in OCRRA that was destined for processing at a combustion facility or for disposal at a landfill. About 97% of MSW generated within this planning unit was processed within the planning unit. About 2% of MSW from OCRRA was exported to Region 8, and minimal amounts were sent to Region 5 and to Canada.

The OCRRA planning unit did not import any MSW in 2018.

The Onondaga MWC processed about 97% of MSW from this planning unit in 2018. Approximately 82% of ash residue that remained after the combustion of MSW from this planning unit was sent to facilities in Region 8, where it was used as AOC or disposed of. The remaining 18% was sent to the Madison County West Side Extension Landfill where it was used as AOC.

The following table provides information on all waste and recovered materials generated in OCRRA by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.51. OCRRA waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	258,100	103,500**
C&D Debris	355,300	94,900
Industrial	54,000	150
Biosolids	38,000	0
Total	705,400	198,550
MSW disposal rate	3.11 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.51, an estimated 903,950 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 705,400 tons, or 78%, were destined for processing at a combustion facility or for disposal at a landfill. The other 198,550 tons, or 22%, were recovered by CDDHRFs or RHRFs.

Table E.51 shows that about 361,600 tons of MSW were generated in 2018, which accounted for 40% of all waste generated in the planning unit that year. Of that 361,600 tons of MSW, 29% was recovered through RHRFs and the remaining 71% was processed or disposed of.

C&D debris accounted for 50% of the total waste from 2018. Approximately 79% of C&D debris generated in 2018 was disposed of at landfills or processed at combustion facilities. The remaining 21% of C&D debris was recovered through CDDHRFs. Industrial waste and biosolids made up 6% and 4%, respectively, of all waste generated in 2018.

Onondaga County - Non-affiliated municipalities

There are two non-affiliated municipalities within Onondaga County, the Town and Village of Skaneateles. Neither of these non-affiliated municipalities has a CRA in place, and waste flow information is limited. The Town and Village of Skaneateles are located on the western edge of Onondaga County, near the northern end of Skaneateles Lake.

Town and Village of Skaneateles

Both the town and village of Skaneateles are considered non-affiliated municipalities because they have opted out of joining the OCRRA planning unit. As such, the 7,174 people that lived here in 2018 were serviced by the town or village of Skaneateles

rather than by OCRRA. There are no disposal or combustion facilities in this area, so all wastes generated within the town and village are exported.

Oswego County

The Oswego County planning unit services all municipalities within Oswego County. As of 2018, this included 117,515 residents (Census, 2019). While there are urban and suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Bristol Hill SLF is a MSW landfill in this planning unit and is owned by Oswego County. Oswego County also owns the Oswego County Energy Recovery Facility, which is a combustion facility. The Energy Recovery Facility and landfill work in tandem to manage waste in the planning unit. Waste is sent to the Energy Recovery Facility first to be combusted and to recover energy from the waste. After combustion, the remaining ash is disposed of at the Bristol Hill SLF. This system reduces the volume of waste disposed of in the landfill, extending the life of the landfill. In order to further reduce the volume of waste disposed of in the landfill, the county also operates a materials recovery facility, a HHW collection facility that is open during the warm weather months each year, and yard trimmings drop-off locations throughout the county. These services provided by Oswego County are communicated to the public through paid advertisements, the County website, and mailings.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.135 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.136 shows the flow of waste for the MSW stream.

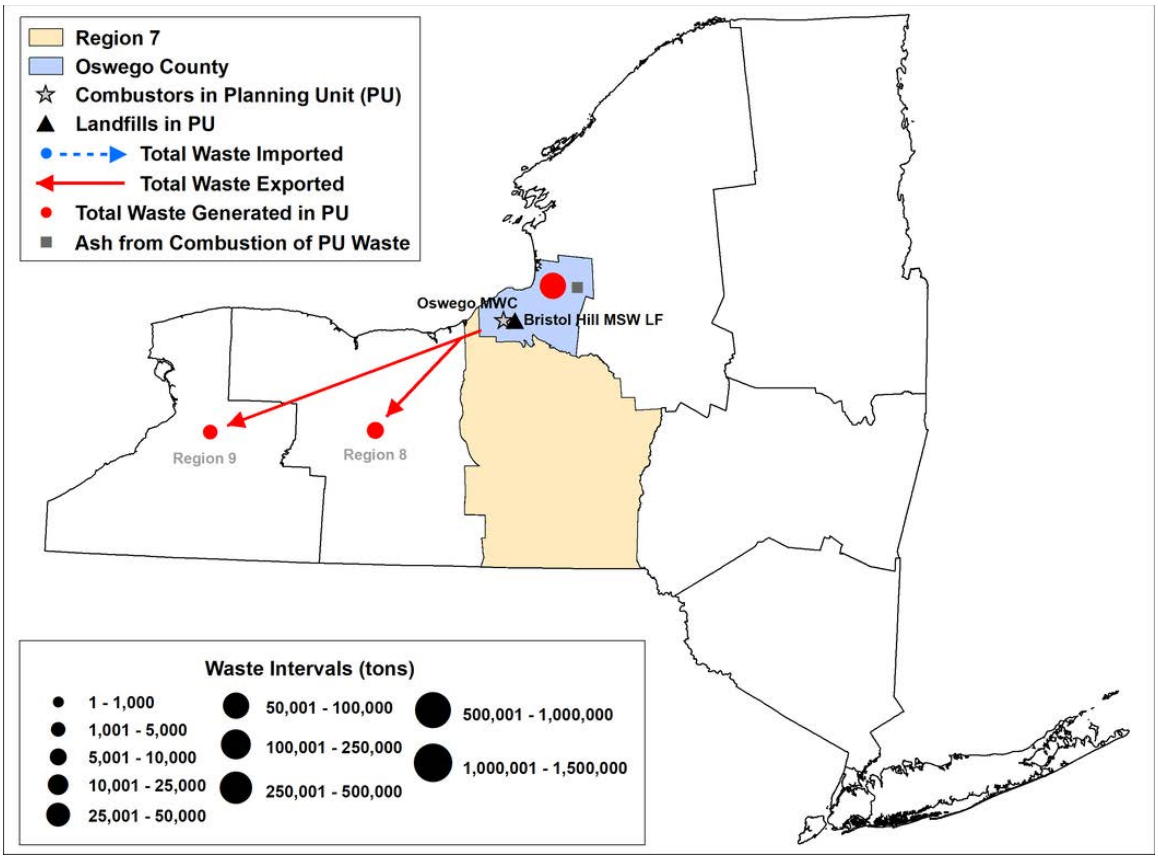


Figure E.135. Oswego County total waste flow

Figure E.135 shows the flow of waste in this planning unit that was destined for processing or for disposal in 2018. As shown, about 92% of waste generated in this planning unit was processed or disposed of within the planning unit. About 5% was sent to Region 8 and the remainder was sent to Region 9.

Figure E.135 also shows that no waste was imported to the Oswego County planning unit in 2018.

Approximately 49% of waste generated in this planning unit was combusted at the Oswego MWC. An estimated 90% of all ash residue generated from the processing of Oswego County waste in 2018 was from the MSW stream. Another 9% was generated from the combustion of C&D debris and 1% was generated from the combustion of industrial waste. All ash residue remaining after the combustion of waste from this planning unit was used as AOC or disposed of at the Bristol Hill MSW Landfill.

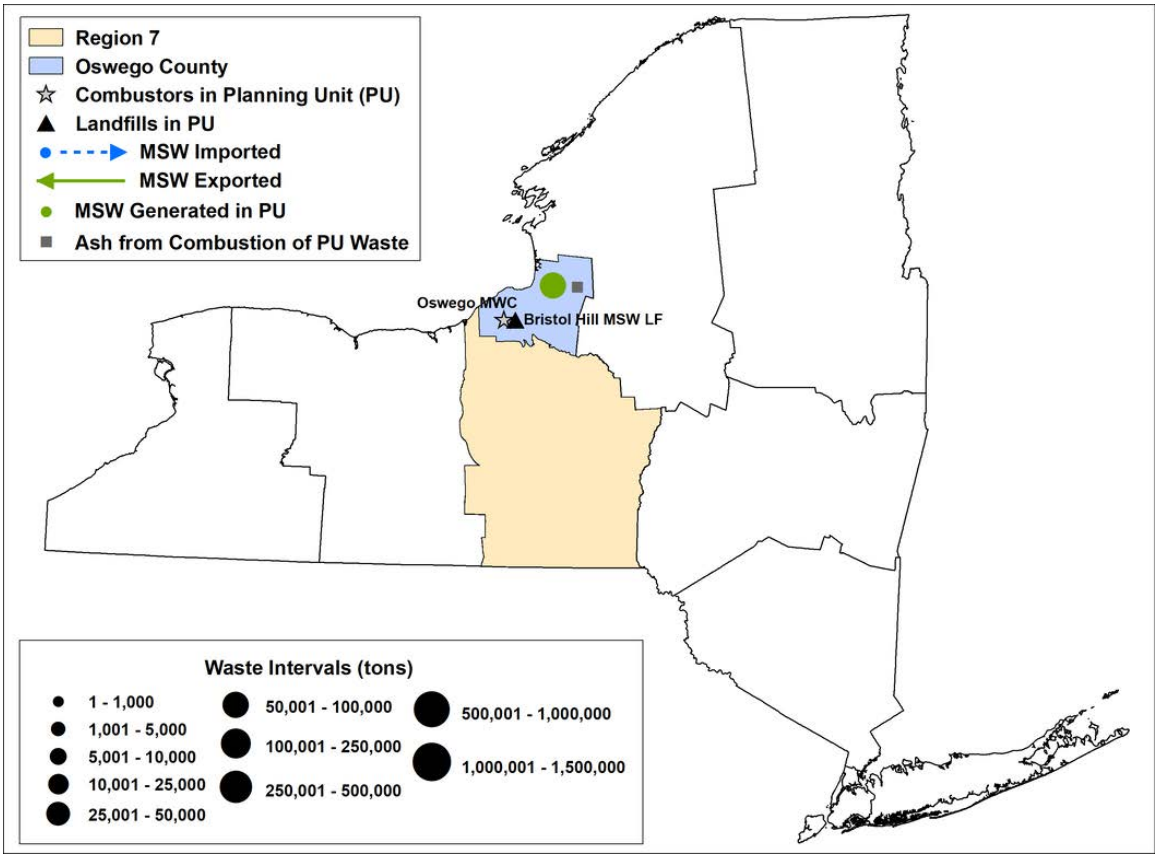


Figure E.136. Oswego County MSW flow

Figure E.136 shows the flow of MSW destined for processing or for disposal in 2018 from this planning unit. As shown, MSW was not imported to Oswego County. All MSW generated in this planning unit was processed or disposed of within the planning unit.

The ash generated as a result of processing the MSW at the Oswego MWC is shown in Figure E.136. About 76% of MSW generated in this planning unit was combusted in 2018. All ash residue resulting from the combustion of MSW generated in this planning unit was used as AOC or disposed of at the Bristol Hill MSW LF.

The following table provides information on all waste and recovered materials generated in Oswego County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.52. Oswego County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	57,350	22,800**
C&D Debris	29,600	70

Industrial	9,300	0
Biosolids	4,500	0
Total	100,750	22,870
MSW disposal rate	2.67 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.52, about 123,620 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 100,750 tons, or 81%, were destined for processing at a combustion facility or for disposal at a landfill. The other 22,870 tons, or 19%, were recovered by CDDHRFs or RHRFs.

Table E.52 shows that about 80,150 tons of MSW were generated in 2018, which accounted for 65% of all waste generated in the planning unit that year. Of that 80,150 tons of MSW, 28% was recovered through RHRFs and the remaining 72% was processed or disposed of.

C&D debris accounted for 24% of the total waste from 2018. Nearly 100% of C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. Minimal amounts of C&D debris were recovered through CDDHRFs. Industrial waste and biosolids made up 8% and 4%, respectively, of all waste generated in 2018.

Tioga County

In 2018, there were an estimated 48,441 people living within Tioga County (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. All municipalities within this county are a part of the Tioga County planning unit. There are no municipal solid waste landfills or combustion facilities in this planning unit, so waste generated is sent to other nearby planning units for combustion or disposal. There are two transfer facilities located within Tioga County, both of which are privately owned and operated. There is also a privately owned materials recovery facility which contracts with the County and collects curbside recyclables from county households. Tioga County encourages residents to dispose of HHW through its agreement with Broome County, which allows Tioga County residents to bring HHW to Broome County's permanent HHW collection site. Tioga County has a program for residents to drop off batteries and fluorescent light bulbs. These programs and services are communicated to the public through the county's outreach and education programs.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.137 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.138 shows the flow of waste for the MSW stream.

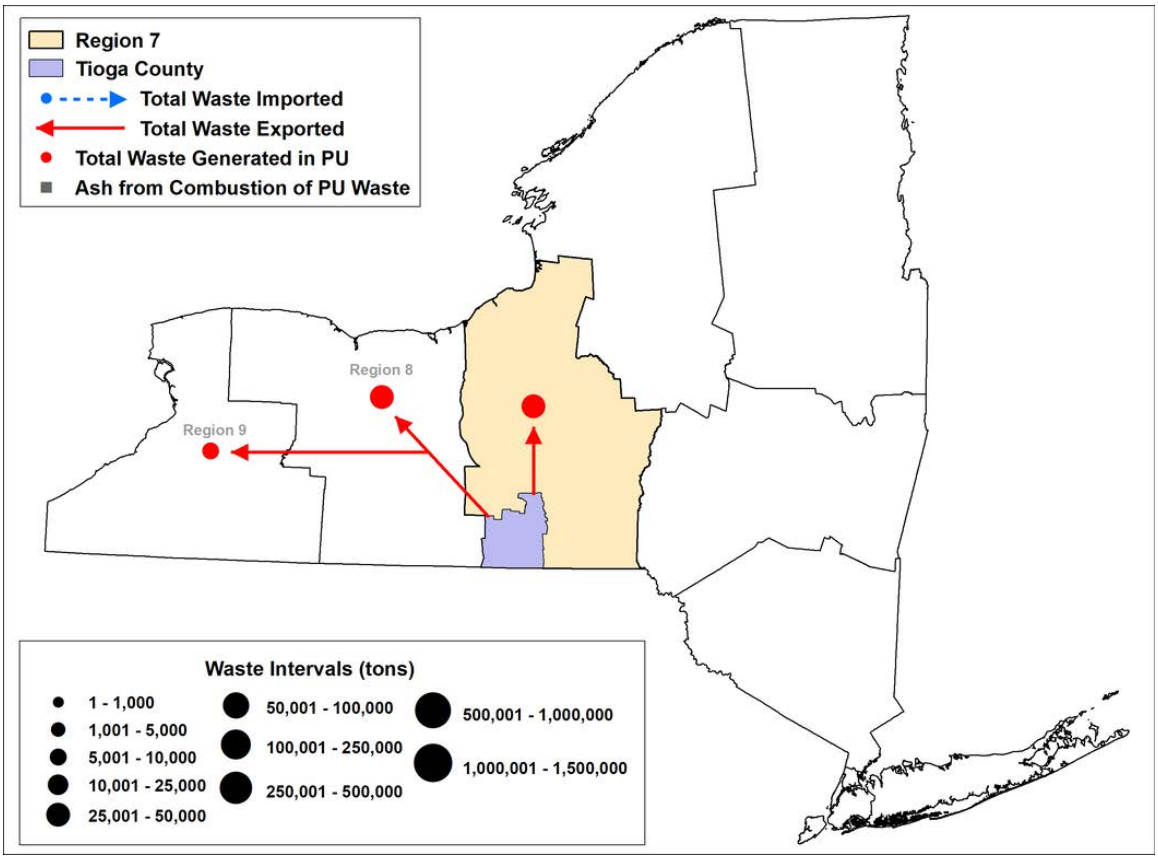


Figure E.137. Tioga County total waste flow

Figure E.137 shows the flow of waste, not including recovered materials, in 2018. As shown, no waste was processed or disposed of within the planning unit. About 53% of waste generated in Tioga County was exported to other planning units in Region 7. Roughly 37% of waste generated in this planning unit was exported to Region 8, and 10% was sent to Region 9.

No waste was imported to Tioga County in 2018.

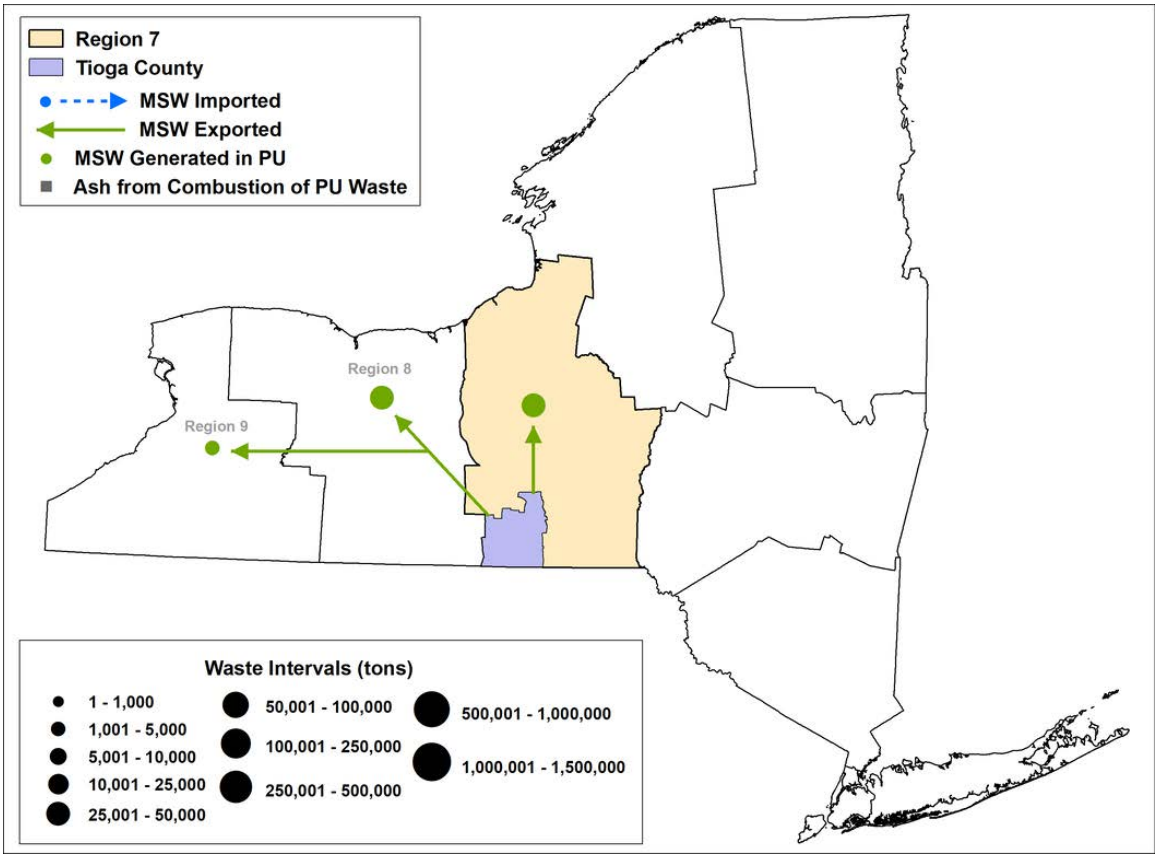


Figure E.138. Tioga County MSW flow

Figure E.138 shows that no MSW was processed or disposed of within the planning unit in 2018. All MSW generated in the planning unit was exported, with about 54% sent to other planning units in Region 7, 40% sent to Region 8, and the remainder sent to Region 9.

No MSW was imported to Tioga County in 2018.

The following table provides information on all waste and recovered materials generated in Tioga County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.53. Tioga County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	64,300	5,900**
C&D Debris	13,300	250
Industrial	4,730	0

Biosolids	0	0
Total	82,330	6,150
MSW disposal rate	7.27 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.53, about 88,480 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 82,330 tons, or 93%, were destined for processing at a combustion facility or for disposal at a landfill. The remaining 6,150 tons, or 7%, were recovered by CDDHRFs or RHRFs.

Table E.53 also shows that about 70,200 tons of MSW were generated in 2018, which accounted for 80% of all waste generated in the planning unit that year. Of that 70,200 tons, 8% was recovered through RHRFs, and the remaining 92% was processed or disposed of.

C&D debris accounted for 15% of the total waste from 2018. Of the C&D debris generated in this planning unit, 98% was disposed of at a landfill or processed at a combustion facility and 2% was recovered through CDDHRFs. Industrial waste made up 5% of all waste generated in 2018.

Tompkins County

The Tompkins County planning unit encompasses all municipalities in the county. This planning unit had an estimated population of 102,419 in 2018 (Census, 2019). While there are urban and suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Cayuga Ash industrial landfill is located in this planning unit. While this landfill accepted waste in 2018, it has since stopped accepting waste. Waste generated in this planning unit is sent to other nearby planning units for combustion or disposal because there are no MSW landfills or combustion facilities in this area. The County contracts with a private company to provide curbside single-stream recycling collection to county households. The County Recycling and Solid Waste Center also provides residents with a location to drop off recyclables as well as other items such as batteries, electronics, fluorescent light bulbs, scrap metal, textiles, tires, film plastic, HHW, food scraps, and yard trimmings. Tompkins County also provides educational opportunities to schools, businesses, and residents to encourage waste reduction, reuse, recycling, and rebuying.

LSWMP Status	The planning unit's approved LSWMP expired in 2011. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.139 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.140 shows the flow of waste for the MSW stream.

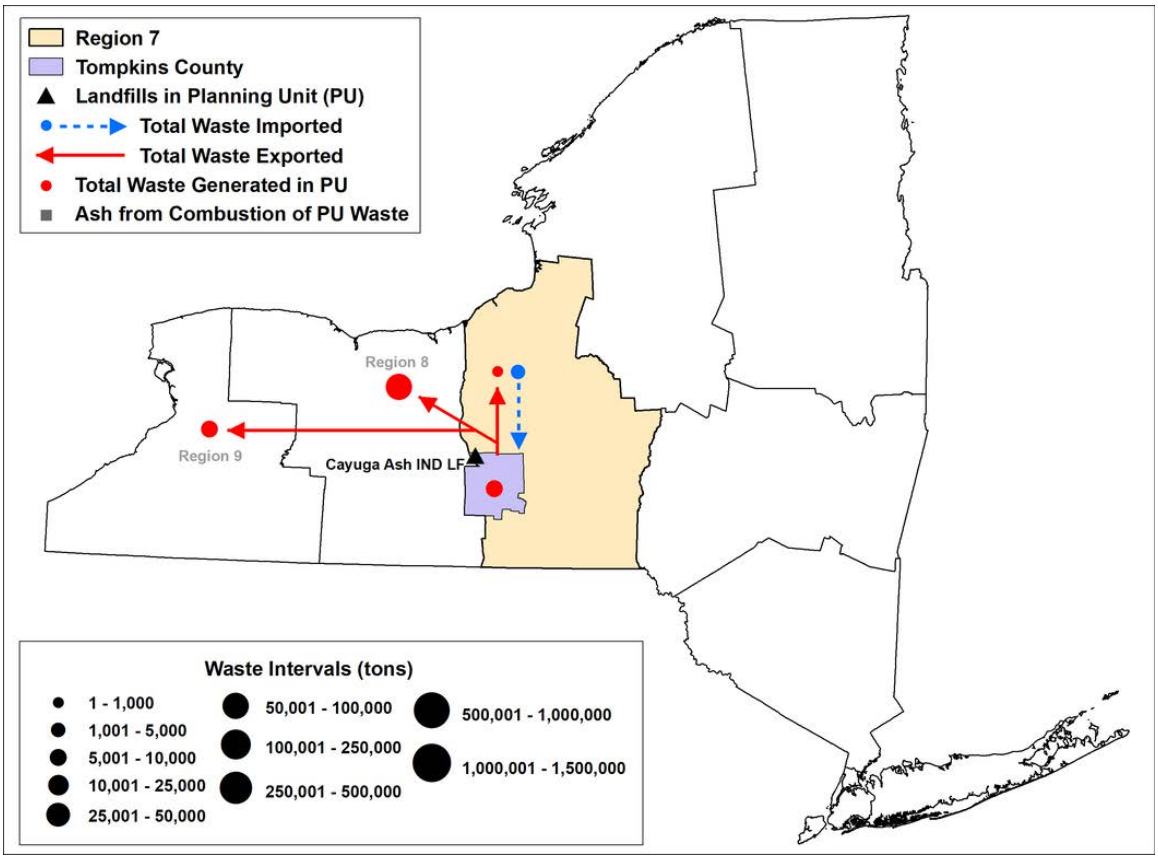


Figure E.139. Tompkins County total waste flow

Figure E.139 shows the flow of all waste generated in this planning unit that was destined for disposal in 2018. About 9% of twaste generated in this planning unit was disposed of within the planning unit in 2018. About 84% of the waste was exported to Region 8, about 7% was sent to Region 9, and minimal amounts were exported to other planning units in Region 7.

Figure E.139 also shows waste imported to this planning unit. The only waste imported to Tompkins County in 2018 was from other planning units in Region 7.

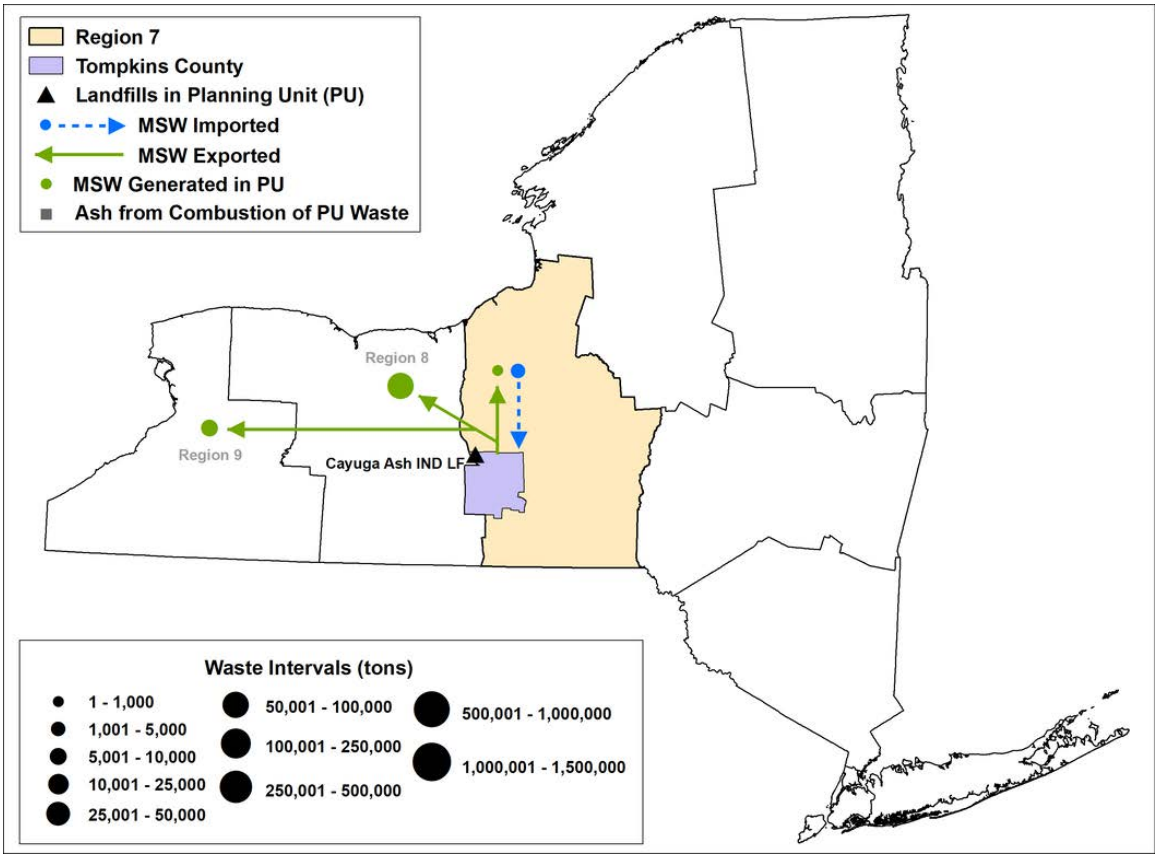


Figure E.140. Tompkins County MSW flow

Figure E.140 shows the flow of MSW generated in Tompkins County that was destined for disposal. No MSW was disposed of within this planning unit in 2018. About 90% of MSW generated in Tompkins County was exported to Region 8, nearly 10% was sent to Region 9, and minimal amounts were sent to other planning units in Region 7.

Figure E.140 also shows imports to this planning unit. In 2018, MSW was not disposed of within this planning unit, but some MSW passed through Tompkins County for consolidation and transfer to a facility outside the planning unit for processing or disposal. All MSW that passed through this planning unit originated in other planning units in Region 7.

The following table provides information on all waste and recovered materials generated in Tompkins County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.54. Tompkins County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	56,600	13,500**

C&D Debris	15,500	0
Industrial	9,200	0
Biosolids	5,900	0
Total	87,200	13,500
MSW disposal rate	3.03	lbs/person/day

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.54, about 100,700 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 87,200 tons, or 87%, were destined for processing at a combustion facility or for disposal at a landfill. The remaining 13,500 tons, or 13%, were recovered by CDDHRFs or RHRFs.

Table E.54 also shows that about 70,100 tons of MSW were generated in 2018, which accounted for 70% of all waste generated in the planning unit that year. Of that 70,100 tons of MSW, 19% was recovered through RHRFs, and the remaining 81% was processed or disposed of.

C&D debris accounted for 15% of the total waste from 2018. Of the C&D debris generated in this planning unit, 100% was disposed of at a landfill or processed at a combustion facility and none of the C&D debris was recovered through CDDHRFs. Industrial waste and biosolids made up 9% and 6%, respectively, of all waste generated in 2018.

Region 8 Overview and Waste Flow Information

Region 8 consists of Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, and Yates counties. This region had an estimated population of 1,326,787 in 2018 (Census, 2019). Monroe County is the most densely populated county in this region. While there are rural and urban areas within Monroe County, the average population density is between 325 and 5,000 people per square mile, which means it has a population characteristic of a suburban population density distribution. The other counties in this region—Chemung, Genesee, Livingston, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, and Yates—may have urban or suburban areas, but they all have average population densities of less than 325 people per square mile, meaning they have a population characteristic of a rural population density distribution.

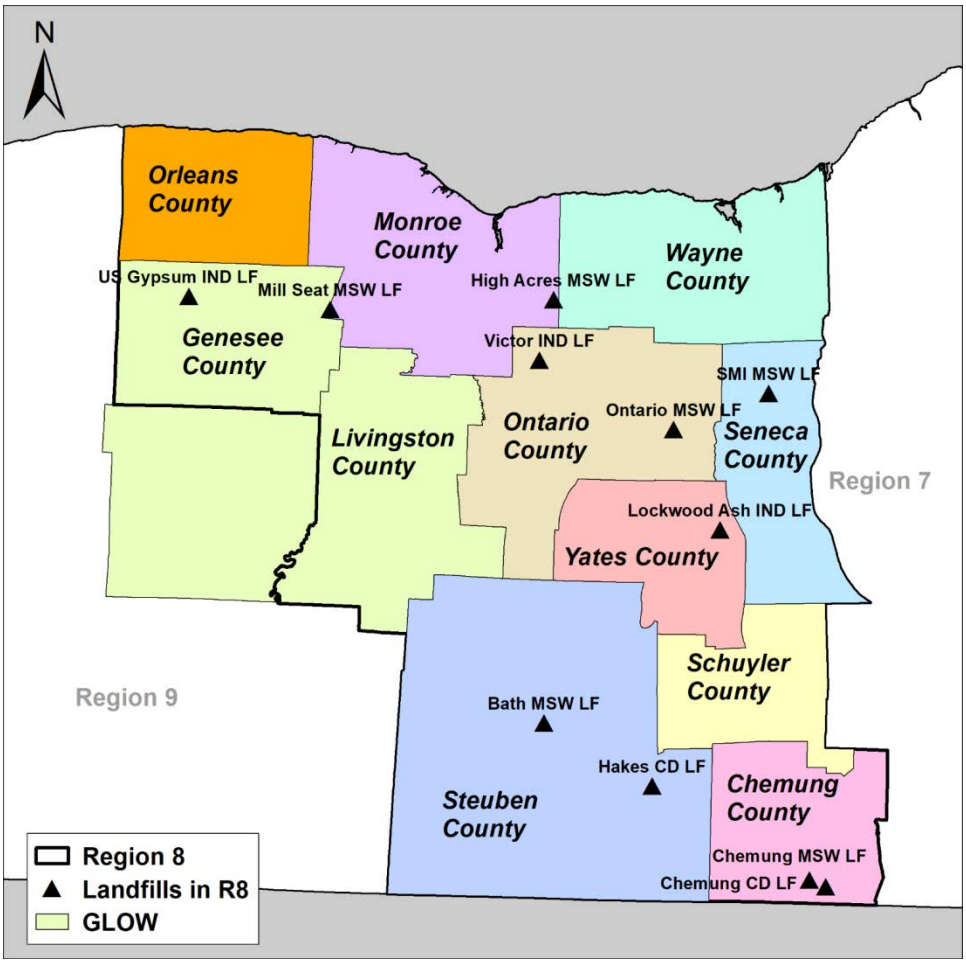


Figure E.141. Region 8 planning units

As shown in Figure E.141, each county is a planning unit in this region, except for Genesee and Livingston. These counties join Wyoming County from Region 9 to form the GLOW Region Solid Waste Management Committee.

As shown in Figure E.141, in 2018, there were six active MSW landfills in Region 8. These landfills are the Mill Seat Landfill and High Acres Landfill in Monroe County, Ontario County Landfill in Ontario County, Seneca Meadows Landfill in Seneca County, Bath Landfill in Steuben County, and Chemung Landfill in Chemung County. There were also three active industrial landfills, in Genesee, Ontario, and Yates counties. These industrial landfills are U.S. Gypsum Landfill, Victor Landfill, and Lockwood Ash Landfill. Active C&D debris landfills were Hakes C&D Landfill in Steuben County, and Chemung C&D Landfill in Chemung County.

The following section includes waste flow maps and a waste summary table for the counties that make up Region 8. The values in these figures and the waste summary table do not include waste generated in Wyoming County since that county is not part of Region 8. However, the section that is dedicated to the GLOW planning unit does include waste flow information and data from Wyoming County.

Of the nine regions in NYS, Region 8 has the highest tonnage of waste imports. The most significant portion of waste imported to Region 8 was MSW, which accounted for 69% of imported waste from other regions in NYS and from other states. C&D debris accounted for about 22% of waste imported to this region. Industrial waste, biosolids, and ash residue accounted for 4%, 3%, and 2%, respectively of imported waste. About 51% of waste imported to Region 8 went to Seneca County for disposal at a landfill. About 18% of waste imports went to landfills in Monroe County for disposal. Figure E.142 and Table E.55 show the sources of waste disposed of in Region 8 in 2018.

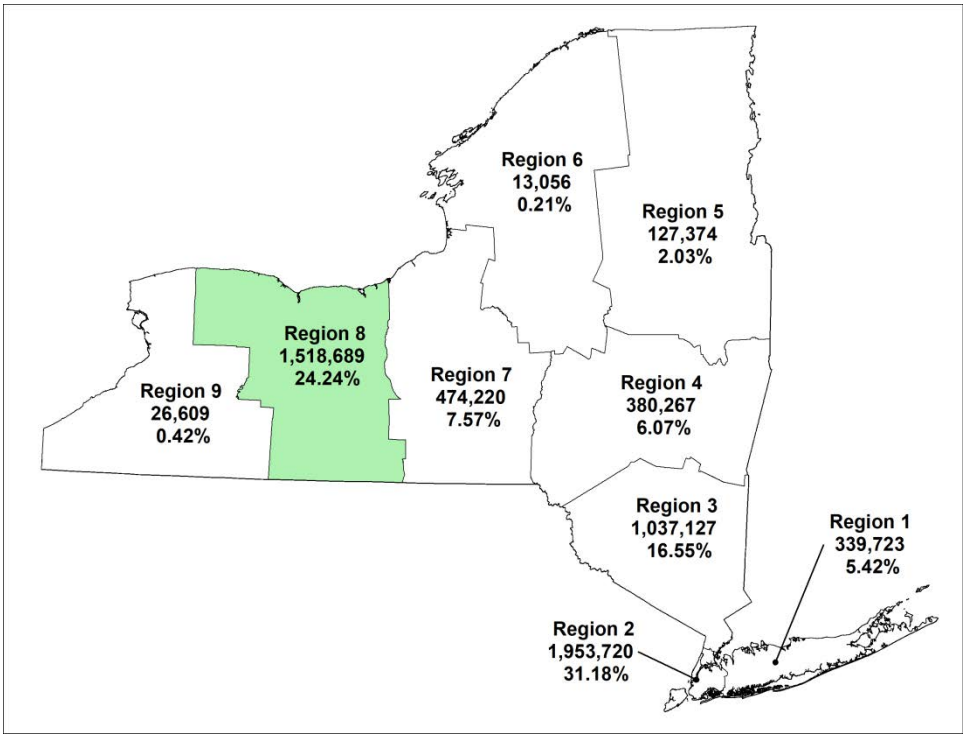


Figure E.142. Origin of waste disposed in Region 8 landfills

As shown in Figure E.142 about 31% of waste disposed of in Region 8 landfills originated in Region 2. About 24% of waste disposed of in Region 8 landfills was generated in Region 8 itself. Approximately 17% and 8% of waste came from Regions 3 and 7, respectively. The amount of waste disposed of in Region 8 that originated in Region 4 was about the same as the total amount that originated in other states; each contributed about 6%. Region 1 waste accounted for about 5% of waste disposed of in Region 8 and Region 5 accounted for about 2%. Waste from Regions 6 and 9 together accounted for less than 1% of waste disposed of in Region 8 landfills.

Table E.55. Distribution of origins for waste Disposed in Region 8 landfills

Origin	Waste (tons)	%
Region 8	1,518,689	24.24
Rest of NYS	4,352,097	69.46
Canada	1.925	0.03
CT	59,119	0.94
MA	266,246	4.25
NH	23,007	0.37
NJ	2,002	0.03
PA	42,055	0.67
Other States	543	0.01
Total	**8,164,000**	**100.0**

As shown in Table E.55, a total of about 69% of waste disposed of in Region 8 originated in other regions across NYS. About 24% of waste originated in Region 8 itself. About 4% of waste disposed of in this Region came from Massachusetts and almost 1% came from Connecticut. Other states sent waste to this region in minimal amounts.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 8 in 2018. Figure E.143 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.144, Figure E.145 and Figure E.146 show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

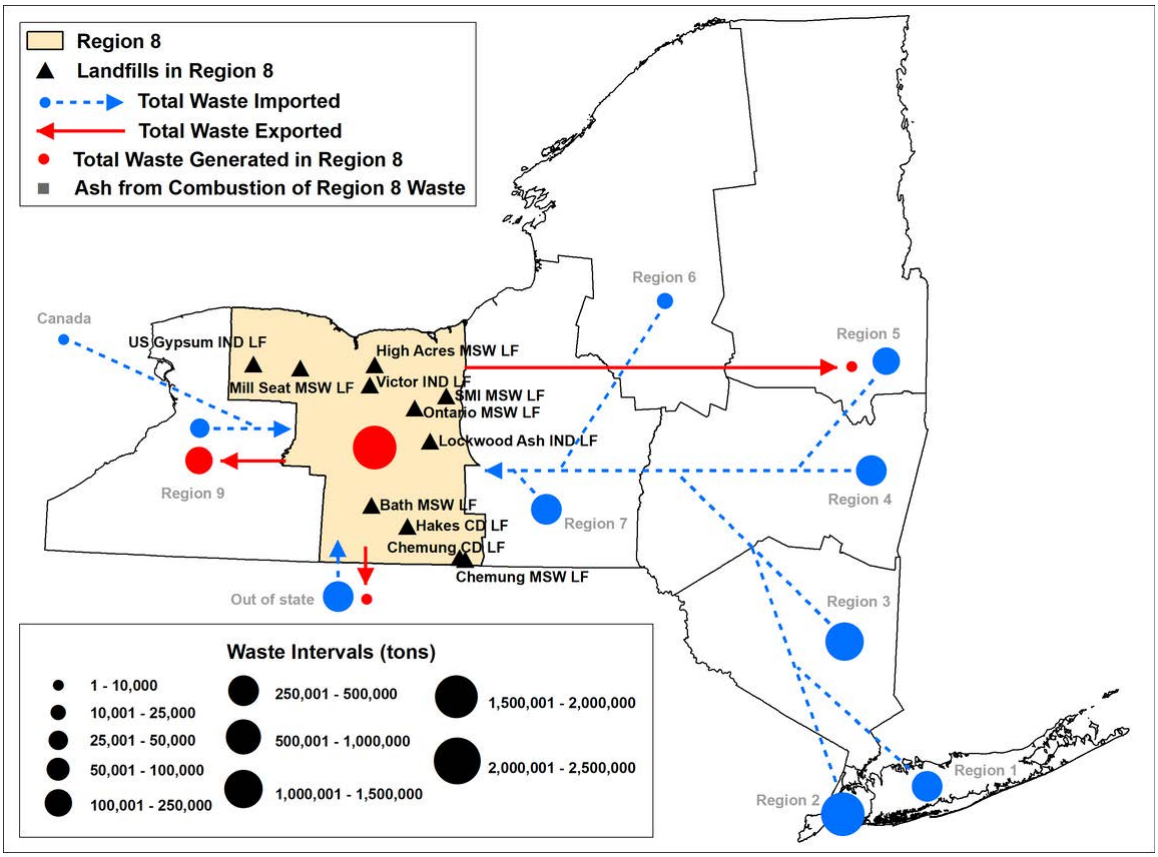


Figure E.143. Region 8 total waste flow

Figure E.143 shows the flow of waste, not including recovered materials, generated in or imported to Region 8 in 2018. As shown in the figure, about 89% of waste generated in Region 8 in 2018 was disposed of within the region. Approximately 11% of waste generated in this region was exported to Region 9 for processing or disposal. Minimal amounts of waste were also exported to Region 5 and to facilities in Pennsylvania. About 64% of waste that was exported from this region was MSW. C&D debris and biosolids accounted for about 17% and 11% of the exports, respectively. The remaining exports were industrial waste. Waste was also imported to Region 8 from all the other regions in NYS.

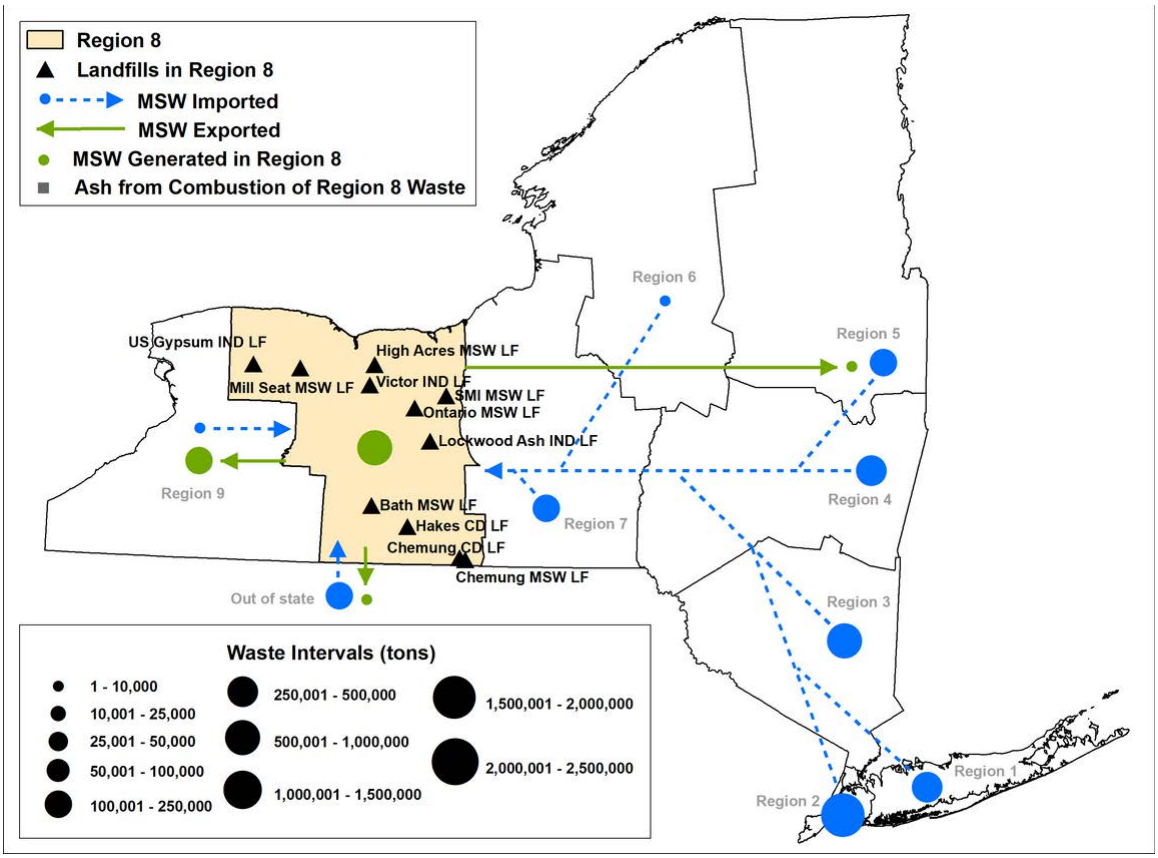


Figure E.144. Region 8 MSW flow

Figure E.144 shows the flow of MSW that was destined for processing or disposal in 2018. As shown, about 86% of MSW generated in Region 8 was disposed of in Region 8. About 14% of the Region 8 MSW was sent to Region 9 for processing or disposal. Small amounts of MSW were also exported to Region 5 and to Pennsylvania.

Figure E.144 shows that MSW was imported to Region 8 from each of the other eight regions in NYS, and from other states. Approximately 46% of imported MSW originated in Region 2. About 10% and 22% came from Regions 1 and 3, respectively. Another 9% of imported MSW was from Region 4, and 6% was imported from other states. Regions 5 and 7 contributed 4% and 3%, respectively. Minimal amounts of MSW were imported from Regions 6 and 9. Of MSW imported from other states, about 89% originated in Massachusetts. Pennsylvania and Connecticut contributed 6% and 5%, respectively. Other states that sent MSW to Region 8 contributed minimal amounts.

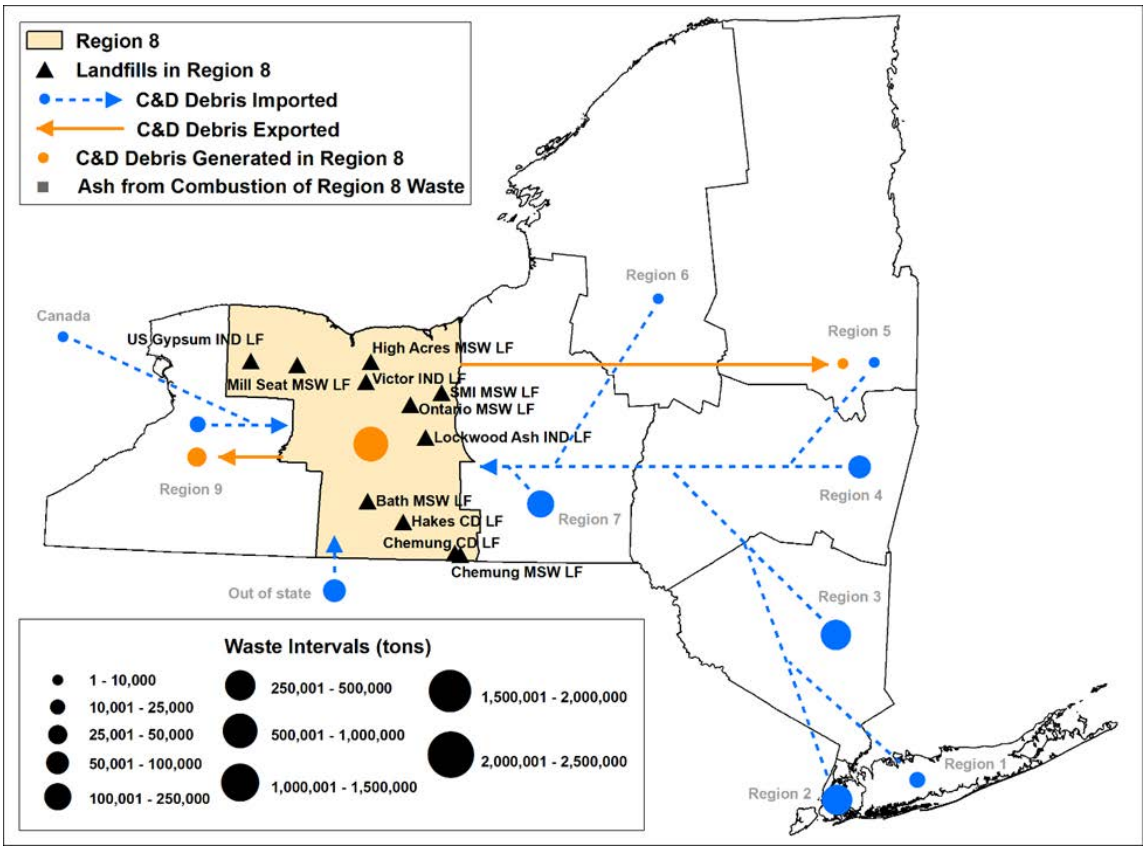


Figure E.145. Region 8 C&D debris flow

Figure E.145 shows the C&D debris generated or disposed of in Region 8, not including recovered materials, in 2018. About 95% of C&D debris generated in Region 8 was also disposed of in Region 8. Almost 5% of the Region 8 C&D debris was exported to Region 9. Minimal amounts of C&D debris were also sent to Region 5.

Of the C&D debris that was imported to Region 8, about 35% originated in Region 2. Regions 3 and 7 contributed about 25% and 21%, respectively, of imported C&D debris. About 8% of imported C&D debris was from other states. About 7% originated in Region 4, and 2% originated in Region 9. Minimal amounts of C&D debris were imported from Regions 1, 5, and 6, and Canada. Of the C&D debris that was imported from other states, about 59% originated in Massachusetts. New Hampshire and Connecticut each contributed about 21% and 14%, respectively. About 5% of imported C&D debris originated in Pennsylvania. Minimal amounts of C&D debris were also imported from three other states.

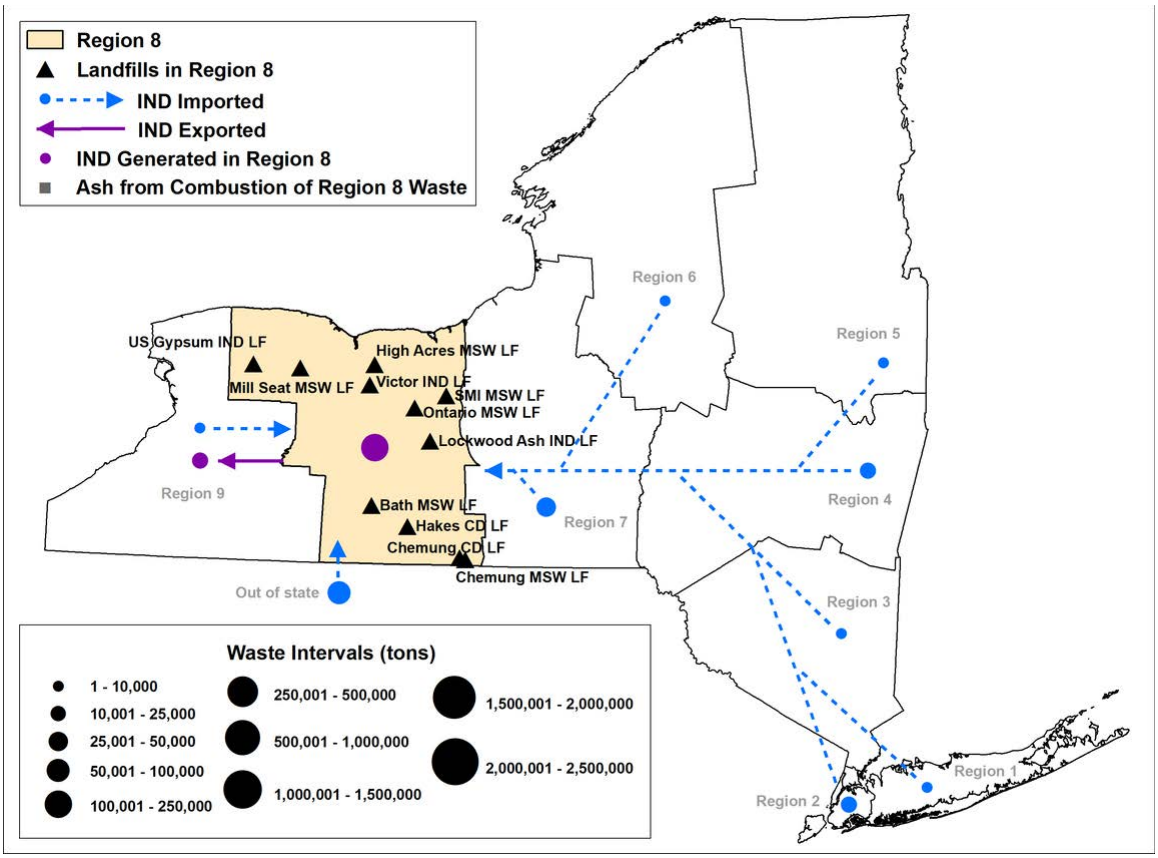


Figure E.146. Region 8 industrial waste flow

Figure E.146 shows the flow of industrial waste in 2018. About 89% of industrial waste generated in Region 8 was disposed of at landfills in the region. The remaining 11% of the industrial waste generated in Region 8 was exported to Region 9.

Figure E.146 also shows that industrial waste was imported to Region 8 from every other region in NYS, other states, and Canada. About 52% of imported industrial waste originated outside of NYS. About 19% of industrial waste imported to this region came from Region 7. Regions 2 and 4 accounted for 8% and 11%, respectively. Approximately 4% of the imported industrial waste was from Region 3, and 3% was from Region 6. Minimal amounts of industrial waste came from Regions 1, 5, and 9. Of the industrial waste imported from other states, about 39% originated in Connecticut, while 29% and 25% came from Massachusetts and Pennsylvania, respectively. New Hampshire contributed about 6% of the industrial waste imported from out of state. Minimal amounts of industrial waste were also imported from three other states.

Table E.56. Region 8 organics recycling summary

Anaerobic Digestion - No facilities	
Composting	
Source-Separated Organics	876 tons
Food Processing Waste	304 tons
Yard Trimmings	35,739 tons
Biosolids	4,904 tons
Land Application	
Biosolids	1,213 tons
Food Processing Waste	6,658 tons

There are 17 composting operations located in Region 8 that compost source-separated organics and yard trimmings, 10 biosolids composting operations, 8 biosolids land application operations, 30 food processing waste land application operations, and no operating anaerobic digesters. Table E.56 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all waste and recovered materials generated in Region 8 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs, RHRFs, composting facilities, anaerobic digestors, and land application facilities.

Table E.57. Region 8 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	850,600	205,715
C&D Debris	593,400	360,620
Industrial	131,950	8,292
Biosolids	119,400	6,117
Total	1,695,350	580,744
MSW disposal rate	3.61 lbs/person/day	

* The heavy metal category is not included in the values in this table.

As shown in Table E.57, about 2,276,094 tons of waste generated in 2018 were processed, disposed of, or recovered. Of all waste generated in the region, approximately 580,744 tons were recovered by CDDHRFs, RHRFs, composting facilities, and land application facilities, which accounts for 26% of the generated waste. About 1,695,350 tons, or 74%, were processed or disposed of.

