

FINAL DRAFT

ROCKLAND COUNTY SOLID WASTE MANAGEMENT PLAN

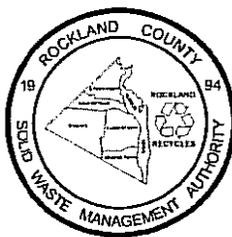
ROCKLAND COUNTY, NEW YORK

Prepared for

Rockland County Solid Waste Management Authority
Rockland, New York
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Revised September 2014

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EXECUTIVE SUMMARY

The enactment of the Resource Conservation and Recovery Act (RCRA) by the Federal government in 1976 required all states to develop comprehensive solid waste management plans. Solid waste management planning within New York State at both the state and local levels is directed by 6 NYCRR Part 360-15. Federal environmental laws and regulations do not address solid waste planning at the local level.

On December 27, 2010, NYSDEC published a new State Solid Waste Management Plan, titled "Beyond Waste," intended to guide state decision-making and local planning units. The priorities of Beyond Waste associated with waste reduction, recycling, and reduced reliance on landfills are reflected in this update to Rockland County's Local Solid Waste Management Plan (LSWMP).

The Planning Unit responsible for the creation and implementation of the Local Solid Waste Management Plan (LSWMP) is Rockland County. The LSWMP is administered within Rockland County by the Rockland County Solid Waste Management Authority (RCSWMA). The Authority was formed in 1994 for the express purpose of managing waste materials generated, managed, and/or disposed within the boundaries of Rockland County.

Rockland County's original LSWMP was prepared in September 1991 and the Plan became effective in 1992. The initial plan covered a planning period of 20 years and expired in 2012. This update to the LSWMP is designed as a 10-year continuation of the planned program already managed within Rockland County. The Final Draft update was submitted to NYSDEC in December 2011 and after receiving their comments and working together this document incorporates agreed upon changes and now represents the Final LSWMP to be adopted by the RCSWMA. An agreed upon change includes updating the represented planning period to be 2014 through 2023 and the inclusion of the biennial 2011-2012 Compliance Report. With this planning period change, it was agreed that only updates to section 4 and 8 were necessary and other sections may still continue to reference 2010 information and data.

Through the implementation of the original LSWMP, the staff at RCSWMA has developed a comprehensive solid waste management system reflective of time proven best practices for materials management. RCSWMA's programs continue to evolve to meet the needs of the people of Rockland County as well as in response to new developments, trends, and technologies for optimization of existing facilities and/or enhancing waste reduction, material reuse and material recycling initiatives. The following LSWMP provides a platform for the RCSWMA to create the most environmentally responsible program possible for the people of Rockland County and fulfill the Authority's Mission.

RCSWMA Mission Statement

We shall serve the people of Rockland County well by providing needed solid waste management services in order to protect and enhance our environment in a high quality, ethical, courteous, timely and cost effective manner.

1 PLANNING UNIT DESCRIPTION

1.1 Planning Unit

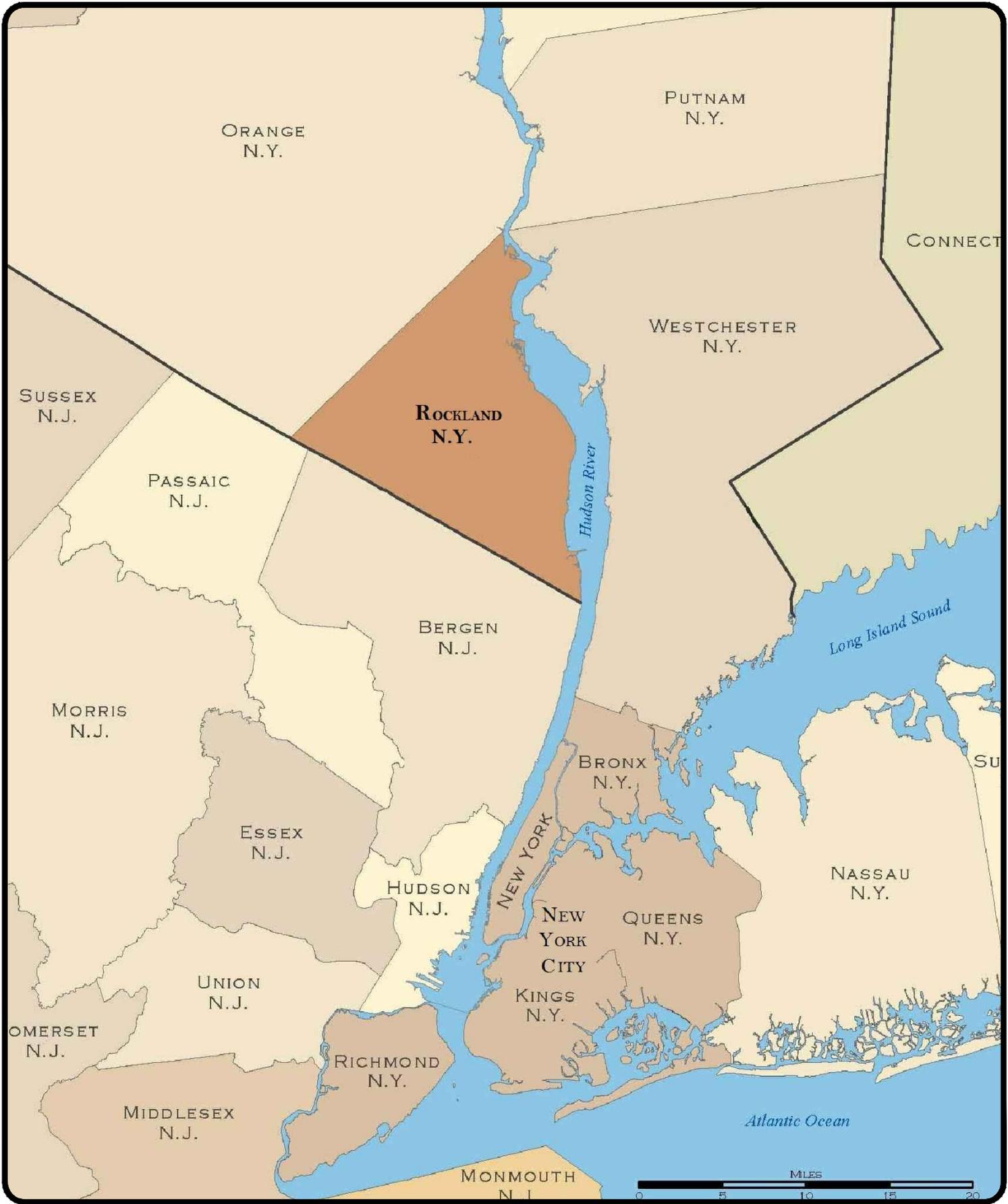
The Planning Unit responsible for the implementation of the Local Solid Waste Management Plan (LSWMP or the Plan) is Rockland County. Rockland County comprises a Planning Unit under NYS regulations. The LSWMP is administered within Rockland County by the Rockland County Solid Waste Management Authority (RCSWMA or Authority). The Authority was formed in 1994 for the express purpose of managing waste materials generated, managed, and/or disposed within the boundaries of Rockland County. The Authority is described in more detail in Section 3.1 of this Plan. This LSWMP has been created by RCSWMA and will be implemented and updated by the Authority as appropriate throughout the 10-year term of the Plan. The location of Rockland County relative to neighboring planning units is shown on Figure 1-1.

1.2 Solid Waste Management Plan

In accordance with state regulation for the planning and implementation of a solid waste management strategy by each local planning unit, Rockland County prepared a 20-year plan in September 1991 that became effective in 1992. New York State adopted a revision to the State Solid Waste Management Plan effective December 27, 2010. The updated Plan is meant to provide guidance and be used as a tool to assist local solid waste management planning units in their planning and decision making to reduce waste and increase reuse, recycling and composting within the Planning Unit. Significant elements of the updated State Plan include:

1. A detailed analysis of the current state of materials and waste management in NYS.
2. Suggested recommendations (legislative, regulatory and programmatic) to change the way discarded materials are managed in NYS.
3. Specific waste reduction goals for NYS with the expectation that Planning Units will have their own specific goals relevant to resources and economics.
4. Summary of the state's financial assistance programs that most directly support materials management programs as well as existing and potential funding sources.

Renewal and update of the County's LSWMP has been prepared to reflect the needs of Rockland County, build upon the established sophisticated waste management systems already in place, and meet the requirements of the newly implemented State Plan.



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ROCKLAND COUNTY SWMP

ROCKLAND COUNTY AND SURROUNDING COUNTIES

FIGURE NO.
1-1

PROJECT NO.
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1.3 Rockland County

Rockland County is located in the lower Hudson Valley of New York State and is the southernmost county west of the Hudson River. Rockland County consists of 5 towns and 19 villages. The general information provided in this section of the solid waste management plan is limited, in part, to descriptive information which sets the stage for the development of the Plan.

Rockland County is the smallest county in New York State located outside of New York City with a total area of 199 square miles (sq. mi.), of which 174 sq. mi. (87.4%) is land and 25 sq. mi. (12.6 %) is water.

In 2000, the population of Rockland County was approximately 286,753 with a calculated population density of 1,645.9 people per square mile. In 2010, the population of the County was approximately 311,687 and the population density was 1,789.0 people per square mile representing 104,057 housing units. Of the housing units in the County 99,242 were occupied representing 95.4% of all available housing units. Housing units on an acreage basis are broken down as follows:

Table 1-1: Rockland County, Housing Units by Acreage

Generalized Land Use	Acreage	Percent
One-Family	32,832	28.7%
Two-Family	1,307	1.1%
Three-Family	189	0.2%
Multi-Family	2,160	1.9%
Multi-Family – Senior	205	0.2%
Total	36,693	32.1%

Source: 2010 US Census Data

It is interesting to note that from a land use perspective the vast majority of the residential land is occupied by one-family dwellings (89.4%). Based strictly on the number of dwelling units reported by the U.S. Census Bureau 2005-2009 American Community Survey, one-family dwellings account for 70.5% of the total dwellings in Rockland County. As such, almost one third (29.5%) of the dwellings are in structures with two or more apartments and 23.1% of the dwellings are in structures with three or more apartments. Based upon this information, multi-family housing units will be an important future focus for the planning unit.

The population increased 8.7 percent between the 2000 and 2010 census. Based upon the 2010 Census, racial origin of Rockland County residents (Table 1-2) consisted of:

Table 1-2: Rockland County, Population by Race Origin

Race Origin	Percent
White	72.2%
Black/ African American	11.9%
American Indian and Alaskan Native	0.3%
Asian	6.2%
Native Hawaiian & other Pacific Islander	0.04%
Some Other Race	5.8%
Two or More Races	2.5%
Hispanic or Latino	15.7%

Rockland County is bounded by Orange County to the north and northwest and by Passaic and Bergen the west and south in New Jersey. The Hudson River provides the eastern boundary. Westchester County is directly across the Hudson River to the east, with a connection to Rockland via the Tappan Zee Bridge.

Significant to land use and the management of waste materials within the County is the fact that approximately one-third of the County’s area is parkland belonging to the County, the Towns within Rockland, or New York State through the Palisades Interstate Park Commission. The large land area dedicated to parkland is subject to the County’s programs for open space waste and recyclables collection and management. Materials collected represent discards from casual use and are nominal with respect to homeowner generated materials.

Rockland County’s parklands can be considered rural. The majority of the remainder of the County is suburban residential interspersed with open green space and commercial and light industrial development. Urban development is limited to the central portions of a few of the villages within the County such as Suffern, New City, and Nyack. From a land use perspective the County can generally be divided into the following categories:

Table 1-3: Rockland County, Generalized Land Use Classifications

Generalized Land Use Classifications	Percent
Residential	32.1%
Commercial	2.2%
Mixed Use	0.1%
Industrial	2.4%
Institutional/Quasi-Public	5.5%
Utilities/Transportation	11.2%
Agricultural/Parks/Open Space	39.0%

Generalized Land Use Classifications	Percent
Vacant Land, Other or No Information	7.4%
Total	99.9%

Land use is quite significant to the planning of solid waste management within the planning unit. As can be seen from Table 1-3 above, although residential land use is less than a third of the County land area, because of the significant quantity of open land, the residential portion represents 60 percent of the inhabited land use within the County. As such, not to diminish the presence of commercial, institutional and industrial activities, Rockland County's residents continue to be the primary focus in the long-term stewardship and management of waste and recyclable materials.

1.4 Infrastructure and Transportation

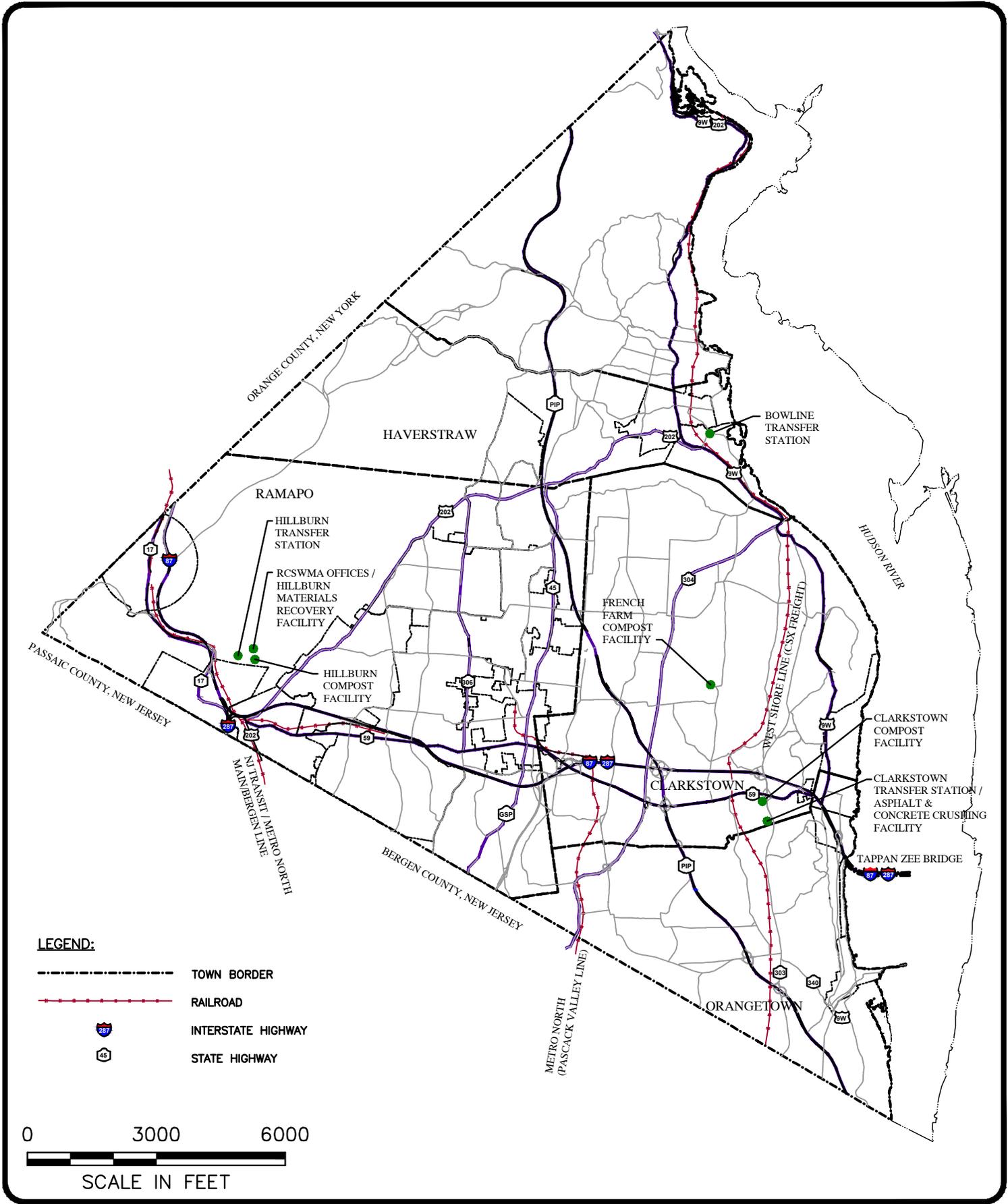
Important for the transportation of waste and recyclable materials within the County is the established network of transportation routes. Two interstate highways pass through Rockland County. The New York State Thruway (Interstate 87) jointly with Interstate 287 runs generally east-west through the central portion of the County from the Town of Ramapo at the Rockland County line in the west to the Village of Nyack where it crosses the Hudson River as the Governor Malcolm Wilson Tappan Zee Bridge. Transportation routes through Rockland County are shown on Figure 1-2.

The interstate highways provide effective conveyance for the transport and transfer of materials to recycling markets or to out-of-County disposal sites. Secondary state, county, and local roadways provide a network of connections for effective material transfer within the County. Available infrastructure does not provide a limitation to the implementation of the components of this solid waste management plan.

1.4.1 Mass Transit

The Rockland County Department of Public Transportation oversees the public transportation needs for the County. There are train, bus and ferry services throughout the County.

At the time of the drafting of this solid waste management plan mass transit systems are considered neutral with respect to the generation and/or conveyance of waste and recyclable materials. And as a result of this neutral position have not been considered for any significant contribution to the solid waste management plan. Mass transit for the purpose of Plan implementation falls under open space materials management and does not represent a large generator of materials.



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ROCKLAND COUNTY SWMP

**MAP OF ROCKLAND COUNTY
RCSWMA FACILITIES AND HIGHWAY/RAIL ROUTES**

FIGURE NO.
1-2

PROJECT NO.
100487

1.4.2 Railroads

There are several railroads that pass through Rockland County including Metro-North, NJ Transit, CSX, and Norfolk Southern Railway. While the mass transit aspect of the railroads is considered neutral with respect to waste and recyclable materials, the presence of the railroad corridors provides the potential for low cost bulk transport of waste and recyclable materials to market or disposal. The railroad lines that pass through Rockland County are shown on Figure 1-2 and use of rail transport for waste and recyclable materials is discussed in Section 5.

The rail lines that pass through the County are the Pascack Valley Line, the Port Jervis Line (Bergen Line), and the West Shore River Line.

The Metro-North Railroad provides train service from Suffern, Spring Valley, Nanuet and Pearl River train stations located along the Port Jervis Line (Bergen Line) to Secaucus, New Jersey.

NJ Transit provides service along the Port Jervis Line from Suffern and Sloatsburg train stations to Hoboken, New Jersey. The Pascack Valley Line provides train service from Spring Valley, Nanuet and Pearl River train stations to Hoboken, New Jersey.

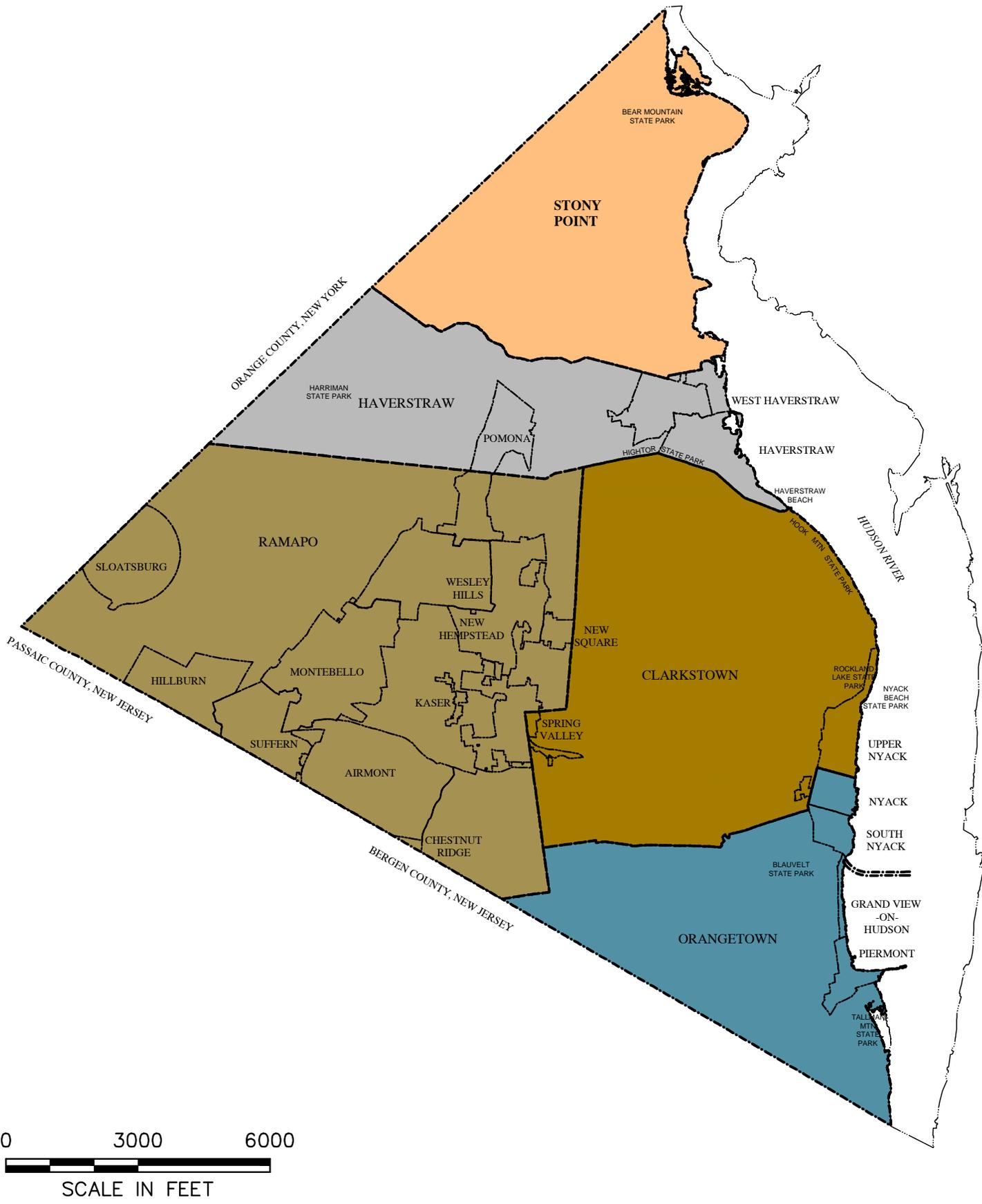
The one principal freight line is the West Shore River Line which is one of CSX's primary freight lines, and it follows the west shore of the Hudson River traversing through several densely populated Towns and Villages.

1.5 Participating Municipalities within The Planning Unit

The Planning Unit consists of the entire County of Rockland which is comprised of five (5) Towns, and nineteen (19) Villages presented below in Table 1-4 with the locations depicted in Figure 1-3. Information on each of the municipalities in Rockland County and how each currently handles the solid waste and recyclable material generated in their jurisdiction is summarized on tables presented in Appendix C. A summary of the municipality's waste handling is included in Table 3-10 presented in Section 3 of this Plan.

Table 1-4: Participating Towns and Villages

Towns	Villages
Clarkstown	<ul style="list-style-type: none"> • Spring Valley (also located in the Town of Ramapo) • Upper Nyack
Haverstraw	<ul style="list-style-type: none"> • Haverstraw • Pomona (also located in the Town of Ramapo) • West Haverstraw
Towns	Villages
Orangetown	<ul style="list-style-type: none"> • Grandview • Piermont • Nyack (also located in the Town of Clarkstown) • South Nyack



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ROCKLAND COUNTY SWMP

**TOWNS & VILLAGES
IN ROCKLAND COUNTY**

FIGURE NO.
1-3
PROJECT NO.
100487

Towns	Villages	
Ramapo	<ul style="list-style-type: none"> • Airmont • Chestnut Ridge • Hillburn • Kaser • Montebello • New Hempstead 	<ul style="list-style-type: none"> • New Square • Sloatsburg • Suffern • Wesley Hills • Spring Valley
Stony Point	None	

1.6 School Districts, Institutions & Facilities

The County is home to 8 Public School Districts, Rockland Board of Cooperative Education Services (BOCES), approximately 88 private schools, 18 colleges, 5 hospitals and 1 prison. A listing of these facilities and institutions is included in Tables 3-11 through 3-14. Considering that as many as one quarter to one third of Rockland County residents are affiliated in some way with these facilities consistent application of material management practices between home and facility continues to be a valuable component of the County's Plan. Additional detail is presented in Section 3 of the Plan.

2 SOLID WASTE COMPOSITION AND MANAGEMENT

2.1 Solid Waste

Solid waste is comprised of a number of different material streams and includes municipal solid waste (MSW), construction and demolition debris (C&D), biosolids (sewage sludge) and industrial waste. Although all of these waste streams are managed in the state, the focus of NYSDEC's Beyond Waste Plan and this SWMP are the materials categorized as the MSW, discussed in the next section. However, both C&D and Biosolids are tracked and managed within the Planning Unit as discussed in subsequent sections. The Authority's transfer stations are not permitted to accept Industrial Waste. Disposal of Industrial waste by generators within the County is not directly reportable to NYSDEC. However, the Implementation Schedule (Schedule 2 Commercial/Institutional) does include a task to evaluate methods to begin to capture this data

Based on the latest data compiled by NYSDEC, in 2008 facilities in New York State managed a total of more than 36 million tons of solid waste as depicted in Table 2-1.

Table 2-1: Materials and Waste Management in NYS, 2008

	MSW		Industrial		C&D		Biosolids		Total	
	Mtons	%	Mtons	%	Mtons	%	Mtons	%	Mtons	%
Recycle/ Compost	3.7	20	1.4	39	7.2	55	0.9	47	13.1	36
Landfill	6.0	33	2.1	60	4.1	32	0.3	17	12.5	34
Combustion	2.5	14	<0.1	1	<0.1	0	0.4	24	3.0	8
Export & Disposal	6.1	33	<0.1	0	1.7	13	0.2	12	8.0	22
Total	18.3	100	3.5	100	13.0	100	1.8	100	36.6	100

*Mtons=Million Tons

Source: NYSDEC, "Beyond Waste Plan"

2.2 Municipal Solid Waste

Municipal Solid Waste (MSW) comprised of materials generated by the residential, commercial and institutional sectors that is either discarded or recycled. NYSDEC estimates that 54 percent of the MSW generated statewide is residential and 46 percent is commercial/institutional. This is important to the planning efforts since the materials generated by each are typically different. In general the commercial/institutional sector generates a higher percentage of food scraps and corrugated cardboard than the residential sector. In addition, the population density of a community (urban, suburban or rural) can have an impact on the composition of the waste stream, particularly with the organic content.

The components of MSW are listed below along with estimated generation and disposal percentages reported in the State's Plan - Beyond Waste (disposal represents non-recycled material).

- **Paper** – {newspaper, corrugated cardboard, other recyclable paper and other compostable paper} comprises approximately 33 percent of the MSW generated in NYS and 28 percent of the MSW sent for disposal.
- **Glass** - {glass packaging, window glass and ceramics} makes up 4 percent of the materials generated and 3 percent disposed of in NYS.
- **Plastics** – {plastic bottles, rigid containers and film plastics} make up more than 14 percent of the MSW generated, and nearly 17 percent of the MSW disposed of in NYS.
- **Metals** – {steel and aluminum cans, aluminum foil, appliances and municipally generated scrap metal} make up nearly seven percent of the waste stream in NYS and 6 percent of MSW disposed in NYS.
- **Organics (food scraps)** – {uneaten food and food preparation materials from residences, commercial establishments and institutions} represent nearly 18 percent of the MSW generated every year in NYS.
- **Yard Waste** – {leaves, grass clippings and garden debris} comprise, on average, approximately five percent of the MSW stream and combined with food scraps represent almost 30 percent of the materials discarded. [urban – 3%, suburban – 10%, rural – 2%]
- **Textiles** – {clothing, carpets, towels, sheets and draperies} and make up approximately five percent of the materials stream. [EPA estimates half of textiles discarded are donated]
- **Wood** – wood {generated by small scale or do-it-yourself projects} is nearly three percent of the MSW generated in NYS.

- **Other** – this category represents about 11 percent of the waste stream in NYS and includes residentially generated C&D materials, other durables, diapers, electronics, HHW and tires, among other items.

2.2.1 MSW Management in Rockland County

The Rockland County Flow Control Law was adopted by the Rockland County Legislature on May 20, 2008 with the goal of increasing the rate of recycling in the County and to provide for safe and environmentally sound handling and disposal of MSW in the County. The law regulates collection, transportation and disposal of MSW generated in Rockland County. This MSW includes garbage (MSW disposed) and the following recyclable materials to be separated from the MSW stream: mixed paper, commingled containers, yard waste, scrap metal, concrete, asphalt, clean dry wallboard, and untreated wood. (See Section 6 for more detail).

Non-recyclable MSW is collected from residences, businesses, and government buildings and delivered to one of the three strategically located transfer stations owned by the RCSWMA. The material is then hauled to a permitted disposal facility outside of the County. A description of each Transfer Station is provided in Section 3.

All commercial (unless exempted) and residential recyclables generated in Rockland County and designated by the Authority to be recycled shall be disposed of at the Materials Recovery Facility (MRF) owned by the Authority. Currently, all municipalities in the County are mandated to have provisions for collection and hauling or drop-off of various recyclable materials. The residential recycling program in every municipality throughout the County incorporates the use of color-coordinated recycling bins (blue for mixed paper, and green for containers). A description of the MRF is provided in Section 3 of the Plan.

In addition to the MRF, an innovative Glass Beneficiation Facility captures a difficult market for broken and low grade glass recyclables.

2.2.2 Yard Waste Management in Rockland County

All yard waste generated in Rockland County should be disposed of at an Authority owned yard waste compost facility (unless exempted for approved green waste recycling program). Yard waste consists of grass clippings, leaves, and brush which are generated within the County, excluding trees and tree stumps (“wood waste” as classified on NYSDEC annual reporting forms). Yard waste may also include other types of green waste as designated by the Authority, which may be modified from time to time, by resolution. Yard waste must be separated from the solid waste stream for collection and/or delivery to a designated facility. There are three yard Waste Facilities in the County that provide Rockland County residents with yard waste, mulching and leaf composting services. Additionally, biodegradable leaf bags are provided to County residents.

2.2.3 Management of Other Materials in Rockland County

2.2.3.1 Household Hazardous Waste

The Authority operates a Household Hazardous Waste (HHW) Facility, one of the few permanent HHW Facilities in New York State that is open 5 days a week and targeted weekend dates. The HHW Facility receives an array of products not usually managed by other HHW Facilities. The Facility also refurbishes some electronic equipment for compassionate reuse - computer equipment for the underprivileged, and cell phones for victims of domestic violence. A description of the facility is provided in Section 3.

HHW consists of waste materials generated in the home that would be regulated as hazardous wastes if generated by commercial or industrial sources. Household products often contain many of the same chemicals contained in industrial waste, but all household wastes are exempt from State and Federal hazardous waste regulations. Homes, sheds, basements and garages contain potentially hazardous chemicals that should be handled and discarded with special care. When handled improperly, HHW can be harmful to the environment and public health. Many households discard these wastes in the trash or store them for long periods of time, unless special HHW collection programs are sponsored by their local government.

The materials presented below represent items typically collected at the facility, and kept from improper disposal:

- Antifreeze
- Hazardous Paint
- Automotive Batteries
- Household Batteries
- Pesticides (solids and liquids)
- Mercury Containing Devices
- Fluorescent Bulbs
- Other HHW (solids and liquids)
- Electronics
- 1 Pound Propane Tanks
- 20 Pound Propane Tanks
- Fire Extinguishers
- Air Conditioners
- Dehumidifier
- Other small Freon containing devices

As part of the trend towards Product Stewardship or Extended Producer Responsibility (EPR), CFLs and rechargeable batteries can also be taken to Home Depot or Lowes for recycling. Other manufacturers and retailers are beginning to recognize the need to assist with providing better solutions for end-of-product-life management. Environmental waste companies can also collect hazardous material, although this alternative can be expensive.

2.2.3.2 Waste Tires

Tire Management and Recycling Act of 2003, which was enacted to ensure the proper management of waste tires in New York State, mandated that tire service centers accept

used tires from customers and established a waste tire management and recycling fee of \$2.50 per new tire sold.

Mavis Discount Tire is a County Tire Collection Program. While not required by law to do so, Mavis performs this community service to help protect the environment and eliminate mosquito breeding grounds. Mavis offers residents throughout the County the convenience of a neighborhood scrap tire collection center. Mavis Discount Tire accepts tires at a nominal handling fee of \$1.00 per tire and accepts up to 4 passenger car tires per person, per year, but cannot accept any tires from commercial businesses. The tires must be un-mounted, not full of water, and not covered in mud. Mavis Discount Tire is located at 81 Smith Street in Nanuet and at 11 South Route 9W in West Haverstraw.

2.3 Non-MSW Materials

As stated above, solid waste includes three other material streams in addition to MSW: C&D, Biosolids and Industrial Waste. Except for industrial waste, as noted above, both C&D and Biosolids are discussed below. Two other waste streams not classified as MSW include scrap metal and medical/biohazardous materials and are discussed below.

2.3.1 Scrap Metal Management

Scrap metal includes a wide variety of materials generated by many different entities. It includes end-of-life vehicles, prompt scrap from metal manufacturers, appliances, and metal from construction and demolition (e.g., copper pipe, aluminum siding, radiators, obsolete machinery, structural beams, bridges structures), among other things. Scrap metal is often taken to a scrap yard or junkyard, where it is processed for later melting for use as raw material for manufacturing. Automotive junkyards often remove parts resale prior to crushing the remainder of the vehicle for scrap. Capturing recycled tonnage is difficult because most facilities that process these materials are exempt from state reporting requirements.

2.3.1.1 Scrap Metal Waste Management in Rockland County

Scrap metal is not regulated under Flow Control in Rockland County; however, the material is accepted at the Authority owned Transfer Stations. In addition, there are numerous scrap metal recyclers and reuse facilities within the County. The Authority utilizes the following scrap metal recycling and or reuse facilities for material received at their transfer stations:

- Teplitz Material Processing
Nanuet, NY
- Coca Cola Recycling LLC
Atlanta, GA

- K-C International LLC.
Brick, NJ
- Hudson Baylor
Newburgh, NY
- Anheuser Busch Recycling Corp.
St. Louis, MO
- All Container Recovery
Piscataway, NJ

Automobile dismantlers, scrap metal processors, automobile junkyards, and metal salvage facilities are exempt from regulation under Part 360, except that the owner or operator of these types of facilities must provide NYSDEC with an annual report that details how all waste automotive fluids are disposed (including, but not limited to, refrigerants, oil, and transmission fluids).

2.3.2 Organics

The organics category includes biosolids, septage, paper mill residuals, carcasses, manure and other agricultural waste

Management of Biosolids in Rockland County

The largest percentage of organic materials managed in the planning unit is biosolids, although small quantities of manure are also managed. Biosolids (sewage sludge) are the solid or semi-solid organic materials generated as a result of the treatment of wastewater.

The Authority owns a regional biosolids co-composting facility that utilizes preprocessed biosolids and clean yard waste to create rich, top grade compost for landscapers and civil projects. Biosolids from the six municipal Sewer Treatment Plants (STP) in Rockland County, as well from a few municipal wastewater treatment plants located outside the County, are processed at the facility. A description of the facility is provided in Section 3.

Table 2-2 presents a summary of the STPs located within Rockland County.

Table 2-2: Sewer Treatment Plants located in Rockland County

Sewer Treatment Plant	Owner/Operator	Area Served	Design Flow	Service Capacity (people)	Year Built/Upgraded
Rockland County Sewer District #1	Rockland County	Towns of Ramapo and Clarkstown and the Villages of Spring Valley, New Square, Sloatsburg and Hillburn	38.9 mgd	<i>Data not available</i>	1968/1988
Haverstraw Joint Regional Sewage Treatment Plant	Haverstraw Joint Regional Sewer Board, Town of Haverstraw & Village of Pomona	Town of Haverstraw, the Villages of Haverstraw and West Haverstraw, and a portion of the Village of Pomona.	8 mgd	51,100	1971/1977
Orangetown Wastewater Treatment Plant	Town of Orangetown	Villages of Nyack, Upper Nyack, South Nyack, Grand View, Upper Grandview, and Piermont	12.75 mgd	<i>Data not available</i>	1959/1995
Western Ramapo Sewer District	Rockland County	Villages of Sloatsburg, Hillburn and Suffern	1.5 mgd	<i>Data not available</i>	2009
Stony Point Wastewater Treatment Plant	Town of Stony Point	Stony Point	1 mgd	10,000	1969/1984
Suffern Wastewater Treatment Plant	Village of Suffern	Suffern	1.8 mgd	13,000	1935/1983
Sloatsburg Wastewater Treatment Plan	Rockland County Sewer District #1	Village of Sloatsburg	0.03 mgd	120	1973

*mgd = million gallons per day

2.3.3 Pharmaceuticals

RCSWMA initiated a successful program to collect unused or expired over the counter, and non-controlled prescription drugs in response to the growing concerns about the potential environmental and health impacts associated with pharmaceutical levels in rivers, streams and drinking waters. Historically, flushing unused and unwanted prescription and over the counter medications down the drain was considered the best way to keep these materials away from children, teenagers, and others who might accidentally or intentionally ingest them. As a result, the chemicals which make up these pharmaceutical products are released into the environment through disposal in private septic systems and wastewater treatment plants which are not capable of destroying many of them. While some natural processes are able to break down or degrade these substances and/or dilute their concentrations, many of the chemicals accumulate in the tissues of animals and plants. Low levels of antibiotics, hormones, contraceptives, and steroids have been found in rivers and streams tested around the country and trace level concentrations of chemicals from medications have been found in aquatic species. As such, the potential exists for detrimental effects on both animals and human health.

In August 2008, the NYSDEC launched an initiative to help households reduce the growing presence of pharmaceuticals in water bodies. The "Don't Flush Your Drugs" campaign is designed to eliminate flushing of pharmaceuticals in household settings by raising public awareness about this issue and providing information about how to properly dispose of household pharmaceuticals.

Pharmaceutical waste may be categorized under the NYSDEC's regulations as non-hazardous solid waste, hazardous waste, and regulated medical waste, and under Department of Health (DOH) regulations as a controlled substance. It is estimated that only about five percent of this pharmaceutical waste stream is regulated as a hazardous waste, and only about five percent may also be regulated as a controlled substance. The regulatory structures for managing these wastes may be different, as each waste category has specific regulations and procedures that apply to its management and disposal. The Department recognizes that regulatory compliance can be complex and is providing the following explanation of regulatory programs to assist you when deciding how to properly manage waste generated by your programs or facilities.

Non-Controlled over-the-counter or prescription medications can be brought to the Household Hazardous Waste Facility for disposal. Controlled substances are not accepted at this facility. Instead controlled substances can be brought to the Rockland County Sheriff's Office. In addition, a number of Pharmacies are instituting mail-in programs. Walgreens, Rite Aid, and CVS all have prescription medication take back programs.

Regulated Medical Waste

Pharmaceutical wastes that are regulated medical wastes include discarded prescription drugs that are biological including serums, vaccines, antigens and antitoxins made with living organisms and their products, associated injectables (i.e., medicine vials and their contents) and the hypodermic or intravenous syringes to which a needle (used or unused) or other sharp is attached that is used to administer such injectable. Each of these materials requires a different type of treatment to destroy pathogens or disease-causing organisms prior to disposal at an authorized solid waste management facility. Such treatment can be achieved, depending on the waste type, through autoclaving, incineration, or with an alternative treatment technology approved by New York State (e.g., microwave, chemical disinfection, electro-thermal and steam-thermal inactivation).

The hospitals in the County are responsible for disposing of medical waste generated in their facilities in accordance with State and Federal requirements. NYSDEC provides technical assistance to generators on medical waste management issues and disposal practices. The Authority has no involvement in how facilities that generate regulated medical waste handle and dispose of these materials.

Approximately 18,000 regulated medical waste (RMW) generators in New York State dispose of approximately 200,000 tons of RMW per year. Medical waste includes, but is not limited to:

- blood-soaked bandages
- culture dishes and other glassware
- cultures, stocks, swabs used to inoculate cultures
- discarded surgical instruments
- discarded lancets
- discarded surgical gloves
- removed body organs (e.g., tonsils, appendices, limbs)
- discarded needles used to give injections or draw blood (e.g., medical sharps)

3 EXISTING PROGRAM DESCRIPTION

3.1 Rockland County Solid Waste Management Authority

The Rockland County Solid Waste Management Authority (RCSWMA or Authority) was created by the State Legislature in 1994 at the request of the County to implement certain provisions of the County's 1991 Solid Waste Management Plan (SWMP) and to develop the necessary solid waste management facilities.

The Authority is organized as a State Authority, and its charter as an authority created guidelines and bylaws that empower best institutional and parliamentary practices. It is governed by a board consisting of 17 members; two are appointees from the County Executive's office, the Supervisor of all five Rockland County Towns, the Mayor of two Rockland County Villages and Rockland County Legislators from various districts throughout the County. The Board membership has ensured the engagement of Rockland County's strongest community leaders.

The Authority Board and staff work together not only with Rockland County municipalities, but also in partnership with Rockland County agencies, such as Rockland County Department of Health, the RC Department of Environmental Health, and RC drainage Agency and participate in many of their respective programs.

3.2 SWM Facility Inventory

The Authority has developed a network of state of the art, regional, full-service, and award-winning waste management facilities which are listed in Table 3-1 and summarized in subsequent sections. As a result of the established network of facilities staff members are able to manage materials generated within the County even though there are no disposal (landfill) facilities located within the County.

In addition to the facilities owned by the Authority, a number of private, Town and City operated facilities exist in Rockland County; these facilities are also included in Table 3-2 below. Table 3-3 summarizes both municipal and privately owned in-active landfills located within Rockland County.

The Authority accepts materials from within Rockland County as well as from various out-of-county sources. This Plan has been developed based upon the management of materials generated within the County.

Table 3-1: Active SWM Facility Inventory Owned by RCSWMA (as of 12/2011)

Facility Name	Facility Type	Location	Permit Status as of 12/2011	Operating Status
Bowline Transfer Station (Haverstraw)	Mixed MSW, C&D, Bulk Metal, Tires	Beach Rd. West Haverstraw	Renewal Pending	Active/ Regulated
Clarkstown Transfer Station	Mixed MSW, C&D, Recyclables, Tires	Rt. 303 West Nyack	Renewal Pending	Active/ Regulated
Hillburn Transfer Station	Mixed MSW, C&D, Pre-Processed Recyclables, Scrap Metal, Tires	Baler Blvd. Hillburn	Renewal Pending	Active/ Regulated
Materials Recovery Facility	Dual Stream - Paper, Glass, Metal, Plastics	Torne Valley Rd. Hillburn	N/A	Registered Facility
HHW Collection & Storage Facility	Household Hazardous Waste	Fireman's Memorial Drive Pomona	Pending Registration	Pending Registration
Hillburn Biosolids Co-Composting Facility	Dewatered biosolids	Torne Valley Rd. Hillburn	Permit Expires July 2016	Active/ Regulated
Concrete & Asphalt Crushing Facility	Uncontaminated broken concrete & asphalt	Rt. 303 West Nyack	N/A	Registered Facility
Clarkstown Yard Waste Composting Facility	Leaves, Grass Clippings, Wood waste, Other (mixed yard waste & Brush)	Rt. 303 West Nyack	Expires 3/09/2014	Active/ Regulated
Hillburn Yard Waste Composting Facility	Leaves	Torne Valley Rd. Hillburn	N/A	Registered Facility
French Farms	Leaf Composting	Brewery Road New City	Expires 2017	Active

Table 3-2: Active SWM Facility Inventory Owned by Others located in Rockland County

Facility Name	Facility Type	Location	Permit Status as of 12/2011	Operating Status
C&A Carbone Transfer Station	SW Transfer Station, Recyclables	Western Highway West Nyack	Expires 8/20/2013	Active Regulated
Chestnut Ridge Transfer Station (IWS)	Mixed MSW, C&D	Chestnut Ridge Rd. Chestnut Ridge	Renewal Pending (Not Operating)	Active Regulated
Transfer Systems Inc.	Mixed MSW, C&D, Bulk Metal, Tires, Concrete	Rt. 17S Hillburn	Expires 8/11/2011	Active Regulated
Materials Communications Network, Inc.	Recyclables Handling & Recovery Facility	Railroad Ave. West Haverstraw	NA	Registered Facility
United Recyclers Northeast	Recyclables Handling & Recovery Facility	Bldg. 2 Hillburn Ind. Park Hillburn	NA	Registered Facility
Metro Recycling, Inc.	Recyclables Handling & Recovery Facility	Beach Rd. West Haverstraw	NA	Registered Facility
Millennium Paper Recycling	Mixed Paper, MSW, Plastics, Recyclables Handling & Recovery Facility	N. Airmont Rd. Suffern	NA	Registered Facility
ORI/ Horticultural Compost	C&D Processing Facility	Rt. 303 Orangeburg	NA	Registered Facility
Raines & Welsh Sons	C&D Processing Facility - Asphalt, Concrete, Rock, Clean Soil	E. Railroad Ave. West Haverstraw	NA	Registered Facility
Sterling Recycling	C&D Processing Facility - C&D Debris	Sterling Mine Rd. Sloatsburg	Expires 3/31/2017	Regulated Facility
WEISW Transfer Station	Personal Hygiene Waste	61 Corporate Way Valley Cottage	Expires 3/2013	Active

Table 3-3: Inactive SWM Facility Inventory located in Rockland County (as of 12/2011)

Facility Name	Facility Type	Location
Clarkstown Landfill	MSW Landfill	Central Nyack
Dexter Landfill	Landfill	Clarkstown
Haverstraw Landfill	Landfill	Haverstraw
Camp Shanks Landfill	Landfill	Orangetown
Piermont Landfill	Landfill	Piermont
Ramapo Landfill	Landfill	Ramapo
Haverstraw Landfill	Landfill	West Haverstraw
Nyack Landfill	Landfill	West Nyack
Ramapo Incinerator	Incinerator	Ramapo
Lederle Laboratories, American Cyanamid Company	3 Landfills (1, 2 and 2A) containing incinerator ash, glass, debris, plant trash, vitamins, sludge, fermentation cake, animal remains and laboratory chemicals Landfill 3A containing solid waste generated onsite	Pearl River

3.2.1 Regional Transfer Stations

At the core of the Authority's materials management strategy are transfer stations. The Authority owns three transfer station facilities to handle MSW generated within the County identified generally as: Bowline, Clarkstown and Hillburn. The Bowline Transfer Station is located in West Haverstraw. The Clarkstown Transfer Station is located in West Nyack and the Hillburn Transfer Station is located in Hillburn. Each of the transfer stations is strategically located to service the disposal needs of specific portions of the planning unit. Service areas and operational information summarized for each of the three facilities are presented on Table 3-4. Locations of these facilities are shown on Figure 1-2.

Table 3-4: RCSWMA Transfer Stations as of 12/2011

	Bowline (Haverstraw) TS 200 Beach Road West Haverstraw, NY 10993		Clarkstown Transfer Station 166 South Route 303 West Nyack, NY 10994		Hillburn Transfer Station 50 Baler Boulevard Hillburn, NY 10931	
Service Areas: Towns:	• Haverstraw	• Stony Point	• Clarkstown	• Orangetown	• Ramapo	
Villages:	• Haverstraw	• West Haverstraw	• Grandview	• South Nyack	• Airmont	• New Square
			• Nyack	• Suffern	• Chestnut Ridge	• Pomona
			• Piermont	• Upper Nyack	• Hillburn	• Sloatsburg
					• Kaser	• Spring Valley
					• Montebello	• Suffern
					• New Hempstead	• Wesley Hills
History	See Appendix D of Plan					
Hours of Operation:	Monday – Friday Saturday	7:00 AM - 4:00 PM Closed	Monday – Friday	7:00 AM - 4:00 PM	Monday – Friday Saturday	7:00 AM - 4:00 PM 7:00 A.M. - Noon
Operator	Santaro Development, Inc		Clarkstown Recycling Center		Allserveco	
Hauling and Disposal	Santaro Development, Inc.		Santaro Development, Inc.		Allserveco	
Scale Operator	RCSWMA		RCSWMA		RCSWMA	
NYSDEC Part 360 Permit	Permit No.	3-3922-00096-00002	3-3920-00166/00003		3-3926-00118-00009	
	Date Issued	March 25, 2003	November 9, 2005		February 5, 2004	
	Date Expires	March 31, 2009 (Permit renewal was submitted in January 2009 and is pending.)	October 31, 2010 (Permit renewal was submitted on June 3, 2009 and is pending.)		June 30, 2010 (Permit renewal is pending.)	
Permitted Capacity	42,900 tons per year (TPY)		228,800 TPY		200,200 TPY	
Total MSW Received in 2010	31,307 Tons		141,732 Tons		78,221 Tons	
In-County MSW Received in 2010	31,307 Tons		137,385 Tons		60,276 Tons	

3.2.2 Yard Waste Facilities

Section 1 of this Plan notes that large portions of the County are parkland and open space and that a significant percentage of the County land use is residential. In an effort to encourage organized management of yard waste and to divert yard waste away from disposal, the Authority has three established yard waste facilities. Clarkstown Yard Waste Compost Facility is located in West Nyack. French Farms is located in New City and Ramapo Landfill Yard Waste Compost Facility is located in Hillburn. Service areas and operational information for each of the three facilities is presented on Table 3.5.

Table 3-5: RCSWMA Yard Waste Facilities (as of 12/2011)

	Clarkstown Yard Waste Compost Facility 166 South Route 303 West Nyack, NY 10994		French Farms Brewery Road New City, NY		Ramapo Landfill Yard Waste Compost Facility Baler Boulevard Hillburn, NY	
Service Areas:	Rockland County		Towns: • Clarkstown		Towns: • Ramapo	
					Villages: <ul style="list-style-type: none"> • Airmont • Hillburn • Montebello • New Hempstead • Sloatsburg • Spring Valley • Suffern • Wesley Hills 	
History	See Appendix D of Plan					
Hours of Operation:	Monday - Friday Saturday	7:00 AM - 3:30 PM 7:00 A.M. - Noon	Monday - Friday	7:00 AM - 4:30 PM Closed	Monday - Friday Saturday	7:00 AM - 3:00 PM Closed
Acceptable Materials	Clean wood including leaves , twigs, branches, logs, grass clippings, brush, pallets and lumber		Leaves		Leaves	
Unacceptable Materials	wood treated with paint, adhesive, creosote, lacquer or other chemicals, plastic bags		Wood, sticks, grass		Wood, sticks, grass	
Operator	Organics Recycling, Inc.		Organics Recycling, Inc.		Organics Recycling, Inc.	
Scale Operator	RCSWMA		N/A		RCSWMA	

Table 3-5: RCSWMA Yard Waste Facilities (as of 12/2011)

		Clarkstown Yard Waste Compost Facility 166 South Route 303 West Nyack, NY 10994	French Farms Brewery Road New City, NY	Ramapo Landfill Yard Waste Compost Facility Baler Boulevard Hillburn, NY
NYSDEC Part 360 Permit	Permit No.			
	Date Issued			
	Date Expires	March 9, 2014 (to be incorporated under umbrella permit with TS and crushing facility)		
	Permitted Capacity	110,000 cy/yr of leaves and grass 120,000 cy/yr of brush and logs	38,000 cy/yr of leaves	
Received in 2010⁽¹⁾	Leaves	23,007 wet tons	38,848 cy	1,078 wet tons
	Grass Clippings	922.10 wet tons		
	Wood Waste	0 wet tons		
	Mixed Yard Waste & Brush	12,467.60 wet tons		

(1) Only receive in-County generated material

3.2.3 Materials Recovery Facility

RCSWMA owns an advanced materials recovery facility (MRF) located in Hillburn and operated under contract by Weminuche Recycling. This facility, operating as a dual stream system for both comingled containers and mixed clean paper is an essential component of the Authority's centralized recycling program and is effective in separating and storing for shipment a variety of recyclable materials. Operational information for the MRF is presented on Table 3-6.

Table 3-6: RCSWMA Materials Recovery Facility (MRF) (as of 12/2011)

Address	420 Torne Valley Road Hillburn, NY 10931	
Service Area	Rockland County	
History	See Appendix D of Plan.	
Hours of Operation	Monday - Friday: Saturday:	7:00 A.M. to 4:30 P.M. Closed
Operator	Weminuche Recycling (Operates and finds markets)	
Acceptable Materials	<p>Commingled containers Plastic containers (1 through 7) (NO Styrofoam or plastic bags) Aluminum cans & foil Disposable aluminum products Metal cans Empty aerosol cans Glass containers (clear, green and brown)</p>	<p>Mixed paper (clean) Newspaper (including inserts) Direct mail (junk mail) Envelopes Cardboard (smooth and corrugated) Office paper Construction paper Computer/fax paper Magazines, Catalogs, & Workbooks Telephone and paperback books Brown grocery bags.</p>
Unacceptable Materials	<p>Plastic bags Film plastics Pots, pans, bowls, utensils or other cookware Ceramic plates or cups Containers that held a toxic substance Hangers Plastic utensils Styrofoam Appliances, Electronics, Clothing, Toys & Lightbulbs</p>	<p>Paper soiled with grease, paint, etc Wax-coated paper or cardboard Paper cups Tissues, napkins, or paper towels Paper Packaging with layers of plastic or foil Hard covered books (remove hard cover) Plastic Bags</p>
Scale Operator	RCSWMA	
NYSDEC Part 360 Permit	Registered facility with NYSDEC	
Permitted Capacity	76,960 TPY	
Total Recyclables Received in 2010	32,120 Tons	
In-County Recyclables Received in 2010	29,427 Tons	

3.2.4 Concrete and Asphalt Crushing Facility

The Clarkstown Concrete and Asphalt crushing facility located in West Nyack is operated by Regional Recycling, LLC. This registered facility provides a much needed resource for the management and reclaiming of asphalt and concrete building and construction materials. Operational information for the Concrete and Asphalt Crushing Facility is presented on Table 3-7.

Table 3-7: Clarkstown Concrete and Asphalt Crushing Facility (as of 12/2011)

Address		166 South Route 303 West Nyack, NY 10994
Service Area		Rockland County
History		See Appendix D of Plan
Hours of Operation		Monday – Friday: 7:00 A.M. to 4:00 P.M. Saturday: 7:00 A.M. to 12:00 P.M.
Operator		Regional Recycling, LLC
Acceptable Materials		Uncontaminated broken concrete and asphalt
Scale Operator		RCSWMA
NYSDEC Part 360 Permit	Permit No.	Registered facility
	Date Issued	June 9, 2009
	Date Expires	Permit Renewal pending - To be added to umbrella permit for TS and Yard Waste Facility
Permitted Capacity		17,000 TPY (permit renewal requested increase to 100,000 TPY)
Material Received in 2010⁽¹⁾		20,703.56 Tons (Concrete) 12,007.89 Tons (Asphalt)

⁽¹⁾ Only receive in-County generated material

3.2.5 Household Hazardous Waste Facility

The Authority owns and operates a separate household hazardous waste facility located in Pomona. Detailed information on the operation of the HHW facility is included in Section 2.2.3 of this Plan. An operational information summary for the HHW facility is presented in Table 3-8.

Table 3-8: RCSWMA Household Hazardous Waste Facility (as of 12/2011)

Address	Fireman's Memorial Drive Pomona, NY 10970 845-364-244	
Service Area	Rockland County	
History	See Appendix D of Plan	
Hours of Drop-off	Monday - Friday: 8:00 A.M. - 1:00 P.M. Saturday & 8:00 A.M. - 1:00 P.M. during the following dates <u>Saturday</u> March 19, 2011 May 14, 2011 July 9, 2011 September 17, 2011 November 12, 2011 <u>Sunday</u> April 17, 2011 June 12, 2011 August 14, 2011 October 16, 2011 December 4, 2011	
Operator	Clean Harbors	
Acceptable Materials	<p>Liquids, Solids & Powders Oil & Latex Paints Wood Preservatives & Thinners Waxes & Polishes Resins & Adhesives Spot Removers Driveway Sealer Antifreeze, Motor Oil, Oil Filters Gasoline, Kerosene, Lighter Fluid Chemistry Kits Photography Chemicals Pool Chemicals Pesticides, Fungicides & Herbicides</p> <p>Mercury Containing Items Thermometer Thermostats & Smoke Detectors</p> <p>Tanks Fire Extinguishers Up to 20 lb. Propane Tanks</p>	<p>Light Bulbs All sizes of compact & fluorescent</p> <p>Batteries Household, care, boat, rechargeable & button cell</p> <p>Electronics Computer, monitors, printers, scanners, fax & copy machines, TVs, VCRs, CD players, radios, telephones, cell phones & beepers</p> <p>Small Freon Appliances A/Cs, small refrigerators, water coolers & dehumidifiers</p> <p>Medications Non-controlled over the counter, prescription medications & pet medications</p>
Unacceptable Materials	<p>Empty containers Tires Aerial flares Asbestos Explosives PCBs Construction material Radioactive material Medical & biological wastes Controlled substance medications substance SHARPS</p>	<p>Appliances Washers, dryers, dishwashers, large refrigerators or freezers, microwave ovens</p> <p>Compressed Gas Tanks Oxygen, Acetylene and other compressed gasses</p>
Scale Operator	RCSWMA	
NYSDEC Part 360	Permit No.	3-3926-00267/00005
	Date of Issue:	July 18, 2006

Table 3-8: RCSWMA Household Hazardous Waste Facility (as of 12/2011)

Permit	Date of Expiration:	July 15, 2011
Permitted Capacity		N/A
HHW Received in		733 Tons (only received in-County generated material)

3.2.6 Biosolids Co-Composting Facility

The Authority owns a biosolids co-composting facility located in Hillburn. The facility, operated by WeCare Organics provides a necessary system for the processing of organic and sludge waste in the County. An operational information summary for the Co-Composting facility is presented on Table 3-9.

Table 3-9: RCSWMA Biosolids Co-Composting Facility (as of 12/2011)

Address		400 Torne Valley Road Hillburn, NY 10931
Service Area		Rockland County
History		See Appendix D of Plan
Operator		WeCare Organics
Acceptable Materials		Clean wood including tree parts, brush, pallets and lumber
Unacceptable Materials		wood treated with paint, adhesive, creosote, lacquer or other chemicals
Scale Operator		RCSWMA
NYSDEC Part 360 Permit	Permit No.	3-3926-00274-00001-0
	Date Issued	July 2006
	Date Expires	July 20, 2016
Permitted Capacity		Maximum annual process rate is 33,000 wet tons per year
Total Material Received		26,360 Tons
In-County Material Received in 2010		19,491 Tons

3.3 Rockland County Solid Waste Programs

3.3.1 Flow Control

Flow control refers to the ability of local governments to mandate, through laws or other regulations the delivery of all locally-generated solid waste to designated publicly owned facilities. On May 20, 2008, the Rockland County Legislature, pursuant to language proposed by the Authority, enacted County-wide flow control through the "Flow Control Act." On June 19, 2008, the County Executive signed the Flow Control Act and caused it to be filed pursuant to State Law whereupon it was designated as Chapter 350 of the Laws of Rockland County. On September 24, 2009, regulations pursuant to the Flow Control Act were issued by the Authority and amended on March 16, 2010 and October 28, 2010.

Flow control establishes the platform for the Authority's overall program of materials management. Flow control provides the fundamental basis for future planning by providing the assurance that facilities developed by the Authority will be provided with a reliable throughput of material allowing the system to be cost competitive. Additional information regarding flow control is included in Section 6 of this Plan as well as in Chapter 350 of the Laws of Rockland County.

3.3.2 MSW including Recyclables

The County consists of five towns and nineteen villages. Currently, three of the five towns and all nineteen villages within the County have responsibility for collection of municipal solid waste, as well as for recyclables, collection and disposal (as depicted on Table 1-4). These towns and the majority of the villages provide such services to their residents through contracts with private haulers. In two of the five towns, Stony Point and Orangetown, homeowners contract directly with carters. Four of the villages maintain their own municipal collection with village employees.

Multi-family residential complexes and commercial, institutional, and industrial properties generally contract with a private hauler for MSW and recyclables collection and disposal. A description of the manner in which each of the municipalities handles the removal of MSW and recyclable materials is provided on Table 3-10. The MSW generated in each of the towns and villages within the County is disposed of by transfer out-of-County through the Hillburn, Bowline and Clarkstown Transfer Stations.

Currently, all municipalities in the County are mandated to have provisions for collection and hauling or drop-off of various recyclable materials. Commingled recyclables are currently hauled by contracted private haulers under contracts with the towns and villages or by employees of the four villages.

Table 3-10: Summary of Rockland County Municipalities and MSW and Recycling Handling (as of 12/2011)

	Contractor	Contract Begins	Contract Ends	Extension Options	Recycling Included	Time of Collection	No. of Units	Back Door Pickup	Curbside Pickup	No. of Pickups per Week	Designated Transfer Station ⁽¹⁾
VILLAGES											
Airmont	Carlo Minuto	1/1/11	12/31/15	No	Yes	6:00 AM - 6:00 PM	2,298	No	Yes	Unknown	Hillburn
Chestnut Ridge	IWS	6/1/05	5/31/10	No	Yes	7:00 AM - 8:00 PM	Unknown	No	Yes	2	Hillburn
Grandview	Menichelli	6/1/03	5/31/07	No	No	Unknown	Unknown	Yes	No	2	Hillburn
Haverstraw	Miele	2/1/10	1/31/15	No	Yes	5:00 AM - 6:00 PM	2,293	No	Yes	1-3	Bowline
Hillburn	Menichelli	6/1/10	5/31/13	No	No	Unknown	Unknown	No	Yes	2	Hillburn
Kaser	Included in the Town of Ramapo Contract	-	-	-	-	-	-	-	-	-	Hillburn
Montebello	IWS	4/1/07	3/31/12	2 Years	Yes	6:00 AM - 6:00 PM	1,252	No	Yes	2	Hillburn
New Hempstead	Minuto Carting Co., Inc.	2/1/10	1/31/15	No	Yes	5:00 AM - 6:00 PM	1,295	Yes	No	2	Hillburn
New Square	Village DPW	-	-	-	-	-	-	-	-	-	Hillburn
Nyack	Village DPW	-	-	-	-	-	-	-	-	-	Clarkstown
Piermont	Village DPW	-	-	-	-	-	-	-	-	-	Clarkstown
Pomona	Scuffy Carting LLC	9/1/08	8/31/11	6 Years	Yes	6:00 AM - 6:00 PM	850	No	Yes	2	Hillburn
Sloatsburg	Miele	1/1/07	12/31/11	No	Yes	5:00 AM - 6:00 PM	1,067	No	Yes	2	Hillburn
South Nyack	Charles Cappaso & Sons	6/1/09	5/31/10	2 Years	No	7:00 AM - 6:00 PM	Unknown	No	Yes	2	Clarkstown
Spring Valley	Miele	1/1/07	12/31/11	No	Yes	5:00 AM - 6:00 PM	2,633	No	Yes	2	Hillburn
Suffern	Village DPW	-	-	-	-	-	-	-	-	-	Clarkstown
Upper Nyack	Carlo Minuto	6/1/07	5/31/13	No	No	6:00 AM - 5:00 PM	662	No	Yes	2	Hillburn
Wesley Hills	IWS	6/1/07	5/31/13	No	Yes	Unknown	Unknown	No	Yes	2	Hillburn
West Haverstraw	Village DPW	-	-	-	-	-	-	-	-	-	Bowline
TOWNS											
Clarkstown (MSW)	Clarkstown Carting Ass., Inc.	2/1/08	12/31/12	6 Months	No	5:30 AM - 3:00 PM	26,659	Yes	No	2	Clarkstown
Clarkstown (Recycling)	Charles Cappaso & Sons	6/1/08	4/30/13	6 Months	Yes	5:30 AM - 3:00 PM	26,659	No	No	1	Hillburn
Haverstraw (MSW)	Sterling Carting	9/1/08	12/31/11	2 Years	No	7:00 AM - 5:00 PM	2,410	No	Yes	2	Bowline
Haverstraw (Recycling)	Charles Cappaso & Sons	11/1/08	12/31/10	None	Yes	8:00 AM - 6:00 PM	2,410	No	Yes	1	Hillburn
Orangetown (MSW)	Homeowners contract directly with carters; no municipal involvements	-	-	-	-	-	-	-	-	-	Clarkstown
Orangetown (Recycling)	Charles Cappaso & Sons	4/1/08	4/1/13		Yes		11,472	No	Yes	2	Hillburn
Ramapo (MSW)	Miele	1/1/10	12/31/10	No	No	6:00 AM - 6:00 PM	7,583	No	Yes	1	Hillburn
Ramapo (Recycling)	Miele	1/1/10	12/31/10	No	Yes	7:00 AM - 6:00 PM	7,583	No	Yes	2	Hillburn
Stony Point (MSW)	Homeowners contract directly with carters; no municipal involvements	3/1/10	2/28/16	-	No	-	-	No	Yes	1	Bowline
Stony Point (Recycling)	Charles Cappaso & Sons	6/1/08	5/31/11	1 Year	Yes	7:00 AM - 6:00 PM	-	No	Yes		Hillburn

Note: recyclables are transported to RCSWMA MRF located in Hillburn, NY.

3.3.3 Household Hazardous Waste

The Authority provides for the disposal of household hazardous waste for its residents and Conditionally Exempt Small Quantity Generators through a drop-off collection facility which is open five (5) days a week and select weekends. Education and Outreach program provides information identifying hazardous materials that should not be included with collected solid waste and recyclable materials. Accepting household hazardous waste materials at no charge incentivizes residents to make use of this facility and avoid careless disposal of household hazardous materials.

Materials accepted and not accepted at the drop-off facility are listed on Table 3-8 and a full list can be found on the Authority's website www.rocklandrecycles.com and in the annual household hazardous waste brochure.

3.3.4 Commercial / Business Facilities

As defined by Rockland County Flow Control Law, commercial consists of any firm, company, partnership, association, institution, multi-family residence, townhouse, cooperative or condominium apartment building or complex, joint stock association or any other group of individuals or other entity providing a public service or engaged in business for profit, and includes the plural as well as the singular. The Authority has designated staff to focus on education of commercial entities to assist them with waste minimization and handling.

Of significance, Rockland County has two major shopping centers (Palisades Center and Nanuet Mall), numerous business parks ranging in size as well as large manufacturing facilities (such as Pfizer in Pearl River). Blue Hill Plaza located in Pearl River is a self-contained office park located on a 93 acre campus consisting of two properties. One Blue Hill Plaza is a 21-story, 550,000 square foot building and Two Blue Hill Plaza is a 6-story, 550,000 square foot building.

Table 3-11 lists the major employers in the County. This summary table will be populated in conjunction with recycling and waste reduction initiatives planned for the commercial sector and will be evaluated on an annual basis.

Each commercial entity is required to provide for the removal of MSW (including yard waste, scrap metals and recyclables) and construction and demolition debris from the property on which they are generated. This removal is provided either through a service provided by a hauler or by direct haul to the designated facility as determined by the Authority to serve the municipality where such commercial entity resides or has a place of business and which receives each such type of waste.

Table 3-11: Major Employers in Rockland County (as of 12/2011)

{Table to be populated on date(s) specified in Implementation Schedule}

Site/Employer	Location	Number of Employees	MSW Hauler	Recycling Hauler	Landscaper	Is there a Business Recycling Program	Recycling Coordinator (Name & Phone)
County Jail							
Rockland County Correctional Facility	New City	278 inmates					
Major Shopping Centers/Malls in Rockland County							
Palisades Center	West Nyack						
Nanuet Mall	Nanuet						
Major Employers in Rockland County							
Rockland County Government	New City	2,709					
Pfizer Pharmaceuticals	Pearl River	2,450					
East Ramapo School District	Spring Valley	2,148					
Good Samaritan Hospital	Suffern	2,100					
Clarkstown Central School District	New City	1,831					
Nyack Hospital	Nyack	1,500					
North Rockland Central School District	Garnerville	1,326					
Northern Services Group, Inc.	Monsey	1,100					
SUNY Rockland Community College	Suffern	1,068					
Verizon Wireless	Orangeburg	1,000					
Rockland Psychiatric Center	Orangeburg	900					
Helen Hayes Hospital	West Haverstraw	861					
Nice-Pak Products, Inc.	Orangeburg	815					
Jawonio Inc.	New City	806					
Rockland BOCES	West Nyack	785					

Orange and Rockland Utilities, Inc.	Pearl River	766					
A & T Healthcare, LLC	New City	750					
Ramapo Central School District	Hillburn	713					
ARC of Rockland	Congers	648					
Camp Venture, Inc.	Nanuet	600					
Chestnut Ridge Transportation Inc.	Spring Valley	600					
South Orangetown Central School District	Blauvelt	530					
Town of Clarkstown	New City	512					
Nyack Union Free School District	South Nyack	501					
Hudson Valley Dev. Disabilities Services	Thiells	500					
Dominican College	Orangeburg	482					
Lamont-Doherty Earth Observatory	Palisades	480					
Nanuet Union Free School District	Nanuet	463					
Chromalloy New York	Orangeburg	440					
Novartis Pharmaceuticals Corp.	Suffern	425					
Barr Laboratories, Inc.	Pomona	415					

3.3.5 Institutional

Rockland County has three hospital facilities (Nyack Hospital, Good Samaritan Hospital, and Helen Hayes Hospital) and numerous medical facilities and offices serving its citizens across the County. Table 3-12 presents a summary of these facilities. As with commercial entities, hospitals are also required to provide for the removal of MSW (including yard waste, and recyclables), scrap metal and construction and demolition debris from their property. In addition hospitals must provide for removal of regulated medical waste as discussed in Section 2.3.4 of the Plan; however, this material is not handled or tracked by the Authority and there is currently no mechanism in place to capture this data since disposal of this waste by generators within the County is not directly reportable to NYSDEC.

This summary table will be populated in conjunction with recycling and waste reduction initiatives (Implementation Schedule 2) planned for the commercial sector and will be evaluated by the Authority on an annual basis.

Table 3-12: Hospitals Located in Rockland County (as of 12/2011)

{ Table to be populated on date(s) specified in Implementation Schedule }

Hospital	Number of Beds	Number of Physicians and Staff	Size of Campus	MSW Hauler	Recycling Hauler
Nyack Hospital Nyack	375	650 physicians 1,400 employees			
Good Samaritan Hospital Suffern	370	600 physicians 2,000 employees			
Helen Hayes Hospital West Haverstraw	155	800 employees			
Summit Park Hospital and Nursing Care Center Pomona	108				
Rockland Psychiatric Center Orangeburg		1,000 employees	600 acres		
Rockland County Infirmery Pomona	341 (nursing facility 41 (Alzheimer's and dementia residents				

3.3.6 Schools

In accordance with the Solid Waste Management Act of 1988, all schools in the State must recycle. The County's eight public school districts plus Rockland BOCES and 88 private schools are required to separate recyclable materials from the rest of the MSW generated at their facilities. RCSWMA has prepared a guidance document for the schools entitled, "Green Schools of Rockland, A Guide to Recycling and Waste Reduction for Rockland County Schools." This document is available on RCSWMA's website at

<http://www.rocklandrecycles.com/docs/RocklandSchoolRecyclingGuide.pdf>

Schools play an important role in promoting recycling. Waste reduction and recycling are critical elements of a well-rounded education that incorporates good social and environmental behaviors. In September 2007, the New York State Education Commissioner sent a letter to all schools in the state informing them of their responsibility to reduce waste and promote recycling. Many of the schools in the County have incorporated recycling education in their curricula, and several are beginning to address other concerns such as food waste reduction. Through programs; such as, the NYSDEC Green Schools program, additional information will be gathered from all school districts to determine current practices, and to investigate how both recycling rates and environmental education can be enhanced at schools in the County.

A number of school systems remove their own recyclable materials from the schools and transport them to the Authority owned transfer stations. Other school systems contract with private haulers to remove the MSW generated at their schools including the recyclable materials. Table 3-13 presents a summary of these schools and information that will be acquired through implementation of this Plan. This summary table will be populated in conjunction with outreach and education efforts to the schools and will be evaluated by the Authority on an annual basis.

Table 3-13: Rockland County, Summary of Public and Private Schools and MSW and Recycling Handling (as of 12/2011)
{ Table to be populated on date(s) specified in Implementation Schedule }

Name of School	Grades	No. of Students	No. of Faculty & Staff	No. and Date of Presentation(s)	Savings (\$/yr)	Contact	Green Team (Yes/No)	Waste Hauler
Rockland BOCES								
Clarkstown Central School District (14 schools)								
Bardonia Elementary School	K-5	415						
Congers Elementary School	K-5	285						
Lakewood Elementary School	K-5	361						
Laurel Plains Elementary School	K-5	379						
Link Elementary School	K-5	454						
Little Tor Elementary School	K-5	296						
New City Elementary School	K-5	406						
Strawtown Elementary School	K-5	342						
West Nyack Elementary School	K-5	356						
Woodglen Elementary School	K-5	498						
Felix Festa Middle School Campus	6-8	2241						
Birchwood School	K-12	104						
Clarkstown High School North	9-12	1513						
Clarkstown High School South	9-12	1546						
East Ramapo Central School District (14 schools)								
Early Childhood Center	K	291						
Fleetwood Elementary School	K-3	584						
Eldorado Elementary School	4-6	364						

Table 3-13: Rockland County, Summary of Public and Private Schools and MSW and Recycling Handling (as of 12/2011)
{ Table to be populated on date(s) specified in Implementation Schedule }

Name of School	Grades	No. of Students	No. of Faculty & Staff	No. and Date of Presentation(s)	Savings (\$/yr)	Contact	Green Team (Yes/No)	Waste Hauler
Grandview Elementary School	K-3	476						
Lime Kiln Elementary School	4-6	431						
Summit Park Elementary School	K-3	510						
Kakiat Elementary School	4-6							
Hempstead Elementary School	K-6	444						
Margetts Elementary School	K-3	453						
Elmwood Elementary School	4-6	377						
Pomona Middle School	7-8	676						
Chestnut Ridge Middle School	6-8	568						
Spring Valley High School	9-12	1110						
Ramapo High School	9-12	1478						
North Rockland Central School District (12 schools)								
Gerald F Neary Elementary School	K-2	466						
Haverstraw Middle School	5-7	562						
James A Farley Middle School	5-7	545						
North Garnerville Elementary	K-4	304						
Stony Point Elementary School	K-4	600						
Thiells Elementary School	K-4	769						
Fieldstone Secondary School	8-9	1214						
Haverstraw Middle School	5-7	562						

Table 3-13: Rockland County, Summary of Public and Private Schools and MSW and Recycling Handling (as of 12/2011)
{ Table to be populated on date(s) specified in Implementation Schedule }

Name of School	Grades	No. of Students	No. of Faculty & Staff	No. and Date of Presentation(s)	Savings (\$/yr)	Contact	Green Team (Yes/No)	Waste Hauler
James A Farley Middle School	5-7	545						
Willow Grove Middle School	5-7	703						
Fieldstone Secondary School	8-9	1214						
North Rockland High School	10-12	2087						
Nanuet Union Free Central School District (4 schools)								
George W. Miller Elementary School	K-2	513						
Highview Elementary School	3-4	349						
A. MacArthur Barr Middle School	5-8	741						
Nanuet Senior High School	9-12	696						
Nyack Union Free Central School District (5 schools)								
Liberty Elementary School	K-5	444						
Upper Nyack Elementary School	K-5	444						
Valley Cottage Elementary School	K-5	472						
Nyack Middle School	6-8	649						
Nyack High School	9-12	910						
Pearl River Union Free Central School District (5 schools)								
Evans Park Elementary School	K-4	331						
Franklin Avenue Elementary School	K-4	328						
Lincoln Avenue Elementary School	K-4	328						

Table 3-13: Rockland County, Summary of Public and Private Schools and MSW and Recycling Handling (as of 12/2011)
{ Table to be populated on date(s) specified in Implementation Schedule }

Name of School	Grades	No. of Students	No. of Faculty & Staff	No. and Date of Presentation(s)	Savings (\$/yr)	Contact	Green Team (Yes/No)	Waste Hauler
Pearl River Middle School	5-7	619						
Pearl River High School	8-12	1058						
Ramapo Central School District (7 schools)								
Cherry Lane Elementary School	K-5	452						
Montebello Elementary School	K-5	389						
Richard P. Conner Elementary	K-5	466						
Sloatsburg Elementary School	K-5	267						
Viola Elementary School	K-5	430						
Suffern Middle School	6-8	1142						
Suffern High School	9-12	1495						
South Orangetown Central School District (5 schools)								
William O. Schaefer School	K-1	524						
Tappan Zee Elementary School	2-3	505						
Cottage Lane School	4-5	530						
South Orangetown Middle School	6-8	866						
Tappan Zee High School	9-12	1094						
Private Schools {largest of the 88 private schools will be incorporated into the table when populated}								

3.3.7 Colleges

The following table summarizes the larger colleges located within Rockland County including their size, number of students and staff, number of resident halls, and type/size of food service.

Table 3-14: Colleges located in Rockland County{Table to be populated on date(s) specified in Implementation Schedule}

Name of College	Size of Campus (acres)	Number of Students	Number of Faculty and Staff	# and Capacity of Residential Halls	Type of Food Service Available (i.e. cafeterias, snack bars)	Campus Contact	MSW and Recycling Hauler
Columbia University's, Lamont-Doherty Earth Observatory (Palisades)		120 scientists 100 Grad Students	550			Patrick O'Reilly Director of Facilities 845-365-8348	
Dominican College (Blauvelt)	26	1,969 full-time 554 part-time		Hertel Hall Rosary Hall Guzman Hall	Granito Center: open at mealtimes for the resident and non-resident community. Casey Hall's cafeteria is open when class is in session.	Sister Kathleen Sullivan 845- 848-7804	
Empire State College/SUNY (Nyack)							
Rockland Graduate Center, Iona College (Pearl River)						Mac-Cali Building Owner 845-620-1350	
Nyack College (Nyack)	South Nyack: 86 Upper Nyack: 39	1,442	321	Total Dorm Capacity 753 Total Apartment Units 65		Doug Walker Director of Facilities 845-358-1710 (w)	

Table 3-14: Colleges located in Rockland County{Table to be populated on date(s) specified in Implementation Schedule}

Name of College	Size of Campus (acres)	Number of Students	Number of Faculty and Staff	# and Capacity of Residential Halls	Type of Food Service Available (i.e. cafeterias, snack bars)	Campus Contact	MSW and Recycling Hauler
				1 Missionary Residence bldg (5,763 sf); 10 Staff Residence bldgs. (30,646 sf); 11 Student residence bldgs (230,196 sf).		845-222-8807 ©	
Rockland Community College (RCC) (Suffern)	Main Campus in Suffern: 175 acres; Extensions located in Haverstraw and Spring Valley.	8,000	125 full-time 200 part-time			Lorinda Hill Assistant to the Director of Plant Facilities 845-574-4525	
SUNY Purchase College (Suffern)							
Rockland Graduate Campus, Long Island University						Jeff McDowell Director 845-359-7200	

Table 3-14: Colleges located in Rockland County{Table to be populated on date(s) specified in Implementation Schedule}

Name of College	Size of Campus (acres)	Number of Students	Number of Faculty and Staff	# and Capacity of Residential Halls	Type of Food Service Available (i.e. cafeterias, snack bars)	Campus Contact	MSW and Recycling Hauler
St. Thomas Aquinas College (Sparkill)	48 acre	2,150			McNelis Commons, an all-you-care-to-eat residential dining hall open 7 days per week. Spartan Grille (open Mon thru Fri).	Pat Lambert Director of Facilities 845-398-4395	
Sunbridge College (Chestnut Ridge)	200			Holder House is 40 single rooms and 4 kitchens.	Threefold Café is open for breakfast and lunch, Monday – Friday and for Dinner on Thursdays. The Hungry Hollow Co-op is a whole foods co-op open to the public. The co-op has a complete store of organic and biodynamic products as well as ready-to-eat meals. The Co-op is open 7 days a week.	Kathleen Morris Admissions 845-425-0055	

Table 3-14: Colleges located in Rockland County{Table to be populated on date(s) specified in Implementation Schedule}

Name of College	Size of Campus (acres)	Number of Students	Number of Faculty and Staff	# and Capacity of Residential Halls	Type of Food Service Available (i.e. cafeterias, snack bars)	Campus Contact	MSW and Recycling Hauler
Yeshivath Viznitz (Monsey)		317					
Yeshiva D'monsey Rabbinical College (Monsey)		73					
Ohr Somayach (Monsey)		116					
Rabbinical College Beth Shraga (Monsey)		43					
Bais Medrash Elyon (Monsey)		17					
Kol Yaakov Torah Center (Monsey)		13					
Yeshiva Shaarei Torah of Rockland (Suffern)		43					

3.4 Environmental Organizations within Rockland County

The RCSWMA partners with and supports non-profit and grassroots organizations such as the Rockland Farm Alliance, the Rockland Business Association, NYS Committee of the Highlands Coalition, the Hudson River Watershed Alliance, the Ramapo River Watershed Intermunicipal Council and the Rockland County Conservation Committee. Through the WasteWise Program, modeled after the USEPA program, the Authority also partners with local businesses and school districts for waste reduction and recycling projects.

There are many environmental organizations and non-profits in the County; the following are examples of some of organizations partnering with the Authority. As shown in Implementation Schedule No. 5 – Education and Outreach included in Section 8 of the Plan, the Authority intends to continue activities with these existing organizations as well as seek out additional partnership opportunities.

3.4.1 Rockland County AmeriCorps Program

Rockland County AmeriCorps (RCA) is part of the Corporation for National and Community Service. The Environmental Corps places civic-minded individuals in local environmental projects designed to meet their community's most compelling needs. The RCSWMA has participated on the AmeriCorps Advisory Board for over ten years and has acquired two to three members annually for the past four years.

3.4.2 Cornell Cooperative Extension of Rockland

Cornell Cooperative Extension (CCE) (www.cce.cornell.edu) is part of a state-wide and nation-wide educational system that enables people to improve their lives and communities through partnerships that put experience and research knowledge to work. The RCSWMA has partnered with CCE on many environmental projects, including backyard composting and other food waste composting initiatives.

3.4.3 County of Rockland

The County has several departments with programs and staff dedicated to protecting human health. The Department of Health and Environmental Management Division (www.co.rockland.ny.us/health) offers outreach programs such as the Health and Wellness Coalition, Healthy Steps of Rockland, Tick Identification, and Water Quality. Proper management of solid waste is an important health issue and as noted previously, the department of health is empowered with the enforcement authority for the County's flow control law.

3.4.4 Keep Rockland Beautiful, Inc.

Keep Rockland Beautiful, Inc. (KRB) is a non-profit affiliate of Keep America Beautiful. Their mission is to promote a cleaner and more beautiful County. The RCSWMA has been a long-standing supporter and partner in their most notable program, the Great American Clean Up, which targets litter, as well as their EarthBeat Program for school. <http://www.keeprocklandbeautiful.org/>

3.4.5 Rockland Farm Alliance

The Rockland Farm Alliance (RFA) (www.rocklandfarm.org) is a community coalition that was founded to facilitate local sustainable agriculture in Rockland and to provide educational resources to the community to promote awareness of the need for local food resources. In conjunction with the Authority's Native Plants Demonstration Garden and Greenhouse, the RCSWMA has partnered with RFA to grow herb and vegetable seedlings in the Greenhouse.

3.4.6 Water Organizations

The RCSWMA also works closely with the RC Drainage Agency, Stream Teams and the Water Quality Committee. The RCSWMA also partners with the Hudson River Watershed Alliance, the Ramapo River Watershed Intermunicipal Council, and the RC Conservation Committee.

3.5 Existing Efforts to Recover Recyclables

The Authority currently has a comprehensive program for the management and recovery of recyclable materials. This program includes a combination of physical facilities, recycling contractors and contracts, recycling education, and outreach. The existing program forms the basis for the next ten years of solid waste and recycling management as outlined in this plan. The components of the existing program are described in the following sections.

3.5.1 Organization and Laws

The creation of the Authority coupled with the enactment of laws concerning recycling create a favorable circumstance for waste reduction and the promotion of recycling and the capture of discarded recyclable materials within the Planning Unit.

From an organizational perspective, the RCSWMA is a corporation created for the public benefit of the people of Rockland County. The Authority Board of Directors, as comprised under the Authorities Act, consists of two appointees from the County

Executive's office, the Supervisors of all five towns within Rockland County, the Mayors of two Rockland County Villages – and Rockland County Legislators from various districts throughout the County. The structure of the Board ensures the engagement and attention of the leaders of Rockland County's communities.

Rockland County's Flow Control Law, Chapter 350 of the Laws of Rockland County, Article XVII of the Rockland County Sanitary Code, and Separation of Non-Offensive Material, designates the type of materials that are required to be separated from the waste stream and recycled. Materials to be recycled include: mixed paper, commingled containers, yard waste, scrap metal, concrete, asphalt, and untreated wood. The laws also outline the facilities designated for the type of waste or recycling. Flow control is discussed in more detail in Section 6 of this Plan.

3.5.2 Outreach and Education

Recognizing that education is essential to successful program implementation, the Authority's focus on education is led by a solid waste educator and several support staff (see Section 10) to conduct continuous outreach to the residents, commercial entities, and institutions within Rockland County. In addition, the Authority has developed multiple facilities for the use of education staff that can be utilized to assist with program development and outreach including: the Education Center, Conference Center and the Greenhouse and Native Plants Garden. The general approach to outreach to each of Rockland's community sectors is described in the following sections.

3.5.2.1 Residential Outreach and Education

An education and outreach program for the residential community utilizes a multi-faceted approach, with coordination of the three main stake holders – residents, government officials and haulers. Each group is educated on sound recycling and waste reduction practices so that a unified and clear message is delivered to the residential community with a goal to increase participation and reduce contamination.

To encourage participation in curbside recycling and yard waste composting, the RCSWMA provides residents with recycling bins for the collection of mixed containers and mixed paper, as well as biodegradable leaf bags for the collection of leaves, grass and brush. Advertising efforts include direct mail pieces, newspaper, local radio and other types of media. The Recycling Door Hanger Program provides on-site education in targeted communities. Staff participates in table-top exhibits at public and private events and also provides speakers to conduct presentations to community groups. Groups can tour the Herb Reisman Environmental Education Center at the MRF and learn more about Rockland's recycling. The Authority hosted, and will continue to host compost bin and rain barrel sales to offer residents a low-cost alternative to waste disposal and municipal water use.

Annually, the RCSWMA hosts an Environmental Day, providing tours of the MRF, Education Center and Native Plants Garden. Over thirty environmental organizations participate by providing relevant information. To promote attendance, additional attractions include; interactive kid's activities; an environmental film festival; local food vendors; demonstrations such as food waste composting; music; and the Rockland Recycles Awards Ceremony.

In order to address the specific needs of each municipality, the Authority works closely with elected officials and staff to customize literature, discuss new strategies, and assist with hauler contracts. A different approach is used for varying housing styles; such as single-family units, condominium complexes, and apartment complexes. On-site visits, waste audits and interviews are conducted to determine existing problems, needs and viable solutions.

3.5.2.2 Business Outreach and Education

The Authority provides assistance to businesses to develop successful recycling and waste reduction programs. Evaluation and recommendations for businesses need to be site specific due to varying size and type of business, materials managed, and recyclables generated.

When businesses are educated to understand the financial aspects of the "reduce, reuse, recycle process", they are more willing to participate. The Authority engages businesses in a guided mentoring process to help them set up recycling and better waste management initiatives at their institution or business. Understanding a business owner's process enables the Authority to provide assistance and advice specific to that business and in this way the business owner is not forced to work out a recycling program on their own. Additionally, the Authority partners with the Rockland Business Association to help promote their Green efforts.

Businesses are contacted by the Recycling Coordinator via phone, scheduled visits, cold visits or visits responding to incoming requests. This is followed up by a site visit to assess their existing program and determine their needs to bring them into compliance with local waste laws. They are also provided with the Authority's "Guide to Recycling and Waste Reduction for Rockland County Businesses", which is a ten-step guide intended to walk them through the process of setting up an effective program.

RCSWMA assesses and helps implement key elements of a business recycling program including identifying an onsite/in-house recycling coordinator or a "core team", employee training, customization of signage, informational flyers, and interfacing with haulers.

Annually, as part of the WasteWise Program, the RCSWMA recognizes excellence in recycling and/or waste prevention/reduction programs through the Rockland Recycles Awards Program. The goal is to highlight the successes of organizations, agencies,

businesses, institutions, schools, and government entities that go beyond the norm to advance recycling and/or waste prevention/reduction and to make these examples available to others who may use them as models. Awards are presented at the Annual Environmental Day, held at the RCSWMA facilities in Hillburn.

The Authority also participates in table-top exhibits at business outreach events, such as the Rockland Business Association's (RBA) Green Expo and also sits on the RBA's Green Council.

3.5.2.3 School Outreach and Education

It is the goal of the Authority to assist the public and private K-12 schools and colleges to develop successful and sustainable recycling and waste reduction programs. As with businesses, schools require individualized attention, since schools although similar in education program, can vary tremendously with respect to internal operations. When working with schools, there are many stake holders that must be brought into the process. The Authority works with the administrators, teachers, students, parents, custodians, and food service staff.

In 2010, the RCSWMA started the Green Schools of Rockland Program to help establish a cohesive network for Rockland County schools. The program began with the creation of the "Guide to Recycling and Waste Reduction for Rockland County Schools", which focuses on the K-12 level. This program is also adaptable for college use.

The Solid Waste Educator provides assistance to schools by providing instruction on how to establish a green team; conduct a waste audit; build awareness; learn to track their materials diversion; plan a kick-off event; keep members engaged; and sustain the program. Free posters, bins, collection equipment and incentive items to help schools ramp up their programs have been provided by the Authority. Schools are also eligible for the Rockland Recycles Awards.

The Solid Waste Educator Assistant provides tours for school groups (grades 2-12), at the Herb Reisman Environmental Education Center, located at the MRF. The interactive and educational program educates students about the importance of proper waste management and recycling. Visitors are engaged through an interactive dialog, video and viewing of the recycling operations. Part of the tour allows visitors to "play" with the interactive environmental games.

When groups tour the Education Center they may receive recycling information, recycled pencils made from currency and denim, and pencil cases made from pre-consumer, industrial waste juice pouches from Terracycle. When school groups cannot make the trip to the Education Center or they would like to educate a larger group of students at once, the Assistant Educator will travel to the school to conduct a presentation. Many materials have been developed over the years specifically for schools.

Although much of the emphasis is on the K-12 schools, the RCSWMA has done outreach to several colleges in Rockland. Over the years, the RCSWMA has met with representatives to help colleges establish recycling programs or expand existing programs.

3.5.2.4 Government Outreach and Education

Government facilities include County buildings, municipal structures, parks and recreation areas. Although all of the County office buildings and all municipal offices have recycling programs, there is still much to be done at public parks and recreation areas.

Since 1999 the Authority has worked with the County to implement a mixed paper and container recycling program in all of the County buildings. The RCSWMA purchased color-coded decals and multi-compartment bins suitable for indoor and outdoor collection that are still in use today. Ongoing training sessions are conducted and educational information is provided for all employees and departments.

The Authority purchased 20 Clear Stream Recycling Containers in 2009 that are loaned to any municipality or organization that would like to provide recycling services at a larger-scale event. Materials are tracked either visually or weighed to determine waste diversion success.