MSW accounted for about 46% of waste generated in Region 8 in 2018 with about 1,056,315 tons. Of MSW generated in 2018, approximately 19% was recovered at RHRFs and composting facilities. About 850,600 tons, or 81%, was processed at combustion facilities or disposed of at landfills.

Table E.57 also shows that 954,020 tons of C&D debris were generated in 2018. This accounted for 42% of waste generated in Region 8. An estimated 62% of the C&D debris waste stream was destined to be processed at a combustion facility or disposed of at a landfill, and the remaining 38% of the C&D debris was recovered through CDDHRFs. Industrial waste and biosolids each made up 6% of all waste generated in 2018.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 8. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit.

Chemung County

Chemung County serves as the planning unit for all municipalities in the county. This county had an estimated population of 83,935 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Chemung County owns the Chemung County Sanitary Landfill, along with a C&D debris landfill and a materials recovery facility at the same site. These facilities are operated by a private company. The private company also operates four residential waste and recyclables drop-off facilities throughout the county. These facilities are operated under a pay-as-you-throw system to encourage recycling. Under this system, MSW is collected for a fee while recyclables are collected at no charge to residents. One of these drop-off facilities, the Lake Street Facility in the City of Elmira, also collects electronics, scrap metals, and waste tires, for a nominal fee. Each year, there are typically two HHW events. The county also participates in education and outreach efforts about recycling programs and best practices for recycling various kinds of materials, such as HHW, agricultural plastic containers, and organics waste.

LSWMP Status	The planning unit's LSWMP is approved through 2025.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.147 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.148 shows the flow of waste for the MSW stream.

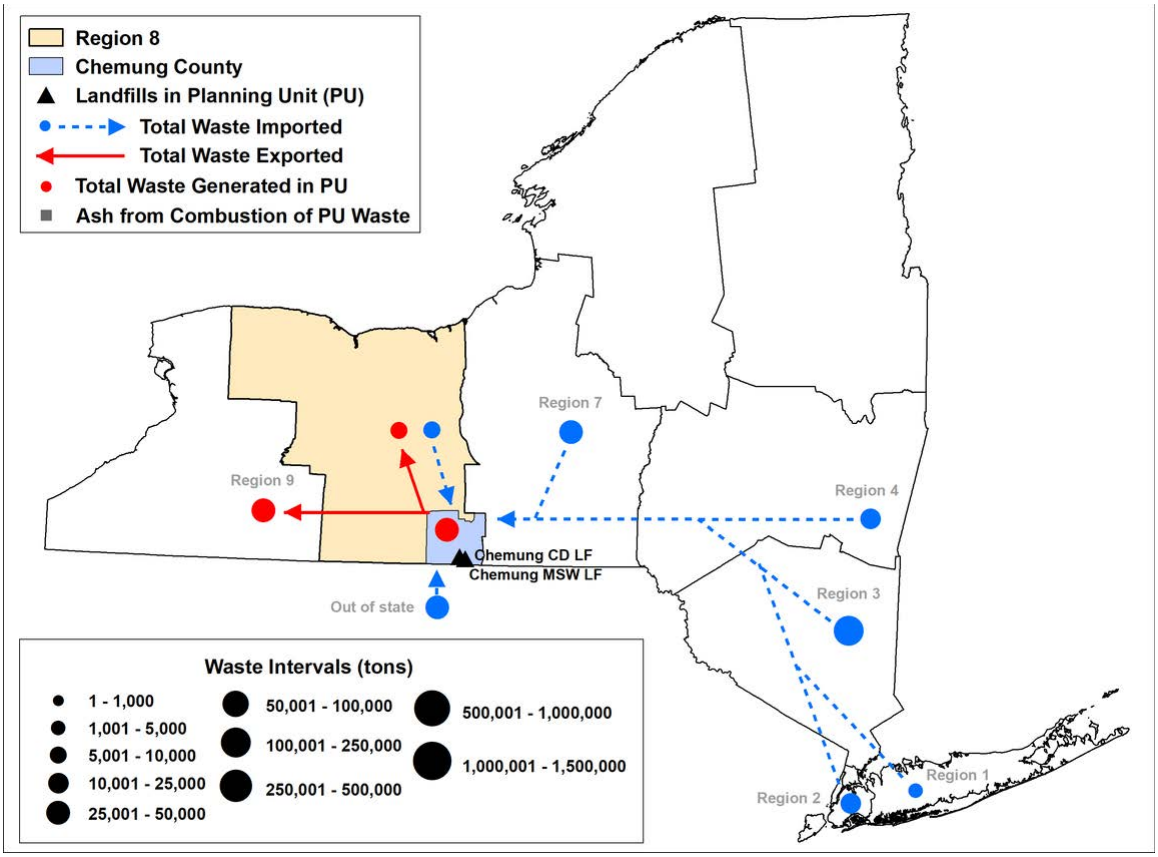


Figure E.147. Chemung County total waste flow

Figure E.147 shows the flow of all waste types into and out of Chemung County in 2018. The MSW and C&D debris landfills located in this planning unit were able to dispose of 48% of the total waste generated in this planning unit in 2018. Approximately 42% of waste was exported to Region 9, and 10% was sent to other planning units in Region 8 for disposal.

Figure E.147 shows that waste was imported to this planning unit from Regions 1, 2, 3, 4, and 7. Waste was also imported from other planning units in Region 8 and from out of state. About 53% of waste imported in 2018 to this planning unit was from Region 3. Imported waste from Region 7 and other states accounted for 16% and 15%, respectively. Region 2 contributed about 7% of imported waste and Region 4

contributed 6%. Waste imported from other planning units in Region 8 accounted for 2%. The remaining waste came from Region 1. Of the waste imported from other states, about 95% originated in Pennsylvania and 5% originated in Massachusetts.

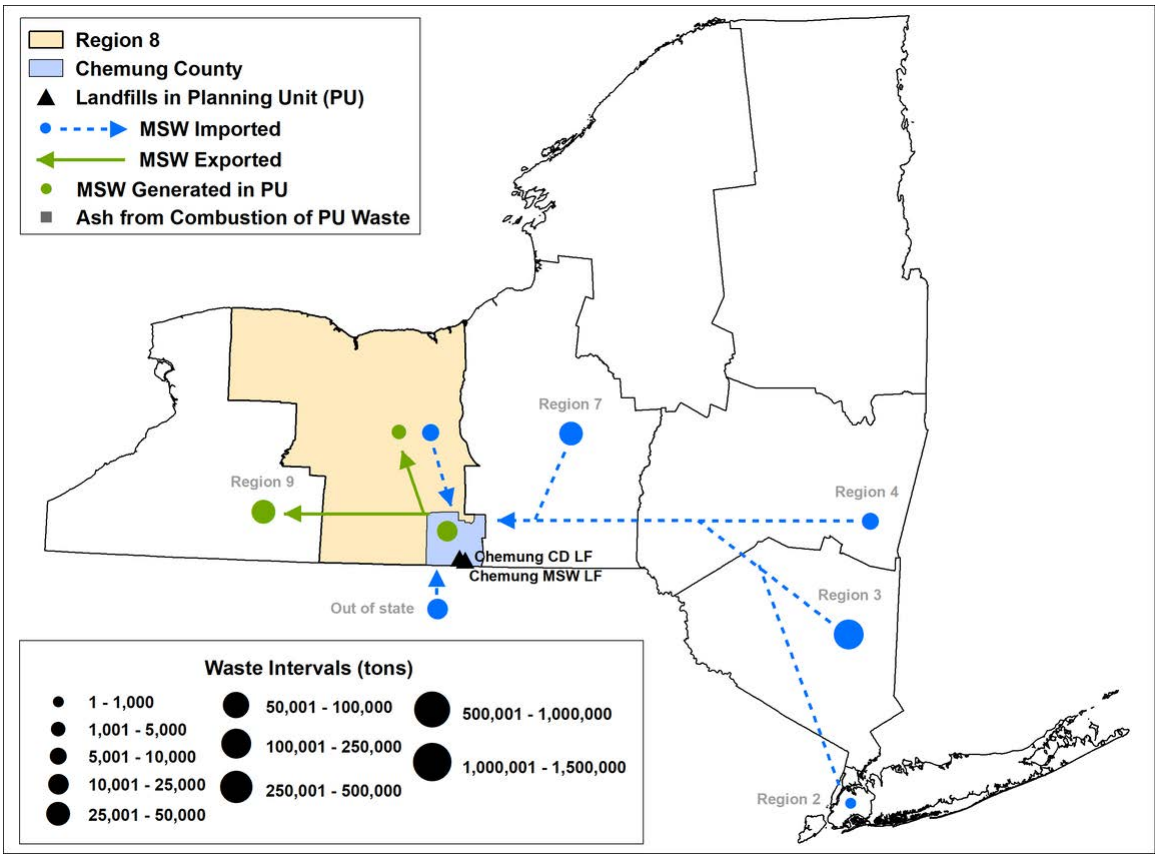


Figure E.148. Chemung County MSW flow

Figure E.148 shows that about 29% of MSW generated in this planning unit was disposed of within the planning unit. About 66% was sent to Region 9, and about 5% was exported to other planning units in Region 8.

Figure E.148 shows that MSW was imported from Regions 2, 3, 4 and 7, other states, and other planning units in Region 8. About 67% of the imported MSW originated in Region 3. Region 7 accounted for 18%, Region 4 for 4%, and other planning units in Region 8 for 3%. MSW imported from other states accounted for 8% of the MSW imports. Minimal amounts of MSW were also imported from Region 2.

The following table provides information on all waste and recovered materials generated in Chemung County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.58. Chemung County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	55,600	12,000**
C&D Debris	13,700	730
Industrial	22,100	0
Biosolids	4,600	0
Total	96,000	12,730
MSW disposal rate	3.63 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.58, about 108,730 tons of waste generated in 2018 were processed, disposed of, or recovered. About 96,000 tons, or 88%, were destined to be processed at a combustion facility or disposed of at a landfill. The remaining 12,730 tons, or 12%, were recovered by CDDHRFs or RHRFs.

Table E.58 shows that about 67,600 tons of MSW were generated in 2018, which accounted for 62% of all waste generated in the planning unit that year. Of that 67,600 tons, 18% was recovered through RHRFs and the remaining 82% was processed or disposed of.

C&D debris accounted for 13% of the total waste from 2018. About 95% of C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. The other 5% was recovered through CDDHRFs. Industrial waste and biosolids made up 20% and 4%, respectively, of all waste generated in 2018.

GLOW Region Solid Waste Management Committee

The GLOW Region Solid Waste Management Committee serves as the planning unit for all municipalities located in Genesee, Livingston, and Wyoming counties. As of 2018, this planning unit was estimated to have a total population of 160,723 (Census, 2019). While there are suburban areas within the planning unit, the average population density of all three member counties was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. GLOW holds HHW collection events each year and the location of these events rotates between the member counties. The planning unit also facilitates the Mat-Ex (short for Material Exchange) program. This program allows residents or businesses to list items

that would otherwise go to a landfill for free or at minimal cost. Other residents or businesses are able to obtain these items so they may be used again instead of being disposed of. GLOW maintains three backyard composting demonstration sites to educate residents on the benefits of backyard composting and educate them on how to set up their own backyard composting systems. The planning unit runs advertising campaigns, maintains email lists, and provides educational presentations to inform residents about programs offered in the planning unit and educate residents on recycling.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.149 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E. 150 shows the flow of waste for the MSW stream.

Wyoming County is not part of Region 8 and waste generated in Wyoming County was not included in the waste flow maps in the Regional Overview and Waste Flow Information section. Since Wyoming County is part of the GLOW planning unit, waste from this county is included in the following waste flow maps and the waste summary table specific to GLOW.

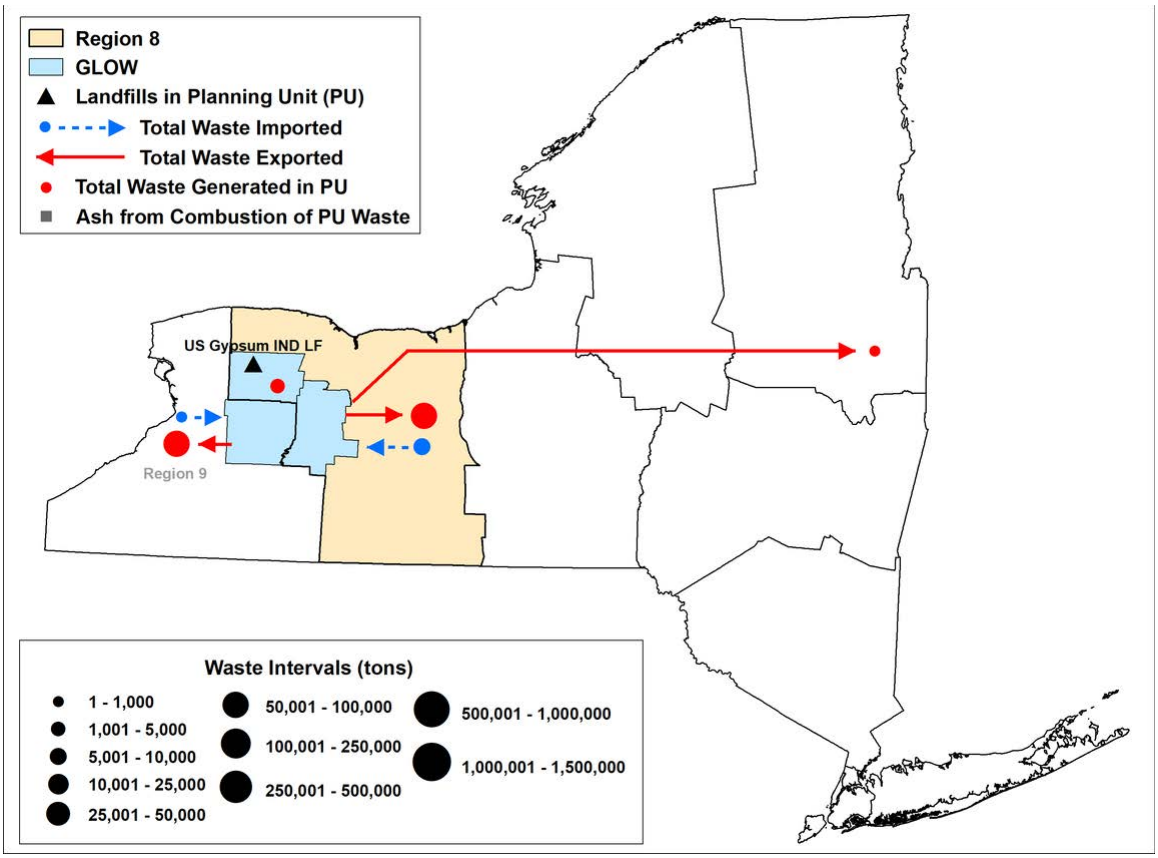


Figure E.149. GLOW total waste flow

Figure E.149 shows the flow of all waste types, not including recovered materials, through the GLOW planning unit in 2018. About 3% of the total waste generated in this planning unit in 2018 was disposed of at the industrial landfill located within the planning unit. About 55% of waste generated in this planning unit was sent to other planning units in Region 8 for disposal Another 42% was sent to other planning units in Region 9. Minimal amounts of waste were also sent to Region 5.

Figure E.149 also shows waste was imported to this planning unit in 2018 for consolidation and transfer to facilities outside the planning unit for processing or disposal. Over 99% of imported waste originated in other planning units in Region 8, while less than 1% of imported waste originated in planning units in Region 9.

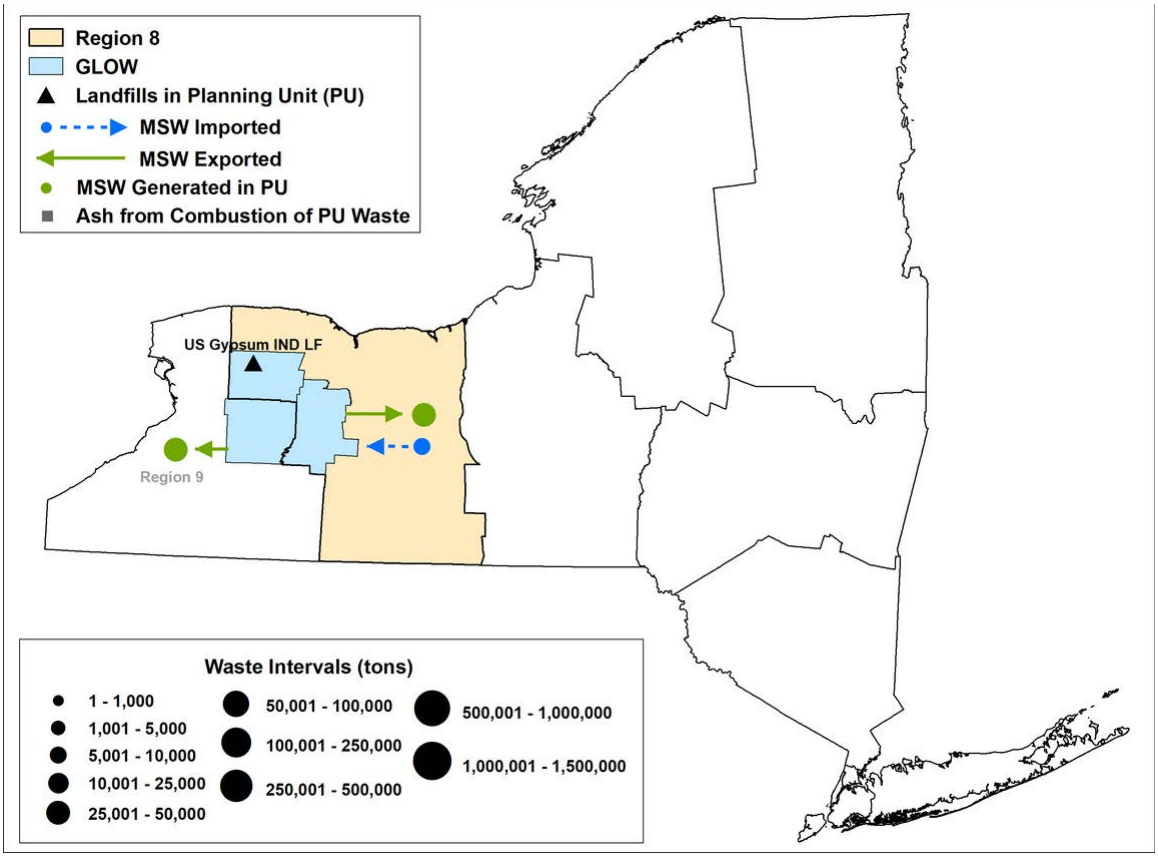


Figure E. 150. GLOW MSW flow

Figure E. 150 shows the flow of MSW from and through this planning unit. About 56% of MSW generated in this planning unit was sent to other planning units in Region 8 for disposal. The other 44% was sent to other planning units in Region 9. Additionally, some MSW from other Region 8 planning units passed though GLOW before reaching a disposal or combustion facility located outside of the planning unit.

The following table provides information on all waste and recovered materials generated in GLOW by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.59. GLOW waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	75,300	7,000**
C&D Debris	29,900	2,800
Industrial	16,000	0
Biosolids	1,000	0

Total	122,200	9,800
MSW disposal rate	2.57 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.59, about 82,300 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 122,200 tons, or 93%, were processed or disposed of. The remaining 9,800 tons, or 7%, were recovered by CDDHRFs or RHRFs.

Table E.59 shows that about 82,300 tons of MSW were generated in 2018, which accounted for 62% of all waste generated in the planning unit that year. Of that 82,300 tons of MSW, 9% was recovered through RHRFs and the remaining 91% was processed or disposed of.

C&D debris accounted for 25% of the total waste from 2018. About 91% of C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. The other 9% was recovered through CDDHRFs. Industrial waste and biosolids made up 12% and 1%, respectively, of all waste generated in 2018.

Monroe County

The Monroe County planning unit includes all municipalities in the county and served a population of 742,864 people as of 2018 (Census, 2019). While there are urban and rural areas within the planning unit, the average population density was between 325 and 5,000 people per square mile, meaning this planning unit had a population characteristic of a suburban population density distribution. There are two MSW landfills in this county. The High Acres Western Expansion Landfill is located in Fairport and is owned by a private company. Mill Seat Landfill is located in Rochester and is owned by Monroe County. The County also owns a transfer facility and a materials recovery facility. While the County owns these facilities, they have agreements with private companies for the operations of all three facilities. Additionally, Monroe County partners with a private company to operate the ecopark, where residents can bring many kinds of recyclables for free, including paper, plastic, glass, electronic waste, sharps, scrap metal, bulky plastics, and fluorescent lights. For a fee, residents can also bring TVs, tires, and refrigerators to the ecopark. HHW can be brought to the ecopark with an appointment. The County provides education and outreach through its website and recycling campaigns.

LSWMP Status	The planning unit's LSWMP is approved through 2025.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.151 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.152 shows the flow of waste for the MSW stream.

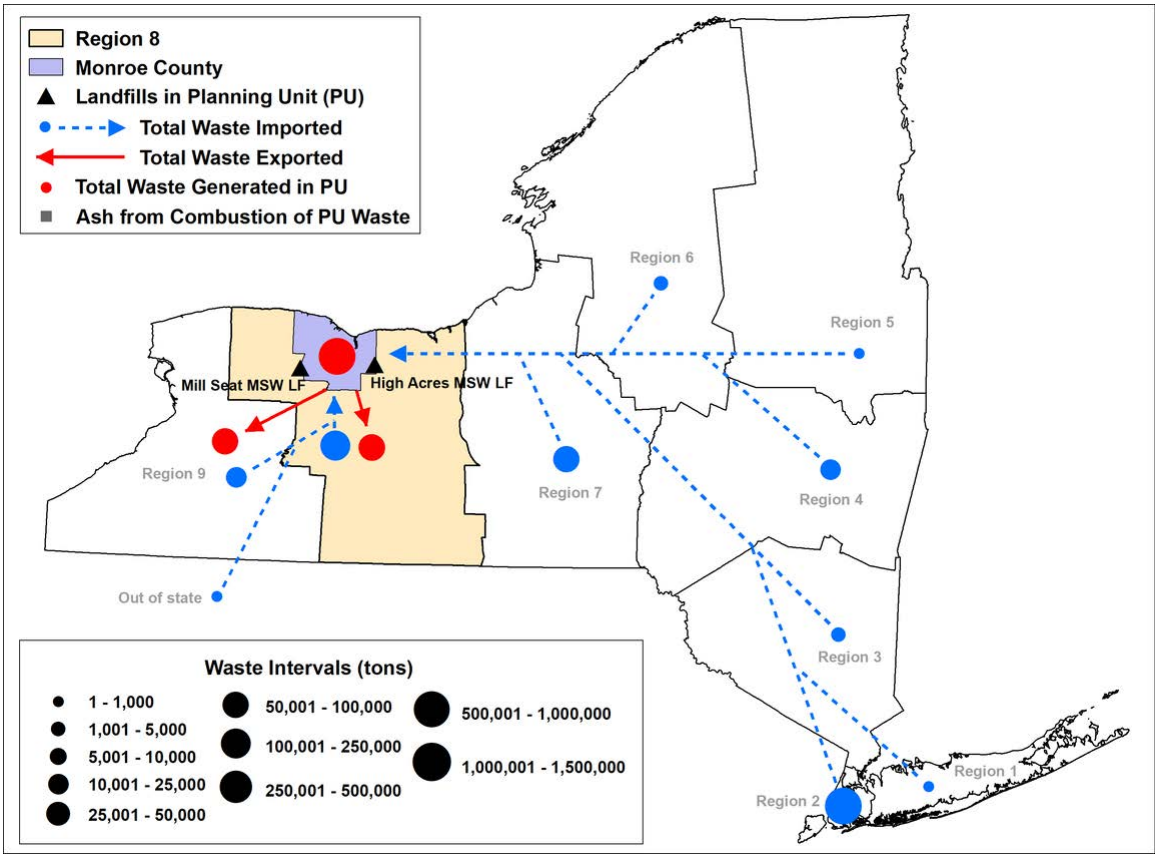


Figure E.151. Monroe County total waste flow

Figure E.151 shows the flow of waste generated in and imported to this planning unit in 2018. As shown, about 89% of waste generated in this planning unit was disposed of within the planning unit. About 5% of waste from Monroe County was sent to other planning units in Region 8 for disposal. The remaining waste, about 4%, was sent to Region 9.

Figure E.151 also shows waste that was imported to this planning unit in 2018. Waste was imported to Monroe County from every region in the state and from other states. Waste from Region 2 accounted for 76% of waste imported to this planning unit. About 12% of waste that was imported to Monroe County came from other planning units in Region 8. Imported waste from Region 7 accounted for about 8%; Regions 4 and 9 each accounted for 1%; Regions 1, 3, 5, 6, and other states each contributed minimal amounts of waste. About 65% of waste imported from other states was C&D debris. The

remaining waste was industrial waste, 30%, and MSW, 5%. About 57% of waste imported from other states originated in Massachusetts and another 39% came from New Jersey. The remaining imports from outside NYS came from six other states.

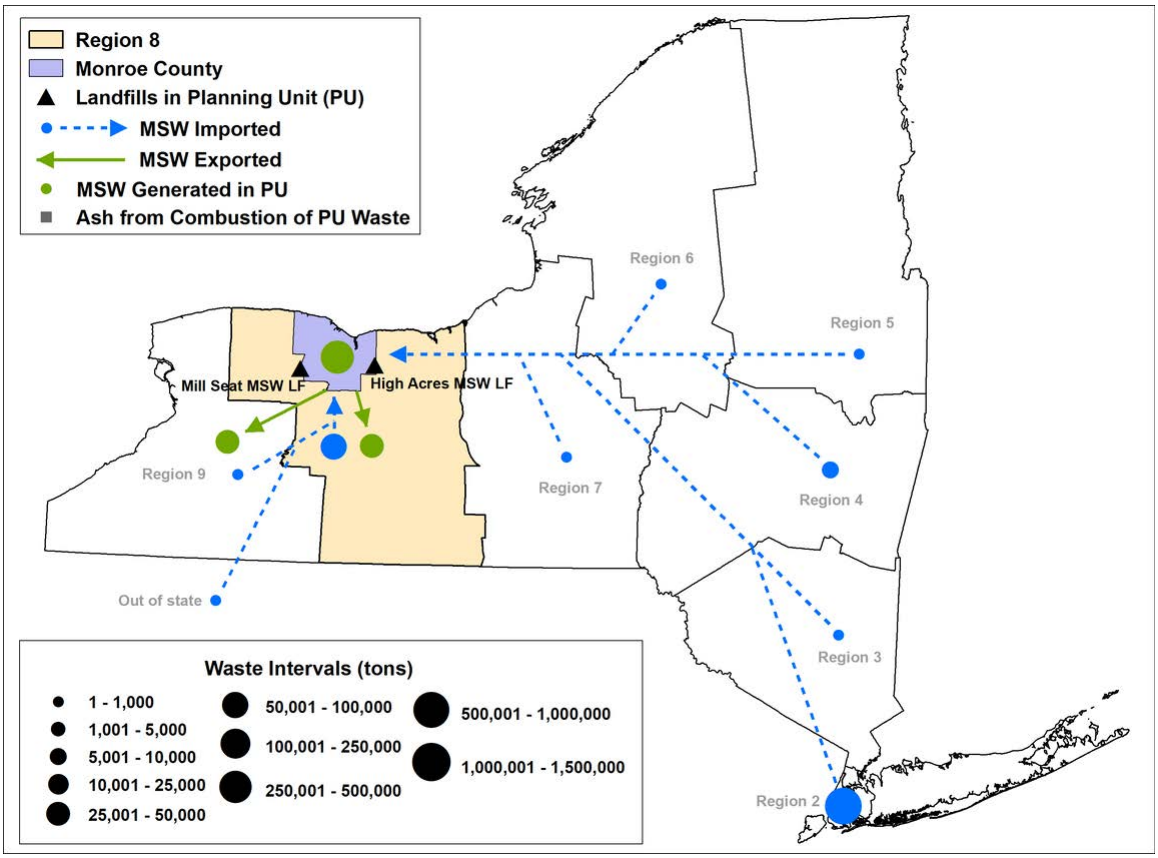


Figure E.152. Monroe County MSW flow

Figure E.152 shows the flow of MSW into and out of Monroe County in 2018. As shown, about 87% of MSW generated in this planning unit was disposed of within the planning unit. About 7% was exported to other planning units in Region 8 for disposal, and the remaining 6% was exported to Region 9.

The figure also shows MSW was imported to this planning unit from each region in the state and from out of state. The greatest portion of imported MSW came from Region 2, which accounted for 91%. About 8% came from other planning units in Region 8 and 1% came from Region 4. Regions 1, 3, 4, 5, 6, and 9, each contributed minimal amounts of MSW. Imported MSW from out of state accounted for less than 1% of total imported MSW. New Jersey contributed about 42% of imported MSW from out of state. Delaware and Massachusetts accounted for 21% and 17%, respectively. The remaining out-of-state imported waste came from Michigan and West Virginia.

The following table provides information on all waste and recovered materials generated in Monroe County by waste type. It differentiates between the tons of waste processed

at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.60. Monroe County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	513,900	105,800**
C&D Debris	356,500	218,200
Industrial	20,100	0
Biosolids	97,400	0
Total	987,900	324,000
MSW disposal rate	3.79 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.60, about 1,311,900 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 987,900 tons, or 75%, were destined to be processed at a combustion facility or disposed of at a landfill. The remaining 324,000 tons, or 25%, were recovered by CDDHRFs or RHRFs.

Table E.60 shows that about 619,700 tons of MSW were generated in 2018, which accounted for 47% of all waste generated in the planning unit that year. Of that 619,700 tons of MSW, 17% was recovered through RHRFs and the remaining 83% was processed or disposed of.

C&D debris accounted for 44% of the total waste from 2018. About 62% of the C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. The other 38% was recovered through CDDHRFs. In Monroe County, large amounts of asphalt were recovered and recycled back into asphalt product. This process contributed to the high percentage of C&D debris that was recovered in this planning unit. Industrial waste and biosolids made up 2% and 7%, respectively, of all waste generated in 2018.

Ontario County

The Ontario County planning unit serves all residents living in the county. This planning unit had an estimated population of 109,738 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than

325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Ontario County Sanitary Landfill is located in this planning unit. This MSW landfill is owned by the county and operated by a private company. At the same site as the landfill, there is a materials recovery facility which is also operated by the same private company. The County's recycling website has information about recycling a large variety of materials, including appliances, electronic waste, light bulbs, textiles, and tires. Information about the planning unit's two yearly HHW collection days can also be found on the website. The County encourages backyard composting and has resources on its website for those looking to start composting at home.

LSWMP Status	The planning unit's LSWMP is approved through 2023.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.153 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.154 shows the flow of waste for the MSW stream.

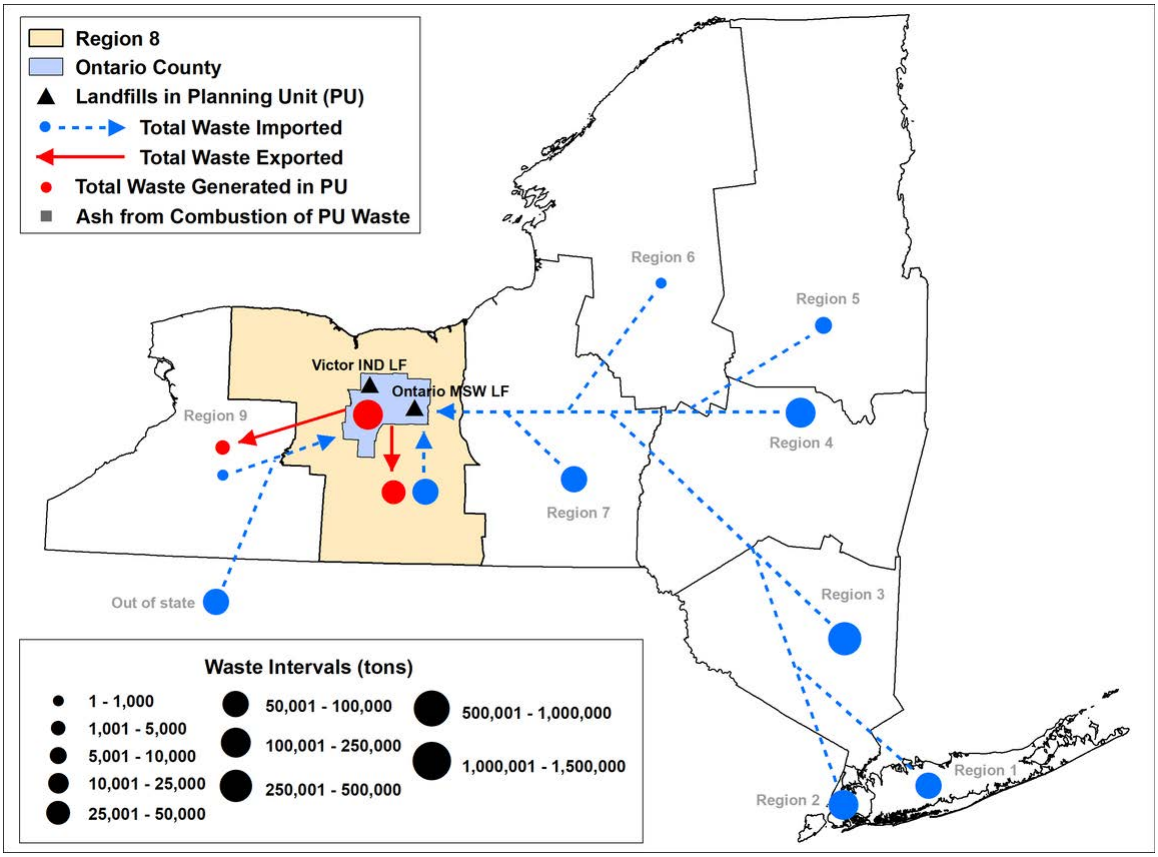


Figure E.153. Ontario County total waste flow

Figure E.153 shows waste generated in and imported to Ontario County in 2018. About 81% of total waste generated in this planning unit was disposed of within the planning unit. Approximately 18% of waste from Ontario County was sent to other planning units in Region 8 for disposal. The remaining waste, about 1% of the total waste, was sent to Region 9.

Figure E.153 shows waste was imported to this planning unit from each region in NYS. About 32% of imported waste originated in Region 3. Regions 2 and 4 contributed about 14% and 15%, respectively. About 11% came from Region 7. Waste from other states accounted for 10%,while waste from other planning units in Region 8 accounted for 9%.. Regions 1 and 5 contributed 7% and 1%, respectively, of the imported waste. Minimal amounts of waste came from Regions 6 and 9. Of waste imported from other states, about 56% was industrial waste. Massachusetts and Connecticut contributed most out-of-state imports, about 57% and 43%, respectively. Four other states each contributed minimal amounts of waste.

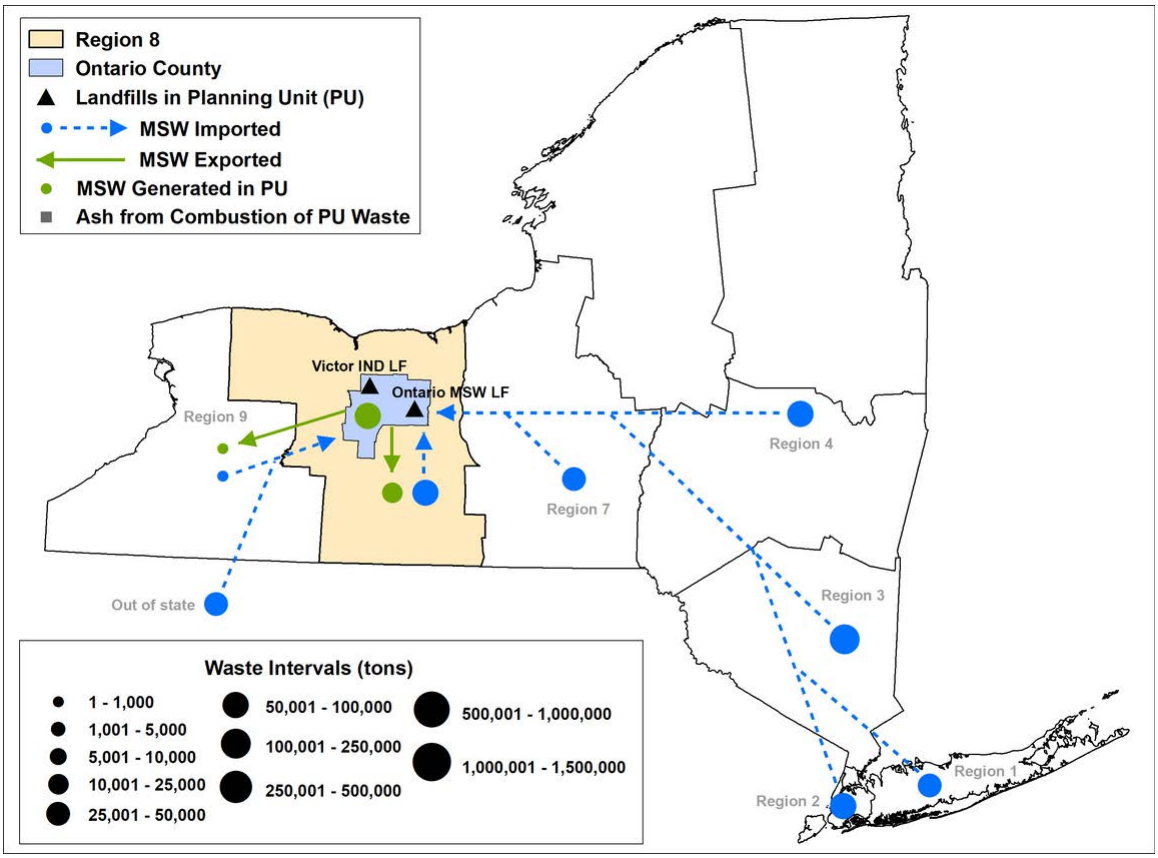


Figure E.154. Ontario County MSW flow

Figure E.154 shows that about 70% of MSW generated in this planning unit was disposed of within the planning unit in 2018. About 30% of MSW from Ontario County was sent to other planning units in Region 8. Minimal amounts of MSW were sent to Region 9.

Figure E.154 also shows MSW was imported to this planning unit from across the state. The greatest portion of imported MSW originated in Region 3, about 41%. Regions 2 and 5 contributed 13% and 15%, respectively. Other planning units in Region 8 contributed about 12% of imported MSW. Approximately 9% of imported MSW came from Region 1 and 6% came from Region 7. MSW from other states accounted for 5% of imports. Minimal amounts of MSW were imported from Region 9. Of MSW imported from other states, over 99% originated in Massachusetts. The remaining MSW imported from out of state came from New Jersey.

The following table provides information on all waste and recovered materials generated in Ontario County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.61. Ontario County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	74,000	10,200**
C&D Debris	87,000	50,700
Industrial	23,700	0
Biosolids	6,200	0
Total	190,900	60,900
MSW disposal rate	3.69 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.61, about 251,800 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 190,900 tons, or 76%, were processed or disposed of. The remaining 60,900 tons, or 24%, were recovered by CDDHRFs or RHRFs.

Table E.61 shows that about 84,200 tons of MSW were generated in 2018, which accounted for 33% of all waste generated in the planning unit that year. Of that 84,200 tons of MSW, 12% was recovered through RHRFs and the remaining 88% was processed or disposed of.

C&D debris accounted for 55% of the total waste from 2018. About 63% of C&D debris generated in 2018 was destined to be processed at a combustion facility or disposed of

at a landfill. The other 37% was recovered through CDDHRFs. Industrial waste and biosolids made up 9% and 2%, respectively, of all waste generated in 2018.

Orleans County

The Orleans County planning unit includes all municipalities in the county. As of 2018, this county had an estimated population of 40,655 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. There are no MSW landfills in this county, so waste generated in Orleans County is brought elsewhere for disposal. The County's website serves as an educational tool. Information about annual HHW events, tire collection events, and electronic recycling centers can be found on the county's website, which also includes a list of commonly accepted bulk items for those looking to dispose of something large, such as a household appliance, exercise equipment, furniture, or gardening tools.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.155 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.156 shows the flow of waste for the MSW stream.

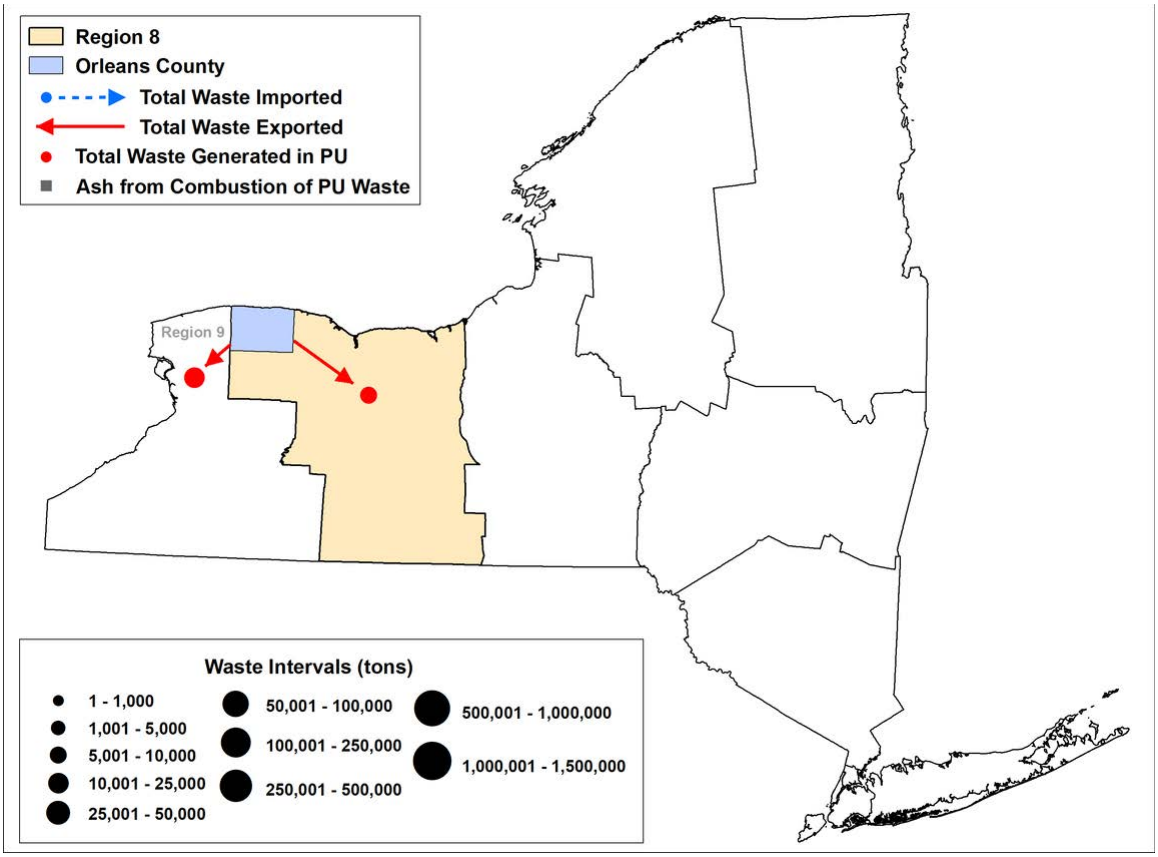


Figure E.155. Orleans County total waste flow

Figure E.155 shows all waste generated in this planning unit in 2018 was exported to other planning units in Region 8 or to Region 9. About 72% of total waste generated in this planning unit was sent to Region 9 in 2018. The remaining 28% was sent to other planning units in Region 8.

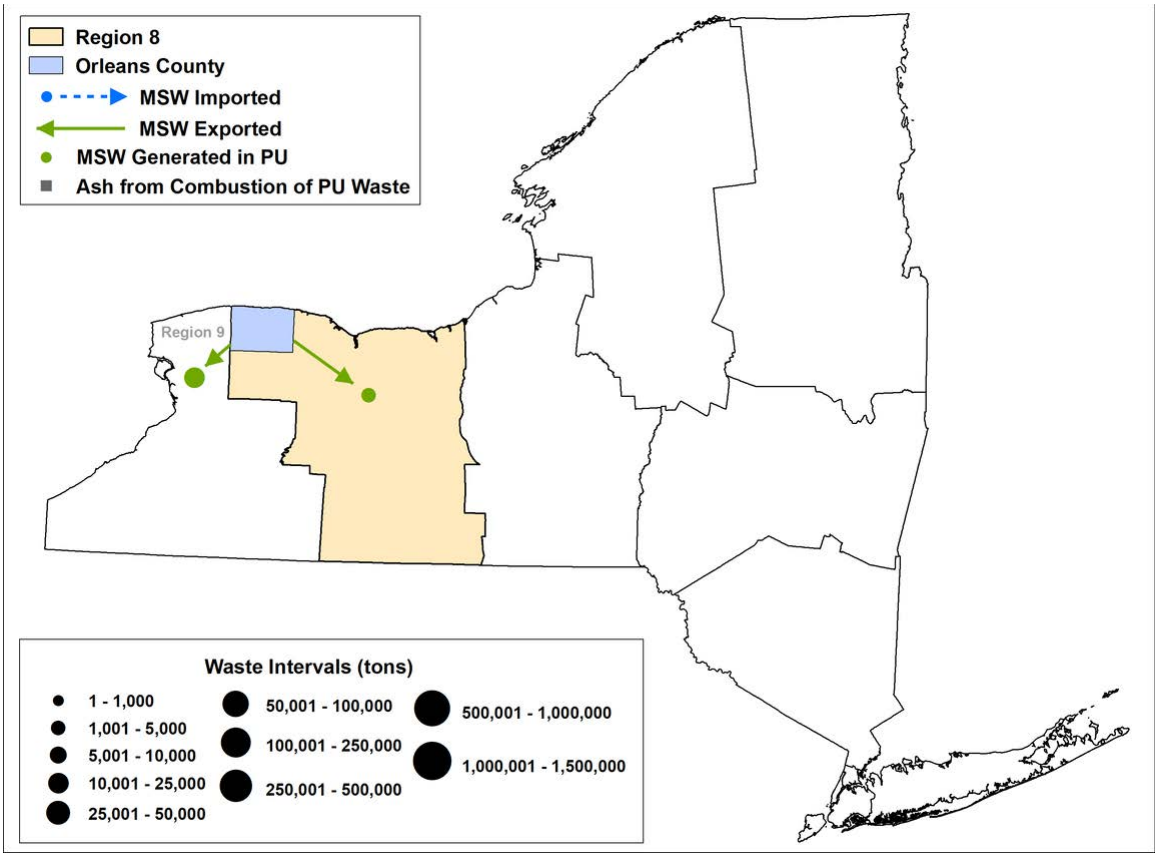


Figure E.156. Orleans County MSW flow

Figure E.156 shows no MSW was disposed of within this planning unit. Approximately 94% of MSW generated in Orleans County was exported to Region 9 in 2018. The remaining MSW, about 6%, was sent to other planning units in Region 8 for disposal.

The following table provides information on all waste and recovered materials generated in Orleans County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.62. Orleans County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	20,300	4,000**
C&D Debris	7,600	6,500
Industrial	3,650	0
Biosolids	200	0
Total	31,750	10,500

MSW disposal rate	2.74	lbs/person/day

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.62, about 42,250 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 31,750 tons, or 75%, were destined to be processed at a combustion facility or disposed of at a landfill. The remaining 10,500 tons, or 25%, were recovered by CDDHRFs or RHRFs.

Table E.62 Summary shows that about 24,300 tons of MSW were generated in 2018, which accounted for 58% of all waste generated in the planning unit that year. Of that 24,300 tons of MSW, 16% was recovered through RHRFs and the remaining 84% was processed or disposed of.

C&D debris accounted for 33% of the total waste from 2018. About 54% of C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility. The other 46% was recovered through CDDHRFs. Industrial waste made up 9% of all waste generated in 2018. Biosolids contributed less than 1% of waste generated.

Schuyler County

Schuyler County serves as the planning unit for all municipalities in the county. This planning unit had an estimated population of 17,884 people in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The County utilizes its website to inform residents of recycling and disposal options. The County has coordinated with Yates County to allow residents to dispose of HHW and electronics waste at collection events in Yates County. Schuyler County also encourages residents to set up backyard composting for food scraps and provides information on the county website about how to set it up.

LSWMP Status	The planning unit's approved LSWMP expired in 2002. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.157 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.158 shows the flow of waste for the MSW stream.

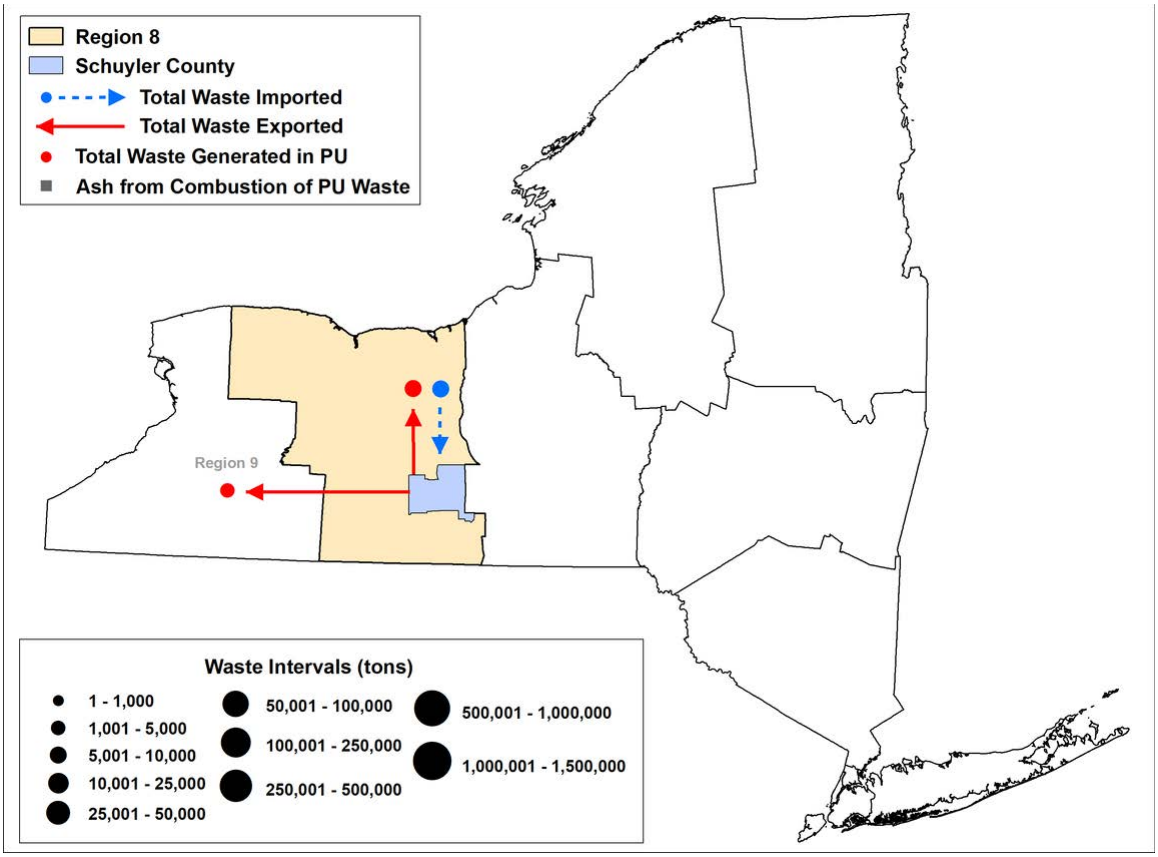


Figure E.157. Schuyler County total waste flow

Figure E.157 shows the flow of waste generated in and passing through this planning unit in 2018. No waste was disposed of or processed in this planning unit. About 72% of waste generated in Schuyler County was sent to other planning units in Region 8 for disposal. About 28% was exported to Region 9. Waste imported to the planning unit from other planning units in Region 8 was consolidated and transferred to a disposal or combustion facility outside the planning unit.

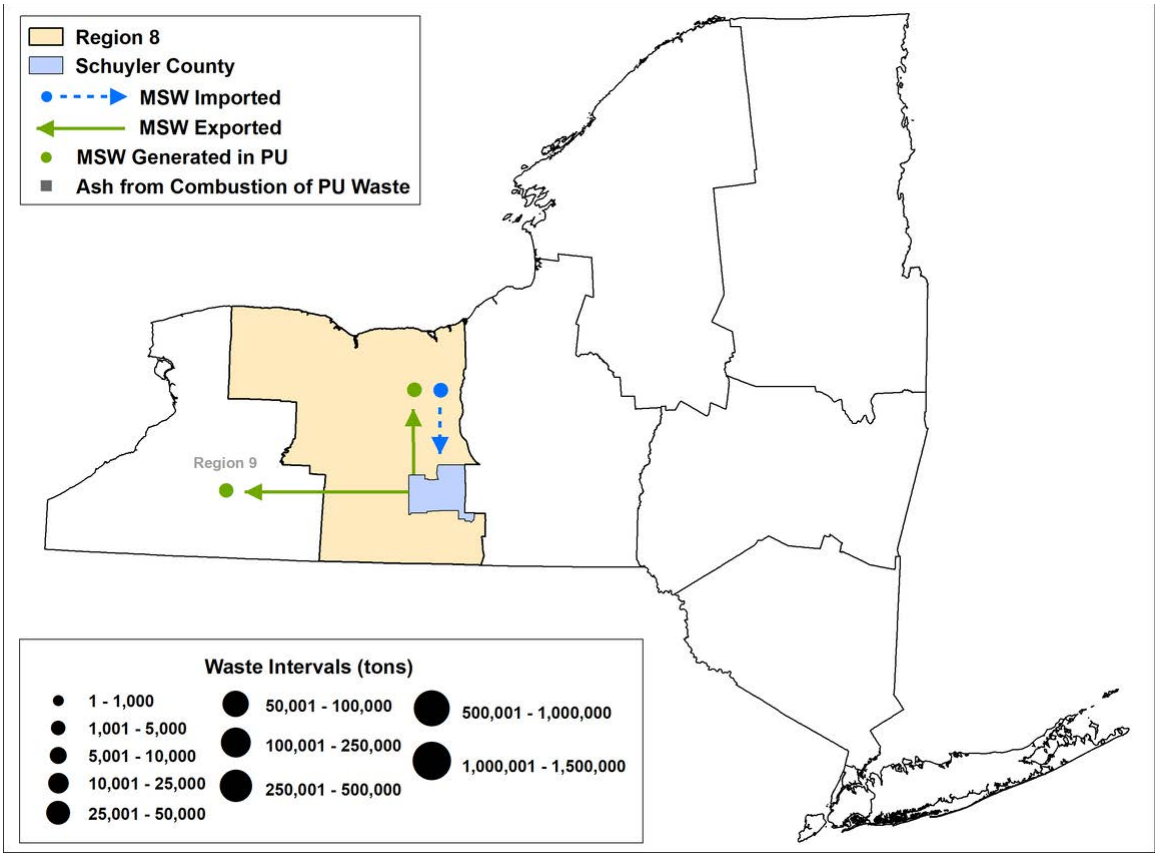


Figure E.158. Schuyler County MSW flow

Figure E.158 shows that no MSW was disposed of in the planning unit as it was all exported. Approximately 70% of MSW generated in this planning unit was sent to other planning units in Region 8 for disposal. The remaining 30% was exported to Region 9. In 2018, some MSW from other planning units in Region 8 was consolidated and transferred to other facilities outside the planning unit.

The following table provides information on all waste and recovered materials generated in Schuyler County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.63. Schuyler County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	6,200	2,000**
C&D Debris	2,600	630
Industrial	100	1,330
Biosolids	0	0

TOTAL	8,900	3,960
MSW disposal rate	1.90 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.63, about 12,860 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 8,900 tons, or 69%, were processed or disposed of. The remaining 3,960 tons, or 31%, were recovered by CDDHRFs or RHRFs.

Table E.63 shows that about 8,200 tons of MSW were generated in 2018, which accounted for 64% of all waste generated in the planning unit that year. Of that 8,200 tons, 24% was recovered through RHRFs and the remaining 76% was processed or disposed of.

C&D debris accounted for 25% of the total waste from 2018. About 80% of C&D debris generated in 2018 was destined to be processed at a combustion facility or disposed of at a landfill. The other 20% was recovered through CDDHRFs. Industrial waste made up 11% of all waste generated in 2018.

Seneca County

Seneca County serves as the planning unit for all municipalities in the county. This planning unit had an estimated population of 34,179 people in 2018 (census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The privately owned Seneca Meadows Landfill is the only MSW landfill in this planning unit. The Seneca Meadows Landfill accepts waste from Seneca County as well as other counties and states. In addition to disposing of waste, the site of the landfill is also a location for recyclables drop-off for residents. The Seneca Meadows Education Center provides recycling education programs for residents. The county also holds HHW collection events each year that give residents an opportunity to dispose of items such as tires, pesticides, pool chemicals, oil-based paints, fluorescent light bulbs, and items that contain mercury.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.159 represents the flow

of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.160 shows the flow of waste for the MSW stream.

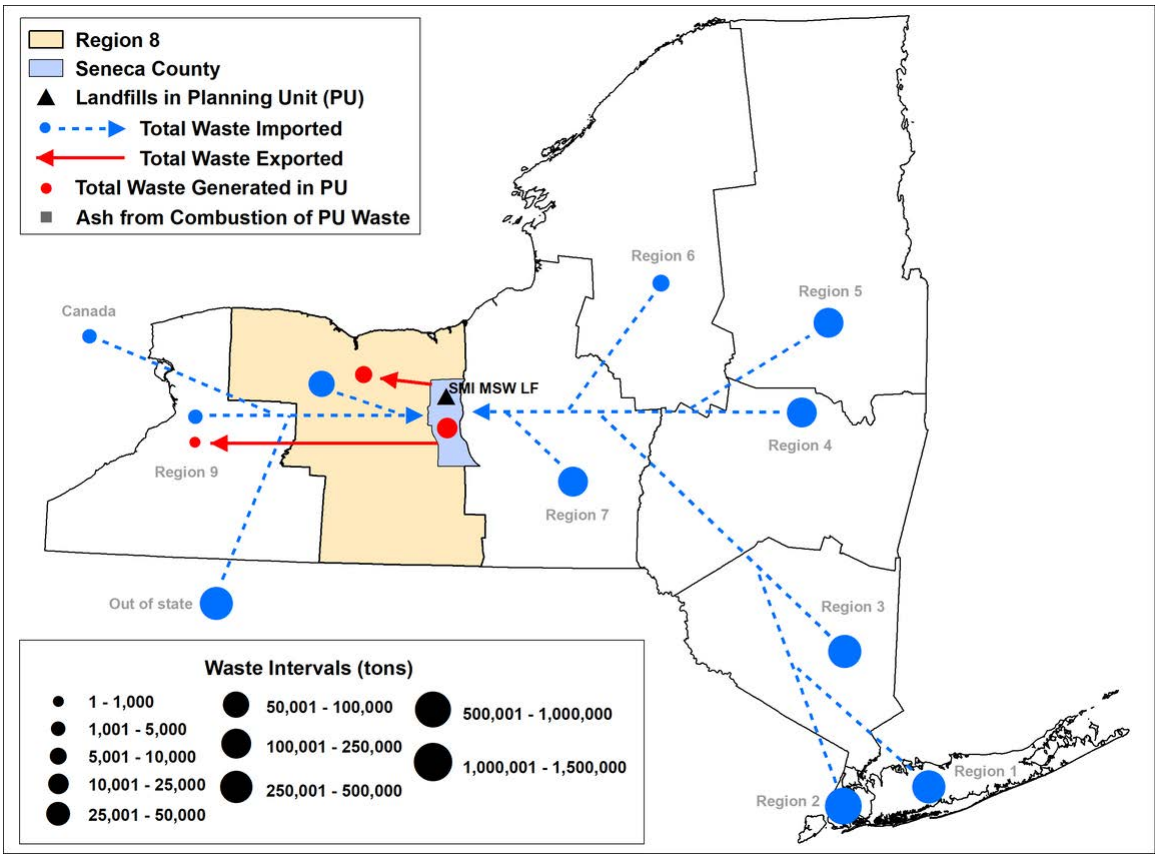


Figure E.159. Seneca County total waste flow

Figure E.159 shows where waste generated in Seneca County in 2018 was disposed of and where waste imported to Seneca County in 2018 came from. About 76% of waste generated in Seneca County was disposed of within the county. About 24% of waste was sent to other planning units in Region 8 for disposal. Minimal amounts of waste were exported to Region 9.

As shown in Figure E.159, waste was imported to Seneca County from all regions in NYS as well as from Canada and other states. About 75% of imported waste was MSW. C&D debris accounted for about 22% of imported waste. Industrial waste and ash residue each accounted for about 2% of imported waste. Region 2 sent the most waste to Seneca County, accounting for 34% of waste imports in 2018. About 18% of waste imported to this planning unit originated in Region 3. The amount of waste imported from Region 1 was about the same as the amount of waste imported from other states; each contributed about 11% of Seneca County's imports. Regions 4 and 7 each contributed about 9% of imported waste; Region 5 contributed approximately 5%; and Regions 6, 8, and 9, and Canada contributed minimal amounts of waste. Of the waste

that was imported from other states, about 82% came from Massachusetts. New Hampshire and Connecticut accounted for 9% and 8%, respectively, of out-of-state imports. Minimal amounts of waste were imported from New Jersey, Pennsylvania, and Rhode Island.

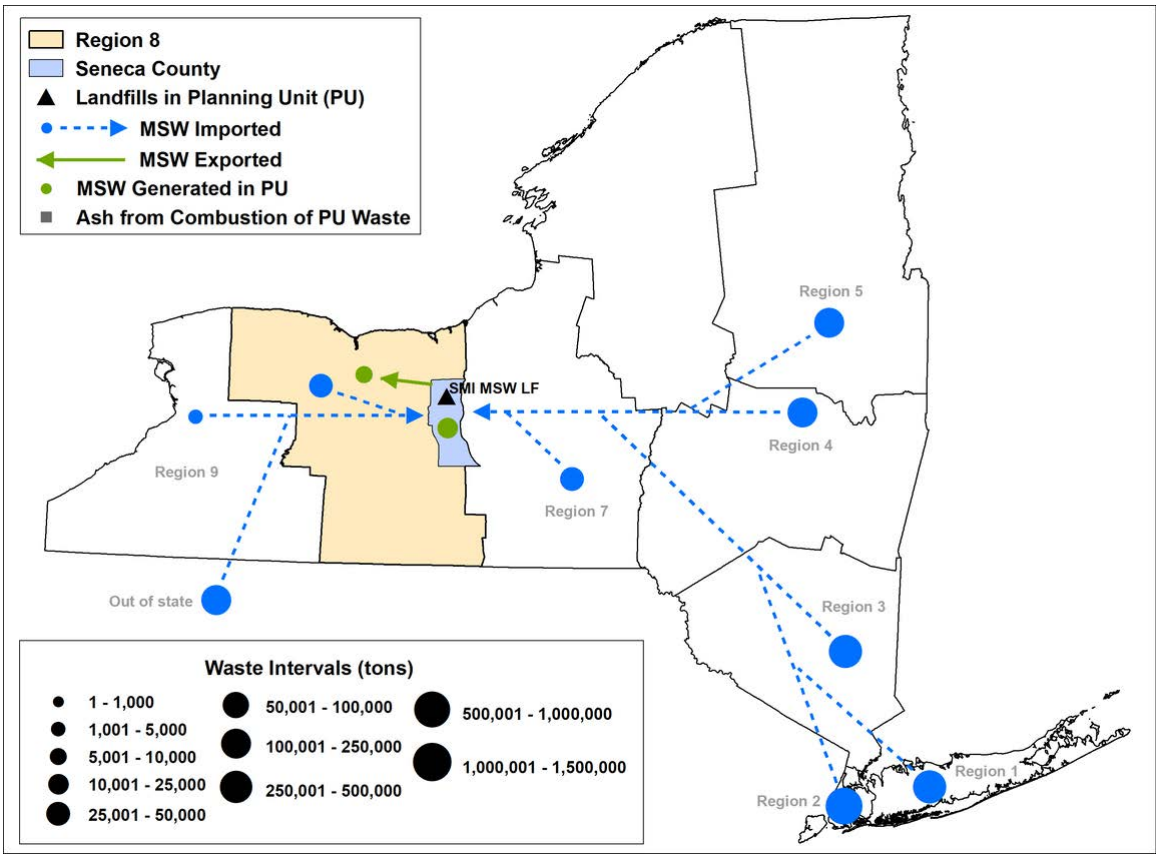


Figure E.160. Seneca County MSW flow

Figure E.160 shows that about 63% of MSW generated in Seneca County in 2018 was disposed of within the county. The remaining 37% was exported to other planning units in Region 8 for disposal.

Figure E.160 also shows this planning unit imported MSW from each region in NYS and from other states. Region 2 accounted for the greatest portion of the imported MSW, about 39%. About 19% of imported MSW originated in Region 3 and another 14% was from Region 1. Imports from Region 4 and from out of state accounted for 10% and 9%, respectively. About 6% of imported MSW was from Region 5. Other planning units in Region 8 contributed about 2% of MSW imports. Minimal amounts of MSW came from Regions 7 and 9. Of the MSW imported from other states, about 94% came from Massachusetts and 6% came from Connecticut.

The following table provides information on waste and recovered materials generated in Seneca County by waste type. It differentiates between the tons of waste processed at

combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.64. Seneca County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	16,800	2,800**
C&D Debris	9,900	4,900
Industrial	5,300	0
Biosolids	0	0
Total	32,000	7,700
MSW disposal rate	2.69 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.64, about 39,700 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 32,000 tons, or 81%, were processed or disposed of. The remaining 7,700 tons, or 19%, were recovered by CDDHRFs or RHRFs.

Table E.64 shows that about 19,600 tons of MSW were generated in 2018, which accounted for 49% of all waste generated in the planning unit that year. Of that 19,600 tons of MSW, 14% was recovered through RHRFs and the remaining 86% was processed or disposed of.

C&D debris accounted for 37% of the total waste from 2018. About 67% of C&D debris generated in 2018 was destined to be processed at a combustion facility or disposed of at a landfill. The other 33% was recovered through CDDHRFs. Industrial waste made up 13% of all waste generated in 2018.

Steuben County

The Steuben County planning unit encompasses all municipalities within the county. The estimated population of this planning unit was 95,860 people in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Bath Sanitary Landfill is located in this planning unit and is owned by Steuben County. The waste

management system in this county also includes three transfer facilities that provide residents a place to drop off their household waste and recycling. These facilities also accept other materials for recycling, including electronics, white goods, fluorescent light bulbs, tires, and propane tanks. The County holds HHW collection events at least once a year and has an agreement with Monroe County for accepting HHW from Steuben County residents for a fee. Steuben County distributes educational brochures, advertises in the newspaper, presents to schools, and manages the County Facebook page and website as part of their education and outreach efforts.

LSWMP Status	The planning unit's LSWMP is approved through 2030.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.161 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.162 shows the flow of waste for the MSW stream.

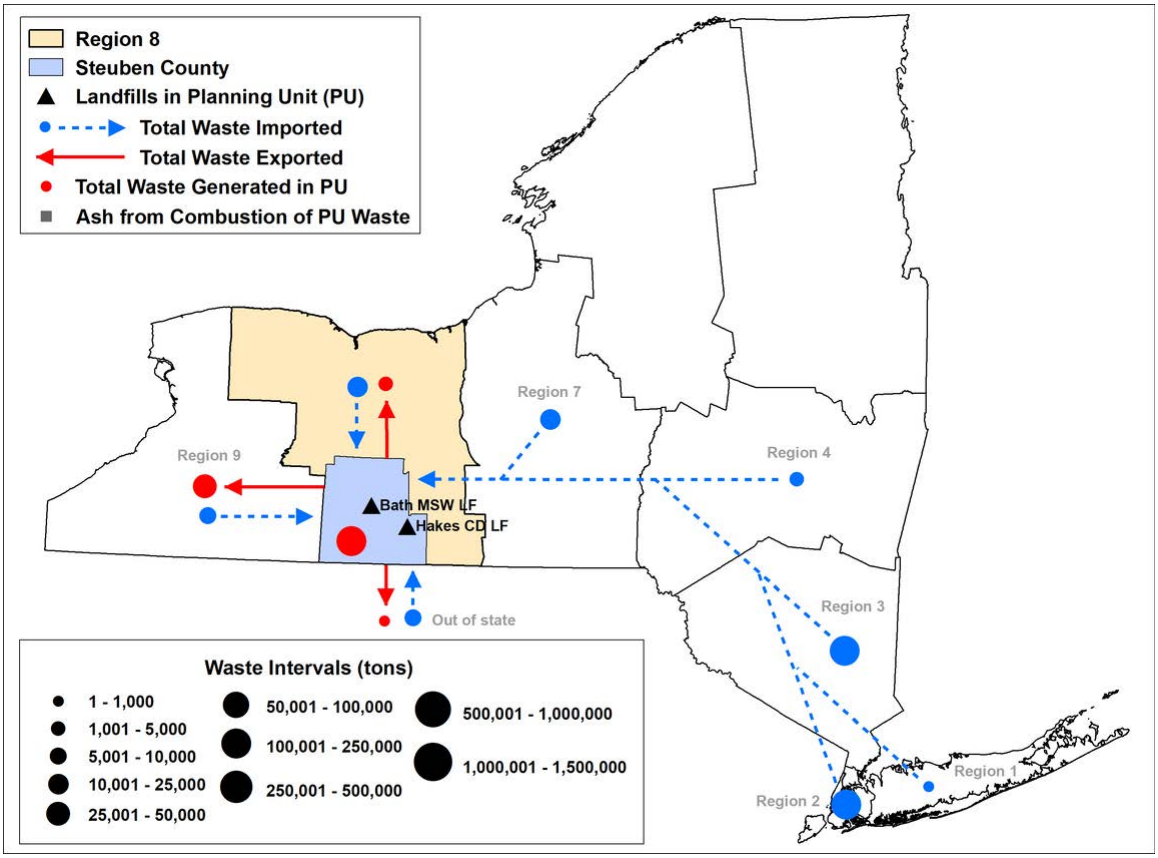


Figure E.161. Steuben County total waste flow

Figure E.161 shows the total waste that was imported to or exported from this planning unit in 2018. About 82% of total waste generated in Steuben County in 2018 was disposed of within the planning unit. Approximately 16% of waste generated in this planning unit was exported to Region 9. Other planning units in Region 8 accepted 2% of waste generated by Steuben County and minimal amounts were sent to Pennsylvania.

Figure E.161 shows about 51% of waste imported to this planning unit originated in Region 2. Another 36% of imported waste came from Region 3. Region 7 and other planning units in Region 8 accounted for 5% and 3%, respectively, of the imports. The amount of waste imported from Region 9 was about the same as the amount imported from other states; each accounted for about 2% of imported waste. Minimal amounts of waste were imported from Regions 1 and 4. Over 99% of waste imported from other states was C&D debris. The remaining out-of-state imports were MSW. Massachusetts accounted for about 57% of waste imported from other states. Connecticut and Pennsylvania contributed about 21% and 14%, respectively. About 8% of out-of-state imports came from New Jersey and minimal amounts came from Rhode Island.

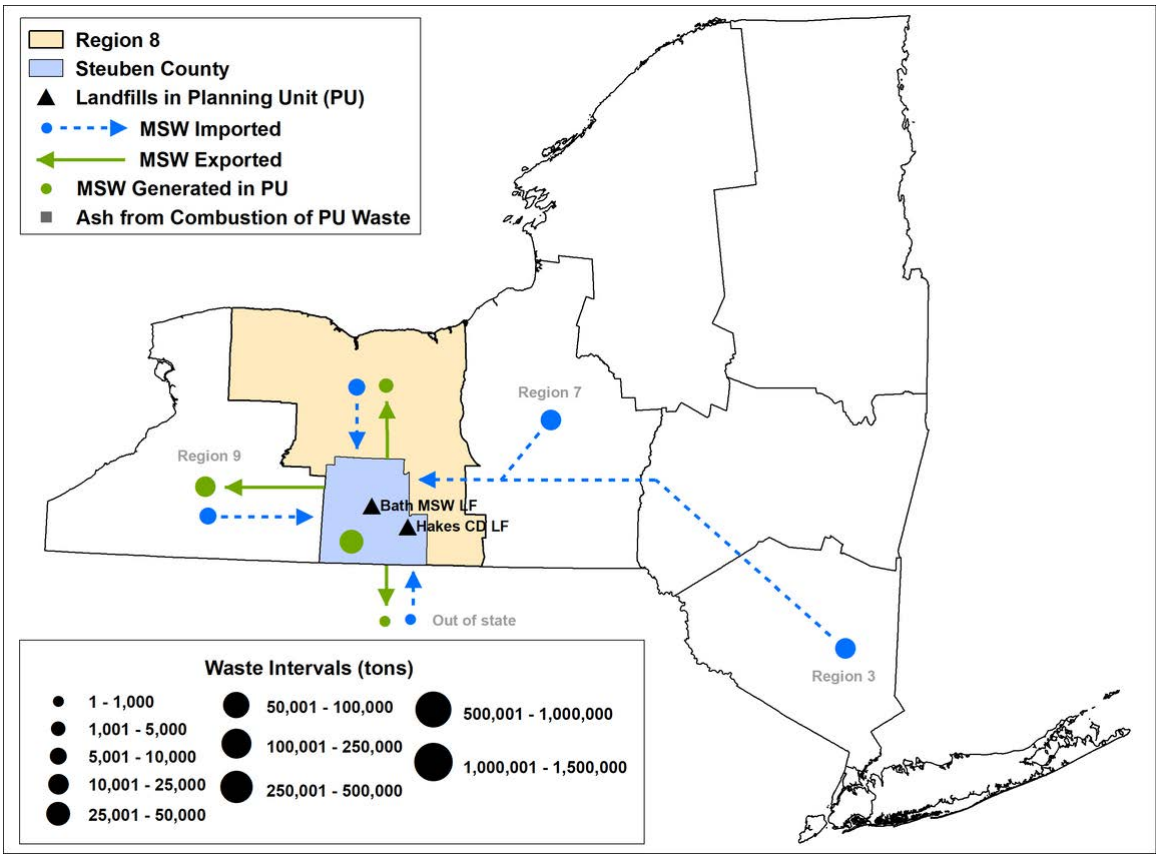


Figure E.162. Steuben County MSW flow

Figure E.162 shows MSW generated in or imported to this planning unit in 2018. Approximately 78% of MSW generated in Steuben County was disposed of within the county. About 21% of MSW from this county was exported to Region 9, while other planning units in Region 8 accepted about 2%. Minimal amounts of MSW were sent to Pennsylvania.

Figure E.162 shows MSW was imported to this planning unit from Regions 3, 7, and 9. MSW was also imported from other planning units in Region 8 and from out of state. About 44% of imported MSW originated in Region 7 and 25% originated in Region 3. About 18% of imported MSW came from Region 9. Other planning units in Region 8 contributed about 12% of MSW imports. Minimal amounts of MSW were imported from Pennsylvania.

The following table provides information on all waste and recovered materials generated in Steuben County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.65. Steuben County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	57,600	11,500**
C&D Debris	69,000	26,300
Industrial	39,200	0
Biosolids	8,600	0
Total	174,400	37,800
MSW disposal rate	3.29 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.65, about 212,200 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 174,400 tons, or 82%, were processed or disposed of. The remaining 37,800 tons, or 18%, were recovered by CDDHRFs or RHRFs.

Table E.65 shows that about 69,100 tons of MSW were generated in 2018, which accounted for 33% of all waste generated in the planning unit that year. Of that 69,100 tons of MSW, 17% was recovered through RHRFs and the remaining 83% was processed or disposed of.

C&D debris accounted for 45% of total waste from 2018. About 72% of C&D debris generated in 2018 was destined to be processed at a combustion facility or disposed of at a landfill. The other 28% was recovered through CDDHRFs. Industrial waste and biosolids made up 18% and 4%, respectively, of all waste generated in 2018.

Wayne County

Wayne County serves as the planning unit for all municipalities in the county. The population of this county was estimated to be 90,200 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. As there are no MSW landfills in the county, waste generated is sent to landfills in other areas. Local county laws require all waste haulers that operate within Wayne County to register with the County each year and fill out quarterly reports. Once a hauler is registered, they can collect MSW and recyclables from county residents.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.163 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.164 shows the flow of waste for the MSW stream.

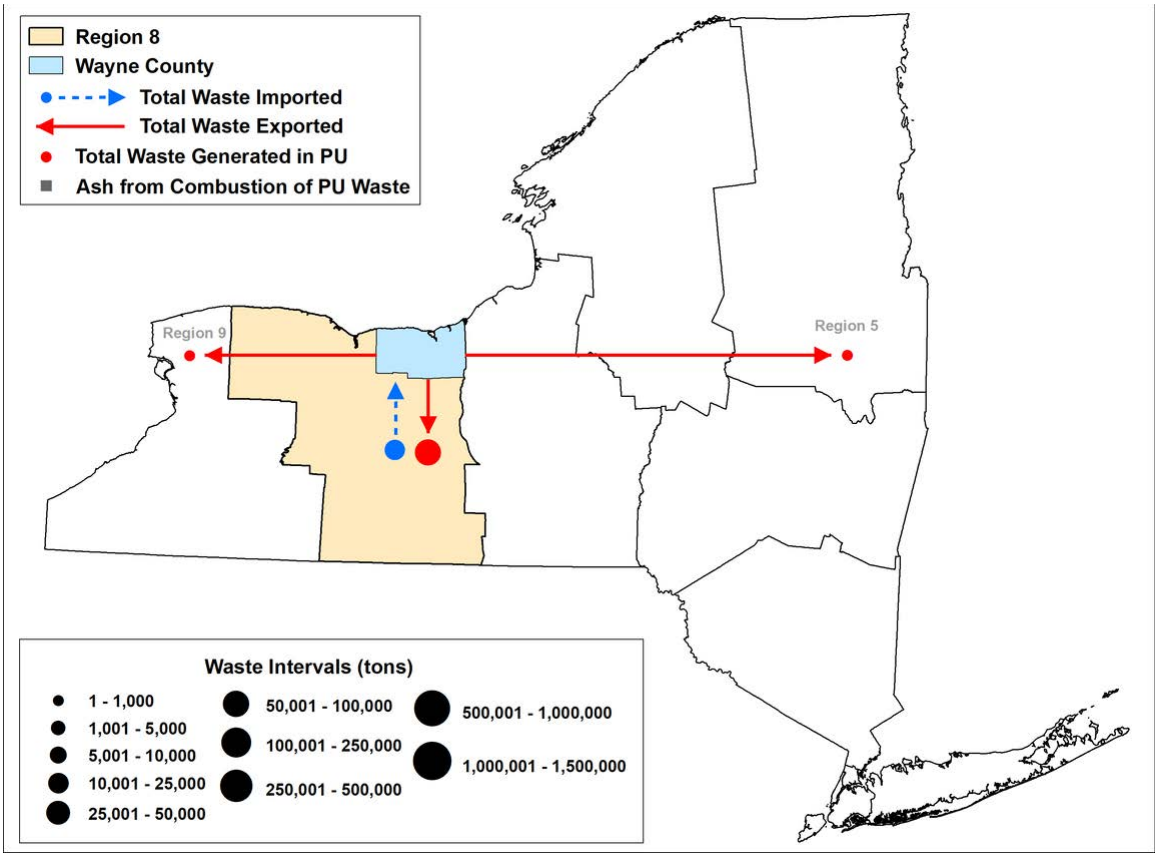


Figure E.163. Wayne County total waste flow

Figure E.163 shows all waste generated in Wayne County in 2018 was exported for disposal. About 99% of waste generated in Wayne County was sent to other planning units in Region 8, while the remaining waste was sent to Regions 5 and 9.

Although no waste was disposed of in Wayne County, some waste from other planning units in Region 8 passed through the county before being sent elsewhere for disposal.

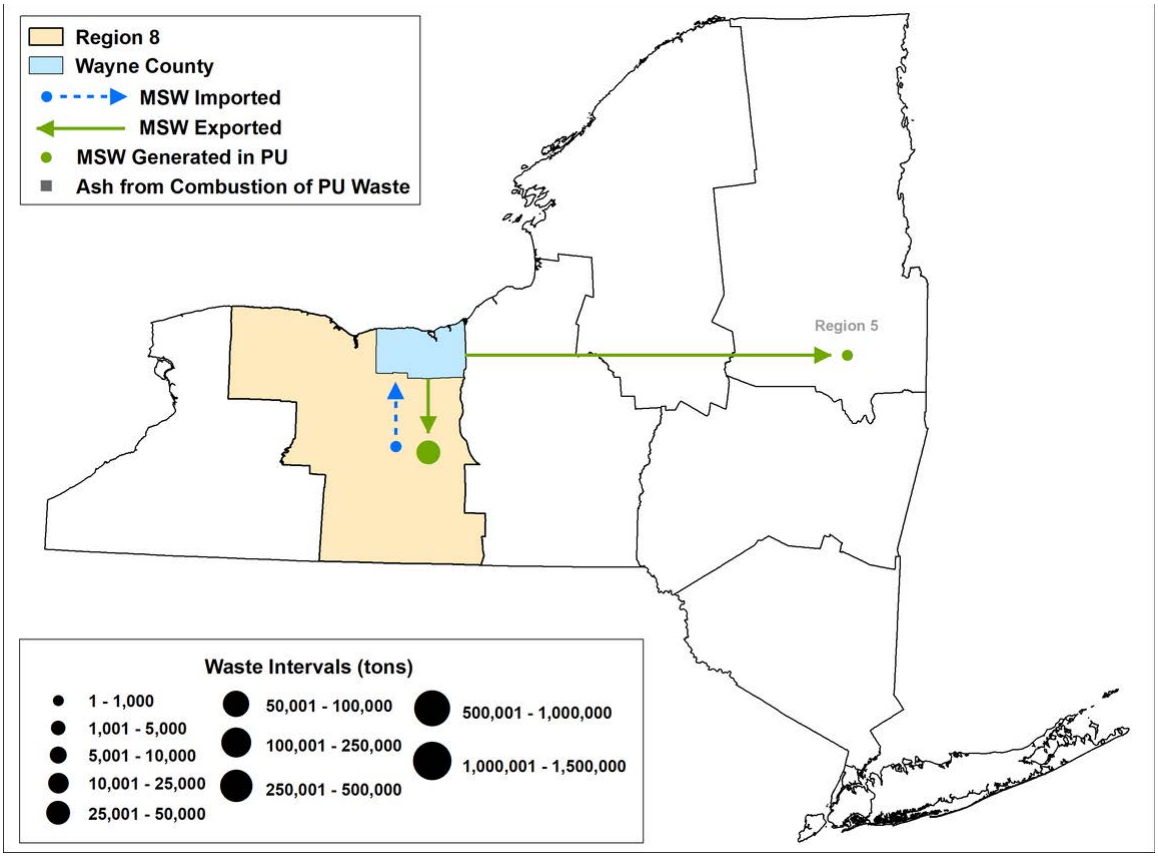


Figure E.164. Wayne County MSW flow

Figure E.164 shows that no MSW was disposed of within Wayne County in 2018. About 99% of MSW generated in this planning unit was sent to other planning units in Region 8 for disposal. The remaining MSW was exported to Region 5.

While there was no MSW that was disposed of within this planning unit, some MSW was imported for consolidation and transfer to a disposal or combustion facility outside the planning unit. All MSW that passed through Wayne County originated in other planning units in Region 8.

The following table provides information on all waste and recovered materials generated in Wayne County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.66. Wayne County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	35,300	14,200**
C&D Debris	18,500	54,100

Industrial	2,700	0
Biosolids	500	0
Total	57,000	68,300
MSW disposal rate	2.14 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.66, about 125,300 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, about 57,000 tons, or 45%, were processed or disposed of. The other 68,300 tons, or 55%, was recovered by CDDHRFs or RHRFs.

Table E.66 shows that about 49,500 tons of MSW were generated in 2018, which accounted for 40% of all waste generated in the planning unit that year. Of that 49,500 tons of MSW, 29% was recovered through RHRFs and the remaining 71% was processed or disposed of.

C&D debris accounted for 58% of total waste from 2018. About 25% of C&D debris generated in 2018 destined to be processed at a combustion facility or disposed of at a landfill. The other 75% was recovered through CDDHRFs. There is a facility in Monroe County that accepted large amounts of asphalt from Wayne County. This asphalt was recovered and recycled back into asphalt product. Asphalt millings and concrete from this process contributed to the high percentage of C&D debris that was recovered in this planning unit. Material industrial waste made up 2% of all waste generated in 2018. Biosolids accounted for less than 1% of waste generated in 2018.

Yates County

Yates County serves as the planning unit for county residents. An estimated 24,951 people lived in this county in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The County requires those who collect, transport, or handle solid waste to obtain a solid waste license from the County. These licenses must be renewed each year. There are no MSW landfills in this county. Yates County also runs HHW and electronics collection days each year, which are coordinated with Schuyler County.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.165 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.166 shows the flow of waste for the MSW stream.

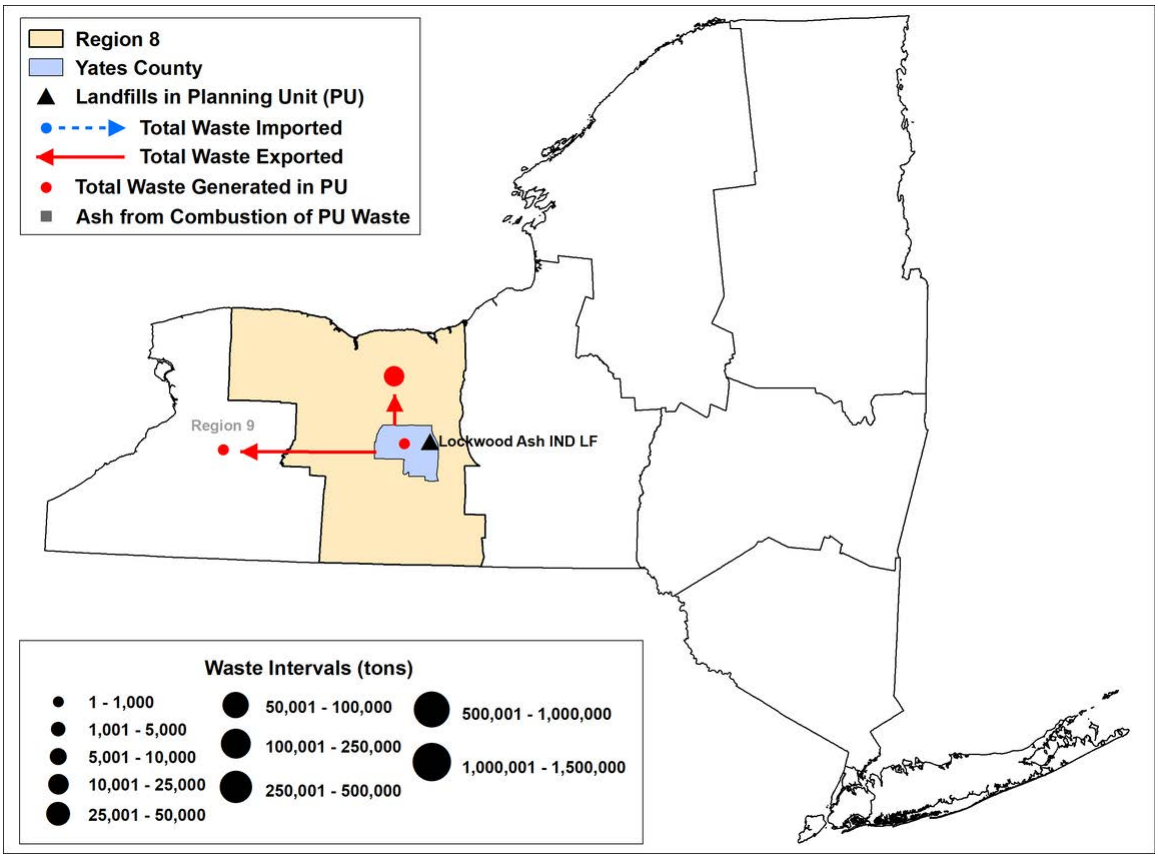


Figure E.165. Yates County total waste flow

Figure E.165 shows that most of the waste generated in Yates County in 2018 was exported to other planning units for disposal. Some industrial waste that was generated in Yates County was disposed of within the county, accounting for less than 1 % of total waste generated in 2018. Over 99% of waste generated in this planning unit was exported to other planning units in Region 8 for disposal. A small amount of waste was also sent to Region 9. No waste was imported to this planning unit in 2018.

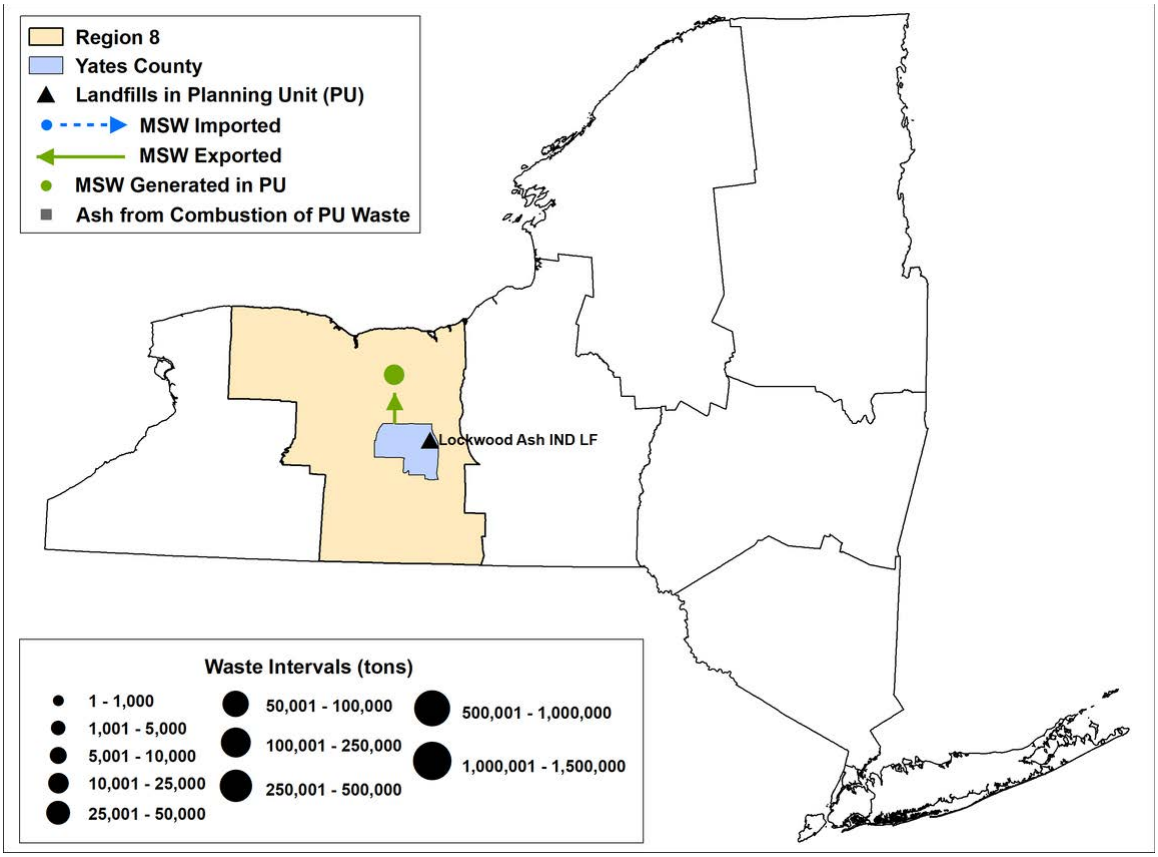


Figure E.166. Yates County MSW flow

Figure E.166 shows the destination of MSW generated in this planning unit. All MSW generated in 2018 was exported to other planning units in Region 8 for disposal. No MSW was imported to Yates County.

The following table provides information on all waste and recovered materials generated in Yates County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.67. Yates County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	16,000	1,700**
C&D Debris	3,300	10
Industrial	1,000	0
Biosolids	900	0
Total	21,200	1,710

MSW disposal rate	3.51	lbs/person/day

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.67, about 22,910 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 21,200 tons, or 93%, were processed or disposed of, and 1,710 tons, or 7%, was recovered by CDDHRFs or RHRFs.

Table E.67 shows that about 17,700 tons of MSW were generated in 2018, which accounted for 77% of all waste generated in the planning unit that year. Of that 17,700 tons of MSW, 10% was recovered through RHRFs and the remaining 90% was processed or disposed of.

C&D debris accounted for 14% of total waste from 2018. Over 99% of C&D debris generated in 2018 was destined to be processed at a combustion facility or disposed of at a landfill, and the remainder was recovered through CDDHRFs. Industrial waste and biosolids each made up 4% of all waste generated in 2018.

Region 9 Overview and Waste Flow Information

Region 9 consists of Niagara, Erie, Wyoming, Chautauqua, Cattaraugus, and Allegany counties. This Region had an estimated population of 1,420,330 in 2018 (Census, 2019). Erie County is the most densely populated county in this region. While there are rural and urban areas within Erie County, the average population density is between 325 and 5,000 people per square mile, which means it has a population characteristic of a suburban population density distribution. While the other counties in this region may have urban or suburban areas, they all have average population densities of less than 325 people per square mile, meaning they have a population characteristic of a rural population density distribution.

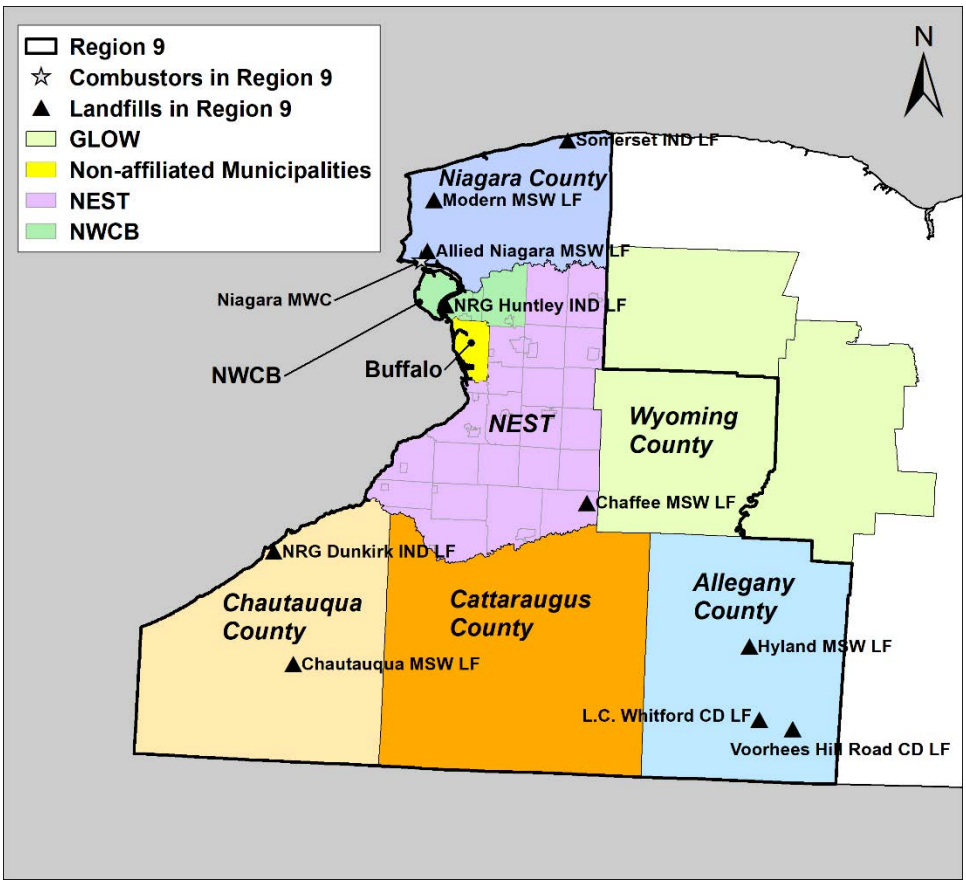


Figure E.167. Region 9 planning units

As shown in Figure E.167, seven planning units are represented in this region. Most counties in this region also serve as planning units, except Erie County and Wyoming County. As shown in Figure E.167, Erie County is split into two planning units: Northeast Southtowns Solid Waste Management Board (NEST) and Northwest Communities Solid Waste Management Board (NWCB). The City of Buffalo is not affiliated with either of the planning units in Erie County. Wyoming County is part of the

GLOW Region Solid Waste Management Committee, which is discussed in the Region 8 section.

Figure E.167 shows landfills and combustion facilities in the region. There are five active MSW landfills in this region, in Allegany, Chautauqua, Erie, and Niagara counties. These landfills are Hyland Landfill, Chautauqua Landfill, Chaffee Landfill, Allied Waste Niagara Falls Landfill, and Modern Landfill. There are also two C&D debris landfills in Allegany County, the L.C. Whitford C&D Landfill, and the Voorhees Hill Road C&D Landfill. Additionally, the Dunkirk Fly Ash Landfill, located in Chautauqua County; the NRG Huntly Landfill, located in Erie County; and the Somerset Operating Station, located in Niagara County are industrial landfills in this region.

The Covanta Niagara Municipal Waste Combustor (Niagara MWC) is located in Niagara County. Although the only combustion facility in this area is in Niagara County, other planning units in this Region will have ash attributed to them on the planning unit waste flow maps. This is because the waste sent to the combustion facility from those planning units became ash that had to be disposed of. The ash is attributed to planning units without a combustion facility because it was derived from waste that was originally generated in those planning units.

In the following section, there are figures and a waste summary table for the counties that make up Region 9. The values in these figures and the waste summary table include waste generated in Wyoming County, even though GLOW, the planning unit that Wyoming County is part of, is discussed in the Region 8 section.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to Region 9 in 2018. Figure E.168 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.169, Figure E.170 and Figure E.171 show the flow of waste by type for MSW, C&D debris, and industrial waste, respectively.

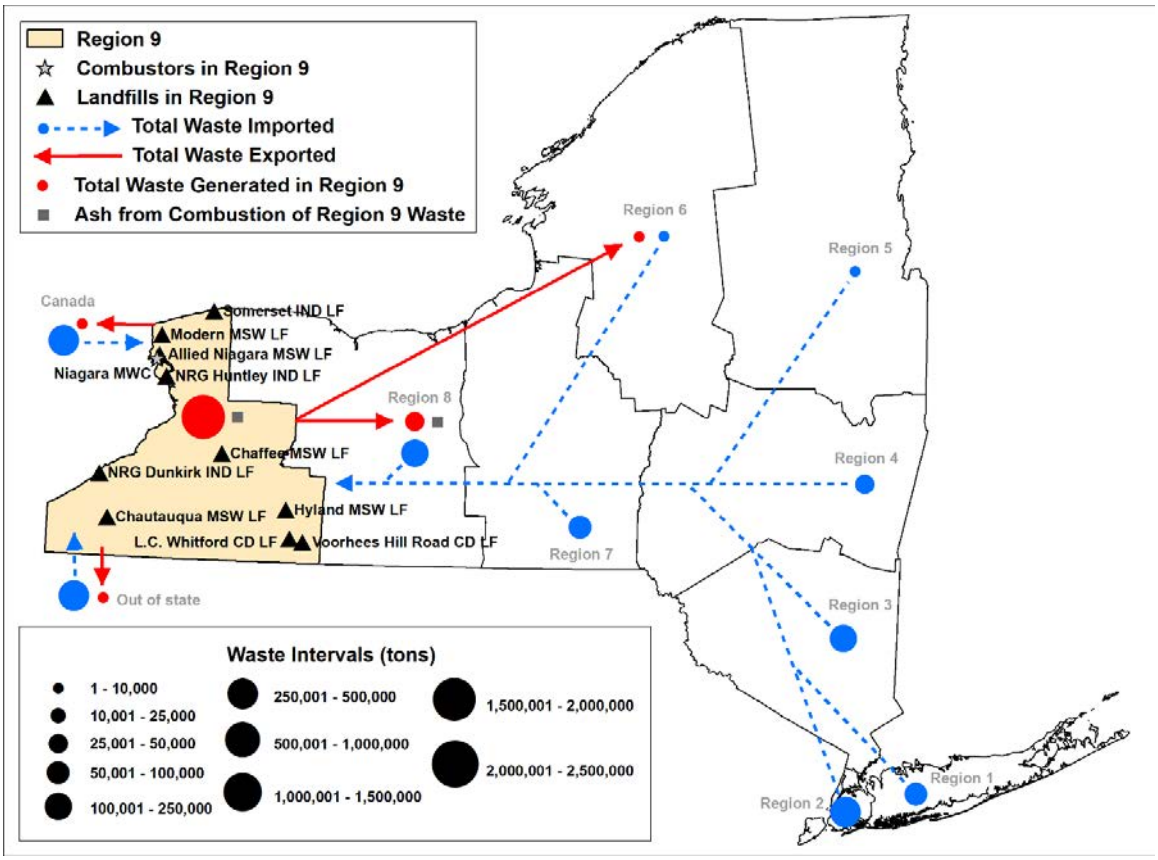


Figure E.168. Region 9 total waste flow

As shown in Figure E.168, not including recovered materials, about 98% of total waste generated in this region was processed at combustion facilities or disposed of at landfills within Region 9. About 1% of waste generated in Region 9 that was destined for processing or disposal was exported to Region 8. The remaining 1% of waste was exported to Region 6, to other states, or to Canada. About 90% of waste exported to other states was sent to Pennsylvania, 6% to Indiana, and 4% to Ohio and Maine. All waste exported to Region 6 was C&D debris.

Waste was imported to Region 9 from every other region in NYS. Region 9 also imported waste from other states and Canada. Canada accounted for about 26% of Region 9 imports. An additional 23% of waste imported to Region 9 came from other states; another 23% originated in Region 2; and about 7%, 5%, and 10% of came from Regions 3, 7, and 8, respectively. Region 1 contributed 3% of imported waste, and Region 4 contributed 2%. Regions 5 and 6 each accounted for less than 1% of total imported waste. Waste imported to Region 9 from out of state came from over 30 different states. The most significant amounts came from Pennsylvania, accounting for 31%. Maine, Connecticut, Michigan, and Massachusetts accounted for 17%, 16%, 13%, and 11%, respectively.

Of the nine regions in NYS, Region 9 has the third highest tonnage of waste imports, behind Region 8 and Region 1. The most significant portion of waste imported to

Region 9 was MSW, which accounted for 52% of imported waste from other regions in NYS and from other states. C&D debris accounted for about 25% of waste imports, while industrial waste and biosolids contributed to 18% and 6%, respectively. About 64% of waste imported to Region 9 went to facilities in Niagara County for processing at a combustion facility or for disposal at a landfill. About 27% of waste imports went to a landfill in Allegany County for disposal.

Figure E.168 also shows the destinations of ash that remained after waste produced in this region was combusted in 2018. Waste was combusted at the Covanta Niagara Municipal Waste Combustor (Niagara MWC) and at another combustion facility in Region 6. About 99% of ash residue that resulted from the combustion of Region 9 waste was disposed of or used as AOC within the region. About 85% of that ash residue was used as AOC at the Allied Waste Niagara Falls Landfill or the Modern Landfill. The remaining 15% was disposed of at the Allied Waste Niagara Falls Landfill. Minimal amounts of ash residue were also sent to landfills in Region 8. Ash residue produced from the combustion of waste imported to Region 9 is discussed in the section for the region where the waste originated from.

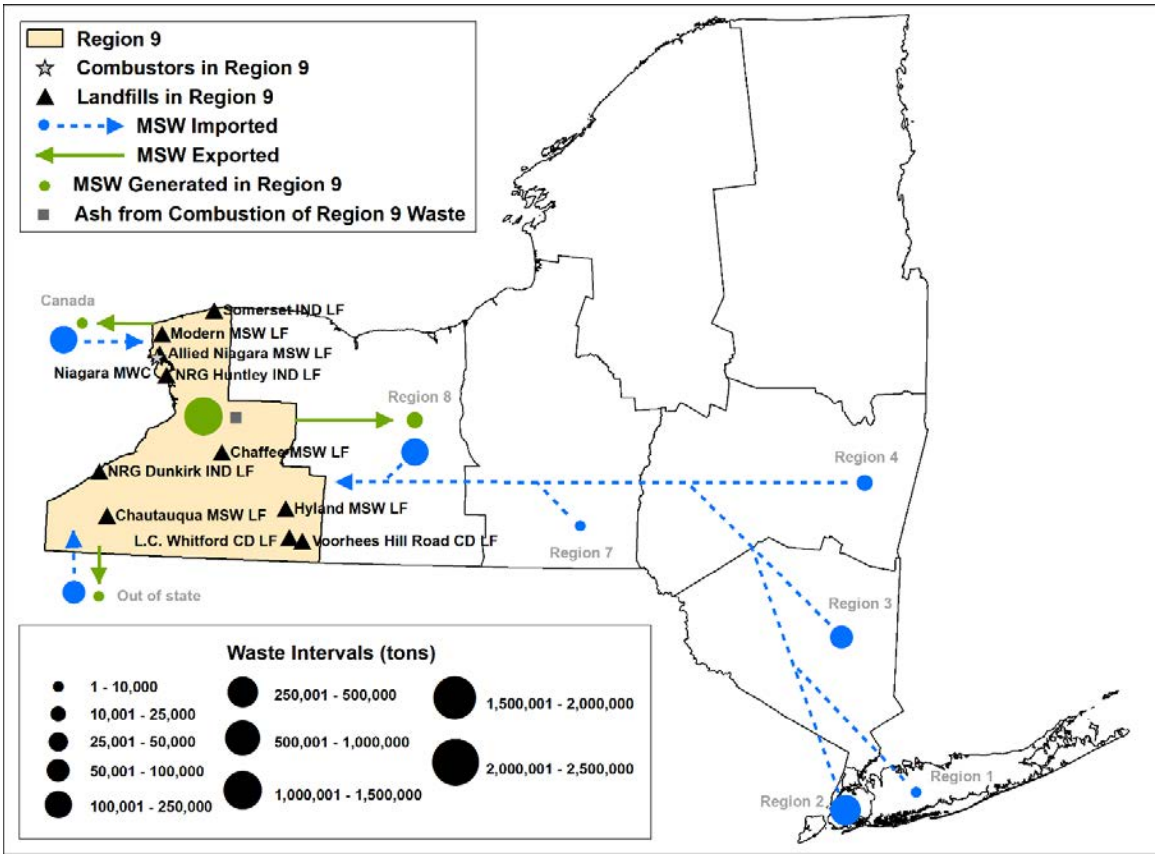


Figure E.169. Region 9 MSW flow

Figure E.169 shows the flow of the MSW waste stream, not including recovered materials. It shows that about 98% of MSW generated in Region 9 in 2018 was processed or disposed of within the region. The remaining MSW, about 2% of the amount generated, was exported to Region 8, other states, or Canada. Of the MSW that was exported to other states, over 99% went to Pennsylvania. Minimal amounts were also exported to Ohio and Massachusetts.

In 2018, MSW was imported to Region 9 from Regions 1, 2, 3, 4, 7, and 8. MSW was also imported from Canada and other states. About 66% of imported MSW went to Niagara County for processing or disposal. Another 25% was imported to Allegany County for disposal. Region 2 accounted for about 34% of imported MSW. An additional 27% of imported MSW came from Canada. Region 8 accounted for about 14%,. Region 3 contributed about 11%, and other states contributed about 10% of the imported MSW. Of the 10% imported from other states, Pennsylvania accounted for over 99%. Regions 1, 4, and 7 each accounted for less than 3% of imported MSW.

Ash from the combustion of MSW produced in this region is also shown in Figure E.169. MSW was combusted at the Niagara MWC. All ash that resulted from the combustion of Region 9 MSW was disposed of or used as AOC within the region. Ash that remained after combustion was either sent to the Allied Niagara MSW Landfill or the Modern MSW Landfill. About 58% of ash was sent to Allied Niagara MSW Landfill for use as AOC or to be disposed of. The other 42% was used as AOC at Modern MSW Landfill.

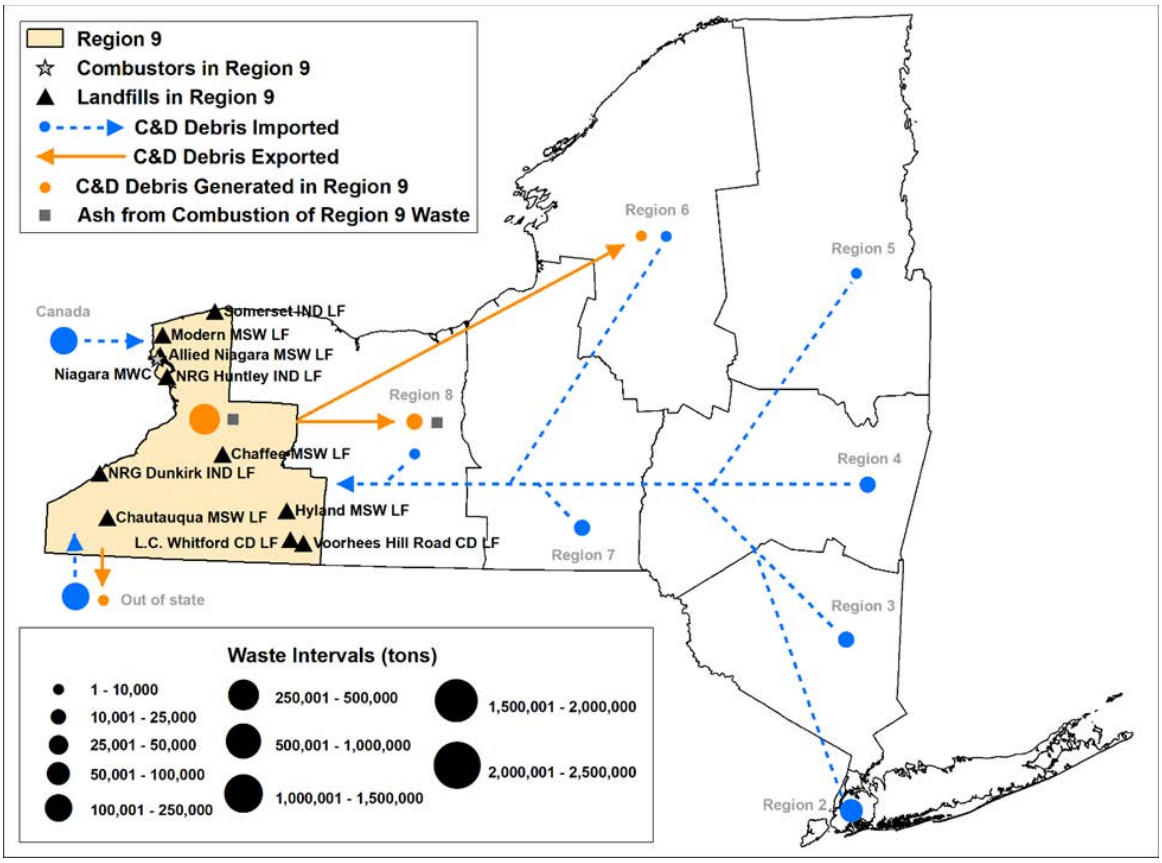


Figure E.170. Region 9 C&D debris flow

Figure E.170 shows the flow of C&D debris that was destined for processing or disposal. In 2018, 94% of C&D debris generated in Region 9 was processed or disposed of within the region. About 5% of the C&D debris was exported to Region 8. Region 6 and Pennsylvania received a small portion of C&D debris generated in Region 9. All C&D debris sent to Region 6 went to a combustion facility for processing.