3.5.3 Programs & Events

3.5.3.1 Environmental Day

The spring 2010 marked the RCSWMA's first annual Environmental Day. Environmental Day is held at the Hillburn facility and features the Awards Ceremony for the Rockland Recycles Awards, with over forty demonstrations and exhibitors, live music, healthy foods, drawings for green products such as mulching mowers, backyard composting bins, rain barrels, etc. In 2010, nine environmental professionals made presentations, children's activities were incorporated, as well as tours of our Environmental Education Center and Native Plants Garden. Over 1,000 people attended the event. The 2011 Environmental Day offered an environmental film festival.

3.5.3.2 WasteWise Program

The RCSWMA established its WasteWise Program, in partnership with the U.S. EPA, to encourage businesses and institutions to reduce disposal of solid waste. The program provides recycling and waste prevention/reduction assistance to various Rockland County organizations, agencies, businesses, institutions and government entities that are committed to preserving the environment. This is accomplished through the creation of

the WasteWise Committee, which consists of representatives of businesses, institutions and schools that meet quarterly to discuss environmental challenges, solutions and to share resources.

Annually, as part of the WasteWise Program, the RCSWMA recognizes excellence in recycling and/or waste prevention/reduction programs. The goal is to highlight the successes of organizations, agencies, businesses, institutions, schools, and government entities that go beyond the norm to advance recycling and/or waste prevention/reduction and to make these examples available to others who may use them as models. Historically, awards have been given to the three most outstanding programs identified.

Individuals may nominate their own or another organization, agency, business, institution or government entity that they believe is worthy of recognition. In order to be eligible for an award, applicants and programs must be located in Rockland County and agree to share their program information with others.

3.5.3.3 Native Plants Garden Lectures and Demos

The Native Plants Garden demonstrates sustainable landscapes with the use of beautiful, New York State Native Plants. Lectures and demonstrations encourage the use of Native Plants in local gardening practice as Native Plants require less water, and no herbicides or pesticides. In support of local organic farming efforts, the RCSWMA has partnered with the Rockland Farm Alliance (RFA) to grow herb and vegetable seedlings in their Greenhouse. In 2011, the (RFA) has grown over 15,000 seedlings which will be transplanted to a municipally owned local historic farm where they will be raised organically for sale at local farmers' markets. This initiative demonstrates the local farming part of the sustainability cycle - and also reduces greenhouse gasses by providing local food - offsetting truck miles for shipping. Compost from the Authority's local yard waste facility enriches the soil in our Native Plants Garden, the local farms and is used as bedding in the RCSWMA's Greenhouse.

3.5.3.4 Home Composting Workshops

Home Composting through workshops and presentations are also promoted. From 2001 to 2003 the Authority engaged in a Compost Bin Give-Away and Education Program through partnership with the NYSDEC and Cornell Cooperative Extension to provide public training sessions about backyard composting and to provide backyard composting bins to homeowners who completed the training sessions. Backyard compost bin sales will continue as a semi-annual event.

3.5.4 Website

The RCSWMA provides recycling information on their website www.rocklandrecycles.com regarding, among other things, the types of materials that must be recycled, where residents can drop off recyclable materials (and other solid waste items for processing) and the hours of operation. Included, is a list of links to other useful websites associated with recycling and waste management. The RCSWMA works with each of the 24 municipalities to assist with educational and instructional literature to be disseminated to each of their communities.

3.5.5 Other Initiatives

The RCSWMA has provided curbside recycling bins to the residents of Rockland County since 1998. In 2000, the bins were color-coded and uniform throughout the County to create clarity and consistency across municipal borders.

As an added incentive, the RCSWMA established a rebate program for recyclables as part of the Intermunicipal Recyclables Management Agreements (IRMA). Currently, twenty-three of the twenty-four municipalities in Rockland County have signed agreements.

3.5.6 Electronics Collection

The RCSWMA provides for the collection of e-waste at their HHW Facility. Computers may be charitably reused through Rockland PC User's Group, a non-profit organization. The Authority has contracted with Clean Harbors to operate the HHW Facility. Clean Harbors' utilizes a unique process to recycle obsolete or nonfunctioning electronic equipment. The equipment is de-manufactured and the materials are recycled. Materials such as light bulbs, computers, small home appliances, and utility company transformers are processed without endangering municipal landfills while gaining the opportunity for the recycling of component materials.

In addition, Best Buy Co. will accept up to three electronic devices per day per household in New York. The following electronics are accepted at no charge:

- DVD players
- Home and car audio
- Peripherals
- Televisions and monitors up to 32"
- Flat-panel TVs and monitors up to 60"
- Cell phones
- MP3 players
- Cables
- Desktop or laptop computers
- Small electronics, fans and vacuums

For console TVs of any size, or tube TVs and monitors larger than 32" consumers can use Best Buy's haul-away or pickup programs. Also, every U.S. Best Buy store has free kiosks, just inside the door, to drop off ink and toner cartridges, rechargeable batteries, and wires, cords and cables. Best Buy also has a trade-in program where consumers can trade in video games, select used electronics, musical instruments, CDs and movies in exchange for gift cards (or a check for a lesser value).

3.5.7 Other Items

Although some of the following items are accepted at the HHW there are other outlets available as noted below, which the RCSWMA will promote in conjunction with their own programs:

Old cell phones and chargers may be donated to organizations for reuse. Verizon Wireless will donate cell phones or a portion of the proceeds from resale to domestic violence groups.

Lead-acid batteries (most car batteries) are accepted for recycling by establishments that sell them. New York State Law requires a \$5.00 deposit on the sale of every new battery, which is refunded when the battery is returned. Lead-acid batteries are accepted at the HHW facility.

Other Batteries: Home Depot, Lowes, Radio Shack, Best Buy, Sam's Club, Verizon Wireless, Staples and Wal-Mart, to name a few, through Call2Recycle®. Call2Recycle® is a program of the Rechargeable Battery Recycling Corporation (RBRC) promoting environmental sustainability by providing free battery and cell phone recycling in North America. Call2Recycle® accepts old cell phones and used portable rechargeable batteries commonly found in cordless power tools, cellular and cordless phones, laptop computers, camcorders, digital cameras, and remote control toys. This includes the following types of batteries: Nickel Cadmium (Ni-Cd), Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-Ion) and Small Sealed Lead (Pb). Customers should bring their old batteries to the returns desk. Domestically produced alkaline and carbon zinc household batteries no longer contain mercury and can be disposed of with SW. Large numbers of used alkaline batteries should not be disposed of together. Used batteries are often not completely dead, and disposing of a number of used batteries together can bring these "live" batteries into contact with one another, creating safety risks.

NYS Rechargeable Battery Recycling Law was signed into law by the Governor on December 10, 2010. The law requires manufacturers of covered rechargeable batteries to collect and recycle the batteries statewide in a manufacturer-funded program at no cost to consumers. Consumers will now be able to safely return rechargeable batteries to retailers, from a large number of electronic products, for recycling or proper management at the end of their useful life. The types of rechargeable batteries covered by the new law are as follows:

- Nickel-cadmium
- Sealed lead
- Lithium ion
- Nickel metal hydride
- Any other such dry cell battery capable of being recharged
- Battery packs containing any of the above-mentioned batteries

The law does not cover: any of the above-mentioned batteries/packs weighing 25 pounds or more; batteries used as the principal power source for a vehicle, such as an automobile, boat, truck, tractor, golf cart or wheelchair; batteries for storage of electricity generated by an alternative power source, such as solar or wind-driven generators; batteries for backup that is an integral component of an electronic device; or any non-rechargeable batteries such as common alkaline batteries.

Under the new law, manufacturers of covered rechargeable batteries or groups of collaborating manufacturers will be responsible for financing the collection and recycling of the batteries, advertising their program to consumers, and reporting on the progress of their programs. Beginning June 8, 2011, retailers that sell covered rechargeable batteries will be required to accept used rechargeable batteries from consumers during normal business hours and will need to post signs informing consumers about these requirements. A retailer must accept up to 10 batteries per day from any person regardless of whether such person purchases replacement batteries or shall accept as many such batteries as a consumer purchases from the retailer.

Small Freon-Containing Appliances are accepted at the HHW Facility. Residents can contact their municipality for information on disposing larger items.

Printer Cartridge Recycling is accepted by the Rockland County Department of Social Services for recycling who use the proceeds to help fund special programs.

Waste Tires are accepted by tire dealers for a nominal fee. Tires can also be brought to the County transfer stations for a nominal fee.

Used Oil: State law requires that establishments that sell more than 1,000 gallons of motor oil per year must accept up to 5 gallons of used oil per person per day. Rockland County accepts waste oil and antifreeze at their HHW Facility.

Plastic grocery bags are accepted for recycling by supermarkets and other large retail stores. New York State's Plastic Bag Reduction, Reuse and Recycling Act became effective January 1, 2009, which requires certain retail and grocery stores to set up a plastic carry out bag recycling program for their customers. 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 provide plastic carry out bags to customers, are required to comply with the law.

Stores meeting these requirements must establish an "at-store" plastic bag recycling program and they must ensure that collected plastic bags are actually recycled,

including maintaining records describing the collection, transport and recycling of plastic bags for at least three years. Stores must also sell reusable bags and allow the use of reusable shopping bags.

Wire Hangers in good condition will be accepted by most dry cleaners.

Shredded paper should be accepted by haulers providing curbside pick-up. Individual haulers should be contacted for specifics.

Compact fluorescent light (CFL) bulbs can be recycled at some store locations as well as at the HHW Facility. Currently Home Depot and Lowe's accept CFLs at the return desk.

Non-Controlled Pharmaceutical Medication can be brought to the HHW for disposal. Controlled substances can be taken to the Rockland County Sheriff's Office every 2nd Saturday of each month.

3.6 Markets for Recovered Recyclables

Markets for recyclable materials fluctuate in the same manner as other commodities. The Authority continually seeks competitive prices for management of the recyclables collected within the County.

3.6.1 Available and Potential Recyclables Markets

Largely because of a lack of a significant manufacturing base, markets within the County for recyclable materials are almost non-existent. The Glass Beneficiation Facility captures a difficult market for broken and low grade glass recyclables. From 2008 to 2010, this facility has produced over 19,000 tons of re-useable product that can be used as a substitute for natural aggregate in applications such as sub base, underdrain, filter material, general earthwork items, and glass beads for reflective pavement markings. This enterprise also saves local municipalities and businesses money by providing a lower-cost 'green' recycled material for pipe bedding and other construction uses. The Authority is now working with the State to include the beneficiated glass material in construction bids and technical specifications, so that the benefits of this material may be applied on a regional basis.

As part of the contract to operate the MRF for the Authority, Weminuche Recycling (Hudson Baylor) attempts to locate new markets for recyclable materials utilizing the feedback received from a variety of sources including sales personnel and commercial and industrial contacts. They also observe the ever changing residential recyclables scene through curbside collections and operation of sorting systems.

The key to identifying markets for a new component of the waste stream that is currently not being recycled is a function of material volume, the ability to economically distinguish and separate the material from the mix delivered into a processing facility,

and the ability to provide economic shipment of loose, compacted and/or baled materials.

The Authority is currently evaluating the feasibility of adding milk and juice cartons (tent top and aseptic) to the list of acceptable recyclable materials at their MRF. Hudson Baler would be able to accept this material if their current operation was modified to include an optical sorter and a storage area. Again, this is subject to material volume and overall economics. Milk and juice cartons are typically recycled through a process called hydropulping, which recovers a material's paper fibers, the cartons are recycled into paper towels, tissue and other paper products.

Today's paper mills differ from those 10 to 15 years ago, in that these mills can accept a wider range of recovered paper products. It would serve Rockland County and Hudson Baylor well to explore this area to determine whether or not existing systems are including all of the post-consumer fiber that is available.

Mixed rigid plastics are presorted at the Hudson Baylor facility. This approach constitutes the best method for recycling odd shaped and large items that have become a part of the residential curbside mix. Because of their unique size and make up, these items are typically presorted, or pulled off of the processing line before they can enter the system.

There are also grades of plastics that can be recycled, based upon specific criteria, provided that these commodities can be sorted, baled, and shipped economically. Some scrap films, and other plastic packaging materials could fall into this category.

3.6.2 Restrictions on Recyclables Markets

Convenience - Recyclable materials are commodities. They have value as raw material for manufacturing products, but this value can be significantly lowered if the material is contaminated. Broken glass in with paper, for example, can increase the amount of unusable material to as much as 16% to 27% according to published studies (Recycling Today). This residual material is then landfilled, making the increase in the amount collected questionable.

Laws - New York State laws do not define materials that must be recycled, which would help to ensure standardization and improve economies of scale.

Economics - There may be available markets for certain commodities, but they must be sorted, baled, and shipped economically.

4 FUTURE PLANNING UNIT PROJECTIONS AND SOLID WASTE CHANGES

As discussed in Section 2, a community's solid waste stream is comprised of four key components: municipal solid waste (MSW), construction and demolition debris (C&D), biosolids, and industrial waste. This Plan tracks the municipal solid waste component of the solid waste stream and the total waste stream. Mirroring the State's approach, MSW includes materials generated by the residential, commercial and institutional sectors and excludes C&D, biosolids, industrial waste, and medical waste. The total waste stream includes MSW, C&D, and biosolids (industrial waste is not included as it is not tracked separately in the County). NYSDEC requested that communities include an MSW recycling rate to provide consistency among solid waste management plans throughout the state. The total waste stream was tracked and a recycling rate calculated to illustrate the impact of the County's comprehensive recycling program on its solid waste management.

As required by NYSDEC, the scope of time for the planning of this solid waste management plan is 10 years. With this in mind, it is necessary to make a critical assessment of the population of Rockland County anticipated throughout the next ten year period in conjunction with the anticipated changes in waste management and recycling practices. Projections included herein are carried out through the year 2023.

4.1 Population Projections

Rockland County's proximity to New York City, just 15 miles north of the George Washington Bridge, and its high quality of life have helped it grow at a rate equal to or greater than New York State as a whole. Between 2000 and 2010, the County's population grew at almost 9 percent compared to the State's 2.1 percent. Between 1990 and 2000, Rockland County's population increased by 8 percent, almost comparable to the statewide increase of 8.6 percent during the same period. Table 4-1 shows the historical change of population over time.

Table 4-1: Population History Changes

Population			Percentage Change		
1990	2000	2010	1990-2000	2000-2010	1990-2010
265,475	286,753	311,687	8.0%	8.7%	17.4%

Source: U.S. Census Bureau.

Projecting to 2023, it is estimated that the population of residents in the County will increase from approximately 317,978 in 2014 to 332,965 in 2023. Table 4-2 shows the annual population projections for the LSWMP period.

Table 4-2: Demographic Projections 2023¹

Year	Population	Year	Population
2014	317,978	2019	326,257
2015	319,551	2020	327,934
2016	321,228	2021	329,594
2017	322,904	2022	331,275
2018	324,581	2023	332,965

¹ Methodology: Linear interpolation of data in five-year increments based on five-year increment growth rates from Rockland County Planning Department, “Populations by Age Group, County of Rockland: 2005 to 2035, Rockland County Population Projections” (2.52% from 2010 to 2015, 2.63% from 2015 to 2020, 4.3% from 2020 to 2035), utilizing U.S. Census population of 311,687 for base year of 2010.

4.2 Solid Waste Quantities

Solid waste is generated by normal human activities associated with work and home life. This dichotomy corresponds to the convention used in solid waste planning that divides solid waste into two categories based on the type of generator: (1) residential and (2) commercial, which also includes institutional. This categorization is independent of the entity that performs the actual collection of solid waste. In Rockland County, residents have their solid waste collected by either municipal or private waste collection firms. Most businesses and multi-family housing developments in the County contract with private waste collection firms for service.

Residential solid waste is waste generated from single-family residences. Residential solid waste includes all types of waste, mixed together or separated, including food waste, paper (newspaper, magazines, junk mail, packaging, etc.), containers of plastic, glass or metal, yard trimmings, old appliances, tires and many more items and/or materials. Commercial solid waste is generated from multi-family residences, institutions, businesses and other entities where people are employed. Commercial entities generate essentially the same materials as those discarded by residential generators, including office paper, cardboard, other papers and containers. Retail trade, industrial, and health and educational services are the largest employers in the County.

Industries produce specialized process wastes; however this analysis will evaluate the solid wastes generated by the residential and commercial generators as industrial waste is not currently tracked in the County as disposal of industrial waste by generators within the County is not directly reportable to NYSDEC.

Solid waste generation encompasses all the waste produced in a residence or business, including both recyclable and non-recyclable wastes. To determine the total quantity of solid waste generated in the County, the solid waste that is disposed, reused, and recycled must be identified and combined. This includes solid waste disposed at landfills, recycled by public and private recycling facilities, and composted in the composting facilities. The Rockland County quantities reported to NYSDEC for 2010, the base year, are shown in Table 4-3 and represent planning unit tonnages handled through permitted/registered facilities reported in the 2010 Annual Recycling reports. However, Planning Unit Annual Recycling reports do not reflect all tonnage diverted by generators within the planning unit as commercial, institutional or residential entities may choose to recycle beyond the utilization of the Authority's infrastructure. For example, big box stores often send their cardboard to central warehousing for recycling and therefore the tonnage is not included in annual data reported by the Authority. Similarly, the diverted tonnage associated with the Returnable Container Act (RCA) is not reported to the Authority. In addition, scrap metal is not required to go to one of the Authority's facilities under the current flow control laws, so the County is not able to fully account for the recycling of scrap metal. Also, although yard waste is subject to flow control laws, exemptions are granted for approved green waste recycling programs, and this tonnage information is unknown to the Authority at this time. Finally, construction and demolition debris is not tracked separately or consistently, however, the Authority estimates that 10 percent of the material accepted as MSW is actually C&D. This estimate is based on the actual segregation of MSW and C&D that occurred at the Hillburn Transfer Station in 2007, as well as an estimate provided by the current operator of the Clarkstown Transfer Station. To adjust for this limited C&D tonnage tracking, the totals for MSW landfilled were reduced by 10 percent in Table 4-3 and the C&D landfilled totals were increased by 10 percent of the MSW landfilled totals to more accurately estimate MSW and C&D tonnages.

In summary, the MSW diverted tonnage shown in Table 4-3 does not reflect the total tonnage diverted with the County.

Table 4-3: 2010 Solid Waste Quantities

Material	Reported Tonnages
MSW Generated	308,371
MSW disposed	224,991
MSW recycled	83,379
Mixed paper	16,440
Cardboard	4,631
Mixed containers	14,221
Yard waste	46,120
HHW	385
Metals	1,319
Tires	264
Solid Waste Disposed	259,542
MSW	224,991
C&D	34,203
HHW	348
Biosolids	0
Industrial	See Note
Solid Waste Recycled	135,582
MSW	83,379
Concrete	20,704
Asphalt	12,008
Biosolids	19,491
Industrial	See Note
Notes: Industrial tonnage is not reported to the Authority	

At the request of the Department, the Waste Composition and Recovery Projection tool (WCRP tool) developed by the Department, was used to provide a more detailed breakdown of the MSW composition. For example, the Authority markets mixed paper which is comprised of several components (newspaper, paperboard, office paper, junk mail, other commercial printing, magazines, books and phone books). The individual component tonnages are estimated using this tool. It was also requested that this tool be used to evaluate effects on the MSW recovery rates assuming implementation of select program initiatives being considered by the Authority. The total tons from Table 4-3 form the basis for the detailed breakdown presented in Table 4-4 and have been adjusted to account for recycled tonnage data not available to the Authority but is being recycled based on information from the Returnable Container Act (RCA), NYS averages, and industry data. It should be noted that the MRF material categories are

tracked and marketed as reported in Table 4-3, not by the detailed categories listed in Table 4-4. The back-up associated with the development of the projections is included in Appendix E.

4.3 MSW Projections – Base Year 2010

The first step to using the WCRP tool is to calculate the tons generated. The generation tonnage for each MSW component is based on the composition analysis and percentages of rural, suburban and urban portions of the planning unit and the percentages of residential and commercial/institution waste generation. These percentages are then applied to the total MSW tons generated as reported in Table 4.3. Backup included in Appendix E summarizes Rockland County generation percentages and provides a comparison with EPA and NYS percentages, respectively.

The base year diversion tonnages (2010) are based on recorded tonnages reported by the Authority. However, it is known based on data from the RCA, state recycling averages and industry data that additional tonnage of select materials are being diverted that the Authority is unable to capture in their reports. Therefore, materials affected by the RCA have been adjusted, any material with a diversion rate significantly lower than the state average has been adjusted to be equal to the state average and any material routinely managed outside normal MSW collection and reporting, supported by industry data, was adjusted. The following base year tonnages were adjusted:

- Newspaper, Office Paper, Corrugated Cardboard, Other Ferrous (State average used)
- Aluminum, Glass & PET containers (RCA)
- Food Waste (Estimate based Garbage disposal waste)

As shown in Table 4-4, in 2010, over 35 percent of the County’s MSW waste stream was diverted (“recycled”).

4.4 MSW Projections 2014 - 2023

The State’s Plan, “Beyond Waste” calls, as a guide, for a 15 percent reduction in the amount of MSW disposed every two years. To work toward this goal, the Authority and Rockland municipalities will need to advance existing programs, improve data tracking of programs, implement new programs and solicit greater participation from not only the residential sector, but especially from commercial and multifamily waste generators. This section estimates the effects on the waste stream of identified potential changes to the current solid waste system.

Projecting MSW tonnages out through the planning period involves looking both at historical population trends as well as unusual or fortuitous development activity that may be outside the metered development activity normally associated with the project population trending. In addition projections may include new or enhanced programs, facilities or systems that may have a positive impact on the recycling rates. The following were incorporated into the waste composition and recovery projections depicted in Table 4-4:

- MSW per capita generation rate: Beyond Waste estimates a 0.5% reduction per year.
- Population Growth: See Table 4-2 (2.52% from 2010 to 2015, 2.63% from 2015 to 2020, 4.3% from 2020 to 2035) which is close to a 0.5% increase per year.
- 2013 RCA data: statewide redemption rate of 62% applied throughout 10 year period.
- Automotive batteries: 100% recovery rate applied throughout 10 year period (supplied by NYSDEC).
- Tires: 39% recovery rate applied throughout 10 year period (supplied by NYSDEC).
- Electronics: 50% recovery rate applied in 2014 to account for current electronics recycling laws and is expected to increase to 85% by 2021 (supplied by DEC).
- MRF Materials: Increase in recycled materials handled in MRF beginning in 2014 (see below for details).
- Food Scraps/Other Compostable Paper: Implement commercial food waste recycling program beginning in 2017 (see below for details).

4.4.1 Increase the Amount of Materials Diverted for Recycling

As stated in Section 3.2.3, the Authority's MRF has a throughput capacity of 76,960 tons per year operating with a single shift. In 2010, the total tonnage of recyclables processed at the MRF was around 35,000, leaving over 40,000 tons of unused capacity. From 2005 to 2009, the MRF processed an average of 25,200 tons per year.

While New York State and all municipalities in Rockland County mandate recycling, there remains great opportunity to increase the amount of material diverted for recycling within the County. This can be accomplished by adding additional types of materials to the County's recycling program and/or by improving participation in the current recycling program. To increase participation in recycling programs, the County proposes to increase education and outreach efforts to all waste generator sectors and to expand outreach to the commercial and institutional sector, as detailed in the Implementation Schedule in Section 8. These efforts will generate materials from within the County that will utilize the available processing capacity at the MRF.

This scenario, shown in Table 4-4 with materials affected highlighted in red, illustrates optimization of recyclable material throughput at the MRF over the planning period. These projections reflect increasing throughput at the MRF by 5 percent every year beginning in 2014. This will result in the MRF being utilized at over 70 percent capacity in 2023, processing over 57,000 tons that year.

4.4.2 Implement Commercial Food Waste Recycling

Rockland County will explore the feasibility of implementing a commercial food waste collection program, as described in the Implementation Schedule in Section 8. According to the New York State's solid waste management plan, commercial waste makes up 46 percent of a municipality's MSW, with food waste accounting for 21 percent of the commercial waste stream. Using this composition estimate, over 30,000 tons of food waste was generated in the County's commercial sector in 2010.

In developing the waste projections for this scenario, food waste was diverted from the commercial sector only. It was assumed that 25 percent of generated food waste will be diverted during 2017, 30 percent diverted in 2018, 40 percent in 2019, increasing to 50 percent diversion in 2020 and subsequent years. The amount of food scraps generated was increased annually due to increased participation from the commercial sector. Beginning in 2017, the materials affected by this scenario are described in Table 4-4 and highlighted in purple.

4.4.3 Summary of Projections

The resulting combined MSW recycling rate occurring by 2023 is over 45 percent assuming the various activities/programs associated with increasing the MRF tonnage and the commercial food waste program is implemented. This is approximately a 30 percent increase in the Per Capita MSW diverted during the 10 year planning period.

Similar to MSW, projections for C&D and Biosolids involve looking at both historical population trends and future development beyond metered development activity normally associated with project population trending. Included in the Implementation Schedule are a few initiatives to be evaluated that could potentially impact tonnages. However, since these initiatives still need to be evaluated; projections for these waste streams are not being provided at this time.

4.5 Additional Program Changes

The County is considering numerous program changes that have the potential to decrease the amount of waste sent for disposal, as detailed in Section 8. Though all of these changes would impact the County's solid waste system, tonnage projections were developed for only two of these scenarios as part of this Plan. As the County moves forward with implementation of program changes, projections will be developed to anticipate the results of the change.

5 TECHNOLOGY EVALUATION

5.1 Introduction

This section will present a discussion of commercially proven waste management technologies and practices which, while not currently used in the planning unit, could be integrated into the current material management program. Feasibility evaluations of these technologies are presented in the Implementation Schedule included in Section 8 of the Plan. The proven waste management technologies and practices currently being employed in the planning unit include dual stream collection and MRF for recyclables, yard waste composting, transfer stations, and landfill disposal. Other potentially feasible proven technologies and practices discussed below include: single stream recyclables collection and MRFs, source separated organic waste composting facilities, and mass burn waste to energy facilities.

5.2 Treatment, Storage, and Disposal of Solid Waste

Multiple waste management technologies and practices are in use today to address the treatment, storage, and disposal of solid waste. Several of these are currently employed by the planning unit, such as transfer stations and MSW landfills. Other potentially feasible technologies and practices that are anticipated to be evaluated in an effort to minimize disposal quantities, minimize discrete cost and possibly generate alternative energy include separate disposal of C&D, intermodal transfer stations and thermal processing facilities as described in the Implementation Schedule in Section 8 (Schedule No. 4). The combination of technologies and practices utilized by a planning unit are dependent on many factors, the most important being integration with existing facilities, access, and economics all of which will be considered as new or alternative technologies are evaluated.

The following sections provide an evaluation of the various technologies available for the storage, treatment, and disposal of solid waste generated and collected.

5.2.1 C&D Landfill

Although there are no plans to permit a C&D landfill within the planning unit, the Authority will evaluate sending the non-recyclable portion of C&D material collected at the transfer stations to a designated C&D landfill. The following table lists the closest permitted C&D landfills to the Planning Unit.

Table 5-1: Closest Permitted C&D Landfills to Rockland County

State	County	Facility Name	Address
NY	Delaware	Burton Clark C & D	SR 10 Delhi, NY 13753
		Delaware County SWMF	South Side NYS Route 10 Walton, NY 13753
	Albany	Bethlehem Rupert Road	Rupert Road Selkirk, NY 12158

Refer to Section 9.4.4 of NYS Beyond Waste Plan for a more detailed discussion of C&D facilities in NYS.

5.2.2 Intermodal Transfer Facilities

Currently the Authority utilizes traditional transfer stations and long distance hauling to a landfill for disposal of the MSW that cannot be recycled. Opportunities will be explored to reduce hauling and disposal costs through reduction of the quantity of material disposed and alternative lower cost transportation. One such avenue may be incorporating rail transportation through the use of an intermodal facility.

An Intermodal Facility is a facility where waste is loaded into intermodal waste containers for transport to a processing or disposal facility via the railroad. An intermodal container is a standardized reusable steel box used for the safe, efficient and secure storage and movement of materials and products within a global containerized intermodal freight transport system. "Intermodal" implies that the container can be moved from one mode of transport to another without unloading and reloading. Rail transport generally uses compactor containers, rotary drum compactors, or open-top rail cars (for uncompacted waste). The advantages of rail transport includes independence of weather conditions and less impact on road traffic, however the facility must be sited where there is a rail connection.

Because of the ability to haul large quantities and high loads, rail cars are used for high density bulk waste, such as scrap metal, slag, rubble, and sludge. The shipping of household and commercial waste by rail becomes economically viable only if certain distances are exceeded. However, the environmental benefits of rail transportation, such as relief for roads, lower specific energy consumption, safety, and clean-air considerations should be seen as a significant advantage even for shorter distances.

Over the past few years the RCSWMA Board has from time to time established committees to review the concept of rail haul of MSW from Authority Facilities. Meetings were held and attended by interested parties and industry professionals and RFPs were issued and a few responses were obtained. Consultations with professional

engineers and attorneys were conducted. Cost-benefit analyses and discussions were held. On information obtained, it was decided to hold the initiative in abeyance. It is agreed that rail haul of MSW could be a potentially viable and beneficial alternative to truck haul, but that current economic conditions combined with geographic, infrastructure and construction requirements suggest that 2011-2012 is not an ideal time to embark on this alternative – but that conditions may be more favorable in the future. RCSWMA intends to review rail as an alternative at some time in the future.

5.2.3 Waste-To-Energy Technologies

Currently the Authority utilizes transfer stations and long distance hauling to a landfill for disposal of the MSW that cannot be recycled. Opportunities will be explored to reduce disposal costs, become more self-sufficient and possibly generate alternative energy. One such avenue may be with one of the various emerging waste to energy technologies discussed below including the Taylor Biomass Project, which may also be an alternative disposal location instead of hauling to a landfill.

Emerging Waste Technologies

There are many technologies currently being proposed for the treatment and disposal of MSW throughout the world. Most of these involve thermal processing, particularly those of gasification and pyrolysis. These technologies have been employed as early as the 18th century in the thermal processing of coal and wood to produce various chemicals and fuels. However, their application to MSW has been limited due to the heterogeneity of MSW. There are some commercial scale plants in Japan, the United Kingdom, and certain other countries, but these technologies are still considered to be “emerging” as a commercial scale technology for MSW processing in the U.S., even though significant advances have been made. Some others involve the biological or chemical decomposition of the organic fraction of the waste to produce useful outputs like compost or energy products, notably synthetic gas (“syngas”) for downstream combustion.

Thermal processing refers to a number of different types of technologies utilizing heat as the mode of waste treatment. There are over 100 offers’ of such thermal technologies as gasification, pyrolysis, plasma arc, and anaerobic digestion technologies. Some example companies were selected to illustrate the technologies and their respective installations; but no endorsement is implied. Table 5-2 presents a brief sampling of facilities that use these emerging thermal processing technologies. The current status of each of these plants is not known. Most of these plants are small, processing less than 100,000 tons per year.

Table 5-2: Selected Gasification or Pyrolysis Plants Reported to be Operating with MSW or Other Waste Feedstock

Technology Supplier	Plant Location	Feed Rate (tpa)	Operational Since	Feedstock	Products	Power Generation	Comments
Brightstar Environmental	Wollongong, Australia	25,000	2001	Sorted MSW	Electricity	Gas engine	Demonstration plant not operated continuously or at full capacity and now closed
British Gas-Lurgi	Schwarze Pumpe, Germany	500,000	1993 rotating grate gasifier, 2000 slagging gasifier	Plastics, RDF, wood, sewage, sludge, lubricants, coal	120000 tonnes/year methanol, 35 MWe, low grade heat, surplus fuel gas		Chemical plant operating on mix of fuels
Compact Power	Avonmouth, UK	8,000	2001	Clinical waste	Electricity & steam for heating and sterilization	Steam cycle	Clinical waste only
Entech/IET	About 8 plants processing at least some separated MWS-biomass. All plants under 25,000 tonnes/year.						
Energos	Ranheim, Norway	10,000	1998	Commercial and industrial waste	Saturated steam to adjacent factory	N/A	
Energos	Averoy, Norway	30,000	2000	MSW	Electricity & Saturated Steam	Steam cycle	
Energos	Hurum, Norway	35,000	2001	MSW and industrial waste	Saturated steam to adjacent factory	N/A	
Energos	Sarpsborg, Norway	70,000	2002	MSW and industrial waste	Electricity and Steam	Steam cycle	
Energos	Forus, Norway	37,000	2002	MSW	Steam	N/A	
Energos	Minden, Germany	37,000	2002	MSW and commercial waste	Steam	N/A	
Enerkeml Novera	Castellon, Spain	25,000	2002	Plastics	Electricity	Gas engine	Plastics only
Foster Wheeler	Lahti, Finland	80,000	1998	Mix containing plastics, paper, cardboard, wood waste, shredded tyres	Syngas	Co-firing in coal fired boiler	In demonstration phase
Lurgi	Rudersdorf, Germany	100MWth	1996	RDF	Syngas	N/A	Syngas and char used in cement kiln
Mitsui Babcock	Yame Seibu, Japan	70,000	2000	MSW	Electricity	Steam cycle	
Mitsui Babcock	Toyoashi City, Japan	120,000	2002	MSW			
Thermoselect	Karlsruhe, Germany	225,000	2002	Range of domestic and industrial wastes	Syngas, sulphur, metallic slag, glassy slag	Steam cycle & syngas export	Closed
Thermoselect	Chiba, Japan	100,000	1999	Range of domestic and industrial wastes	Synthetic gas, sulphur, metallic slag, glassy slag	Co-firing in	
Thermoselect	Mutsu, Japan	50,000	Apr-03	Industrial waste	Synthetic gas, sulphur, metallic slag, glassy slag	Steam cycle & gas engine	
TPS Tenniska	Greve-in-Chianti, Italy	67,000	1992	Pelletised RDF	3.5MWe	Steam cycle	
Techtrade/WasteGen	Burgau, Germany	35,000	1984	Mixed domestic and industrial waste	Electricity	Steam cycle	
Techtrade/WasteGen	Harm, Germany	100,000	2002	Mixed domestic and industrial waste	Electricity	Syngas firing in coal fired power plant	
Technology Supplier	Plant Location	Feed Rate (tpa)	Operational Since	Feedstock	Products	Power Generation	Comments

Source: Fichtner Consulting Engineers Limited, The Viability of Advanced Thermal Treatment of MSW in the UK, March 2004.

There is a general perception that gasification technologies are more advantageous than combustion technologies and have lower costs, greater efficiency, less emissions, and overall reduced adverse impacts. There is merit to certain claims associated with gasification technology, however, many of the perceived benefits are unfounded or have yet to be confirmed through a reasonable period of operation on a commercial scale. Also, there is no reason to believe these technologies are less expensive than conventional combustion technologies when considering the all-in costs, particularly when in many cases, they are more complex.

The following emerging WTE technologies are described in detail in Appendix G.

- Pyrolysis
- Gasification
- Anaerobic Digestion
- Mixed Waste Composting
- Plasma Arc
- Chemical Decomposition
- Taylor Biomass Energy Project

The permitted WTE project nearest to the Planning Unit is the Taylor Biomass Energy Project. The Town of Montgomery in Orange County will be the home of the proposed Taylor Biomass Energy (TBE) project, which would be the first project in New York State to convert the organic biomass contained in municipal solid waste into electricity through a gasification process. Sited on 95 acres in an interchange development zone in Montgomery, the TBE project will expand and improve the existing construction and demolition/wood waste processing Taylor Recycling Facility (TRF), add the capacity to sort and separate municipal solid waste, and add a proprietary state-of-the-art gasification facility.

TRF currently has capacity for 307 tons per day (tpd) of construction and demolition debris (C&D) and 100 tpd of wood waste. TBE's proposal anticipates processing 450 tpd of C&D waste, 100 tpd of unadulterated wood waste, and 500 tpd of municipal solid waste. Non-organic and recyclable materials will be separated, and eligible biomass materials will be processed into refuse derived fuel (RDF) for energy conversion.

TBE's application for a U.S. Department of Energy (DOE) loan guarantee, under Section 1705 of the Energy Policy Act of 2005, was approved July 30, 2010. The DOE program provides support for innovative renewable energy systems such as TBE. TBE will also receive a 30 percent federal tax credit applicable to electricity generating renewable energy projects. The New York Power Authority will purchase renewable energy credits from the project, which will support both New York State renewable energy goals and a Port Authority of New York and New Jersey program that aims to make the Port Authority's operations carbon neutral.

TBE's projected date of commercial startup is the end of 2012. Although it is not located in Rockland County, TBE will reduce the impacts of the region's solid waste management by reducing long-haul truck traffic that currently exports waste to distant landfills. It will also reduce impacts by providing a source of renewable energy as well as by avoiding the generation of methane, a potent greenhouse gas that is created in landfills.

The Authority will continue to monitor TBE for applicability within the planning unit.

Additional information on Waste to Energy and emerging technologies is included in Appendix G.

5.3 Alternative Recyclables Recovery Programs

The purpose of the LSWMP is to evaluate and implement, where feasible, methods to reduce the amount of waste disposed by reducing waste generation and increasing reuse, recycling, composting and other material recycling methods.

There are a number of alternative solid waste management methods that help reduce the quantity of material landfilled, increase the quantity of material reused and recycled, and/or increase alternative energy production; again, some are already employed by the planning unit, such as dual stream collection and MRF for recyclables, yard waste composting, asphalt & concrete processing, and biosolids composting. Then there are others that are gaining momentum in select market sectors and may be considered by the planning unit, as described in the Implementation Schedules included in Section 8 of the Plan (Schedule No. 2 and 3), such as single stream collection and MRF for recyclables, PAYT/SMART, Product Stewardship, and Source Separated Organics (SSO) collection and processing.

Recycling programs can include a wide range of materials and many different alternative methods. Communities usually identify what will be included in their programs and how the programs will be run based on a combination of economics, markets for the various materials, ease of establishment and operation, and mandated requirements. The following are some examples.

5.3.1 Reuse

As stated in the NYS Beyond Waste Plan, reuse is the recovery of materials and products for the same or similar use for which they were originally produced. This approach for the management of materials is now considered a separate strategy from recycling since the actions required to maximize reuse are distinct from those that increase recycling. It involves the collection and distribution of useful products, such as household and office furniture, food, building materials, books, sporting equipment and appliances and includes remanufacturing and refurbishing products for their original intended use.

There is a growing infrastructure to promote reuse within New York State and across the nation. Some examples are thrift shops, consignment stores, food banks, deconstruction and building material retail facilities, tag sales, web-based surplus materials exchange venues (2good2toss), etc. In addition, planning units that utilize transfer stations have added structures at these facilities to allow residents to drop off products and materials they no longer need and take at no cost.

New York State also hosts a statewide chapter of the Reuse Alliance, <http://www.reusealliance.org/>, which connects, supports and promotes reuse sector organizations which planning units can promote and possible partner with to increase reuse.

5.3.2 Single Stream Collection

A growing trend in curbside recycling programs is the use of “single stream” recycling of paper with plastic, glass, and metal containers. Single stream recycling allows all of these materials to be commingled in single containers which are often large wheeled covered carts having a 65 or 94 gallon capacity. In single stream recycling, both the collection and processing systems must be designed to handle this fully commingled mixture of recyclables.

Proponents of single stream note several advantages:

- Reduced sorting effort by residents may mean more recyclables are placed at the curb and more residents may participate in recycling.
- Collection Costs may be reduced because single-compartment trucks are cheaper to purchase and operate, collection can be automated, and collection routes can be serviced more efficiently.
- Greater fleet flexibility allows single compartment vehicles to be used for refuse or recycling, providing greater fleet flexibility and reducing the number of reserve vehicles needed (customer can distinguish between refuse and recyclable trucks).
- Volume per household may increase and worker injuries may decrease because the switch to single stream is often accompanied by a switch from bins to cart-based collection.
- Changing to single stream may provide an opportunity to update the collection and processing system and add new materials to the list of recyclables accepted.
- More paper grades may be collected, including junk mail, telephone books and mixed residential paper.

Potential disadvantages of single stream may include:

- Initial capital cost for: new carts, different collection vehicles, upgrading of processing facility, and education of residents.
- Processing costs may increase compared to multiple stream systems.
- Possible reduced commodity prices due to contamination of paper.
- Increased “downcycling” of paper, i.e. use of high quality fibers for low-end uses like boxboard due to presence of contaminants.
- Possible increase in residual rates after processing (collecting all recyclable material together does not necessarily reduce waste if the contaminated residual is still landfilled).
- Potential for diminished public confidence if more recyclables are destined for landfill disposal due to contamination or there not being a market.

When considering a single-stream collection system, municipalities should undertake an analysis on how collection costs may be impacted and should include the following:

- Capital investment such as new bins
- Processing costs
- Costs to their domestic end-markets
- Impact on the quality of the material to be processed
- Amount of available options for end-use and the level of risk associated with marketing material, i.e. how well the quality of their bales can maintain demand in a variety of economic conditions.

Switching to a single stream system requires substantial financial investment – larger and more expensive carts for the households, new trucks for haulers, new sorting technology at the MRFs, and more public education for participants. Processing costs rise due to issues related to contamination, even as revenues for processed materials are likely to shrink.

Municipalities contemplating a shift to single stream collection must examine their own waste management system in its entirety, including the level of education of their residents and whether their existing infrastructure is compatible with single stream programs. Perhaps the most important, municipalities must understand who the end-markets are for the collected material, both today and in the future, and how secure these markets are and will continue to be.

5.3.3 Material Recovery Facility (MRF) to Handle Single Stream Recyclables

Recyclable materials collected at the curb or at drop-off centers require processing to remove contaminants to meet the specifications of industrial markets, and storage to collect sufficient quantity to ensure economical shipping. This processing takes place in a Material Recovery Facility (MRF). MRFs are critically important because they maximize the value of discarded materials while simultaneously decreasing the amount of refuse that goes to the local landfills.

As discussed in Section 3, the Authority operates a MRF that has been designed to process material from a dual stream collection process, which means that curb-side recyclables are separated into two containers: one container for co-mingled recyclable paper and the other containing recyclable glass, metal, and plastic bottles and cans. As discussed in Section 5.3, the Authority plans to evaluate switching to single stream collection, which would require the existing MRF to be retrofitted. The retrofit would require the process equipment and the flow of material through the MRF to change. The following would be considered when evaluating a retrofit including the equipment necessary for a single stream process:

- Tonnage to be handled
 - With a transition to single stream recycling, the tonnage of recyclables collected at the curbside generally increases due to increased participation and an increase in the quantity of recyclables that are set out by those persons that are participating.
 - The percentage of residue generally tends to increase with a change-over to single stream recycling.
- Availability of space
 - Site area is limited at this facility which in turn limits the ability to expand the MRF building and associated site operations areas (e.g. truck maneuvering areas, storage areas for recovered materials)
 - The building footprint imposes a limitation on the ability to incorporate additional processing and sorting equipment.
- Material market specifications
 - Purchasers of materials require compliance with industry standard specifications for recyclables.
 - Material processing requirements are developed and equipment selections are made to produce materials that meet the specifications for materials that are shipped to markets.
- Materials to be marketed
 - Materials markets are changing and previously unmarketable materials are being processed and upgraded to be sold to new markets
 - Multiple grades of materials can be produced (e.g. paper). The facility design should be capable of being adaptable and flexible to meet changing markets. Additional space should be provided to allow for the recovery and processing of materials that may not be currently marketed.

- Degree of automation
 - Depending on the throughput of the facility, automation may become economically viable (e.g. optical sorting of plastics).
 - Analyses of the cost/benefit should be made when evaluating technologies for sorting and/or processing.
- Incoming and outgoing material storage requirements
 - The tipping floor at the MRF should be evaluated with respect to the area available for incoming material storage.
 - If additional materials are accepted at the facility, generally speaking they would have to be stored within the tipping floor area.
 - Outdoor or covered material storage is problematic at the site due to the limited area available for development.
- Operational considerations
 - Can the facility operating hours be adjusted?
 - Would other vehicle types or number of vehicles decrease with the conversion to single stream? If other materials are accepted at the facility, what would be the impact on the vehicle count?
 - How would the conversion be handled from a construction perspective? (e.g. how long would the facility be shut down?)
- Facility financial performance
 - Evaluate the cost of the conversion and the impact to the materials revenues that would be handled at the facility.
 - As presented above, what are the cost/benefits for including technology and potentially reducing staffing levels?
 - How would the conversion be financed?
 - What would be the impact to the tipping fee?

Further details of various technologies and equipment that are used in MRFs are included in Appendix G.

5.3.4 PAYT/SMART Programs

Under traditional waste collection systems, homeowners pay for services through the general tax base or through a flat fee whereby residents incur no financial consequence regardless how much or how little they throw away. Pay As You Throw (PAYT) generally describes any program that charges disposers based on the amount of waste they generate; it can also be called unit-based or variable rate pricing, or SMART (Save Money And Reduce Trash). PAYT breaks the traditional approach and encourages people to conserve resources (e.g. by reusing, recycling, composting, or generally throwing out less).

PAYT is a fee-for-service payment program for MSW. It is an approach that provides direct economic incentive that encourages residents to:

- Reduce the amount of waste they generate

- Recycle more
- Compost more

As can be seen from the EPA map shown in the figure below, most of the states in the U.S., including New York, have PAYT programs. In fact, a recent EPA tally found that 445 NY locations, or 42.4% of all NY communities, have some form of PAYT.

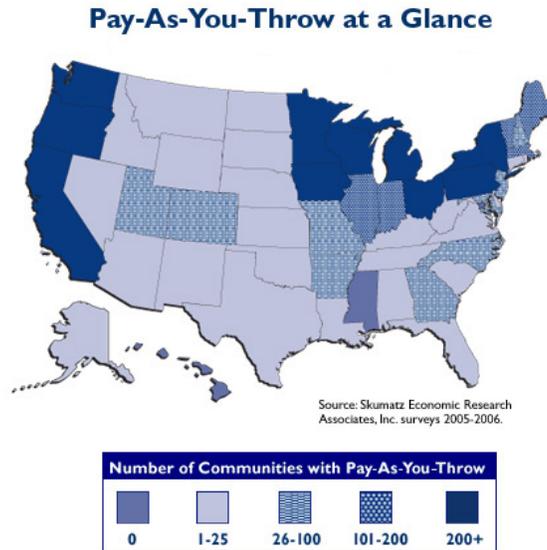


Figure 5-1: Communities with PAYT systems.