Figure E.170 also shows C&D debris that was imported to Region 9. Of all C&D debris imported to this region, about 66% went to Niagara County for processing or disposal. About 31% of imported C&D debris was destined for disposal in Allegany County. C&D debris was imported from Regions 2, 3, 4, 5, 6, 7, and 8 as well as from other states and Canada. About 39% of the C&D debris imports came from Canada. Imports from other states accounted for 25% of the C&D debris imports. Region 2 accounted for 22% of the C&D debris imports, while Regions 3, 4, and 7 contributed 3%, 5%, and 4%, respectively. Regions 5, 6, and 8 each contributed less than 2%. Of the C&D debris imported from other states, Massachusetts contributed 35% and Connecticut contributed 31%. About 23% came from Maine, and about 11% came from Pennsylvania. Minimal amounts were also imported from Ohio.

All of the C&D debris from this region that was combusted did so in Region 6. After this waste was combusted, the remaining ash was sent to a landfill in Region 8 for disposal.

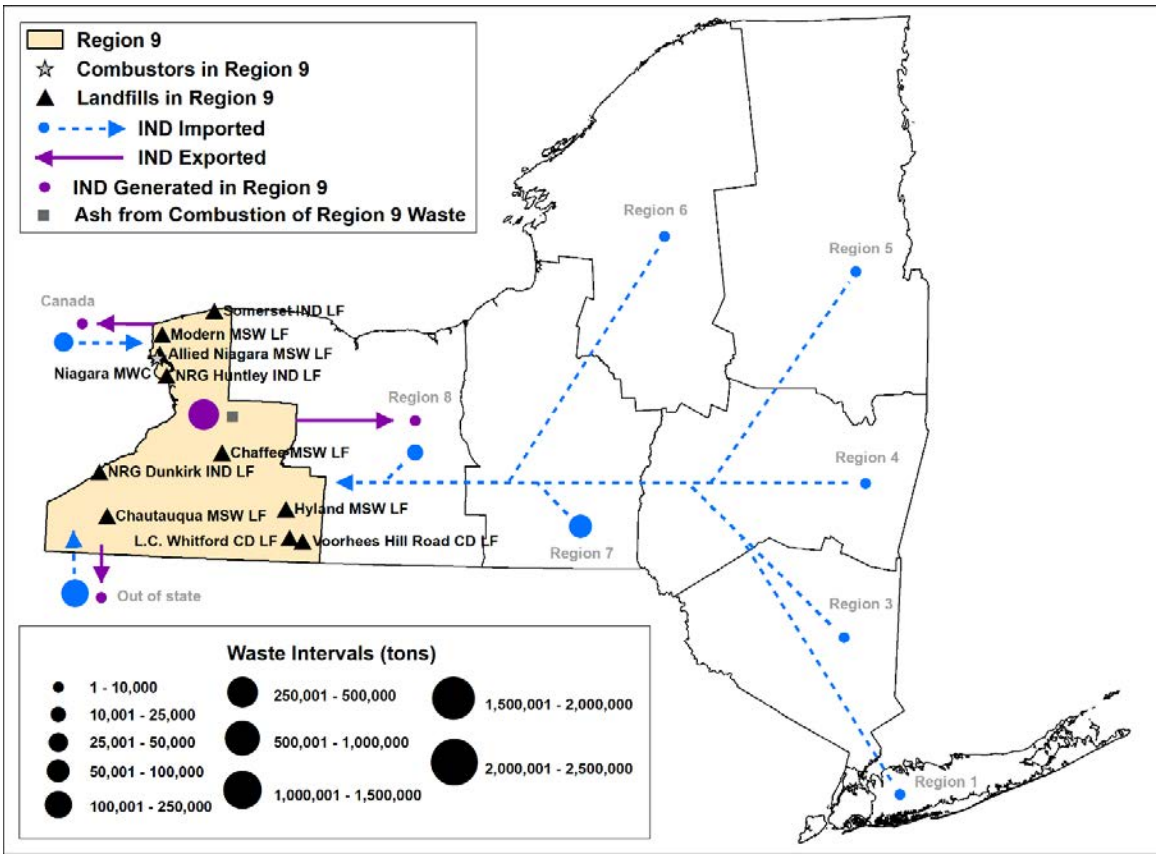


Figure E.171. Region 9 industrial waste flow

Figure E.171 shows the flow of industrial waste from 2018 destined for processing or disposal. Over 99% of the industrial waste generated in Region 9 was processed or disposed of within the region. Small amounts of industrial waste were sent to Region 8, other states, or Canada. Of the industrial waste that was exported to other states, about 74% went to Indiana, 19% to Ohio, and 7% to Pennsylvania.

Industrial waste was imported to Region 9 from Regions 1, 3, 4, 5, 6, 7, and 8, as shown in Figure E.171. About 73% of industrial waste imported to this region went to Niagara County for processing or disposal. About 16% of imported industrial waste was sent to Allegany County for disposal. Industrial waste was also imported from other states and from Canada. Industrial waste imports from other states accounted for 59% of industrial waste imported to this region. About 21% of the industrial waste was imported from Region 7, and 14% was imported from Canada. About 5% came from Region 8, while Regions 1, 3, 4, 5, and 6 each contributed less than 1% of the industrial waste imports. Region 9 imported industrial waste from over 30 states. Of the industrial waste imported from other states, 27% originated in Michigan, 22% came from Maine, and 15% came from Connecticut. Approximately 10%, 8%, and 6% came from New Jersey, Pennsylvania, and Ohio, respectively. The remaining states contributed a combined total of 13% of the out-of-state industrial waste imports.

Industrial waste was also combusted at the Niagara MWC. About 85% of ash residue resulting from the combustion of Region 9 industrial waste was used as AOC at the Allied Waste Niagara Falls Landfill or the Modern Landfill. The remaining 15% was disposed of at the Allied Waste Niagara Falls Landfill.

Table E.68. Region 9 organics recycling summary

Anaerobic Digestion	
Food Processing Waste	2,481 tons
Source-Separated Organics	0 tons
Composting	
Source-Separated Organics	3,284 tons
Food Processing Waste	0 tons
Yard Trimmings	45,462 tons
Biosolids	4,599 tons
Land Application	
Biosolids	220 tons
Food Processing Waste	3,307 tons

There are 20 composting operations located in Region 9 that compost source-separated organics and yard trimmings, 6 biosolids composting operations, 3 biosolids land application operations, 20 food processing waste land application operations, and 3operating anaerobic digesters. Table E.68 shows the type and quantity of materials recycled at these facilities.

The following table provides information on all waste and recovered materials generated in Region 9 by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills and the tons of materials recovered through CDDHRFs, RHRFs, composting facilities, anaerobic digestors, and land application facilities.

Table E.69. Region 9 waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	1,117,000	286,246
C&D Debris	318,000	587,100

Industrial	382,600	26,188
Biosolids	141,873	9,418
Total	1,959,473	908,952
MSW disposal rate	4.31 lbs/person/day	
* The heavy metal category is not included in the values in this table.		

Table E.69 shows that an estimated 2,868,425 tons of waste were generated in Region 9 that were processed, disposed of, or recovered in 2018. Of that amount, 1,959,473 tons, or about 68%, were processed or disposed of. The remaining 908,952 tons, or 32%, were recovered through CDDHRFs, RHRFs, composting facilities, anaerobic digestors, and land application facilities.

Of all waste generated in 2018, about 49%, or 1,403,246 tons, was MSW. Approximately 20% of the MSW portion of the waste stream was recovered through RHRFs, composting facilities, and anaerobic digestors. The other 80% of MSW generated in Region 9 was processed at the combustion facility or disposed of. C&D debris accounted for 32% of waste generated in Region 9 in 2018 with about 905,100 tons. Of that amount, about 35% was processed or disposed of, and 65% was recovered through CDDHRFs. Industrial waste and biosolids accounted for 14% and 5%, respectively, of waste generated in Region 9.

Planning Unit Overviews and Waste Flow Information

The following section includes an overview and waste flow information for each of the planning units in Region 9. The figures and waste summary table detail the waste generated in each planning unit and the flow of waste into and out of each planning unit. This section also includes information about the municipalities in this region that are not currently affiliated with a recognized planning unit. The City of Buffalo is a non-affiliated municipality located in Erie County. As such, it is discussed after the planning units in Erie County.

Allegany County

The Allegany County planning unit services all municipalities within the county. In 2018, Allegany County had an estimated population of 46,332 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. There are two C&D debris landfills in this planning unit: the L.C. Whitford Landfill and the Voorhees Hill Road Landfill. These landfills are less than 3 acres in size and accept waste mainly from Allegany County. Allegany County operates seven residential waste and recyclables drop-off facilities located throughout the county. There is also a privately owned transfer

facility located within the county. The County holds quarterly recycling events at one of its transfer facilities and annual HHW collection events, at which residents can responsibly recycle or dispose of electronics or HHW.

LSWMP Status	The planning unit's LSWMP is approved through 2030.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.172 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.173 shows the flow of waste for the MSW stream.

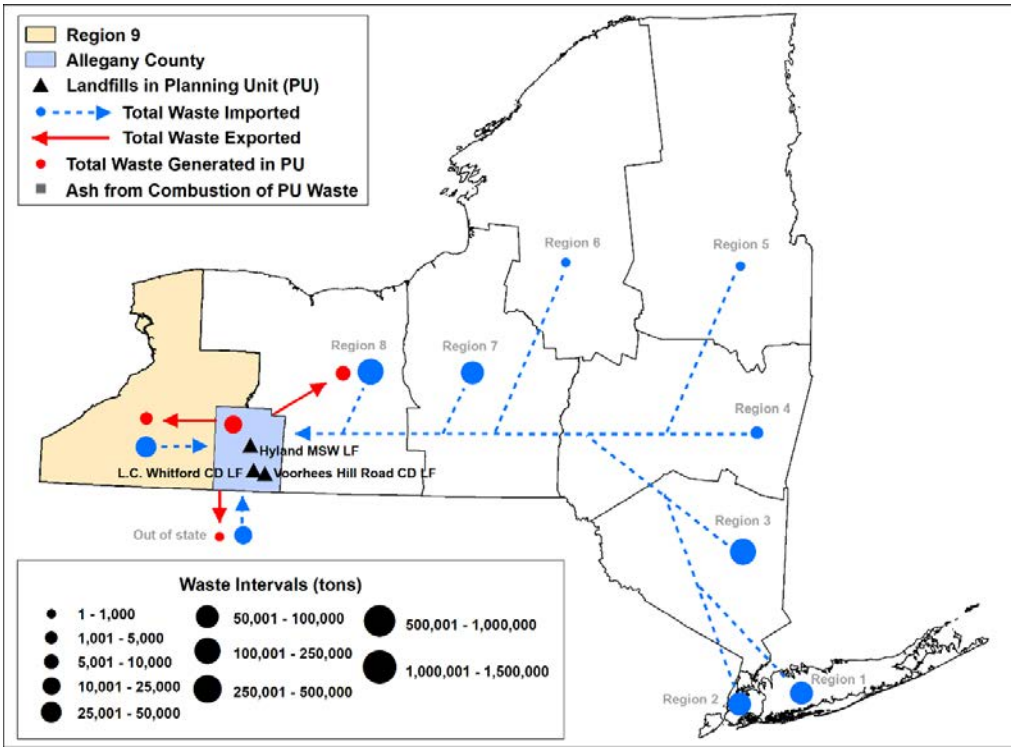


Figure E.172. Allegany County total waste flow

Figure E.172 shows the flow of all waste streams, not including recovered materials, within the Allegany County planning unit in 2018. As shown, about 69% of waste generated within this planning unit was disposed of within the planning unit. Approximately 24% of waste was sent to Region 8, and 5% was sent to other planning units in Region 9. The remaining 2% of waste generated in this planning unit was exported to Pennsylvania.

Waste was imported to Allegany County from Regions 1, 2, 3, 4, 5, 6, 7, and 8. Waste was also imported from other planning units in Region 9 and from out of state, as shown

in Figure E.172. About 23% and 22% of imports to this planning unit came from Regions 3 and 8, respectively. Approximately 18% of imported waste originated in Region 2. Waste from Region 7 accounted for 14% of the imported waste, and waste from Region 1 accounted for another 11%. An estimated 9% of imports came from other planning units in Region 9, and minimal amounts came from Regions 4, 5, and 6. About 2% of imported waste was from other states. Of that amount, 81% came from Pennsylvania, 10% from Vermont, and 4% from Massachusetts. Minimal amounts were imported from Connecticut, New Hampshire, and New Jersey. About 78% of waste imported from out-of-state facilities was MSW, 17% was industrial waste, and 5% was C&D debris.

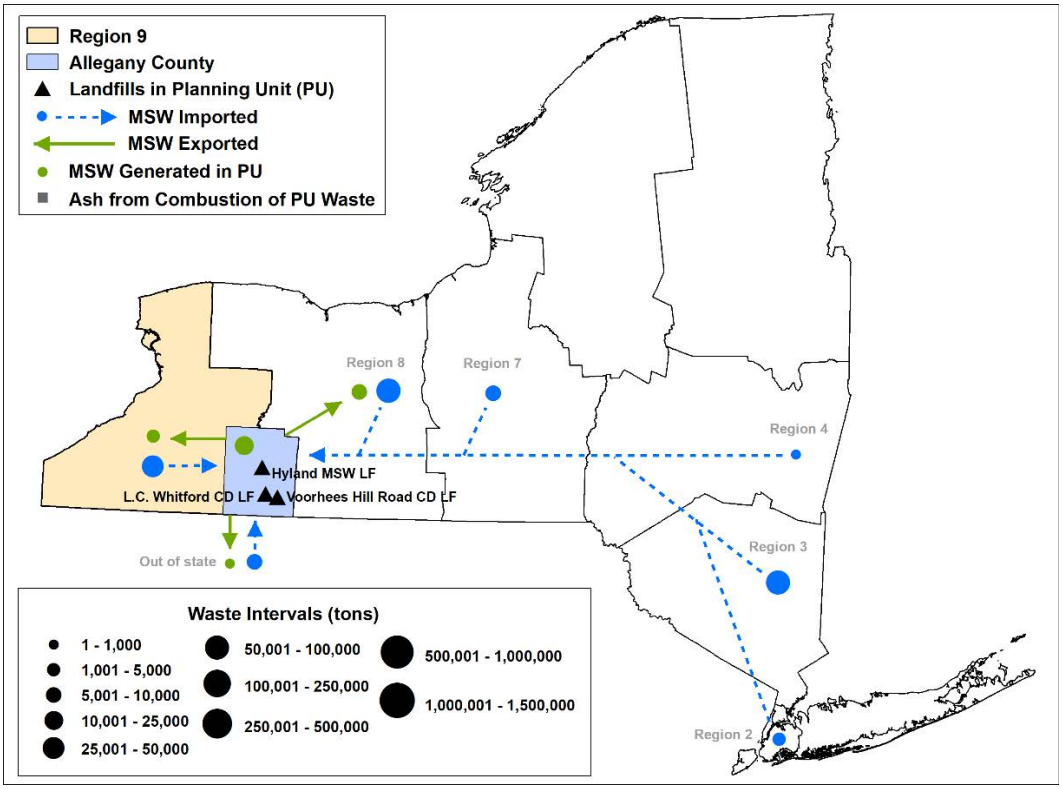


Figure E.173. Allegany County MSW flow

Figure E.173 shows the flow of MSW that was destined for processing or disposal in 2018. About 64% of MSW generated in this planning unit was disposed of within the planning unit in 2018. Approximately 29% of MSW was exported to Region 8, 5% was sent to other planning units in Region 9, and 2% was sent to Pennsylvania.

As shown in Figure E.173, MSW was also imported to Allegany County in 2018. Imported MSW originated in Regions 2, 3, 4, 7, and 8. MSW was also imported from other planning units in Region 9 and from other states. An estimated 41% of imported MSW came from Region 8, 38% from Region 3, and 14% from other planning units in Region 9. Regions 2 and 7 contributed 1% and 4%, respectively. About 3% came from other states, and minimal amounts came from Region 4. Of the MSW imported from

other states, over 99% came from Pennsylvania, and a small percentage came from Massachusetts.

The following table provides information on all waste and recovered materials generated in Allegany County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.70. Allegany County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	24,350	6,590**
C&D Debris	3,000	230
Industrial	1,950	0
Biosolids	850	0
Total	30,150	6,820
MSW disposal rate	2.88 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.70 shows that an estimated 36,970 tons of waste were generated in 2018 that were processed, disposed of, or recovered. About 30,150 tons, or 82%, were destined for processing or disposal. The remaining 6,820 tons, or 18%, were recovered through CDDHRFs or RHRFs.

MSW accounted for about 84%, or 30,940 tons, of waste generated in this planning unit in 2018. About 79% was processed or disposed of, and 21% was recovered through RHRFs. Additionally, C&D debris accounted for 9% of the waste from this planning unit. About 93% of the C&D debris was destined for processing at combustion facilities or for disposal at landfills. The remaining 7% was recovered through CDDHRFs. Industrial waste and biosolids made up 5% and 2%, respectively, of waste generated in 2018.

Cattaraugus County

The Cattaraugus County planning unit consists of all municipalities within the county. The estimated 2018 population for this county was 76,726 people (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. The Cattaraugus Department of Public Works Refuse Division plays a major role in solid waste management within the

planning unit. The Refuse Division operates transfer facilities located throughout the county which accept MSW and recyclables. The transfer facilities operate under a pay-as-you-go model, which incentivizes recycling by accepting certain recyclables for free and charging tipping fees for other kinds of waste. In addition to the recyclables accepted for free, the transfer facilities accept electronic waste and tires for a fee. HHW events are held annually in the planning unit. The Refuse Division has information available on the Cattaraugus County website to inform residents of current events and programs as well as to encourage environmental stewardship and sustainability.

LSWMP Status	The planning unit's approved LSWMP has expired. The planning unit has not submitted a draft LSWMP to DEC.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.174 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.175 shows the flow of waste for the MSW stream.

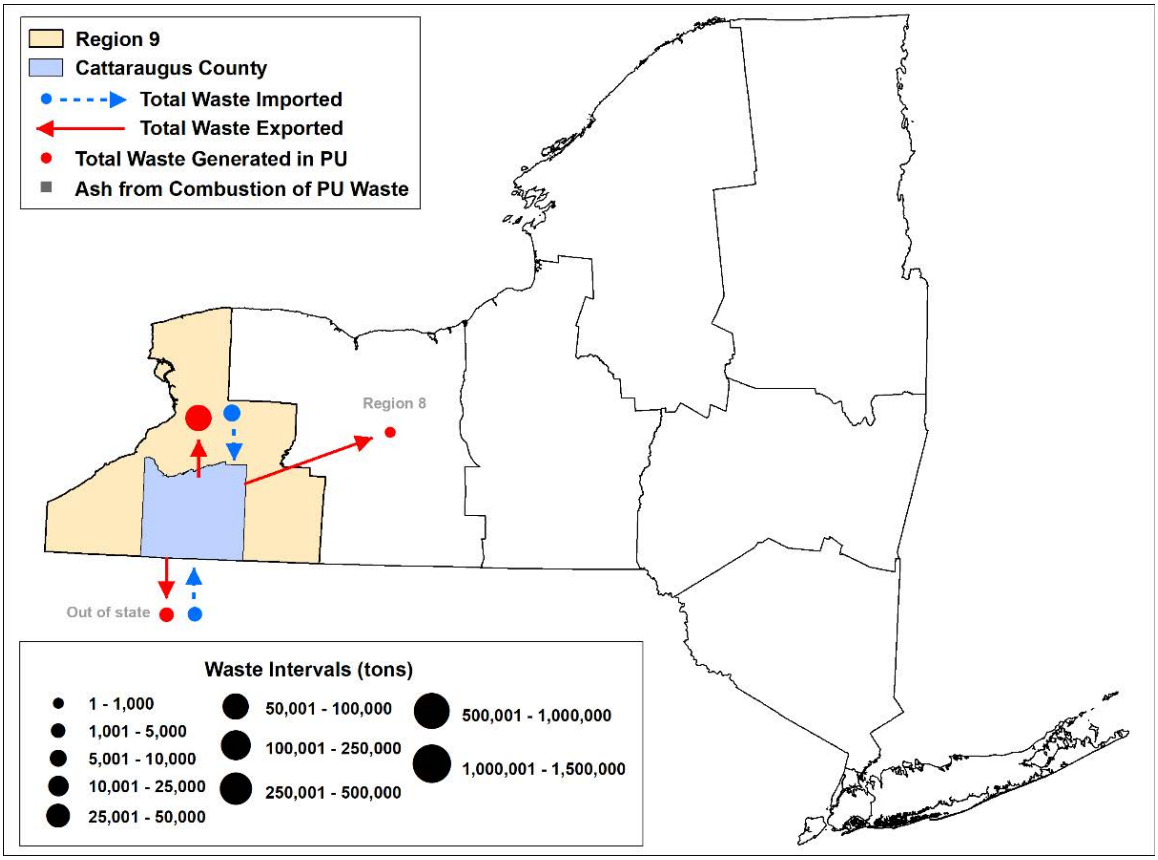


Figure E.174. Cattaraugus County total waste flow

Figure E.174 shows the flow of waste destined for processing or disposal in 2018. About 94% of waste generated in Cattaraugus County was sent to other planning units in Region 9 for disposal. Approximately 5% of waste generated in this planning unit was exported to Pennsylvania, and 1% was sent to Region 8.

Figure E.174 also shows that some waste was imported to Cattaraugus County in 2018. Other planning units in Region 9 contributed about 55% of these imports, and Pennsylvania contributed 45%. Imported waste was brought in to be consolidated before being sent to facilities outside the county for processing or disposal.

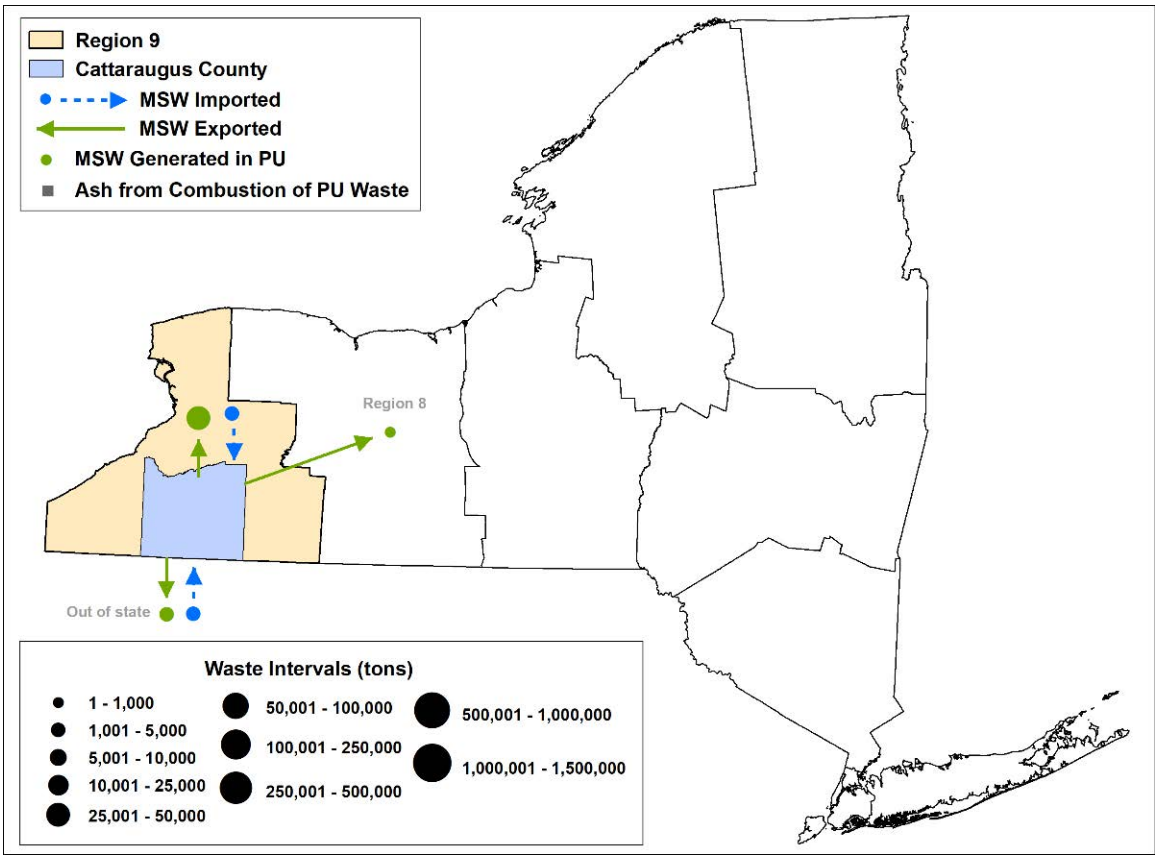


Figure E.175. Cattaraugus County MSW flow

Figure E.175 shows the flow of MSW from this planning unit, not including recovered materials. An estimated 93% of MSW generated in Cattaraugus County in 2018 was sent to other planning units in Region 9 for disposal. Approximately 6% of MSW generated in this county was exported to Pennsylvania, and 1% was exported to Region 8.

MSW was also imported to Cattaraugus County for consolidation before being sent to facilities located outside county for processing or disposal. About 56% of MSW imported to this planning unit came from other planning units in Region 9, and 44% came from Pennsylvania.

The following table provides information on all waste and recovered materials generated in Cattaraugus County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.71. Cattaraugus County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	42,750	6,700**
C&D Debris	18,500	400
Industrial	1,900	0
Biosolids	2,500	0
Total	65,650	7,100
MSW disposal rate	3.05 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.71 shows that of the 72,750 tons of waste generated in this planning unit in 2018, 65,650 tons, or 90%, were processed or disposed of, and 7,100 tons, or 10%, were recovered through CDDHRFs and RHRFs.

Table E.71 shows that MSW accounted for 68% of all waste from this planning unit in 2018. Of that amount, about 86% was processed or disposed of, and 14% was recovered through RHRFs. C&D debris accounted for 26% of all waste from this planning unit. Of the C&D debris, about 98% was processed or disposed of, and 2% was recovered at CDDHRFs. Industrial waste and biosolids each accounted for 3% of the total waste stream in 2018.

Chautauqua County

All municipalities in Chautauqua County are part of the Chautauqua County planning unit. The total estimated population of the county in 2018 was 127,472 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Agriculture is an important industry within the county, which impacts solid waste management within the planning unit. While the planning unit operates many facilities involved in solid waste management, organic waste from farms, wineries, and other agricultural businesses can

also be land applied or composted. The Chautauqua County Landfill is located in this planning unit and accepts MSW. Within Chautauqua County, there are also both municipally owned and privately owned transfer facilities, RHRFs, and composting facilities.

LSWMP Status	The planning unit's approved LSWMP expired in 2010. The planning unit is working with DEC to develop a new LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.176 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.177 shows the flow of waste for the MSW stream.

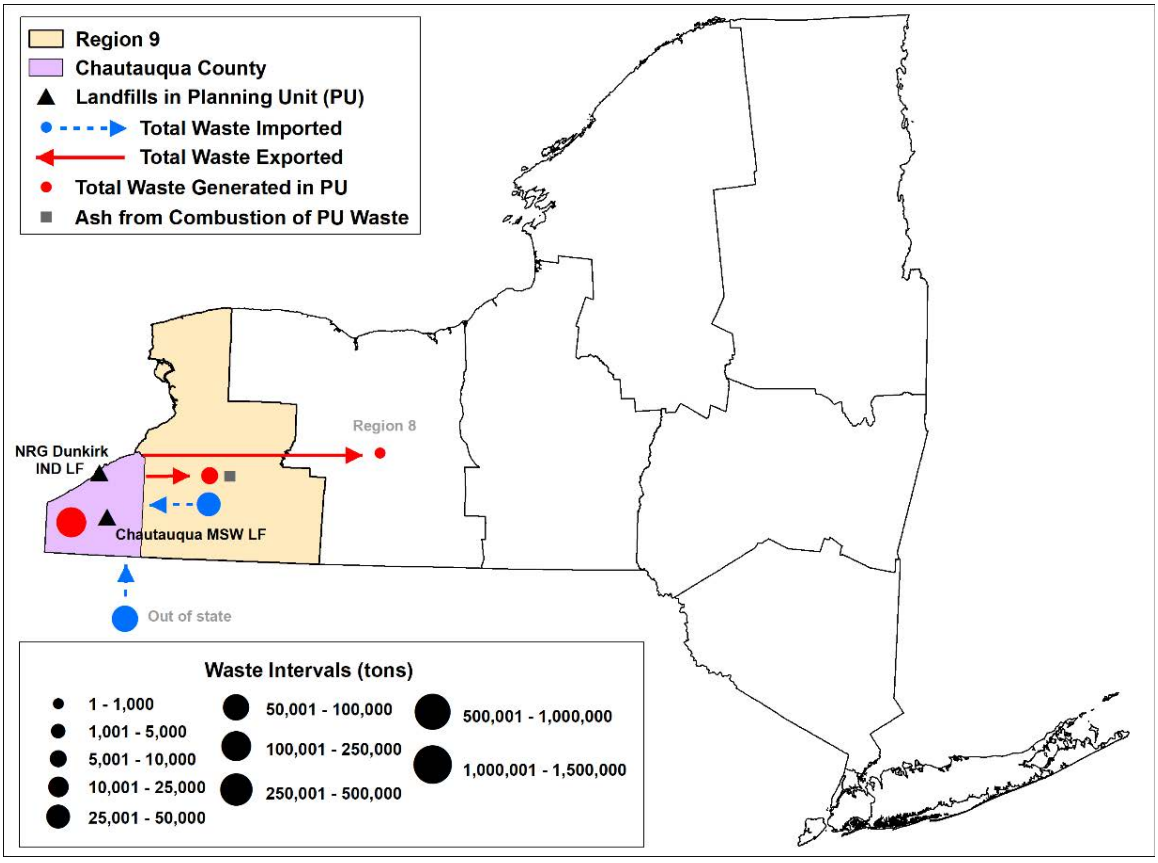


Figure E.176. Chautauqua County total waste flow

Figure E.176 shows the flow of all waste streams, not including recovered materials, within Chautauqua County in 2018. About 94% of waste generated in this planning unit was disposed of within the planning unit. Almost 6% of waste was sent to other planning units in Region 9, and less than 1% was exported to Region 8.

Figure E.176 also shows that waste was imported to Chautauqua County in 2018. About 72% of waste imported to this planning unit was from out of state. The other 28% was from other planning units in Region 9. Of the waste imported from other states, over 99% originated in Pennsylvania. The remaining out-of-state imports came from Massachusetts, Maine, and Ohio.

Although there are no combustion facilities in Chautauqua County, waste from this planning unit was exported and processed at a combustion facility in another planning unit in Region 9. About 42% of the ash remaining after combustion was sent to Modern Landfill for use as AOC. The other 58% was either used as AOC or disposed of at the Allied Waste Niagara Falls Landfill.

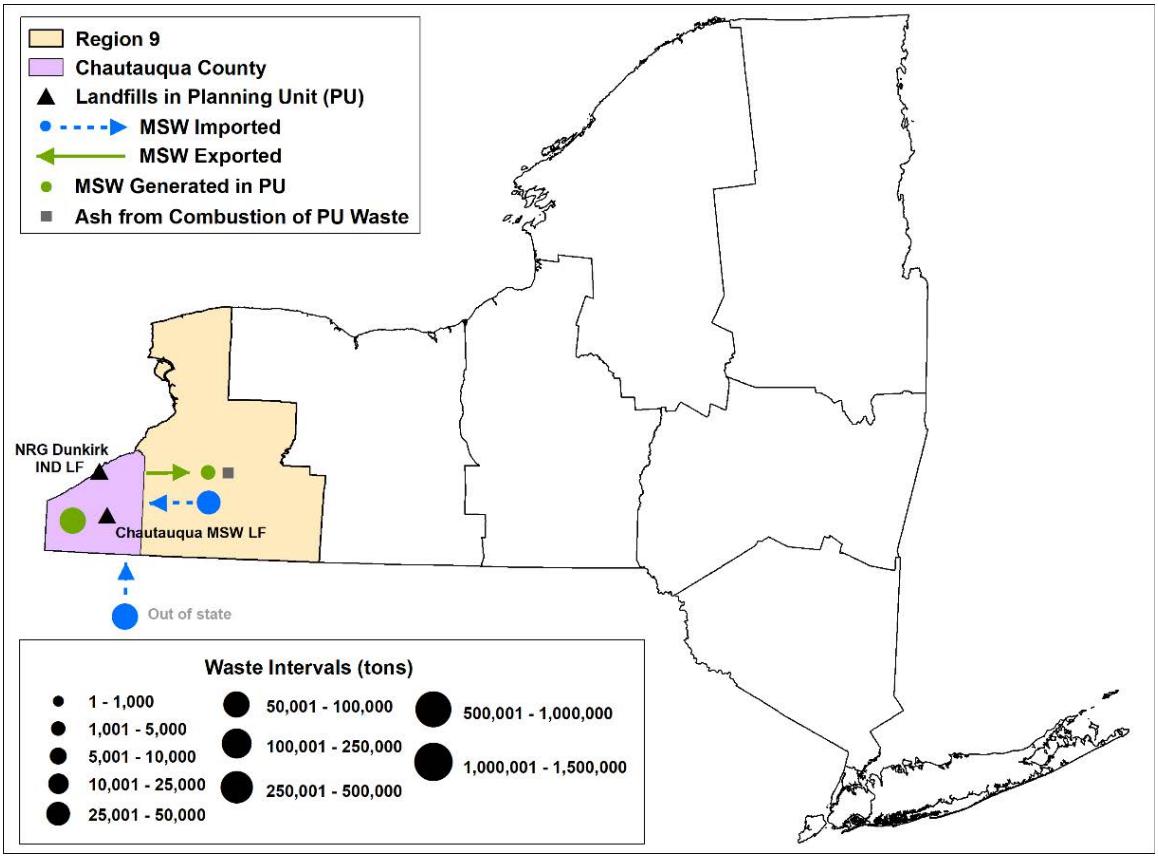


Figure E.177. Chautauqua County MSW flow

Figure E.177 shows that about 96% of MSW generated in this planning unit in 2018 was disposed of within the planning unit. The remaining 4% of MSW was exported to other planning units in Region 9 for processing or disposal.

MSW was also imported to this planning unit. About 72% of imported MSW originated in other states. The remaining 28% came from other planning units in Region 9. Over 99%

of MSW imported from other states came from Pennsylvania. A small amount came from Ohio.

MSW from Chautauqua County was exported and processed at a combustion facility in another planning unit in Region 9. About 42% of ash remaining after combustion was sent to Modern Landfill for use as AOC. The other 58% was either used as AOC or disposed of at the Allied Waste Niagara Falls Landfill.

The following table provides information on all waste and recovered materials generated in Chautauqua County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.72. Chautauqua County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	88,500	7,500**
C&D Debris	43,100	59,100
Industrial	14,200	30
Biosolids	15,100	0
Total	160,900	66,630
MSW disposal rate	3.80 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.72 shows an estimated 227,530 tons of waste were generated in 2018 that were processed, disposed of, or recovered. Of this waste, 160,900 tons, or 71%, were destined for processing at combustion facilities or for disposal at landfills. The other 66,630 tons, or 29%, were recovered through RHRFs or CDDHRFs.

Table E.72 shows the MSW portion of the waste stream accounted for about 42% of all waste generated in 2018. That value corresponds with 96,000 tons of MSW. Of MSW generated, about 92% was processed or disposed of and the remaining 8% was recovered through RHRFs. C&D debris made up about 45% of the total waste stream. Of that amount, 58% was recovered through CDDHRFs, and 42% was sent for processing at combustion facilities or disposed of at landfills. Industrial waste and biosolids accounted for 6% and 7%, respectively, of the waste stream.

Niagara County

The Niagara County planning unit serves all municipalities within the county. The county had an estimated population of 210,060 in 2018 (Census, 2019). While there are suburban areas within the planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. Niagara County originally formed the Niagara County Refuse Disposal District in 1968, which covered most of the county. Since then, there have been changes in membership and structure, and the Niagara County planning unit now encompasses all municipalities within the county. There are two privately owned MSW landfills within this county: Modern Landfill and Allied Waste Niagara Falls Landfill. The Allied Waste Niagara Falls Landfill is unique in that it only receives non-putrescible solid waste. Additionally, Covanta Niagara, a combustion facility, is located in this planning unit. The Somerset Industrial Landfill is another privately owned landfill located in this planning unit. Some municipally owned facilities in Niagara County include a transfer facility and a composting facility. The planning unit also regularly holds HHW collection events for residents.

LSWMP Status	The planning unit is working with DEC to develop a LSWMP.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.178 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.179 shows the flow of waste for the MSW stream.

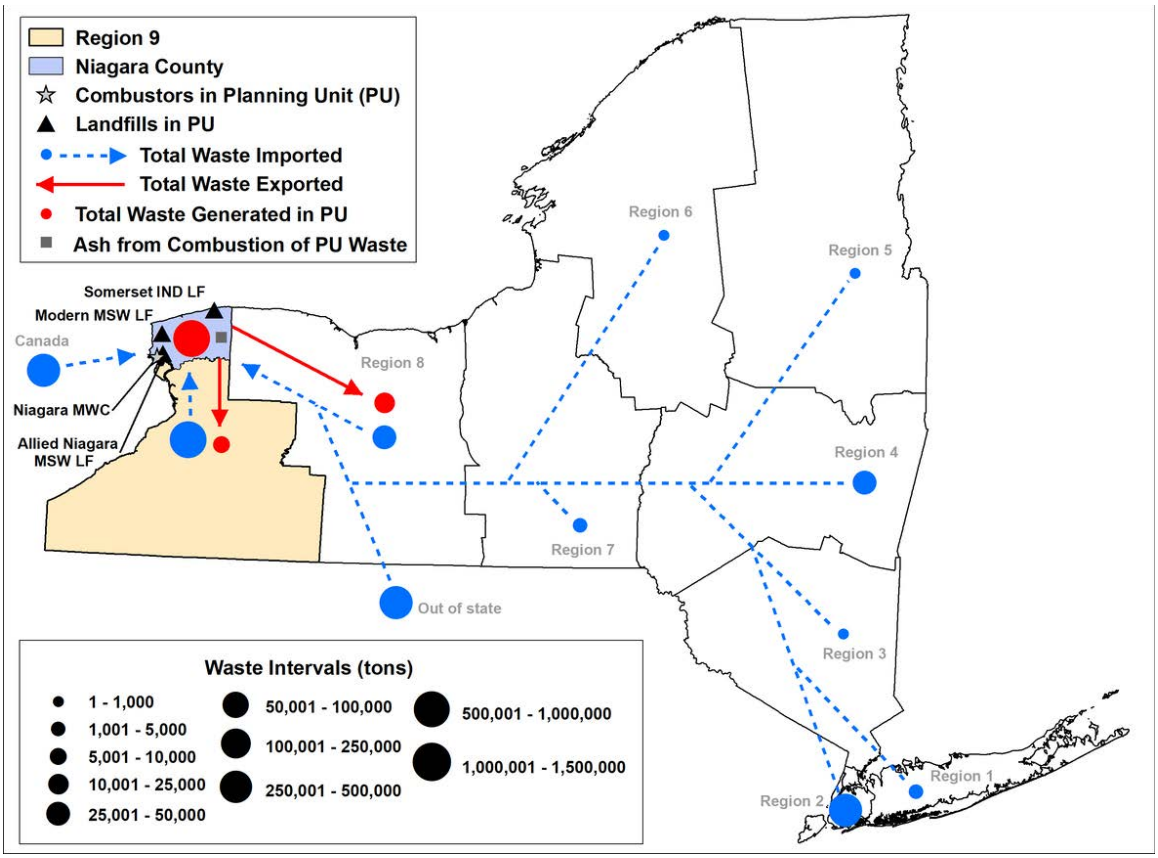


Figure E.178. Niagara County total waste flow

Figure E.178 shows the flow of all waste types destined for processing or disposal in 2018. As shown in the figure, about 96% of waste generated in Niagara County was processed or disposed of within the planning unit. About 2% of waste from this planning unit was sent to other planning units in Region 9, and 2% of waste was exported to Region 8.

Figure E.178 also shows waste was imported to this planning unit. Niagara County imported waste from each region in NYS as well as from other states and Canada. About 33% of waste imported to Niagara County originated in other planning units in Region 9. About 28% of imported waste came from Canada. Imports from Regions 2, 4, and 8 accounted for 18%, 2%, and 2%, respectively, of imported waste. Regions 1, 3, 5, 6, and 7 each accounted for less than 1% of imported waste. Imports from other states accounted for 17% of imported waste.

About 64% of waste imported to Niagara County from other states was industrial waste. Approximately 36% of waste imported from other states was C&D debris, and minimal amounts were MSW. Of the waste imported from other states, 24% came from Maine and 23% from Connecticut. An additional 18%, 16%, and 7% came from Michigan, Massachusetts, and New Jersey, respectively. The remaining waste imported from a variety of other states amounted to less than 5% of the out-of-state imports.

About 22% of the total waste from this planning unit was combusted at the Niagara MWC. This waste that was destined for processing was made up of MSW and industrial waste. About 17% of MSW and 31% of industrial waste generated in Niagara County in 2018 was sent to the Niagara MWC. Ash that remained after combustion was sent to landfills within this planning unit. About 42% of ash remaining after combustion was sent to Modern Landfill for use as AOC. The other 58% was either used as AOC or disposed of at the Allied Waste Niagara Falls Landfill.

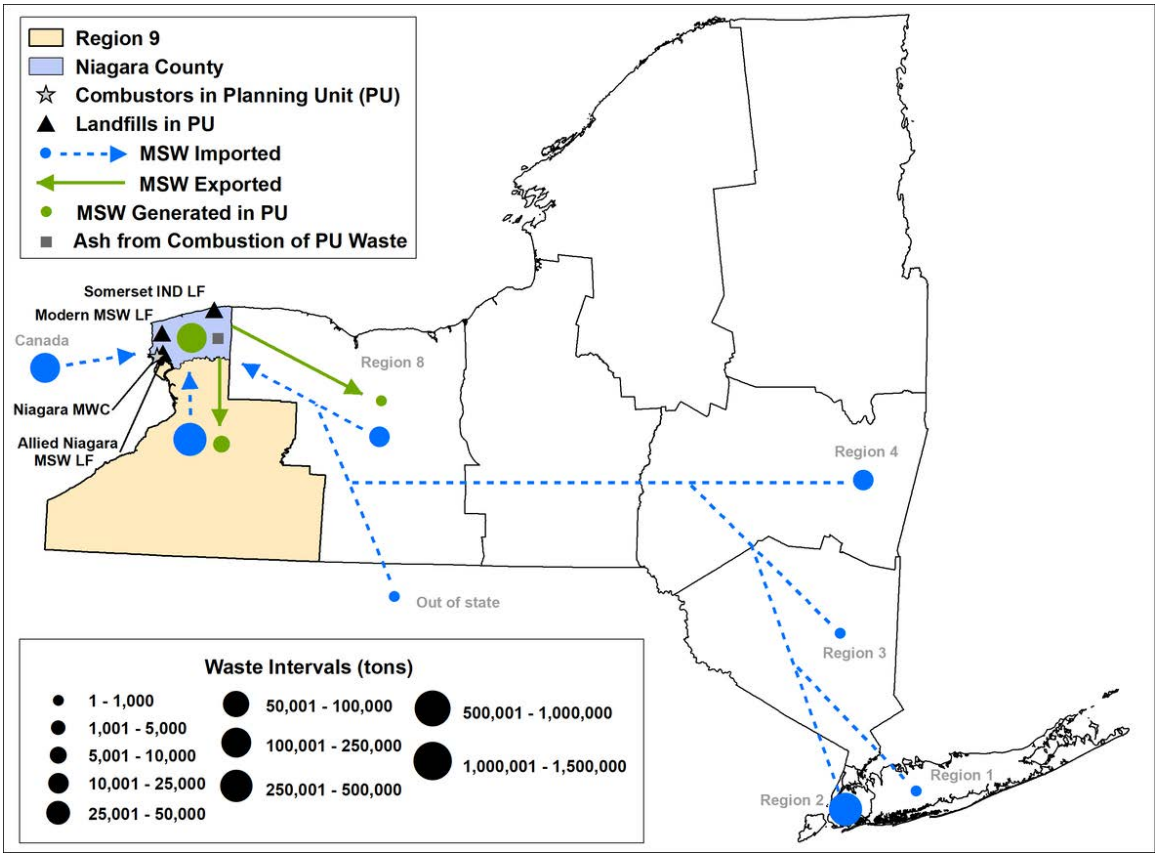


Figure E.179. Niagara County MSW flow

Figure E.179 shows the flow of MSW that was destined for processing or disposal in 2018. About 97% of MSW generated in Niagara County was processed or disposed of within the planning unit. About 3% was exported to other planning units in Region 9, and less than 1% was sent to Region 8.

Figure E.179 also shows that MSW was imported to this planning unit in 2018. MSW was imported from Regions 1, 2, 3, 4, and 9, from other planning units in Region 9, out-of-state, and Canada. About 42% of MSW imported to this county came from other planning units in Region 9. Twenty-four percent of imported MSW originated in Canada, and 29% came from Region 2. Regions 4 and 8 each contributed about 2% of the imported MSW. Regions 1 and 3, and Ohio each contributed less than 1%.

About 17% of MSW from this planning unit was combusted at the Niagara MWC. Ash that remained after combustion was either sent to the Allied Niagara MSW Landfill or the Modern MSW Landfill. About 58% of ash was sent to Allied Niagara MSW Landfill for use as AOC or to be disposed of. The other 42% was used as AOC at Modern MSW Landfill.

The following table provides information on all waste and recovered materials generated in Niagara County by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.73. Niagara County waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	176,000	65,700**
C&D Debris	32,700	136,800
Industrial	291,000	0
Biosolids	36,500	0
Total	536,200	202,500
MSW disposal rate	4.59 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

Table E.73 shows that about 738,700 tons of waste were processed, disposed of, or recovered in Niagara County in 2018. Of that waste, 536,200 tons, or 73%, were destined for processing at combustion facilities or for disposal at landfills, and 202,500 tons, or 27%, were recovered through RHRFs and CDDHRFs.

The waste summary table also shows that 241,700 tons of MSW were generated in 2018 in this planning unit, accounting for 33% of waste generated in Niagara County. Of MSW generated in 2018, 73% was sent for processing or disposal, and 27% was recovered through RHRFs. C&D debris accounted for 23% of waste generated in 2018. Of the C&D generated, 81% was recovered by CDDHRFs and 19% was sent to combustion facilities or landfills for processing or disposal. Industrial waste and biosolids accounted for 39% and 5%, respectively, of all waste generated in 2018.

Northeast Southtowns Solid Waste Management Board (NEST)

As shown in Figure E.167, the NEST planning unit covers the majority of municipalities in Erie County. The only Erie County municipalities that are not part of the NEST planning unit are the six communities listed below in the NWCB planning unit, the Cattaraugus reservation, and the City of Buffalo. The estimated population of this planning unit was 427,813 in 2018 (Census, 2019). While there are suburban areas within this planning unit, the average population density was less than 325 people per square mile, meaning this planning unit had a population characteristic of a rural population density distribution. NEST includes the privately operated Chaffee Landfill. Some municipalities within this planning unit collect yard trimmings for composting. Residents have the opportunity twice a year to dispose of HHW at HHW collection events. The planning unit also participates in county-wide education programs organized by the Erie County Department of Environment and Planning. These programs inform residents of proper ways to recycle as well as what to do with materials that can be difficult to recycle or dispose of, such as HHW or electronics waste.

LSWMP Status	The planning unit's LSWMP is approved through 2029.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.180 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.181 shows the flow of waste for the MSW stream.

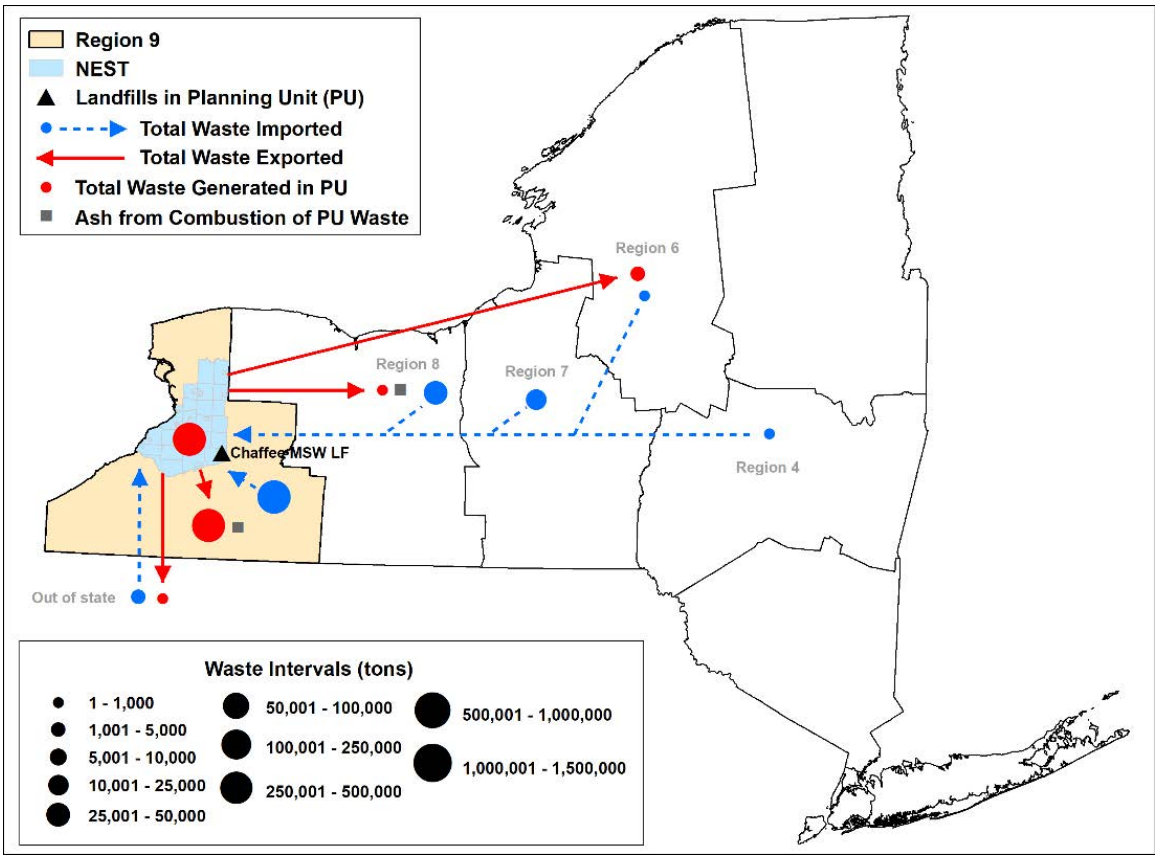


Figure E.180. NEST total waste flow

Figure E.180 shows the flow of waste destined for processing or disposal in 2018. As shown, about 42% of waste generated in the NEST planning unit was disposed of within the planning unit. About 58% of waste generated was sent to other planning units in Region 9 for processing or disposal. Less than 1% of the waste from this planning unit was exported to Regions 6 and 8, and out of state. Pennsylvania and Ohio were the only states to receive waste from this planning unit. All waste sent to Region 6 was C&D debris destined for a combustion facility for processing.

As shown in Figure E.180, waste was also imported to the NEST planning unit, from Regions 4, 6, 7, and 8, as well as other planning units in Region 9 and out-of-state. About 87% of waste imported to this planning unit originated in other planning units in Region 9. Another 7% was from Region 8, about 4% from Region 7, and 1% was from other states. Regions 4 and 6 each contributed less than 1% of this planning unit's imports. About 90% of waste imported from out-of-state facilities was industrial waste, 10% was C&D debris, and less than 1% was MSW.

Although there are no combustion facilities in this planning unit, MSW and C&D debris were exported for processing at combustion facilities. MSW was combusted at a facility in another planning unit in Region 9. The C&D debris was combusted at a facility in Region 6. About 58% of ash remaining after combustion was sent to the Allied Waste Niagara Falls Landfill for use as AOC or for disposal. About 42% was used as AOC at

the Modern Landfill. All the ash remaining after combustion of the C&D debris from this planning unit was sent to a landfill in Region 8 for disposal.

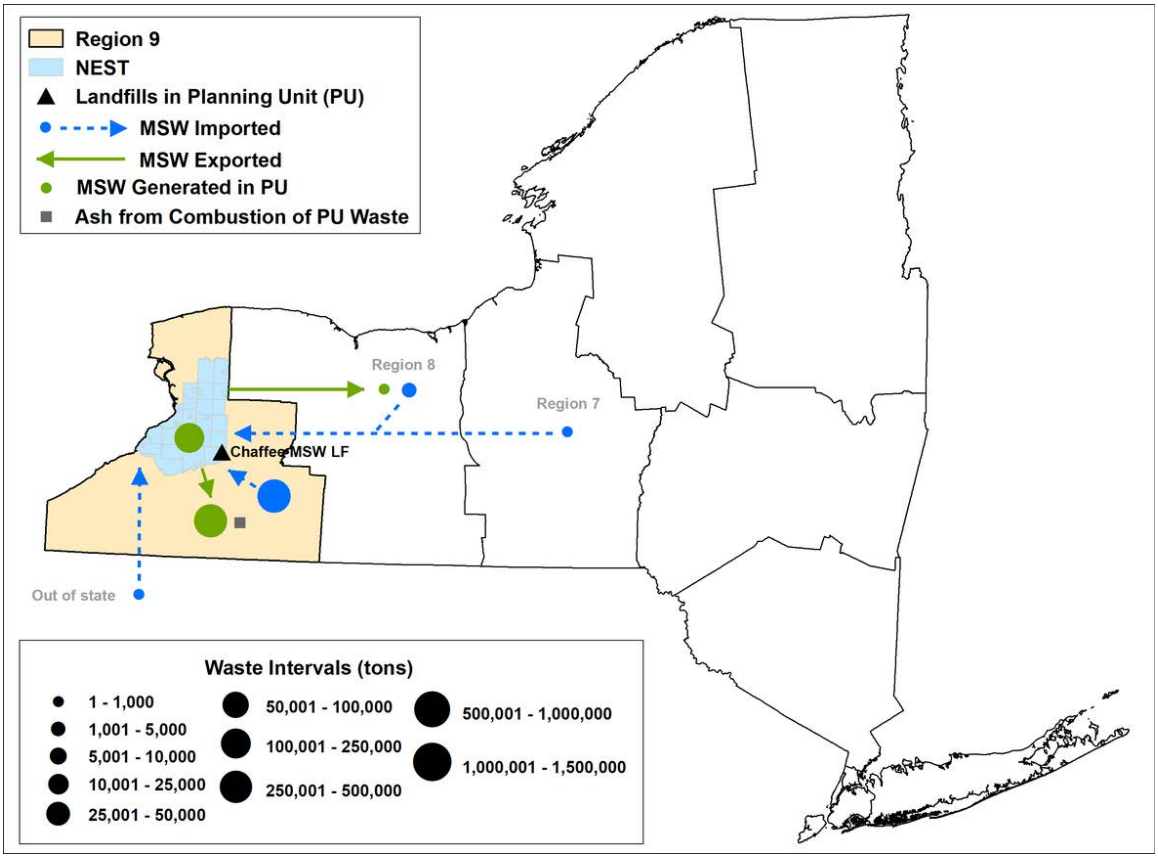


Figure E.181. NEST MSW flow

Figure E.181 shows the flow of MSW that was destined for processing or disposal. As shown, about 32% of MSW, not including recovered materials, that was generated in this planning unit was disposed of within the planning unit. About 68% of MSW generated by NEST was sent to other planning units in Region 9 for processing or disposal. Small amounts of waste were also exported to Region 8.

MSW was also imported to the NEST planning unit, as shown in Figure E.181. About 99% of imported MSW came from other planning units in Region 9. Less than 1% came from Regions 7 and 8, and from Pennsylvania.

MSW from this planning unit was sent to a combustion facility in another planning unit in Region 9 for processing. About 58% of ash remaining after this MSW was combusted was sent to Allied Niagara MSW Landfill to be used as AOC or disposed of. The other 42% was used as AOC at Modern Landfill.

The following table provides information on all waste and recovered materials generated in the NEST planning unit by waste type. It differentiates between the tons of waste

processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.74. NEST waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	439,000	64,500**
C&D Debris	178,500	228,755
Industrial	58,300	20
Biosolids	33,317	0
Total	709,190	293,275
MSW disposal rate	5.62 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.74, about 1,002,392 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 709,117 tons, or about 71%, were destined for processing at a combustion facility or for disposal at a landfill. The other 293,275 tons, or 29%, were recovered through CDDHRFs or RHRFs.

Table E.74 also shows that about 503,500 tons of MSW were generated in 2018, which accounted for 50% of all waste generated in the planning unit that year. Of that 503,500 tons of MSW, 13% was recovered through RHRFs, and the remaining 87% was processed or disposed of. C&D debris accounted for 41% of the total waste from 2018. About 44% of C&D debris generated in 2018 was disposed of at a landfill or processed at a combustion facility, with the remaining 56% recovered through CDDHRFs. Industrial waste and biosolids made up 6% and 3%, respectively, of all waste generated in 2018.

Northwest Communities Solid Waste Management Board (NWCB)

The NWCB planning unit consists of the municipalities of the Town of Grand Island, Town and City of Tonawanda, Village of Kenmore, Town of Amherst, and Village of Williamsville. These municipalities are located in the northwestern portion of Erie County. In 2018, the estimated population of this planning unit was 306,052 (Census, 2019). While there are urban areas within the planning unit, the average population density was between 325 people per square mile and 5,000 people per square mile, meaning this planning unit had a population characteristic of a suburban population

density distribution. Some municipalities in this planning unit contract with private companies for MSW and recycling collection while other municipalities have their own staff that collect MSW and recycling. Residents in this planning unit have access to twice-a-year HHW collection events. The NRG Huntley Landfill is a privately owned industrial waste landfill located in this planning unit. Like the NEST planning unit, NWCB participates in education programs organized by the Erie County Department of Environment and Planning. These programs inform residents of proper ways to recycle as well as what to do with materials that can be difficult to recycle or dispose of, such as HHW or electronics waste.

LSWMP Status	The planning unit's LSWMP is approved through 2029.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the planning unit in 2018. Figure E.182 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.183 shows the flow of waste for the MSW stream.

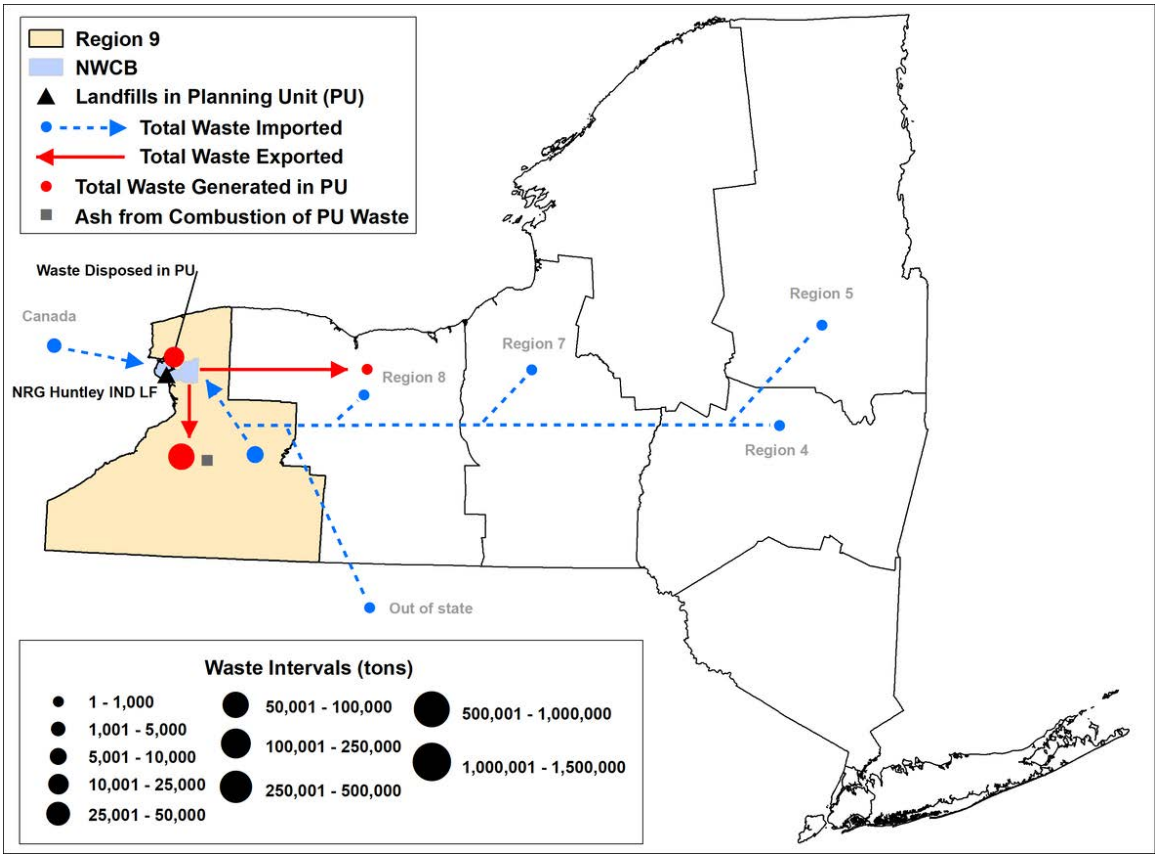


Figure E.182. NWCB total waste flow

Figure E.182 the flow of waste destined for processing or disposal in 2018. About 11% of waste generated in this planning unit is disposed of within the planning unit. All waste was industrial waste that was disposed of at the NRG Huntley Landfill. About 89% of waste generated by NWCB was sent to other planning units in Region 9 for processing or disposal. Less than 1% of waste was exported to Region 8.

As shown in Figure E.182, waste was imported to NWCB from Regions 4, 5, 7, and 8. Waste from out-of-state, Canada, and other planning units in Region 9 was also imported. Waste from other planning units in Region 9 accounted for 47% of imported waste. About 36% of imported waste originated in Canada, while 7% was from out of state. Regions 5, 7, and 8 supplied about 2%, 1%, and 5%, respectively, of imported waste. Small amounts of waste were imported from Region 4.

All waste imported to this planning unit from out of state was industrial waste. About 45% came from New Jersey, 21% from Pennsylvania, 19% from Connecticut, and 7% from Minnesota. The remaining states that sent waste to this planning unit each accounted for less than 5% of the out of state waste.

Although there is not a combustion facility in this planning unit, waste from NWCB was sent to another planning unit in Region 9 to be combusted. About 58% of ash that remained after combustion was sent to Allied Niagara MSW Landfill to be disposed of or used as AOC. The remaining 42% was used as AOC at Modern Landfill.

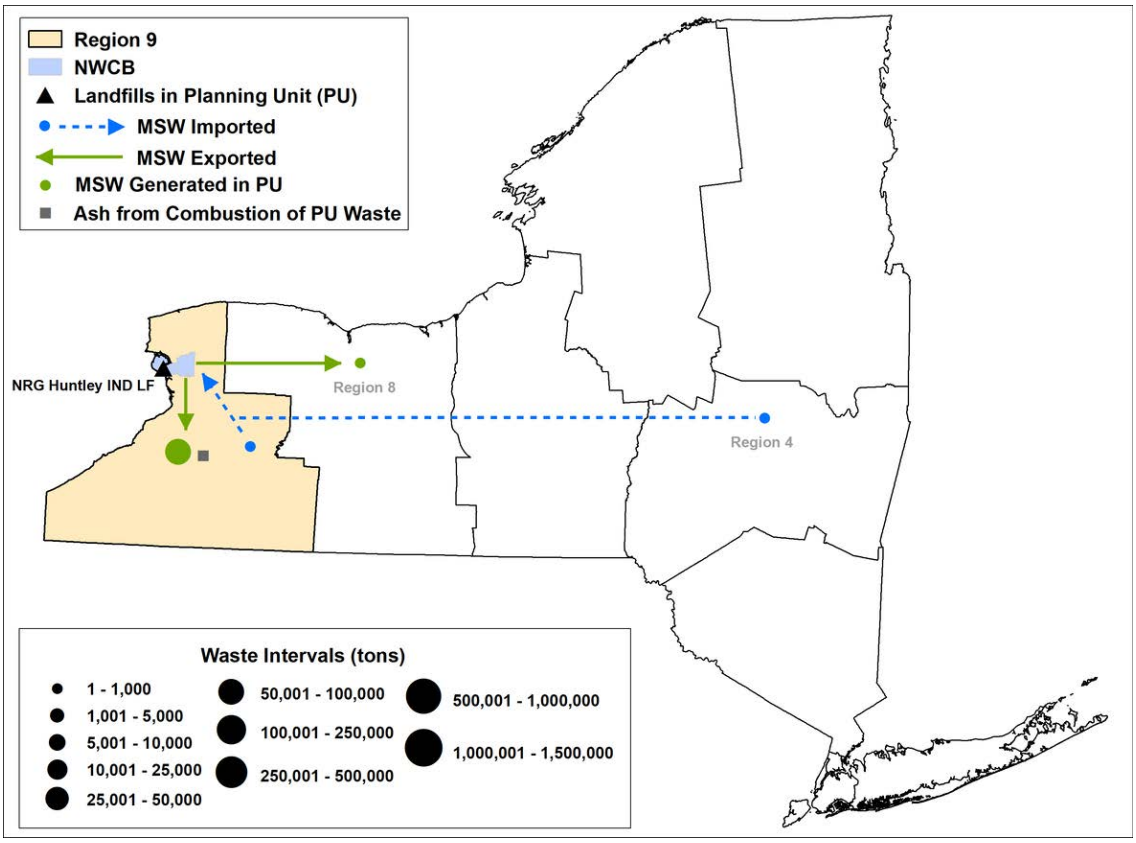


Figure E.183. NWCB MSW flow

Figure E.183 shows the MSW destined for processing or disposal in 2018. No MSW was disposed of within the planning unit, as 99% of MSW generated was sent to other planning units in Region 9 for processing or disposal. The remaining MSW was exported to Region 8.

As shown in Figure E.183, some MSW was imported to this planning unit. This MSW was not disposed of within NWCB. It passed through this planning unit for consolidation and transfer to facilities outside the planning unit for processing or disposal. About 59% of MSW imported to this planning unit came from other planning units in Region 9. The other 41% came from Region 4.

MSW from NWCB was sent to another planning unit in Region 9 to be combusted. About 58% of ash that remained after combustion was sent to Allied Niagara MSW Landfill to be disposed of or used as AOC. The remaining 42% was used as AOC at Modern Landfill.

The following table provides information on all waste and recovered materials generated in the NWCB planning unit by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.75. NWCB waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	87,000	20,300**
C&D Debris	2,300	85,800
Industrial	12,200	19,800
Biosolids	3,988	0
Total	105,488	125,900
MSW disposal rate	2.04 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.75, about 231,388 tons of waste generated in 2018 were processed, disposed of, or recovered. Of that amount, 105,488 tons, or about 46%, were destined for processing at combustion facilities or for disposal at landfills. The other 125,900 tons, or 54%, were recovered through CDDHRFs or RHRFs.

Table E.75 also shows that about 107,300 tons of MSW were generated in 2018, which accounted for 46% of all waste generated in the planning unit that year. Of that 107,300

tons of MSW, 19% was recovered through RHRFs, and the remaining 81% was processed or disposed of. C&D debris accounted for 38% of the total waste from 2018. Only about 3% of C&D debris generated in 2018 was sent for processing at a combustion facility or for disposal at a landfill, with the remaining 97% recovered through CDDHRFs. Industrial waste and biosolids made up 14% and 2%, respectively, of all waste generated in 2018.

Erie County - Non-affiliated municipality

There is one non-affiliated municipality within Erie County: the City of Buffalo. As shown in Figure E.167, the City of Buffalo is in the northwest quadrant of Erie County. It is bordered by the NEST planning unit toward the south, the NWCB planning unit toward the north, and Lake Erie toward the west.

City of Buffalo

The City of Buffalo is not affiliated with a planning unit. Instead of having a LSWMP, the city has a CRA. As of 2018, the City of Buffalo had an estimated population of 255,781 people (Census, 2019). The city is classified as an urban area, meaning the population density is greater than 5,000 people per square mile. The City provides curbside collection for MSW and contracts with a private waste hauler for recycling. Residents can also drop off waste at the East Side Transfer Facility. The City of Buffalo runs HHW collection events. For other kinds of recycling or waste collection, such as yard trimmings, electronics waste, and waste tires, the City has contracted with private companies. In addition to waste and recycling collection, the City also has a marketing and education campaign called “34 and More” with the goal of achieving a 34% landfill diversion rate.

CRA Status	The municipality's CRA is approved through 2028.

The following figures depict the flow of waste, not including recovered materials, generated in and imported to the municipality in 2018. Figure E.184 represents the flow of all waste destined for processing at combustion facilities and for disposal at landfills, including MSW, C&D debris, industrial waste, and biosolids. Figure E.185 shows the flow of waste for the MSW stream.

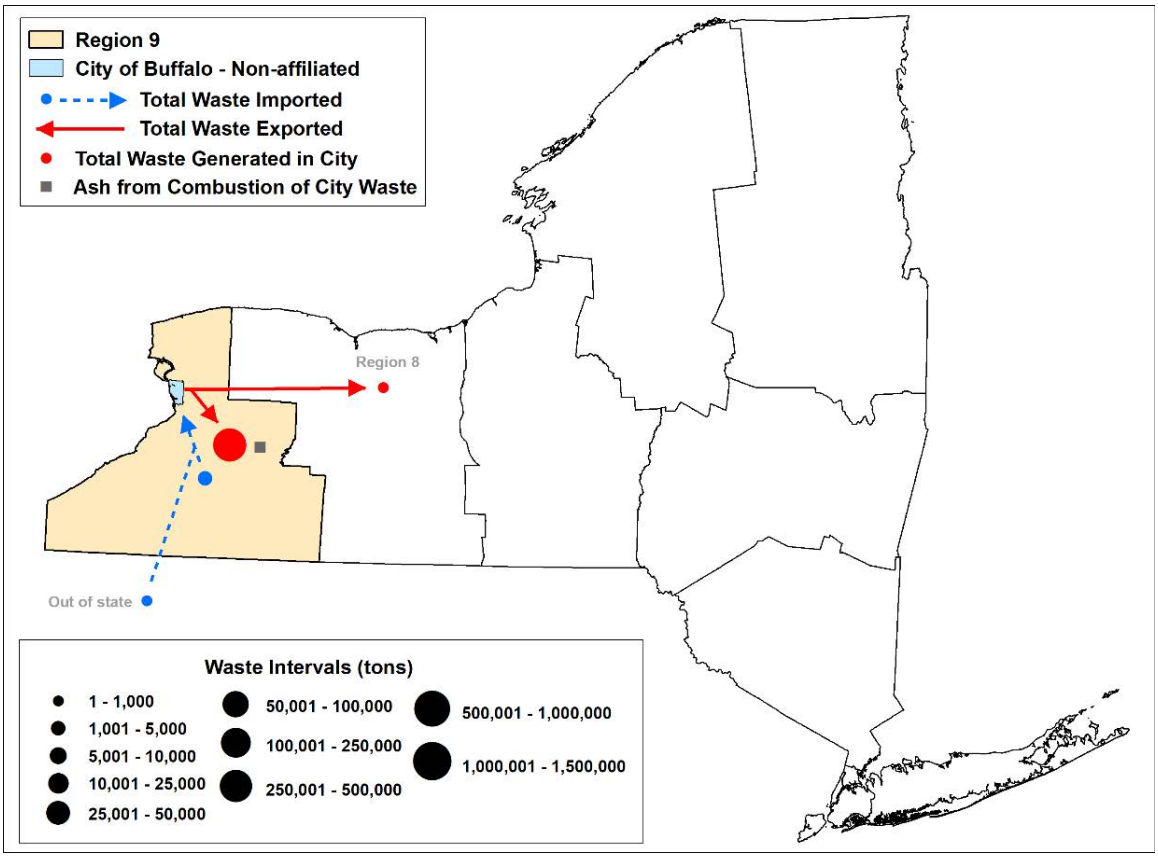


Figure E.184. City of Buffalo total waste flow

Figure E.184 shows the flow of waste generated destined for processing or disposal in 2018. Since there are no processing or disposal facilities within the city of Buffalo, all waste generated was to be sent to facilities in other planning units for processing or disposal. About 99% of waste from this municipality was sent to other planning units in Region 9. Less than 1% was exported to Region 8.

Some waste also passed through the city of Buffalo for consolidation and transfer to facilities outside the city for processing or disposal. This waste is shown as imports in Figure E.184. About 99% of waste that was imported came from other planning units in Region 9, and less than 1% came from out of state.

Although there is no combustion facilities in the city of Buffalo, waste was sent to another planning unit in Region 9 to be combusted. About 58% of ash that remained after combustion was sent to Allied Niagara MSW Landfill to be disposed of or used as AOC. The remaining 42% was used as AOC at Modern Landfill.

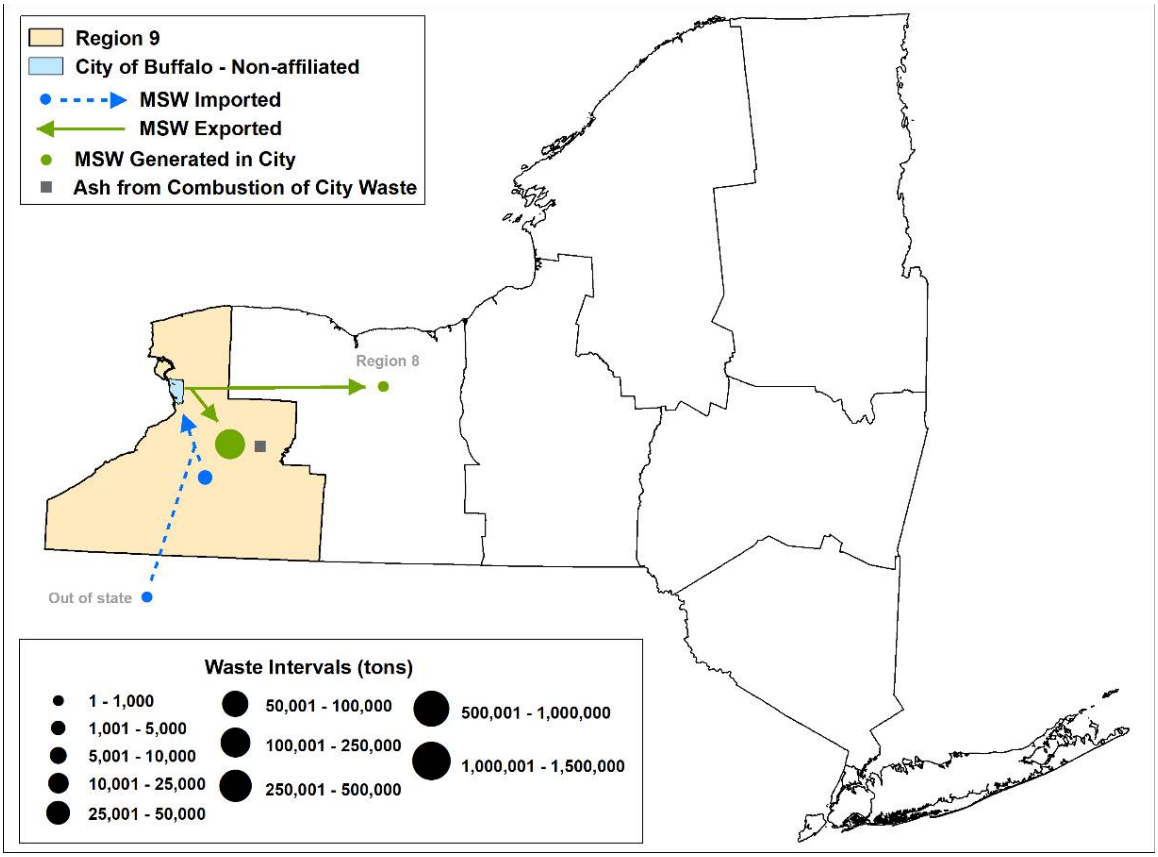


Figure E.185. City of Buffalo MSW flow

Figure E.185 shows the flow of MSW that was destined for processing or disposal in 2018. Over 99% of MSW produced in this municipality was processed or disposed of in other areas of Region 9. Less than 1% was exported to Region 8.

While no MSW was processed or disposed of within this municipality, Figure E.185 shows some MSW imported. MSW from other planning units in Region 9 and from out of state passed through the city of Buffalo for consolidation and transfer to facilities outside the city for processing or disposal.

Although there is no combustion facilities in the city of Buffalo, waste from the city was sent to another planning unit in Region 9 to be combusted. About 58% of ash that remained after combustion was sent to Allied Niagara MSW Landfill to be disposed of or used as AOC. The remaining 42% was used as AOC at Modern Landfill.

The following table provides information on all waste and recovered materials generated in the City of Buffalo by waste type. It differentiates between the tons of waste processed at combustion facilities or disposed of at landfills, and the tons of materials recovered through CDDHRFs or RHRFs.

Table E.76. City of Buffalo waste summary

Type of Waste*	Tons Disposed	Tons Recovered
MSW	238,000	64,000**
C&D Debris	35,300	72,000
Industrial	1,200	550
Biosolids	48,622	0
Total	323,122	136,550
MSW disposal rate	5.10 lbs/person/day	

* The heavy metal category is not included in the values in this table.

** The tons of recovered MSW do not include the amount of material recovered through the organics recycling facilities.

As shown in Table E.76, about 459,672 tons of waste generated in Buffalo in 2018 were processed, disposed of, or recovered. Of that amount, 323,122 tons, or 70%, were destined for processing at a combustion facility or for disposal at a landfill. The remaining 136,550 tons, or 30%, were recovered by CDDHRF or RHRF facilities.

Table E.76 shows that 302,000 tons of MSW were generated in 2018, which was about 66% of all waste generated in Buffalo that year. Of the 302,000 tons of MSW, 21% was recovered through RHRFs and 79% was processed or disposed of. C&D debris accounted for about 23% of the total waste in 2018. About 67% of C&D debris was recovered through CDDHRFs, while 33% was processed at combustion facilities or disposed of at landfills. Large amounts of asphalt were recovered and recycled back into asphalt product. This process contributed to the high percentage of C&D debris that was recovered in this municipality. Biosolids accounted for approximately 11% of total waste generated. Industrial waste accounted for less than 1% of total waste generated in the city.

Wyoming County - GLOW Region Solid Waste Management Committee

Wyoming County is part of the GLOW Region Solid Waste Management Committee. This planning unit is made up of three member counties: Wyoming County from Region 9 and Genesee and Livingston counties from Region 8. Although Wyoming County is included in the Region 9 waste flow maps and discussion, more detail about its planning unit, including the GLOW waste flow maps and waste summary data, can be found in the Region 8 section.

Appendix F: Local Government Materials Management – Facts and Figures

The New York State Department of Environmental Conservation (DEC) recognizes the value and importance of monitoring data at the local government level. Developing Local Solid Waste Management Plans (LSWMPs) and Comprehensive Recycling Analyses (CRAs) involve improvements to data collection by the local government from planning units and municipalities. This effort allows DEC to gauge the progress made toward statewide goals and objectives, and to identify the need for new programs to help overcome obstacles impeding local governments from achieving their solid waste management goals and objectives.

The facts and figures presented below were developed using data from approximately 1,500 municipalities in New York State. Each municipality's information was gathered using their LSWMP or CRA and their local solid waste management website. The facts and figures illustrate how the residential municipal solid waste (MSW), recyclables, yard trimmings, food scraps, and household hazardous waste (HHW) are managed across the state. In most areas of the state, especially the urban and suburban areas, waste from multi-family residences with more than four units, such as apartment complexes, condominiums, etc., is collected by privately contracted waste collectors who are hired by the property owner. Statewide, 37% of the population resides in multi-family residences of more than four units, and outside of New York City the number is 17% of the population. Accordingly, adjustments for the population living at multi-family residences greater than four units were applied to account for the variation in the MSW and recyclables collection method. The significant exception is New York City, which provides municipal collection for all single-family and multi-family residential waste, regardless of the number of units.

Limited information is available on the management of some of the waste streams from commercial and institutional entities across the state. As a result, the management of waste from these entities is not part of the scope of the facts and figures presented below.

The facts and figures below display the type of services and programs offered by planning units and municipalities in the state to their residents. Some facts and figures illustrate the percentage of the population that has access to specific services and programs. Other facts and figures exhibit the programs and services available in an area without relating it to a percentage of the population. In some cases, these programs have a limited capacity or are available on a first-come, first-served basis, and as a result, do not cover the entirety of the population in the area.

The population information used in this appendix is based on the 2020 population estimates published by the U.S. Census Bureau. The 2020 Census estimated the population of New York State to be 20,201,249. The facts and figures presented below

do not include the state's Indian Nation population, estimated to be 10,852. Also, because DEC Region 2—which consists entirely of New York City—accounts for about 44% of the state's population, and because of the unique level of municipal service the city provides to multi-family residential units, some of the graphs and figures presented below will show the data for the state with and without the New York City population.

Tables 1, 2, and 3 present the data used to generate the following facts and figures.

Residential MSW Collection Method

The collection of residential MSW is managed in several ways across the state.

1. Municipalities can choose to use municipal staff, vehicles, and resources to collect MSW and recyclables. This method is most often provided within the cities, villages, and towns on Long Island.
2. Municipalities can procure the services of private waste collectors to collect MSW and recyclables on behalf of residents. This is common in the state's more suburban areas.
3. Residents may contract directly with a private waste collector for MSW and recyclables. This method is more common in some suburban areas and most rural areas of the state.

Municipalities can also establish special districts for collecting waste and recyclables and set the pricing for these services through bidding and negotiation with private waste collectors. MSW generators in the special districts would then pay the selected waste collector directly. Special waste districts can be used for MSW from residences or MSW from commercial and institutional entities. This is not currently a standard method used in New York State.

In most instances, a combination of these methods is used to collect MSW within a municipality or planning unit. The following figure represents the collection of residential MSW in New York State.

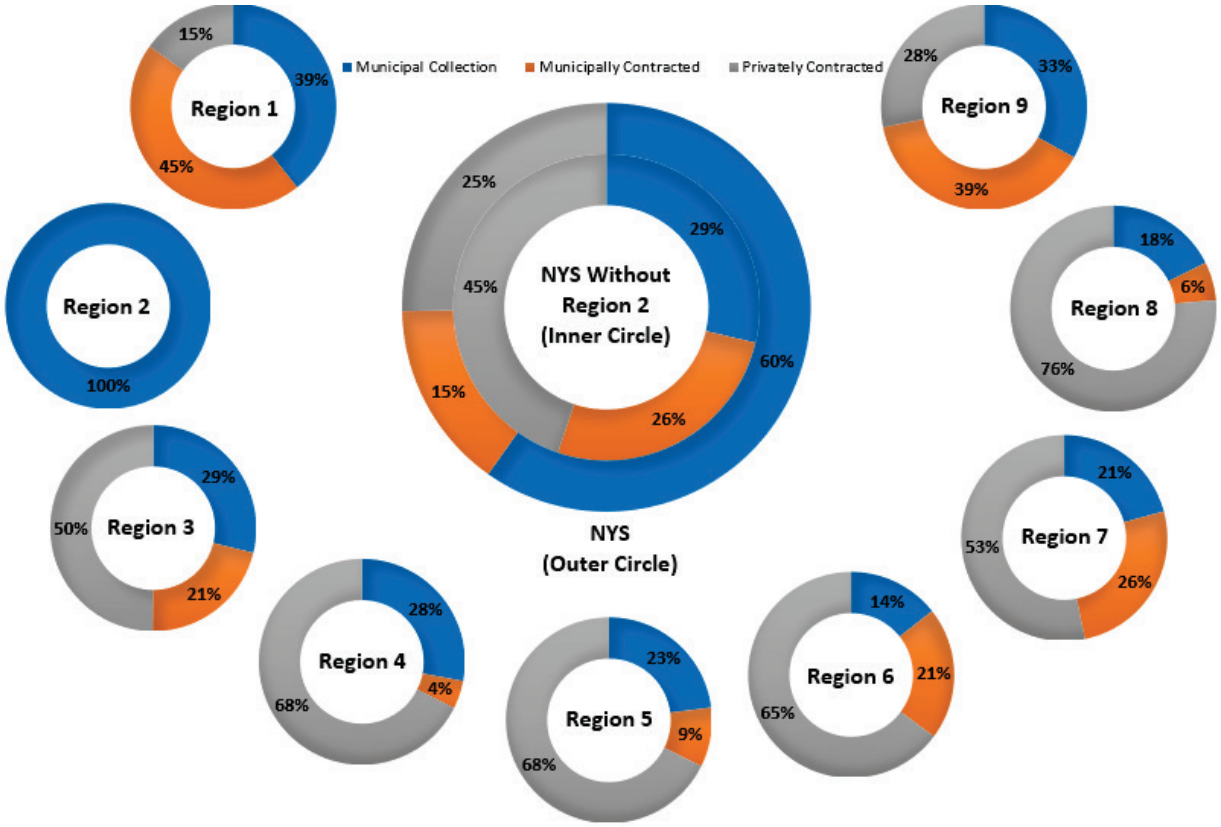


Figure F.1. Distribution of curbside collection methods for residential MSW by percent population

Figure F.1 shows the distribution of the methods used for collection of residential MSW for New York State and for each of the DEC Regions. The circles in the center show this distribution for the entire state, while the outer rings represent each of the nine regions. Because DEC Region 2 (New York City) represents about 44% of the state's population and provides a unique level of municipal service to multi-family residential units, the rings in the center of Figure F.1 depict the information with and without the Region 2 population statistics in the outer and inner circles, respectively.

The outer circle represents the state as a whole and shows that 60% of the state's residents are provided direct municipal curbside collection services for waste and recyclables utilizing a municipal workforce. The remaining 40% of residents are divided between 25% of the property owners procuring collection services directly with private waste collectors and 15% handled by municipalities contracting private waste collection services on behalf of residents.

The inner circle depicts the same information excluding the DEC Region 2 (New York City) population. When the Region 2 population is excluded, the distribution between the three residential collection methods is very different, with 45% of residents covered under collection services contracted directly with private waste collectors, 29% receiving direct municipal curbside collection services, and 26% covered by municipalities contracting private waste collection services on behalf of residents.

Figure 1 also shows the distribution of the curbside collection method used for residential MSW in the nine DEC regions. While the unique nature of New York City's municipal collection service has been described above, the information also shows other less dramatic—but significant—regional differences.

DEC Region 1 (Long Island) provides the second-highest level of direct municipal collection (39%). This percentage is greater than the next highest, DEC Region 9, which includes the City of Buffalo (33%). Region 1 also provides the highest percentage of municipally contracted services by a private waste collector on behalf of their residents (45%), also edging out Region 9 in that category by 6% (39%).

For DEC Regions 3–8, the predominant method of collection for residents is through property owners procuring services directly with private waste collectors. The percentages range between 76% in DEC Region 8, which is in Western New York and includes the City of Rochester, to 50% in DEC Region 3, which is the lower Hudson Valley area and includes Westchester County. In those DEC Regions, direct municipal curbside collection ranges from 29% in DEC Region 3 to 14% in DEC Region 6, which includes a large portion of the Adirondacks but also the City of Utica. The remaining category for curbside collection services is municipally contracted service from a private waste collector on behalf of residents. That collection category in DEC Regions 3–8 ranges from 26% in DEC Region 7, which is in Central New York and includes the City of Syracuse, to 4% in DEC Region 4, which is the Capital District area and includes the Cities of Albany, Schenectady, and Troy.

For the most part, the curbside collection of residential recyclables in a municipality is managed using the same method as the residential waste. However, there are a few municipalities that utilize their own staff for the collection of residential waste, but contract with a private waste collector company for the collection of residential recyclables.

Residential Recycling System

Recycling is the most common means used by local governments to reduce the amount of waste destined to be disposed at landfills or processed at Municipal Waste Combustors (MWCs). Recycling systems vary from one municipality to another based on several factors, including resources, equipment, and infrastructure. In New York State, municipalities rely on a combination of single-stream and dual-stream systems.

Figure F.2 represents the percentage of the population whose recyclables are processed through single-stream and dual-stream recycling systems. The circles in the center show the distribution for the entire state, while the outer rings represent each of the nine DEC regions. Because DEC Region 2 (New York City) represents about 44% of the state's population, the rings in the center of Figure F.2 depict the information with and without the Region 2 population in the outer and inner circles, respectively.

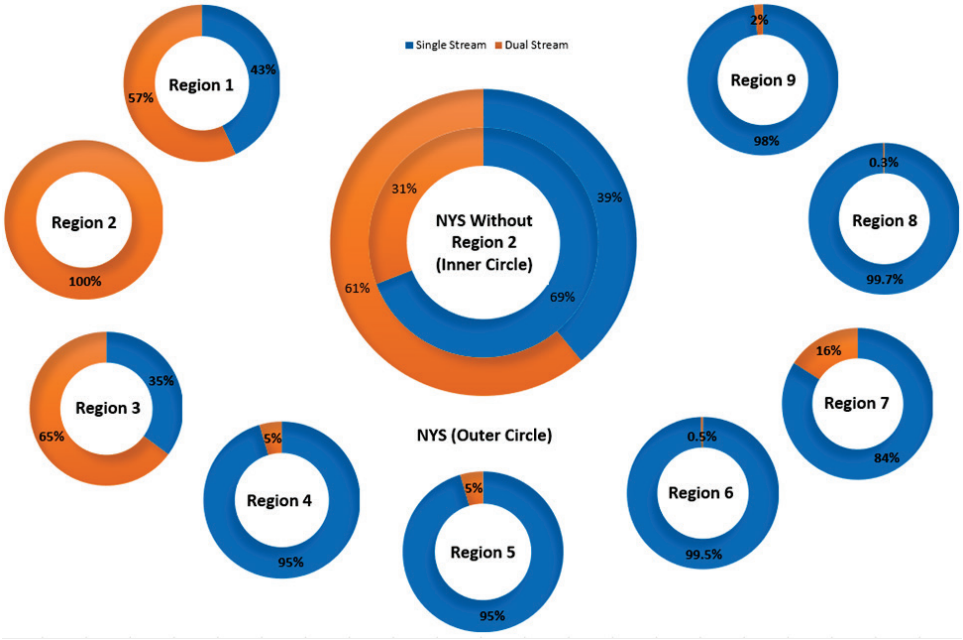


Figure F.2. Distribution of residential recycling programs by percent population

The outer circle represents the state as a whole and shows that 39% of the population's recyclables are collected and processed through a single-stream recycling system with 61% collected and processed through a dual-stream system. In contrast, the inner circle depicts the same information, excluding the Region 2 population. As shown, the distribution between the recycling systems changes drastically, with 69% of the population served by a single-stream collection and processing system and 31% of the population's recyclables collected and processed utilizing a dual-stream recycling system.

Figure F.2 also shows the distribution of residential recycling systems in each DEC Region of the state. This figure shows that the majority of the population (83%) in Regions 4–9 are served by single-stream recycling systems. In contrast, DEC Regions 1–3 predominantly rely on dual-stream recycling. As depicted, 100% of the DEC Region 2 (New York City) population, 65% of the DEC Region 3 (lower Hudson Valley) population, and 57% of the DEC Region 1 (Long Island) population are served by a dual-stream collection and processing recycling system.

Residential MSW and Recycling Drop-off

Many municipalities around the state utilize drop-off sites as part of their solid waste management program. The infrastructure and coverage of drop-off sites varies as they range in size and the type of waste accepted. Some drop-off sites require residents to get permits while others charge a fee per bag or item.

Drop-off sites are common for solid waste programs that rely on residents to procure the curbside collection of MSW and recyclables from private waste collectors, as many municipalities offer residents the option to self-haul their waste. Nonetheless, some municipalities that provide curbside collection—through direct municipal collection or a contract with a private waste collector on behalf of residents—also offer drop-off sites as a complementary service for residents.

While drop-off sites are predominately used for residential waste, they can also be used for waste from commercial and institutional establishments, though that is less commonplace across New York State.

Figure F.3 represents the distribution of the population in New York State that has access to drop-off sites that accept MSW and recyclables. The circles in the center show this distribution for the entire state while the outer rings represent each of the nine DEC regions. Because DEC Region 2 (New York City) represents about 44% of the state's population, the figure depicts the information with and without the DEC Region 2 (New York City) population in the outer and inner circles, respectively.

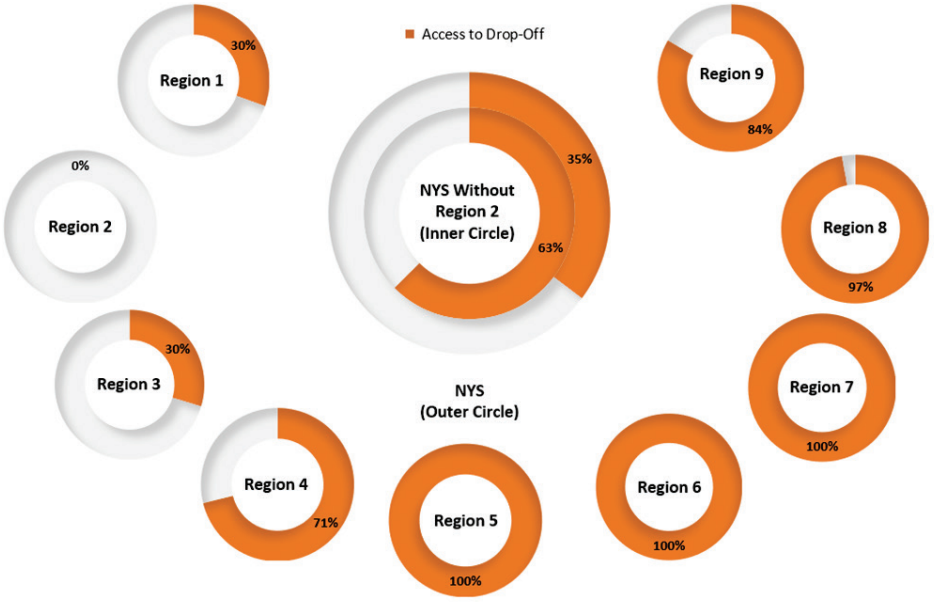


Figure F.3. Distribution of MSW and residential drop-off sites by percent population

As shown in Figure F.3, about 35% of the state's population has access to drop-off sites within their municipalities. However, when excluding the population from DEC Region 2 (New York City), the accessibility to drop-off sites for residents in the rest of the state increases to 63%.

Figure F.3 also shows the distribution of the population that has access to drop-off sites for each DEC region of the state. The difference between DEC Regions 1–3 and the remainder of the state is evident. About 30% of the residents from DEC Regions 1 and 3 have access to drop-off sites while none in Region 2 have the same access. More

than 70% of the residents from municipalities in Regions 4–9 have access to drop-off locations.

Materials Accepted in Recycling Programs

New York State municipalities must have local recycling laws or ordinances in accordance with Section 120-aa of the General Municipal Law (GML-120-aa) that identify the materials included in the source separation recycling program within the municipality. These laws or ordinances must cover all generators within the municipality, including residents, businesses, and institutions. Because each planning unit or municipality determines the materials that are part of their municipality's recycling program, following the requirements of GML-120-aa the materials accepted in recycling programs vary across the state. While the lists of required recyclables in most local recycling laws do not distinguish a difference in materials between residential, commercial, and institutional sources, there are exceptions, such as New York City. This section focuses on materials from residences only.

Figure F.4 shows the materials that are included in local recycling laws and the percentage of the state population that has access to a residential recycling program for each type of material. Figure F.4 indicates that while many materials are widely collected across the state, other materials have not yet been included in all recycling programs across the state.

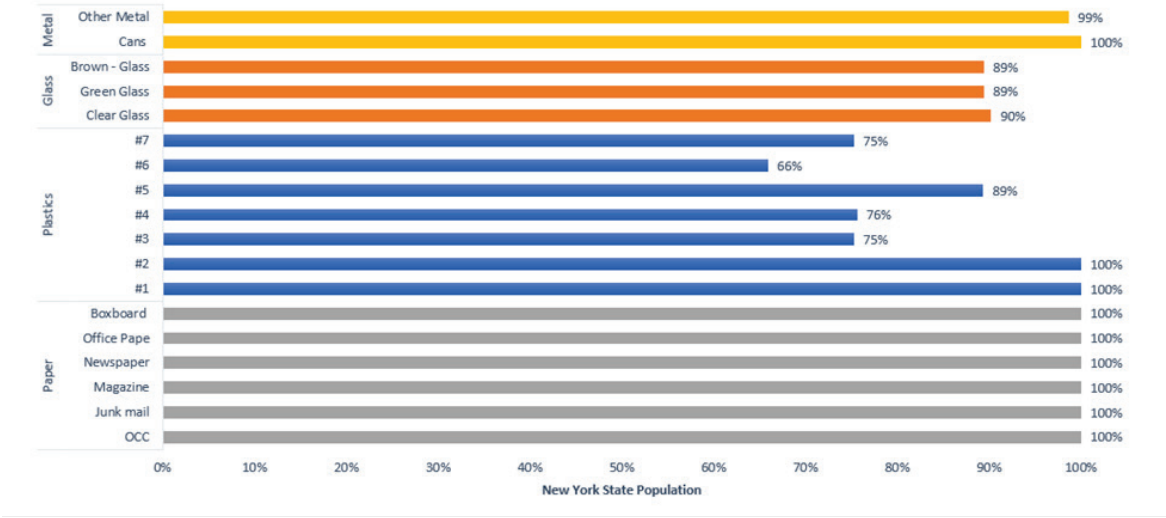


Figure F.4. Materials accepted in residential recycling collection programs

As shown in Figure F.4, 100% of the recycling programs include access to recycling for all the listed categories of paper (i.e., boxboards, office paper, newspapers, magazines, junk mail, and corrugated cardboard).

It is estimated that 100% of the recycling programs accept plastics #1 (PET) and #2 (HDPE). In addition, approximately 89% of the recycling programs accept plastics #5 (PP). Plastics #3 (PVC), #4 (LDPE), and #7 (Other/Mixed components) are collected in roughly 75% of the recycling programs, and Plastics #6 (PS) is included in 66% of the recycling programs. Collecting all plastics through residential recycling programs has yet to become available across the state. This is likely due to the fact that some materials are more challenging to market than others.

Regarding the collection of glass, it is estimated that approximately 89% of the recycling programs collect brown and green glass, and 90% collect clear glass. This is due to the temporary discontinuance of glass collection in a few of the state's municipalities because of budget constraints and market conditions in 2020 during the COVID pandemic.

Lastly, the metal category is divided between cans and other metals (which may include aluminum foil, scrap metal, and other items particular to each recycling program). It is estimated that 100% of the recycling programs collect all metal cans, and 99% of the programs collect most other types of metals.

Residential Yard Trimmings

Like the residential MSW collection, managing residential yard trimmings within a municipality can be done a number of different ways:

1. Municipalities can use their own municipal staff, vehicles, and resources to collect yard trimmings curbside. This method is most often prevalent within cities, villages, and suburban areas. Yard trimmings are typically placed in barrels or in large paper yard-trimmings bags available for purchase at many retail establishments, In some limited areas of the state, residents rake their yard trimmings to the curb and the municipality uses a vacuum device to collect them.
2. Municipalities can also contract with private waste collectors to provide for the collection of yard trimmings. This tends to be more common in suburban areas.
3. Municipalities can provide a location where residents can drop yard trimmings off directly rather than having them collected curbside. This method is more common in some suburban and rural areas to provide a low-cost alternative, especially where residents contract directly with a private waste collector.
4. Residents can contract directly with a private hauler to collect and manage their yard trimmings. This method is more common for residents in suburban areas, especially in areas where it is common for residents to use a lawn service for their lawn care.
5. Residents can manage yard trimmings on-site. This is common in more rural areas but can be practiced in suburban areas as well, where lot size allows for on-site composting.

Businesses or institutions in suburban and rural areas often utilize drop-off locations offered by the municipalities, since these are located at transfer facilities or other collection sites. It is also common for larger businesses and institutions with available land and staff to manage yard trimmings on-site through composting.

In most instances, a combination of these methods is used to manage yard trimmings within a municipality or planning unit.

DEC Region 2 (New York City) is unique with respect to composting. In other parts of the state, food scraps programs and yard trimmings programs are typically separated. In New York City, the extensive composting program manages both food scraps and yard trimmings. As of June 2022, curbside collection of organic waste in New York City is limited to neighborhoods with sufficient interest expressed by residents through a sign-up system. Over time, the New York City Department of Sanitation (DSNY) plans to add more communities to the organics curbside collection program. In the meantime, drop-off sites are also available throughout the city for this material. In waste collection districts with significant leaf generation—about 38 of the 59 collection districts—the DSNY collects leaves in the fall. At the beginning of the year, DSNY also collects Christmas trees from all the collection districts in the city.

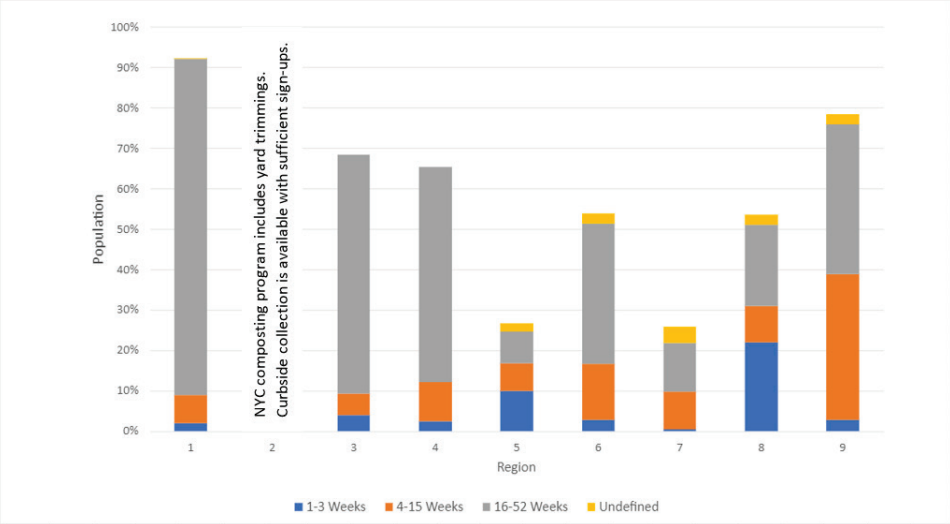


Figure F.5. Regional distribution of the availability and frequency of residential yard trimmings curbside collection by percent population

Figure F.5 shows the percentage of the residential population that has access to curbside yard trimmings collection and the frequency of that collection. This figure has a separate bar for each DEC Region. The total height of the bar indicates the portion of the regional population that has curbside collection of yard trimmings. Within each bar, the different colors indicate the collection frequency. The smallest frequency, one to three weeks, represents programs that collect yard trimmings three or fewer times per year. These kinds of programs typically have large, seasonal events such as spring or fall clean-up days, or Christmas tree collection. The next category, 4–15 weeks,

represents programs that collect yard trimmings more frequently. These programs range from monthly collection for a few months a year to biweekly collection for most of the spring, summer, and fall. They could also perform weekly collection for a limited period in the fall to collect leaves. Next, programs in the 16–52 weeks category will often collect yard trimmings throughout most of the spring, summer, and fall. Finally, the undefined category is for programs that don't fall into any of the other categories. This could be because the collection frequency varies from year to year. Programs that collect yard trimmings only by appointment or request also fall into the undefined category. As shown in the figure, most regions in the state have a mix of frequencies for residential yard trimmings curbside collection. As discussed above and shown in the figure, yard trimmings collection in Region 2 is part of the city's food scraps and yard trimmings program, and curbside collection of yard trimmings is available in neighborhoods that have enough sign-ups.

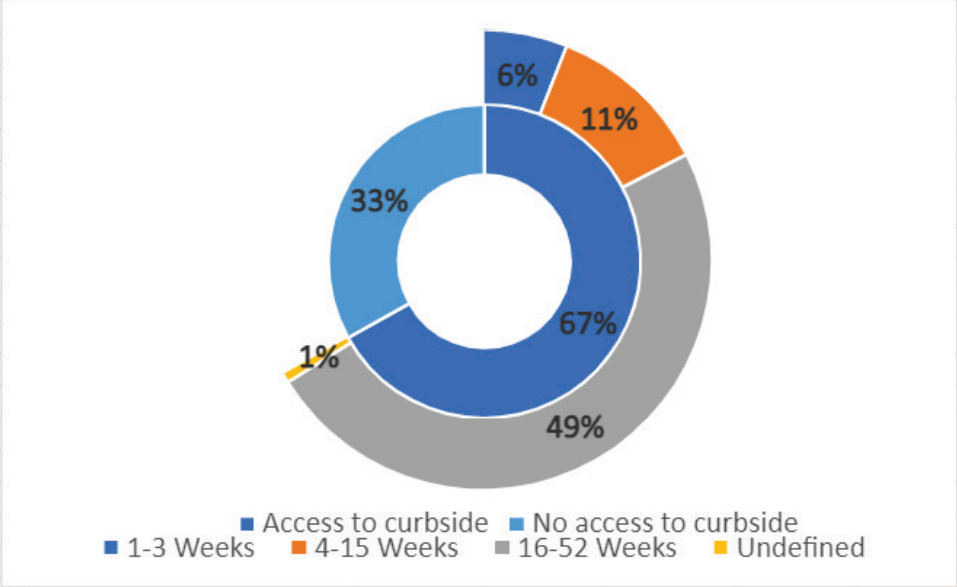


Figure F.6. Distribution of the availability and frequency of residential yard trimmings curbside collections by percent population for New York State

In Figure F.6, the inner circle shows the percentage of residents in New York, excluding New York City, that have access to curbside collection of yard trimmings. Overall, about 67% of the population outside New York City has curbside collection of yard trimmings. This graph does not include programs that rely on residents bringing their yard waste to a drop-off location. It is worth noting that a portion of the population that is listed as having no curbside collection in Figure F.6 has the option to bring yard trimmings to a drop-off location. For the 67% of the state population that has curbside collection for yard trimmings, the outer circle of the graph shows the frequency of collection. Programs with a frequency of 16–52 weeks are most common, accounting for about 49% of the population residing outside of New York City. The least common frequency,

outside of the programs without a defined frequency, is 1–3 weeks per year, which only accounted for about 6% of the referenced population.

Residential Food Scraps Programs

In the last few years, separate collection of residential food waste has grown significantly.

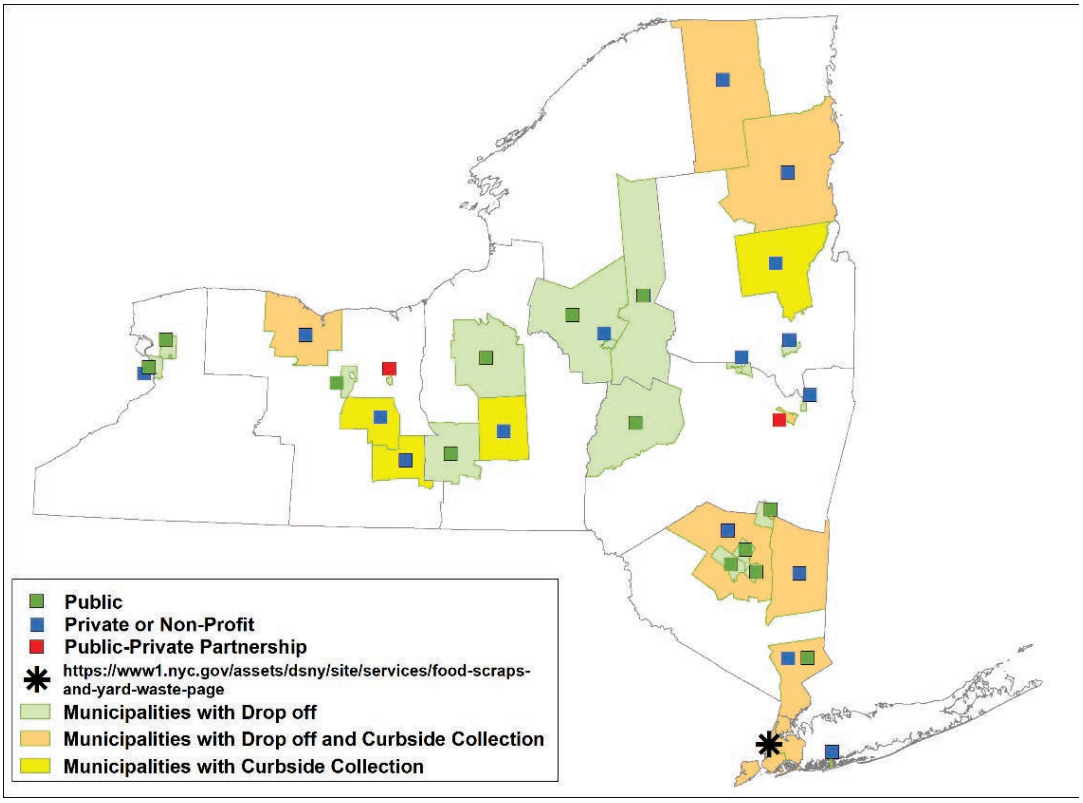


Figure F.7. Distribution and type of residential food scraps collection programs in New York State

Figure F.7 presents information on the residential food scraps collection programs that are available as of June 2022, based on DEC data. Residents may either have access to drop-off locations or curbside collection for their food scraps. In some cases, the food scraps programs are pilot programs or small in scale. As a result, they might not be available or easily accessible to all residents within the municipality. The shading on the area covered by the program indicates how food scraps are collected. The shading is green for programs with access to drop-off locations for residents. Yellow shading is used for programs with curbside collection, and the areas shaded in orange have both drop-off and curbside collection programs. The type of entity that runs the food scraps program is shown in the figure by a different colored square. Green squares indicate

publicly run programs, blue squares indicate programs run by a private or non-profit entity, and red squares show programs managed by a public-private partnership.

DEC Region 2 (New York City) has the state's most extensive residential food scraps collection program. This program combines curbside collection in certain districts and drop-off locations that residents can utilize. More information about this program can be found at the URL shown in the legend of the figure.

Figure F.7 shows that while there are residential food scraps collection programs throughout the state, there is a concentration of programs in the downstate and central areas. Most of the current residential food scraps collection programs also rely on drop-off locations or include drop-off locations as an option for residents. There is also a roughly even mix of programs run by municipalities and programs run by private or nonprofit entities.

Learn more about food scraps drop-off and residential food scraps collection services.