This type of economic incentive ensures that citizens/businesses see and feel the cost of waste disposal services. The traditional system for funding or paying for solid waste collection and disposal has no separate payment or fee for service. The costs of the system have traditionally been paid from property taxes through the General Fund and all citizens pay the same flat fee for all services. In contrast, PAYT have citizens pay based on amount of waste thrown away NOT a fixed fee. This is a fee for service approach similar to electricity, gas, other utilities, and some cell phone plans.

There are two ways to charge for PAYT and develop the price to be paid by the customer:

- Volume-based: where the citizen or customer pays for each bag or can of waste set out, or pays depending on the size of container selected.



Figure 2: PAYT tags on bags of waste



Figure 3: PAYT by container size

- Weight-based: where the collection truck contains scales, either under the body or in the container lifting mechanism, which weigh the container as it is dumped and the customer pays based on the weight of refuse in the container.

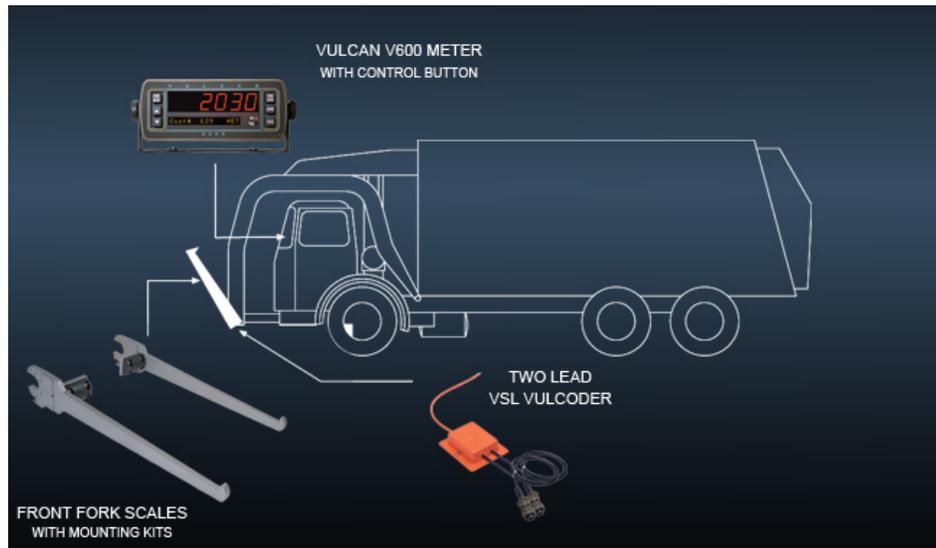


Figure 5-2: PAYT equipment for using weight

The weight based systems are found most frequently in commercial collection but less in residential waste collection. Some programs have implemented weighing of residential recyclables from collection customers, providing data as further incentive to increase recycling diversion. In general, weighing is less common due to cost of equipment needed and billing infrastructure. Further, in residential collection the accuracy of the weighing equipment has been a problem and prevents the scales from being certified for

commerce. This means that collection service bills cannot be based on the weights. In the early 1990s, the EPA funded some pilot programs in weight-based collections which helped develop the technology but commercial scale accuracy is still a problem.

PAYT, as a method of charging for waste collection, has a number of advantages including:

- Fairness among customers
- Provides tool for control over costs
- Incentive / motivation to recycle more which generates more revenues from recyclables
- Lowers disposal costs and uses landfill space at slower rate
- 25% - 35% waste reductions reported from communities that have implemented it
- Reduces pollution and greenhouse gas emissions because fewer natural resources are used and less energy consumed
- Increases public awareness of environmental issues

PAYT also has a number of disadvantages including:

- Potential increase of illegal dumping
- Requires capital investment: fee collection system, containers, etc.
- Concerns from lower-income residents about amount to pay
- Potential for rate shortfall over system costs
- Container (particularly cart) selection, planning, and delivery
- Transition planning will take staff time from other duties
- Effort and costs increase if the MSW collection system is substantially changed along with PAYT: new trucks, routes, policies and procedures, etc.

PAYT is applicable in all sizes of communities but it works best when tailored to the local needs of each community. Several case studies detailing various program components and results are provided in Appendix G. In addition, EPA has developed resource page on their site located at <http://www.epa.gov/osw/conserves/tools/payt>.

5.3.5 Source Separated Organics (SSO) Collection and Processing

Organic materials, which can be up to 25% of the MSW waste stream (about a third by weight)^[1] consists of yard trimmings, food scraps, wood waste, and paper and paperboard from residential, commercial institutional and industrial generators. (note - agricultural operations produce large amounts of organic waste, however, these materials typically are not mixed with MSW since most farmers' compost it themselves.) Source Separated Organic (SSO) programs depend on the composition of local waste

stream, acceptance specifications for the organics processing facility, and collection methods. In general the following types of organic materials are collected.

- **Yard and Landscape Debris:** floral trimmings, tree trimmings, leaves, grass, brush and weeds
- **Food waste:** organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods including fruits, vegetables, meat, poultry, seafood, shellfish, bones, rice, beans, pasta, bakery items, cheese, eggshells, and coffee grounds
- **Paper Fibers:** waxed cardboard, napkins, paper towels, uncoated paper plates, tea bags, coffee filters, wooden crates and greasy pizza boxes
- **Wood Waste:** urban wood waste, woody debris from suburban land clearing, and rural forestry residuals

The organic fraction of the waste stream is increasingly viewed as a resource with substantial agricultural value and high energy potential. Removing these components from the waste stream which is still landfilled can also result in an economic benefit with respect to hauling costs and conserving remaining landfill airspace.

SSO programs have been launched in a wide range of venues including: single-family residential units; commercial businesses such as supermarkets, restaurants, and coffee shops; events; food processors; schools; hospitals; theme parks; airports. The United States EPA has assembled a list of Food Waste Management Tools and Resources^[2] to assist communities interested in launching their own food waste reduction and collection efforts.

Organic materials collected in SSO programs typically get delivered to composting facilities where the waste is turned into nutrient-rich soil amendments known as compost. Organic feedstock can also be delivered to anaerobic digestion facilities that produce biogas, a source of renewable energy. The resulting biogas (methane) can then be used for cogeneration (electricity and heat preferably on or close to the site of production) and can be used in gas combustion engines or turbines. With further upgrading to synthetic natural gas it can be injected into the natural gas network or further refined to hydrogen for use in stationary cogeneration fuel cells.

(1) <http://www.epa.gov/epawaste/nonhaz/municipal/pubs/msw2008rpt.pdf>

(2) <http://www.epa.gov/osw/conserves/materials/organics/food/fd-res.htm#tools>

The utilization of an existing or construction of a new, processing facility for SSO is based on which can meet many, if not, all these factors:

- Be located within a reasonable distance from the collection routes
- Not create air quality or odor problems
- Have sufficient capacity and residence times to handle the program's throughputs
- Produce a marketable product
- Be reasonably priced

The wide array of technologies in use commercially to process SSOs can be categorized into three groups - windrows, in-vessel, and anaerobic digesters. They reflect a continuum of greater costs, complexity, and capabilities to manage food scraps. The first two, which process material either outdoors or in a building, both use aerobic decomposition, and the third uses anaerobic decomposition, which is always enclosed, and is followed by aerobic composting of the residual digestate.

Table 5-3: Summary of Organic Processing Systems

Major Groups of Organic Processing Systems			
	Aerobic		Anaerobic
	Windrows	In-Vessel	Digesters
Types	<ul style="list-style-type: none"> ➤ Open turned piles ➤ Static aerated piles ➤ Covered Pod ➤ Covered Fabric 	<ul style="list-style-type: none"> ➤ Shipping container ➤ Silo ➤ Tunnel ➤ Channel ➤ Rotating drum 	<ul style="list-style-type: none"> ➤ Sewage plant digesters ➤ Wet Digesters ➤ Dry Digesters
General Descriptions	Elongated piles of organics, usually yard trimmings and sometimes sludge, laid out on the ground, or on concrete slabs-The piles can be either open or covered, and aerated manually with end loaders by turning or with forced aeration through piping.	Organics, more often including food scraps and soiled paper, are placed in either shipping containers, in rotating drums, or, in an enclosed building, in tunnels or channels where forced aeration or moving paddles are used to bring oxygen to the material.	The part of the organics primarily consisting of food scraps and soiled paper are first placed in an enclosed anaerobic digester to generate methane for energy, and then the remaining digestate is composted using conventional aerobic processes.

Source: http://beyondrecycling.org/pdf_files/Processing.pdf

5.3.5.1 Source Separated Organic (SSO) Composting

Composting is the aerobic decomposition of biodegradable organic matter, producing compost from decaying vegetable and other plant materials. The decomposition is performed primarily by aerobic bacteria, yeasts and fungi. Composting considerably speeds up the natural process of decomposition as a result of the higher temperatures generated. Although composting has historically been associated with creating garden-ready soil, it is becoming more important in the reduction of solid waste.

Organic Waste Recycling Facilities (OWRF) are facilities which receive and process organic wastes through methods such as composting, land application, chemical stabilization, pelletization, and digestion to put organic material to beneficial use. Most types of OWRF are required to be permitted by the NYSDEC, although there are many exemptions within the regulations for specific materials and/or quantity of material processed, depending on the environmental impact of the material processed.

Individual homeowners can also compost vegetative waste, leaves, and lawn cuttings, thus removing these materials from the waste stream and keeping them out of the landfills. This homeowner-based processing is typically known as “Backyard Composting.” Backyard composting can be accomplished in a number of ways. One or more small bins can be constructed in an out of the way location in the yard, with material deposited there to be turned periodically with a shovel or pitch fork. Plastic bins, specifically designed for home composting, can also be purchased at garden supply centers or on line. Many of these plastic bins are made to pivot so that the compost is turned over by rotating the bin. Rockland County Solid Waste Management Authority began distributing home backyard composting bins to residents in 2002, as a result of an award of a bin grant from the NYSDEC.

Turning aerates the organic material and assists decomposition. Another option is vermicomposting, or composting with worms. This involves the use of red worms or “red wigglers” to decompose the material. This method requires a little more attention since it’s necessary to keep the worms healthy, but it is an option to consider. Jurisdictions can encourage these home-based activities by hosting educational workshops, such as those provided in 2002 by Rockland County Solid Waste Authority, and promoting bins through preferred pricing events, etc. All successful composting methods involve balancing carbon rich (“brown”) material such as dry leaves, with nitrogen rich (“green”) material such as grass clippings or kitchen scraps. Compostable food material on a small scale should include only vegetable waste, no meat, dairy, or fats, due to the concern of attracting pests and or creating unpleasant odors. Moisture content of the pile is important as well. The compostable material should be as damp as a wrung out sponge. In addition to reducing the amount of waste sent to landfills, home composting provides an excellent product for use in gardens, reducing the need for additional purchased compost. Composting is a major focus of NYSDEC, both because organics comprise about 25% of the waste stream, and because converting this waste to a useful product is relatively simple.

Large-scale yard waste composting, where leaves, grass cuttings, and other yard wastes are brought by residents or haulers and composted, is available at the Clarkstown Yard Waste Facility and, to a lesser extent, the Hillburn Yard Waste Facility. Whereas these facilities are both owned by the Authority, they are operated by Organic Recycling, Inc., a private contract operator who also produces compost at their own company locations in the region. These large composting activities reduce the amount of these organic materials being sent to the landfills. Compost generated at these facilities was largely provided for retail sale by the private operator, while a small portion was utilized by two member villages.

Co-composting, where biosolids are combined with woody wastes, is performed at the Rockland County Solid Waste Authority Co-Composting Facility, located adjacent to the Authority's MRF and Transfer Station in Hillburn. This Facility operates an in-vessel (enclosed) agitated bin composting plant, mixing clean brush, wood waste, biosolids (sludge) and other organic residues for production of exceptional quality compost. This facility accepts clean wood including tree parts, brush, pallets and lumber for a tip fee;

pre-ground woodchips are accepted for free. The Facility was originally designed and constructed by Waste Management of New York, and is currently operated by WeCare Organics under contract to the Authority. The resulting compost product is sold strictly by contract, marketed by WeCare, and is not for sale to residents.

To augment these large scale yard waste composting activities, it may be possible to increase some small scale mulching or composting in other local communities. In some regions, finished compost is often made available to residents free of charge to encourage participation and promote the program. Different composting techniques, employing from lower to higher technologies include:

- Windrow – Suitable for yard waste and some food waste composting.
- Aerated Static Pile – Suitable for yard waste and some food waste composting.
- In-Vessel – Can also be utilized to compost the organic fraction of municipal solid waste. Delaware County, New York has an active program.
- Anaerobic Digestion – Can also be utilized to compost the organic fraction of municipal solid waste.

General Composting Background

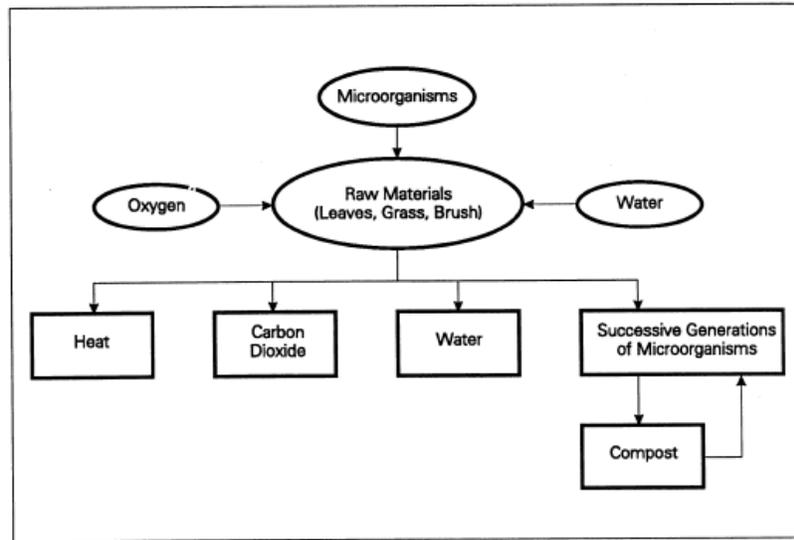
Compost is the product of a controlled biological decomposition of organic material that generates enough heat to kill pathogens. Roger Haug, author of *The Practical Handbook of Compost Engineering*, defines the compost process as:

“The biological decomposition and stabilization of organic substrates under conditions that allow development of thermophilic temperatures as a result of biologically produced heat, to produce a final product that is stable, free of pathogens and plant seeds, and can be beneficially applied to land.”¹

The aerobic (with air) composting process takes a mix of feedstock materials that are high in carbon (e.g., dry leaves, paper, wood chips) and other items high in nitrogen (e.g., sewage sludge, wet grass, food waste) then applies moisture and oxygen to these materials to generate consistent heat of 140 degrees F., for a duration of time, to kill pathogens and seeds. Microorganisms (e.g., bacteria, fungi, actinomycets) break down the organic matter and produce humus known as compost. Figure 5-3 is a diagram illustrating this aerobic composting process.

¹ Roger T. Haug, *The Practical Handbook of Compost Engineering*, CRC , 1993; also see USEPA website for information on composting: <http://www.epa.gov/epaoswer/non-hw/composting/basic.htm#org>

Figure 5-3:- Aerobic Composting Process



Compost is also created by biological decomposition that eliminates oxygen (anaerobic). Advanced anaerobic processes digest the organic waste in tanks, capturing the biogas made from methane and carbon dioxide. This biogas can be used as a substitute for petroleum-based fuel. The remaining physical material, compost, can be used as a soil supplement.

Compost processes can employ varying degrees of technology to convert the organic matter into a usable soil product. Lower tech systems utilize long, outdoor piles or rows, called windrows, in which to cure materials. Middle technology systems add features to these windrows, such as aeration introducing additional air through fans, or flexible coverings for the waste material during processing, like a large scale tarp or bag, also known as a lower tech version of in-vessel composting. Higher technology systems employ an enclosed process in which to generate the compost, including bagged in-vessel systems and fully-enclosed composting done in a specially-designed building. Lastly, newer high-tech composting methods include anaerobic digestion processes where, without air, microorganisms break down the organic waste solids, generating a gas. Each of these methods is discussed in further detail below as well as some of their benefits and drawbacks.

Windrow Composting

In a large-scale composting facility that uses outdoor open windrows, organic waste is pre-processed through grinding or shredding to a smaller particle size and then placed into long narrow rows to cure into compost.

The process is described as follows:

1. The organic waste is delivered in a rear-load collection vehicle.

2. The fresh organic waste is placed in a tub grinder and then mixed with other material to balance carbon and nitrogen-containing materials.
3. A dump truck takes this mixed batch and spreads into a long straight row, or windrow.
4. A specialized piece of equipment, called a windrow turner, straddles the windrow and, moving forward, turns and mixes the material so that oxygen adequately gets to all material. This can also be achieved by a standard front-end loader, although the use of specialized compost equipment expedites the process and provides more appropriate material handling.
5. After the windrow material has cured for the desired length of time to meet quality standards of the operation, the contents of the rows are processed through a screen to separate finished, right-sized compost from any non-compostable items such as rocks and any larger organic items which have not yet broken down to a desired size. These larger organic pieces can be reintroduced back into the windrows for further composting while the non-compostable items are discarded.

Many communities utilize windrow composting for creating a soil product from the standard yard waste materials. Others operations incorporate a small fraction of specially-collected food waste materials in with the yard waste compost windrows. A windrow system has a low development cost and does not maintain much equipment in the processing of material into compost. However, the low-tech windrow composting process takes up a significant amount of acreage and often is placed on pavement to control runoff, thereby increasing the site development costs substantially.

Aerated Static Pile Composting

Composting facilities employing aerated static pile systems are similar to windrow facilities in that organic wastes are initially size-reduced and then placed in long, outdoor piles. However, unlike windrow composting, these piles are not left to stand and be turned in order to receive aeration. The piles are created on a framework of grating, pipes, and fans, allowing air to be circulated throughout the pile from other angles, creating additional opportunities for decomposition to take place.

While these facilities are still relatively low cost to develop, they can also require significant real estate and do employ additional equipment and infrastructure which must be purchased, installed, and maintained, adding to the cost and complexity of the system.

In-Vessel Composting

The in-vessel composting process begins by grinding and mixing the organic material, as is done in the windrow and aerated static pile processes noted above. Subsequently, the size-reduced organic material is placed into an enclosed building or processing unit, or "in a vessel," giving this process its name. These vessel variations provide

disparate types of in-vessel composting systems. Rockland County Solid Waste Management Authority Co-Composting Facility operates an in-vessel system for composting biosolids and yard waste type organic materials.

A hybrid system between windrow composting, aerated static pile, and in-vessel processing is operated by Peninsula Compost Group at the Wilmington Organic Recycling Center (WORC) in Wilmington, Delaware, which employs the GORE™ Cover System technology. This type of facility stores ground organics in windrows, provides positive aeration of the piles, and covers the material with a waterproof and breathable membrane to control temperature, moisture, odor, and dust. This technical process results in a shortened curing time for finished compost of around eight weeks. WORC began operation at the end of 2009 and is designed to handle 160,000 tons per year of source separated organics including yard waste, wood waste, food waste, and some compostable papers. It is currently the largest food waste composting site in America. Organic feedstock is captured from the Port of Wilmington, as well as generators such as food processors, institutions, grocers, restaurants, and local jurisdictions, throughout the region. This system requires clean material and cannot accept high levels of contamination in incoming wastes.

Some jurisdictions have chosen to use an in-vessel system employing an agricultural bag (Photo 5-1) which is made of thick plastic, and stuffed with ground and mixed yard waste. A system of blowers is connected to the sealed bag so that air circulates through the material. The bag keeps the material contained and thus less land area is needed and dust and odors are minimized. However, these bags cannot be reused and become a waste product after the curing process is completed.



Photo 5-1: Example of Ag Bag Composting System

Other jurisdictions cure the compostable material in containers similar to those used for ocean shipping. Using these types of vessels provides the site manager with the ability to move the containers of compost around as needed. Photo 5-2 shows a row of such

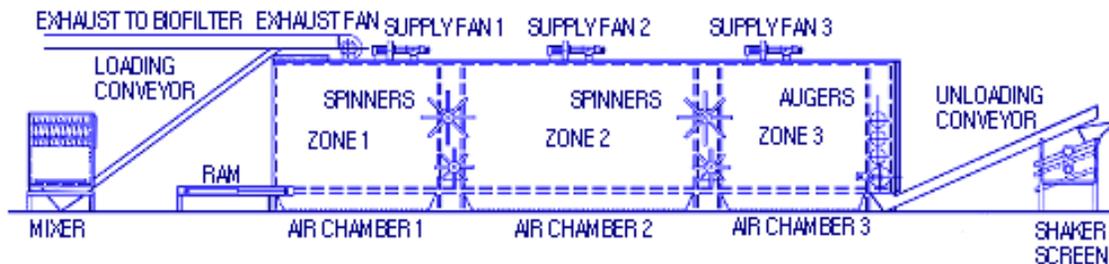
containers each in different stages of curing. This is a modular system that can be expanded by adding containers, providing expansion capability for modest investment.



Photo 5-2: Modular Compost Container System

Figure 5-4 shows a schematic for a modular composting system consisting of a series of connected metal boxes with a ram, or tray conveyor, propelling the material from one box to the next. Each box, or zone as it is called in the schematic, has a mechanism that spins the material to increase air flow and generate heat.

Figure 5-4 – Self Contained Composting System



Each zone has its own air supply and a biofilter exhaust fan to minimize odor. The configuration of airflow and temperatures kills the pathogens in a 14-day cycle and the material then comes out of the machine. The product must then be stockpiled to cure for another 30 to 90 days, depending upon the quality of compost desired.

Photo 5-3 is of the modular system located at the Virginia Powhatan Correctional Institute, which started operation in 2000 and processes two tons of food waste a day.



Photo 5-3: Self-Contained Compost Machine in Virginia

The ultimate in-vessel composting system is operated inside an enclosed building. Whereas this is not economically practical for yard waste or small scale food waste composting, the composting of MSW materials is typically housed in such facilities. Due to the caustic nature of MSW composting, rust-proof buildings, covering multiple acres, are constructed to accept, screen, and process waste materials into a finished compost product, all indoors. Delaware County, New York operates an indoor co-composting facility, handling MSW materials as well as processed sewage sludge or biosolids. Operational as of 2005, the facility in Walton, New York, has the capacity to process 35,000 TPY of MSW and 6,700 TPY of biosolids from generators within the County. A three-story, three-acre enclosed structure encases the tipping area, bioreactor, maturation area, refining stage, and curing process of this operation. MSW material is delivered by collection vehicle and sorted by equipment to remove any oversized or wholly non-compostable items initially identified by operators. Next, the sorted MSW enters a 180-foot long rotating drum which is 14 feet in diameter. Biosolids are introduced in appropriate quantities and mixed with the MSW materials, achieving a temperature of about 130 degrees Fahrenheit, a testament to the compost process at work.

It takes about three days for the material to work its way down the rotating tube, at the end of which machines screen the product to remove any non-compostable small items and separates larger pieces for landfilling from small, composted organic material product. Odors are controlled by air exchange through biofilters while the compost product continues to cure inside, for about two months. The finished product is mixed with topsoil and utilized for landscaping; since it includes biosolids, the state precludes its use on agricultural sites.

Co-composting of these materials provides processing for 70 percent of the area's waste stream. The operation runs 24 hours a day and seven days per week. As a backup to this highly technical system, Delaware County operates an adjacent landfill to accept material should the plant be down for longer than the week of capacity in the waste storage area.

Higher tech in-vessel composting processes are capital intensive in equipment, with the MSW co-composting facility in Walton registering price tag of \$23 million to construct and around \$80,000 per year to operate.

In-vessel composting systems do take up less land space overall and shorten the curing time to a finished compost product. In general, in-vessel composting machines shorten the curing time for yard waste only composting to approximately a month. In the case of MSW/biosolids co-composting, the indoor vessel makes this process possible.

5.3.5.2 Anaerobic Digestion

Anaerobic Digestion is a process by which organic materials, including MSW are processed into soil amendment and other products. As applied to the processing of organic waste and/or MSW, anaerobic digestion is a wet treatment process where waste is first pre-sorted and then fed into water tanks. Using agitators, pumps, conveyors and other materials handling equipment, material is wetted and formed into slurry. Non-organic fractions, such as metals, glass, and other constituents of MSW that have no affinity for water, are eventually discharged from the system into dedicated containers for recycling, further processing, or final disposal. The organic fractions, including yard wastes, paper, garbage, soluble components, etc., generate "black water" which has a relatively high organic content. This stream is processed in a series of sealed digesters without air where microorganisms break down the solids and generate gas containing methane. The time in the chamber and the residence time will be sufficient to generate the gas.

The solid residual from the digestion process is similar to compost and can be used as a soil amendment. In addition to the creation of compost, the gas produced is rich in methane and other organics and can be burned as a fuel for heating or for electric power generation. The process also separates out non-soluble recyclable materials such as glass and metals. There are many such facilities processing sewage sludge, manure, and other homogeneous organic wastes, in the U.S. and abroad.

The anaerobic digestion composting system operates without high temperatures or pressure. In theory, it is extremely simple, relying on non-specialized mechanical equipment (pumps, screens, macerators, tanks, conveyors, etc.) for operation. Digestion occurs through the presence of natural microorganisms in MSW, so charging with specialty or unique bacteria is not necessary.

Although there is currently no anaerobic digestion plant processing MSW in the United States. Although, one international vendor, who has responded to procurements in Los Angeles and New York, operates both a 300-TPD, full-scale MSW demonstration process line in Tel Aviv, Israel and a 270-TPD, commercial scale plant for MSW in Sydney, Australia.

5.3.5.2.1 Codigestion at Wastewater Treatment Plants

Codigestion of food scraps and FOG at wastewater treatment plants (WWTP) appears to make sense environmentally and economically. This emerging practice has the potential to use existing digester capacity to divert waste and generate renewable energy; however, the economic feasibility of this approach is still relatively unknown and can vary greatly from place to place. The Co-Digestion Economic Analysis Tool enables wastewater treatment operators and solid waste managers to perform an initial economic analysis of codigesting food scraps and FOG at WWTP to help assess the viability of a project. The economics depend heavily on the amount of excess capacity available in the WWTP digesters, the quantity and quality of feedstock that can be readily sourced, as well as other factors.

5.3.5.3 Organics in Rockland County

Rockland County Solid Waste Authority accepts yard waste for a fee. As described in Section 2, a number of municipalities provide curbside yard waste and/or leaf collection or allow citizen drop off locations where yard waste can be left. Most municipalities require that yard waste material be set out in biodegradable bags, which many times are available free-of-charge directly from the jurisdiction. Some municipalities process the collected yard waste into mulch or compost and make this organic material available to members of that community, typically at no charge to the residents. While some of the compost produced at Authority facilities is utilized on community projects, the rest is sold to commercial buyers and the proceeds returned to the municipalities, via the Authority.

While current programs do not specifically target food waste for composting from residents, an increased amount of organic materials could be diverted from the waste stream if these were accepted. Depending upon the techniques employed and permits held by the various composting facilities operating within the County, food wastes from small-scale and large-scale generators could be incorporated with the current yard waste and/or co-composting operations. The inclusion of food wastes would likely require some minor operational changes at the facility, provision of collection services at larger generators by either municipal or private carters, and community education to assure proper material preparation and set out and acceptance of the program. Households could be permitted to include food wastes in with any bagged or containerized yard waste materials, utilizing the same collection system for delivery to the compost facility and incurring no measurable additional cost.

5.3.5.4 Federal Legislation

There are no U.S. federal regulations that apply to bioconversion of MSW or a fraction of MSW, such as yard waste. However, there are regulations that apply to biosolids (sewage sludge). The Clean Water Act (40 CFR Parts 122, 123, and 503) outlines requirements that apply to composting of biosolids. A co-composting facility,

processing MSW and biosolids, must comply with these regulations. When composting of yard waste or mixed MSW, however, most operators and state and local regulators rely on these federal requirements as guidance and best practices for biosolids. The USEPA and the U.S. Department of Agriculture have developed guidelines for quality, content, and acceptable levels of contaminants in compost. The RCRA Subtitle D Landfill Criteria promulgated by USEPA bans bulk liquid wastes from landfills. These regulations apply to liquid organic wastes which are biodegradable. Composting in conjunction with shredded yard waste provides an alternative method of disposing of and recycling these materials which is acceptable to the USEPA. Many jurisdictions apply the biosolid standards to composting of yard waste and/or MSW.

5.3.6 C&D Debris Processing Facility

Construction and demolition debris (C&D) is uncontaminated solid waste produced during the construction, renovation, or demolition of buildings and other structures, and from land clearing. The components of C&D typically include asphalt, bricks, concrete, soil, rock, wood, metal, drywall, plumbing fixtures, non-asbestos insulation, roofing, shingles, plate glass, carpet, and electrical wires. C&D can be handled several different ways. C&D can be landfilled in a C&D landfill, select materials can be recovered through reuse and recycling and/or the materials can be transferred to a processing facility.

Currently asphalt and concrete is processed at the Clarkstown processing facility; however, other C&D material is taken to a transfer station and landfilled with the MSW hauled and landfill. The Authority plans to evaluate other avenues for this material such as a (1) Promoting Reduction and Recycling, (2) C&D Processing Facility or (3) C&D landfill.

5.3.6.1 Reducing and Recycling

Reducing and recycling C&D materials conserves landfill space, reduces the environmental impact of producing new materials, creates jobs, and can reduce overall building project expenses through avoided purchase/disposal costs. USEPA has developed goals for the reduction and utilization of C&D including:

- Characterize, measure, and increase knowledge and understanding of the C&D materials waste stream;
- Promote research and development on best practices for C&D materials reduction and recovery;
- Foster markets for construction materials and other recycled materials that can be incorporated into building products;
- Work with the construction, remodeling, and demolition industries to implement more resource-efficient practices; and

- Incorporate C&D materials into broader "green building" programs

In order for materials to be reusable, contractors generally must remove them intact (windows and frames, plumbing fixtures, floor and ceiling tiles) or in large pieces (drywall, lumber) which in many cases result in additional labor efforts to remove nails or make repairs. Many materials can be salvaged from demolition and renovation sites and sold, donated, stored for later use, or reused on the current project. More than 200 used building materials stores around the country buy and/or accept donations of used building materials such as plumbing fixtures, doors, cabinets, windows, carpeting, bricks, light fixtures, ceiling and floor tiles, wood, HVAC equipment, and decorative items like fireplaces and stonework. Contractors can avoid the cost of removal by allowing private companies to salvage materials from the site. Organizations that have space may consider storing high-value materials for later projects. The Authority plans to provide information to contractors, builders, home improvement stores, and others regarding options for reuse or recycling of building materials on their website as they become available. Some area organizations which deal in the re-use of building materials are listed below:

Table 5-4: Summary of Building Material Re-Use Organizations within Proximity of PU

Company	Location	Services	Website
Build It Green! NYC	3-17 26th Ave at 4th St. Astoria, NY 11102	Deconstruction, Reuse Center	http://www.bignyc.org/
ReStores (Habitat for Humanity)	524 Main St. New Rochelle, NY 10801	Deconstruction, Reuse Centers	http://www.habitat.org/restores/
	2 Cortlandt St. Mount Vernon, NY 10550		
	125 Washington St. Newburgh, NY 12550		
	1-3 Milk St. Branchville, NJ 07826		
PK Metals	3542 Route 112 Coram, NY 11727	Metal Recycling, Deconstruction & Recovery	http://www.pkmetals.com/
USA Recycling Facility Services, Inc.	499 Lawrence Road Kings Park, NY 11754	Accepts all C&D debris	http://usarecyclingservices.com/
Reusable Green Works, LLC	840 Boston Post Rd, West Haven, CT 06516	Deconstruction, Reuse Center	http://www.reusablegreenworks.com/ Welcome.html

Other useful websites include:

- <http://www.materialresourcecenter.org/links.php>
- <http://earth911.com/>
- <http://www.wastematch.org/services>
- <http://www.nysar3.org/>

In order to be recyclable, materials must be separated from contaminants (trash, nails, and broken glass, etc.). This can be accomplished if contractors have their workers sort materials as they remove items from buildings or as debris is produced. Many contractors use labeled roll-off containers for the storage of source-separated materials. For projects where onsite source separation is not possible, contractors can use C&D material processing firms who remove the C&D and process it at their off-site facility. There are currently no C&D processing facilities located within the planning unit; however, there is a facility located in the neighboring planning unit of Orange County operated by Taylor Recycling.

Taylor Recycling, Montgomery, New York -
(845) 457-4021 <http://www.taylorrecycling.com/>

The existing C&D Debris Processing Facility operations are designed to process approximately 300 tons per day (TPD) of C&D waste and 100 TPD of unadulterated wood waste. The current permit application proposes an increase to 450 TPD of C&D.

5.3.7 Product Stewardship

Product stewardship is a product-centered approach that is gaining increasing attention in public policy as an effective mechanism for solid waste management. Refer to Section 5 of the NYS Beyond Waste Plan for a detailed overview. http://www.dec.ny.gov/docs/materials_minerals_pdf/frptbeyondwaste.pdf

Consumer engagement is critical in product stewardship because it is the consumer who makes the choice between competing products and who must use and dispose of products responsibly. State and local governments are essential to fostering product stewardship as it relates to waste management, because solid waste and recycling programs are administered by local governments pursuant to state regulation and policy.

A national non-profit organization called the Product Stewardship Institute (PSI) was formed in 2001 to work with state and local governments to partner with manufacturers, retailers, environmental groups, federal agencies and other key stakeholders to reduce the health and environmental impacts of consumer products (PSI, 2009). Currently, PSI is involved in the following product categories:

- Carpet
- Electronics
- Fluorescent lighting
- Gas cylinders
- Medical sharps
- Mercury products
- Paint
- Pesticides
- Pharmaceuticals
- Phone books
- Radioactive devices
- Thermostats
- Tires

The planning unit can work with NYSDEC , the NY PSC (www.nypsc.org) and others to advance an agenda of product stewardship initiatives that can reduce the amount and toxicity of these materials that are left for disposal at the end of their useful lives.

6 LEGAL AND INSTITUTIONAL ANALYSIS

6.1 Laws, Rules, Regulations, or Ordinances Affecting Solid Waste

The Authority is a public benefit corporation which is organized and exists under the Rockland County Solid Waste Management Authority Act, Title 13-M of Article 8 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State of New York, as amended from time to time. Copies are included in Appendix F.

6.1.1 Organization By-Laws of Rockland County Solid Waste Management Authority

The Organizational By-Laws of Rockland County were enacted by Resolution No. 1 of 1994 on September 8, 1994 and has been amended by many resolutions which allow the Authority to meet the needs of Rockland County and to make necessary adjustments to reflect changes to their solid waste management practices.

These by-laws describe the Authority, its members, officers, and their meetings. A copy is provided in Appendix F.

6.1.2 Rockland County Sanitary Code, Article XVII – Separation of Non-Offensive Materials

Article XVII of the Rockland County Sanitary Code, Separation of Non-Offensive Materials, requires source separation and segregation of uncontaminated recyclable material from the putrescible, infectious, and other offensive solid waste of County residents and businesses. Article XVII is a regulation promulgated by the Rockland County Department of Health (DOH) that became effective on May 1, 2000, and remains in effect. A copy is provided in Appendix F.

In addition to the source separation requirements it imposes, Article XVII includes mandatory reporting requirements for persons (other than homeowners) who own or operate a facility of 10,000 sq. ft. or more, or who employ fifteen or more employees, or who own or operate an apartment, condominium or townhouse complex with three or more dwelling units. Specifically, such persons are required to submit a Source Separation Plan to the DOH. The plan is reviewed every five years and must be updated. Article XVII also requires solid waste and recyclable haulers to obtain a permit from the Commissioner of Health for each vehicle used to remove, collect, and transport such materials and prohibits the commingling of source separated materials by haulers. Pursuant to the New York State Public Health Law §348, the provisions of the Rockland

County Sanitary Code have the force and effect of law. A copy is provided in Appendix F.

6.1.3 Rockland County Flow Control Law

Flow control refers to the ability of local governments to mandate, through laws or other regulations the delivery of all locally-generated solid waste to designated facilities. On May 20, 2008, the Rockland County Legislature, pursuant to language proposed by the Authority, enacted county-wide flow control (the "Flow Control Act) as Local Law No. 2 of 2008. On June 19, 2008, the County Executive signed the Flow Control Act and caused it to be filed pursuant to State law whereupon it was designated as Chapter 350 of the Laws of Rockland County. On September 24, 2009, regulations pursuant to the Flow Control Act were issued by the Authority and amended on March 16, 2010 and October 28, 2010.

The law seeks to increase the rate of recycling in the County, and provide for the safe and environmentally sound handling and disposal of the solid waste generated in Rockland County. The law regulates the collection, transportation and disposal of solid waste generated in Rockland County, including non-recyclable MSW (garbage), recyclables, construction & demolition debris, and yard waste, which require a Permit from the Rockland County Department of Health. The law states that wastes generated in the County must be delivered to Facilities designated by the Rockland County Solid Waste Management Authority.

Under the Flow Control Act, it is a violation for any hauler to take yard waste, solid waste, construction and demolition debris (C&D), and/or designated recyclables to any facility other than a facility designated by the Authority.

The recycling provisions of the Flow Control Act state that each commercial and industrial entity shall provide for the separation of designated recyclables from all other types of waste and shall provide for the placement of such designated recyclables into separate, suitable containers labeled as containing recyclables.

Further, the landscaper provisions of the Flow Control Act state that all landscapers must take yard waste to a facility designated by the Authority. The yard waste must not be mixed with any other type of waste, and must be separately collected and disposed at the designated facility. However, this does not apply to any landscaper, tree service company, or green waste recycler that has a green waste recycling program in place and is approved by the Authority. The Flow Control Act does not prohibit private non-commercial composting of yard waste or mulching of leaves, grass clippings and cuttings.

Under the Flow Control Act, the County DOH was designated as the agency charged with enforcement of the Flow Control Act. The Commissioner of Health has the

authority to enforce the Flow Control Law and to impose the civil sanctions and penalties proscribed in the law. The Authority has entered into an inter-municipal agreement with the County for reimbursement of personnel and operating expense in conjunction with Flow Control, in addition to the services the DOH provides the Authority's HHW Facility.

6.1.4 Rules and Regulations to the County Flow Control Law

These rules and regulations, administered by the RCSWMA, serve to establish the requirements for increasing the rate of recycling, and for eliminating or reducing the amount of County-generated solid waste disposed of in the landfills. These rules and regulations were amended March 16, 2010 and October 28, 2010. Currently there are fourteen (14) rules.

7 INTEGRATED SYSTEM SELECTION

The existing integrated system in-place and implemented by RCSWMA currently has a multitude of the elements sought after by the NYS Beyond Waste Plan. However, the Authority continues to strive to make improvements to their existing programs. Therefore many of the tasks detailed within the Implementation Schedules (Schedule 1 through 5) included in Section 8 are already being performed by the RCSWMA. In an effort to continue to reduce the dependency on disposal by increasing reuse and recycling, some additional activities and processes have been added.

Although there are no new projects or infrastructure proposed as part of the Plan, there are a number of evaluation initiatives proposed that may lead to new program elements during the planning period. As illustrated and detailed in the Implementation Schedules (Schedule 1 through 5) included in Section 8 of the Plan, the evaluations listed below are anticipated to be acted on and may be implemented, if found to be economically viable and help meet the mission of the Authority.

- Additional Yard Waste Facility (see Schedule 2)
- Food Waste Recycling and Processing (see Schedule 2)
- Evaluate Single Stream Recycling (see Schedule 2)
- Utilization of Pre-processing Facility (see Schedule 2)
- PAYT/SMART Programs (see Schedule 2)
- Carcass Composting Program (see Schedule 2)
- Expand opportunities for Deconstruction programs (Schedule 3)
- Expand opportunities for Materials Exchange/Reuse programs (Schedule 3)
- Evaluate alternative waste treatment techniques (Schedule 4)
- Evaluate alternative waste hauling methods (Schedule 4)
- Website update (Schedule 5)

8 IMPLEMENTATION SCHEDULE

8.1 Introduction

As illustrated in the Implementation Schedule the Authority has a multitude of existing tasks being performed on a daily basis and has plans for a number of potential improvements and evaluations for additional program elements. The Implementation Schedule provides a general timeline and sequence of all these tasks. The tasks have been grouped together into five different schedules.

The Plan is considered a living document that will be updated throughout the planning period as elements of the Plan are pursued and implemented, which includes the Implementation Schedule. The following provides a summary of each Implementation Schedule included in this section.

8.2 Implementation Schedule

Implementation Schedule No. 1 – General

- **SWMP**
 - Finalize SWMP
 - Reporting
- **Laws and Legislation**
 - Periodic Review of Legislation and Overall Program
 - Enforcement
- **Finance**
 - Contracts
 - Establish a 501 c3
 - Continue to Apply for Standard Government Grants (DEC, EPA, EFC, etc.)
 - Renewable Energy Opportunities
 - Regionalization Study

Implementation Schedule No. 2 – Recyclables and Waste Reduction

- **Materials Recovery Facility - increase Participation and Recyclables Through Facility**
 - Accepted Recyclable Materials at MRF
 - Residential Participation
 - Multi-Family Participation
 - Schools(K-12)
 - Colleges
 - Commercial/Institutional

- Municipal/Government
- Evaluate Single Stream Recycling
- **Yard Waste Composting - increase participation at facilities and promote back-yard composting efforts**
 - Data Collection and Efficiencies
 - Evaluate improvements to residential drop off procedures
 - Increase Participation and Back-Yard Composting
- **Food Waste Recycling - evaluate incorporating into program**
 - Feasibility
 - Pilot Program
 - Full Scale Program
 - Program Expansion
- **Biosolids**
 - Capacity Evaluation
 - Alternatives
- **Recyclables Pre-processing Facility**
 - Evaluation and Implementation
- **Public Spaces Recycling**
 - Parks, Sports Fields, Municipal Curbside
 - Special Events
- **PAYT/SMART Programs**
 - Evaluation and Implementation
- **Carcass Composting Program**
 - Evaluation and Implementation

Implementation Schedule No. 3 – Reuse and Reduction

- **Household Hazardous Waste Facility**
 - Continue to optimize HHW operations
 - Evaluate e-waste collection
 - Continue coordination with pharmaceutical take-back programs
- **Scrap Metal**
 - Data Collection and Efficiencies
- **Deconstruction**
 - Implementation & Expansion Evaluation
- **Materials Exchange/Reuse**
 - Implementation & Expansion Evaluation
- **Product Stewardship**
 - Promotion and Support
- **Buy Recycled**
 - Promotion and Support

Implementation Schedule No. 4 - Non-Recyclables

- **Data Collection and Alternative Disposal**
 - Data Collection and Operations
- **Alternatives**
 - Evaluate alternative waste treatment techniques
 - Evaluate alternate transportation methods (i.e.) rail, barge..

Implementation Schedule No. 5 - Education and Outreach

- **Overall Program Initiatives**
 - Continue to expand education & outreach initiatives
 - Update Website
 - Annual Rockland Recycles Awards Program
 - Environmental Day
 - Promote existing rebate program
 - Support local, state and national organizations created to promote reduction, reuse and recycling
 - Partnerships
 - Waste Wise Program

Implementation Schedule No. 2 - Recyclables and Waste Reduction
 Rockland County Solid Waste Management Plan 2014 - 2023

Task Name	2014				2015				2016				2017				2018				2019				2020				2021				2022				2023			
	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4			
Recyclables and Waste Reduction																																								
Materials Recovery Facility - Increase Participation and Recyclables Through Facility																																								
Accepted Recyclable Materials at MRF																																								
Regular discussions with Carton Council regarding adding gable top/aseptic packages to recycling stream																																								
Meetings with MRF operator to discuss current initiatives and progress																																								
Residential Participation																																								
Identify a community/neighborhood with the lowest tonnage/participation rate each year																																								
Meet with municipal officials of this community/neighborhood each year to understand unique challenges such as cultural, lingual, and demographics																																								
Schedule work sessions with municipal officials and staff of these communities to develop a plan for improved participation																																								
Track participation within identified communities/neighborhoods, in response to outreach modification																																								
Multi-Family Participation																																								
Identify a complex with the lowest tonnage/participation rate each year																																								
Meet with property owner/building management each year to understand unique challenges to participation																																								
Schedule work sessions with property owner/building management to develop a plan for improved participation																																								
Track participation within complex, in response to outreach modification																																								
Schools(K-12)																																								
Create/Update database of public schools by district and privates, contacts and waste handling practices																																								
Identify one public school district and three private schools with the lowest tonnage and participation rates to focus outreach and education each year																																								
Meet with school representatives to determine challenges/needs, such as, student/staff participation, collection contract, food and custodial services, equipment, funding, and education																																								
Schedule meetings with school officials, staff, teachers, and students to develop a plan for improved participation																																								
Develop system to track ROI (participation, education, attendance at meetings, programs offered at schools, reduction)																																								
Track ROI																																								
Colleges																																								
Create/Update database of colleges, contacts and waste handling practices																																								
Identify a college with the lowest tonnage and participation rate to focus outreach and education each year																																								
Meet with school representatives to develop a plan for improved participation																																								
Schedule meetings with college representatives to determine challenges/needs, such as student/staff participation, collection contract, food and custodial services, equipment, funding, and education																																								
Develop system to track ROI (participation, education, attendance at meetings, programs offered at schools, reduction)																																								
Track ROI																																								
Commercial/Institutional																																								
Create/Update database of commercial & institutions, contacts and waste handling practices																																								
Identify a business each month to visit and focus outreach and education initiatives																																								
Meet with business representatives/staff to determine challenges/needs, such as employee participation, collection contract, housekeeping services, equipment, funding, and training																																								
Schedule meetings with business representatives/staff to develop a plan to increase participation																																								
Develop program to track ROI																																								
Track ROI																																								
Municipal/Government																																								
Create/Update database of all municipal and government facilities, contacts and solid waste practices																																								
Identify one facility a month to meet with their representatives and discuss potential improvements																																								
Meet with representatives/staff to determine challenges/needs, such as employee participation, collection contract, housekeeping services, equipment, funding, and training																																								
Schedule meetings with representatives/staff to develop a plan to increase participation																																								
Develop program to track ROI																																								
Track ROI																																								
Evaluate Single Stream Recycling																																								
Research single stream operation models in other locations																																								
Perform cost-benefit analysis of implementation of single stream in Rockland																																								

Implementation Schedule No. 2 - Recyclables and Waste Reduction
 Rockland County Solid Waste Management Plan 2014 - 2023

Task Name	2014				2015				2016				2017				2018				2019				2020				2021				2022				2023			
	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3	Qtr 4	tr	Qtr 2	Qtr 3
Alternatives																																								
Explore uses for alternate processes/operations (i.e.) power generation, etc.																																								
Pursue partnerships with industry and research organizations																																								
Research and pursue new composting technologies																																								
Review/Implement economical and operational efficiencies																																								
Recyclables Pre-processing Facility																																								
Evaluation and Implementation																																								
Send RFI																																								
Prepare summary report of alternative uses for facility (e.g. Clean recyclable rich commercial out-of county loads)																																								
Economic analysis of preferred alternatives (including dedicated personnel)																																								
Public Spaces Recycling																																								
Parks, Sports Fields, Municipal Curbside																																								
Enumerate and map potential sites for implementation of initiatives by recyclable component (paper/container/food)																																								
Rank potential areas for best implementation																																								
Create pilot program at highest ranked location																																								
Special Events																																								
Enumerate and map potential sites for implementation of initiatives by recyclable component (paper/container/food)																																								
Rank potential areas for best implementation																																								
Create pilot program at highest ranked location																																								
Develop "kits" or "checklists" for event planners																																								
PAYT/SMART Programs																																								
Evaluation and Implementation																																								
Identify potential communities for program																																								
Meeting with haulers in potential communities																																								
Hold public education event for municipalities																																								
Establish program goals and perform cost analysis																																								
Design pilot program (volume or weight based, containers, training, billing system, fee schedule, enforcement)																																								
Track program data of pilot program																																								
Evaluate results of program and prepare report of recommendations																																								
Update Implementation Schedule																																								
Carcass Composting Program																																								
Evaluation and Implementation																																								
Review past efforts with County DPW																																								
Meet with DPW officials to discuss composting plan																																								
Develop preliminary composting plan																																								
Implement composting plan																																								

Implementation Schedule No. 3 - Reuse and Reduction
Rockland County Solid Waste Management Plan 2014 - 2023

Task Name	2014				2015				2016				2017				2018				2019				2020				2021				2022				2023			
	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
Reuse and Reduction																																								
Household Hazardous Waste Facility																																								
Household Hazardous Waste Facility																																								
Continue to Optimize HHW Operations																																								
Investigate value of municipal drop-off and aggregation of some types of HHW																																								
Investigate value of periodic local aggregation days																																								
Evaluate and implement program changes																																								
Evaluate E-Waste Collection																																								
Track changes in e-waste stream as e-waste laws are modified																																								
Continue Coordination with Pharmaceutical Take-Back Programs																																								
Contact medical community for ideas and analysis of potential tonnage																																								
Contact pharmaceutical companies for input and ideas																																								
Discuss with local pharmaceutical companies – Novartis and Pfizer																																								
Scrap Metal																																								
Scrap Metal																																								
Data Collection and Efficiencies																																								
Review permit process and reporting requirements																																								
Identify and meet with scrap metal haulers and facilities																																								
Develop data collection procedures																																								
Deconstruction																																								
Deconstruction																																								
Implementation & Expansion Evaluation																																								
Research existing programs and reuse opportunities and prepare report of options																																								
Meet with contractors/unions																																								
Conduct cost-benefit analysis to determine feasibility of Authority operated program																																								
Materials Exchange/Reuse																																								
Materials Exchange/Reuse																																								
Implementation & Expansion Evaluation																																								
Research existing programs and prepare report of options to increase reuse infrastructure within Planning Unit																																								
Evaluate adding component to transfer stations or processing center to accept material																																								
Develop list of regional reuse options and add to website																																								
Attend one Reuse Alliance meeting per year																																								
Product Stewardship																																								
Product Stewardship																																								
Promotion and Support																																								
Review national and state initiatives and prepare report																																								
Work with State and Industry																																								
Join Product Stewardship Council and attend one meeting per year																																								
Buy Recycled																																								
Buy Recycled																																								
Promotion and Support																																								
Add and maintain current information on website																																								

Implementation Schedule No. 5 - Education and Outreach
Rockland County Solid Waste Management Plan 2014 - 2023

Task Name	2014				2015				2016				2017				2018				2019				2020				2021				2022				2023			
	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
Education & Outreach																																								
Overall Program Initiatives																																								
Continue to Expand Education & Outreach Initiatives																																								
Assess current outreach initiatives for potential improvement and expansion																																								
Exhibit or present at three events per year that provide us the opportunity to provide information about the RCSWMA's facilities, programs and services																																								
Create/enhance resources for schools and colleges, such as, posting resources on website, list serve, posters, decals, signage, promotional materials and incentive programs																																								
Evaluate printed material and identify potential updates																																								
Review Education Center program annually																																								
Review and Update "A Guide to Recycling and Waste Reduction for Rockland Schools" annually																																								
Review and Update "A Guide to Recycling and Waste Reduction for Rockland Business" annually																																								
Conduct one hundred tours per year of our Environmental Education Center & Native Plants Garden for school, civic, and other community groups																																								
Website Utilization																																								
Post all available resources on website in categories for residential, businesses, schools and legal sectors																																								
Update website to be the primary source for information to the public																																								
Utilize website for communications, surveys, requests for tours and presenters																																								
Post availability of tours and presenters on website and through targeted mailings																																								
Annual Rockland Recycles Awards Program																																								
Continue to identify organizations, agencies, businesses, institutions and government entities that demonstrate excellence in recycling and/or waste prevention																																								
Continue to hold Annual Awards Program to showcase three or more success models																																								
Environmental Day																																								
Continue to host Annual Environmental Day at the Authority's facilities																																								
Continue to promote the RCSWMA's facilities and programs available to the public to create more awareness and increase participation																																								
Continue to increase the number of local environmental exhibitors, vendors, demonstrations and other activities that bring value to attendees																																								
Continue to host Rockland Recycles Awards program at the event																																								
Promote Existing Rebate Program																																								
Produce (re-create) newsletter to go out with checks																																								
Promote use of rebate \$\$s to go toward Green initiatives																																								
Support Local, State and National Organizations Created to Promote Reduction, Reuse and Recycling																																								
Create list of organizations (name, purpose, meeting dates, events)																																								
Maintain active participation																																								
Partnerships																																								
Seek out new partnerships with organizations to enhance education and outreach																																								
Continue to partner with organizations such as RCA, CCE, KRB, and RFA																																								
Waste Wise Program																																								
Continue to conduct quarterly meetings																																								
Evaluate methods to increase participation/membership																																								
Evaluate cross-over opportunities with EPA program																																								

9 EXPORT CERTIFICATION OF CAPACITY

9.1 Certification of Disposal Capacity For Destination Facilities

9.1.1 Landfill Facilities

There are no active municipal solid waste landfills in Rockland County, as such, solid waste accepted at the RCSWMA transfer stations is hauled by private contractors to disposal or processing facilities located outside of the Planning Unit. Export certification of capacity forms were request from the two landfills the Authority mainly utilizes for disposal. A summary of each facility and relevant capacity information is presented below. Appendix H includes a copy of each form.

Table 9-1: Summary of Landfills Utilized by RCSWMA

Facility	Permit Capacity	Capacity Limit	Contract Limit	Expiration Date of Permit
Ontario County Landfill	+/- 5 million CY	2,999 tons/day	150,000 Tons	01/20/2015
Hyland Landfill	+/- 2.5 million tons	312,000 tons/year	240,000 Tons	05/1/2015

9.1.2 HHW Material Disposal

RCSWMA currently contracts Clean Harbors to operate the HHW facility. Materials that cannot be recycled or reclaimed require disposal and depending on the material, Clean Harbor utilizes one of the facilities summarized below. Copies of the export certification capacity forms are provided in Appendix H.

Table 9-2: Summary of Facilities Used by Clean Harbors for HHW Disposal or Reclamation

Facility	Type of Facility	Materials Disposed	Expiration Date of Permit
Clean Harbors El Dorado, LLC	Incinerator & Solvent Recovery, Fluorescent Bulb Crusher and 10 day hub	<i>Hazardous wastes (RCRA regulated) and non-hazardous wastes</i> contaminated process wastewaters, oils, spent flammable solvents, organic and inorganic, laboratory chemicals, paint residues, debris from toxic or, reactive chemical cleanups, off-spec commercial products, cylinders and lab packs.	March 2018
Clean Harbors Deer Park, LLC	Incinerator	<i>Hazardous wastes (RCRA regulated) and non-hazardous wastes</i> contaminated process wastewaters, oils, spent flammable solvents, organic and inorganic, laboratory chemicals, paint residues, debris from toxic or, reactive chemical cleanups, off-spec commercial products, cylinders and lab packs	March 2015
Clean Harbors Environmental Services, Inc.	Wastewater Treatment Facility	Bulk acids	October 2011

10 ADMINISTRATIVE AND FINANCIAL STRUCTURES

10.1 Administrative

The RCSWMA staff and Board work together with the municipalities in Rockland County and work in partnership with many Rockland County agencies, such as the Department of Health, the Department of Environmental Health, and the Drainage Agency. The Authority employs 23 full-time and 4 part-time employees to oversee the Solid Waste Management System operations. The Authority performs all of its Solid Waste Management System operation services through the use of its own employees or through contracting with private vendors. Figure 10-1 presents the organization chart of the Authority.

Below is a summary of the main responsibilities for the personnel at the Authority in charge of managing key aspects of the Solid Waste Management Program.

Executive Director - Anna Roppolo

Ms. Roppolo serves as the Executive Director of the RCSWMA and is responsible to implement the strategic goals and objectives of the organization, and give direction and leadership toward the achievement of the organization's philosophy, mission, strategy, and its annual goals.

Solid Waste Educator - Kerri Scales

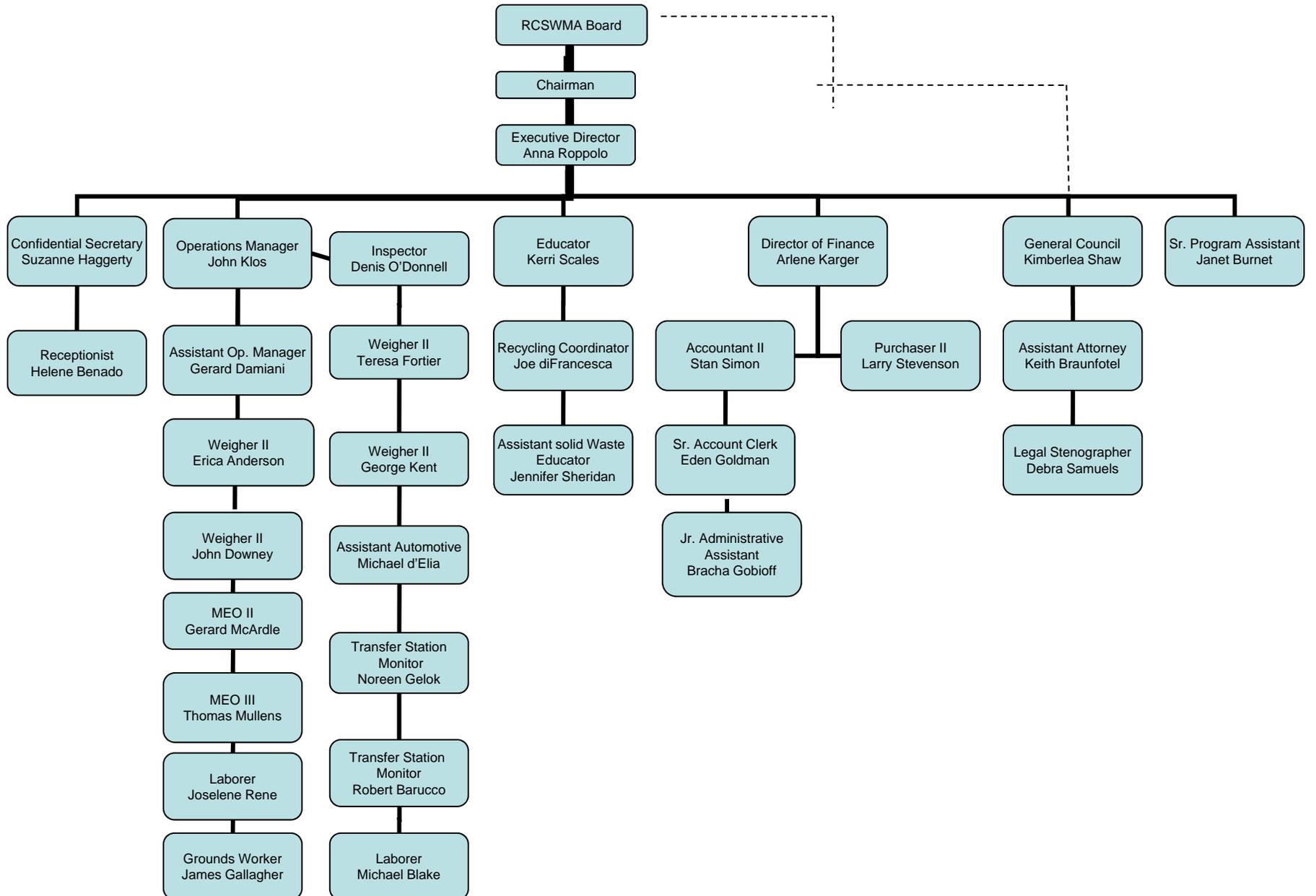
Ms. Scales serves as the Authority's Solid Waste Educator and is responsible to assist RCSWMA in the development of the Authority's Public Education and Outreach Programs. This involves the preparation, publication, and distribution of materials for education and outreach programs including the implementation of various environmental education programs. Ms. Scales also chairs the Authority's Waste Wise Committee and has implemented recycling programs at public schools in the County, and works with Rockland County businesses to promote their recycling efforts.

Recycling Coordinator - Joe diFrancesca

Mr. diFrancesca serves as the Authority's Recycling Coordinator and is responsible to encourage and assist municipalities, haulers and generators in their recycling efforts. In addition, the Coordinator assists in developing, presenting and implementing Authority recycling initiatives and programs to the residential and commercial sectors.

Solid Waste Operations Manager - John Klos

**Figure 10-1
RCSWMA Organization Chart**



Mr. Klos serves as the Authority's Operations Manager and is responsible for overseeing the day-to-day operations of the Solid Waste Management System. In this capacity, Mr. Klos works directly with and supervises the Authority's transfer station staff and is the primary liaison between the Authority and the private contractors who operate the MRF, Biosolids Cocomposting Facility and the HHW Facility.

Solid Waste Inspector - Denis O'Donnell

Mr. O'Donnell serves as the Authority's Solid Waste Inspector and is responsible for working directly with the municipalities that have intermunicipal collection agreements with the Authority. In this capacity, Mr. O'Donnell is the primary interface between local citizens, haulers, and municipal officials to develop and implement solutions to solid waste collection and disposal issues.

Senior Program Assistant - Janet Lee Burnet

Ms. Burnet serves as the Authority's Senior Program Assistant and Grant Writer and is responsible for researching grant programs and plans, researching and writing funding applications and coordinating and leading the activities of a grant/loan program that supports capital improvement projects for the Authority. Additionally, Ms. Burnet is involved with publicity for the RCSWMA and serves as liaison to local and regional environmental organizations.

10.2 Financial Structures

10.2.1 Revenue Sources

The various solid waste management plan initiatives and programs are funded through revenue earned through the solid waste disposal charges, tip fees and the revenue from the sale of recyclables. Each is discussed in some detail below.

10.2.2 Solid Waste Disposal Charges (User Fee & Ad Valorem)

There are several line items included in the tax bill of Rockland County residents and property owners in order to cover operation and maintenance costs of the Authority's facilities and the operation of the Authority. The charges are ad valorem and are based upon the assessed value of the property and/or residential or commercial unit. Also, the municipalities that contract directly with solid waste and recycling haulers, the fees associated with these contracts are also included on the tax bill.

A description of the individual solid waste charges is described below.

Area Benefit Charge - This charge is for capital or debt service costs for the Authority's solid waste facilities, i.e. the sludge co-composting facility, the materials recovery

facility, the yard waste composting facility, transfer station, and for general administration costs. The Area Benefit Charge is assessed on all properties in the County on an ad valorem basis.

Green Waste Unit Charge - Per Parcel - This unit charge is for the operations and maintenance costs for the yard waste composting program for composting all of the leaves, grass, and brush collected in the County. The Green Waste Unit Charge is imposed on a per parcel of real property unit basis.

Household Hazardous Waste Unit Charge - Per Unit - This unit charge is for the operation and maintenance costs for the household hazardous waste collection facility. The Household Hazardous Waste Unit Charge is imposed on a per dwelling unit basis.

Transfer Station Facility Unit Charge - Per Unit - This unit charge is for the operation and maintenance costs for the transfer stations, which is available to receive municipal solid waste from all of the residential properties in the County. The Transfer Station Facility Unit Charge is imposed on a per dwelling unit basis.

Materials Recovery Facility Unit Charge - Per Unit - This unit charge is for the operation and maintenance costs for the materials recovery facility. The Materials Recovery Facility Unit Charge is imposed on a per dwelling unit basis.

Sludge Cocomposting Unit Charge - Per Unit ; Water Usage - This unit charge is for the operation and maintenance costs for the cocomposting facility. The Cocomposting Unit Charge is imposed on a per dwelling unit basis with additional units charged to non-residential properties based on actual water usage divided by the average water consumption per dwelling unit.

10.2.3 Tip Fees

Table 10-1 presents the tipping fees charged at the RCSWMA transfer station, co-composting facility, pre-processing facility, concrete crushing facility and the Clarkstown yard waste facility.

Table 10-1: Current Tipping Fees (as of January 2010)

Transfer Station	
Acceptable Waste In-County	\$76.00 per ton
Acceptable Waste Out-of-County/State	\$76.00 per ton
Car Tires	\$2.00 each
Truck Tires	\$10.00 each
Truckloads	\$200.00 per ton
Scrap Metal	No Charge
Cocomposting Facility	
Clean Unprocessed Wood Waste	\$25.00 per ton
Clean Chipped Wood	No Charge
Wood Pallets	\$10.00 per ton
Preprocessing Facility	
Mixed Dry Loads	No Charge
Metal	No Charge
Other Recyclables	No Charge
Concrete Crushing Facility	
Asphalt	\$15.00 per ton
Concrete	\$15.00 per ton
Oversize Charges (per load)	
Rate 1 (Less than 10 ton Truck)	\$30.00 per ton
Rate 2 (10 - 20 ton Truck)	\$60.00 per ton
Rate 3 (20 - 30 ton Truck)	\$90.00 per ton
Yard Waste Facility - Clarkstown	
Leaves (Out of County/Commercial)	\$51.00 per ton
Grass	\$70.00 per ton
Brush	\$57.00 per ton
Mixed Yard Waste	\$105.00 per ton
Stumps	\$150.00 per ton

10.2.4 Recyclable & Re-usable Materials

The Authority earns revenue by selling the recyclable and re-usable materials it receives at its facilities. Below describes the various ways the Authority earns revenue at each of its facilities.

Materials Recovery Facility:

The Authority contracts with Weminuche Recycling to operate and sell the recyclables generated by the Material Recovery Facility (MRF). The commodity pricing of the various products sold by the operator of the MRF and the contracts they have agreed to with their buyer's impact the revenue sharing agreement with the Authority. This agreement stipulates fiber floor pricing. Prior to the economic downturn during late 2008, the Authority historically had pricing benefits far greater than the minimum levels

required under contract. When commodity prices fall below the allowable floor pricing, the Authority receives the agreed floor pricing. Legislative changes, such as the NYS enhanced bottle bill, has impacted recycling revenue by impacting the Authority's residential curbside recycling initiative.

The Authority pays each municipality \$32 per ton for each of the recyclable materials delivered to the MRF. This helps the municipality defray the cost of collection and transportation and also provides an incentive for residents to recycle.

Co-composting Facility:

In its contract with the operator of the Co-composting Facility, the Authority was able to establish a sludge processing guarantee without making any physical plant expansions but with capital improvements/enhancements. This in turn allows the Authority to create capacity both for future growth in its current service area and to increase merchant tonnage at favorable rates. As capacity for disposal may become a premium for out-of-County users, this increase in capacity creates a more competitive environment for the Authority. The Authority continues to pursue out-of-county opportunities to maximize revenues.

Concrete Crushing Facility:

The Authority has contracted with Regional Recycling, LLC to operate, maintain and market the end products; RCA and asphalt. Similar to the MRF, the commodity pricing of the products sold by the operator of the Crushing Facility and the contracts agreed to with their buyers impact the revenue sharing agreement with the Authority. There are multiple end market uses for RCA which are ever expanding while there is a somewhat steady demand for the asphalt. However, the demand for material and associated pricing is still contingent on the health of the economy which ultimately affects the number of construction projects in the area.

10.2.5 Household Hazardous Waste Grants

Based on trending analysis, the quantity of material received at the HHW is expected to continue to grow due to several factors, including the increase in e-waste. Ongoing evolution in the television market and the modification to digital television accelerates the obsolescence of existing television units, therefore further accelerating the quantity of e-waste removal. Similar forces are affecting smaller personal items such as calculators, digital video discs (DVDs), cell phones and electronic organizers.

Historically, the Authority has applied for EPF grants to offset the cost of operating the Household Hazardous Waste Facility (HHW), however newly introduced legislation regarding product stewardship has changed the funding mechanism for the HHW facility in that NYS may decrease and/or cease funding. There may be funding

opportunities with large corporations that would partner with the Authority as a disposal site for e-waste. The Authority will continue to follow the legislation and begin to pursue product stewardship partnerships with large corporations independently of the legislation.

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APPENDIX A
PUBLIC COMMENT SUMMARY

**Any Public comments received during
Comment Period will be included in
Appendix A with the Final LSWMP.**

APPENDIX B

SEQR

**SEQR Documents will be included in
Appendix B with Final LSWMP.**



APPENDIX C

ROCKLAND COUNTY TOWNS AND VILLAGES

Town of Clarkstown		
Villages	Hamlets	
<ul style="list-style-type: none"> • Nyack (also located in the Town of Orangetown) • Spring Valley (also located in the Town of Ramapo) • Upper Nyack 	<ul style="list-style-type: none"> • Bardonia • Brownsell Corners • Centenary • Central Nyack • Congers • Germonds 	<ul style="list-style-type: none"> • Mount Ivy • Nanuet • New City • Oakbrook • Valley Cottage • West Nyack
Contact	<ul style="list-style-type: none"> • Environmental Control office 845-639-2111 	
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town • Collected twice a week (Monday/Thursday, Tuesday/Friday, or Wednesday/Saturday). • Each home (single, two and three family only) is issued one official garbage collection sticker by the Tax Assessor's Office which must be placed on the household garbage container. Additional stickers are available for a fee. 	
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler • Collected once a week 	
Bulk Material	<ul style="list-style-type: none"> • Collected monthly on the Wednesday, Thursday, or Friday that coincides with your regular garbage collection day • Bulk can be brought out to the curb the weekend prior to your bulk date and must be out at the curb the night before your bulk pickup day. • Acceptable items for the Bulk Pick-Up program include: <ul style="list-style-type: none"> – Refrigerators and freezers, doors must be removed – washing machines – dryers – water heaters – stoves/ranges – room air conditioners – Modest amount of building material (up to 2, 50-pound bundles, under 5 feet in length) generated by the do-it-yourself homeowner. – Small quantities not more than 2 bundles, no longer than 5 feet and no heavier than 50 lbs. each will be collected of the following material: <ul style="list-style-type: none"> ▪ scrap lumber ▪ empty paint cans ▪ wallboard ▪ plaster ▪ wallpaper ▪ paneling ▪ sofas ▪ chairs ▪ carpeting and padding tightly rolled, bundled, tied not exceeding 5 ft. in length ▪ storm/screen windows and doors ▪ interior closet and room doors ▪ home furnishing products ▪ electrical/plumbing fixtures ▪ linoleum and ceramic tile flooring 	

Town of Clarkstown

Bulk Material (con't)	<ul style="list-style-type: none"> • Unacceptable Household Bulk Items include: <ul style="list-style-type: none"> - furnaces and boilers - central AC units - windows - outside doors - garage doors - sliding glass doors - lumber - decks - porches - sheds railroad ties - fences - pool heaters/liners/ladders/diving boards <ul style="list-style-type: none"> - tree stumps - grass clippings - soil - rocks and stones - concrete and asphalt - automobile parts - barbecue propane tanks - pallets - tires <p>Note: Contractors who work in your home are responsible to remove all debris that result from their work.</p>
Yard Waste	<p>Loose Leaf Pick-up Program (for Town residents only)</p> <ul style="list-style-type: none"> • Last week of October through second week of December, • Loose or biodegradable bagged leaves are collected from lawns or curbside • Plastic bags are not acceptable. • <i>Biodegradable leaf bags are available for free at the Town Hall, the Highway Department and the Parks & Recreation Department.</i> <p>Yard Waste Program (conducted by the Town's Highway Department)</p> <ul style="list-style-type: none"> • Collected 4 times a year by the Highway Department. • Residents can also drop off yard waste at the Clarkstown Transfer Station during the following hours: <ul style="list-style-type: none"> - Monday – Friday: 7:30 a.m. to 3:30 p.m. - Saturday: 7:30 a.m. to Noon <p>Note: Use the Rt. 303 southbound entrance</p>
Tires	<ul style="list-style-type: none"> • Tires can be disposed of by residents at the Solid Waste Facility. Call RCSWMA for information: 845-753-2200
Other	

Village of Upper Nyack	
Contact	<ul style="list-style-type: none"> • Village Hall 845-358-0084
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village • Collected twice a week.
Recyclables	<ul style="list-style-type: none"> • Collected by Village Employees • Collected every Monday except major holidays.
Bulk Material	
Yard Waste	
Other	

Town of Haverstraw		
Villages	Hamlets	
<ul style="list-style-type: none"> • Haverstraw • Pomona (also located in the Town of Ramapo) • West Haverstraw 	<ul style="list-style-type: none"> • Camp Hill • Felters Corners • Garnerville • Johnstown • LadenTown 	<ul style="list-style-type: none"> • Mount Ivy • Samsondale • Thiells • Willow Grove
Contact	<ul style="list-style-type: none"> • Town Highway Department 845-429-9126 	
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town • Collected twice a week. 	
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town • Collected once a week. 	
Bulk Material	<ul style="list-style-type: none"> • Collected by the Town's Highway Department • Collected every Thursday • Bulk items can only be placed out on Wednesday nights for pick up. • Bulk pick-ups consist of items other than what your regular carter will pick up. • All items must be separated (bulk, metal, brush, hazardous) and placed in an orderly manner at curbside for pick-up. No items are to be placed in the road at any time. • Acceptable items include: <ul style="list-style-type: none"> - furniture - toys - appliances - carpeting - mowers - bicycles - paint - tires - brush - stumps - wood objects - metal objects - hazardous materials 	
Yard Waste	<p>Grass and Leaves</p> <ul style="list-style-type: none"> • Collected by the Town's Highway Department • Collected every Monday, year round weather permitting • Grass and leaves must be put in biodegradable bags and placed at the curbside • No rocks, dirt or other debris will be accepted • Biodegradable bags are available at the highway garage on a limited basis at a rate of one bundle per household. • No bags are to be left out longer than the night before the pickup. <p>Brush, Twigs and Branches</p> <ul style="list-style-type: none"> • Collected every Thursday. • Collected by the Town's Highway Department 	
Tires		
Other		

Village of Haverstraw	
Contact	<ul style="list-style-type: none"> • Village Hall 845-429-0300
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village • Collected once to three times per week.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village • Collected once to three times per week.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of Pomona																	
Contact	<ul style="list-style-type: none"> • Village Hall 845-354-0545 																
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Cost is included in the residential taxes. • Collected twice a week, Monday and Thursday. • Garbage must be at the curbside by 6:15 A.M. on the day of collection. 																
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Paper is collected 1st and 3rd Wednesday. • Commingled Containers are collected 2nd and 4th Wednesday. • Recycling containers are provided to the residents free of charge and are available at the Village Hall. 																
Bulk Material	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected on Thursday. • Acceptable Bulk Pick-Up items include: <ul style="list-style-type: none"> – Paint cans, empty – Swing sets, 5ft bundles – Metal cabinets – Small rugs, rolled if possible – Push mowers (gas tank removed) – Wood, bundled, tied, 5ft max lengths – Twigs, bundled, tied, max 5ft lengths – Furniture (max 3 pieces per week) – Barbecues, tanks removed, max 60 lbs • Unacceptable Bulk Pick-Up items include: <ul style="list-style-type: none"> – Leaves – Wood with nails – Batteries (hazardous waste) – Trash from commercial home improvement – Trash from commercial landscaping – Paint cans with paint in them (hazardous waste) – Any item weighing more than 60 lbs or larger than 5 ft – Wall-to-wall carpentry – Tires • Table of Standard Charges from Donato Marangi, Inc.: <table style="width: 100%; border: none;"> <tr> <td>– White Goods - Appliances - no freon</td> <td style="text-align: right;">\$25</td> <td>– Pool Liners</td> <td style="text-align: right;">\$50</td> </tr> <tr> <td>– Carpets (per room, w/out pads)</td> <td style="text-align: right;">\$30</td> <td>– Boiler</td> <td style="text-align: right;">\$65</td> </tr> <tr> <td>– Riding mowers (gas tank removed)</td> <td style="text-align: right;">\$100</td> <td>– Hot water heater</td> <td style="text-align: right;">\$30</td> </tr> <tr> <td>– Microwave (larger than 12" x 15")</td> <td style="text-align: right;">\$25</td> <td>– Console TV</td> <td style="text-align: right;">\$30</td> </tr> </table> • Residents must call (845) 268-5747 to make collection arrangements. 	– White Goods - Appliances - no freon	\$25	– Pool Liners	\$50	– Carpets (per room, w/out pads)	\$30	– Boiler	\$65	– Riding mowers (gas tank removed)	\$100	– Hot water heater	\$30	– Microwave (larger than 12" x 15")	\$25	– Console TV	\$30
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– Riding mowers (gas tank removed)	\$100	– Hot water heater	\$30														
– Microwave (larger than 12" x 15")	\$25	– Console TV	\$30														
Yard Waste	<ul style="list-style-type: none"> • Residents must contact the private hauler, Donato Marangi, Inc. at (845) 268-5747 to arrangement for pickup of leaves. <ul style="list-style-type: none"> – Leaves must be placed in bio-degradable bags and placed at the curb – Cost: \$6 per bag • Bio-degradable bags are available at the Village Hall for free. 																
Tires																	
Other	<ul style="list-style-type: none"> • <i>Residents can donate their used cell phones, printer cartridges from any copier, fax, etc., books and eye glasses at the Village Hall.</i> • <i>These items are then donated to charity collections.</i> 																

Village of West Haverstraw	
Contact	<ul style="list-style-type: none"> • Village DPW 845-429-4460
MSW	<ul style="list-style-type: none"> • Collected by the Village DPW. • Collected once a week from single-family homes and buildings with fewer than 3 apartments. • Collected on Monday for West Haverstraw residents, with the exception of a few Garnerville streets, and on Tuesday for Garnerville residents. • Not collected from commercial establishments or multi-unit apartment buildings containing more than 3 units. • Residents can elect to reject solid waste collection service.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected once to three times per week. • Collected on Wednesday. • Recycling bins are available to Village residents for free and can be picked up at the DPW Office, 132 Samsondale Avenue, during working hours.
Bulk Material	<ul style="list-style-type: none"> • Collected by the Village DPW. • Collected once a week on Thursday from single-family homes and buildings with fewer than three apartments. • Acceptable items eligible for the Bulk Pick-Up program include: <ul style="list-style-type: none"> – room air conditioners – sofas – refrigerators – major appliances – hot water heaters. • Limited quantities of the following items: <ul style="list-style-type: none"> – do it yourself home renovation material – mattresses and box springs, etc. • Two (2) cubic yard weekly limit per household. • Metal items, such as refrigerators and air conditioners, must be separated from all other bulk items.
Yard Waste	<ul style="list-style-type: none"> • Collected by the DPW. • Collected weekly during the spring on Fridays. • Collected from residences that already receive garbage and recycling collection services. • Acceptable Materials include: <ul style="list-style-type: none"> –Leaves – Bulbs – Prunings – Bundled branches and limbs –Grass clippings – Twigs – Pine cones –Weeds – Brush – Uprooted plants • Must be placed in brown paper yard waste bags weighing no more than 40 pounds. • Bags must be folded closed and/or in bundles no more than 4 feet in length and tied with twine. • Yard waste bags are free to Village residents and are available for pick up at the DPW Office, 132 Samsondale Avenue, during working hours.
Tires	<ul style="list-style-type: none"> • Collected by the DPW on Fridays. • \$5.00 fee per tire. Must be paid prior to the scheduled tire pick up.
Other	

Town of Orangetown														
Villages	Hamlets													
<ul style="list-style-type: none"> • Grandview • Nyack (also located in the Town of Clarkstown) • Piermont • South Nyack 	<ul style="list-style-type: none"> • Middletown • Nauraushaun • Orangeburg • Palisades • Pearl River 	<ul style="list-style-type: none"> • Sickletown • Sneden's Landing • Sparkill • Tappan • Upper Grandview 												
Contact	<ul style="list-style-type: none"> • Town Hall 845-359-6500 • Recycling Program Orangetown Solid Waste Hotline at 845-359-6988 or 845-359-6989. 													
MSW	<ul style="list-style-type: none"> • Residents contract individually. 													
Recyclables	<ul style="list-style-type: none"> • Collected by the Highway Department. 													
Bulk Material	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town. • Collected once per month. • Items should be placed in an orderly manner curbside for your last garbage pickup of the month. • Items should be less than 5ft in length and bundled • Appliance doors removed • Glass and mirrors taped to prevent shattering • Sharp objects (nails, screws, etc.) should be removed from items for pickup. • Acceptable items for Curbside Bulk Pickup include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">– Furniture</td> <td style="width: 50%;">– Water Heaters</td> </tr> <tr> <td>– Appliances</td> <td>– Mowers</td> </tr> <tr> <td>– Carpeting</td> <td>– Bicycles</td> </tr> </table> <p>* Refrigerators/Air Conditioners must have the freon removed and red-tagged by a licensed freon removal service. Residents may bring these items to the Drop-Off Center located at the Highway Department, 119 Route 303, Orangeburg, New York.</p> <ul style="list-style-type: none"> • Unacceptable items for Curbside Bulk Pickup include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">– Tires</td> <td style="width: 50%;">– Masonary Material</td> </tr> <tr> <td>– Construction Debris</td> <td>– Brush/Leaves</td> </tr> <tr> <td>– Hazardous Waste</td> <td>– Recyclable Materials</td> </tr> </table> 		– Furniture	– Water Heaters	– Appliances	– Mowers	– Carpeting	– Bicycles	– Tires	– Masonary Material	– Construction Debris	– Brush/Leaves	– Hazardous Waste	– Recyclable Materials
– Furniture	– Water Heaters													
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– Tires	– Masonary Material													
– Construction Debris	– Brush/Leaves													
– Hazardous Waste	– Recyclable Materials													

Town of Orangetown	
Yard Waste	<p>Green Waste Program</p> <ul style="list-style-type: none"> • Collected by the Highway Department • Collected every Monday, year round weather permitting • Acceptable Green Waste includes: <ul style="list-style-type: none"> – Leaves and yard debris (placed in biodegradable bags) – Branches no longer than 5 feet in length and neatly stacked – logs no larger than 36 inches in diameter – stumps that are clean of dirt and rocks • Unacceptable Green Waste include: <ul style="list-style-type: none"> – Grass clippings and thatch are not picked up, however they may be brought to the Town Drop-off Center. • Biodegradable bags are available at the highway garage on a limited basis at a rate of one bundle per household. • Green waste material shall be placed at curbside no sooner than 5 days prior to pickup date and no later than 7 A.M. of pickup date.
Town Drop-Off Center	<ul style="list-style-type: none"> • For residents only. • Location: Route 303, West Nyack • Hours: Weekdays: 8:00 AM to 4:00 PM Saturdays: 8:00 AM to 3:30 PM (May through November) 8:00 AM to 12:00 Noon (December through April) • Residents must apply for a permit sticker which must be permanently affixed to the upper left corner of the inside driver side windshield and/or ID card in order to utilize the Drop-Off Center. • Commercial pickup trucks and vans must obtain a “Commercial Vehicle Use”. • Applications can be obtained at the Highway Department Administrative Office. • Acceptable materials include: <ul style="list-style-type: none"> – Brush <i>Must be</i> – Branches, limbs 3 to 5 feet long and 8 inches in – Leaves <i>separated</i> diameter or less. – Grass – Tires (\$2 per tire) – Refrigerators/Air Conditioners (freon must be removed and are red-tagged by a licensed freon removal service. • Any person found violating these restrictions will be subject to a \$100.00 fine, 10 days in prison, or both. Town law provides that the ordinance regulating dumping may be enforced by the Orangetown Police Department, Superintendent of Highways or any Highway Department Foreman. • Call 845-358-0759 for more information
Other	<ul style="list-style-type: none"> • Town’s Highway Department Litter Marshal Program. • Provides a means for residents to report litterbugs anonymously. • Residents can join free of charge. • A Litter Marshal Program Packet, including litter educational materials, a reporting card and a welcome letter which outlines the program, is sent to all Litter Marshals.

Village of Grandview	
Contact	<ul style="list-style-type: none"> • Village Hall 845-358-2919
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village • Collected twice a week.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village • Collected once a week.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of Nyack	
Contact	<ul style="list-style-type: none"> • Village DPW 845-358-0548
MSW	<ul style="list-style-type: none"> • Collected by the Village DPW. • Collected once a week, Monday through Thursday. • Residential districts - refuse containers must be removed from the curb on collection days. • Business Districts – refuse containers must be removed within 1 hour after collection.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected every other Wednesday. • Recycling bins must be placed at the curbside the night before collection and brought in immediately after collection. • Clear plastic bags can also be used if the recycling bins are not big enough. • Corrugated cardboard must be cut or folded into manageable bundles no larger than 3 feet by 3 feet and tied separately from other recyclables.
Bulk Material	<ul style="list-style-type: none"> • Collected every other Friday. • Acceptable items include: <ul style="list-style-type: none"> – Appliances – Furniture – Debris • Contractors are responsible for removal and disposal of their own debris. • Residents may also rent the Village DPW truck for major house cleanups and other debris at a cost of \$300 for the first 3 tons. Quantities in excess of 3 tons will be billed accordingly. Further information can be obtained by calling 845-358-3552.
Yard Waste	<ul style="list-style-type: none"> • From December 5th through October 15th the material must be bagged. • From October 15th through December 5th leaves may be placed in the gutter for pickup. Brush must be tied in bundles less than 5 feet long and the leaves must be free of rocks, sticks, brush and trash. • Acceptable items include: <ul style="list-style-type: none"> – Grass – Weeds – Brush, tied in bundles less than 5 feet long – Leaves free of rocks, sticks, brush and trash
Tires	
Other	

Village of Piermont	
Contact	<ul style="list-style-type: none">• Village Hall 845-359-1258
MSW	<ul style="list-style-type: none">• Collected by the DPW.
Recyclables	<ul style="list-style-type: none">• Collected by the DPW.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of South Nyack	
Contact	<ul style="list-style-type: none"> • Village DPW 845-358-0206
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village DPW. • Collected twice a week on Tuesdays and Fridays. • Containers must be placed at curbside no earlier than the night before the scheduled pick-up and removed from place of pick-up within 8 hours after collection.
Recyclables	<ul style="list-style-type: none"> • Collected by the Village DPW. • Collected every other Thursday. • Containers must be placed at curbside no earlier than the night before the scheduled pick-up and removed from place of pick-up within 8 hours after the contents have been removed.
Bulk Material	<ul style="list-style-type: none"> • Household discards may be put at curbside on the regular garbage days of Tuesdays and Fridays. • Acceptable items include: <ul style="list-style-type: none"> – refrigerators (with doors removed) – other "white goods" – metal items which must be kept separate – rocks and bricks – black-top or concrete which is free of metal – loose wood cut in 4 ft. lengths, bundled and tied with heavy cord and must weigh less than 50 pounds – plaster and sheet rock which has been placed into small boxes and placed in sealed garbage bags
Yard Waste	<ul style="list-style-type: none"> • Collected by the DPW every Tuesday or Friday. • Acceptable items include: <ul style="list-style-type: none"> – Leaves – Grass clippings – Other yard debris – Tree branches cut into 6 to 9 foot lengths with cut ends stacked in the same direction – Small brush, bundled in lengths easily handled by one person. • Unacceptable items include: <ul style="list-style-type: none"> – Trees – Tree stumps • Brush is chipped by the DPW so it must be free from dirt, rocks and roots as these items can damage the chipper. • Yard waste must be free of sticks, rocks and garbage and placed in biodegradable bags or bundled with string or rope. • No wires please. • Biodegradable bags are available at the Village Hall. • Residents may rent a Village truck. Contact the Village Hall for more information
Tires	
Other	<ul style="list-style-type: none"> • Residents can drop off waste oil at the DPW garage located at 65 Brookside Avenue weekdays between 7 AM and 3 PM. • Waste oil must be in a sealed container marked "Waste Oil" and must not be mixed with water, gasoline or anti freeze.

Town of Ramapo	
Villages <ul style="list-style-type: none"> • Airmont • Chestnut Ridge • Hillburn • Kaser • Montebello • New Hempstead • New Square 	<ul style="list-style-type: none"> • Pomona (also located in the Town of Haverstraw) • Sloatsburg • Suffern • Spring Valley (also located in the Town of Clarkstown) • Wesley Hills
Hamlets	<ul style="list-style-type: none"> • Antrim • Hillcrest • Monsey • Ramapo • Sterlington • Suffern Park • Tallman
Contact	<ul style="list-style-type: none"> • DPW, Division of Solid Waste and Recycling 845-357-0591
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town. • Collected twice a week, Monday and Thursday or Tuesday and Friday.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town. • Collected once a week.
Bulk Material	
Yard Waste	
Tires	
Other	<ul style="list-style-type: none"> • The Town also publishes an eNewsletter which promotes A Cleaner Ramapo. • Residents are encouraged to report littering complaints and the dumping of solid waste materials in Unincorporated Ramapo by calling the Town of Ramapo DPW at 845-357-0591 or the Ramapo Police Department at 845-357-2400 if they are witnessing the act.