Household Hazardous Waste (HHW) Collection

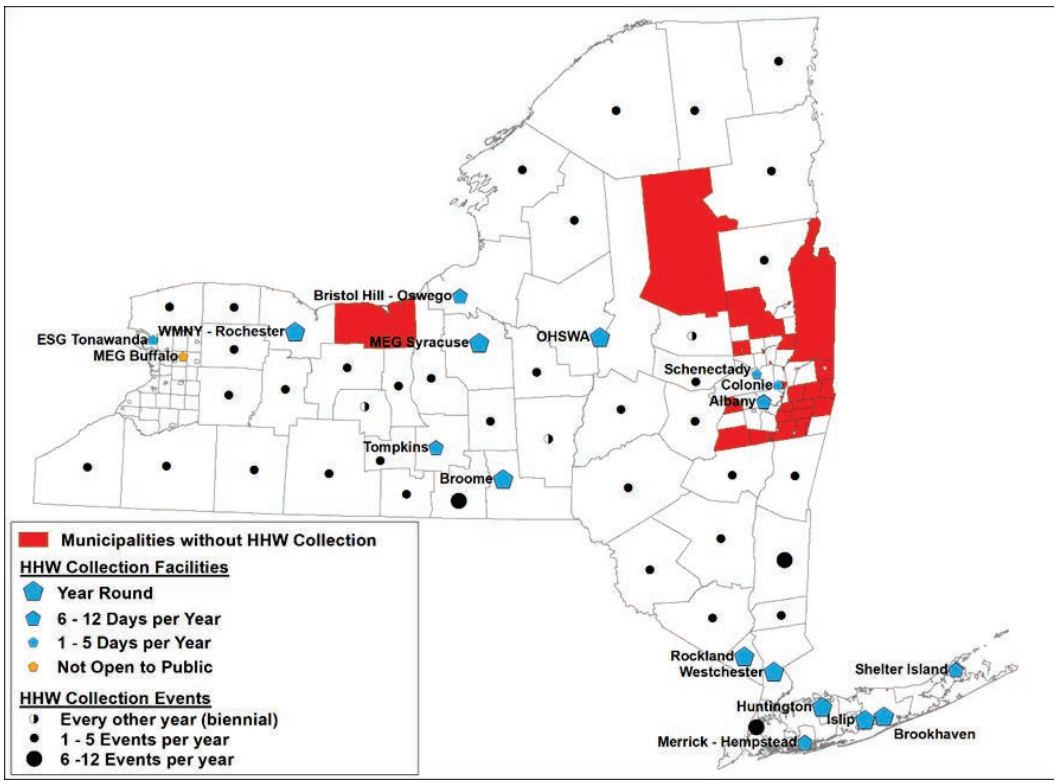


Figure F.8. HHW collection events and facilities in New York State

Household hazardous waste (HHW) collection facilities and events offer safe outlets for recycling and disposal of HHW. Figure F.8 shows the HHW collection events and facilities in New York State. HHW collection facilities are shown on the figure with a pentagon. The size of this pentagon shows how frequently the facility is open for residents to drop off their HHW. HHW collection events are depicted on the figure with shaded circles. The size and shading of the circle indicate how frequently HHW collection events occur in that area. The areas shaded in red on the figure represent the areas of the state that do not have regular HHW collection events or facilities that residents can use.

Figure F.9 and Figure F.10 show the same information and use the same legend. These figures each zoom in on one area of the state to show detail that is difficult to see in Figure F.8.

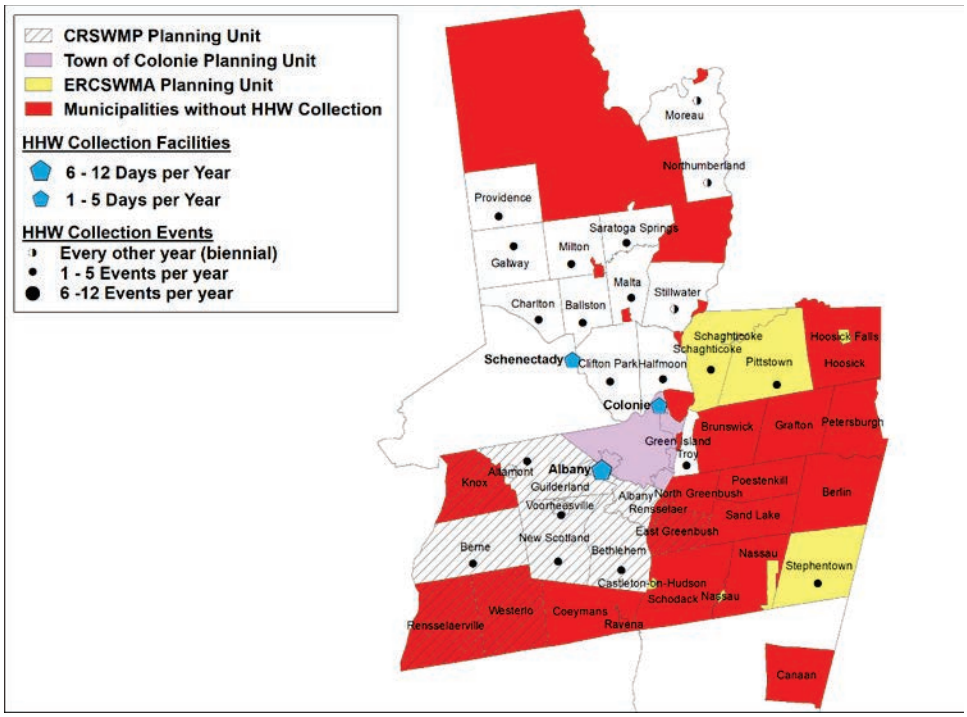


Figure F.9. HHW collection events and facilities in the Capital Region

Figure F.9 shows the HHW collection facilities and events in the Capital Region. As shown in the figure, several municipalities do not have HHW collection events or facilities in this area. There are three HHW collection facilities in this area. HHW collection events are more common in this part of the state, with most municipalities hosting one to five collection events per year.

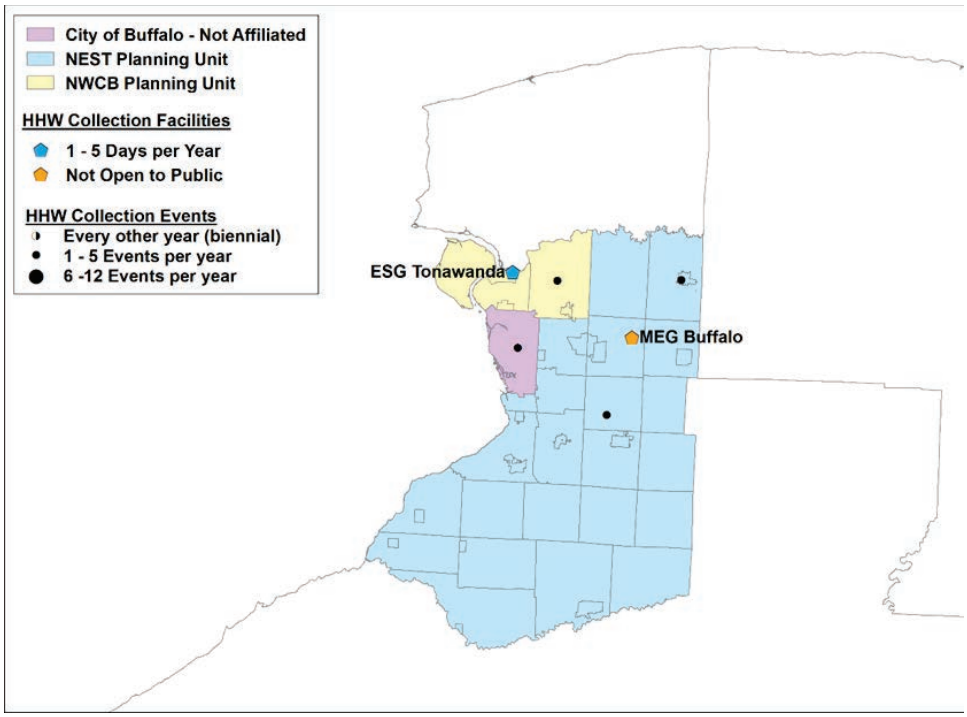


Figure F.10. HHW collection events and facilities in Erie County

Figure F.10 shows the HHW collection events and facilities in Erie County. As shown in the figure, there is a collection facility that is open to the public located in the NWCB planning unit. Both planning units in this county have events one to five times per year. The City of Buffalo also runs one to five events per year. The second circle shown in the northeast corner of the Northeast Southtowns Solid Waste Management Board (NEST) planning unit represents events held by the Town of Newstead and the Village of Akron, which are both located in the NEST planning unit but hold their own HHW collection events that are separate from those run by the planning unit. Residents of Newstead and Akron can utilize either the events run by their municipality or the events run by the planning unit.

							Residential MSW Collection Method			Residential Recycling System			Yard Trimmings				
													Seasonal Collection				
Region	Planning Unit	County	Population	Percentage of NYS Population	Percentage of Population Living in Single-Family Residences	Percentage of Population Living in Multi-Family Residences	Municipal Collection	Municipal Contracted	Public Contracted	Single Stream	Dual Stream	Residential MSW and Recycling Drop Off	1–3 Weeks	4–15 Weeks	16–52 Weeks	Undefined	Drop-Off
1	City of Glen Cove	Nassau	28,365	0.14%	78%	22%	78%	0%	22%	100%	0%	0%	0%	0%	100%	0%	0%
1	Town of Hempstead	Nassau	793,409	3.93%	87%	13%	87%	0%	13%	100%	0%	6%	0%	6%	81%	0%	0%
1	City of Long Beach	Nassau	35,029	0.17%	63%	37%	63%	0%	37%	0%	100%	0%	0%	0%	0%	0%	0%
1	Town of North Hempstead	Nassau	174,179	0.86%	90%	10%	9%	81%	10%	0%	100%	100%	0%	0%	91%	0%	95%
1	Town of Oyster Bay	Nassau	259,182	1.28%	94%	6%	87%	7%	6%	100%	0%	0%	0%	0%	100%	0%	0%
1	Town of Babylon	Suffolk	218,233	1.08%	89%	11%	17%	72%	11%	0%	100%	0%	0%	0%	100%	0%	0%
1	Town of Brookhaven	Suffolk	485,773	2.40%	88%	12%	4%	84%	12%	0%	100%	0%	0%	0%	100%	0%	0%
1	Town of East Hampton	Suffolk	28,385	0.14%	93%	7%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	100%
1	Town of Huntington	Suffolk	204,127	1.01%	96%	4%	30%	65%	5%	0%	100%	100%	0%	0%	100%	0%	0%
1	Town of Islip	Suffolk	339,938	1.68%	89%	11%	0%	89%	11%	0%	100%	100%	0%	0%	100%	0%	0%
1	Town of Riverhead	Suffolk	35,901	0.18%	82%	18%	0%	82%	18%	0%	100%	0%	0%	0%	100%	0%	0%
1	Town of Shelter Island	Suffolk	3,253	0.02%	99%	1%	49%	0%	51%	0%	100%	100%	0%	0%	0%	0%	100%
1	Town of Smithtown	Suffolk	116,296	0.58%	94%	6%	0%	94%	6%	0%	100%	0%	0%	100%	0%	0%	0%
1	Town of Southampton	Suffolk	69,036	0.34%	93%	7%	0%	0%	100%	100%	0%	100%	100%	0%	0%	0%	100%
1	Town of Southold	Suffolk	23,732	0.12%	96%	4%	48%	0%	52%	100%	0%	100%	0%	100%	0%	0%	0%
1	Fisher Island Waste Management District	Suffolk	125	0.00%	99%	1%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
1	Village of Great Neck Estates	Nassau	2,990	0.01%	89%	11%	0%	89%	11%	0%	100%	0%	0%	0%	100%	0%	0%
1	Village of Great Neck Plaza	Nassau	7,591	0.04%	9%	91%	9%	9%	91%	0%	100%	0%	0%	0%	100%	0%	0%
1	Village of New Hyde Park	Nassau	6,492	0.03%	98%	2%	98%	0%	2%	0%	100%	0%	0%	0%	100%	0%	0%
1	Village of Mineola	Nassau	20,800	0.10%	71%	29%	71%	0%	29%	100%	0%	0%	0%	100%	0%	0%	0%
1	Village of Plandome	Nassau	7,482	0.04%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%
1	Village of Plandome Manor	Nassau	1,448	0.01%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	100%	0%	0%
1	Village of Westbury	Nassau	793	0.00%	84%	16%	84%	0%	16%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Williston Park	Nassau	15,864	0.08%	93%	7%	0%	0%	7%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Bayville	Nassau	6,748	0.03%	99%	1%	99%	0%	1%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Brookville	Nassau	2,939	0.01%	99%	1%	0%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Centre Island	Nassau	407	0.00%	98%	2%	0%	98%	2%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Cove Neck	Nassau	293	0.00%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%
1	Glenwood-Glen Head, Garbage District	Nassau	8,896	0.04%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Lattingtown	Nassau	1,881	0.01%	99%	1%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Laurel Hollow	Nassau	1,940	0.01%	100%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Matinecock	Nassau	847	0.00%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Mill Neck	Nassau	1,054	0.01%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Muttontown	Nassau	3,512	0.02%	99%	1%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Old Brookville	Nassau	2,020	0.01%	99%	1%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%
1	Village of Old Westbury	Nassau	2,206	0.01%	99%	1%	0%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Oyster Bay Cove	Nassau	2,265	0.01%	98%	2%	0%	98%	2%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Roslyn Harbor	Nassau	294	0.00%	97%	3%	0%	97%	3%	100%	0%	0%	0%	0%	100%	0%	0%
1	Village of Sea Cliff	Nassau	5,062	0.03%	93%	7%	93%	0%	7%	100%	0%	0%	0%	0%	0%	0%	100%
1	Village of Upper Brookville	Nassau	1,786	0.01%	99%	1%	0%	66%	34%	100%	0%	0%	0%	0%	100%	0%	0%
2	New York City	Multiple	8,804,190	43.58%	38%	62%	100%	0%	0%	0%	100%	0%	*	*	*	*	*
3	Dutchess County	Dutchess	295,911	1.46%	82%	18%	9%	4%	87%	100%	0%	0%	1%	1%	15%	0%	75%
3	Orange County	Orange	401,310	1.99%	80%	20%	28%	26%	47%	100%	0%	100%	9%	10%	50%	0%	32%
3	Putnam County	Putnam	97,668	0.48%	93%	7%	2%	71%	27%	67%	33%	20%	35%	2%	16%	0%	12%
3	Rockland County Solid Waste Management	Rockland	338,329	1.67%	80%	20%	10%	56%	34%	0%	100%	0%	3%	25%	68%	0%	4%
3	Sullivan County	Sullivan	78,624	0.39%	83%	17%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	0%
3	Ulster County	Ulster	181,851	0.90%	84%	16%	11%	6%	83%	0%	100%	100%	6%	0%	1%	0%	93%
3	Westchester County	Westchester	1,004,457	4.97%	67%	33%	49%	12%	39%	0%	100%	3%	0%	0%	92%	0%	6%
4	CRSWMP	Multiple	219,438	1.09%	81%	19%	39%	4%	57%	100%	0%	49%	0%	10%	85%	0%	10%
4	Town of Colonie	Albany	114,112	0.56%	79%	21%	27%	0%	73%	100%	0%	100%	0%	25%	75%	0%	91%
4	Town of Coeymans	Albany	3,985	0.02%	79%	21%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%
4	Village of Ravena	Albany	3,271	0.02%	77%	23%	0%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%
4	Columbia County	Columbia	60,000	0.30%	85%	15%	10%	0%	90%	100%	0%	100%	0%	12%	0%	0%	100%
4	Town of Canaan	Columbia	1,570	0.01%	96%	4%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	0%
4	Delaware County	Delaware	44,308	0.22%	83%	17%	0%	0%	100%	100%	0%	34%	0%	0%	21%	0%	0%
4	Greene County	Greene	47,931	0.24%	87%	13%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
4	Otsego County	Otsego	58,524	0.29%	82%	18%	0%	0%	100%	100%	0%	100%	1%	0%	25%	0%	0%
4	ERCSWMA	Rensselaer	22,131	0.11%	90%	10%	0%	80%	20%	100%	0%	13%	0%	8%	7%	0%	59%
4	Town of Berlin	Rensselaer	1,808	0.01%	88%	12%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of Brunswick	Rensselaer	12,581	0.06%	85%	15%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of Grafton	Rensselaer	2,051	0.01%	89%	11%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of Hoosick	Rensselaer	3,495	0.02%	93%	7%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of Nassau	Rensselaer	2,883	0.01%	93%	7%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of Petersburg	Rensselaer	1,372	0.01%	76%	24%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of Poestenkill	Rensselaer	4,322	0.02%	98%	2%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%
4	Town of North Greenbush	Rensselaer	13,292	0.07%	80%	20%	0%	0%	100%	100%	0%	0%	0%	0%	100%	0%	0%
4	Town of Sand Lake	Rensselaer	8,348	0.04%	92%	8%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	100%
4	Town of Schodack	Rensselaer	11,488	0.06%	88%	12%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
4	City of Troy	Rensselaer	51,401	0.25%	72%	28%	72%	0%	28%	100%	0%	0%	0%	0%	100%	0%	0%
4	Montgomery County	Montgomery	49,532	0.25%	86%	14%	38%	22%	40%	88%	12%	30%	0%	12%	46%	0%	0%
4	Schenectady County	Schenectady	158,061	0.78%	84%	16%	51%	0%	49%	100%	0%	100%	14%	15%	66%	0%	100%
4	Schoharie County	Schoharie	29,714	0.15%	81%	19%	0%	10%	90%	100%	0%	100%	0%	0%	0%	0%	0%
5	Clinton County	Clinton	79,843	0.40%	76%	24%	17%	60%	24%	75%	25%	100%	0%	0%	25%	0%	100%
5	Essex County	Essex	37,381	0.19%	88%	12%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
5	CFSWMA	Franklin	43,892	0.22%	82%	18%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
5	Fulton County	Fulton	53,324	0.26%	85%	15%	85%	0%	15%	100%	0%	100%	15%	28%	2%	0%	15%
5	Hamilton County	Hamilton	5,107	0.03%	89%	11%	89%	0%	11%	0%	87%	100%	0%	0%	0%	0%	14%
5	Saratoga County	Saratoga	235,509	1.17%	80%	20%	5%	3%	93%	99%	1%	100%	20%	9%	0%	5%	63%
5	Warren County	Warren	65,737	0.33%	84%	16%	83%	1%	16%	100%	0%	100%	5%	2%	23%	0%	76%
5	Washington County	Washington	61,302	0.30%	89%	11%	9%	0%	91%	99%	0%	100%	5%	3%	16%	0%	100%
6	OHSWA	Multiple	292,264	1.45%	83%	17%	11%	36%	53%	100%	0%	100%	0%	18%	51%	2%	100%
6	DANC	Multiple	251,808	1.25%	79%	21%	18%	4%	79%	99%	1%	100%	6%	9%	16%	3%	46%
7	Broome County	Broome	198,683	0.98%	83%	17%	43%	1%	57%	100%	0%	100%	2%	14%	41%	25%	18%
7	Cayuga County	Cayuga	76,248	0.38%	81%	19%	33%	4%	63%	65%	35%	100%	0%	11%	40%	0%	100%
7	Chenango County	Chenango	47,220	0.23%	72%	28%	0%	0%	100%	0%	100%	100%	0%	15%	0%	0%	85%
7	Cortland County	Cortland	46,809	0.23%	83%	17%	0%	39%	61%	0%	100%	100%	0%	38%	0%	0%	38%
7	Madison County	Madison	68,016	0.34%	84%	16%	17%	0%	83%	0%	100%	100%	0%	0%	0%	0%	100%
7	OCRRA	Onondaga	468,573	2.32%	80%	20%	25%	43%	32%	100%	0%	100%	0%	0%	0%	0%	100%
7	Oswego County	Oswego	117,525	0.58%	80%	20%	8%	7%	85%	100%	0%	100%	2%	11%	3%	0%	0%
7	Tioga County	Tioga	48,455	0.24%	81%	19%	0%	0%	100%	100%	0%	100%	0%	0%	9%	9%	31%
7	Tompkins County	Tompkins	105,740	0.52%	70%	30%	0%	70%	30%	100%	0%	100%	0%	34%	21%	0%	47%
7	Town of Skaneateles	Onondaga	4,579	0.02%	96%	4%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
7	Village of Skaneateles	Onondaga	2,533	0.01%	89%	11%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
8	Chemung County	Chemung	84,148	0.42%	87%	13%	31%	0%	69%	100%	0%	100%	56%	12%	0%	6%	100%
9	GLOW	Multiple	160,512	0.79%	85%	15%	0%	24%	76%	100%	0%	100%	7%	0%	0%	5%	19%
8	Monroe County	Monroe	759,443	3.76%	82%	18%	23%	2%	75%	100%	0%	100%	30%	9%	37%	2%	31%
8	Ontario County	Ontario	112,458	0.56%	81%	19%	20%	1%	79%	100%	0%	100%	0%	33%	0%	2%	66%
8	Orleans County	Orleans	40,343	0.20%	84%	16%	0%	84%	16%	100%	0%	0%	35%	0%	0%	0%	0%
8	Schuyler County	Schuyler	17,898	0.09%	77%	23%	0%	0%	100%	78%	22%	100%	0%	0%	0%	0%	10%
8	Seneca County	Seneca	33,814	0.17%	85%	15%	0%	85%	15%	100%	0%	100%	0%	0%	0%	0%	100%
8	Steuben County	Steuben	93,584	0.46%	79%	21%	17%	0%	83%	100%	0%	100%	0%	11%	0%	0%	50%
8	Wayne County	Wayne	91,283	0.45%	86%	14%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
8	Yates County	Yates	24,774	0.12%	85%	15%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	100%
9	Allegany County	Allegany	46,449	0.23%	80%	20%	14%	8%	78%	100%	0%	100%	10%	6%	0%	0%	0%
9	Cattaraugus County	Cattaraugus	75,467	0.37%	81%	19%	23%	2%	75%	100%	0%	100%	0%	0%	0%	0%	100%
9	Chautauqua County	Chautauqua	127,614	0.63%	86%	14%	0%	30%	70%	78%	22%	100%	11%	0%	0%	0%	100%
9	Niagara County	Niagara	211,521	1.05%	87%	13%	13%	75%	13%	100%	0%	100%	4%	51%	30%	6%	15%
9	NEST	Erie	434,912	2.15%	88%	12%	28%	49%	24%	100%	0%	100%	3%	13%	78%	0%	2%
9	NWCB	Erie	238,749	1.18%	84%	16%	32%	52%	16%	100%	0%	0%	0%	33%	58%	9%	52%
9	City of Buffalo	Erie	278,349	1.38%	83%	17%	83%	0%	17%	100%	0%	100%	0%	100%	0%	0%	100%
NYS			20,190,397	100%	63%	37%	64%	16%	20%	39%	61%	35%	3%	6%	27%	1%	21%

* New York City, the extensive composting program manages both food scraps and yard trimmings. At this point in time, curbside collection of organic waste in New York City is limited to neighborhoods with sufficient sign-ups.

					Paper						Plastics							Glass			Metals	
Region	Planning Unit	County	Population	Percentage of NYS Population	OCC	Junk Mail	Magazine	Newspaper	Office Paper	Boxboard	#1	#2	#3	#4	#5	#6	#7	Clear	Green	Brown	Aluminum Cans	Other Metal
1	City of Glen Cove	Nassau	28,365	0.14%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Town of Hempstead	Nassau	793,409	3.93%	100%	100%	100%	100%	100%	100%	100%	100%	34%	34%	36%	33%	36%	**	**	**	100%	100%
1	City of Long Beach	Nassau	35,029	0.17%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Town of North Hempstead	Nassau	174,179	0.86%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Town of Oyster Bay	Nassau	259,182	1.28%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	**	**	**	100%	100%
1	Town of Babylon	Suffolk	218,233	1.08%	100%	100%	100%	100%	100%	100%	100%	100%	88%	88%	88%	0%	88%	100%	100%	100%	100%	100%
1	Town of Brookhaven	Suffolk	485,773	2.40%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	**	**	**	100%	100%
1	Town of East Hampton	Suffolk	28,385	0.14%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Town of Huntington	Suffolk	204,127	1.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	**	**	**	100%	100%
1	Town of Islip	Suffolk	339,938	1.68%	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%	98%	0%	98%	100%	100%	100%	100%	100%
1	Town of Riverhead	Suffolk	35,901	0.18%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Town of Shelter Island	Suffolk	3,253	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Town of Smithtown	Suffolk	116,296	0.58%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	**	**	**	100%	100%
1	Town of Southampton	Suffolk	69,036	0.34%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Town of Southold	Suffolk	23,732	0.12%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Fisher Island Waste Management District	Suffolk	125	0.00%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
1	Village of Great Neck Estates	Nassau	2,990	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Village of Great Neck Plaza	Nassau	7,591	0.04%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Village of New Hyde Park	Nassau	6,492	0.03%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Village of Mineola	Nassau	20,800	0.10%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Village of Plandome	Nassau	7,482	0.04%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Village of Plandome Manor	Nassau	1,448	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	Village of Westbury	Nassau	793	0.00%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%
1	Village of Williston Park	Nassau	15,864	0.08%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
1	Village of Bayville	Nassau	6,748	0.03%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	**	**	**	100%	100%
1	Village of Brookville	Nassau	2,939	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Centre Island	Nassau	407	0.00%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Cove Neck	Nassau	293	0.00%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Glenwood-Glen Head, Garbage District	Nassau	8,896	0.04%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Lattingtown	Nassau	1,881	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Laurel Hollow	Nassau	1,940	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Matinecock	Nassau	847	0.00%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Mill Neck	Nassau	1,054	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%
1	Village of Muttontown	Nassau	3,512	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Old Brookville	Nassau	2,020	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Old Westbury	Nassau	2,206	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Oyster Bay Cove	Nassau	2,265	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	**	**	**	100%	0%
1	Village of Roslyn Harbor	Nassau	294	0.00%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	100%	0%
1	Village of Sea Cliff	Nassau	5,062	0.03%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
1	Village of Upper Brookville	Nassau	1,786	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
2	New York City	Multiple	8,804,190	43.58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
3	Dutchess County	Dutchess	295,911	1.46%	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%	0%	99%	100%	100%	100%	100%	100%
3	Orange County	Orange	401,310	1.99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	8%	100%	100%	100%	100%	100%	100%
3	Putnam County	Putnam	97,668	0.48%	100%	100%	100%	100%	100%	100%	100%	100%	88%	86%	100%	86%	100%	100%	100%	100%	100%	100%
3	Rockland County Solid Waste Management	Rockland	338,329	1.67%	100%	100%	100%	100%	100%	100%	100%	100%	14%	100%	100%	14%	100%	100%	100%	100%	100%	100%
3	Sullivan County	Sullivan	78,624	0.39%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
3	Ulster County	Ulster	181,851	0.90%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	0%	0%	100%	100%	100%	100%	100%
3	Westchester County	Westchester	1,004,457	4.97%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%
4	CRSWMP	Multiple	219,438	1.09%	100%	100%	100%	100%	100%	100%	100%	100%	99%	95%	96%	95%	96%	100%	100%	100%	100%	74%
4	Town of Colonie	Albany	114,112	0.56%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Town of Coeymans	Albany	3,985	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Village of Ravena	Albany	3,271	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Columbia County	Columbia	60,000	0.30%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
4	Town of Canaan	Columbia	1,570	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%
4	Delaware	Delaware	44,308	0.22%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Greene County	Greene	47,931	0.24%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Otsego County	Otsego	58,524	0.29%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Eastern Rensselaer	Rensselaer	22,131	0.11%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Town of Berlin	Rensselaer	1,808	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%
4	Town of Brunswick	Rensselaer	12,581	0.06%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%
4	Town of Grafton	Rensselaer	2,051	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%
4	Town of Hoosick	Rensselaer	3,495	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%
4	Town of Nassau	Rensselaer	2,883	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
4	Town of Petersburg	Rensselaer	1,372	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%
4	Town of Poestenkill	Rensselaer	4,322	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
4	Town of North Greenbush	Rensselaer	13,292	0.07%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
4	Town of Sand Lake	Rensselaer	8,348	0.04%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
4	Town of Schodack	Rensselaer	11,488	0.06%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
4	City of Troy	Rensselaer	51,401	0.25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
4	Montgomery County	Montgomery	49,532	0.25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
4	Schenectady County	Schenectady	158,061	0.78%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
4	Schoharie County	Schoharie	29,714	0.15%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
5	Clinton County	Clinton	79,843	0.40%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	99%	100%	100%	100%
5	Essex County	Essex	37,381	0.19%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
5	CFSWMA	Franklin	43,892	0.22%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
5	Fulton County	Fulton	53,324	0.26%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%
5	Hamilton County	Hamilton	5,107	0.03%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
5	Saratoga County	Saratoga	235,509	1.17%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
5	Warren County	Warren	65,737	0.33%	100%	100%	100%	100%	100%	100%	100%	100%	85%	8%	26%	8%	26%	100%	100%	100%	100%	100%
5	Washington County	Washington	61,302	0.30%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
6	OHSWA	Multiple	292,264	1.45%	100%	100%	100%	100%	100%	100%	100%	100%	100%	1%	100%	1%	100%	100%	100%	100%	100%	100%
6	DANC	Multiple	251,808	1.25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%
7	Broome County	Broome	198,683	0.98%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
7	Cayuga County	Cayuga	76,248	0.38%	100%	100%	100%	100%	100%	100%	100%	100%	96%	98%	98%	96%	98%	100%	100%	100%	100%	100%
7	Chenango County	Chenango	47,220	0.23%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
7	Cortland County	Cortland	46,809	0.23%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
7	Madison County	Madison	68,016	0.34%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
7	OCRRA	Onondaga	468,573	2.32%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
7	Oswego County	Oswego	117,525	0.58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	90%	100%	100%	100%	100%	100%	100%
7	Tioga County	Tioga	48,455	0.24%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
7	Tompkins County	Tompkins	105,740	0.52%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
7	Town of Skaneateles	Onondaga	4,579	0.02%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
7	Village of Skaneateles	Onondaga	2,533	0.01%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
8	Chemung County	Chemung	84,148	0.42%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
9	GLOW	Multiple	160,512	0.79%	100%	100%	100%	100%	100%	100%	100%	100%	94%	94%	94%	94%	94%	98%	98%	98%	100%	100%
8	Monroe County	Monroe	759,443	3.76%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%
8	Ontario County	Ontario	112,458	0.56%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
8	Orleans County	Orleans	40,343	0.20%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%
8	Schuyler County	Schuyler	17,898	0.09%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%
8	Seneca County	Seneca	33,814	0.17%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
8	Steuben County	Steuben	93,584	0.46%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%
8	Wayne County	Wayne	91,283	0.45%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
8	Yates County	Yates	24,774	0.12%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
9	Allegany County	Allegany	46,449	0.23%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%
9	Cattaraugus County	Cattaraugus	75,467	0.37%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	**	**	**	100%	100%
9	Chautauqua County	Chautauqua	127,614	0.63%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%	78%	78%	100%	100%
9	Niagara County	Niagara	211,521	1.05%	100%	100%	100%	100%	100%	100%	100%	100%	14%	0%	24%	14%	14%	100%	100%	100%	100%	100%
9	NEST	Erie	434,912	2.15%	100%	100%	100%	100%	100%	100%	100%	100%	78%	78%	78%	76%	78%	100%	91%	91%	100%	100%
9	NWCB	Erie	238,749	1.18%	100%	100%	100%	100%	100%	100%	100%	100%	46%	46%	46%	46%	46%	100%	48%	48%	100%	100%
9	City of Buffalo	Erie	278,349	1.38%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	NYS		20,190,397	99.95%	100%	100%	100%	100%	100%	100%	100%	100%	75%	76%	89%	66%	75%	90%	89%	89%	100%	99%

** Temporary discontinuance of glass collection in some of the state's municipalities due to budget constraints and market conditions during the pandemic

					Food Scraps		HHW Collection				
							HHW Event				
Region	Planning Unit	County	Population	Percentage of NYS Population	Curbside Collection	Drop-off	Biennial	1–5 Events per Year	6–12 Events per Year	Events held by Cities, Towns, or Villages	Access to a HHW Facility
1	City of Glen Cove	Nassau	28,365	0.14%				■			
1	Town of Hempstead	Nassau	793,409	3.93%	■						■
1	City of Long Beach	Nassau	35,029	0.17%				■			
1	Town of North Hempstead	Nassau	174,179	0.86%				■			
1	Town of Oyster Bay	Nassau	259,182	1.28%				■			
1	Town of Babylon	Suffolk	218,233	1.08%				■			
1	Town of Brookhaven	Suffolk	485,773	2.40%							■
1	Town of East Hampton	Suffolk	28,385	0.14%				■			
1	Town of Huntington	Suffolk	204,127	1.01%							■
1	Town of Islip	Suffolk	339,938	1.68%				■			■
1	Town of Riverhead	Suffolk	35,901	0.18%				■			
1	Town of Shelter Island	Suffolk	3,253	0.02%							■
1	Town of Smithtown	Suffolk	116,296	0.58%				■			
1	Town of Southampton	Suffolk	69,036	0.34%				■			
1	Town of Southold	Suffolk	23,732	0.12%				■			
1	Fisher Island Waste Management District	Suffolk	125	0.00%			■				
1	Village of Great Neck Estates	Nassau	2,990	0.01%				■			
1	Village of Great Neck Plaza	Nassau	7,591	0.04%				■			
1	Village of New Hyde Park	Nassau	6,492	0.03%				■			
1	Village of Mineola	Nassau	20,800	0.10%				■			
1	Village of Plandome	Nassau	7,482	0.04%				■			
1	Village of Plandome Manor	Nassau	1,448	0.01%				■			
1	Village of Westbury	Nassau	793	0.00%				■			
1	Village of Williston Park	Nassau	15,864	0.08%				■			
1	Village of Bayville	Nassau	6,748	0.03%				■			
1	Village of Brookville	Nassau	2,939	0.01%				■			
1	Village of Centre Island	Nassau	407	0.00%				■			
1	Village of Cove Neck	Nassau	293	0.00%				■			
1	Glenwood-Glen Head, Garbage District	Nassau	8,896	0.04%				■			
1	Village of Lattingtown	Nassau	1,881	0.01%				■			
1	Village of Laurel Hollow	Nassau	1,940	0.01%				■			
1	Village of Matinecock	Nassau	847	0.00%				■			
1	Village of Mill Neck	Nassau	1,054	0.01%				■			
1	Village of Muttontown	Nassau	3,512	0.02%				■			
1	Village of Old Brookville	Nassau	2,020	0.01%				■			
1	Village of Old Westbury	Nassau	2,206	0.01%				■			
1	Village of Oyster Bay Cove	Nassau	2,265	0.01%				■			
1	Village of Roslyn Harbor	Nassau	294	0.00%				■			
1	Village of Sea Cliff	Nassau	5,062	0.03%				■			
1	Village of Upper Brookville	Nassau	1,786	0.01%				■			
2	New York City	Multiple	8,804,190	43.58%	■	■			■		
3	Dutchess County	Dutchess	295,911	1.46%		■			■		
3	Orange County	Orange	401,310	1.99%				■			
3	Putnam County	Putnam	97,668	0.48%				■			
3	Rockland County Solid Waste Management	Rockland	338,329	1.67%							■
3	Sullivan County	Sullivan	78,624	0.39%				■			
3	Ulster County	Ulster	181,851	0.90%	■	■		■			
3	Westchester County	Westchester	1,004,457	4.97%	■	■					■
4	CRSWMP	Multiple	219,438	1.09%	■	■				■	■
4	Town of Colonie	Albany	114,112	0.56%						■	■
4	Town of Coeymans	Albany	3,985	0.02%							
4	Village of Ravena	Albany	3,271	0.02%							
4	Columbia County	Columbia	60,000	0.30%				■			
4	Town of Canaan	Columbia	1,570	0.01%							
4	Delaware	Delaware	44,308	0.22%				■			
4	Greene County	Greene	47,931	0.24%				■			
4	Otsego County	Otsego	58,524	0.29%				■			
4	Eastern Rensselaer	Rensselaer	22,131	0.11%				■			
4	Town of Berlin	Rensselaer	1,808	0.01%							
4	Town of Brunswick	Rensselaer	12,581	0.06%							
4	Town of Grafton	Rensselaer	2,051	0.01%							
4	Town of Hoosick	Rensselaer	3,495	0.02%							
4	Town of Nassau	Rensselaer	2,883	0.01%							
4	Town of Petersburg	Rensselaer	1,372	0.01%							
4	Town of Poestenkill	Rensselaer	4,322	0.02%							
4	Town of North Greenbush	Rensselaer	13,292	0.07%							
4	Town of Sand Lake	Rensselaer	8,348	0.04%							
4	Town of Schodack	Rensselaer	11,488	0.06%							
4	City of Troy	Rensselaer	51,401	0.25%				■			
4	Montgomery County	Montgomery	49,532	0.25%				■			
4	Schenectady County	Schenectady	158,061	0.78%				■			■
4	Schoharie County	Schoharie	29,714	0.15%				■			
5	Clinton County	Clinton	79,843	0.40%				■			
5	Essex County	Essex	37,381	0.19%	■	■		■			
5	CFSWMA	Franklin	43,892	0.22%	■	■		■			
5	Fulton County	Fulton	53,324	0.26%			■				
5	Hamilton County	Hamilton	5,107	0.03%							
5	Saratoga County	Saratoga	235,509	1.17%	■					■	
5	Warren County	Warren	65,737	0.33%	■			■			
5	Washington County	Washington	61,302	0.30%							
6	OHSWA	Multiple	292,264	1.45%		■					■
6	DANC	Multiple	251,808	1.25%				■			
7	Broome County	Broome	198,683	0.98%							■
7	Cayuga County	Cayuga	76,248	0.38%				■			
7	Chenango County	Chenango	47,220	0.23%			■				
7	Cortland County	Cortland	46,809	0.23%	■			■			
7	Madison County	Madison	68,016	0.34%				■			
7	OCRRA	Onondaga	468,573	2.32%		■					■
7	Oswego County	Oswego	117,525	0.58%							■
7	Tioga County	Tioga	48,455	0.24%							■
7	Tompkins County	Tompkins	105,740	0.52%		■		■			■
7	Town of Skaneateles	Onondaga	4,579	0.02%				■			
7	Village of Skaneateles	Onondaga	2,533	0.01%				■			

					Food Scraps		HHW Collection				
							HHW Event				
Region	Planning Unit	County	Population	Percentage of NYS Population	Curbside Collection	Drop-off	Biennial	1–5 Events per Year	6–12 Events per Year	Events held by Cities, Towns, or Villages	Access to a HHW Facility
8	Chemung County	Chemung	84,148	0.42%				■			
9	GLOW	Multiple	160,512	0.79%				■			
8	Monroe County	Monroe	759,443	3.76%	■	■					■
8	Ontario County	Ontario	112,458	0.56%		■		■			
8	Orleans County	Orleans	40,343	0.20%				■			
8	Schuyler County	Schuyler	17,898	0.09%	■			■			
8	Seneca County	Seneca	33,814	0.17%				■			
8	Steuben County	Steuben	93,584	0.46%				■			
8	Wayne County	Wayne	91,283	0.45%							
8	Yates County	Yates	24,774	0.12%	■		■				
9	Allegany County	Allegany	46,449	0.23%				■			
9	Cattaraugus County	Cattaraugus	75,467	0.37%				■			
9	Chautauqua County	Chautauqua	127,614	0.63%				■			
9	Niagara County	Niagara	211,521	1.05%				■			
9	NEST	Erie	434,912	2.15%				■			
9	NWCB	Erie	238,749	1.18%		■		■			
9	City of Buffalo	Erie	278,349	1.38%				■			

NYS	20,190,397	99.95%

Appendix G: Disadvantaged Communities and Potential Environmental Justice Area Impacts

The New York State Department of Environmental Conservation (DEC) supports the fair and meaningful treatment of all people, regardless of race, income, national origin, or color, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Disproportionately impacted residents need access to tools to address environmental concerns across all of DEC's operations. It is the general policy of DEC to promote environmental justice and incorporate measures for achieving environmental justice into its programs, policies, regulations, legislative proposals, and activities.

In New York State, as in the rest of the nation, frontline communities such as Black, Indigenous, and People of Color (BIPOC), as well as low-income communities, bear a large burden associated with pollution from a variety of facilities and operations.

Approximately 46% of the population in New York State resides in a Potential Environmental Justice Area (PEJA) and 36% of the population resides in a Disadvantaged Community (DAC). That percentage is higher in New York City, where approximately 72% of the population resides in a PEJA and 50% of the population resides in a DAC. For the areas of the state outside of New York City, 26% of the population resides in a PEJA and 25% of the population resides in a DAC.

Learn more about how DACs are defined.

Learn more about how PEJAs are defined.

For solid waste management facilities, an important first step is an assessment of the number, type, and size of solid waste facilities located in disadvantaged communities across the state. The information included in the table in Appendix G provides an assessment of this data subdivided into statewide, NYC-only, and outside NYC. In addition to an assessment of the number of facilities located in Potential Environmental Justice Areas and Disadvantaged Communities, the data in the table provide an assessment of the overall throughput of waste at those facilities, which is the amount of waste handled by each of the facilities. Throughput of the facilities is an important factor to consider in an assessment of overall impact of the facilities on the community, in addition to the type of facilities and the potential impacts they present. The following information is included in Appendix G:

- Assessment of solid waste management facilities in PEJAs and DACs
- Map identifying the location of landfills and permitted combustion facilities
- Map identifying the location of transfer facilities, C&D debris handling and recovery facilities, and recyclables handling and recovery facilities (RHRFs)
- Map identifying the location of vehicle dismantling and scrap metal processing facilities
- Map identifying the location of organic waste management facilities

Solid Waste Management Facilities Impact on Disadvantaged Communities (DACs) and Potential Environmental Justice Areas (PEJ

New York State

Type of Facility	Total Number of Facilities	2018 Throughput in Tons (capacity)		Number of Facilities in DACs	Percentage	2018 Throughput in Tons in DACs (capacity)	Percentage of Throughput Handled by Facilities in DACs	2018 Throughput by NYC Facilities in DACs in Tons (capacity)	Percentage of Throughput Handled by NYC Facilities in DACs		Number of Facilities in PEJAs	Percentage	2018 Throughput PEJAs in Tons (capacity)	Percentage of Throughput Handled by Facilities in PEJAs	2018 Throughput Handled by NYC Facilities in PEJAs in Tons (capacity)	Percentage of Throughput Handled by NYC Facilities in PEJAs
CDDHRF	550	15,693,857		220	40.0%	10,721,517	68.3%	5,364,959	34.2%		180	32.7%	7,274,275	46.4%	4,009,374	25.5%
HHW	18	5,569		6	33.3%	629	11.3%	0	0.0%		4	22.2%	1,644	29.5%	0	0.0%
Landfill	50	13,558,342		15	32.0%	5,003,193	36.9%	0	0.0%		5	10.0%	1,111,957	8.2%	0	0.0%
LCD Landfill	92	47,820		6	6.5%	6,188	12.9%	0	0.0%		3	3.3%	1,178	2.5%	0	0.0%
Combustion Facilities	17	4,063,797		10	58.8%	2,326,303	57.2%	0	0.0%		8	47.1%	1,939,534	47.7%	0	0.0%
RHRF	350	2,802,699		95	27.1%	1,795,719	64.1%	1,101,661	39.3%		74	21.1%	1,413,556	50.4%	1,009,298	36.0%
RMW	50	19,200		19	38.0%	16,820	87.6%	12,871	67.0%		19	38.0%	15,240	79.4%	12,647	65.9%
SMP	124	2,552,424		63	50.8%	1,154,819	45.2%	303,762	11.9%		43	34.7%	700,665	27.5%	303,762	11.9%
Transfer Facility	507	13,812,364		141	27.8%	9,442,575	68.4%	4,915,599	35.6%		111	21.9%	7,372,598	53.4%	3,386,302	24.5%
Used Cooking Oil	13	91,266		5	38.5%	40,363	44.2%	19,712	21.6%		5	38.5%	40,363	44.2%	19,712	21.6%
VDF	528	884,517		201	38.1%	380,525	43.0%	59,103	6.7%		156	29.5%	275,717	31.2%	59,912	6.8%
WTHRF	33	188,490		22	66.7%	95,952	51.5%	153	0.1%		16	48.5%	47,682	25.6%	153	0.1%
Anaerobic digestion	5	7,629		0	0.0%	0	0.0%	0	-		0	0.0%	0	-	-	-
Animal feed production	1	-		0	0.0%	-	-	-	-		0	0.0%	-	-	-	-
Composting	215	728,313		56	26.0%	85,081	11.7%	1,898	0.0		45	20.9%	38,075	5.2%	648	0.1%
Land application	180	25,497		40	22.2%	8,038	31.5%	0	-		20	11.1%	2,693	10.6%	-	0.0%
Mulch processing	37	13,803		9	24.3%	9,769	70.8%	0	-		9	24.3%	13,803	100.0%	0	0.0%
SSO processing	3			2	66.7%				-		2	66.7%				
Storage	30			2	6.7%				-		5	16.7%				

IN NEW YORK CITY

Type of Facility	Total Number of Facilities in NYC	NYC 2018 Throughput in Tons (capacity)		Number of Facilities in NYC in DACs	Percentage	2018 Throughput by NYC Facilities in DACs in Tons (capacity)	Percentage of Throughput Handled by NYC Facilities in DACs		Number of Facilities in NYC in PEJAs	Percentage	2018 Throughput by NYC Facilities in PEJAs in Tons (capacity)	Percentage of Throughput Handled by NYC Facilities in PEJAs
CDDHRF	48	6,299,085		40	83.3%	5,364,959	85.2%		34	70.8%	4,009,374	63.7%
HHW	0	0		0	-	0	-		0	-	0	-
Landfill	0	0		0	-	0	-		0	-	0	-
LCD Landfill	0	0		0	-	0	-		0	-	0	-
Combustion Facilities	0	0		0	-	0	-		0	-	0	-
RHRF	20	1,165,716		17	85.0%	1,101,661	94.5%		17	85.0%	1,009,298	86.6%
RMW	7	14,054		5	71.4%	12,871	91.6%		5	71.4%	12,647	90.0%
SMP	13	452,547		12	92.3%	303,762	67.1%		12	92.3%	303,762	67.1%
Transfer Facility	28	5,295,408		26	92.9%	4,915,599	92.8%		19	67.9%	3,386,302	63.9%
Used Cooking Oil	3	19,712		3	100.0%	19,712	100.0%		3	100.0%	19,712	100.0%
VDF	57	102,090		47	82.5%	59,103	57.9%		48	84.2%	59,912	58.7%
WTHRF	1	153		1	100.0%	153	100.0%		1	100.0%	153	100.0%
Anaerobic digestion	0	0		0	-	0	-		0	-	0	-
Animal feed production	0	-		0	-	-	-		0	-	-	-
Composting	8	1,898		3	37.5%	1,898	100.0%		3	37.5%	648	34.1%
Land application	0	0		0	-	0	-		0	-	0	-
Mulch processing	0	0		0	-	0	-		0	-	0	-
SSO processing	0			0	-		-		0	-		-
Storage	0			0	-		-		0	-		-

OUTSIDE NEW YORK CITY

Type of Facility	Total Number of Facilities Located Outside NYC	2018 Throughput in tons for Facilities Located Outside NYC in Tons (capacity)		Number of Facilities in DACs Located Outside NYC	Percentage	2018 Throughput by Facilities Located Outside NYC in DACs in tons (capacity)	Percentage of Throughput Handled by Facilities Located Outside NYC in DACs		Number of Facilities in PEJAs Located Outside NYC	Percentage	2018 Throughput by Facilities Located Outside NYC in PEJAs in tons (capacity)	Percentage of Throughput Handled by Facilities Located Outside NYC in PEJAs
CDDHRF	502	9,394,772		180	35.9%	5,356,558	57.0%		146	29.1%	3,264,901	35%
HHW	18	5,569		6	33.3%	629	11.3%		4	22.2%	1,644	30%
Landfill	50	13,558,342		16	32.0%	5,003,193	36.9%		5	10.0%	1,111,957	8%
LCD Landfill	92	47,820		6	6.5%	6,188	12.9%		3	3.3%	1,178	2%
Combustion Facilities	17	4,063,797		10	58.8%	2,326,303	57.2%		8	47.1%	1,939,534	48%
RHRF	330	1,636,983		78	23.6%	694,057	42.4%		57	17.3%	404,258	25%
RMW	43	5,146		14	32.6%	3,950	76.8%		14	32.6%	2,592	50%
SMP	111	2,099,877		51	45.9%	851,057	40.5%		31	27.9%	396,903	19%
Transfer Facility	479	8,516,956		115	24.0%	4,526,977	53.2%		92	19.2%	3,986,297	47%
Used Cooking Oil	10	71,554		2	20.0%	20,651	28.9%		2	20.0%	20,651	29%
VDF	471	782,427		154	32.7%	321,422	41.1%		108	22.9%	215,805	28%
WTHRF	32	186,337		21	65.6%	95,799	51.4%		15	46.9%	47,529	26%
Anaerobic digestion	5	7,629		0	0.0%	0	0.0%		0	0.0%	0	0%
Animal feed production	1	-		0	0.0%	-	-		0	0.0%	-	0%
Composting	207	726,415		53	25.6%	83,183	11.5%		42	20.3%	37,427	5%
Land application	180	25,497		40	22.2%	8,038	31.5%		20	11.1%	2,693	11%
Mulch processing	37	13,803		9	24.3%	9,769	70.8%		9	24.3%	13,803	100%
SSO processing	3			2	66.7%		-		2	66.7%		0%
Storage	30			2	6.7%		-		5	16.7%		0%
Total	**2,618**	**41,142,922**		**759**	**29.0%**	**19,307,772**	**46.9%**		**563**	**21.5%**	**11,447,172**	**28%**

SUMMARY TABLE

	Statewide		Disadvantaged Communities					Potential Environmental Justice Areas				
	Total Number of Facilities	2018 Total Throughput in Tons (capacity)	Percentage of Population	Number of Facilities	Percentage of Total Number of Facilities	2018 Throughput in Tons (capacity)	Percentage of Total Throughput Handled by Facilities in DACs	Percentage of Population	Number of Facilities	Percentage	2018 Throughput in Tons (capacity)	Percentage of Total Throughput Handled by Facilities in PEJAs
NYC	**185**	**13,350,665**	**49.7%**	**154**	**83.2%**	**11,779,718**	**88.2%**	**71.5%**	**142**	**76.8%**	**8,801,808**	**66%**
Outside NYC	**2618**	**41,142,922**	**25.1%**	**758**	**29.0%**	**19,307,772**	**46.9%**	**25.8%**	**563**	**21.5%**	**11,447,172**	**28%**
Total NYS	**2803**	**54,493,587**	**35.7%**	**912**	**32.5%**	**31,087,490**	**57.0%**	**45.8%**	**705**	**25.2%**	**20,248,980**	**37%**

Landfills in DACs

Facility Name	Type of Facility	Activity Number	Region	Planning Unit	County	2018 Throughput in Tons (capacity)
Dunn C&D LF	Landfill - C&D Debris – permit	[42D20]	4	Capital Region Solid Waste Management Partnership (CRSWMP)	Rensselaer	510,275
Dunkirk Fly Ash Landfill	Landfill – Industrial Waste – permit	[07N21]	9	Chautauqua County	Chautauqua	298
Lafarge North America Inc	Landfill – Industrial Waste – permit	[01N20]	4	Not Affiliated - Coeymans (Town)	Albany	118,241
Lockwood Ash Disp Site	Landfill – Industrial Waste – permit	[62N01]	8	Yates County	Yates	12
NRG Huntley Landfill	Landfill – Industrial Waste – permit	[15N24]	9	Northwest Communities Solid Waste Management Board (NWCB)	Erie	11,044
US Gypsum Landfill	Landfill – Industrial Waste – permit	[19N01]	8	GLOW Region Solid Waste Management Committee	Genesee	3,436
Brookhaven Waste Management Facility	Landfill - Long Island – permit	[52LN0226]	1	Brookhaven (Town)	Suffolk	897,424
Babylon Southern Ashfill	Landfill - Long Island – permit	[52A01]	1	Babylon (Town)	Suffolk	52,765
Allied Waste Niagara Falls Landfill	Landfill - MSW - permit	[32S11]	9	Niagara County	Niagara	455,465
Auburn Landfill No 2	Landfill - MSW - permit	[06LS0002]	7	Cayuga County	Cayuga	60,791
Bath Sanitary Landfill	Landfill - MSW - permit	[51LS0025]	8	Steuben County	Steuben	150,724
Bristol Hill Landfill	Landfill - MSW - permit	[38S14]	7	Oswego County	Oswego	50,923
Hyland Landfill	Landfill - MSW - permit	[02S17]	9	Allegany County	Allegany	464,640
Madison County West Side Extension LF	Landfill - MSW - permit	[27LS0016]	7	Madison County	Madison	52,472
Seneca Meadows LF	Landfill - MSW - permit	[50S08]	8	Seneca County	Seneca	2,174,684

Landfills in PEJAs

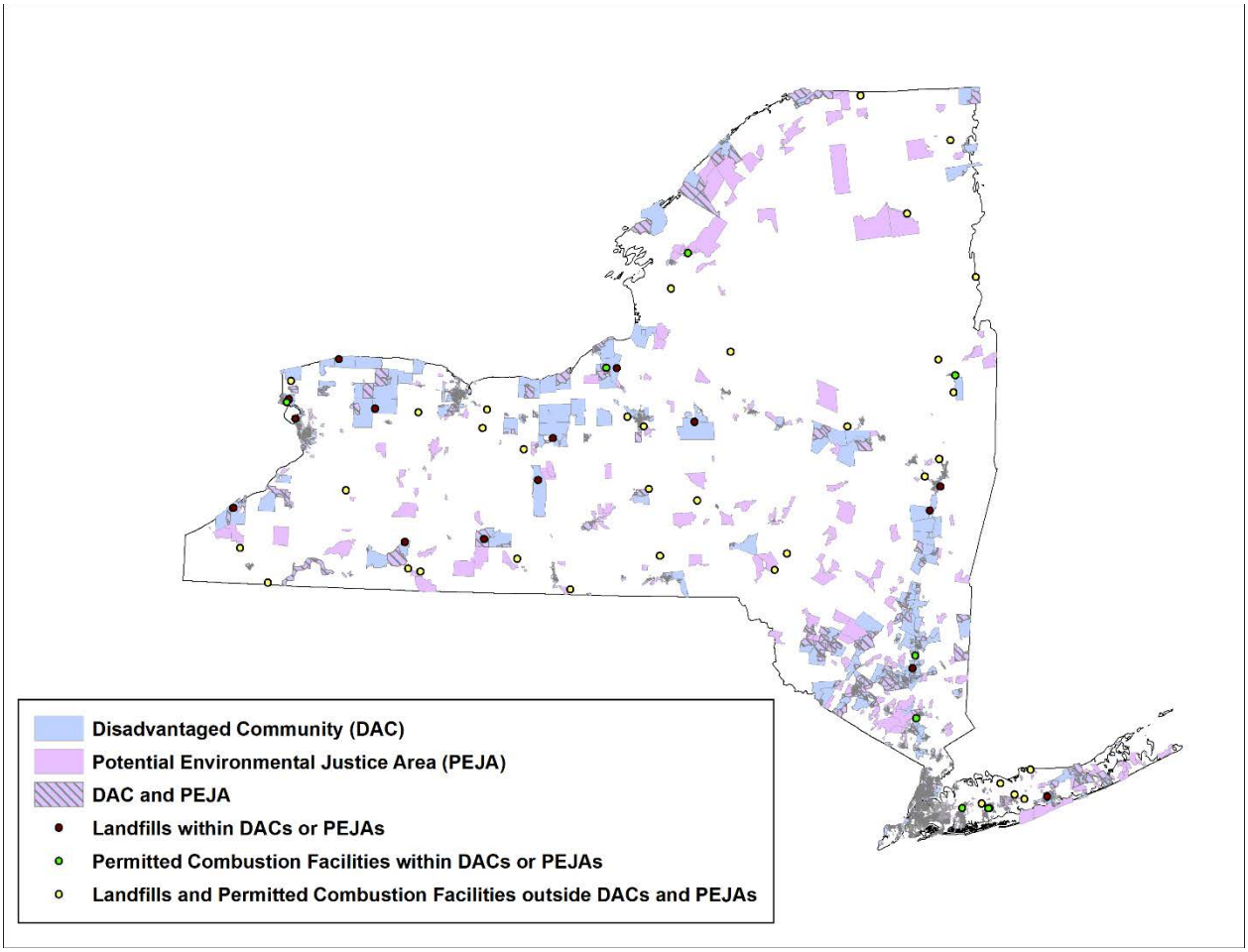
Facility Name	Type of Facility	Activity Number	Region	Planning Unit	County	2018 Throughput in Tons (capacity)
Danskammer Landfill(Mercia)	Landfill – Industrial Waste – permit	[36N01]	3	Orange County	Orange	0
NRG Huntley Landfill	Landfill – Industrial Waste – permit	[15N24]	9	Northwest Communities Solid Waste Management Board (NWCB)	Erie	11,044
Brookhaven Waste Management Facility	Landfill - Long Island – permit	[52LN0226]	1	Brookhaven (Town)	Suffolk	897,424
Babylon Southern Ashfill	Landfill - Long Island – permit	[52A01]	1	Babylon (Town)	Suffolk	52,765
Bath Sanitary Landfill	Landfill - MSW - permit	[51LS0025]	8	Steuben County	Steuben	150,724