Village of Airmont	
Contact	<ul style="list-style-type: none"> • Village Hall 845-353-5678
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week. • Route #1 is collected on Monday and Thursday. • Route #2 is collected on Tuesday and Friday. • Yard side pickup is provided.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected once a week. • Collected on Wednesday.
Bulk Material	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected on the second collection day. • Acceptable items include: <ul style="list-style-type: none"> – Box Spring – Washers and Dryers – Furniture – Lawn Mower – Mattresses – Metal Paint Cans (crushed) – Refrigerators (door removed) – Snow Blowers – Swing Sets – Televisions – Tires – Window Air Conditioners – Christmas Trees – Wall Ovens • Unacceptable items include:: <ul style="list-style-type: none"> – Bathtubs – Built-in Appliances – Cabinets – Cast Iron Boilers – Concrete Construction Material – Decks – Heating Units – Household Improvements – Lumber – Rocks and Stone – Sheet Rock – Sinks – Sliding Glass Doors – Stumps – Toilets
Yard Waste	<ul style="list-style-type: none"> • Leaves, grass, tree branches and twigs are picked up on an ongoing basis. • Must be put in biodegradable bags. • Collected on Wednesday. • Biodegradable bags are available for pick-up at Village Hall from 9:00 A.M. to 4:00 P.M, Monday through Friday. • Tree branches must be cut into sections less than 4 feet in length with each section weighing not more than 60 pounds, and each section is to be bundled and tied. • Twigs must be tied in 4 feet bundles.
Tires	<ul style="list-style-type: none"> • Tires are collected by the Village at a cost of \$5.00 fee per tire. • Residents must obtain a disposal sticker from Village Hall.
Other	

Village of Chestnut Ridge	
Contact	<ul style="list-style-type: none"> • Village Hall 845-425-2805
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected once a week.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of Hillburn					
Contact	<ul style="list-style-type: none"> • Village Hall 845-357-2036 				
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week on Mondays and Thursdays. 				
Recyclables	<ul style="list-style-type: none"> • Collected by Village personnel. • Collected once per week on Monday. 				
Bulk Material	<ul style="list-style-type: none"> • Collected quarterly in April, July and October. • Items must be placed at curbside. • Acceptable items include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - furniture - household appliances - refrigerators (doors removed) - washing machines - dryers </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - dishwashers - hot water tanks - lawn mowers (drained of gasoline and oil) </td> </tr> </table> • Unacceptable items include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - construction debris - sheet rock - lumber </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - roof shingles - concrete and bricks - tires </td> </tr> </table> 	<ul style="list-style-type: none"> - furniture - household appliances - refrigerators (doors removed) - washing machines - dryers 	<ul style="list-style-type: none"> - dishwashers - hot water tanks - lawn mowers (drained of gasoline and oil) 	<ul style="list-style-type: none"> - construction debris - sheet rock - lumber 	<ul style="list-style-type: none"> - roof shingles - concrete and bricks - tires
<ul style="list-style-type: none"> - furniture - household appliances - refrigerators (doors removed) - washing machines - dryers 	<ul style="list-style-type: none"> - dishwashers - hot water tanks - lawn mowers (drained of gasoline and oil) 				
<ul style="list-style-type: none"> - construction debris - sheet rock - lumber 	<ul style="list-style-type: none"> - roof shingles - concrete and bricks - tires 				
Yard Waste	<ul style="list-style-type: none"> • Acceptable items include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - garden waste - yard waste - lawn wastes </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - tree branches no larger than 2 inch in diameter - brush cut and tied into 4 foot sections </td> </tr> </table> 	<ul style="list-style-type: none"> - garden waste - yard waste - lawn wastes 	<ul style="list-style-type: none"> - tree branches no larger than 2 inch in diameter - brush cut and tied into 4 foot sections 		
<ul style="list-style-type: none"> - garden waste - yard waste - lawn wastes 	<ul style="list-style-type: none"> - tree branches no larger than 2 inch in diameter - brush cut and tied into 4 foot sections 				
Tires					
Other					

Village of Kaser	
Contact	<ul style="list-style-type: none"> • Village Hall 845-352-2932 • Town of Ramapo DPW, Division of Solid Waste and Recycling 845-357-0591
MSW	<ul style="list-style-type: none"> • Collected provided by the Town of Ramapo. • Collected by a private hauler contracted by the Town. • Collected twice a week, Monday and Thursday or Tuesday and Friday.
Recyclables	<ul style="list-style-type: none"> • Collected provided by the Town of Ramapo. • Collected by a private hauler contracted by the Town. • Collected once a week.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of Montebello	
Contact	<ul style="list-style-type: none"> • Village Hall 845-368-2211
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week. • Must be placed at curbside on the scheduled pickup day no later than 6 a.m.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected once per week on Wednesday. • Recycling bins must be at the curbside the night before collection or by 6 a.m. on the day of collection and must be brought in immediately after collection.
Bulk Material	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected on the second garbage collection day. • Maximum weight: 60 pounds. • Maximum volume capacity: 30 gallons. • Acceptable items include: <ul style="list-style-type: none"> - mattresses/box springs - washers and dryers - pool heaters - hot water tanks - wall ovens - furniture - Christmas trees - dishwashers - lawn mowers - snow blowers - swing sets (broken down) - window air-conditioners - trampolines - mirrors (must be taped up) - refrigerators and freezers (doors and freon must be removed) - gym equipment (broken down and manageable) - carpet (cut up into 4 feet in lengths, bundled and tied) • Unacceptable items include: <ul style="list-style-type: none"> - heating units - bathtubs - toilets - cabinets - shower doors - windows - railroad ties - water softeners - sheet rock - lumber - sinks - concrete - decking - paneling - rocks - stones - brick - insulation pipes - construction materials - built-in appliances - household improvement items - cast iron boilers - construction materials - empty paint cans • Materials left over from home improvements and remodeling projects and/or refuse from demolished or newly constructed buildings are not considered bulk material. Arrangements must be made with the home improvement contractor to remove these materials or residents can make private arrangements with the private hauler contracted by the Village.
Yard Waste	<ul style="list-style-type: none"> • Acceptable items include: <ul style="list-style-type: none"> - Tree branches (no larger than 6 inches in diameter and less than 4 feet in length, tied and bundled) - Yard debris/grass clippings (placed in brown recyclable bags) - Leaves (placed in brown biodegradable bags)

Village of Montebello	
Tires	<ul style="list-style-type: none">• Cost: \$5.00 per tire.• Resident must obtain a disposal sticker from Village Hall.
Other	

Village of New Hempstead	
Contact	<ul style="list-style-type: none"> • Village Hall 845-354-8100
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected once per week.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of New Square	
Contact	<ul style="list-style-type: none">• Village Hall 845-354-5778
MSW	<ul style="list-style-type: none">• Collected by the DPW.
Recyclables	<ul style="list-style-type: none">• Collected by the DPW.
Bulk Material	
Yard Waste	
Tires	
Other	

Village of Sloatsburg											
Contact	<ul style="list-style-type: none"> • Village Hall 845-753-2727 										
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week on Tuesday and Friday. 										
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected every Wednesday. 										
Bulk Material	<ul style="list-style-type: none"> • Collected every Friday. • Acceptable items include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">– refrigerators</td> <td style="width: 50%;">– washers</td> </tr> <tr> <td>– water heaters</td> <td>– dryers</td> </tr> <tr> <td>– stoves</td> <td>– furniture</td> </tr> <tr> <td>– air conditioners</td> <td>– household fixtures and the like</td> </tr> <tr> <td>– appliances</td> <td></td> </tr> </table> 	– refrigerators	– washers	– water heaters	– dryers	– stoves	– furniture	– air conditioners	– household fixtures and the like	– appliances	
– refrigerators	– washers										
– water heaters	– dryers										
– stoves	– furniture										
– air conditioners	– household fixtures and the like										
– appliances											
Yard Waste	<ul style="list-style-type: none"> • Collected by a private contractor retained by the Village. • Collected every Monday. • Acceptable Items: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">–Leaves</td> <td style="width: 50%;">– Branches and twigs cut and tied in 3 foot bundles</td> </tr> <tr> <td>–Yard waste</td> <td></td> </tr> <tr> <td>–Grass clippings</td> <td></td> </tr> </table> • Free, biodegradable bags for residents are available in the Village Office. 	–Leaves	– Branches and twigs cut and tied in 3 foot bundles	–Yard waste		–Grass clippings					
–Leaves	– Branches and twigs cut and tied in 3 foot bundles										
–Yard waste											
–Grass clippings											
Tires	<ul style="list-style-type: none"> • Rimless tires are accepted at the Public Works Facility, 100 Sterling Mine Road • Hours: Monday through Friday 6 A.M. to 2 P.M. 										
Other	<ul style="list-style-type: none"> • Used motor oil and car batteries are accepted at the Public Works Facility • Collection hours: Monday through Friday 6 A.M. to 2 P.M. 										

Village of Suffern			
Contact	<ul style="list-style-type: none"> • Village Hall 845-357-2600 • Village DPW 845-357-2602 		
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week. • Must be placed in heavy gauge plastic or metal waterproof containers having a capacity no greater than 35 gallons and must have detachable lids. • Should not be put on the curb until 6:00 P.M. the night before the scheduled pickup. 		
Recyclables	<ul style="list-style-type: none"> • Collected by Village personnel • Collected once per week. • Commingled collected on Thursday or Friday corresponding with regular garbage pick-up. • Commingled collected on Wednesday morning. • Recycling bins must be placed on the curbside the night before pick-up. • Recycling bins can be obtained at the Village Hall. 		
Bulk Material	<ul style="list-style-type: none"> • Picked up on the last Wednesday of each month. • Unacceptable items include: <ul style="list-style-type: none"> – lumber cut-offs – vinyl or ceramic tiles – bricks – cement – rocks – paneling – plaster board – used lumber – floor or roofing products – no paint of any kind 		
Yard Waste	<ul style="list-style-type: none"> • Leaf bags left at the curbside are collected by the Refuse Department. • During the fall season, pickup is on a daily roving basis throughout the Village. • During the other seasons brush and leaf pick-up is collected Monthly as follows: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>1st & 3rd Wed. & 1st & 3rd Thurs.</u> east of commuter railroad tracks and west of Woodland Drive </td> <td style="width: 50%; vertical-align: top;"> <u>2nd & 4th Wed. & 2nd & 4th Thurs.</u> east of Woodland Drive (including Woodland) and west of commuter railroad tracks </td> </tr> </table> • Items should be placed at the curbside after 6 p.m. the night before the scheduled pick-up. • Acceptable items: <ul style="list-style-type: none"> – Leaves and grass clippings (placed in biodegradable paper bags or open-top containers) – brush cut and tied into 4 foot sections • Residents can obtain free mulch and top soil at the Village DPW, daily during working hours, and on the 1st and 3rd Saturday of each month, between 7:00 A.M. to 10:00 A.M. 	<u>1st & 3rd Wed. & 1st & 3rd Thurs.</u> east of commuter railroad tracks and west of Woodland Drive	<u>2nd & 4th Wed. & 2nd & 4th Thurs.</u> east of Woodland Drive (including Woodland) and west of commuter railroad tracks
<u>1st & 3rd Wed. & 1st & 3rd Thurs.</u> east of commuter railroad tracks and west of Woodland Drive	<u>2nd & 4th Wed. & 2nd & 4th Thurs.</u> east of Woodland Drive (including Woodland) and west of commuter railroad tracks		
Tires	<ul style="list-style-type: none"> • Tires (off the rim) can be taken to the Village DPW garage during any working day between 7:30 A.M. to 3:00 P.M. 		

Village of Suffern

Other

- Waste oil and batteries can be taken to the Village DPW garage during any working day between 7:30 A.M. to 3:00 P.M.
- **Recycling Committee** informs residents about different ways to recycle. Some of the options available within the Village are as follows:
 - **Used clothing, furniture, toys and kitchen items** can be taken to the Christ Episcopal Church on Washington Avenue in Suffern or the Salvation Army on Route 59 in the Village; or dropped in the DARE bins located in different areas around the Village.
 - **Village of Suffern Stuff Sale.** A sale is currently scheduled for Sunday, May 23, 2010, from 10 am to 3 pm in the Village Parking Lot opposite the Post Office. A spot can be rented for a cost of \$10.00 with a two spot maximum.
 - **Batteries** of any kind or size can be brought to the Suffern DPW located at 61 Washington Avenue during working hours.
 - **Suffern Free Library** resells used books.
 - **Suffern Lion's Club** collects used eyeglasses. Collection boxes with the Lion's Club Logo on it are located in several locations around the Village including the Village Hall, Suffern Free Library, Post Office and a mail box on the corner of Lafayette Avenue and Chestnut Street.

Village of Spring Valley	
Contact	<ul style="list-style-type: none"> • Village Hall 845-352-1100
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week. • Private haulers must obtain a license in order to operate in the Village. <ul style="list-style-type: none"> – Applications must be submitted to the Village Clerk – Application fee: \$200 plus \$100 per vehicle. – License is good for one year.
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected once a week.
Bulk Material	
Yard Waste	
Tires	

Village of Wesley Hills	
Contact	<ul style="list-style-type: none"> • Village Hall 845-354-0400
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected twice a week, either Monday/Thursday or Tuesday/Friday
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected every Wednesday. • Must be placed at the curbside by 6:00 A.M.
Bulk Material	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Village. • Collected on the second garbage collection day. • Must be placed at the curbside by 6:00 A.M.
Yard Waste	
Tires	
Other	

Town of Stony Point		
Villages	Hamlets	
None	<ul style="list-style-type: none"> • Bear Mountain • Bulsontown • Cedar Flats • Doodletown • Grassy Point 	<ul style="list-style-type: none"> • Jones Point • Stony Point • Tomkins Cove • Willow Grove
Contact	<ul style="list-style-type: none"> • Town Highway Department 845-786-2300 	
MSW	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town • Collected twice a week. 	
Recyclables	<ul style="list-style-type: none"> • Collected by a private hauler contracted by the Town • Collected once a week. 	
Bulk Material	<ul style="list-style-type: none"> • Drop off items is available at the Town's highway garage • Annual drop-off fee: \$20.00 • Hours for drop-off: Monday - Friday 7 A.M. and 3:30 P.M. Saturday 9:00 A.M. and 1:00 P.M. • Acceptable items include: <ul style="list-style-type: none"> - appliances - metal Items - furniture - household goods - batteries - tires (\$2.00/tire) • Unacceptable items include: <ul style="list-style-type: none"> - paints - chemicals - hazardous materials - household garbage - construction materials • Residents must contract with their private garbage collector for removal services for construction debris. 	
Yard Waste	<ul style="list-style-type: none"> • Acceptable items include: <ul style="list-style-type: none"> - bagged leaves - brush - grass clippings which must be in bio-degradable bags • Unacceptable items include: <ul style="list-style-type: none"> - tree stumps • The Town will pick up the following: <ul style="list-style-type: none"> - brush (in excess of 10 yards) - Cost: \$60.00/hour/backhoe plus \$85.00/hour/roll off truck. - Residents must schedule this pick up service with the Highway Garage by calling 845-786-2300 and/or the Town Clerk at 845-786-2716. • Leaf bags are available at the Highway Department Monday through Friday 7 A.M. until 3:30 P.M. and on Saturday 9 A.M until 1 P.M. 	
Tires		
Other		

APPENDIX D

ROCKLAND COUNTY FACILITY DESCRIPTIONS

APPENDIX D - ROCKLAND COUNTY FACILITY DESCRIPTION

1.1 RCSWMA Transfer Stations

1.1.1 Bowline (Haverstraw) Transfer Station

The Bowline Transfer Station (TS) began operations in 1988 and was acquired by the Authority in 2008. This facility serves the northern portion of the County which includes the Town of Stony Point, Town of Haverstraw and Villages of Haverstraw and West Haverstraw. The total tonnage of MSW (residential, institutional & commercial) received in 2010 was 31,307 tons (this does not include recyclables and recovered materials). The permitted capacity is 42,900 tons per year. The Bowline TS is operating under a NYSDEC Part 360 Permit that expired March 31, 2009. A permit renewal, which was submitted in January 2009, is still pending.

The primary sources of waste received at the Bowline TS are waste collected under municipal contracts and commercial wastes. The following villages and towns are designated to use this facility: the Town & Village of Haverstraw, Town of Stony Point and the Village of West Haverstraw.

The Authority has contracted with Santaro Development, Inc. to operate and provide hauling and disposal services. Weigh scale operations are conducted by Authority staff.

1.1.2 Clarkstown Transfer Station

The Clarkstown Transfer Station was constructed by a private firm on behalf of the Town of Clarkstown and commenced operations in 1990. The Town of Clarkstown and the Authority executed an agreement for the acquisition of the Clarkstown TS and adjacent solid waste facilities on November 13, 2008. This facility serves the Towns of Clarkstown and Orangetown and the Villages of Grandview, Piermont, and South Nyack. The total tonnage of MSW (residential, institutional & commercial) received in 2010 was 141,732 tons (this does not include recyclables and recovered materials). The permitted capacity is 228,800 tons per year. The Clarkstown TS is operating under a NYSDEC Part 360 Permit that expired October 2010. A permit renewal, which was submitted in June 3, 2009, is still pending.

The primary sources of waste received at the Clarkstown TS are from Clarkstown and Orangetown; however, the following villages are also designated to use this facility: Villages of Grand-View-On-Hudson, Nyack, Piermont, South Nyack and Upper Nyack.

The Authority has contracted with the Clarkstown Recycling Center to operate the facility and with Santaro Development to provide hauling and disposal services. Weigh scale operations are conducted by Authority staff.

1.1.3 Hillburn Transfer Station

The Hillburn TS was acquired by the Authority in August 1998. This facility serves the Town of Ramapo, including the Villages of Spring Valley and Pomona (villages which span more than one town). The total tonnage of MSW (residential, institutional & commercial) received in 2010 was 78,221 tons (this does not include recyclables and recovered materials). The permitted capacity is 200,200 tons per year. The Hillburn TS is operating under a NYSDEC Part 360 Permit that expired June 30, 2010. A permit renewal, which was submitted in April 19, 2010, is still pending.

The primary sources of waste received at the Hillburn TS are waste collected under municipal contracts and commercial wastes. The following villages and towns are designated to use this facility: Town of Ramapo and Villages of Airmont, Chestnut Ridge, Hillburn, Kaser, Montebello, New Hempstead, New Square, Pomona, Sloatsburg, Spring Valley, Suffern and Wesley Hills.

All incoming loads of the recyclable rich material will be screened by the Authority at the Pre-Processing Facility for contaminants or other unacceptable material. Loads containing more than 20% non-recyclable material (by weight or volume) may be rejected at the Authority's sole discretion. Putrescible waste is not acceptable; part or all of rejected loads will be disposed of at the transfer station at the prevailing SW disposal rate, at the Authority's sole discretion.

The Authority has contracted with Allserveco to operate and provide hauling and disposal services. Weigh scale operations are conducted by Authority staff.

1.2 Regional Materials Recovery Facility

The Materials Recovery Facility (MRF) was constructed in 1998 and upgraded in 2005. This facility serves the entire County as well as certain recyclable materials originating outside the County. The total tonnage of recyclables (paper and commingled) processed in 2010 was 32,120 tons. The throughput capacity is 76,960 tons per year (300 tpd) using a single shift. The MRF is a registered facility with NYSDEC.

The MRF processes commingled containers and mixed paper to produce marketable recovered materials. Commingled containers included plastic containers with recycling code 1 through 7 (no Styrofoam or plastic bags), aluminum cans, aluminum foil, disposable aluminum products, metal cans, empty aerosol cans, and glass containers (clear, green and brown). Mixed paper defined as any clean paper products including but not limited to newspaper (including inserts), direct mail (junk mail), envelopes, cardboard (smooth and corrugated), office paper, construction paper, computer/fax paper,

magazines, catalogs, workbooks, telephone books, paperback books and brown grocery bags. The Facility contains two processing lines, one (1) each for commingled paper and commingled containers. In addition, there are two balers and a glass crushing system.

The glass beneficiation facility captures a difficult market for broken and low grade glass recyclables. From 2008 to 2010, this facility has produced over 19,000 tons of re-useable product. This successful enterprise also saves local municipalities and businesses money by providing a lower-cost 'green' recycled material for pipe bedding and other construction uses. With the success of this program at the local level, the Authority is now working with the State to include the beneficiated glass material in bids and specifications, so that our material can be generated for use on a regional basis.

The Authority has contracted with Weminuche Recycling to operate the facility and to find markets for the materials. Weigh scale operations are conducted by Authority staff.

1.3 Regional Household Hazardous Waste Collection and Storage Facility

The Household Hazardous Waste Collection and Storage Facility (HHW) is located in the Village of Pomona at the County Firemen's Training Center. Operations of the facility were transferred by the County to the Authority in 1995. The Authority has contracted with Clean Harbors Environmental Services to operate the facility which includes identifying end markets.

The Facility, a completely drive-through drop-off collection facility, accepts household hazardous waste materials from Rockland County residents free of charge, 5 days a week and select weekends. Small businesses, institutions, non-profits in Rockland County that qualify for Conditionally Exempt Small Quantity Generators (CESQG) status may also deliver household hazardous waste to the HHW Facility for a fee. This fee is waived for Rockland municipalities and schools. The total tonnage of material received in 2010 was approximately 733 tons. It operates in accordance with a NYSDEC Part 360 Permit that expires July 15, 2011.

Through a sub-contracted operator, the Authority supports NYS E-Waste Stewardship Legislation, while at the same time continuing to accept e-waste at their convenient drop-off facilities. The Authority's HHW Facility is managed in partnership with the Rockland County Department of Health, which also manages the records and provides an annual report on tonnage.

A comprehensive annual brochure focusing on the RCSWMA Household Hazardous Waste Facility (HHW) is mailed to every resident in the County. Also, the Authority places monthly advertisements in the local newspaper, The Journal News, as a reminder to residents for upcoming weekend household hazardous drop-off dates. The advertisements further help to build awareness of the HHW Facility.

During the last few years, RCSWMA has instituted several new collections programs at the HHW including:

- Pharmaceutical drop-off – in response to growing concern over pharmaceutical levels in rivers, streams and drinking waters, RCSWMA initiated a successful program to collect unused or expired over the counter and non-controlled prescription drugs.
- Freon-containing small electronics – RCSWMA now takes Freon-containing small electronic appliances such as dormitory sized refrigerators and window air conditioning units.

1.4 Regional Co-Composting Facility

The Biosolids Cocomposting Facility (BCF) has been operational since June 1999. This Facility recycles biosolids from all the municipal wastewater treatment plants within the County and select plants within the surrounding counties. The BCF is an in-vessel aerated, agitated bin composting plant which processes clean brush, wood waste, biosolids (sludge) and other organic residues into exceptional quality (EQ) compost. Prior to composting, biosolids are mixed with clean wood in order to attain the prescribed moisture content, density and carbon to nitrogen ration necessary. Clean wood including tree parts, brush, pallets and lumber are accepted, while wood treated with paint, adhesive, creosote, lacquer or other chemicals is not acceptable. The finished product is similar to peat moss and is an excellent soil amendment for use on golf courses, flower gardens and landscaping projects.

The total tonnage of material received in 2010 was 26,360 tons. The permitted maximum annual process rate is 33,000 wet tons per year of biosolids. It operates in accordance with a NYSDEC Part 360 Permit that expires July 2016.

The Authority has contracted with WeCare Organics to operate the facility which includes identifying end markets.

The Authority operates two yard waste facilities; one located in the Town of Clarkstown (West Nyack & French Farms Site) and the other in Hillburn located on the closed Town of Ramapo Landfill. In addition the Authority operates a wood mulching operation near the Clarkstown yard waste composting facility.

All of the municipally-collected and much of the privately generated yard waste in the County is currently delivered to these facilities. Trees and tree parts may be retained by landscapers and tree service firms for processing at private sites and for sale in accordance with the Flow Control Act. Green waste recyclers that have a green waste recycling program in place and who apply and qualify for an exemption under the Flow Control Act may also retain certain types of yard waste for processing at their own yards.

1.5 RCSWMA Yard Waste Facilities

1.5.1 Clarkstown Yard Waste Composting Facility

The Clarkstown Yard Waste Composting facility is located adjacent to Clarkstown transfer station and operations began in 1997. The Town of Clarkstown and the Authority executed an agreement for the acquisition of the Clarkstown TS and adjacent solid waste facilities on November 13, 2008. This facility serves the entire County.

The facility accepts leaves, grass and brush for composting. As per the Authority, in 2010 the facility accepted approximately 23,007 tons leaves, 922 tons of grass clippings and 12,467 tons of mix yard waste and brush, including wood waste. The permitted capacity allows for 110,000 cubic yards per year of leaves and grass and 120,000 cubic yards per year of brush and logs. The Clarkstown yard waste facility is operating under a NYSDEC Part 360 Permit that expires March 9, 2014 and will be incorporated unto the umbrella permit for the Clarkstown Solid Waste Facilities discussed above.

The Town of Clarkstown owns a second yard waste composting facility, for leaves only; at another location know as the French Farms site. The Authority is licensed as the facilities operator but does not own the facility. In 2010, approximately 38,848 tons of leaves were received. The permitted capacity allows for 38,000 cubic yards per year of leaves.

The Authority has contracted with Organic Recycling, Inc. to operate and maintain the both facilities. In addition they are responsible for marketing the material. The material at French Farms is not weighed.

1.5.2 Ramapo Landfill Yard Waste Compost Facility

The Ramapo Landfill Yard Waste Compost Facility is located on the closed Town of Ramapo Landfill in Hillburn, NY. It was designed by the Authority and constructed in 2007. This facility serves the northern portion of the County and receives yard waste mainly from municipal crews and private landscapers. The municipalities include 6 villages (Airmont, Hillburn, Montebello, Piermont, Sloatsburg, and Wesley Hills) and the Town of Ramapo.

The facility accepts only leaves for composting and since operations occur outdoors, deliveries are seasonal (fall & spring). In 2010 the facility accepted approximately 1,078 tons of leaves (per Authority). The facility operates under a NYSDEC registration is capable of handling 1,300 tons per year of leaves.

The Authority has contracted with Organic Recycling, Inc. to operate and maintain the facility. In addition they are responsible for marketing the material. The material received at this facility is weighed.

1.6 Concrete and Asphalt Crushing Facility

The Clarkstown Concrete and Asphalt Crushing facility is located adjacent to Clarkstown transfer station and operations began in 1997. The Town of Clarkstown and the Authority executed an agreement for the acquisition of the Clarkstown TS and adjacent solid waste facilities on November 13, 2008. This facility serves the entire County.

The facility accepts and stockpiles incoming loads of uncontaminated broken concrete and asphalt. The recycled concrete aggregate produced is generally used as a substitute for gravel in road sub-base, structural fill and walkways and the recycled asphalt produced is generally used for patching roads. Currently this is a registered facility (NYSDEC issued on June 9, 2009) with a limit of acceptance set at 17,000 tons per year. The Authority has requested an increase in the capacity up to 100,000 tons per year under the umbrella permit application tied to the transfer station and yard waste facility. The Clarkstown TS is operating under a NYSDEC Part 360 Permit that expired October 2010. A permit renewal which was submitted in June 3, 2009 is still pending.

The Authority has contracted with Regional Recycling, LLC to operate and maintain the facility. In addition they are responsible for marketing the material. Weigh scale operations are conducted by Authority staff.

APPENDIX E

**ROCKLAND COUNTY SOLID WASTE HISTORICAL TONNAGE /
PROJECTION BACKUP**

Rockland County Solid Waste Authority - Historical In-County Solid Waste Tonnages

Year	Tonnage					
	2010	2009	2008	2007	2006	2005
MSW landfilled	224,991	244,823	187,797	211,190	286,805	285,845
C&D landfilled	34,203	42,605	62,848	73,257	110,681	57,460
HHW disposed	348	336	395	358	364	397
Total landfilled	259,194	287,428	250,645	284,446	397,486	343,304
Mixed paper	16,440	15,583	14,960	13,722	14,209	6,405
Cardboard	4,631	2,667	25	464	997	369
Mixed containers	14,221	15,940	16,088	11,806	9,722	3,918
Biosolids	19,491	20,281	16,996	16,408	14,082	no data
Yard waste	46,120	47,865	18,422	55,110	64,045	18,850
HHW	385	358	268	228	201	156
Metals	1,319	2,151	925	1,626	3,728	2,788
Tires	264	0	0	0	48	19
Asphalt	12,008	10,392	0	0	14,223	8,029
Concrete	20,704	53,883	177	2,994	43,032	39,091
Total recycled	135,582	169,121	67,860	102,358	164,286	79,626
MSW recycling rate	27%	26%	21%	28%	24%	10%
Solid waste recycling rate	34%	37%	21%	26%	29%	19%

Source: Historical Waste Tonnages, ALL SW FACILITIES, Generated In-County spreadsheet received from Cornerstone on July 15, 2011

Notes:

MSW landfilled = Subtotal MSW Generated in Rockland from ALL SW FACILITIES spreadsheet - 10% of MSW subtotal to account for estimated C&D tonnage

C&D landfilled = Subtotal C&D Generated in Rockland from ALL SW FACILITIES spreadsheet + 10% of annual MSW tonnage

Total landfilled = MSW landfilled + C&D landfilled

Mixed paper = % of mixed paper by weight from annual MRF tonnage spreadsheet received from county 6/23/2011 multiplied by total tonnage of in-County MRF recyclables from Historical Solid Waste Tonnages, ALL SW FACILITIES, Generated In-County spreadsheet received from Cornerstone 7/15/2011

Cardboard = % of cardboard by weight from annual MRF tonnage spreadsheet received from county 6/23/2011 multiplied by total tonnage of in-County MRF recyclables from Historical Solid Waste Tonnages, ALL SW FACILITIES, Generated In-County spreadsheet received from Cornerstone 7/15/2011

Mixed containers = % of plastic, glass, and metal containers by weight from annual MRF tonnage spreadsheet received from county 6/23/2011 multiplied by total tonnage of in-County MRF recyclables from Historical Solid Waste Tonnages, ALL SW FACILITIES, Generated In-County spreadsheet received from Cornerstone 7/15/2011

Metals = Metal recyclables Recovered + scrap metal from Historical Solid Waste Tonnages, ALL SW FACILITIES, Generated In-County spreadsheet received from Cornerstone 7/15/2011

Tires = Tires Recovered from Historical Solid Waste Tonnages, ALL SW FACILITIES, Generated In-County spreadsheet received from Cornerstone 7/15/2011

Rockland County Estimated MSW Detailed Composition Analysis Year 2010
 Rockland County Solid Waste Management Plan

Material	MSW GENERATED									Planning Unit/ Municipality Percentages
	Rural			Suburban			Urban			
	0.00%			80.20%			19.80%			
	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%
Newspaper	5.20%	1.90%	3.81%	4.70%	1.70%	3.35%	6.50%	1.90%	4.29%	3.54%
Corrugated Cardboard	6.60%	13.90%	9.67%	5.70%	12.60%	8.81%	6.20%	12.70%	9.32%	8.91%
Other Recyclable Paper										
Paperboard	3.20%	1.10%	2.32%	3.60%	1.10%	2.48%	3.90%	1.00%	2.51%	2.48%
Office Paper	0.80%	3.80%	2.06%	1.00%	4.30%	2.49%	3.70%	5.90%	4.76%	2.93%
Junk Mail	3.00%	0.70%	2.03%	3.50%	1.10%	2.42%	3.70%	0.90%	2.36%	2.41%
Other Commercial Printing	1.70%	2.30%	1.95%	1.30%	3.30%	2.20%	2.50%	3.20%	2.84%	2.33%
Magazines	1.10%	0.90%	1.02%	1.60%	0.80%	1.24%	0.80%	0.70%	0.75%	1.14%
Books	0.50%	0.30%	0.42%	0.60%	0.40%	0.51%	0.70%	0.50%	0.60%	0.53%
Bags	0.50%	0.20%	0.37%	0.50%	0.20%	0.37%	0.60%	0.20%	0.41%	0.37%
Phone Books	0.30%	0.30%	0.30%	0.40%	0.30%	0.36%	0.30%	0.20%	0.25%	0.33%
Poly-Coated	0.20%	0.30%	0.24%	0.30%	0.20%	0.26%	0.30%	0.20%	0.25%	0.25%
Other Recyclable Paper (Total)	11.30%	9.90%	10.71%	12.80%	11.70%	12.31%	16.50%	12.80%	14.72%	12.78%
Other Compostable Paper	6.80%	6.80%	6.80%	6.40%	6.40%	6.40%	6.80%	6.80%	6.80%	6.48%
Total Paper	29.90%	32.50%	30.99%	29.60%	32.40%	30.86%	36.00%	34.20%	35.14%	31.71%
Ferrous/Aluminum Containers										
Ferrous Containers	1.90%	1.00%	1.52%	1.20%	0.70%	0.98%	1.40%	0.70%	1.06%	0.99%
Aluminum Containers	0.70%	0.40%	0.57%	0.60%	0.30%	0.47%	0.50%	0.40%	0.45%	0.46%
Ferrous/Aluminum Containers (Total)	2.60%	1.40%	2.10%	1.80%	1.00%	1.44%	1.90%	1.10%	1.52%	1.46%
Other Ferrous Metals	5.20%	5.40%	5.28%	5.00%	5.80%	5.36%	3.30%	3.70%	3.49%	4.99%
Other Non-Ferrous Metals										
Other aluminum	0.20%	0.30%	0.24%	0.20%	0.30%	0.25%	0.20%	0.30%	0.25%	0.25%
Automotive batteries	0.80%	0.50%	0.67%	0.70%	0.40%	0.57%	0.20%	0.20%	0.20%	0.49%
Other non-aluminum	0.50%	0.30%	0.42%	0.30%	0.40%	0.35%	0.40%	0.20%	0.30%	0.34%
Other Non-Ferrous Metals (Total)	1.50%	1.10%	1.33%	1.20%	1.10%	1.16%	0.80%	0.70%	0.75%	1.08%
Total Metals	9.30%	7.90%	8.71%	8.00%	7.90%	7.96%	6.00%	5.50%	5.76%	7.52%
PET Containers	1.10%	0.80%	0.97%	1.20%	0.90%	1.07%	1.30%	1.10%	1.20%	1.09%
HDPE Containers	1.10%	0.60%	0.89%	0.90%	0.70%	0.81%	1.00%	0.70%	0.86%	0.82%
Other Plastic (3-7) Containers	0.20%	0.10%	0.16%	0.20%						
Film Plastic	5.70%	5.90%	5.78%	5.50%	5.80%	5.64%	5.80%	5.80%	5.80%	5.67%
Other Plastic										
Durables	3.10%	3.20%	3.14%	3.00%	3.00%	3.00%	3.20%	3.30%	3.25%	3.05%
Non-Durables	1.60%	1.80%	1.68%	1.60%	1.80%	1.69%	1.80%	1.90%	1.85%	1.72%
Packaging	1.40%	1.10%	1.27%	1.40%	1.10%	1.27%	1.50%	1.10%	1.31%	1.27%
Other Plastic (Total)	6.10%	6.10%	6.10%	6.00%	5.90%	5.96%	6.50%	6.30%	6.40%	6.04%
Total Plastics	14.20%	13.50%	13.91%	13.80%	13.50%	13.67%	14.80%	14.10%	14.46%	13.82%
Glass Containers	4.10%	3.80%	3.97%	3.90%	3.80%	3.86%	4.30%	3.80%	4.06%	3.90%
Other Glass	0.50%	0.40%	0.46%	0.29%	0.39%	0.34%	0.40%	0.40%	0.40%	0.35%
Total Glass	4.60%	4.20%	4.43%	4.19%	4.19%	4.19%	4.70%	4.20%	4.46%	4.24%
Food Scraps	12.70%	13.30%	12.95%	12.90%	15.50%	14.07%	17.20%	25.20%	21.04%	15.45%
Yard Trimmings	3.10%	1.10%	2.26%	14.50%	12.40%	13.56%	5.20%	2.50%	3.90%	11.64%
Total Organics	15.80%	14.40%	15.21%	27.40%	27.90%	27.63%	22.40%	27.70%	24.94%	27.09%
Clothing Footwear, Towels, Sheets	4.60%	3.00%	3.93%	4.40%	3.20%	3.86%	4.80%	2.50%	3.70%	3.83%
Carpet	1.40%	1.30%	1.36%	1.70%	1.40%	1.57%	1.70%	0.90%	1.32%	1.52%
Total Textiles	6.00%	4.30%	5.29%	6.10%	4.60%	5.43%	6.50%	3.40%	5.01%	5.34%
Total Wood	4.10%	9.00%	6.16%	1.90%	2.91%	2.35%	2.00%	3.50%	2.72%	2.43%
DIY Construction & Renovation Materials	8.00%	7.60%	7.83%	2.00%	1.50%	1.78%	2.10%	3.30%	2.68%	1.95%
Other Durables	1.90%	1.70%	1.82%	1.11%	1.10%	1.11%	1.30%	1.30%	1.30%	1.14%
Diapers	1.90%	1.10%	1.56%	2.00%	1.00%	1.55%	1.90%	1.00%	1.47%	1.53%
Electronics	1.30%	1.40%	1.34%	1.50%	1.50%	1.50%	1.30%	1.30%	1.30%	1.46%
Tires	1.80%	1.80%	1.80%	1.70%	1.40%	1.57%	0.40%	0.40%	0.40%	1.33%
HHW	0.60%	0.00%	0.35%	0.60%	0.00%	0.33%	0.50%	0.00%	0.26%	0.32%
Fines	0.60%	0.60%	0.60%	0.10%						
Total Miscellaneous	16.10%	14.20%	15.30%	9.01%	6.60%	7.93%	7.60%	7.40%	7.50%	7.84%
Total	100.00%									

Estimated MSW Generation Composition - Comparison

Rockland County Solid Waste Management Plan

Material	Waste Generation Composition (%)			
	EPA Percentages	NYS Percentages	Rockland Percentages (NYS Waste Composition Calculator)	Rockland Adjusted Percentages
Newspaper	4.30%	4.06%	3.89%	3.54%
Corrugated Cardboard	12.30%	10.00%	9.98%	8.91%
~ Other Recyclable Paper ~				
Paperboard	2.30%	2.29%	2.28%	2.48%
Office Paper	2.40%	2.86%	2.73%	2.93%
Junk Mail	2.30%	2.11%	2.10%	2.41%
Other Commercial Printing	2.50%	2.24%	2.17%	2.33%
Magazines	1.00%	1.00%	0.96%	1.14%
Books	0.50%	0.46%	0.44%	0.53%
Bags	0.40%	0.39%	0.38%	0.37%
Phone Books	0.30%	0.27%	0.28%	0.33%
Poly-Coated	0.20%	0.23%	0.22%	0.25%
Other Recyclable Paper (Total)	11.90%	11.86%	11.57%	12.77%
Other Compostable Paper	4.20%	6.68%	6.55%	6.48%
Total Paper	32.70%	32.61%	31.99%	31.70%
~ Ferrous/Aluminum Containers ~				
Ferrous Containers	1.10%	1.11%	1.01%	0.99%
Aluminum Containers	0.70%	0.48%	0.46%	0.46%
Ferrous/Aluminum Containers (Total)	1.80%	1.59%	1.48%	1.45%
Other Ferrous Metals	5.10%	4.34%	4.69%	4.99%
~ Other Non-Ferrous Metals ~				
Other aluminum	0.20%	0.25%	0.25%	0.25%
Automotive batteries	0.50%	0.39%	0.43%	0.49%
Other non-aluminum	0.60%	0.33%	0.33%	0.34%
Other Non-Ferrous Metals Total	1.30%	0.97%	1.01%	1.08%
Total Metals	8.20%	6.89%	7.17%	7.52%
~ Other Plastic ~				
PET Containers	1.10%	1.01%	0.95%	1.09%
HDPE Containers	0.90%	0.85%	0.83%	0.82%
Other Plastic (3-7) Containers	0.20%	0.19%	0.20%	0.20%
Film Plastic	2.20%	5.75%	5.70%	5.67%
~ Other Plastic ~				
Durables	4.10%	3.18%	3.15%	3.05%
Non-Durables	2.20%	1.77%	1.75%	1.72%
Packaging	1.40%	1.29%	1.28%	1.27%

Diversion Percentage Comparison with NY Statewide Averages Rockland County Solid Waste Management Plan

	Est. Average Waste Comp. % breakdown (1)		In-County Tons Diverted Through Authority Facilities in 2010 (2)	Calculated Diversion %	NY Average Statewide Diversion %	Total Tons Diverted	Add'l Tons Diverted
newspaper	29.8 %		4,899	44.87%	66%	7,206	2,307
paperboard	13.9 %		2,285	29.83%	similar		
office paper	15.1 %		2,482	27.40%	51%	4,621	2,139
junk mail	13.9 %		2,285	30.75%	similar		
commercial printing	15.7 %		2,581	35.94%	similar		
magazines	6.1 %		1,003	28.42%	similar		
books	2.4 %		395	24.20%	similar		
paper bags	1.2 %		197	17.08%	similar		
telephone books	1.9 %		312	30.20%	similar		
Poly -Coated			-				
			16,439			20,884	
Corrugated Cardboard		w/o	4,631	16.84%	53%	14,574	9,943
ferrous containers	0.12		1,707	55.70%	similar		
aluminum containers	0.015		213	14.92%	impacted by RCA (4)		
other ferrous	0.049		697	4.52%	31%	4534	3,837
other aluminum	0.005		71	9.36%			
auto batteries			26	1.71%	100%	1521	1,495
other non-aluminum			-	0.00%			
PET (#1) plastic containers	0.145		2,062	61.14%	impacted by RCA		
HDPE (#2) plastic containers	0.14		1,991	78.74%			
#3-#7 plastic containers	0.026		370	59.93%			
Film Plastic			-	0.00%			
glass containers	0.5		7,111	59.13%	impacted by RCA		
			14,222	36.29%		18,059	
Electronics (3)			359	8.12%	jumps to 50% in 2012	2,211	1,852

Projections Backup



Estimated Waste Composition Information for LSWMPs

Estimated average waste compositions percentage breakdowns for various mixed streams.

Adjust as appropriate if one or more of those materials are not included in the specific program:

Single Stream

- newspaper 23.5%
- corrugated cardboard 26.0%
- paperboard 7.6%
- office paper 7.3%
- junk mail 5.7%
- commercial printing 5.3%
- magazines 3.5%
- books 0.1%
- paper bags 0.1%
- telephone books 0.5%
- poly-coated paper/aeseptic containers 0.4%
- ferrous containers 2.4%
- aluminum containers 0.3%
- other ferrous 1.0%
- other aluminum 0.1%
- PET (#1) plastic containers 2.9%
- HDPE (#2) plastic containers 2.8%
- #3 - #7 plastic containers 0.5%
- glass containers 10%

16440

35292

Mixed Paper collected with Corrugated Cardboard

- newspaper 22.5% - 3699
- corrugated cardboard 24.6% - 1045 plus 4631 = 8676
- paperboard 10.5% - 1726
- office paper 11.4% - 1874
- junk mail 10.5% - 1726
- commercial printing 11.8% - 1940
- magazines 4.6% - 756
- books 1.8% - 296
- paper bags 0.9% - 148
- telephone books 1.4% - 230

Mixed Paper w/o Corrugated Cardboard

- newspaper 29.8%
- paperboard 13.9%
- office paper 15.1%
- junk mail 13.9%
- commercial printing 15.7%
- magazines 6.1%
- books 2.4%
- paper bags 1.2%
- telephone books 1.9%

14221

Mixed Containers

- ferrous containers 11.8%
- aluminum containers 1.5%
- other ferrous 4.8%
- other aluminum 0.5%
- PET (#1) plastic containers 14.2%
- HDPE (#2) plastic containers 13.7%
- #3 - #7 plastic containers 2.5%
- glass containers 49%
- poly-coated paper/aeseptic containers 2.0%

Mixed Containers w/o poly-coated/aeseptic containers

- ferrous containers 12.0% - 1707
- aluminum containers 1.5% - 213
- other ferrous 4.9% - 697
- other aluminum 0.5% - 71
- PET (#1) plastic containers 14.5% - 2062
- HDPE (#2) plastic containers 14.0% - 1991
- #3 - #7 plastic containers 2.6% - 370
- glass containers 50% - 7110

Estimated statewide average recovery rate in 2010 of certain materials routinely managed outside normal MSW collection and reporting mechanisms:

automotive batteries – 100% – 1492
tires – 39% – 1588

These recovery rates can be used instead of the numbers normally available to municipalities for municipally collected materials.

Estimated Returnable Container Act (RCA) container waste composition

80% of the aluminum containers are deposit $\times .59 \times 1400 = 661$

50% of glass containers are deposit $\times .59 \times 11797 = 3480$

45% of PET containers are deposit. $\times .59 \times 3304 = 878$

The 2010 RCA data indicates that the statewide redemption rate for all containers was 59%.
Apply the 59% redemption rate to the percentages of the containers above for RCA recovery rate.

The 2011 and 2012 RCA data indicates a statewide redemption rate of 61%.

The 2013 RCA data indicates a statewide redemption rate of 62%.

Adjust accordingly based on base year.

APPENDIX F

ROCKLAND COUNTY LAWS AND REGULATIONS

ROCKLAND COUNTY SOLID WASTE MANAGEMENT AUTHORITY ACT
TITLE 13-M OF ARTICLE 8 OF PUBLIC AUTHORITIES LAW
CHAPTER 43-A OF THE CONSOLIDATED LAW OF THE STATE OF NEW YORK

TITLE 13 - M

ROCKLAND COUNTY SOLID WASTE MANAGEMENT AUTHORITY

- Section 2053-a. Short title.
- 2053-b. Definitions.
- 2053-c. Rockland county solid waste management authority.
- 2053-d. Transfer of property to authority; acquisition of property by county for authority.
- 2053-e. Powers of the authority.
- 2053-f. Certain county rights.
- 2053-g. Charges by the authority; method of collection.
- 2053-h. Governmental capacity of the authority and municipalities.
- 2053-i. Transfer of officers and employees.
- 2053-j. Bonds of the authority.
- 2053-k. Remedies of bondholders.
- 2053-l. State, county and municipalities not liable on bonds.
- 2053-m. Moneys of the authority.
- 2053-n. Bonds and notes as legal investment.
- 2053-o. Agreement with the state.
- 2053-p. Exemption from taxes, assessments and certain fees.
- 2053-q. Actions against the authority.
- 2053-r. Contracts.
- 2053-s. Interest in contracts prohibited.
- 2053-t. Audit and annual report.
- 2053-u. Limited liability.
- 2053-v. Contracts with municipalities; powers of municipalities.
- 2053-w. Solid waste reserve fund.
- 2053-x. Environmental applications, proceedings, approvals and permits.
- 2053-y. Separability.

S 2053-a. Short title. This title shall be known and may be cited as the "Rockland County Solid Waste Management Authority Act."

§ 2053-b. Definitions. As used or referred to in this title, unless a different meaning clearly appears from the context:

1. "Authority" shall mean the public benefit corporation created by section two thousand fifty-three-c of this title, known as the Rockland county solid waste management authority.

2. "Bonds" shall mean the bonds, notes or other evidences of indebtedness issued by the authority pursuant to this title and the provisions of this title relating to bonds and bondholders and shall apply with equal force and effect to notes and obligations and noteholders and obligation holders, respectively, unless the context otherwise clearly requires.

3. "Construction" shall mean the acquisition, erection, building, alteration, improvement, increase, enlargement, extension, reconstruction, renovation or rehabilitation of a solid waste management facility; the inspection and supervision thereof; and the engineering, architectural, legal, fiscal and economic investigations and studies, surveys, designs, plans, working drawings, specifications, procedures and other actions incidental thereto subject to the provisions of section two thousand fifty-three-f of this title.

4. "Cost," as applied to any project, shall mean and include the cost of construction, the cost of the acquisition of all property, including real property and other property, both real and personal and improved and unimproved, subject to the provisions of section two thousand fifty-three-f of this title, the cost of demolishing, removing or relocating any buildings or structures on lands so acquired, including the cost of relocating tenants or other occupants of the buildings or structures on such land, including the cost of acquiring any lands to which such buildings or structures may be moved or relocated, the cost of all systems, facilities, machinery, apparatus and equipment, financing charges, interest prior to, during and after construction to the extent not paid or provided for from revenues or other sources, the cost of engineering and architectural surveys, plans and specifications, the cost of consultant, legal and other professional services, the cost of lease guarantee or bond insurance and the cost of other expenses necessary or incidental to the construction thereof, including the amount authorized in the resolution of the authority providing for the issuance of bonds to be paid into any reserve or other special fund from the proceeds of such bonds, the financing of the placing of any project in operation and reimbursement to the county, any municipality, any state agency, the state, the United States government or any other person for expenditures that would be costs of the project hereunder had they been made directly by the authority.

5. "County" shall mean the county of Rockland.

6. "Governing body" shall mean the members of the authority constituting and acting as the governing body of the authority.

7. "Municipality" shall mean any county, city, town, village, district or any combination thereof.

8. "Person" shall mean any natural person, partnership, association,

joint venture or corporation, exclusive of a public corporation.

9. "Project" shall mean any solid waste management facility, the planning, development, financing, construction, operation or maintenance of which is authorized to be undertaken in whole or in part by the authority pursuant to this title.

10. "Real property" shall mean lands, structures, franchises and interests in land, waters, lands underwater, riparian rights and air rights and any and all things and rights included within said term and includes not only fees simple absolute, but also any and all lesser interests including, but not limited to, easements, rights-of-way, uses, leases, licenses and all other incorporeal hereditaments and every estate, interest or right, legal or equitable, including terms for years and liens thereon by way of judgments, mortgages or otherwise.

11. "Resource recovery" shall mean the separation, extraction and recovery of usable materials, energy or heat from solid waste through source separation, recycling centers, composting, combustion or other programs, projects or facilities.

12. "Revenues" shall mean all rates, fees, rents, charges, receipts and other income derived by the authority from its operations.

13. "Solid waste" shall mean all putrescible and nonputrescible solid wastes, including, but not limited to, materials or substances which are discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, or which are being accumulated, stored, or physically, chemically or biologically treated prior to being discarded or rejected, having served their intended use, or which are manufacturing by-products, including, but not limited to, garbage, refuse, industrial, commercial and agricultural waste sludges from air or water pollution control facilities or water supply treatment facilities, rubbish, ashes, contained gaseous material, incinerator residue, demolition and construction debris and offal, but not including sewage and other highly diluted water carried materials or substances and those in gaseous form, special nuclear or by-product material within the meaning of the Atomic Energy Act of 1954, as amended, or waste which appears on the list or satisfies the characteristics of hazardous waste promulgated by the commissioner of environmental conservation pursuant to section 27-0903 of the environmental conservation law or any scrap or other material of value held for purposes of materials recycling other than materials designated as recyclables, pursuant to section one hundred twenty-aa of the general municipal law.

14. "Solid waste management facility" or "facility" shall mean any facility, plant, works, system, building, structure, improvement, machinery, equipment, fixture or other real or personal property which is to be used, occupied or employed beyond the initial solid waste collection process for the receiving, transporting, storage, processing, treatment, or disposal of solid waste or the recovery by any means of any material or energy product or resource therefrom including but not limited to recycling centers, material recovery facilities, mixed waste processing facilities, household hazardous

waste facilities, transfer stations, shredding facilities, baling facilities, rail haul or maritime facilities, processing systems, resource recovery facilities, steam and electric generating and transmission facilities, including auxiliary facilities to supplement or temporarily replace such generating facilities, steam distribution facilities, sanitary landfills, plants and facilities for compacting, composting or pyrolyzation of solid wastes or manufacturing or enhancing the value of materials or commodities recovered from solid waste, incinerators and other solid waste disposal, reduction or conversion facilities and resource recovery equipment, source separation equipment and disposal equipment as defined in subdivisions four and five of section 51-0903 of the environmental conservation law.

15. "Solid waste management plan" shall mean the Rockland county integrated solid waste management plan as it may be adopted, amended and supplemented from time to time in accordance with section 27-0107 of the environmental conservation law.

16. "Source separation" shall mean the segregation of recyclable materials from the solid waste stream at the point of generation for separate collection, sale or other disposition.

17. "State" shall mean the state of New York.

S 2053-c. Rockland county solid waste management authority. 1. Upon compliance with the requirements of subdivision seven of this section, a corporation known as the Rockland county solid waste management authority shall be deemed to have been created hereby for the public purposes and charged with the duties and having the powers provided in this title. The authority shall be a body corporate and politic constituting a public benefit corporation.

2. The authority shall consist of seventeen members. Eight members shall be members of the county legislature. Five of the eight legislative members shall be appointed by the chairman of the county legislature and three shall be appointed by the minority leader of the county legislature, subject in each case to confirmation by a majority of the county legislature. No such appointment shall be effective unless there shall be, among the legislative members of the authority, a resident of each of the five towns in the county. Residency shall be determined as of the effective date of appointment, and subsequent changes in residency shall not effect the validity of the appointment or the authority of the legislative member to serve in the authority. Each of the legislative members of the authority initially appointed and certified to the secretary of state shall serve for a term ending on January fifteen, nineteen hundred ninety-four. Subsequent appointments of legislative members of the authority shall be made in the same manner and for terms of two years. All legislative members shall continue to hold office until their successors are appointed and qualify. Vacancies occurring otherwise than by expiration of term shall be filled in the same manner, respectively, for the unexpired term. Members may be removed from office for the same reasons and in the same manner as provided by law for the removal of officers of the county. Appointments to fill expired

and unexpired terms shall be made within sixty days upon receipt of notification by the chairman of the board of supervisors that a vacancy exists.

3. Five members of the authority shall consist, ex officio, of the supervisors of the five towns in the county. The term of each town supervisor serving ex officio as a member of the authority shall coincide with such member's term of elective office. No person shall be both an appointed member from the county legislature and a town supervisor serving ex officio as a member of the authority. Two members of the authority shall be appointed by and shall serve at the pleasure of the county executive of the county. Two members shall be mayors of villages contained within the county of Rockland and shall be appointed by the county legislature upon the recommendation of the Rockland county conference of mayors. The term of each mayor serving as a member of the authority shall coincide with such member's term of elective office, not to exceed two years. No such mayor shall be selected from a village that has failed to sign the intermunicipal recyclables management agreement. Such mayors are to be selected from different towns within Rockland county, and for the purposes of determining which town a mayor is determined to be from, if the jurisdiction of the municipality in which a mayor presides spans more than one town, that mayor shall not be restricted from appointment because one portion of his jurisdiction is coterminous with that of another mayor chosen as a member of the authority. Any member of the authority, whether appointed or serving ex officio, may be removed from office by a vote of ten members of the authority for gross neglect of duty, misconduct, maladministration or malfeasance in office, including the unexcused failure to attend three consecutive regular meetings of the authority.

4. The members of the authority shall receive no compensation for their services but shall be reimbursed for all of their actual and necessary expenses incurred in connection with the carrying out of the purposes of this title. The powers of the authority shall be vested in and be exercised by the governing body at a meeting duly called and held where a quorum of eight members is present. No action shall be taken except by the favorable vote of at least eight members. The officers of the authority shall consist of a chairman, a vice-chairman and a treasurer who shall be members of the authority, and a secretary who need not be a member of the authority. The officers of the authority shall be selected by the authority and shall serve in such capacities at the pleasure of the authority. In addition to such officers, the authority may appoint and at its pleasure remove an executive director, attorney and engineer, which positions shall be in the exempt class of the civil service, and such additional officers and employees as it may deem necessary, and may determine and fix their qualifications, duties and compensation, subject to the provisions of the civil service law. The authority may delegate to one or more of its members, officers, agents or employees any such powers as it may deem proper. The authority may also contract for expert professional services. The treasurer shall execute a bond conditioned on the faithful performance of the duties of his or her office, the amount and sufficiency of which shall be approved

by the governing body and the premium for which shall be paid by the authority.

5. Notwithstanding any inconsistent provision of any general, special or local law, ordinance, resolution or charter, no officer, member or employee of the state, any municipality or any public benefit corporation shall forfeit his or her office or employment by reason of his or her acceptance of appointment as a member, officer, agent or employee of the authority, nor shall service as a member, officer, agent or employee of the authority be deemed incompatible or in conflict with such office, membership or employment. The members and employees of the authority shall be subject to all requirements of state and county law pertaining to ethics and financial disclosure to which members of the county legislature and employees of the county, respectively, are subject.

6. In addition to any powers granted to it by law, the county legislature may appropriate by resolution with the concurrence of the county executive sums of money to defray project costs or any other costs and expenses of the authority to be incurred prior to the first issuance of bonds. Subject to rights of bondholders, the county legislature with the concurrence of the county executive may determine if the moneys so appropriated shall be subject to repayment by the authority to the county and, in such eventuality, the manner and schedule for such repayment.

7. (a) The county shall file on or before the twelve month anniversary of the date on which this title shall have become a law, in the office of the secretary of state, a resolution of the county legislature adopted following a public hearing approving the creation of the authority, together with a certificate approved by the county legislature and signed by the county executive setting forth: (1) the name of the authority; (2) the names of the initial members; and (3) the effective date of this title. The authority shall be perpetual in duration, except that if such resolution and certificate are not filed with the secretary of state on or before such date, then the power of the legislature of the county to approve the creation of the authority shall thereupon lapse, the authority shall not be deemed to have been created hereby and shall not exist or be deemed to have existed, and the provisions of this title shall no longer have any force or effect.

(b) Except as provided in paragraph (a) of this subdivision, the authority and its corporate existence shall continue until terminated by law; provided, however, that no such law shall take effect so long as the authority shall have bonds or other obligations outstanding unless adequate provision has been made for the payment or satisfaction thereof. Upon termination of the existence of the authority, all of the rights and properties of the authority then remaining shall pass to and vest in the county.

8. It is hereby determined that the authority and the carrying out of its powers and duties are in all respects for the benefit of the people of the county and the state for the improvement of their health, welfare and prosperity and that such purposes are public purposes and that the authority is and will be performing an essential governmental function in the exercise of the powers conferred upon it by this title.

9. In exercising the powers conferred upon it by this title, the

authority shall at all times act in accordance with, and be in compliance with, the provisions of the solid waste management plan.

§ 2053-d. Transfer of property to authority; acquisition of property by county for authority. 1. The county or any other municipality may give, grant, sell, convey, loan, license the use of or lease to the authority any property or facility which is useful to the authority in order to carry out its powers and duties under this title. Any such transfer of property shall be upon such terms and conditions, subject to the rights of the holders of any bonds, subject to the provisions of section two thousand fifty-three-f of this title, as the authority and the county or other municipality may agree.

2. Notwithstanding the provisions of any other law, general, special or local, real property acquired by the authority, subject to the provisions of section two thousand fifty-three-f of this title, or the county from the state may be used for any corporate purpose of the authority.

§ 2053-e. Powers of the authority. The authority shall have the power:

1. To sue and be sued.

2. To have a seal and alter the same.

3. To acquire in the name of the authority, hold, sell, lease, mortgage or otherwise dispose of property, real, personal or mixed, or any interest therein, without limitation, for its corporate purposes. In selecting the location for any real property to be acquired or leased, the authority shall give consideration to the present and any proposed land use character of the area in which such site is to be located and shall be subject to and exempt from the zoning laws or regulations, if any, otherwise generally applicable to such area to the same extent that the county is subject to and exempt from the zoning laws or regulations otherwise generally applicable to such area. The authority shall not acquire or lease any interest in real property except upon compliance with the procedure set forth in section two thousand fifty-three-f of this title.

4. To condemn in the name of the authority pursuant to the eminent domain procedure law, any real property within the county and required by the authority to carry out the powers granted by this title, subject to the provisions of section two thousand fifty-three-f of this title.

5. To collect, receive, transfer, transport, process, dispose of, sell, store, convey, recycle, compost, combust and deal with, in any lawful manner and way, solid waste and any products or by-products thereof now or hereafter developed or discovered, including any recovered materials, compost or energy produced or generated by the operation of any solid waste management facility. Any such disposal or sale may be effected on such terms and in such manner as the authority may deem proper.

6. To plan, develop and construct projects and to pay the cost thereof and to contract in relation thereto with municipalities or

persons within or without the county and to own and operate, maintain, repair, improve, reconstruct, enlarge and extend, subject to the provisions of this title, any of its projects acquired or constructed under this title, and to sell, lease, mortgage, grant a security interest in, pledge, encumber, or otherwise dispose of any project or part thereof to any person, municipality or public corporation, subject to such conditions and limitations as the authority may determine to be in the public interest, and to apply for, hold and perform its obligations under any permit, license, approval, or other legal entitlement which may be required for its projects, services or exercise of powers.

7. To assist in the planning, development, construction and operation of and the financing of the cost of any solid waste management facility to be located in the county whether or not such solid waste management facility is to be owned by the authority, which assistance may include loans to any person or public corporation.

8. To collect or receive from the United States, the state, the county, any other municipality or public corporation or person, subject to the limitations of section two thousand fifty-three-f of this title, solid waste for the purpose of treatment or disposal thereof, with the right of the authority to sell and dispose of any products or by-products (including recovered materials, compost or energy) of such process of treatment or disposal, as the authority may deem proper.

9. To contract with the county, other municipalities, state agencies, public corporations or persons within or without the county, for the purpose of receiving, treating and disposing of solid waste or for any other purpose authorized hereunder, including, without limitation, the power to contract with municipalities, state agencies, public corporations or persons for the delivery of all solid waste generated within a stated area to a specific solid waste management facility.

10. To make rules, regulations and by-laws pertaining to and governing the management and regulation of its affairs and, subject to agreements with bondholders, the use of any project or other property of the authority and the provision of any service by the authority, which rules, regulations and by-laws and all amendments thereto, duly certified by the secretary of the authority, shall be filed in the office of the authority and in the office of the clerk of the county, and to provide for the enforcement of such rules, regulations and by-laws by legal or equitable proceedings which are or may be provided or authorized by law. In addition, the county legislature shall have power to prescribe that violations of specific rules, regulations and by-laws of the authority shall constitute violations and provide for the enforcement of violations thereof by civil penalties, including any such rules, regulations and by-laws requiring the payment of generator, user or hauler fees by any person in connection with the service or availability or service by any facility owned or under contract to the authority.

11. With the consent of the county executive, to use officers or

employees of the county and to pay a property portion of the compensation or costs for the services for such officers or employees.

12. To make contracts and to execute all necessary or convenient agreements, documents and instruments, including evidences of indebtedness, negotiable or non-negotiable.

13. To enter on any lands, waterways or premises for the purpose of making surveys, soundings and examinations, any liability for which shall not exceed actual damages.

14. To borrow money and to issue bonds and to fund or refund the same, and to provide for the right of the holders thereof.

15. To procure insurance, letters of credit, lines of credit, or other credit enhancement with respect to its bonds or notes issued pursuant to this title, or facilities for the payment of tenders of such bonds or notes or facilities for the payment upon maturity of short-term notes not renewed.

16. To enter into interest rate exchange or similar arrangements with any person under such terms and conditions as the authority may determine including, without limitation, provisions as to default or early termination and indemnification by the authority or any other party thereto for loss of benefits as a result thereof.

17. To fix and collect, as more fully set forth in section two thousand fifty-three-g of this title, rates, rentals, fees and other charges for the use of the facilities of, or services provided by, or any commodities furnished by, the authority, and to contract with any municipality in respect thereto, so as to provide revenues sufficient at all times to pay, as the same shall become due, the principal and interest on the bonds of the authority, together with the maintenance of proper reserves therefor, in addition to paying, as the same shall become due, the expenses of operating and maintaining the properties and business of the authority and meeting all of its contractual and other obligations, together with proper reserves for debt service, depreciation, maintenance and contingencies and all other obligations and indebtedness of the authority.

18. To enter into agreements, in its direction, to pay annual sums in lieu of taxes to any municipality in respect to any real property which is owned by the authority and located in such municipality, political subdivision or taxing district.

19. To accept gifts, grants, loans or contributions from the United States, the state or any agency or instrumentality of either of them, or any municipality or from any person or public corporation, by bequest or otherwise, and to expend the proceeds for any corporate purposes of the authority.

20. To covenant and consent that the interest on any of its bonds or notes issued pursuant to this title shall be includible, under the United States Internal Revenue Code of 1986, as amended, or any subsequent corresponding internal revenue law of the United States, in gross income of the holder of the bonds or notes to the same extent and in the same manner that the interest on bills, bonds, notes or other obligations of the United States is includible in the gross income of the holders thereof under said Internal Revenue Code or any

such subsequent law.

21. To act as an agency, as such term is used in section two hundred fifty-one of the county law.

22. To do all things necessary or convenient to carry out the powers expressly given in this title.

S 2053-f. Certain county rights. The authority shall not (1) acquire or lease any interest in real property, or (2) accept or permit the acceptance at facilities owned or under contract with the authority of solid waste originating outside the county, unless (i) at least forty-five days prior notice of the acquisition or lease of any interest in real property by the authority or any such acceptance of solid waste originating outside the county shall have been given to the county legislature, and (ii) no objection, by resolution of the county legislature, shall have been made and delivered to the agency within such forty-five days.

S 2053-g. Charges by the authority; method of collection. The authority may fix and collect, on any equitable basis, rates, rentals, fees and other charges for the use of facilities of or services or commodities provided by the authority, including the availability of any of the foregoing from the authority. Such rates, rentals, fees and other charges may be fixed and collected from any person to whom such facilities, services or commodities are provided by or made available from the authority, including generators of solid waste and owners of real property upon which solid waste is generated. Such rates, rentals, fees and other charges may be the same or different for each classification of user or service recipient and may, by way of example, reflect the source and composition of solid waste and may provide for fee reductions to the users or service recipients in proportion to waste generated or to reflect participation in source separation programs. In any instance where the county is or would be required by law, with respect to solid waste management, to conduct a public hearing in connection with a user or rate, rental, fee or other charge, the authority shall not establish, fix, or revise any classification of user or service recipient, rate, rental, fee or other charge unless and until the authority has held a public hearing at which interested persons have had an opportunity to be heard concerning the same; provided however, that if the county has conducted a public hearing in connection with such rate, rental, fee or other charge, the authority shall not be required to hold a public hearing. Notice of any such public hearing shall be published at least ten days before the date set therefor, in at least one newspaper of general circulation in the county. Such notice shall set forth the date, time and place of such hearing and shall include a brief description of the matters to be considered at such meeting. A copy of the notice shall be available for inspection by the public. At any such hearing, any interested persons shall have an opportunity to be heard concerning the matters under consideration. Any decision by the authority at such public hearing shall be in writing and be made

available in the office of the authority for public inspection during regular office hours.

All rates, rentals, fees and other charges for the use of the facilities of, or services provided or made available by, the authority and billed directly by the authority to the user or service recipient pursuant to a classification of users or service recipients adopted by the authority as herein provided shall be a lien upon the real property upon which, or in connection with which, services are provided or made available, as and from the first date fixed for payment of such rates, rentals, fees and other charges. Any such lien shall take precedence over all other liens or encumbrances, except taxes or assessments. The treasurer of the authority shall prepare and transmit to the respective legislative body of each municipality, on or before the first day of December in each year, a list of those properties within each respective municipality using such facilities or for which such services were provided or made available and from which the payment of rates, rentals, fees and other charges are in arrears for a period of thirty days or more after the last day fixed for payment of such rates, rentals, fees and other charges without penalty. The list shall contain a brief description of such properties, the names of the persons or corporations liable to pay for the same, and the amount chargeable to each, including penalties and interest computed to December thirty-first of that year. Each governing body shall levy such sums against the properties liable and shall state the amount thereof in a separate column in the annual tax rolls of the various municipalities under the heading "solid waste disposal charge". Such amounts, when collected by the several municipal collectors or receivers of taxes, shall be paid over to the treasurer of the authority. Alternatively, the legislative body of any municipality which provides solid waste collection service to all or a portion of the properties within its boundaries using municipally owned and operated collection vehicles may execute an agreement with the authority to collect and be responsible for the collection of, on behalf of the authority, any overdue or delinquent rates, rentals, fees or other charges and such municipality shall have the power to pay directly to the authority such overdue or delinquent rates, rentals, fees and other charges whether or not they are actually collected from the users or service recipients of such municipality. All of the provisions of the tax law of the state governing enforcement and collection of unpaid taxes or assessments for special improvements not inconsistent herewith shall apply to the collection of such unpaid rates, rentals, fees and other charges.

S 2053-h. Governmental capacity of the authority and municipalities. The county, other municipalities within the county and the authority in carrying out the respective powers and duties under this title shall be deemed to be acting in a governmental capacity. The construction, operation and maintenance of any project financed in whole or in part by the authority shall be deemed to be the performance of an essential governmental function by the authority

acting in its governmental capacity, whether such project shall be owned or operated by the authority or by any person or other public corporation.

S 2053-i. Transfer of officers and employees. Any officer or employee of the county under civil service or otherwise, selected by the authority, may, with the consent of the county executive, be transferred to the authority and shall be eligible for such transfer and appointment, without examination, to applicable offices, positions and employment under the authority. The salary or compensation of any such officer or employee, after such transfer, shall be paid by the authority. Any such officers or employees so transferred to the authority pursuant to this section, who are members of or benefit under any existing pension or retirement fund or system, shall continue to have all rights, privileges, obligations and status with respect to such fund or system as are now prescribed by law, but during the period of their employment by the authority, all contributions to such funds or system to be paid by the employer on account of such officers or employees shall be paid by the authority. All such officers or employees so transferred to the authority who have been appointed to positions under the rules and classifications of the personnel officer of the county shall have the same status with respect thereto after transfer to the authority as they had under their original appointment.

S 2053-j. Bonds of the authority. 1. The authority shall have the power and is hereby authorized from time to time to issue bonds or notes in such principal amounts as it may determine to be necessary to pay the cost of any project or for any other corporate purpose, including incidental expenses in connection therewith. The authority shall have power and is hereby authorized to enter into such agreements and perform such acts as may be required under any applicable federal legislation to secure a federal guarantee of any bonds. The authority shall have power from time to time to refund any bonds by the issuance of new bonds whether the bonds to be refunded have or have not matured, and may issue bonds partly to refund bonds then outstanding and partly for any other corporate purpose. Bonds issued by the authority may be general obligations secured by the faith and credit of the authority or may be special obligations payable solely out of particular revenues or other moneys as may be designated in the proceedings of the authority under which the bonds shall be authorized to be issued and subject to any agreements with the holders of outstanding bonds pledging any particular revenues or moneys. The authority may also enter into loan agreements, lines of credit and other security agreements and obtain for or on its behalf letters of credit in each case for securing its bonds or to provide direct payment of any costs which the authority is authorized to pay.

2. Bonds shall be authorized by resolution of the authority, be in such denominations, bear such date or dates and mature at such time or times as such resolution shall provide, except that notes and any

renewals thereof shall mature within five years from the date of the original issuance and bonds and any renewals thereof shall mature within thirty years from the date of the original issuance of any such bonds or notes. The bonds and notes shall be subject to such terms of redemption, bear interest at such rate or rates payable at such times, be in such form, either coupon or registered, carry such registration privileges, be executed in such manner, be payable in such medium of payment at such place or places, and be subject to such terms and conditions as such resolution may provide. Bonds may be sold at public or private sale for such price or prices as the authority shall determine. Bonds of the authority shall not be sold by the authority at private sale unless such sale and the terms thereof have been approved in writing by the state comptroller where such sale is not to be to such comptroller, or by the state director of the budget where such sale is to said comptroller. The authority may pay all expenses, premiums and commissions which it may deem necessary or advantageous in connection with the issuance and sale of bonds.

3. Any resolution or resolutions authorizing bonds or any issue of bonds may contain provisions which may be a part of the contract with the holders of the bonds thereby authorized as to:

(a) pledging all or any part of the revenues, other moneys or property of the authority to secure the payment of the bonds, including but not limited to, any assets, contracts, investment securities, earnings or proceeds of any grant to the authority received from any private or public source, subject to such agreements with bondholders as may then exist;

(b) the setting aside of reserves and the creation of sinking funds and the regulation and disposition thereof;

(c) limitations on the purpose to which the proceeds from the sale of bonds may be applied;

(d) the rates, rents, fees and other charges to be fixed and collected by the authority and the amount to be raised in each year thereby and the use and disposition of revenues;

(e) limitations on the right of the authority to restrict and regulate the use of the project or part thereof in connection with which bonds are issued;

(f) limitations on the issuance of additional bonds, the terms upon which additional bonds may be issued and secured and the refunding of outstanding or other bonds;

(g) the procedure, if any, by which the terms of any contract with bondholders may be amended or abrogated, the amount of bonds the holders of which must consent thereto, and the manner in which such consent may be given;

(h) the creation of special funds into which any revenues or moneys may be deposited;

(i) the terms and provisions of any trust, deed or indenture securing the bonds under which the bonds may be issued;

(j) vesting in a trustee or trustees such properties, rights, powers and duties in trust as the authority may determine, which may include any or all of the rights, powers and duties of the trustees appointed

by the bondholders pursuant to section two thousand fifty-three-i of this title and limiting or abrogating the rights of the bondholders to appoint a trustee under such section or limiting the rights, duties and powers of the trustee;

(k) defining the acts or omissions to act which may constitute a default in the obligations and duties of the authority to the bondholders and providing for the rights and remedies of the bondholders in the event of such default, including as a matter of right the appointment of a receiver, provided, however, that such rights and remedies shall not be inconsistent with the general laws of the state and other provisions of this title;

(l) limitations on the power of the authority to sell or otherwise dispose of any project or any part thereof;

(m) limitations on the amount of revenues and other moneys to be expended for operating, administrative or other expenses of the authority;

(n) the payment of the proceeds of bonds, revenues and other moneys to a trustee or other depository and for the method of disbursement thereof with such safeguards and restrictions as the authority may determine; and

(o) any other matters of like or different character which in any way affect the security or protection of the bonds or the rights and remedies of bondholders.

4. In addition to the powers herein conferred upon the authority to secure its bonds, the authority shall have power in connection with the issuance of bonds to enter into such agreements as the authority may deem necessary, consistent or desirable concerning the use of disposition of its revenues or other moneys or property, including the mortgaging of any property and the entrusting, pledging or creation of any other security interest in any such revenues, moneys or property and the doing of any act (including refraining from doing any act) which the authority would have the right to do in the absence of such agreements. The authority shall have power to enter into amendments of any such agreements within the powers granted to the authority by this title and to perform such agreements. The provisions of any such agreements may be made a part of the contract with the holders of bonds of the authority.

5. Any provision of the uniform commercial code to the contrary notwithstanding, any pledge of or other security interest in revenues, moneys, accounts, contract rights, general intangibles or other personal property made or created by the authority shall be valid, binding and perfected from the time when such pledge is made or other security interest attaches without any physical delivery of the collateral or further act, and the lien of any such pledge or other security interest shall be valid, binding and perfected against all parties having claims of any kind in tort, contract or otherwise against the authority irrespective of whether or not such parties have notice thereof. No instrument by which such a pledge or security is created nor any financing statement need be recorded or filed.

6. Whether or not the bonds are of such form and character as to be

negotiable instruments under the terms of the uniform commercial code, the bonds are hereby made negotiable instruments within the meaning of and for all the purposes of the uniform commercial code, subject only to the provisions of the bonds for registration.

7. Neither the members of the authority nor any person executing bonds shall be liable personally thereon or be subject to any personal liability or accountability by reason of the issuance thereof.

8. The authority, subject to such agreements with bondholders as then may exist, shall have power out of any moneys available therefor to purchase bonds of the authority, which shall thereupon be cancelled, at a price not exceeding (a) if the bonds are then redeemable, the redemption price then applicable, plus accrued interest to the next interest payment date or (b) if the bonds are not then redeemable, the redemption price applicable on the first date after such purchase upon which the bonds become subject to redemption plus accrued interest to the next interest payment date.

§ 2053-k. Remedies of bondholders. Subject to any resolution or resolutions adopted pursuant to subdivision three of section two thousand fifty-three-j of this title:

1. In the event that the authority shall default in the payment of principal of or interest on any issue of bonds after the same shall become due, whether at maturity or upon call for redemption, and such default shall continue for a period of thirty days, or in the event that the authority shall fail or refuse to comply with the provisions of this title or shall default in any agreement made with the holders of any issue of bonds, the holders of twenty-five percent in aggregate principal amount of the bonds of such issue then outstanding, by instrument or instruments filed in the office of the clerk of the county and proved or acknowledged in the same manner as deed to be recorded, may appoint a trustee to represent the holders of such bonds for the purpose herein provided.

2. Such trustee may and, upon written request of the holders of twenty-five per centum in principal amount of such bonds outstanding, shall in his or its own name:

(a) by action or proceeding in accordance with the civil practice law and rules, enforce all rights of the bondholders, including the right to require the authority to collect rents, rates, fees and charges adequate to carry out any agreement as to, or pledge of, such rents, rates, fees and charges and to require the authority to carry out any other agreements with the holders of such bonds to perform its duties under this title;

(b) bring an action or proceeding upon such bonds;

(c) by action or proceeding, require the authority to account as if it were the trustee of an express trust for the holders of such bonds;

(d) by action or proceeding, enjoin any acts or things which may be unlawful or in violation of the rights of the holders of such bonds; and

(e) declare all such bonds due and payable, and if all defaults shall be made good, then with the consent of the holders of

twenty-five per centum of the principal amount of such bonds then outstanding, to annul such declaration and its consequences.

3. Such trustee shall in addition to the foregoing have and possess all of the powers necessary or appropriate for the exercise of any functions specifically set forth herein or incident to the general representation of bondholders in the enforcement and protection of their rights.

4. The supreme court shall have jurisdiction of any action or proceeding by the trustee on behalf of such bondholders. The venue of any such action or proceeding shall be laid in the county.

5. Before declaring the principal of bonds due and payable, the trustee shall first give thirty days` notice in writing to the authority.

6. Any such trustee, whether or not the issue of bonds represented by such trustee has been declared due and payable, shall be entitled as of right to the appointment of a receiver of any part or parts of the project, the revenues of which are pledged for the security of the bonds of such issue, and such receiver may enter and take possession of such part or parts of the project and, subject to any pledge or agreement with holders of such bonds, shall take possession of all moneys and other property derived from such part or parts of the project and proceed with any construction thereon or the acquisition of any property, real or personal, in connection therewith that the authority is under obligation to do, and to operate, maintain and reconstruct such part or parts of the project and collect and receive all revenues thereafter arising therefrom subject to any pledge thereof or agreement with bondholders relating thereto and perform the public duties and carry out the agreements and obligations of the authority under the direction of the court. In any suit, action or proceeding by the trustee the fees, counsel fees and expenses of the trustee and of the receiver, if any, shall constitute taxable disbursements and all costs and disbursements allowed by the court shall be a first charge on any revenues derived from the project.

7. The county is authorized to pledge to and agree with the holders of the bonds that the county will not limit or impair the rights hereby vested in the authority to purchase, construct, maintain, operate, repair, improve, increase, enlarge, extend, reconstruct, renovate, rehabilitate or dispose of any project, or any part or parts thereof, for which bonds or notes of the authority shall have been issued, to establish and collect rates, rents, fees and other charges referred to in this title and to fulfill the terms of any agreements made with the holders of the bonds or notes or with any public corporation or person with reference to such project or part thereof, or in any way impair the rights and remedies of the bondholders, until the bonds, together with interest thereon, with interest on any unpaid installments of interest and all costs and expenses in connection with any action or proceeding by or on behalf of the bondholders are fully met and discharged.

S 2053-1. State, county and municipalities not liable on bonds.

Neither the state, county nor any other municipality or public corporation shall be liable on the bonds of the authority and such bonds shall not be a debt of the state, county or any other municipality or public corporation, and such bonds shall contain, on the face thereof, a statement to such effect.

S 2053-m. Moneys of the authority. All moneys of the authority from whatever source derived shall be paid to the treasurer of the authority and shall be deposited forthwith in interest bearing accounts in a bank or banks in the state designated by the governing body. The moneys in such accounts shall be paid out on check of the treasurer, upon requisition by the governing body or of such other person or persons as the governing body may authorize to make such requisitions. All deposits of such moneys shall be secured by obligations of the United States, the state or the county of a market value equal at all times to the amount on deposit and all banks and trust companies are authorized to give such security for such deposits. The authority shall have power, notwithstanding the provisions of this section, to contract with the holders of any bonds, as to the custody, collection, security, investment and payment of any moneys of the authority or any moneys held in trust or otherwise for the payment of bonds or in any way to secure bonds, and to carry out any such contract notwithstanding that such contract may be inconsistent with the provisions of this section. Moneys held in trust or otherwise for the payment of bonds, or in any ways to secure bonds, and deposits of such moneys may be secured in the same manner as moneys of the authority and all banks and trust companies are authorized to give such security for such deposits. Any moneys of the authority not required for immediate use or disbursement may, at the discretion of the authority, be invested in those obligations specified pursuant to the provisions of section ninety-eight-a of the state finance law, as amended from time to time. Subject to the provisions of any contract with bondholders and with the approval of the comptroller, the authority shall prescribe a system of accounts.

S 2053-n. Bonds and notes as legal investment. The bonds of the authority are hereby made securities in which all public officials and bodies of the state and all municipalities, all insurance companies and associations and other persons carrying on an insurance business, all banks, bankers, trust companies, savings banks and savings associations, including savings and loan associations, investment companies and other persons carrying on a banking business, and administrators, guardians, executors, trustees and other fiduciaries and all other persons whatsoever, who are now or may hereafter be authorized to invest in bonds or notes, or other obligations of the state may properly and legally invest funds including capital in their control or belonging to them. The bonds and notes are also hereby made securities which may be deposited with and may be received by all public officers and bodies of this state and all municipalities for any purposes for which the deposit of bonds or notes or other

obligations of this state is now or hereafter may be authorized.

S 2053-o. Agreement with the state. The state does hereby pledge to and agree with the holders of any bonds or notes issued by the authority pursuant to this title that the state will not alter or limit the rights hereby vested in the authority to purchase, construct, maintain, operate, repair, improve, increase, enlarge, extend, reconstruct, renovate, rehabilitate or dispose of any project, or any part or parts thereof, for which bonds of the authority shall have been issued, to establish and collect rates, rents, fees and other charges referred to in this title to fulfill the terms of any agreement made with or for the benefit of the holders of bonds or notes or with any public corporation or person with reference to such project or part thereof, or in any way to impair the rights and remedies of bondholders until the bonds or notes, together with the interest thereon, including interest on any unpaid installments of interest and all costs and expenses in connection with any action or proceeding by or on behalf of such holders, are fully met and discharged, provided, however, that this section shall not be construed to limit in any manner the ability of the state to alter, amend or enforce laws or regulations to protect public health and the environment. The authority is authorized to include this pledge and agreement of the state in any agreement with bondholders.

S 2053-p. Exemption from taxes, assessments and certain fees. 1. It is hereby determined that the creation of the authority and the carrying out of its corporate purposes is in all respects for the benefit of the people of the county and the state and is a public purpose and the authority shall be regarded as performing a governmental function in the exercise of the powers conferred upon it by this title and shall not be required to pay any taxes, special ad valorem levies or special assessments upon any property owned by it or under its jurisdiction, control or supervision or upon its activities or any filing, recording or transfer fees or taxes in relation to instruments filed, recorded or transferred by it or on its behalf. The construction, use, occupation or possession of any property owned by the authority or the county, including improvements thereon, by any person or public corporation under a lease, lease and sublease or any other agreement shall not operate to abrogate or limit the foregoing exemption, notwithstanding that the lessee, user, occupant or person in possession shall claim ownership for federal income tax purposes. Mortgages made or financed, directly or indirectly, by the authority shall be exempt from the mortgage recording taxes imposed by article eleven of the tax law. The authority shall be deemed a public authority for the purposes of section four hundred twelve of the real property tax law.

2. Any bonds issued pursuant to this title together with the income therefrom as well as the property of the authority shall be exempt from taxes, except for transfer and estate taxes. The revenues, moneys and all other property and all transactions and activities of the

authority shall be exempt from all taxes and governmental fees or charges, whether imposed by the state or any municipality, including without limitation real estate taxes, franchise taxes, sales taxes or other excise taxes. The state hereby covenants with the purchasers and with all subsequent holders and transferees of bonds issued by the authority pursuant to this title, in consideration of the acceptance of any payment for the bonds, that the bonds of the authority issued pursuant to this title and the income therefrom and all revenues, moneys, and other property pledged to secure the payment of such bonds shall at all times be free from taxation except for transfer and estate taxes.

§ 2053-q. Actions against the authority. 1. Except in an action for wrongful death, no action or special proceeding shall be prosecuted or maintained against the authority for personal injury or damage to real or personal property alleged to have been sustained by reason of the negligence or wrongful act of the authority or of any member, officer, agent or employee thereof, unless (a) a notice of claim shall have been made and served upon the authority within the time limit by and in compliance with section fifty-e of the general municipal law, or (b) it shall appear by and as an allegation in the complaint or moving papers that at least thirty days have elapsed since the service of such notice and that adjustment or payment thereof has been neglected or refused, and (c) the action or special proceeding shall be commenced within one year and ninety days after the happening of the event upon which the claim is based. An action against the authority for wrongful death shall be commenced in accordance with the notice of claim and time limitation provisions of title eleven of article nine of this chapter. Actions to recover damages for personal injury or injury to property caused by the latent effects of exposure to any substance or combination of substances, in any form, upon or within the body or upon or within property shall be governed by section two hundred fourteen-c of the civil practice law and rules.

2. Wherever a notice of claim is served upon the authority, it shall have the right to demand an examination of the claimant relative to the occurrence and extent of the injuries or damages for which claim is made, in accordance with the provisions of section fifty-h of the general municipal law.

3. The authority may require any person, presenting for settlement an account or claim for any cause whatever against the authority, to be sworn before a member, counsel or an attorney, officer or employee of the authority designated for such purpose concerning such account or claim and, when so sworn, to answer orally as to any facts relative to such account or claim. The authority shall have power to settle or adjust all claims in favor of or against the authority.

4. The rate of interest to be paid by the authority upon any judgment for which it is liable, other than a judgment on its bonds, shall be the rate prescribed by section three-a of the general municipal law. Interest on payments of principal or interest on any bonds in default shall accrue at the rate borne by such bonds from the

due date thereof until paid or otherwise satisfied.

5. Any action or proceeding to which the authority or the people of the state may be parties, in which any question arises as to the validity of this title, shall be preferred over all other civil causes of action or cases, except election causes of action or cases, in all courts of the state and shall be heard and determined in preference to all civil business pending therein, except election causes, irrespective of position on the calendar. The same preference shall be granted upon application of the authority or its counsel in any action or proceeding questioning the validity of this title in which the authority may be allowed to intervene. The venue of any such action or proceeding shall be laid in the supreme court of the county in which the principal office of the authority is located.

S 2053-r. Contracts. 1. All contracts or orders for work, material or supplies performed or furnished in connection with construction shall be awarded by the authority pursuant to resolution of the governing body except as hereinafter provided. Such awards, when applicable, shall be made in compliance with paragraph (e) of subdivision four and subdivision seven of section one hundred twenty-w of the general municipal law. In any construction contract, the authority may provide a program for the payment of damages for delays and incentive awards in order to encourage timely project completion. An action, suit or proceeding contesting the validity of a contract awarded pursuant to this section, or the validity of the procedures relating to such award, shall be governed by the provisions of subdivision six of section one hundred twenty-w of the general municipal law and the term "municipality" as used in such subdivision six shall mean the authority.

2. The person whose bid or proposal is accepted shall give security for the faithful performance of the contract, and such other security as the authority may require, and may be required to maintain any construction done under the contract for such period as shall be stipulated, all in the manner prescribed and required by the authority and the sufficiency of such security shall, in addition to the justification and acknowledgement, be approved by the authority. All bids or proposals shall be publicly opened by the governing body or its duly authorized agent. If the person whose bid or proposal has been accepted after advertising shall neglect or refuse to accept the contract within five days after written notice that the contract has been awarded to him on his bid or proposal or if he accepts but does not execute the contract and give proper security, the authority shall have the right to declare his deposit forfeited. In case any work shall be abandoned by any contractor, the authority may, if it determines that the public interest is thereby served, adopt on behalf of the authority any or all subcontracts made by such contractor for such work and all such subcontractors shall be bound by such adoption if made. No bid or proposal shall be accepted from or any contract awarded to any person or corporation who is in arrears to the authority or the county upon any obligation of the authority or of the

county. Every contract shall be executed in duplicate, one copy of which shall be held by the authority and one copy of which shall be delivered to the contractor. The authority may adopt, utilize, ratify and confirm any request for proposals, invitation for sealed bids, plans, specifications and notices heretofore or hereafter published by the county with respect to any proposed project. The provisions of this section shall supersede any inconsistent provisions of the general municipal law, or any other general, special or local law, or the charter of the county. The authority shall be deemed an authority for the purpose of section twenty-eight hundred seventy-eight of this chapter.

3. For the purposes of article fifteen-A of the executive law only, the authority shall be deemed a state agency as that term is used in such article, and its contracts for design, construction, services and materials shall be deemed state contracts within the meaning of that term as set forth in such article.

S 2053-s. Interest in contracts prohibited. It shall be a misdemeanor for any member of the governing body or any officer, agent, servant or employee of the authority to be in any way or manner interested, directly or indirectly, in the furnishing of work, materials, supplies or labor, or in any contract therefor which the authority is empowered by this title to make.

S 2053-t. Audit and annual report. In conformity with the provisions of section five of article ten of the constitution, the accounts of the authority shall be subject to the supervision of the state comptroller and an annual audit shall be performed by an independent certified accountant. The authority shall annually submit to the governor and state comptroller and to the state legislature a detailed report pursuant to the provisions of section two thousand eight hundred of this chapter, and a copy of such report shall be filed with the county executive and the chairman of the county legislature. The authority shall comply with the provisions of sections two thousand eight hundred one, two thousand eight hundred two and two thousand eight hundred three of this chapter.

S 2053-u. Limited liability. Neither the members of the governing body, nor any municipality, officer or employee acting on its behalf, while acting within the scope of their authority, shall be subject to any personal liability resulting from the construction, maintenance or operation of any of the properties of the authority or from carrying out any of the powers expressly given in this title; provided, however, that this section shall not be held to apply to any independent contractor.

S 2053-v. Contracts with municipalities; powers of municipalities.
1. The county and one or more municipalities within the county, or the authority and the county, shall have power to contract from time to time between or among themselves, or among themselves and with the

authority, in relation to the receiving, transporting, storage, processing, treatment or disposal of solid waste or for the purchase or use of any materials, energy, byproducts or residue generated by or resulting from the operation of any solid waste management facility. Any such contract to which the authority, the county and any municipality within the county are parties may include provisions stipulating the maximum rates, rentals, fees and other charges to be collected for the use or availability of facilities. Any contract to which the authority, the county and any municipality within the county are parties may include provisions (i) requiring the periodic delivery to the particular facilities of minimum amounts of solid waste and providing for specified minimum period payments whether or not such delivery is made, or (ii) requiring the county and any municipality within the county to pay, within appropriations available therefor, such amounts as shall be necessary to assure the continued operation and solvency of the authority, such payments to be determined and paid in such manner and at such times as may be provided in such contract or contracts.

2. In recognition of existing state policy, as declared in title one of article twenty-seven of the environmental conservation law, the legislature hereby affirms that the basic responsibility for the planning and operation of solid waste management facilities remains with local governments; and further recognizes the county's role as planning unit under section 27-0107 of the environmental conservation law. To further the governmental and public purposes of the authority, including the implementation of any contract or proposed contract contemplated by this title, and in recognition of the public policy of the state in the area of the control and management of solid waste and solid waste disposal activities to displace competition with regulation or monopoly public control, the county and all other municipalities within the county shall have the power to adopt and amend local laws, ordinances and regulations imposing appropriate and reasonable limitations on competition with respect to collecting, receiving, transporting, delivering, storing, processing, treating and disposing of solid waste or the recovery by any means of any material or energy product or resource therefrom, and shall further have the power to adopt and amend local laws requiring that all solid waste generated, originated or brought within their respective boundaries, subject to such exceptions as may be determined to be in the public interest, shall be delivered to a specified facility or facilities; provided however, that any such local law enacted by the county shall take precedence over and shall supersede any inconsistent provisions of any such local law enacted by a municipality with the county. Any such local law shall be adopted in accordance with the procedure provided by the municipal home rule law, except that no such local law shall be subject to either mandatory or permissive referendum. Any such local law may include provisions for the enforcement thereof and penalties for the violation thereof, which may provide, but shall not be limited to providing, that any violation of a local law may be punished by civil penalty, fine or other monetary charge, and/or, the

suspension or revocation of permits or licenses granted by any other jurisdiction with respect to the collecting, receiving, transporting, delivery or storing of solid waste. For the purposes of this section, solid waste shall have the same meaning as defined in section two thousand fifty-three-b of this title. Upon the adoption of any local law, ordinance or regulation pursuant to this section, the county or municipality shall file with the commissioner of the department of environmental conservation a verified copy of such local law, ordinance or regulation; provided, however, that failure to so file such a local law, ordinance or regulation shall not invalidate such local law, ordinance or regulation. The foregoing provisions of this subdivision shall not be construed to limit, alter or abridge the powers granted to the county under the provisions of chapter five hundred sixty-nine of the laws of nineteen hundred ninety-one, as amended.

3. The county is hereby authorized to resell or otherwise dispose of all or any part of the materials, energy, by-products or residue purchased from the authority pursuant to subdivision one of this section. Any resale or other disposition may be made in such manner as the county may deem proper and upon such terms and conditions as may be agreed upon by the parties thereto.

4. The county and all other municipalities within the county shall have power to perform such other acts, to enter into such other contracts, including contracts between or among themselves, execute such instruments and to undertake such future proceedings as shall be determined necessary or desirable to effectuate the purpose of this title, including the making of gifts, grants, loans or contributions to the authority. 5. Except as otherwise provided by section one hundred twenty-w of the general municipal law, any contract entered into by a municipality pursuant to this section may be for such term or duration, not to exceed thirty years, as may be agreed upon by the parties thereto.