Permitted Combustion Facilities in DACs

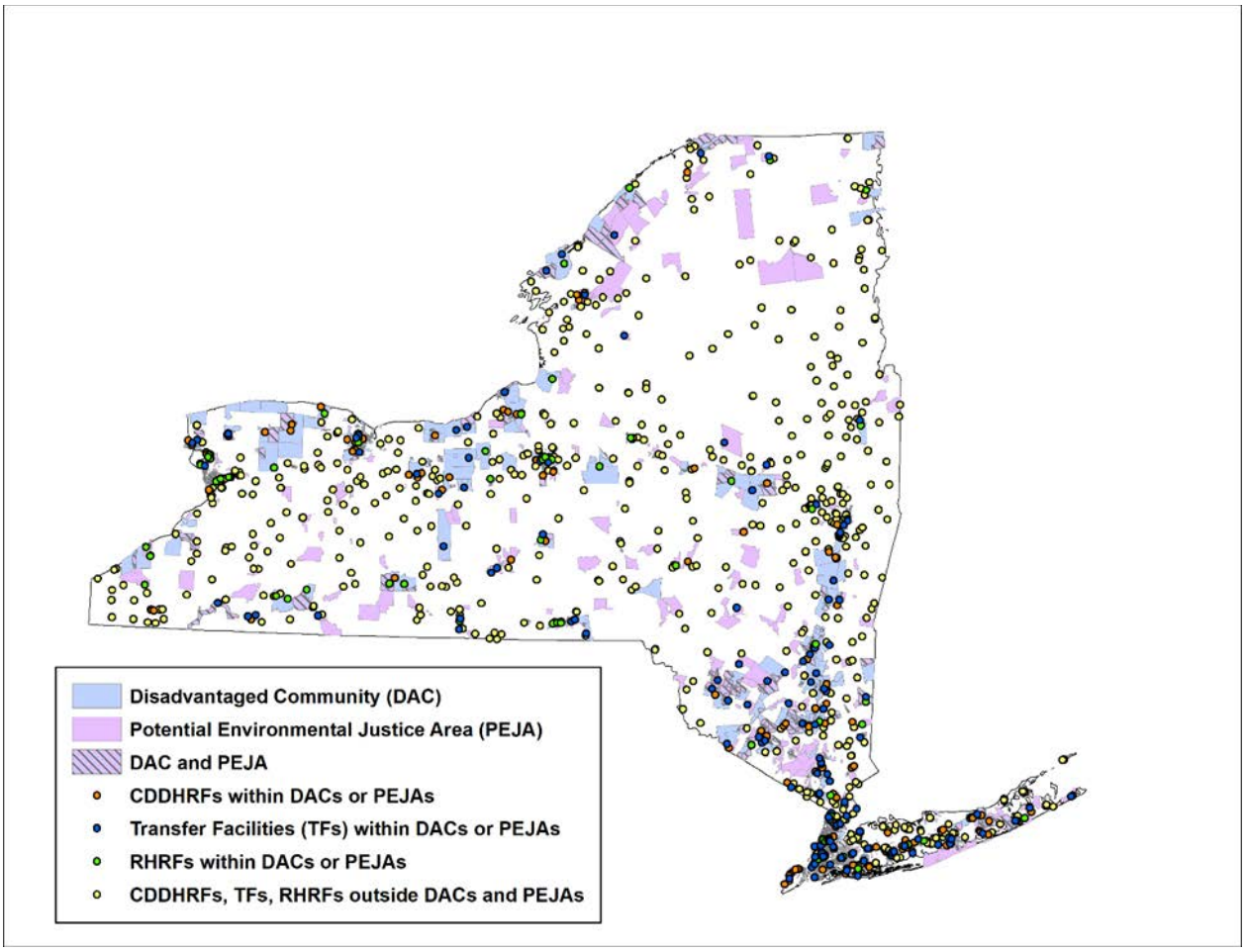
Facility Name	Type of Facility	Activity Number	Region	Planning Unit	County	2018 Throughput in Tons (capacity)
Babylon Resource Recovery Facility	Combustion Facility - Permit	[52BP0290]	1	Babylon (Town)	Suffolk	243,446
Dutchess County Resource Recovery Facility	Combustion Facility - Permit	[14E01]	3	Dutchess County	Dutchess	122,784
Wheelabrator Hudson Falls	Combustion Facility - Permit	[58BP0018]	5	Washington County	Washington	158,907
Wheelabrator Westchester L.P.	Combustion Facility - Permit	[60E01]	3	Westchester County	Westchester	702,017
Hempstead Resource Recovery Facility	Combustion Facility - Permit	[30E06]	1	Hempstead (Town)	Nassau	1,037,652
Oswego County Energy Recovery Facility	Combustion Facility - Permit	[38E01]	7	Oswego County	Oswego	56,246

Permitted Combustion Facilities in PEJAs

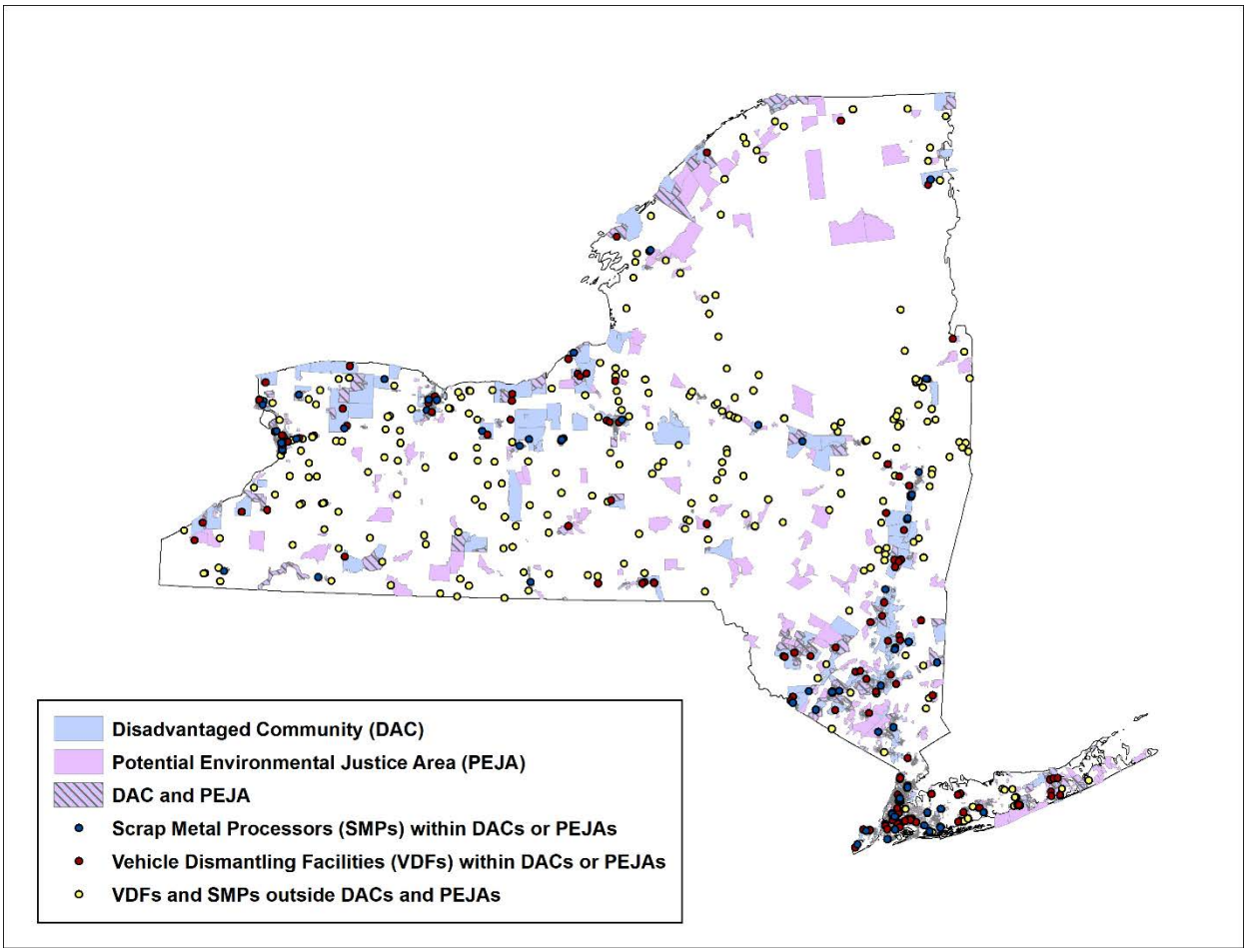
Facility Name	Type of Facility	Activity Number	Region	Planning Unit	County	2018 Throughput in Tons (capacity)
Babylon Resource Recovery Facility	Combustion Facility - Permit	[52BP0290]	1	Babylon (Town)	Suffolk	243,446
ReEnergy Black River	Combustion Facility - Permit	[23BP0014]	6	Development Authority of North Country (DANC)	Jefferson	52,765
Wheelabrator Hudson Falls	Combustion Facility - Permit	[58BP0018]	5	Washington County	Washington	158,907
Wheelabrator Westchester L.P.	Combustion Facility - Permit	[60E01]	3	Westchester County	Westchester	702,017
Covanta Niagara I; LLC	Combustion Facility - Permit	[32E01]	9	Niagara County	Niagara	781,938



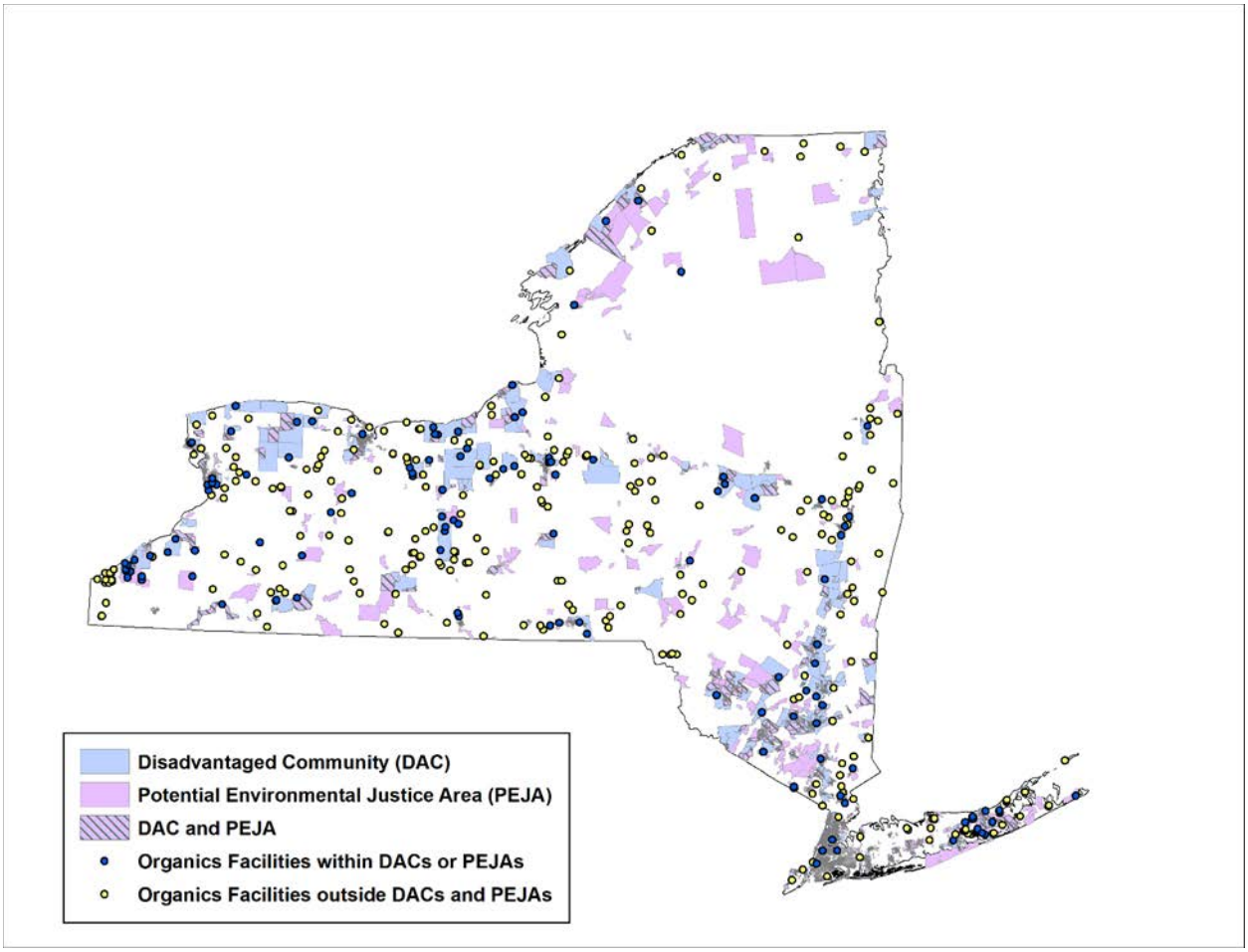
The map above shows the location of landfills (municipal solid waste landfills, construction and demolition (C&D) debris landfills, Long Island landfills, and industrial waste landfills) and permitted combustion facilities as they relate to PEJAs and DACs.



The map above shows the location of C&D debris handling and recovery facilities, transfer facilities, and RHRFs as they relate to PEJAs and DACs.



The map above shows the location of vehicle dismantling facilities and scrap metal processors as they relate to PEJAs and DACs.



The map above shows the location of organics recycling facilities, including composting, land application and storage, mulch processing, and other types of source separated organics processing facilities as they relate to PEJAs and DACs.

Appendix H: Projections and Waste Characterization

Appendix H provides supporting data mentioned throughout the New York State Solid Waste Management Plan. The following tables and figures are found in Appendix H.

- NYS Waste Projections 2023–2050
- Municipal Solid Waste (MSW)
    - NYS MSW Composition Summary Combined Composition Analysis 2023–2050
    - NYS MSW Composition Combined Composition Analysis Year 2023
    - NYS MSW Composition Commercial/Institutional Composition Analysis Year 2023
    - NYS MSW Composition Residential Composition Analysis Year 2023
    - NYS MSW Composition Detailed Composition Analysis Year 2023
    - NYS MSW Materials Composition
    - 2018 Management of MSW Generated in NYS
    - MSW Materials Composition
    - 2018 Percent of Recyclables Recovered from MSW Stream
    - 2018 Composition of MSW Recyclables
    - 2018 Composition of Plastics Stream
    - 2018 Composition of Paper Stream
    - 2018 Composition of Metal Stream
- Construction and Demolition (C&D) Debris
    - NYS Waste Material Composition Combined Building C&D Composition Analysis 2023
    - NYS Waste Material Composition Demolition C&D Composition Analysis 2023
    - NYS Waste Material Composition Renovation C&D Composition Analysis 2023
    - NYS Waste Material Composition New Construction C&D Composition Analysis 2023
    - NYS Material Composition Detailed C&D Composition Analysis 2023
    - 2018 Management of C&D Debris Generated in NYS
    - C&D Debris Materials Composition
    - 2018 Percent of Recyclables Recovered from C&D Debris Waste Stream
    - 2018 Composition of C&D Debris Recyclables
    - 2018 Composition of Concrete/Asphalt/Brick/Rock Stream
    - 2018 Composition of Soil/Gravel Stream

New York State Waste Projections 2023–2050									
		2018	**2023**	**2025**	**2027**	**2030**	**2032**	**2040**	**2050**
MSW	**Tons Generated**	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980	17,889,980
	Tons Diverted	3,399,096	3,935,796	4,651,395	5,724,794	7,155,992	9,123,890	11,628,487	15,206,483
	Recycling Rate (%)	19%	22%	26%	32%	40%	51%	65%	85%
CDD	**Tons Generated**	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987	18,360,987
	Tons Diverted	11,751,032	12,301,861	13,219,911	13,770,740	14,321,570	14,688,790	15,056,009	15,606,839
	Recycling Rate (%)	64%	67%	72%	75%	78%	80%	82%	85%
Industrial	**Tons Generated**	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296	1,932,296
	Tons Diverted	560,366	618,335	695,627	869,533	1,062,763	1,255,992	1,449,222	1,642,452
	Recycling Rate (%)	29%	32%	36%	45%	55%	65%	75%	85%
Biosolids	**Tons Generated**	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854	1,372,854
	Tons Diverted	302,028	425,585	453,042	480,499	507,956	535,413	617,784	782,527
	Recycling Rate (%)	22%	31%	33%	35%	37%	39%	45%	57%
Bulk/ Heavy Metals	**Tons Generated**	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161	2,692,161
	Tons Diverted	2,369,102	2,369,102	2,396,023	2,422,945	2,422,945	2,476,788	2,503,710	2,557,553
	Recycling Rate (%)	88%	88%	89%	90%	90%	92%	93%	95%
Total Waste Stream	**Tons Generated**	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278	42,248,278
	Tons Diverted	18,381,623	19,650,678	21,415,997	23,268,511	25,471,226	28,080,873	31,255,212	35,795,853
	Recycling Rate (%)	44%	47%	51%	55%	60%	66%	74%	85%

MSW				
	Tons Generated	Tons Diverted	Recycling Rate (%)	Per Capita Waste Disposal (lbs/person/day)
2018	17,889,980	3,399,096	19%	4.09
2023	17,889,980	3,900,016	22%	3.91
2025	17,889,980	4,561,945	26%	3.71
2027	17,889,980	5,760,574	32%	3.37
2030	17,889,980	7,191,772	40%	2.97
2032	17,889,980	9,159,670	51%	2.42
2040	17,889,980	11,664,267	65%	1.71
2050	17,889,980	15,224,373	85%	0.72

NYS Population	
2018	19,530,351
2023	19,628,003
2025	19,667,259
2027	19,706,593
2030	19,765,713
2032	19,805,244
2040	19,963,686
2050	20,163,323

New York State MSW Composition
Summary Combined Composition Analysis
2023–2050

Material	2023 Tons Generated	% of Total	2023 Tons Disposed	% of Total		2023 Tons Diverted	% Diverted		2025		2027		2030		2032		2040		2050	
									Tons Diverted	% Diverted	Tons Diverted	% Diverted	Tons Diverted	% Diverted	Tons Diverted	% Diverted	Tons Diverted	% Diverted	Tons Diverted	% Diverted
Newspaper	727,017	4.06%	241,489	1.72%		485,528	66.78%		508,912	70.00%	545,263	75.00%	581,614	80.00%	617,964	85.0%	654,315	90.00%	654,315	90.00%
Corrugated Cardboard	1,789,286	10.00%	834,442	5.96%		954,844	53.36%		1,073,572	60.00%	1,163,036	65.00%	1,252,500	70.00%	1,341,965	75.0%	1,610,358	90.00%	1,610,358	90.00%
Other Recyclable Paper	2,122,774	11.86%	1,552,821	11.09%		569,953	26.85%		636,832	30.00%	742,971	35.00%	849,110	40.00%	1,061,387	50.0%	1,592,081	75.00%	1,910,497	90.00%
Other Compostable Paper	1,195,169	6.68%	1,169,890	8.36%		25,279	2.12%		59,758	5.00%	179,275	15.00%	298,792	25.00%	478,068	40.0%	717,101	60.00%	1,075,652	90.00%
Subtotal Paper	*5,834,246*	*32.61%*	*3,798,642*	*27.13%*		*2,035,604*	*34.89%*		*2,279,074*	*39.06%*	*2,630,545*	*45.09%*	*2,982,016*	*51.11%*	*3,499,384*	*60.0%*	*4,573,855*	*78.40%*	*5,250,822*	*90.00%*
Ferrous/Aluminum Containers	283,763	1.59%	167,409	1.20%		116,354	41.00%		170,258	60.00%	198,634	70.00%	227,011	80.00%	241,199	85.0%	255,387	90.00%	255,387	90.00%
Other Non-Ferrous Metals	172,781	0.97%	94,441	0.67%		78,339	45.34%		103,668	60.00%	120,946	70.00%	138,225	80.00%	155,503	90.0%	155,503	90.00%	155,503	90.00%
Other Ferrous Metals	776,345	4.34%	528,282	3.77%		248,063	31.95%		271,721	35.00%	349,355	45.00%	465,807	60.00%	582,258	75.0%	698,710	90.00%	698,710	90.00%
Subtotal Metals	*1,232,888*	*6.89%*	*790,132*	*5.64%*		*442,756*	*35.91%*		*545,647*	*44.26%*	*668,936*	*54.26%*	*831,042*	*67.41%*	*978,960*	*79.4%*	*1,109,600*	*90.00%*	*1,109,600*	*90.00%*
PET Containers	180,438	1.01%	94,371	0.67%		86,067	47.70%		90,219	50.00%	108,263	60.00%	126,307	70.00%	144,351	80.0%	162,394	90.00%	162,394	90.00%
HDPE Containers	151,658	0.85%	119,599	0.85%		32,058	21.14%		45,497	30.00%	60,663	40.00%	90,995	60.00%	106,160	70.0%	121,326	80.00%	136,492	90.00%
Other Plastic (3-7) Containers	34,581	0.19%	32,550	0.23%		2,031	5.87%		3,458	10.00%	6,916	20.00%	10,374	30.00%	17,291	50.0%	20,749	60.00%	31,123	90.00%
Film Plastic	1,028,407	5.75%	992,690	7.09%		35,718	3.47%		51,420	5.00%	102,841	10.00%	205,681	20.00%	308,522	30.0%	514,204	50.00%	925,566	90.00%
Other Plastic	1,117,816	6.25%	1,082,984	7.74%		34,832	3.12%		55,891	5.00%	111,782	10.00%	223,563	20.00%	335,345	30.0%	447,126	40.00%	1,006,034	90.00%
Subtotal Plastics	*2,512,900*	*14.05%*	*2,322,194*	*16.59%*		*190,706*	*7.59%*		*246,486*	*9.81%*	*390,465*	*15.54%*	*656,920*	*26.14%*	*911,668*	*36.3%*	*1,265,799*	*50.37%*	*2,261,610*	*90.00%*
Glass Containers	712,940	3.98%	388,088	2.77%		324,851	45.57%		285,176	40.00%	285,176	40.00%	356,470	50.00%	427,764	60.0%	499,058	70.00%	641,646	90.00%
Other Glass	70,275	0.39%	67,690	0.48%		2,585	3.68%		3,514	5.00%	7,028	10.00%	21,083	30.00%	28,110	40.0%	35,138	50.00%	63,248	90.00%
Subtotal Glass	*783,215*	*4.38%*	*455,778*	*3.26%*		*327,437*	*41.81%*		*288,690*	*36.86%*	*292,203*	*37.31%*	*377,552*	*48.21%*	*455,874*	*58.2%*	*534,195*	*68.21%*	*704,894*	*90.00%*
Food Scraps	3,158,775	17.65%	3,069,514	21.93%		89,261	2.83%		315,877	10.00%	631,755	20.00%	947,632	30.00%	1,579,387	50.0%	1,895,265	60.00%	2,842,897	90.00%
Yard Trimmings	898,660	5.02%	290,606	2.08%		608,053	67.66%		763,861	85.00%	808,794	90.00%	808,794	90.00%	808,794	90.0%	808,794	90.00%	808,794	90.00%
Subtotal Organics	*4,057,434*	*22.68%*	*3,360,120*	*24.00%*		*697,314*	*17.19%*		*1,079,738*	*26.61%*	*1,440,549*	*35.50%*	*1,756,426*	*43.29%*	*2,388,181*	*58.9%*	*2,704,058*	*66.64%*	*3,651,691*	*90.00%*
Textiles	926,746	5.18%	871,438	6.22%		55,308	5.97%		92,675	10.00%	185,349	20.00%	278,024	30.00%	370,698	40.0%	463,373	50.00%	834,072	90.00%
Wood	623,721	3.49%	585,844	4.18%		37,877	6.07%		31,186	5.00%	62,372	10.00%	124,744	20.00%	187,116	30.0%	249,488	40.00%	467,791	75.00%
Miscellaneous	1,920,601	10.73%	1,815,850	12.97%		104,750	5.45%		0	0.00%	96,030	5.00%	192,060	10.00%	384,120	20.0%	768,240	40.00%	960,300	50.00%
Subtotal Other	*3,471,068*	*19.40%*	*3,273,133*	*23.38%*		*197,935*	*5.70%*		*123,861*	*3.57%*	*343,751*	*9.90%*	*594,828*	*17.14%*	*941,935*	*27.1%*	*1,481,102*	*42.67%*	*2,262,163*	*65.17%*
Total	***17,891,752***	***100.00%***	***14,000,000***	***100.00%***		***3,891,752***	***21.75%***		***4,563,495***	***25.51%***	***5,766,449***	***32.23%***	***7,198,785***	***40.24%***	***9,176,002***	***51.29%***	***11,668,609***	***65.22%***	***15,240,778***	***85.18%***

Population Served (Statewide)	19,530,351																			
						Tons Disposed			13,328,257		12,125,303		10,692,967		8,715,750		6,223,143		2,650,974	
Quantity/Capita (tons)	0.92		0.72			Disposal/Capita (tons)			0.68		0.62		0.55		0.45		0.32		0.14	
Quantity/Capita (lbs)	1,832		1,434			Disposal/Capita (lbs)			1,365		1,242		1,095		893		637		271	
Quantity/Capita/Day (lbs)	5.02		3.93			Disposal/Capita/Day (lbs)			3.74		3.40		3.00		2.45		1.75		0.74	
Residential Disposal (@ 54% of total disposal)			7,560,000																	
Residential Disposal (lbs/day)			15,120,000,000																	
Residential Disposal/Capita (lbs)			774																	

Note: Numbers displayed in this table have been rounded.

New York State MSW Composition
Combined Composition Analysis
Year 2023

Material	Waste Generation				Waste Discard			
	Rural	Suburban	Urban	NYS Percentages	Rural	Suburban	Urban	NYS Percentages
	16.00%	30.00%	54.00%	100.00%	16.00%	30.00%	54.00%	100.00%
Newspaper	3.81%	3.61%	4.39%	4.06%	1.68%	1.55%	1.84%	1.72%
Corrugated Cardboard	9.67%	9.89%	10.16%	10.00%	5.92%	6.41%	5.72%	5.96%
Other Recyclable Paper	10.71%	10.93%	12.73%	11.86%	11.66%	13.65%	9.50%	11.09%
Other Commercial Printing	2.32%	2.27%	2.30%	2.29%	2.72%	3.03%	2.51%	2.70%
Office Paper	2.06%	2.39%	3.36%	2.86%	1.87%	2.39%	1.09%	1.60%
Junk Mail	2.03%	2.08%	2.16%	2.11%	2.42%	2.64%	2.32%	2.43%
Paperboard	1.95%	2.02%	2.44%	2.24%	1.98%	2.62%	1.56%	1.95%
Magazines	1.02%	0.91%	1.05%	1.00%	1.06%	1.16%	0.81%	0.95%
Books	0.42%	0.41%	0.50%	0.46%	0.57%	0.61%	0.40%	0.49%
Bags	0.37%	0.37%	0.41%	0.39%	0.43%	0.52%	0.41%	0.45%
Phone Books	0.30%	0.30%	0.25%	0.27%	0.30%	0.35%	0.20%	0.26%
Poly-Coated	0.24%	0.20%	0.25%	0.23%	0.30%	0.35%	0.20%	0.26%
Other Compostable Paper	6.80%	6.40%	6.80%	6.68%	7.98%	8.39%	8.45%	8.36%
Subtotal Paper	*30.99%*	*30.82%*	*34.08%*	*32.61%*	*27.25%*	*29.99%*	*25.51%*	*27.13%*
Ferrous/Aluminum Containers	2.10%	1.44%	1.52%	1.59%	1.26%	1.16%	1.20%	1.20%
Ferrous Containers	1.52%	0.98%	1.06%	1.11%	1.00%	0.90%	0.95%	0.94%
Aluminum Containers	0.57%	0.47%	0.45%	0.48%	0.26%	0.26%	0.25%	0.25%
Other Non-Ferrous Metals	1.33%	1.16%	0.75%	0.97%	0.77%	0.66%	0.66%	0.67%
Other Aluminum	0.24%	0.25%	0.25%	0.25%	0.30%	0.25%	0.30%	0.28%
Automotive Batteries	0.67%	0.57%	0.20%	0.39%	0.00%	0.00%	0.00%	0.00%
Other Non-aluminum	0.42%	0.35%	0.30%	0.33%	0.47%	0.41%	0.36%	0.39%
Other Ferrous Metals	5.28%	5.36%	3.49%	4.34%	3.96%	3.80%	3.70%	3.77%
Subtotal Metals	*8.71%*	*7.96%*	*5.76%*	*6.89%*	*5.99%*	*5.61%*	*5.56%*	*5.64%*
PET Containers	0.97%	0.86%	1.10%	1.01%	0.70%	0.70%	0.65%	0.67%
HDPE Containers	0.89%	0.81%	0.86%	0.85%	0.73%	1.01%	0.80%	0.85%
Other Plastic (3-7) Containers	0.16%	0.20%	0.20%	0.19%	0.30%	0.26%	0.20%	0.23%
Film Plastic	5.78%	5.64%	5.80%	5.75%	6.92%	7.28%	7.04%	7.09%
Other Plastic	6.10%	6.05%	6.40%	6.25%	7.68%	7.82%	7.70%	7.74%
Durables	3.14%	3.09%	3.25%	3.18%	3.86%	3.96%	3.95%	3.94%
Non-durables	1.68%	1.69%	1.85%	1.77%	2.21%	2.20%	2.20%	2.20%
Packaging	1.27%	1.27%	1.31%	1.29%	1.62%	1.67%	1.56%	1.60%
Subtotal Plastics	*13.91%*	*13.55%*	*14.36%*	*14.05%*	*16.34%*	*17.07%*	*16.40%*	*16.59%*
Glass Containers	3.97%	3.86%	4.06%	3.98%	2.74%	2.75%	2.80%	2.77%
Other Glass	0.46%	0.35%	0.40%	0.39%	0.50%	0.45%	0.50%	0.48%
Subtotal Glass	*4.43%*	*4.20%*	*4.46%*	*4.38%*	*3.24%*	*3.19%*	*3.30%*	*3.26%*
Food Scraps	12.95%	14.07%	21.04%	17.65%	17.21%	18.19%	25.40%	21.93%
Yard Trimmings	2.26%	10.31%	2.90%	5.02%	1.93%	2.44%	1.92%	2.08%
Subtotal Organics	*15.21%*	*24.38%*	*23.94%*	*22.68%*	*19.14%*	*20.63%*	*27.32%*	*24.00%*
Textiles	5.29%	5.43%	5.01%	5.18%	5.67%	6.76%	6.09%	6.22%
Clothing, Footwear, Towels, Sheets	3.93%	3.86%	3.70%	3.78%	4.13%	4.90%	4.44%	4.53%
Carpet	1.36%	1.57%	1.32%	1.40%	1.54%	1.87%	1.65%	1.70%
Wood	6.16%	3.44%	2.72%	3.49%	5.07%	4.45%	3.78%	4.18%
Miscellaneous	15.30%	10.24%	9.66%	10.73%	17.31%	12.31%	12.05%	12.97%
C&D Materials	7.83%	3.31%	4.11%	4.47%	9.12%	4.49%	5.16%	5.59%
Other Durables	1.82%	1.56%	1.71%	1.68%	2.27%	2.06%	2.06%	2.09%
Diapers	1.56%	1.70%	1.72%	1.69%	1.91%	1.94%	2.27%	2.11%
Electronics	1.34%	1.65%	1.30%	1.41%	1.34%	1.75%	1.60%	1.60%
Tires	1.80%	1.57%	0.45%	1.00%	1.70%	1.56%	0.45%	0.98%
HHW	0.35%	0.33%	0.26%	0.30%	0.52%	0.33%	0.31%	0.35%
Fines	0.60%	0.15%	0.10%	0.19%	0.44%	0.20%	0.20%	0.24%
Subtotal Other	*26.75%*	*19.11%*	*17.39%*	*19.40%*	*28.04%*	*23.52%*	*21.92%*	*23.38%*
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

New York State MSW Composition
Commercial/Instutional Composition Analysis
Year 2023

Material	Waste Generation				Waste Discard			
	Rural	Suburban	Urban	NYS Percentages	Rural	Suburban	Urban	NYS Percentages
	16.00%	30.00%	54.00%	100.00%	16.00%	30.00%	54.00%	100.00%
Newspaper	1.90%	1.90%	2.00%	1.95%	2.20%	2.10%	2.20%	2.17%
Corrugated Cardboard	13.90%	13.90%	13.70%	13.79%	7.20%	8.00%	6.40%	7.01%
Other Recyclable Paper	9.90%	10.10%	12.00%	11.09%	9.40%	12.60%	5.50%	8.25%
Other Commercial Printing	1.10%	1.00%	0.90%	0.96%	1.10%	1.60%	1.00%	1.20%
Office Paper	3.80%	4.20%	5.80%	5.00%	3.20%	4.20%	1.30%	2.47%
Junk Mail	0.70%	0.70%	0.70%	0.70%	0.80%	1.10%	0.60%	0.78%
Paperboard	2.30%	2.40%	2.60%	2.49%	2.10%	3.00%	1.20%	1.88%
Magazines	0.90%	0.80%	1.00%	0.92%	1.00%	1.10%	0.60%	0.81%
Books	0.30%	0.30%	0.40%	0.35%	0.40%	0.50%	0.30%	0.38%
Bags	0.20%	0.20%	0.20%	0.20%	0.20%	0.30%	0.20%	0.23%
Phone Books	0.30%	0.30%	0.20%	0.25%	0.30%	0.40%	0.10%	0.22%
Poly-Coated	0.30%	0.20%	0.20%	0.22%	0.30%	0.40%	0.20%	0.28%
Other Compostable Paper	6.80%	6.40%	6.80%	6.68%	8.10%	8.50%	8.50%	8.44%
Subtotal Paper	*32.50%*	*32.30%*	*34.50%*	*33.52%*	*26.90%*	*31.20%*	*22.60%*	*25.87%*
Ferrous/Aluminum Containers	1.40%	1.00%	1.10%	1.12%	1.20%	1.10%	1.20%	1.17%
Ferrous Containers	1.00%	0.70%	0.70%	0.75%	1.00%	0.90%	1.00%	0.97%
Aluminum Containers	0.40%	0.30%	0.40%	0.37%	0.20%	0.20%	0.20%	0.20%
Other Non-Ferrous Metals	1.10%	1.10%	0.70%	0.88%	0.60%	0.60%	0.50%	0.55%
Other Aluminum	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
Automotive Batteries	0.50%	0.40%	0.20%	0.31%	0.00%	0.00%	0.00%	0.00%
Other Non-aluminum	0.30%	0.40%	0.20%	0.28%	0.30%	0.30%	0.20%	0.25%
Other Ferrous Metals	5.40%	5.80%	3.70%	4.60%	3.90%	3.80%	3.60%	3.71%
Subtotal Metals	*7.90%*	*7.90%*	*5.50%*	*6.60%*	*5.70%*	*5.50%*	*5.30%*	*5.42%*
PET Containers	0.80%	0.80%	1.00%	0.91%	0.70%	0.70%	0.60%	0.65%
HDPE Containers	0.60%	0.70%	0.70%	0.68%	0.50%	0.90%	0.70%	0.73%
Other Plastic (3-7) Containers	0.10%	0.20%	0.20%	0.18%	0.30%	0.20%	0.20%	0.22%
Film Plastic	5.90%	5.80%	5.80%	5.82%	7.50%	7.50%	7.40%	7.45%
Other Plastic	6.10%	6.10%	6.30%	6.21%	7.80%	7.60%	7.60%	7.63%
Durables	3.20%	3.20%	3.30%	3.25%	3.80%	3.90%	4.00%	3.94%
Non-durables	1.80%	1.80%	1.90%	1.85%	2.50%	2.20%	2.20%	2.25%
Packaging	1.10%	1.10%	1.10%	1.10%	1.50%	1.50%	1.40%	1.45%
Subtotal Plastics	*13.50%*	*13.60%*	*14.00%*	*13.80%*	*16.80%*	*16.90%*	*16.50%*	*16.67%*
Glass Containers	3.80%	3.80%	3.80%	3.80%	2.80%	2.80%	2.90%	2.85%
Other Glass	0.40%	0.40%	0.40%	0.40%	0.50%	0.50%	0.50%	0.50%
Subtotal Glass	*4.20%*	*4.20%*	*4.20%*	*4.20%*	*3.30%*	*3.30%*	*3.40%*	*3.35%*
Food Scraps	13.30%	15.50%	25.20%	20.39%	17.50%	18.90%	29.30%	24.29%
Yard Trimmings	1.10%	9.10%	1.50%	3.72%	1.70%	2.00%	1.50%	1.68%
Subtotal Organics	*14.40%*	*24.60%*	*26.70%*	*24.10%*	*19.20%*	*20.90%*	*30.80%*	*25.97%*
Textiles	4.30%	4.60%	3.40%	3.90%	5.90%	6.10%	6.30%	6.18%
Clothing, Footwear, Towels, Sheets	3.00%	3.20%	2.50%	2.79%	4.30%	4.40%	4.60%	4.49%
Carpet	1.30%	1.40%	0.90%	1.11%	1.60%	1.70%	1.70%	1.68%
Wood	9.00%	4.10%	3.50%	4.56%	6.40%	5.00%	4.40%	4.90%
Miscellaneous	14.20%	8.70%	8.20%	9.31%	15.80%	11.10%	10.70%	11.64%
C&D Materials	7.60%	2.70%	3.80%	4.08%	8.60%	4.10%	4.90%	5.25%
Other Durables	1.70%	1.50%	1.50%	1.53%	2.10%	2.00%	1.90%	1.96%
Diapers	1.10%	1.20%	1.10%	1.13%	1.50%	1.50%	1.70%	1.61%
Electronics	1.40%	1.70%	1.30%	1.44%	1.40%	1.80%	1.60%	1.63%
Tires	1.80%	1.40%	0.40%	0.92%	1.70%	1.50%	0.40%	0.94%
HHW	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Fines	0.60%	0.20%	0.10%	0.21%	0.50%	0.20%	0.20%	0.25%
Subtotal Other	*27.50%*	*17.40%*	*15.10%*	*17.77%*	*28.10%*	*22.20%*	*21.40%*	*22.71%*
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

New York State MSW Composition
Residential Composition Analysis
Year 2023

Material	Waste Generation				Waste Discard			
	Rural	Suburban	Urban	NYS Percentages	Rural	Suburban	Urban	NYS Percentages
	16.00%	30.00%	54.00%	100.00%	16.00%	30.00%	54.00%	100.00%
Newspaper	**5.20%**	**5.00%**	**6.60%**	**5.90%**	**1.30%**	**1.10%**	**1.50%**	**1.35%**
Corrugated Cardboard	**6.60%**	**6.60%**	**6.90%**	**6.76%**	**5.00%**	**5.10%**	**5.10%**	**5.08%**
Other Recyclable Paper	**11.30%**	**11.60%**	**13.40%**	**12.52%**	**13.30%**	**14.50%**	**13.20%**	**13.61%**
Other Commercial Printing	3.20%	3.30%	3.60%	3.45%	3.90%	4.20%	3.90%	3.99%
Office Paper	0.80%	0.90%	1.10%	0.99%	0.90%	0.90%	0.90%	0.90%
Junk Mail	3.00%	3.20%	3.50%	3.33%	3.60%	3.90%	3.90%	3.85%
Paperboard	1.70%	1.70%	2.30%	2.02%	1.90%	2.30%	1.90%	2.02%
Magazines	1.10%	1.00%	1.10%	1.07%	1.10%	1.20%	1.00%	1.08%
Books	0.50%	0.50%	0.60%	0.55%	0.70%	0.70%	0.50%	0.59%
Bags	0.50%	0.50%	0.60%	0.55%	0.60%	0.70%	0.60%	0.63%
Phone Books	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
Poly-Coated	0.20%	0.20%	0.30%	0.25%	0.30%	0.30%	0.20%	0.25%
Other Compostable Paper	**6.80%**	**6.40%**	**6.80%**	**6.68%**	**7.90%**	**8.30%**	**8.40%**	**8.29%**
Subtotal Paper	***29.90%***	***29.60%***	***33.70%***	***31.86%***	***27.50%***	***29.00%***	***28.20%***	***28.33%***
Ferrous/Aluminum Containers	**2.60%**	**1.80%**	**1.90%**	**1.98%**	**1.30%**	**1.20%**	**1.20%**	**1.22%**
Ferrous Containers	1.90%	1.20%	1.40%	1.42%	1.00%	0.90%	0.90%	0.92%
Aluminum Containers	0.70%	0.60%	0.50%	0.56%	0.30%	0.30%	0.30%	0.30%
Other Non-Ferrous Metals	**1.50%**	**1.20%**	**0.80%**	**1.03%**	**0.90%**	**0.70%**	**0.80%**	**0.79%**
Other Aluminum	0.20%	0.20%	0.20%	0.20%	0.30%	0.20%	0.30%	0.27%
Automotive Batteries	0.80%	0.70%	0.20%	0.45%	0.00%	0.00%	0.00%	0.00%
Other Non-aluminum	0.50%	0.30%	0.40%	0.39%	0.60%	0.50%	0.50%	0.52%
Other Ferrous Metals	**5.20%**	**5.00%**	**3.30%**	**4.11%**	**4.00%**	**3.80%**	**3.80%**	**3.83%**
Subtotal Metals	***9.30%***	***8.00%***	***6.00%***	***7.13%***	***6.20%***	***5.70%***	***5.80%***	***5.83%***
PET Containers	**1.10%**	**0.90%**	**1.20%**	**1.09%**	**0.70%**	**0.70%**	**0.70%**	**0.70%**
HDPE Containers	**1.10%**	**0.90%**	**1.00%**	**0.99%**	**0.90%**	**1.10%**	**0.90%**	**0.96%**
Other Plastic (3-7) Containers	**0.20%**	**0.20%**	**0.20%**	**0.20%**	**0.30%**	**0.30%**	**0.20%**	**0.25%**
Film Plastic	**5.70%**	**5.50%**	**5.80%**	**5.69%**	**6.50%**	**7.10%**	**6.70%**	**6.79%**
Other Plastic	**6.10%**	**6.00%**	**6.50%**	**6.29%**	**7.60%**	**8.00%**	**7.80%**	**7.83%**
Durables	3.10%	3.00%	3.20%	3.12%	3.90%	4.00%	3.90%	3.93%
Non-durables	1.60%	1.60%	1.80%	1.71%	2.00%	2.20%	2.20%	2.17%
Packaging	1.40%	1.40%	1.50%	1.45%	1.70%	1.80%	1.70%	1.73%
Subtotal Plastics	***14.20%***	***13.50%***	***14.70%***	***14.26%***	***16.00%***	***17.20%***	***16.30%***	***16.52%***
Glass Containers	**4.10%**	**3.90%**	**4.30%**	**4.15%**	**2.70%**	**2.70%**	**2.70%**	**2.70%**
Other Glass	**0.50%**	**0.30%**	**0.40%**	**0.39%**	**0.50%**	**0.40%**	**0.50%**	**0.47%**
Subtotal Glass	***4.60%***	***4.20%***	***4.70%***	***4.53%***	***3.20%***	***3.10%***	***3.20%***	***3.17%***
Food Scraps	**12.70%**	**12.90%**	**17.20%**	**15.19%**	**17.00%**	**17.60%**	**21.80%**	**19.77%**
Yard Trimmings	**3.10%**	**11.30%**	**4.20%**	**6.15%**	**2.10%**	**2.80%**	**2.30%**	**2.42%**
Subtotal Organics	***15.80%***	***24.20%***	***21.40%***	***21.34%***	***19.10%***	***20.40%***	***24.10%***	***22.19%***
Textiles	**6.00%**	**6.10%**	**6.50%**	**6.30%**	**5.50%**	**7.30%**	**5.90%**	**6.26%**
Clothing, Footwear, Towels, Sheets	4.60%	4.40%	4.80%	4.65%	4.00%	5.30%	4.30%	4.55%
Carpet	1.40%	1.70%	1.70%	1.65%	1.50%	2.00%	1.60%	1.70%
Wood	**4.10%**	**2.90%**	**2.00%**	**2.61%**	**4.10%**	**4.00%**	**3.20%**	**3.58%**
Miscellaneous	**16.10%**	**11.50%**	**11.00%**	**11.97%**	**18.40%**	**13.30%**	**13.30%**	**14.12%**
C&D Materials	8.00%	3.80%	4.40%	4.80%	9.50%	4.80%	5.40%	5.88%
Other Durables	1.90%	1.60%	1.90%	1.81%	2.40%	2.10%	2.20%	2.20%
Diapers	1.90%	2.10%	2.30%	2.18%	2.20%	2.30%	2.80%	2.55%
Electronics	1.30%	1.60%	1.30%	1.39%	1.30%	1.70%	1.60%	1.58%
Tires	1.80%	1.70%	0.50%	1.07%	1.70%	1.60%	0.50%	1.02%
HHW	0.60%	0.60%	0.50%	0.55%	0.90%	0.60%	0.60%	0.65%
Fines	0.60%	0.10%	0.10%	0.18%	0.40%	0.20%	0.20%	0.23%
Subtotal Other	***26.20%***	***20.50%***	***19.50%***	***20.87%***	***28.00%***	***24.60%***	***22.40%***	***23.96%***
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

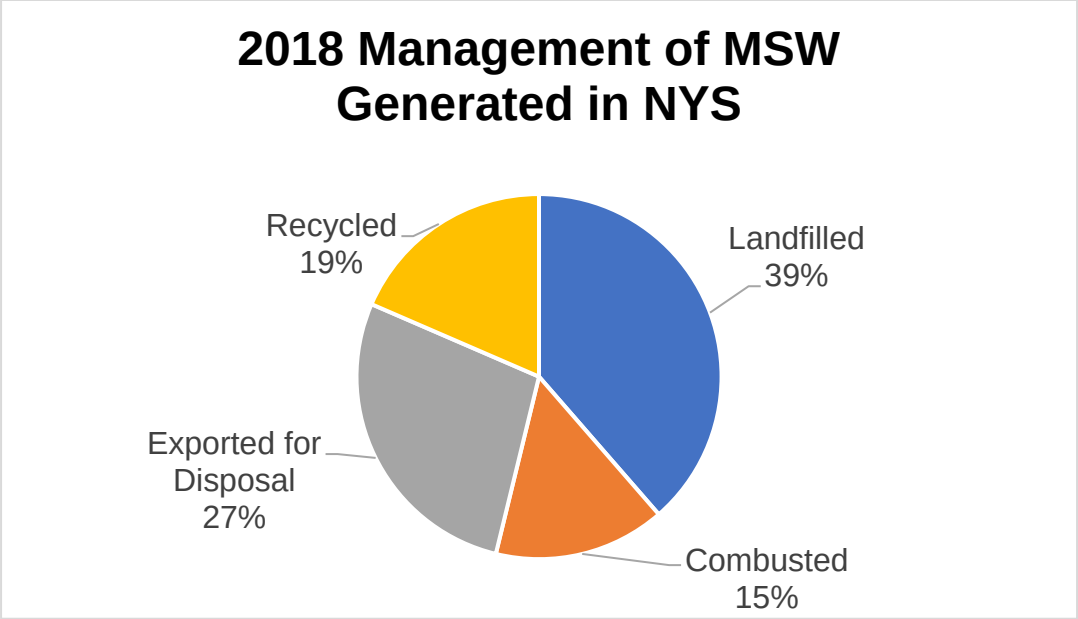
New York State MSW Composition
Detailed Composition Analysis
Year 2023

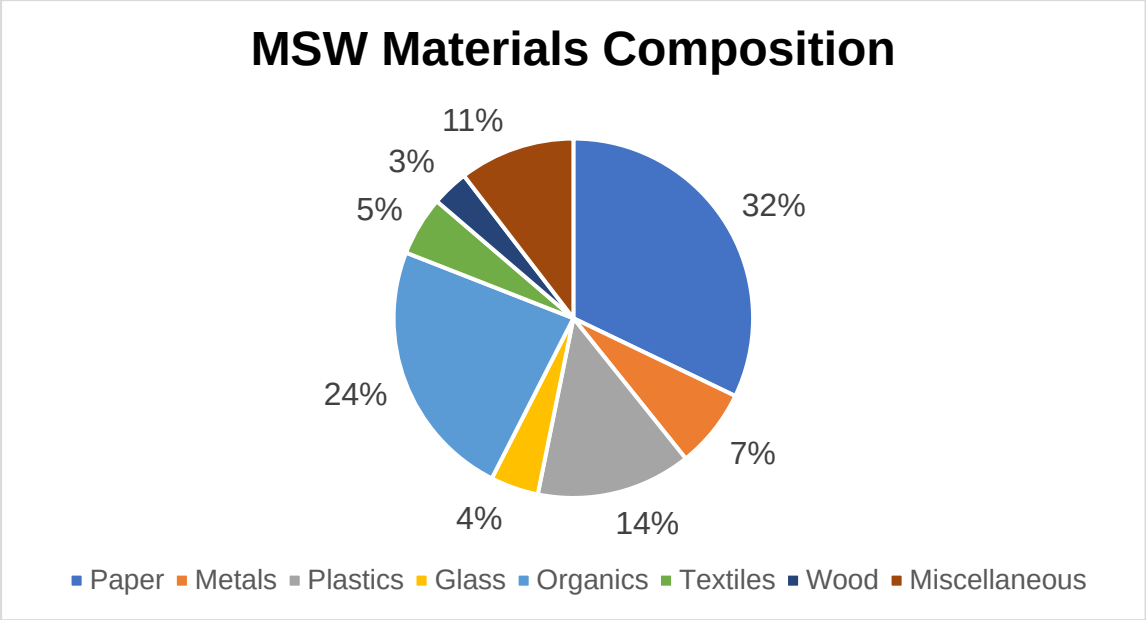
Material	Waste Generation										Waste Discard									
	Rural			Suburban			Urban			NYS Percentages	Rural			Suburban			Urban			NYS Percentages
	16.00%			30.00%			54.00%				16.00%			30.00%			54.00%			
	Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined		Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined	
	58.00%	42.00%	100.00%	55.00%	45.00%	100.00%	52.00%	48.00%	100.00%	100.00%	58.00%	42.00%	100.00%	55.00%	45.00%	100.00%	52.00%	48.00%	100.00%	100.00%
Newspaper	**5.20%**	**1.90%**	**3.81%**	**5.00%**	**1.90%**	**3.61%**	**6.60%**	**2.00%**	**4.39%**	**4.06%**	**1.30%**	**2.20%**	**1.68%**	**1.10%**	**2.10%**	**1.55%**	**1.50%**	**2.20%**	**1.84%**	**1.72%**
Corrugated Cardboard	**6.60%**	**13.90%**	**9.67%**	**6.60%**	**13.90%**	**9.89%**	**6.90%**	**13.70%**	**10.16%**	**10.00%**	**5.00%**	**7.20%**	**5.92%**	**5.10%**	**8.00%**	**6.41%**	**5.10%**	**6.40%**	**5.72%**	**5.96%**
Other Recyclable Paper	**11.30%**	**9.90%**	**10.71%**	**11.60%**	**10.10%**	**10.93%**	**13.40%**	**12.00%**	**12.73%**	**11.86%**	**13.30%**	**9.40%**	**11.66%**	**14.50%**	**12.60%**	**13.65%**	**13.20%**	**5.50%**	**9.50%**	**11.09%**
Paperboard	3.20%	1.10%	2.32%	3.30%	1.00%	2.27%	3.60%	0.90%	2.30%	2.29%	3.90%	1.10%	2.72%	4.20%	1.60%	3.03%	3.90%	1.00%	2.51%	2.70%
Office Paper	0.80%	3.80%	2.06%	0.90%	4.20%	2.39%	1.10%	5.80%	3.36%	2.86%	0.90%	3.20%	1.87%	0.90%	4.20%	2.39%	0.90%	1.30%	1.09%	1.60%
Junk Mail	3.00%	0.70%	2.03%	3.20%	0.70%	2.08%	3.50%	0.70%	2.16%	2.11%	3.60%	0.80%	2.42%	3.90%	1.10%	2.64%	3.90%	0.60%	2.32%	2.43%
Other Commercial Printing	1.70%	2.30%	1.95%	1.70%	2.40%	2.02%	2.30%	2.60%	2.44%	2.24%	1.90%	2.10%	1.98%	2.30%	3.00%	2.62%	1.90%	1.20%	1.56%	1.95%
Magazines	1.10%	0.90%	1.02%	1.00%	0.80%	0.91%	1.10%	1.00%	1.05%	1.00%	1.10%	1.00%	1.06%	1.20%	1.10%	1.16%	1.00%	0.60%	0.81%	0.95%
Books	0.50%	0.30%	0.42%	0.50%	0.30%	0.41%	0.60%	0.40%	0.50%	0.46%	0.70%	0.40%	0.57%	0.70%	0.50%	0.61%	0.50%	0.30%	0.40%	0.49%
Bags	0.50%	0.20%	0.37%	0.50%	0.20%	0.37%	0.60%	0.20%	0.41%	0.39%	0.60%	0.20%	0.43%	0.70%	0.30%	0.52%	0.60%	0.20%	0.41%	0.45%
Phone Books	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.20%	0.25%	0.27%	0.30%	0.30%	0.30%	0.30%	0.40%	0.35%	0.30%	0.10%	0.20%	0.26%
Poly-Coated	0.20%	0.30%	0.24%	0.20%	0.20%	0.20%	0.30%	0.20%	0.25%	0.23%	0.30%	0.30%	0.30%	0.30%	0.40%	0.35%	0.20%	0.20%	0.20%	0.26%
Other Compostable Paper	**6.80%**	**6.80%**	**6.80%**	**6.40%**	**6.40%**	**6.40%**	**6.80%**	**6.80%**	**6.80%**	**6.68%**	**7.90%**	**8.10%**	**7.98%**	**8.30%**	**8.50%**	**8.39%**	**8.40%**	**8.50%**	**8.45%**	**8.36%**
Subtotal Paper	***29.90%***	***32.50%***	***30.99%***	***29.60%***	***32.30%***	***30.82%***	***33.70%***	***34.50%***	***34.08%***	***32.61%***	***27.50%***	***26.90%***	***27.25%***	***29.00%***	***31.20%***	***29.99%***	***28.20%***	***22.60%***	***25.51%***	***27.13%***
Ferrous/Aluminum Containers	**2.60%**	**1.40%**	**2.10%**	**1.80%**	**1.00%**	**1.44%**	**1.90%**	**1.10%**	**1.52%**	**1.59%**	**1.30%**	**1.20%**	**1.26%**	**1.20%**	**1.10%**	**1.16%**	**1.20%**	**1.20%**	**1.20%**	**1.20%**
Ferrous Containers	1.90%	1.00%	1.52%	1.20%	0.70%	0.98%	1.40%	0.70%	1.06%	1.11%	1.00%	1.00%	1.00%	0.90%	0.90%	0.90%	0.90%	1.00%	0.95%	0.94%
Aluminum Containers	0.70%	0.40%	0.57%	0.60%	0.30%	0.47%	0.50%	0.40%	0.45%	0.48%	0.30%	0.20%	0.26%	0.30%	0.20%	0.26%	0.30%	0.20%	0.25%	0.25%
Other Non-Ferrous Metals	**1.50%**	**1.10%**	**1.33%**	**1.20%**	**1.10%**	**1.16%**	**0.80%**	**0.70%**	**0.75%**	**0.97%**	**0.90%**	**0.60%**	**0.77%**	**0.70%**	**0.60%**	**0.66%**	**0.80%**	**0.50%**	**0.66%**	**0.67%**
Other Aluminum	0.20%	0.30%	0.24%	0.20%	0.30%	0.25%	0.20%	0.30%	0.25%	0.25%	0.30%	0.30%	0.30%	0.20%	0.30%	0.25%	0.30%	0.30%	0.30%	0.28%
Automotive Batteries	0.80%	0.50%	0.67%	0.70%	0.40%	0.57%	0.20%	0.20%	0.20%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other Non-aluminum	0.50%	0.30%	0.42%	0.30%	0.40%	0.35%	0.40%	0.20%	0.30%	0.33%	0.60%	0.30%	0.47%	0.50%	0.30%	0.41%	0.50%	0.20%	0.36%	0.39%
Other Ferrous Metals	**5.20%**	**5.40%**	**5.28%**	**5.00%**	**5.80%**	**5.36%**	**3.30%**	**3.70%**	**3.49%**	**4.34%**	**4.00%**	**3.90%**	**3.96%**	**3.80%**	**3.80%**	**3.80%**	**3.80%**	**3.60%**	**3.70%**	**3.77%**
Subtotal Metals	***9.30%***	***7.90%***	***8.71%***	***8.00%***	***7.90%***	***7.96%***	***6.00%***	***5.50%***	***5.76%***	***6.89%***	***6.20%***	***5.70%***	***5.99%***	***5.70%***	***5.50%***	***5.61%***	***5.80%***	***5.30%***	***5.56%***	***5.64%***
PET Containers	**1.10%**	**0.80%**	**0.97%**	**0.90%**	**0.80%**	**0.86%**	**1.20%**	**1.00%**	**1.10%**	**1.01%**	**0.70%**	**0.70%**	**0.70%**	**0.70%**	**0.70%**	**0.70%**	**0.70%**	**0.60%**	**0.65%**	**0.67%**
HDPE Containers	**1.10%**	**0.60%**	**0.89%**	**0.90%**	**0.70%**	**0.81%**	**1.00%**	**0.70%**	**0.86%**	**0.85%**	**0.90%**	**0.50%**	**0.73%**	**1.10%**	**0.90%**	**1.01%**	**0.90%**	**0.70%**	**0.80%**	**0.85%**
Other Plastic (3-7) Containers	**0.20%**	**0.10%**	**0.16%**	**0.20%**	**0.20%**	**0.20%**	**0.20%**	**0.20%**	**0.20%**	**0.19%**	**0.30%**	**0.30%**	**0.30%**	**0.30%**	**0.20%**	**0.26%**	**0.20%**	**0.20%**	**0.20%**	**0.23%**
Film Plastic	**5.70%**	**5.90%**	**5.78%**	**5.50%**	**5.80%**	**5.64%**	**5.80%**	**5.80%**	**5.80%**	**5.75%**	**6.50%**	**7.50%**	**6.92%**	**7.10%**	**7.50%**	**7.28%**	**6.70%**	**7.40%**	**7.04%**	**7.09%**
Other Plastic	**6.10%**	**6.10%**	**6.10%**	**6.00%**	**6.10%**	**6.05%**	**6.50%**	**6.30%**	**6.40%**	**6.25%**	**7.60%**	**7.80%**	**7.68%**	**8.00%**	**7.60%**	**7.82%**	**7.80%**	**7.60%**	**7.70%**	**7.74%**
Durables	3.10%	3.20%	3.14%	3.00%	3.20%	3.09%	3.20%	3.30%	3.25%	3.18%	3.90%	3.80%	3.86%	4.00%	3.90%	3.96%	3.90%	4.00%	3.95%	3.94%
Non-durables	1.60%	1.80%	1.68%	1.60%	1.80%	1.69%	1.80%	1.90%	1.85%	1.77%	2.00%	2.50%	2.21%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%
Packaging	1.40%	1.10%	1.27%	1.40%	1.10%	1.27%	1.50%	1.10%	1.31%	1.29%	1.70%	1.50%	1.62%	1.80%	1.50%	1.67%	1.70%	1.40%	1.56%	1.60%
Subtotal Plastics	***14.20%***	***13.50%***	***13.91%***	***13.50%***	***13.60%***	***13.55%***	***14.70%***	***14.00%***	***14.36%***	***14.05%***	***16.00%***	***16.80%***	***16.34%***	***17.20%***	***16.90%***	***17.07%***	***16.30%***	***16.50%***	***16.40%***	***16.59%***
Glass Containers	**4.10%**	**3.80%**	**3.97%**	**3.90%**	**3.80%**	**3.86%**	**4.30%**	**3.80%**	**4.06%**	**3.98%**	**2.70%**	**2.80%**	**2.74%**	**2.70%**	**2.80%**	**2.75%**	**2.70%**	**2.90%**	**2.80%**	**2.77%**
Other Glass	**0.50%**	**0.40%**	**0.46%**	**0.30%**	**0.40%**	**0.35%**	**0.40%**	**0.40%**	**0.40%**	**0.39%**	**0.50%**	**0.50%**	**0.50%**	**0.40%**	**0.50%**	**0.45%**	**0.50%**	**0.50%**	**0.50%**	**0.48%**
Subtotal Glass	***4.60%***	***4.20%***	***4.43%***	***4.20%***	***4.20%***	***4.20%***	***4.70%***	***4.20%***	***4.46%***	***4.38%***	***3.20%***	***3.30%***	***3.24%***	***3.10%***	***3.30%***	***3.19%***	***3.20%***	***3.40%***	***3.30%***	***3.26%***
Food Scraps	**12.70%**	**13.30%**	**12.95%**	**12.90%**	**15.50%**	**14.07%**	**17.20%**	**25.20%**	**21.04%**	**17.65%**	**17.00%**	**17.50%**	**17.21%**	**17.60%**	**18.90%**	**18.19%**	**21.80%**	**29.30%**	**25.40%**	**21.93%**
Yard Trimmings	**3.10%**	**1.10%**	**2.26%**	**11.30%**	**9.10%**	**10.31%**	**4.20%**	**1.50%**	**2.90%**	**5.02%**	**2.10%**	**1.70%**	**1.93%**	**2.80%**	**2.00%**	**2.44%**	**2.30%**	**1.50%**	**1.92%**	**2.08%**
Subtotal Organics	***15.80%***	***14.40%***	***15.21%***	***24.20%***	***24.60%***	***24.38%***	***21.40%***	***26.70%***	***23.94%***	***22.68%***	***19.10%***	***19.20%***	***19.14%***	***20.40%***	***20.90%***	***20.63%***	***24.10%***	***30.80%***	***27.32%***	***24.00%***
Textiles	**6.00%**	**4.30%**	**5.29%**	**6.10%**	**4.60%**	**5.43%**	**6.50%**	**3.40%**	**5.01%**	**5.18%**	**5.50%**	**5.90%**	**5.67%**	**7.30%**	**6.10%**	**6.76%**	**5.90%**	**6.30%**	**6.09%**	**6.22%**
Clothing, Footwear, Towels, Sheets	4.60%	3.00%	3.93%	4.40%	3.20%	3.86%	4.80%	2.50%	3.70%	3.78%	4.00%	4.30%	4.13%	5.30%	4.40%	4.90%	4.30%	4.60%	4.44%	4.53%
Carpet	1.40%	1.30%	1.36%	1.70%	1.40%	1.57%	1.70%	0.90%	1.32%	1.40%	1.50%	1.60%	1.54%	2.00%	1.70%	1.87%	1.60%	1.70%	1.65%	1.70%
Wood	**4.10%**	**9.00%**	**6.16%**	**2.90%**	**4.10%**	**3.44%**	**2.00%**	**3.50%**	**2.72%**	**3.49%**	**4.10%**	**6.40%**	**5.07%**	**4.00%**	**5.00%**	**4.45%**	**3.20%**	**4.40%**	**3.78%**	**4.18%**
Miscellaneous	**16.10%**	**14.20%**	**15.30%**	**11.50%**	**8.70%**	**10.24%**	**11.00%**	**8.20%**	**9.66%**	**10.73%**	**18.40%**	**15.80%**	**17.31%**	**13.30%**	**11.10%**	**12.31%**	**13.30%**	**10.70%**	**12.05%**	**12.97%**
C&D Materials	8.00%	7.60%	7.83%	3.80%	2.70%	3.31%	4.40%	3.80%	4.11%	4.47%	9.50%	8.60%	9.12%	4.80%	4.10%	4.49%	5.40%	4.90%	5.16%	5.59%
Other Durables	1.90%	1.70%	1.82%	1.60%	1.50%	1.56%	1.90%	1.50%	1.71%	1.68%	2.40%	2.10%	2.27%	2.10%	2.00%	2.06%	2.20%	1.90%	2.06%	2.09%
Diapers	1.90%	1.10%	1.56%	2.10%	1.20%	1.70%	2.30%	1.10%	1.72%	1.69%	2.20%	1.50%	1.91%	2.30%	1.50%	1.94%	2.80%	1.70%	2.27%	2.11%
Electronics	1.30%	1.40%	1.34%	1.60%	1.70%	1.65%	1.30%	1.30%	1.30%	1.41%	1.30%	1.40%	1.34%	1.70%	1.80%	1.75%	1.60%	1.60%	1.60%	1.60%
Tires	1.80%	1.80%	1.80%	1.70%	1.40%	1.57%	0.50%	0.40%	0.45%	1.00%	1.70%	1.70%	1.70%	1.60%	1.50%	1.56%	0.50%	0.40%	0.45%	0.98%
HHW	0.60%	0.00%	0.35%	0.60%	0.00%	0.33%	0.50%	0.00%	0.26%	0.30%	0.90%	0.00%	0.52%	0.60%	0.00%	0.33%	0.60%	0.00%	0.31%	0.35%
Fines	0.60%	0.60%	0.60%	0.10%	0.20%	0.15%	0.10%	0.10%	0.10%	0.19%	0.40%	0.50%	0.44%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.24%
Subtotal Other	***26.20%***	***27.50%***	***26.75%***	***20.50%***	***17.40%***	***19.11%***	***19.50%***	***15.10%***	***17.39%***	***19.40%***	***28.00%***	***28.10%***	***28.04%***	***24.60%***	***22.20%***	***23.52%***	***22.40%***	***21.40%***	***21.92%***	***23.38%***
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

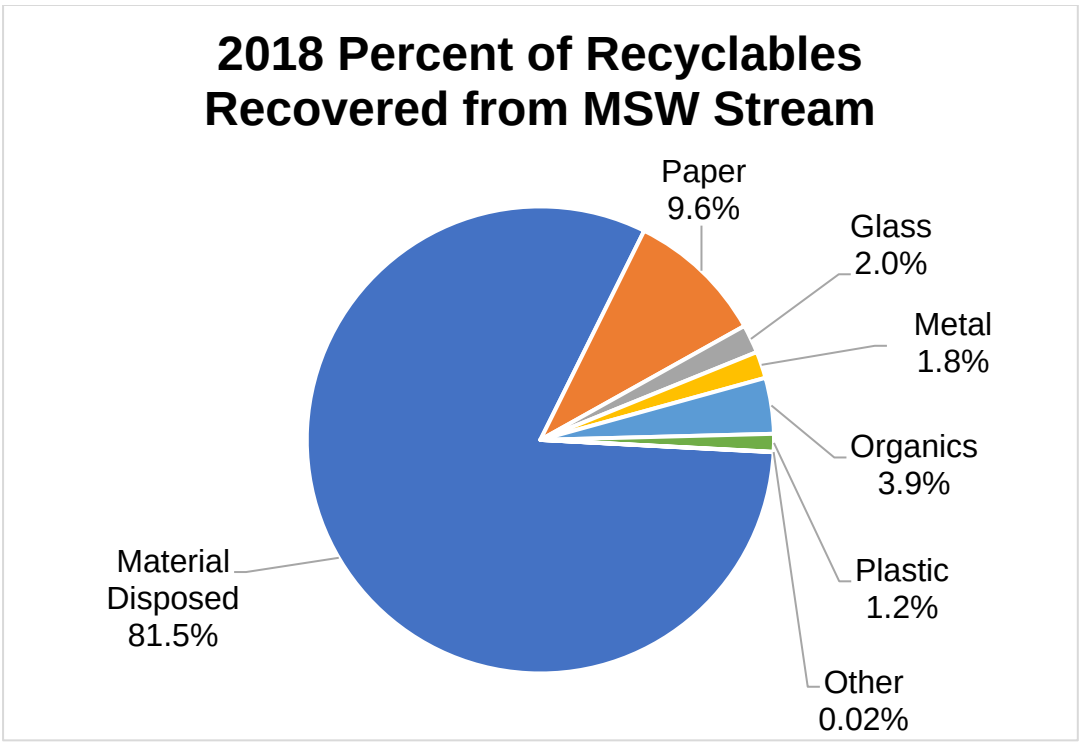
NYS MSW Materials Composition

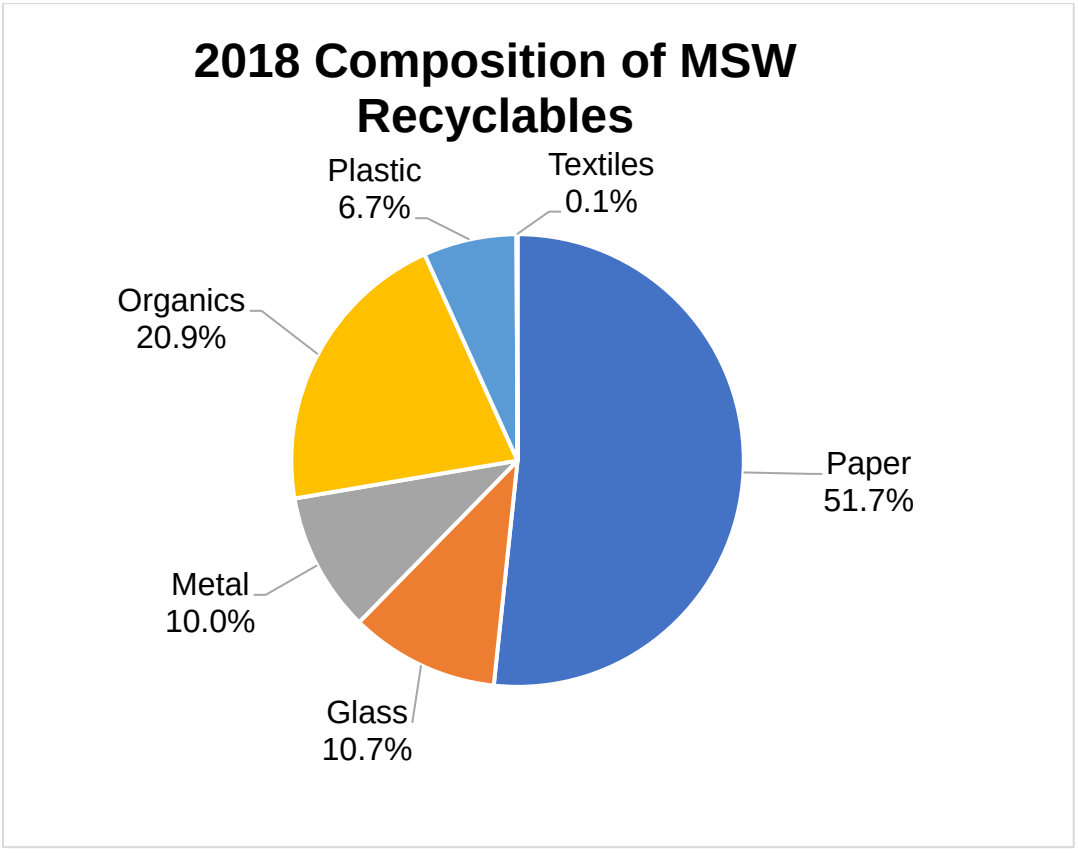
			MSW Materials Composition (%)
Material	Newspaper		4.04%
	Corrugated Cardboard		9.82%
	Other Recyclable Paper	Paperboard	2.35%
		Office Paper	2.64%
		Junk Mail	2.17%
		Other Commercial Printing	2.18%
		Magazines	0.98%
		Books	0.45%
		Paper Bags	0.39%
		Phone Books	0.28%
		Poly-Coated	0.23%
	Other Recyclable Paper (Total)		11.67%
	Other Compostable Paper		6.59%
	Total Paper		*32.12%*
	Ferrous/Aluminum Containers	Ferrous Containers	1.06%
		Aluminum Containers	0.47%
	Ferrous/Aluminum Containers (Total)		1.53%
	Other Ferrous Metals		4.60%
	Other Non-Ferrous Metals	Other Aluminum	0.24%
		Automotive Batteries	0.43%
		Other Non-Aluminum	0.34%
	Other Non-Ferrous Metals (Total)		1.01%
	Total Metals		*7.14%*
	PET Containers		0.97%
	HDPE Containers		0.84%
	Other Plastic (3-7) Containers		0.20%
	Film Plastic		5.71%
	Other Plastic	Durables	3.15%
		Non-Durables	1.75%
		Packaging	1.29%
	Other Plastic (Total)		6.20%
	Total Plastics		*13.91%*
	Glass Bottles, Jars and Containers		3.96%
	Other Glass (flat glass, dishware, light bulbs, etc.)		0.37%
	Total Glass		*4.33%*
	Food Scraps		16.59%
	Leaves and Grass / Pruning and Trimmings		6.87%
	Total Organics		*23.46%*
	Clothing Footwear, Towels, Sheets		3.85%
	Carpet		1.47%
	Total Textiles		*5.32%*
	Total Wood		*3.30%*
	DIY - Construction & Renovation Materials		3.95%
	Diapers		1.73%
	Electronics		1.49%
	Tires		1.14%
	HHW		0.32%
	Soils and Fines		0.16%
	Other Composite Materials - Durable and/or Inert		1.64%
	Total Miscellaneous		*10.42%*

Total	*100.00%*

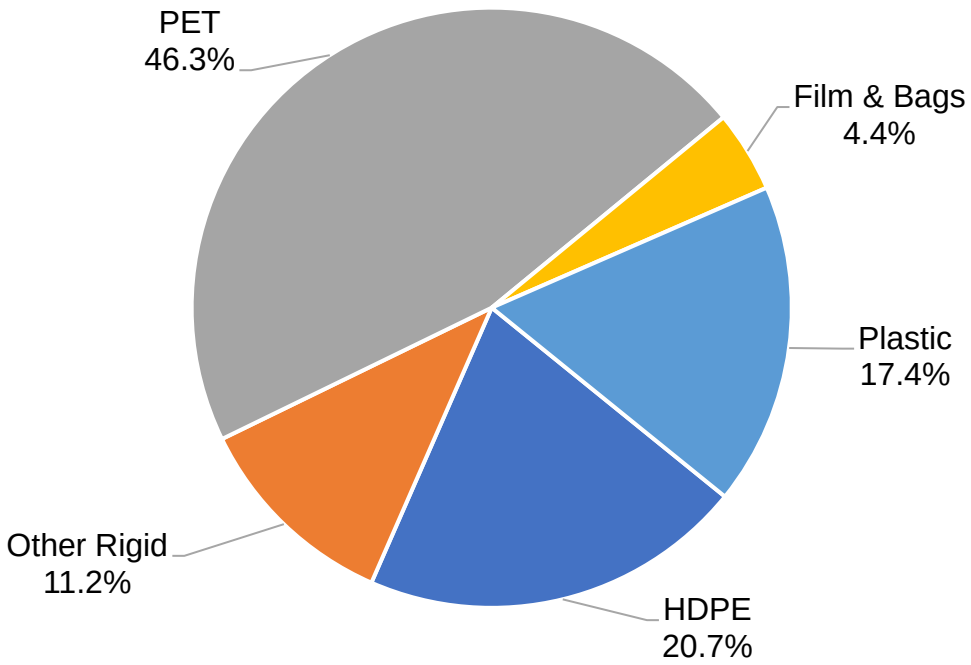

2018 Management of MSW Generated in NYS
Recycled 19%
Landfilled 39%
Exported for Disposal 27%
Combusted 15%


MSW Materials Composition
11%
3%
5%
32%
24%
7%
4%
14%
Paper
Metals
Plastics
Glass
Organics
Textiles
Wood
Miscellaneous

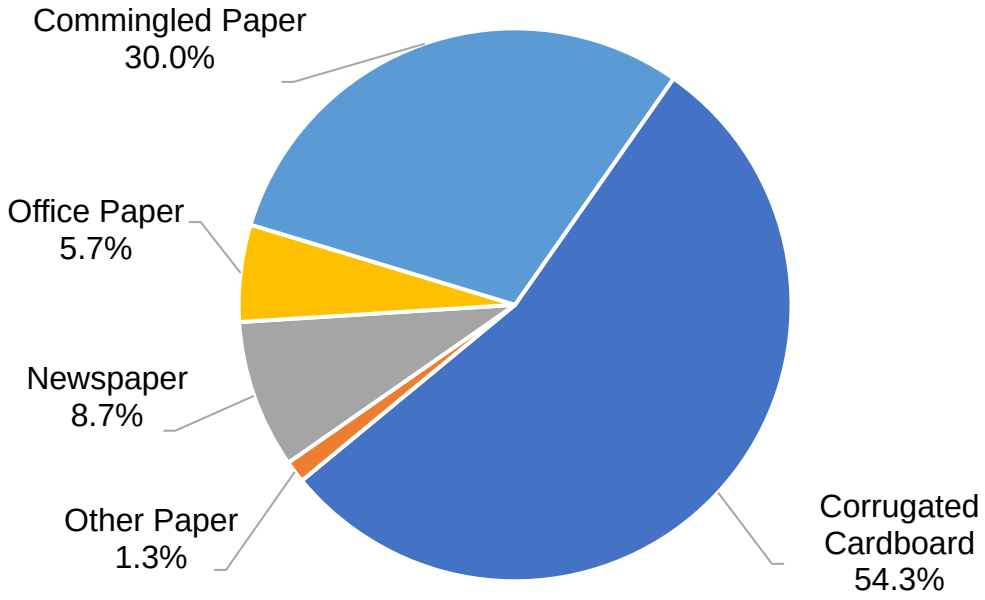

2018 Percent of Recyclables Recovered from MSW Stream
Paper 9.6%
Glass 2.0%
Metal 1.8%
Organics 3.9%
Plastic 1.2%
Other 0.02%
Material Disposed 81.5%

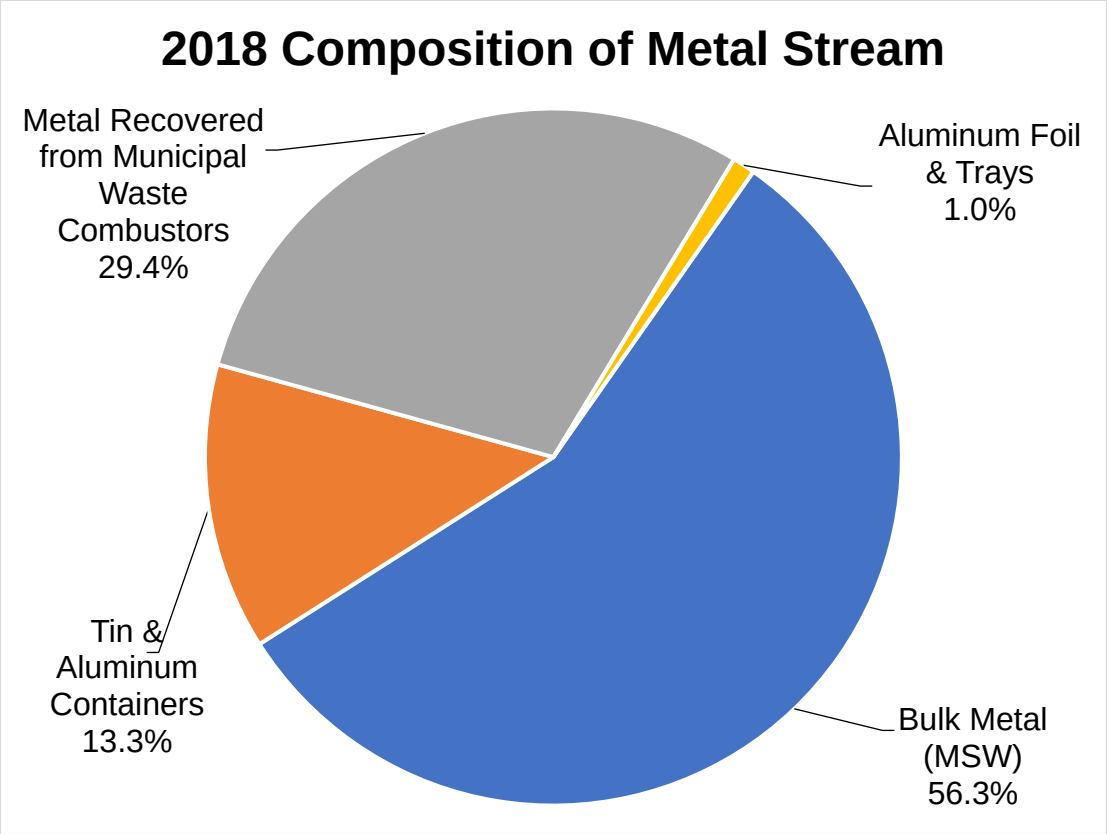

2018 Composition of MSW Recyclables
Plastic 6.7%
Textiles 0.1%
Organics 20.9%
Paper 51.7%
Metal 10.0%
Glass 10.7%

2018 Composition of Plastics Stream



2018 Composition of Paper Stream




2018 Composition of Metal Stream
Metal Recovered from Municipal Waste Combustors 29.4%
Aluminum Foil & Trays 1.0%
Tin & Aluminum Containers 13.3%
Bulk Metal (MSW) 56.3%

New York State Waste Material Composition
Combined Building C&D Composition Analysis
2023

Material	Waste Generation			Waste Discard		
	Residential	Non-Residential	NYS Percentages	Residential	Non-Residential	NYS Percentages
	40.00%	60.00%	100.00%	49.00%	51.00%	100.00%
Concrete/Asphalt/Rock/Brick	18.65%	22.17%	20.76%	19.96%	21.97%	20.99%
Wood	24.25%	18.34%	20.70%	25.94%	20.86%	23.35%
Roofing	10.70%	12.44%	11.74%	12.58%	17.08%	14.87%
Drywall	7.07%	5.35%	6.04%	8.36%	7.49%	7.92%
Soil/Gravel	14.40%	10.91%	12.31%	8.64%	7.75%	8.19%
Metal	6.98%	13.33%	10.79%	4.15%	3.73%	3.93%
Plastic	0.55%	0.52%	0.53%	0.66%	0.74%	0.70%
Corrugated/Paper	3.72%	4.77%	4.35%	3.53%	3.35%	3.44%
Other	13.68%	12.18%	12.78%	16.20%	17.02%	16.62%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

New York State Waste Material Composition
Demolition C&D Composition Analysis
2023

Material	Waste Generation			Waste Discard		
	Residential	Non-Residential	NYS Percentages	Residential	Non-Residential	NYS Percentages
	40.00%	60.00%	100.00%	49.00%	51.00%	100.00%
Concrete/Asphalt/Rock/Brick	21.50%	23.10%	22.46%	23.30%	23.30%	23.30%
Wood	25.70%	24.20%	24.80%	27.90%	27.90%	27.90%
Roofing	6.10%	5.10%	5.50%	7.40%	7.40%	7.40%
Drywall	5.10%	4.30%	4.62%	6.20%	6.20%	6.20%
Soil/Gravel	18.50%	15.60%	16.76%	11.20%	11.20%	11.20%
Metal	5.20%	11.10%	8.74%	3.20%	3.20%	3.20%
Plastic	0.30%	0.30%	0.30%	0.40%	0.40%	0.40%
Corrugated/Paper	3.10%	4.20%	3.76%	3.00%	3.00%	3.00%
Other	14.50%	12.10%	13.06%	17.40%	17.40%	17.40%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

New York State Waste Material Composition
Renovation C&D Composition Analysis
2023

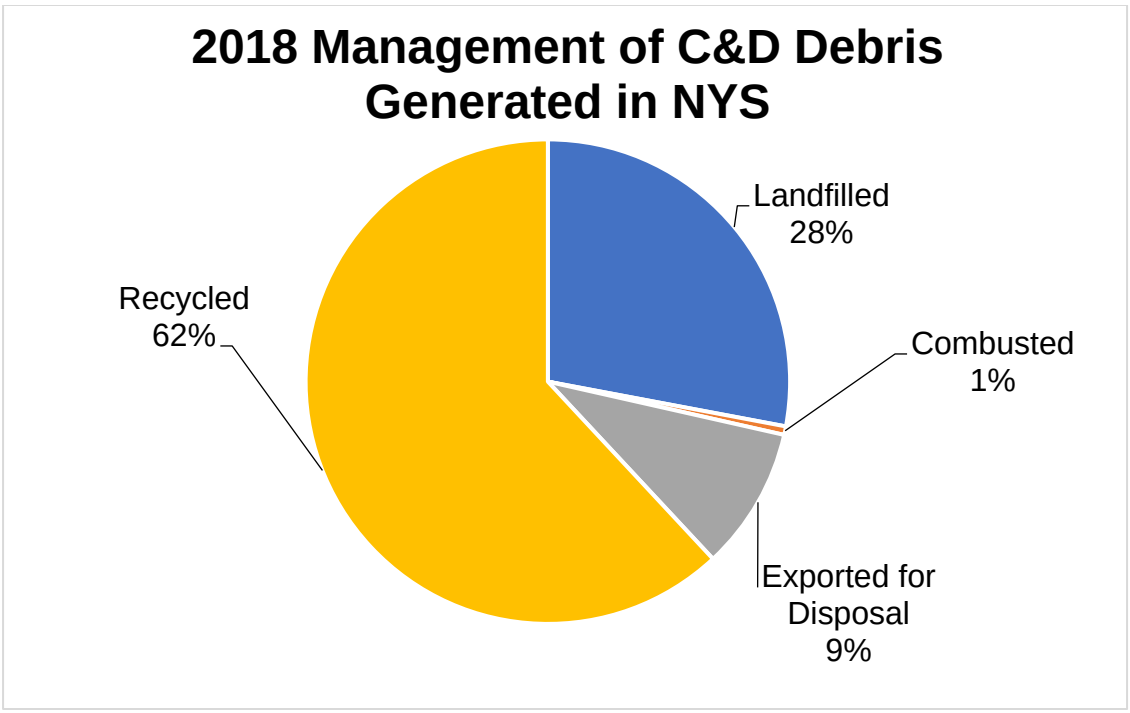
Material	Waste Generation			Waste Discard		
	Residential	Non-Residential	NYS Percentages	Residential	Non-Residential	NYS Percentages
	40.00%	60.00%	100.00%	49.00%	51.00%	100.00%
Concrete/Asphalt/Rock/Brick	16.10%	19.10%	17.90%	16.70%	18.10%	17.41%
Wood	19.10%	12.40%	15.08%	19.80%	13.40%	16.54%
Roofing	22.00%	21.20%	21.52%	25.40%	28.70%	27.08%
Drywall	7.90%	6.40%	7.00%	9.10%	8.70%	8.90%
Soil/Gravel	7.10%	6.50%	6.74%	4.10%	4.40%	4.25%
Metal	11.30%	15.50%	13.82%	6.50%	4.20%	5.33%
Plastic	0.70%	0.70%	0.70%	0.80%	1.00%	0.90%
Corrugated/Paper	2.90%	4.60%	3.92%	2.70%	3.10%	2.90%
Other	12.90%	13.60%	13.32%	14.90%	18.40%	16.69%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

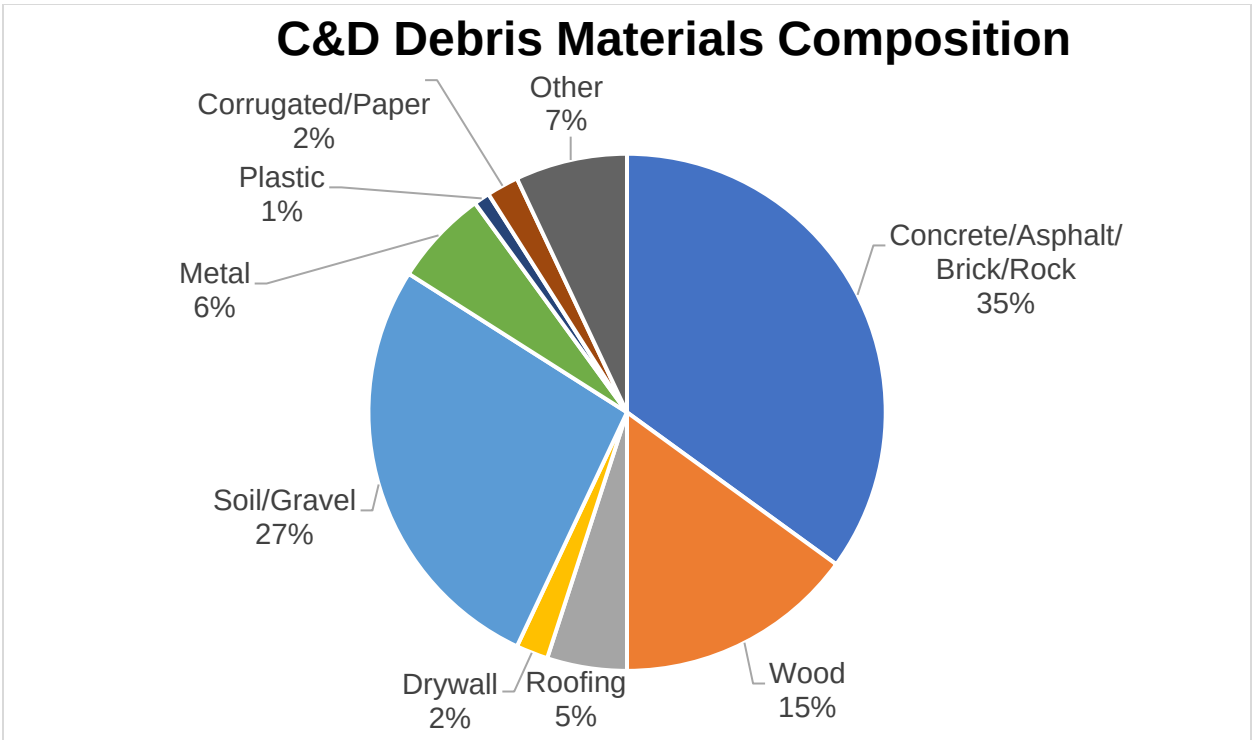
New York State Waste Material Composition
New Construction C&D Composition Analysis
2023

Material	Waste Generation			Waste Discard		
	Residential	Non- Residential	NYS Percentages	Residential	Non-Residential	NYS Percentages
	40.00%	60.00%	100.00%	49.00%	51.00%	100.00%
Concrete/Asphalt/Rock/Brick	9.80%	30.70%	22.34%	10.30%	32.30%	21.52%
Wood	29.90%	22.70%	25.58%	31.40%	27.30%	29.31%
Roofing	6.00%	2.10%	3.66%	7.00%	3.20%	5.06%
Drywall	15.60%	4.60%	9.00%	18.20%	6.90%	12.44%
Soil/Gravel	11.30%	13.10%	12.38%	6.60%	9.80%	8.23%
Metal	5.30%	12.00%	9.32%	3.10%	3.60%	3.36%
Plastic	1.50%	0.50%	0.90%	1.70%	0.80%	1.24%
Corrugated/Paper	9.30%	7.10%	7.98%	8.60%	5.30%	6.92%
Other	11.30%	7.20%	8.84%	13.10%	10.80%	11.93%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

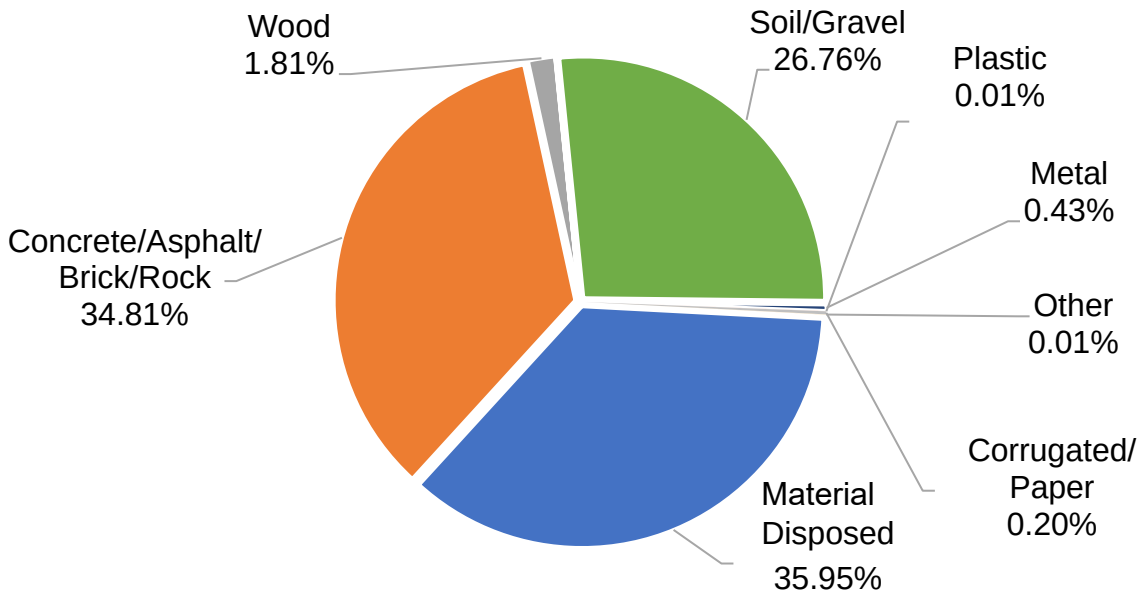
New York State Waste Material Composition
Detailed C&D Composition Analysis
2023

Material	Generated										Discarded									
	Residential				Non- Residential				Infrastructure/ Other	NYS Percentages	Residential				Non-Residential				Infrastructure/ Other	NYS Percentages
	17.00%				25.00%				58.00%		33.00%				35.00%				32.00%	
	New Construction	Renovation	Demolition	Combined Residential	New Construction	Renovation	Demolition	Combined Non-Residential	Infrastructure/ Other		New Construction	Renovation	Demolition	Combined Residential	New Construction	Renovation	Demolition	Combined Non-Residential	Infrastructure/ Other	
	11.00%	29.00%	60.00%	100.00%	13.00%	48.00%	39.00%	100.00%	100.00%	100.00%	11.00%	29.00%	60.00%	100.00%	13.00%	48.00%	39.00%	100.00%	100.00%	100.00%
Concrete/Asphalt/Rock/Brick	9.80%	16.10%	21.50%	18.65%	30.70%	19.10%	23.10%	22.17%	46.00%	35.39%	10.30%	16.70%	23.30%	19.96%	32.30%	18.10%	23.30%	21.97%	67.70%	35.94%
Wood	29.90%	19.10%	25.70%	24.25%	22.70%	12.40%	24.20%	18.34%	10.50%	14.80%	31.40%	19.80%	27.90%	25.94%	27.30%	13.40%	27.90%	20.86%	12.40%	19.83%
Roofing	6.00%	22.00%	6.10%	10.70%	2.10%	21.20%	5.10%	12.44%	0.00%	4.93%	7.00%	25.40%	7.40%	12.58%	3.20%	28.70%	7.40%	17.08%	0.00%	10.13%
Drywall	15.60%	7.90%	5.10%	7.07%	4.60%	6.40%	4.30%	5.35%	0.00%	2.54%	18.20%	9.10%	6.20%	8.36%	6.90%	8.70%	6.20%	7.49%	0.00%	5.38%
Soil/Gravel	11.30%	7.10%	18.50%	14.40%	13.10%	6.50%	15.60%	10.91%	38.00%	27.22%	6.60%	4.10%	11.20%	8.64%	9.80%	4.40%	11.20%	7.75%	11.20%	9.15%
Metal	5.30%	11.30%	5.20%	6.98%	12.00%	15.50%	11.10%	13.33%	2.40%	5.91%	3.10%	6.50%	3.20%	4.15%	3.60%	4.20%	3.20%	3.73%	0.70%	2.90%
Plastic	1.50%	0.70%	0.30%	0.55%	0.50%	0.70%	0.30%	0.52%	0.30%	0.40%	1.70%	0.80%	0.40%	0.66%	0.80%	1.00%	0.40%	0.74%	0.40%	0.60%
Corrugated/Paper	9.30%	2.90%	3.10%	3.72%	7.10%	4.60%	4.20%	4.77%	0.30%	2.00%	8.60%	2.70%	3.00%	3.53%	5.30%	3.10%	3.00%	3.35%	0.40%	2.46%
Other	11.30%	12.90%	14.50%	13.68%	7.20%	13.60%	12.10%	12.18%	2.50%	6.82%	13.10%	14.90%	17.40%	16.20%	10.80%	18.40%	17.40%	17.02%	7.20%	13.61%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

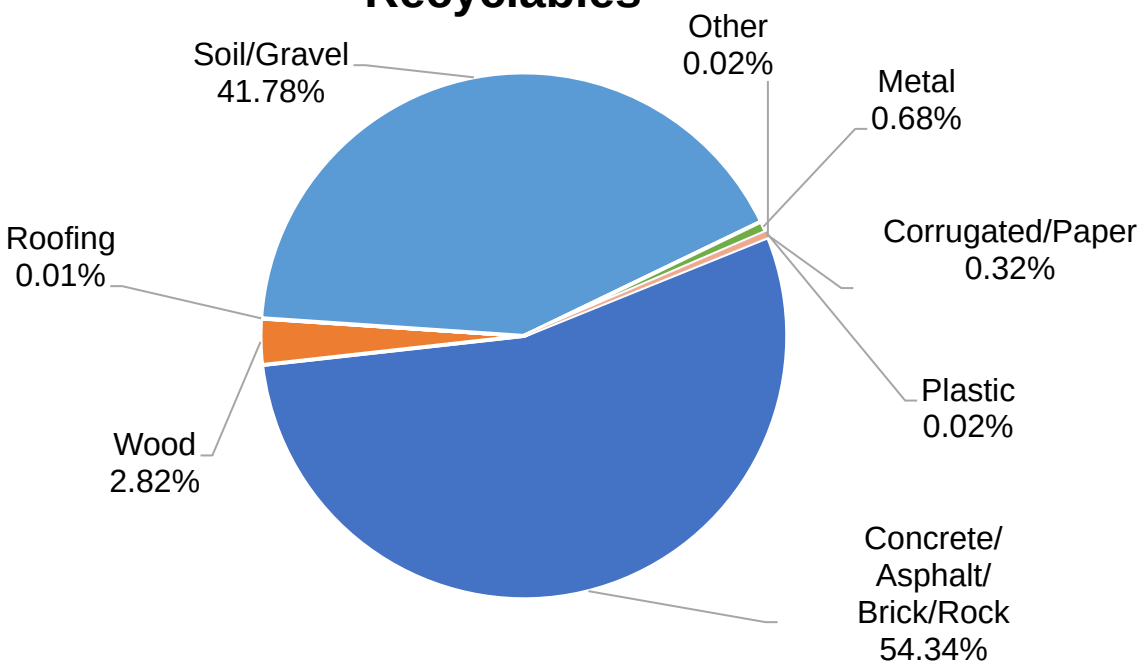

2018 Management of C&D Debris Generated in NYS
Landfilled 28%
Combusted 1%
Exported for Disposal 9%
Recycled 62%


C&D Debris Materials Composition
Other 7%
Corrugated/Paper 2%
Plastic 1%
Metal 6%
Concrete/Asphalt/ Brick/Rock 35%
Soil/Gravel 27%
Drywall 2%
Roofing 5%
Wood 15%

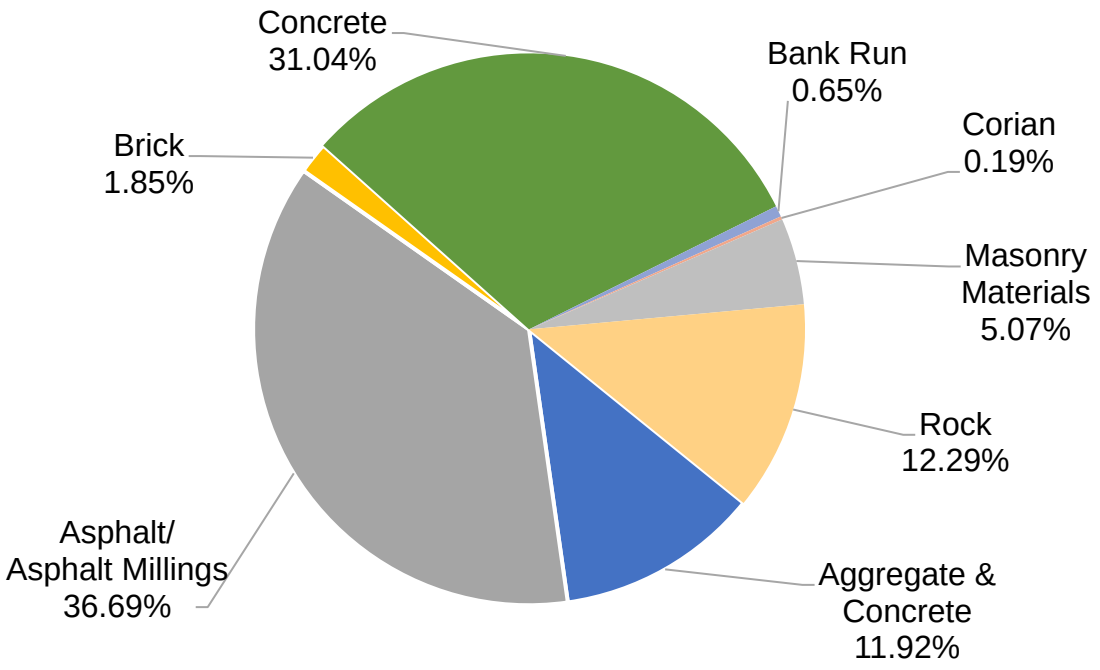
2018 Percent of Recyclables Recovered from C&D Debris Waste Stream



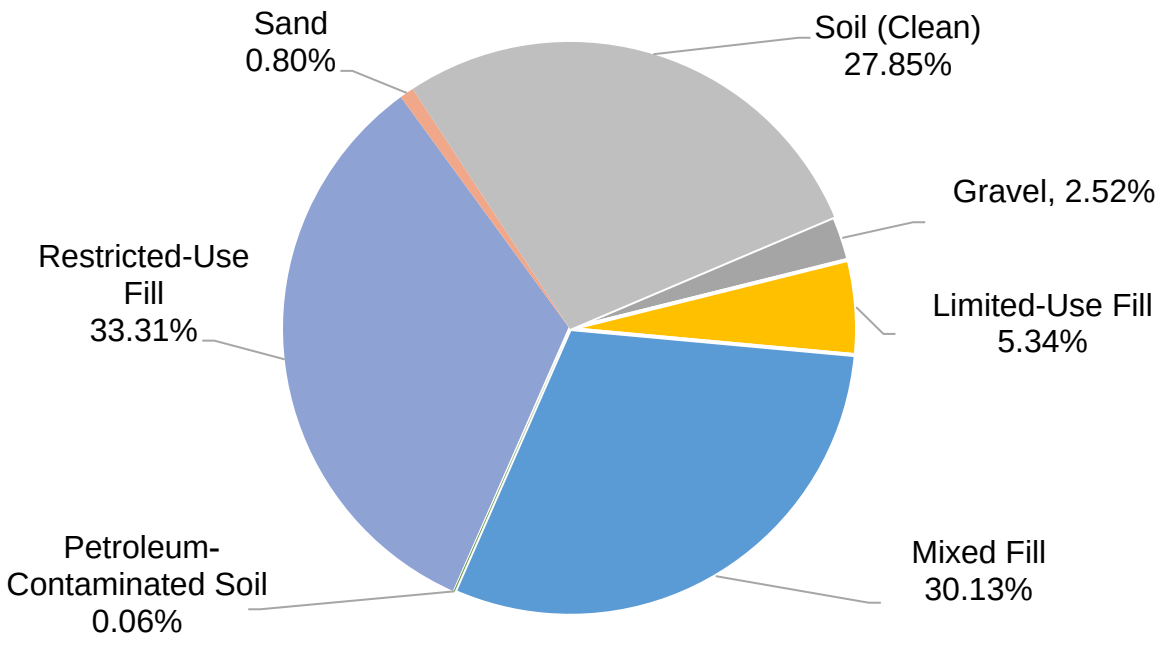
2018 Composition of C&D Debris Recyclables



2018 Composition of Concrete/Asphalt/Brick/Rock Stream



2018 Composition of Soil/Gravel Stream



Appendix I: NYS Materials Management Laws and Relevant Regulations

The following list presents some of the laws and related information related to Materials Management found in the Environmental Conservation Law (ECL), Public Health Law (PHL), and other documents, that may be of interest to readers of this Solid Waste Management Plan. This is not meant to be a comprehensive list of all applicable laws and documents governing this subject area.

Bag Waste Reduction

Provisions of Law Effective: March 1, 2020
ECL Citation: Article 27, Title 28
Relevant Regulations: 6 NYCRR Part 351
For more information on the Bag Waste Reduction Law

Bisphenol A

ECL Citation: Article 37, Title 5
For more information on bisphenol A

Drug Take Back

Provisions of Law Effective: January 1, 2019
PHL Citation: Article 2-B
Relevant Regulations: 10 NYCRR Part 60
For more information on the Drug Take Back Law

Electronic Equipment Recycling and Reuse (E-waste Law)

Provisions of Law Effective: January 1, 2011
ECL Citation: Article 27, Title 26
Relevant Regulations: 6 NYCRR Subpart 368-3
For more information on the E-waste Law

Executive Order 4: Establishing a State Green Procurement and Agency Sustainability Program

For more information on Executive Order 4

Executive Order 18: Restricting the Use of Bottled Water at State Facilities and Promoting Executive Agency Sustainability

For more information on Executive Order 18

Expanded Polystyrene Foam Container and Polystyrene Loose Fill Packaging Ban

Provisions of Law Effective: January 1, 2022
ECL Citation: Article 27, Title 30
Relevant Regulations: 6 NYCRR Part 353
For more information on the Polystyrene Foam Ban

Food Donation and Food Scraps Recycling

Provisions of Law Effective: January 1, 2022
ECL Citation: Article 27, Title 22
Relevant Regulations: 6 NYCRR Part 350
For more information on the Food Donation and Food Scraps Recycling Law

Hazardous Packaging

Provisions of Law Effective: January 1, 1992
Amended December 2, 2020, to prohibit the sale or distribution of food packaging that contains intentionally added PFAS as of December 31, 2022.
ECL Citation: Article 37, Title 2
For more information on the Hazardous Packaging Act

Lead-Acid Battery Recycling

Provisions of Law Effective: January 1, 1991
ECL Citation: Article 27, Title 17
For more information on lead-acid batteries

Litter and Solid Waste Control (Returnable Container Act or Bottle Bill)

Provisions of Law Effective: July 1, 1983
ECL Citation: Article 27, Title 10
Relevant Regulations: 6 NYCRR Part 367
For more information on the Bottle Bill

Mercury-Added Consumer Products Law

Provisions of Law Effective: July 12, 2005

- Amended September 16, 2005 (phases in prohibitions on the sale of mercury thermostats, various mercury-containing instruments and measuring devices, mercury switches, and mercury relays, beginning January 1, 2006, through January 1, 2008)
- Amended August 16, 2006 (phases out mercury-added components in motor vehicles beginning with the model year 2012)
- Amended May 17, 2011 (establishes a waiver process for manufacturers to apply for a phase-out exemption)

- Amended November 25, 2019 (phase-out of mercury-containing flooring in public and non-public elementary and secondary schools).
- Amended December 13, 2019 (mercury content restrictions for general purpose lamps effective January 1, 2021).

ECL Citation: Article 27, Title 21
Relevant Regulations: 6 NYCRR Subpart 368-2
For more information on mercury-added products

Mercury Thermostat Collection Act

Provisions of Law Effective: July 1, 2014
ECL Citation: Article 27, Title 29
For more information on mercury thermostats

Plastic Bag Reduction, Reuse, and Recycling

Provisions of Law Effective: January 1, 2009, amendments effective March 1, 2015
ECL Citation: Article 27, Title 27
Relevant Regulations: 6 NYCRR Part 351
For more information on the Plastic Bag Reduction, Reuse, and Recycling Law

Postconsumer Paint Collection Program

Signed into law and effective immediately: December 16, 2019
ECL Citation: Article 27, Title 20
For more information on the Postconsumer Paint Collection Program

Rechargeable Battery Recycling

Provisions of Law Effective: March 10, 2011
ECL Citation: Article 27, Title 18
Relevant Regulations: None
For more information on rechargeable battery recycling

Recycling Labeling

ECL Citation: Article 27, Title 7
Relevant Regulations: 6 NYCRR Subpart 368-1

Regulation of Chemicals in Upholstered Furniture, Mattresses, and Electronic Enclosures

- Reporting for electronic displays effective December 31, 2022
- Restrictions on the sale of upholstered furniture, mattresses, and electronic displays containing covered chemicals effective December 1, 2024
- Restrictions on the repair of upholstered furniture with components containing covered chemicals effective December 1, 2025

ECL Citation: Article 37, Title 10
For more information on chemicals in upholstered furniture, mattresses, and electronic enclosures

Solid and Hazardous Waste Policy and Planning

ECL Citation: Article 27, Title 1
Relevant Regulations: 6 NYCRR Part 366
For more information on local solid waste management plan (LWSMP) development

Solid Waste Management and Resource Recovery Facilities

ECL Citation: Article 27, Title 3, and Title 7
Relevant Regulations: 6 NYCRR Parts 360-365
For more information on solid waste management facilities
For more information on waste transporters

State Aid for Implementation of Resource Recovery and Other Improved Solid Waste Management Systems (Grants)

ECL Citation: Article 27, Title 5
Relevant Regulations: 6 NYCRR Part 369
For more information on State assistance programs

Toxic Chemicals in Children's Products

Provisions of Law Effective: January 1, 2023
ECL Citation: Article 37, Title 9
Relevant Regulations: Under development

- DEC is working with DOH to promulgate a list of chemicals of concern and high-priority chemicals. Manufacturers must disclose if these chemicals are present in their children's products; and
- The sale of children's products containing benzene, asbestos, or tris (1,3-dichloro-2-propyl) phosphate is prohibited as of January 1, 2023.

For more information on toxic chemicals in children's products

TRIS-Free Child and Babies Act

Provisions of Law Effective: December 1, 2013
ECL Citation: Article 37, Title 7
For more information on toxic chemicals in children's products

Waste Tire Management and Recycling

Provisions of Law Effective: September 12, 2003
ECL Citation: Article 27, Title 19
For more information on the Waste Tire Management and Recycling Act

Wireless Telephone Recycling Act

Provisions of Law Effective: January 1, 2007
ECL Citation: Article 27, Title 23*2
For more information on the Wireless Telephone Recycling Act


NEW
YORK
STATE
Department of
Environmental
Conservation