6. Any contract entered into pursuant to this section to which the authority shall be a party may be pledged by the authority as security for any issue of bonds, and may be assigned, in whole or in part, by the authority to any public corporation or person which shall construct, purchase, lease or otherwise acquire any solid waste management facility, or part thereof, financed in whole or in part by the authority.

S 2053-w. Solid waste reserve fund. The county legislature may establish a special fund, to be known as the solid waste reserve fund of the county. There shall be credited to such reserve fund all amounts paid to the county and specifically designated by the payor for deposit in such reserve fund, together with such county moneys as may be appropriated thereto from time to time. Moneys in such reserve fund may be appropriated only for the purpose of paying amounts due from the county under the terms of any contract entered into pursuant to this title, for which an insufficient or no provision has otherwise been made, except that upon the adoption of a resolution by at least a

two-thirds vote of the voting strength of the county legislature, all or any portion of the moneys in such reserve fund may be transferred to any other reserve fund established by the county pursuant to the general municipal law. To the extent not inconsistent with the provisions of this section, the management of such reserve fund and the investment of moneys therein shall be subject to the provisions of section six-h of the general municipal law.

S 2053-x. Environmental applications, proceedings, approvals and permits. 1. Any application in relation to the purposes of or contemplated by this title, or any proceeding commenced in relation thereto, by the county with the state department of environmental conservation, the department of transportation or any other state agency or instrumentality shall inure to and for the benefit of the authority to the same extent and in the same manner as if the authority had been a party to such application or proceeding, and the authority shall be deemed a party thereto, to the extent not prohibited by any federal law. Any license, approval, permit or decision issued or granted pursuant to or as a result of any such application or proceeding shall inure to the benefit of and be binding upon the authority and shall be assigned and transferred by the county to the authority unless such assignment and transfer is prohibited by federal law.

2. All such applications, proceedings, licenses, approvals, permits and decisions shall further inure to and be for the benefit of and be binding upon any person leasing, acquiring, constructing, maintaining, using or occupying any facility financed in whole or in part by the authority.

S 2053-y. Separability. If any section, clause or provision in this title shall be held by a competent court to be unconstitutional or ineffective in whole or in part, to the extent that it is not unconstitutional or ineffective, it shall be valid and effective, and no other section, clause or provision shall on account thereof be deemed invalid or ineffective.

S 2053-z. Effect of inconsistent provisions. In so far as the provisions of this title are inconsistent with the provisions of any other act, general or special, or of the county charter or any local law, ordinance or resolution of the county or any other municipality, the provisions of this title shall be controlling. Nothing contained in this section shall be held to supplement or otherwise expand the powers or duties of the authority otherwise set forth in this title. Nothing contained in this title shall be held to alter or abridge the powers and duties of the department of environmental conservation or the department of health.

**ORGANIZATIONAL BI-LAWS
OF
ROCKLAND COUNTY SOLID WASTE MANAGEMENT AUTHORITY**

ORGANIZATIONAL BY-LAWS

of

ROCKLAND COUNTY SOLID WASTE MANAGEMENT AUTHORITY

ARTICLE I

THE AUTHORITY

Section 1.1 Name - The name of the Authority shall be the Rockland County Solid Waste Management Authority.

Section 1.2. Seal - The Seal of the Authority shall be in the form of a circle and shall bear the name of the Authority and the year of its organization.

Section 1.3 Office of the Authority - The Office of the Authority shall be located in the County of Rockland (the "County"), State of New York.

ARTICLE II

MEMBERS

Section 2.1. Governing Body - The governing body of the Authority shall be the members of the Authority (the "Members" or the "Members of the Authority").

Section 2.2. Membership - The Authority shall consist of seventeen Members. Eight Members shall be members of the County legislature, five Members of the Authority shall consist, ex officio, of the supervisors of the five towns in the County, two Members of the Authority shall be appointed by and shall serve at the pleasure of the County Executive of the County, and two members shall be the term of each mayor serving as a member of the authority shall coincide with such member's term of elective office, not to exceed two years. No such mayor shall be selected from a village that has failed to sign the intermunicipal recyclables management agreement, such mayor are to be selected from different towns with Rockland County, and for the purposes of

determining which town a mayor is determined to be from, if the jurisdiction of the municipality in which a mayor presided spans more than one town, that mayor shall not be restricted from appointment because one portion of his jurisdiction is coterminous with that of another mayor chosen as a member of the authority.

No person shall be both an appointed Member from the County Legislature and a town supervisor serving ex officio as a Member of the Authority.

Section 2.3. Legislative Members - Five of the eight legislative Members shall be appointed by the chairman of the County legislature and three shall be appointed by the minority leader of the County legislature, subject in each case to confirmation by a majority of the County legislature. [No such appointment shall be effective unless there shall be, among the legislative Members of the Authority, a resident of each of the five towns in the County.] Residency shall be determined as of the effective date of appointment, and subsequent changes in residency shall not effect the validity of the appointment or the authority of the legislature Member to serve in the Authority.

Section 2.4. Legislative Members – Terms and Vacancies -

Appointments of legislative Members of the Authority shall be for terms of two years. All legislative Members shall continue to hold office until their successors are appointed and qualify. Vacancies occurring otherwise than by expiration of term shall be filled in the same manner, respectively, for the un-expired term.

Section 2.5. Legislative Members - Removal - Members may be removed from office for the same reasons and in the same manner as provided by law for the removal of officers of the County.

Section 2.6. Legislative Members - Replacement - Appointments to fill expired and un-expired terms shall be made within sixty days upon receipt of notification by the chairman of the County legislature that a vacancy exists.

Section 2.7. Town Supervisor Members - The term of each town supervisor serving ex officio as a Member of the Authority shall coincide with such Member's term of elective office.

Section 2.7.1 Mayor Members - The term of each mayor serving as a Member of the Authority shall coincide with such Member's term of elective office, not to exceed two years.

Section 2.8. Removal of Members - Any Member of the Authority, whether appointed or serving ex officio, may be removed from office by a vote of ten Members of the Authority for gross neglect, of duty, misconduct, maladministration or malfeasance in office, including the unexcused failure to attend three consecutive regular meetings of the Authority

Section 2.9. Compensation - Each Member shall serve without compensation, but each shall be entitled to reimbursement of the Member's actual and necessary expenses incurred in connection with carrying out the purposes of the Authority.

ARTICLE III

OFFICERS

Section 3.1. Officers - The Officers of the Authority shall be a Chairman, Vice Chairman and a Treasurer who shall be Members of the Authority, and a Secretary who need not be a member of the Authority.

Section 3.2. Authorized Officer - The Chairman, Vice Chairman, Treasurer, Secretary or other Member of the Authority or any agent or employee of the Authority may be delegated authority to perform specific acts or duties by duly adopted resolution of the Authority.

Section 3.3. Nomination and Appointment - At the organizational meeting of the Authority, the Members of the Authority shall nominate and appoint the first Officers of the Authority, who shall serve until their successors are appointed and qualified at the first Annual

Meeting of the Authority. A nominating committee shall be selected by the Authority at its October meeting. Such committee shall render a report at the December meeting of the Authority and propose nominees for the officers to be elected at the next annual meeting of the Authority. The Officers of the Authority shall be nominated and appointed by the Members of the Authority at the Annual Meeting of the Authority and shall serve until their successors are appointed and qualified at the next Annual Meeting.

Section 3.4. Terms of Office and Vacancies - The Officers of the Authority shall serve one (1) year terms or until successors are appointed and qualified by the Members at the annual meeting of the authority. Except as provided in section 3.5, should any office become vacant, the Members of the Authority shall appoint a successor for the unexpired term of such office at the next regular meeting of the Authority or may do so at a special meeting called for that purpose.

Section 3.5. Removal of Officers - Any Officer may be removed from office at the pleasure of the members of the Authority at any regular or special meeting by the favorable vote of at least two-thirds of the Members of the Authority, provided, however, that at least fourteen (14) days actual written notice of such proposed action is given to all Members. A successor shall be appointed by the members at the regular or special meeting at which the officer was removed.

Section 3.6. Chairman - The Chairman shall preside at all meetings of the Authority and meetings of any executive committee, shall serve as an ex officio member of any executive committee, shall serve as an ex officio member of all Authority committees, and with respect to any actions of the Authority where a roll call vote is taken the Chairman shall be polled last.

Section 3.7. Vice Chairman - The Vice Chairman shall perform the duties of the Chairman in the absence or incapacity of the Chairman, and in the event of the resignation, end of

appointment or death of the Chairman, the Vice Chairman shall perform the duties of the Chairman until such time as the Authority shall elect a new Chairman.

Section 3.8. Treasurer - The Treasurer shall have the care and custody of all funds of the Authority and shall deposit same, in the name of the Authority, in such bank or banks as the Authority may select pursuant to Article VI Section 6.2 hereof. Except as otherwise authorized by resolution of the Authority, the Treasurer shall sign all instruments of indebtedness, all orders, and all checks for the payment of money, and shall pay out and reimburse such Monies under the direction of the Authority. Except as otherwise authorized by resolution of the Authority, all such instruments of indebtedness, orders, and checks need not be countersigned by the Chairman or Vice Chairman. The Treasurer shall keep regular books of accounts showing receipts and expenditures, and shall render to the Authority at each regular meeting an account of his transactions and also of the financial condition of the Authority. The Treasurer shall direct the preparation of and submit annual audits and reports as provided by Article 8, Title 13-M, Section 2053-t of the Public Authorities Law of the State of New York. To the extent permitted by applicable law, the Authority may designate by resolution a person, including but not limited to, the Rockland County Department of Finance, to perform such duties listed above in this Section 3.8 on behalf of the Treasurer. The Treasurer shall give such bond for the faithful performance of such Officer's duties as the Authority may determine. Provisions for such bond shall be paid for by the Authority.

Section 3.9. Secretary - The Secretary shall keep the records of the Authority, shall act as secretary of the meetings of the Authority and maintain a record of all Authority proceedings in a journal of proceedings kept for such purpose, and shall perform all duties incident to such office, including preparation of all reports other than financial reports required by law or agreement to be regularly given. The Secretary shall have custody of the

Seal of the Authority and shall have the power to affix such Seal to all contracts and other instruments authorized to be executed by the Authority.

Section 3.10. Additional Duties - The officers of the Authority shall perform such other duties and functions as may from time-to-time be authorized by resolution of the Authority or be required by the By-laws of the Authority.

Section 3.11. Additional Personnel - The Authority may from time-to-time employ such personnel as it deems necessary to exercise its powers, duties and functions as prescribed by Article 8, title 13-M, Section 2053-a et seq. of the Public Authorities Law of the State of New York, and all other laws of the State of New York applicable thereto. The selection and compensation of all personnel shall be determined by the Authority subject to the laws of the State of New York. Among such personnel there shall be appointed an executive director, a general, counsel and staff engineer of the Authority.

ARTICLE IV

MEETINGS

Section 4.1 Annual Meetings - The Annual Meeting of the Authority shall be held on the fourth Thursday in January, annually, at the regular meeting place of the Authority.

Section 4.2 Regular Meetings - Regular Meetings of the Authority shall be held once per month and may be held on the fourth Thursday of each month at 8:00 p.m. at the regular meeting place of the Authority, and at such other times and places as from time to time may be determined by resolution of the Authority, unless the Chairman, by written notice sent to all members in accordance with section 4.4, elects to cancel any single regular monthly meeting for lack of any business to be transacted or anticipated lack of a quorum.

Section 4.3 Special Meetings - When the Chairman deems it desirable such Officer may call a special meeting of the Authority. Upon the written request of two Members of the Authority, the Chairman shall call a special meeting of the Authority for the purpose of

transacting any business designated in the call. The call for a special meeting shall be delivered to each Member of the Authority personally or by facsimile or by telegram to the business or home address of each Member of the Authority at least two (2) calendar days prior to the date of such special meeting. At such special meeting, no business shall be considered other than as designated in the call, but if all the Members of the Authority are present at the special meeting, with or without notice thereof, any and all business may be transacted at such special meeting by the affirmative vote of two-thirds of the Members of the Authority.

Section 4.4 Notice - Notice of the time and place of each regular meeting of the Authority shall be given to each Member at their last known address (a) via the United States Postal Service at least four (4) calendar days before such meeting, or (b) via the Rockland County inter-office mail system at least four (4) calendar days before such meeting provided that the recipient is an employee or elected official of the County of Rockland, or (c) by personal delivery at least twenty-four (24) hours before such meeting, or (d) by facsimile transmission at least twenty-four (24) hours before such meeting, or (e) by telegram at least twenty-four (24) hours before such meeting. (e) overnight courier service. Notice by United States Postal Service shall be deemed to have been given when deposited in a post-office or official depository of the United States Postal Service, and addressed to such Member at the Members' address appearing on the records of the Authority. Notice by Rockland County Inter-Office Mail System shall be deemed to have been given when deposited with the employees of the County of Rockland employed for such purpose and addressed to the Member by name and title of office. Notice by personal delivery shall be deemed to have been given when personally delivered to the Member or delivered to a person of suitable age and discretion accepting delivery at the home or business address of such Member as appears on the records of the Authority. Notice by telegram shall be deemed to have been given when presented for transmission to the telegram company overnight courier

shall be deemed to have been given when delivered to or picked-up by overnight courier, as in the case of notices by United States Postal Service. Notices by facsimile shall be deemed to have been given when transmitted to the business or residence facsimile number appearing on the records of the Authority. Each member of the Authority may designate the manner, method and location where the Notice of Meeting shall be sent, by filing a written declaration thereof with the Secretary of the Authority. Except as otherwise provided in Article VII relating to the amendment of these Bylaws, Article III, Section 3.5 relating to the removal of Officers, and in Article IV, Section 4.3 relating to special meetings, such notice need not specify the matters to be considered at the meeting.

Section 4.5 Waiver of Notice - Notice of any meeting of the Authority need not be given to a Member if waived in writing by such Member either before or after such meeting. No notice need be given of any meeting if all the Members then in office shall be present thereat. Notice of an adjourned meeting need not be given to anyone present at the time of adjournment.

Section 4.6 Quorum - At all meetings of the Authority, nine Members of the Authority shall constitute a quorum for the purpose of transacting any business or the exercise of any power or function of the Members of the Authority and, except as otherwise provided in these By-laws or by any special or general law, no action shall be taken at any meeting of the Authority except by the favorable vote of at least a majority of the Members of the Authority.

Section 4.7. Order of Business - At a regular meeting of the Authority, the following shall be the order of business:

1. Roll Call
2. Reading and approval of the minutes of the previous meeting
3. Reports of Officers

4. Staff Reports
5. Committee Reports and Resolutions
6. Unfinished Business
7. New Business
8. Program/Presentation
9. Adjournment

The foregoing Order of Business may be changed or modified at any regular meeting, by resolution of the Members made immediately following the roll call, or prior to such meeting by service upon each member of a written agenda with the notice of meeting provided in Section 4.4 of this Article.

Section 4.8 Manner of Voting - The voting on all questions coming, before the Authority shall be by voice vote or show of hands. When requested by a member or required by law and in the case of appointments, the vote shall be by roll call.

Section 4.9. Rules of Procedure - All meetings of the Authority shall be conducted in accordance with Robert's Rules of order, current edition.

ARTICLE V

GENERAL

Section 5.1 Resolutions - The Authority shall act by resolution of the Members of the Authority. The Authority may from time to time consider and adopt resolutions on all matters necessary or convenient for the management and regulation of its affairs subject to applicable law. All resolutions shall be oral or in writing, and presented or distributed or read to the Members present at the meeting where such resolution is considered, except for those resolutions made in accordance with Article 7 (Amendments to By-Laws) and Article 3 (Removal of Officers). All passed resolutions shall be copied in, or attached to, a journal of the proceedings of the Authority.

Section 5.2 Fiscal Year - The fiscal year of the Authority shall coincide with that of the County of Rockland, New York.

Section 5.3 Committees - The Authority may form, from time to time, such standing or special committees from its membership as it deems desirable to advise the Members on any matter incident to the functions of the Authority.

Section 5.4 Powers - The Authority shall do all things necessary or convenient to carry out its purposes and shall exercise the powers expressly given the Authority as set forth in Article 8, Title 13-M of the Public Authorities Law of the State of New York, being sections 2053-a through 2053-z of said law.

Section 5.5 Open Meetings Law - Meetings of the Authority are subject to the provisions of the Open Meetings Law of the State of New York and shall be conducted in compliance therewith.

Section 5.6. Designated Official Newspaper - The Authority may designate a newspaper of general circulation in the Rockland County area as its official newspaper, for the publication of legal notices, requests for proposals or bids, or other official Authority advertisements or publications.

ARTICLE VI

MISCELLANEOUS

Section 6.1. Indemnification - The Authority shall, to the fullest extent permitted by Article 2, Section 18 of the Public Officers Law of the State of New York and subject to the provisions thereof, indemnify any person made, or threatened to be made, a party to any action or proceeding, other than a criminal action, by reason of the fact that such person, his or her testator or intestate, was a member or an Officer or employee of the Authority or served at the request of the Authority, as a Member or an Officer or employee of the Authority or served at the request of the Authority, as a Member or an Officer or employee of any subsidiary of the Authority, against judgments, fines, amounts paid in

settlement and reasonable expenses, including attorneys' fees, actually and necessarily incurred as a result of such action or proceeding (including any appeal therein)

Section 6.2. Designated Depositories - The Authority shall designate, the depositories of its monies, credits and funds either within or without the State of New York. The Authority may require any bank or trust company so designated, in which Authority funds are on deposit or are to be deposited to deliver to the Authority a surety bond payable to the Authority, executed by a surety company authorized and licensed to transact business in the State of New York and assuring the Authority the payment of such deposits and the agreed interest thereon; or, in lieu of such a depository bond, may require any bank or trust company to deposit with the Authority bonds or certificates of the United States, the State of New York, or any county, town, city, village or school district located in the State of New York as surety for such funds so deposited, but such bonds or certificates shall be deposited in such place and held under such conditions as the Authority may determine.

ARTICLE VII

AMENDMENTS

Section 7.1. Amendments to By-laws The By-laws of the Authority shall be amended only with the approval of at least two-thirds of the Members of the Authority at a regular or special meeting.

Section-7.2. Notice of Proposed Amendments - No amendment to the Bylaws shall be adopted unless written notice thereof, including the proposed change, has been received by all Members of the Authority at least seven (7) days in advance of such meeting.

Enacted by Resolution No. 1 of 1994 this 8th day of September, 1994, in Rockland County, NY

Amended by Resolution No. 31 of 1994 on October 27, 1994 in Rockland County, NY

Further Amended by Resolution No. 25 of 1995 on April 27, 1995 in Rockland County, NY

Further Amended by Resolution No. 59 of 1995 on October 26, 1995 in Rockland County, NY

Further Amended by Resolution No. 36 of 1999 on September 30, 1999 in Rockland County,
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ARTICLE XVII

SEPARATION OF NON-OFFENSIVE MATERIALS

ARTICLE XVII

SEPARATION OF NON-OFFENSIVE MATERIALS

17.1.0 - Declaration of Policy

It is hereby declared to be the policy of the Rockland Health District to protect the Public Health and Environment of the citizens of Rockland County by requiring the separation of non-offensive materials from the putrescible, infectious, and offensive materials by County residents and businesses and to enforce such requirements. (Added 6/16/10.)

17.2.0 – Purpose

It is hereby declared that the purpose of this article is to establish, implement, and enforce reasonable non-offensive materials separation practices and procedures applicable to every person, household, business, and institution within Rockland County in order to reduce the amount of infected and contaminated solid waste that would require special processing should a highly infectious disease appear in the county. (Added 6/16/10.)

17.3.0 – Definitions

Whenever used in this article unless otherwise expressly stated or unless the context or subject matter requires a different meaning, the following terms shall have the meanings herein set forth or indicated:

17.3.1 Dwelling

The term “dwelling” shall mean any building or structure which is wholly or partly used or intended to be used for living or sleeping by human occupants.

17.3.2 Facility

The term “facility” shall mean any structure other than a single-family dwelling occupying more than 10,000 square feet.

17.3.3 Non-Offensive Material (Added 6/16/10.)

The term “non-offensive material” as used in this article shall mean:

17.3.3.1 Mixed paper defined as any clean paper products including but not limited to newspaper, mail, cardboard, school and office paper, magazines, catalogs, telephone books, paperback books and brown grocery bags.

17.3.3.2 Commingled containers defined as containers made from all grades of plastic (except styrofoam and plastic bags), aluminum, metal, and glass.

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103.3.3 Construction and demolition debris as used in this article shall mean solid waste resulting from construction, remodeling, repair, demolition of structures and road building. Such wastes include but are not limited to bricks, concrete and other masonry materials, lumber and asphalt.

103.3.4 Yard waste defined as grass clippings, leaves, brush and cuttings from shrubs, hedges and trees. Stumps and tree stumps are exempt from this part.

103.3.5 Scrap metals as used in this article shall mean white goods (stoves, refrigerators, washing machines, dishwashers and hot water heaters), metal furniture, recognizable and uncontaminated metal vehicle parts (excluding mufflers and catalytic converters and parts that contain fluids or motor oils), metal pipes, bed frames, metal sheds and other metal objects and which has been discarded or rejected as being spent, useless, worthless or in excess to the owner's at the time of such discard or rejection, having served their intended use.

103.4 Garbage

The term "garbage" shall mean putrescible and nonputrescible solid wastes which are generated by any Person during any public or private activity which are not hazardous wastes, liquids or sludges or materials mandated for source separation as defined in this article.

103.5 Hazardous Waste

The term "hazardous waste" shall mean any waste which by reason of its quality, concentration, composition or physical, chemical or infectious characteristics may do the following: cause or significantly contribute to an increase in mortality, an increase in serious irreversible or incapacitating illness or pose a substantial threat or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise mismanaged.

103.6 Infectious Material

The term "infectious material" shall mean any material containing any organism (such as a virus or bacterium) that is capable of being communicated by invasion and multiplication in body tissues and is capable of causing disease or adverse health impacts in humans.

103.7 Offensive Materials

The term "offensive materials" as used in this article shall mean any sewage, fecal matter, manure, offal, garbage, dead animals, meat wastes, blood, petroleum waste products, liquid or solid chemicals, pool waste water, any putrescible organic matter, the contents of sewage disposal systems (either liquid or solid state), or any substance or liquid dangerous or prejudicial to health, safety or general welfare or gives rise to offensive odors. This shall include solid waste

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as defined in Chapter 3002 of the Laws of Rockland County to the extent permitted by all other New York State Laws and Regulations. (Revised 6/16/10.)

103.8 Owner

The term "owner" shall mean any person who alone or jointly or severally with another (1) shall have legal title to any dwelling or dwelling unit with or without accompanying actual possession thereof or (2) shall have charge, care or control of any dwelling or dwelling unit as owner, lessee, mortgagee or tenant in possession, assignee of rents or as a receiver of an executor, administrator, trustee or guardian of the estate of the owner. Any agent for any of the above shall be bound to comply with the provisions of this Part to the same extent as if he were the owner.

103.9 Person

The term "person" shall mean and include any individual, firm, public or private corporation, municipality, political subdivision, association, partnership, institution, public body, facility manager, condominium or townhouse association, joint stock association or any other group of individuals and includes plural as well as singular.

103.10 Putrescible

The term "putrescible" shall mean that the material in question is capable of undergoing the process of decomposition resulting in the formation of malodorous byproducts.

103.11 Suitable Container

The term "suitable container" shall mean the receptacles to be utilized for the setout of mandated materials in accordance with applicable municipal ordinance as supplied by the applicable municipality or as approved by the Commission of Health.

17.4.0 Separation and Storage Requirements: (Revised 6/16/10.)

17.4.1 All persons in accordance with the provisions of this article shall not combine non-offensive materials with any hazardous waste, infectious material, offensive material or any other non-offensive material. (Revised 6/16/10.)

17.4.2 All commingled containers listed in Section 103.3.1 shall be drained, rinsed or wiped to remove excessive putrescible, infectious or offensive material before storage, transportation or collection so as to maintain a sanitary environment. (Revised 6/16/10.)

17.4.3 All mixed paper products and commingled containers shall not be combined and must be stored in separate suitable containers protected from the weather and of a size suitable for the quantity of material generated on the site. (Revised 6/16/10.)

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- 17.4.4 Concrete and asphalt shall not be combined with any other construction and demolition debris listed in Section 17.3.3.2. (Added 6/16/10.)
- 17.4.5 Suitable containers shall have appropriate signage identifying the materials to be placed in each receptacle and prohibiting the use of the suitable container for ordinary garbage. (Revised 6/16/10.)

17.5.0 - Mandatory Reporting Requirements

- 17.5.1 The following Persons shall complete and submit a Separation of Nonoffensive Materials Plan to the Rockland County Health Department: (Revised 6/16/10.)
 - 17.5.1.1 Any person other than a homeowner who owns or operates a facility of 10,000 sq. ft. or more
 - 17.5.1.2 Any person who employs fifteen (15) or more employees (Revised 6/16/10.)
 - 17.5.1.3 Any person who owns or operates an apartment, condominium or townhouse complex consisting of three or more dwelling units.
- 17.5.2 Such plan shall be submitted on a form supplied by the Commissioner of Health in a format approved by the Commissioner of Health.
- 17.5.3 Such plan shall be submitted no later than sixty (60) days after the effective date of this Article.
- 17.5.4 Such plan shall be implemented within ninety (90) days of approval.
- 17.5.5 For persons employing more than one hundred (100) employees such plan shall be reviewed every year and an updated plan shall be submitted to the Health Department no later than January 1st of each year. For all other persons required to submit a Separation of Nonoffensive Materials Plan such plan shall be reviewed every five years and an updated plan shall be submitted to the Health Department no later than January 1st of that year. (Revised 6/16/10.)
- 17.5.6 If such plan is modified at any time the modified plan shall be submitted to the Health Department within sixty (60) days of completion. (Added 6/16/10.)

17.6.0 - Severability

If any part of this Article is found to be invalid by a court of competent jurisdiction the remaining sections shall remain in full force and effect.

17.7.0 – Fee (Added 6/16/10.)

A fee shall be charged for each plan review in accordance with Article 17 of the Rockland County Sanitary Code. This fee shall be paid by cash, check or money order made

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payable to the Commission of Finance of Rockland County. Payment shall accompany the submission of the Department of Nonoffensive Materials Plan.

17.8.0 - Effective Date (revised 6/16/10.)

Article 17 became effective on May 1, 2000. Revised: June 1, 2003 and October 26, 2004. Revised June 18, 2008. Added to and revised June 16, 2010.

LAWS OF ROCKLAND COUNTY

CHAPTER 350

SOLID WASTE

Chapter 350

SOLID WASTE

- § 350-1. Legislative intent.
- § 350-2. Definitions.
- § 350-3. Rockland County Solid Waste Management Authority.
- § 350-4. Rockland County Department of Health.
- § 350-5. Provision for regular and reliable collection and disposition of waste.
- § 350-6. Requirements for set out, collection, and disposal of residential solid waste.
- § 350-7. Requirements for set out, collection, and disposal of residential recyclables.
- § 350-8. Requirements for set out, collection, and disposal of residential ~~yard waste~~.
- § 350-9. Requirements for set out, collection, and disposal of construction and demolition debris.
- § 350-10. Requirements for set out, collection, and disposal of commercial solid waste.
- § 350-11. Requirements for set out, collection, and disposal of ~~commercial~~ recyclables.
- § 350-12. Hauler waste collection and disposal requirements.
- § 350-13. Landscaper waste collection and disposal requirements.
- § 350-14. Prohibition against unauthorized dumping and scavenging.
- § 350-15. Enforcement; penalties for offenses.
- § 350-16. Implementation.

§ 350-17. Severability.

§ 350-18. When effective.

[HISTORY: Adopted by the Rockland County Legislature 5-20-2008 by L.L. No. '2-2008. Amendments noted where applicable.]

§ 350-1. Legislative intent.

- A. The management of solid waste is the inherent responsibility of local government, whose authority in this area is derived from its police powers. County-wide collection and disposition of municipal solid waste, more commonly referred to as "flow control," will allow for more effective and environmentally responsible waste planning and management, and more effective implementation of the County's integrated solid waste management plan.
- B. Flow control is needed so that environmentally beneficial management options which are not economically appealing to the waste management industry, such as source reduction, resource recovery, and alternative solid waste processing technologies, can be implemented. Flow control will further the goals of protecting the public health, safety, and welfare of the citizens of Rockland County from offensive materials by regulating the removal, transportation and disposal of solid waste and reducing the amount of infected and contaminated solid waste that would require special processing.
- C. More than 16 years after the adoption of its integrated solid waste management plan in September 1991, the County desires to further increase its rate of recycling, and to implement an alternative solid waste processing technology with the goal of eliminating, or severely reducing the amount of County-generated waste that needs to be disposed of in landfills. Flow control will guarantee the quantity of waste to make the

implementation of an alternative solid waste processing technology a viable goal, and serve important environmental and public health, welfare, and safety objectives.

§ 350-2. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

AUTHORITY — The Rockland County Solid Waste Management Authority, a public benefit corporation organized and existing under the Rockland County Solid Waste Management Authority Act, Title 13-M of Article 8 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State of New York, as amended from time to time.

BIODEGRADABLE LEAF BAGS — Kraft paper bags used in storing and composting yard waste.

BULK ITEMS — Items that may be too large to fit into standard household trash cans or are typically not collected as part of weekly trash collections, such as small household appliances and housewares; painted, laminated and treated wood, including lumber under four feet in length and under 25 pounds, and plywood; furniture (wooden and upholstered); mattresses; textiles; bulky plastics; packing materials; insulation; office equipment; and small machinery, generated within the County and which has been discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, having served their intended use. Bulk items shall not include any items or materials that appear on the list of designated recyclables.

COMMERCIAL — Any firm, company, corporation, partnership, association, institution, multifamily residence, townhouse, cooperative or condominium apartment building or complex, joint stock association or any other group of individuals, or other entity providing a public service or

engaged in a business for profit, and includes the plural as well as the singular.

CONSTRUCTION AND DEMOLITION DEBRIS — Solid waste resulting from construction, remodeling, repair, demolition of structures, and road building, which is generated within the County. Such wastes include but are not limited to bricks, concrete and other masonry materials, lumber, and asphalt, as designated by the Authority, and modified from time to time, by resolution.

COUNTY — The County of Rockland.

CURBSIDE — The location within five feet from the public street at which yard waste, solid waste, scrap metal, construction and demolition debris, or recyclables may be set out for collection by a hauler.

DEPARTMENT OF HEALTH — The Rockland County Department of Health.

DESIGNATED FACILITY — Any publicly owned solid waste facility(ies) and/or any solid waste facility(ies) owned and/or operated by the authority, and designated by the authority for acceptance or disposal of yard waste, solid waste, construction and demolition debris, scrap metals, and/or recyclables, including but not limited to transfer stations, materials recovery facilities, drop-off centers, and resource recovery facilities.

DESIGNATED RECYCLABLES — Recyclables, as designated by the Authority, and modified from time to time by resolution and which shall be separated from the solid waste stream for collection and/or delivery to a materials recovery facility or other recycling facility.

DUMPSTER CONTAINER — A container used for the purpose of temporarily holding construction and demolition debris, solid waste, scrap metals, or recyclables and which generally ranges in size from 1/2 cubic yard to 40 cubic yards.

HAULER — Each such individual or carting company, or any municipality providing such collection service, authorized by a valid permit issued by the Department of Health to collect, pick up, remove, transport and/or dispose or cause to be collected, picked up, removed, transported or disposed any yard waste, solid waste, construction and demolition debris, scrap metals, and/or recyclables generated within the County and placed at curbside or other designated area for collection by such hauler.

INFECTIOUS WASTE — Any material containing any organism (such as a virus or bacterium) that is capable of being communicated by invasion and multiplication in body tissues and is capable of causing disease or adverse health impacts in humans.

LANDSCAPER — Any person or entity, commercial or otherwise, who performs the following services for customers within Rockland County for financial consideration: cutting, trimming, lawn care, and maintenance of trees and shrubs; collection, consolidation, and removal of yard waste.

MATERIALS RECOVERY FACILITY — Any designated facility where designated recyclables are received and processed.

MUNICIPALITY — The County, any village, town, city, school district, special district, or public authority located in the County, or any combination thereof.

OWNER — Any person who, alone or jointly or severally with another: (1) shall have legal title to any dwelling or dwelling unit, with or without accompanying actual possession thereof; or (2) shall have charge, care, or control of any dwelling or dwelling unit, as owner, lessee, mortgagee or vendee in possession, assignee of rents, or as a receiver; of an executor, administrator, trustee, or guardian of the estate of the owner. Any agent for any of the above shall be bound to comply with the provisions of this chapter to the same extent as if he were the owner.

PERMIT — A written license and authorization to carry on a specified activity or activities as regulated by this chapter and includes any written approval issued by the Commissioner of the Department of Health or his duly designated representative.

PERSON — Includes any individual; landlord, tenant, owner or manager of a multifamily residence, townhouse, cooperative or condominium apartment building or complex; chief executive officer, owner or manager of a commercial entity; director or manager of any institution, including nonprofit or tax-exempt organizations; firm; public or private corporation; municipality; political subdivision; association; partnership; institution; public body; joint stock association or any other group of individuals, including apartment, condominium, and townhouse association; and the term "person" shall include plural as well as singular.

PUTRESCIBLE — That the material in question is capable of undergoing the process of decomposition resulting in the formation of malodorous byproducts.

RECYCLABLES — Any material generated within the County and which, under any applicable law, is not hazardous and which is designated to be separated from the waste stream to be recycled.

REGULATED MEDICAL WASTE — Any medical waste that is a solid waste that is generated in the diagnosis, treatment (e.g., provision of medical services), or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, that is not excluded or exempted under 6 NYCRR Part 360-17.2(h)(2).

ROCKLAND COUNTY SANITARY CODE — The Sanitary Code of the County of Rockland.

SCRAP METALS — White goods (stoves, refrigerators, washing machines, dishwashers and hot water heaters), metal furniture, recognizable and uncontaminated metal vehicle parts (excluding mufflers and catalytic converters and parts that

contain fluids or motor oils), metal pipes, bed frames, metal sheds and other metal objects, generated within the County and which have been discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, having served their intended use.

SOLID WASTE — All putrescible and non-putrescible solid wastes resulting from handling, preparation, cooking, serving or consumption of food and other non-recyclable household waste products, as well as residue from the burning of coal or wood, as well as bulk items, which are generated within the County. It shall include, but not be limited to, materials or substances discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, or that are being accumulated, stored, or physically, chemically or biologically treated prior to being discarded or rejected, having served their intended use, or as a manufacturing by-product, including, but not limited to, garbage, refuse, industrial, commercial and agricultural waste, rubbish, ashes, contained gaseous material, incinerator residue, offal, but not including sewage sludge and other highly diluted water-carried materials or substances and those in gaseous form, special nuclear or by-product material within the meaning of the Atomic Energy Act of 1954, as amended, or waste which appears on the list or satisfies the characteristics of hazardous waste promulgated by the Commissioner of the New York State Department of Environmental Conservation.

SUITABLE CONTAINER — The receptacles to be utilized for the set-out of mandated materials, as designated by the Authority.

TIRES — Tires from cars and trucks and their casings.

YARD WASTE — Grass clippings, leaves, and brush which are generated within the County, and excluding trees and tree stumps, and which shall be separated from the solid waste stream for collection and/or delivery to a designated facility. Yard waste may also include other types of green waste as designated by the Authority, and modified from time to time, by resolution.

YARD WASTE COMPOSTING FACILITY — Any publicly owned yard waste composting facility(ies) designated by the Authority to receive, process, and market compost and wood products from yard waste generated within the County.

§ 350-3. Rockland County Solid Waste Management Authority.

The Rockland County Solid Waste Management Authority shall implement and administer the provisions of this chapter related to:

- A. Determination of the designated facility that shall serve a particular municipality;
- B. Determination of the types of wastes that shall be handled and processed at each designated facility;
- C. Designation of those materials that are to be separated and collected for recycling at the materials recovery facility or other designated facility. A current official list of designated recyclables shall be maintained by and be available from the Authority;
- D. Coordination with the Department of Health on the implementation and enforcement of this chapter, and exchange of information with the Department of Health related to such implementation and enforcement;
- E. Promulgation of regulations applicable to commercial entities requesting Authority approval of their recycling programs for purposes of § 350-11C of this chapter;
- F. Promulgation of regulations applicable to landscapers, tree service companies, and green waste recyclers requesting authority approval of their green waste recycling programs for purposes of § 350-13D of this chapter;
- G. Promulgation of such other regulations and performance of such other duties and functions determined by the Authority to be in furtherance of the goals of this chapter.

§ 350-4. Rockland County Department of Health.

- A. The Commissioner of the Department of Health shall enforce violations for any noncompliance with the provisions of this chapter.
- B. The Rockland County Department of Health shall require a background check and fingerprinting of a hauler's principals as a requirement for issuance of a permit under Article III of the Rockland County Sanitary Code to commercially collect, pick up, remove or transport or cause to be collected, picked up, removed or transported any yard waste, construction and demolition debris, solid waste, scrap metals, and/or recyclables. The Commissioner of the Department of Health may satisfy the requirement for such background checks and fingerprinting by recognizing the licenses of other jurisdictions such as the Town of Clarkstown, Town of Orangetown, County of Westchester, the City of New York, and any other jurisdiction that requires background checks and fingerprinting for issuance of a hauling permit or license.
- C. The Department of Health shall coordinate with the Authority on the implementation and enforcement of this chapter, and provide the exchange of information related to such implementation and enforcement between the Department of Health and the Authority.
- D. All such costs incurred by the Department of Health pursuant to this chapter shall be reimbursed by the Authority, including enforcement actions.
- E. The Commissioner of Health shall require all permittees covered by this chapter to submit quarterly reports, on forms provided by the Department of Health, of the amounts (in cubic yards or tons, as applicable) of solid waste, yard waste, construction and demolition debris, scrap metals, and recyclables and the facility to which such materials were delivered.

§ 350-5. Provision for regular and reliable collection and disposition of waste.

- A. In order to provide for public health and safety and to facilitate the conservation of vital resources, each person shall provide for the removal of yard waste, solid waste, construction and demolition debris, scrap metals and designated recyclables from the property on which they are generated either through a service provided by a municipality or hauler or by direct haul by such person to the designated facility as determined by the authority to serve the municipality where such person resides or has a place of business, and which receives each such type of waste.
- B. In order to provide for public health and safety and to facilitate the conservation of vital resources, each commercial entity shall provide for the removal of yard waste, solid waste, construction and demolition debris, scrap metals, and recyclables from the property on which they are generated either through a service provided by a hauler or by direct haul to the designated facility as determined by the authority to serve the municipality where such commercial entity resides or has a place of business, and which receives each such type of waste.
- C. It shall be a violation of this chapter for any person to place at curbside or other designated area for collection any appliance containing chlorofluorocarbons ("CFCs"), such as freon, in such a manner that would allow for it to be crushed or for CFCs to escape into the atmosphere.
- D. This chapter shall not affect the handling and disposal of infectious waste and regulated medical waste by medical facilities, such as doctor's offices, clinics, nursing homes, and hospitals.

§ 350-6. Requirements for set out, collection, and disposal of residential solid waste.

- A. In order to provide for public health and safety, each person shall provide for the separation of solid waste from all other types of waste and shall provide for the placement of such solid waste into a dumpster container, compactor, or other suitable container at curbside or other designated area for collection by a hauler.
- B. All solid waste placed at curbside or other designated area for collection by a hauler must be delivered to the designated facility.
- C. It shall be a violation of this chapter for any person to place at curbside or other designated area for collection any can, container or dumpster container that has scrap metals, recyclables or yard waste mixed with solid waste.
- D. Yard waste shall be separately placed in biodegradable leaf bags or as directed by the municipality where the person resides or has a place of business, and set out for collection by a hauler.
- E. All scrap metals must be separately placed at curbside or other designated area for collection by a hauler. Such scrap metals must be delivered to the designated facility.

§ 350-7. Requirements for set out, collection, and disposal of residential recyclables.

- A. In order to facilitate the conservation of vital natural resources through recycling, each person shall separate his or her designated recyclables from all other types of waste and shall provide for the placement of such designated recyclables into separate suitable containers designated for each type of designated recyclables, e.g., paper products and containers made of aluminum, glass, ferrous metals, and all grades of plastic.

- B. All recyclables placed at curbside for collection by a hauler must be delivered to the materials recovery facility or other designated facility.

§ 350-8. Requirements for set out, collection, and disposal of residential yard waste.

- A. In order to provide for public health and safety, each person creating his or her own yard waste shall provide for the separation of yard waste from all other types of waste and shall provide for the placement of such yard waste into biodegradable leaf bags at curbside for collection by a hauler, or as directed by the municipality where the person resides or has a place of business.
- B. All yard waste placed at curbside for collection must be delivered to the designated facility.
- C. All yard waste generated by the activities of a landscaper and collected and/or consolidated for removal by said landscaper from the premises where generated must be delivered to the designated facility.
- D. Where allowed by law or regulation, this section shall not prohibit private noncommercial composting of yard waste, or mulching of leaves, grass clippings and cuttings.

§ 350-9. Requirements for set out, collection, and disposal of construction and demolition debris.

- A. In order to provide for public health and safety, all construction and demolition debris that has been placed into a dumpster container for collection by a hauler must be delivered to the designated facility.
- B. In order to facilitate the conservation of vital natural resources through recycling, each person and commercial entity shall separate his or her construction and demolition debris from all other types of waste and shall provide for the placement of such separated construction

and demolition debris into suitable containers for pick up by a hauler and delivery to the designated facility.

§ 350-10. Requirements for set out, collection, and disposal of commercial solid waste.

- A. In order to provide for public health and safety, each commercial or industrial entity that generates solid waste shall provide for the separation of such waste from all other types of waste and shall cause the placement of such solid waste into a dumpster container, compactor, or other suitable container and the placement of such container at curbside or other designated area for collection by a hauler.
- B. All such solid waste placed at curbside or other designated area for collection by a hauler must be delivered to the designated facility.
- C. All scrap metals must be separately placed at curbside or other designated area for collection by a hauler. Such scrap metals must be delivered to the designated facility.

§ 350-11. Requirements for set out, collection, and disposal of commercial recyclables.

- A. In order to facilitate the conservation of vital natural resources through recycling, each commercial and industrial entity shall provide for the separation of designated recyclables from all other types of waste and shall provide for the placement of such designated recyclables into separate suitable containers labeled as containing recyclables and set out at curbside or other designated area for collection by a hauler.
- B. All recyclables placed at curbside or other designated area for collection by a hauler must be delivered to the materials recovery facility or other designated facility.

- C. The provisions of this section shall not apply to any commercial entity having in place a recycling program approved by the Authority pursuant to regulations promulgated in accordance with § 350-3E of this chapter.

§ 350-12. Hauler waste collection and disposal requirements.

- A. It shall be a violation of this chapter for any hauler without a valid permit issued by the Department of Health pursuant to Article III of the Rockland County Sanitary Code, to commercially collect, pick up, remove or transport or cause to be collected, picked up, removed or transported any yard waste, solid waste, construction and demolition debris, scrap metals, and/or recyclables placed at curbside or other designated area for collection by a hauler. Each such collection, pick up, or removal from one or more premises shall constitute a separate and distinct offense in violation of this chapter.
- B. It shall be a violation of this chapter for any hauler to take yard waste, solid waste, construction and demolition debris, scrap metals, and/or designated recyclables to any facility other than a designated facility.
- C. From the time of placement of yard waste, solid waste, construction and demolition debris, scrap metals, and/or designated recyclables at curbside or other designated area by a person for collection by a hauler in accordance herewith, such yard waste, solid waste, construction and demolition debris, scrap metals, and designated recyclables shall be delivered to the designated facility.
- D. Solid waste shall not be mixed with either recyclables (including scrap metals) or with yard waste; each such type of waste shall be separately collected and separately disposed at the designated facility.
- E. Tires shall not be mixed with solid waste but must be separately collected and disposed at the designated facility.

- F. It shall be a violation of this chapter for any hauler to handle any appliance containing CFCs, such as freon, in such a manner that would allow for it to be crushed or for CFCs to escape into the atmosphere.
- G. Every hauler shall offer recyclables collection to those persons for whom said hauler provides removal, collection or transport of solid waste.
- H. Every hauler shall submit written quarterly reports, on forms to be provided by the Department of Health, to the Department of Health and to the Authority, of the amounts (in cubic yards or tons, as applicable) of solid waste, yard waste, construction and demolition debris, scrap metals, and recyclables collected during the quarter ended and the facility to which such materials were delivered, and any other information which the Commissioner of Health shall, from time to time, require.
- I. Failure to comply with the provisions of this § 350-12 shall subject the violator to the penalties set forth in § 350-15.

§ 350-13. Landscaper waste collection and disposal requirements.

- A. It shall be a violation of this chapter for any landscaper to take yard waste to any facility other than a designated facility.
- B. Yard waste shall not be mixed with any other type of waste but must be separately collected and disposed at the designated facility.
- C. Failure to comply with the provisions of this § 350-13 shall subject the violator to the penalties set forth in § 350-15.
- D. The provisions of this section shall not apply to any landscaper, tree service company, or green waste recycler having in place a green waste recycling program approved by the Authority pursuant to regulations promulgated in accordance with § 350-3F of this chapter.

- E. Every landscaper shall submit written quarterly reports, on forms to be provided by the Department of Health, to the Department of Health and to the Authority, of the amounts (in cubic yards or tons, as applicable) of yard waste collected during the quarter ended and the facility to which such materials were delivered, and any other information which the Commissioner of Health shall, from time to time, require.

§ 350-14. Prohibition against unauthorized dumping and scavenging.

- A. It shall be a violation of this chapter for any person to place for the purpose of collection solid waste, recyclables, construction and demolition debris, scrap metals, or yard waste at a property other than the property generating said material.
- B. It shall be a violation of this chapter for any person to place solid waste, recyclables, construction and demolition debris, scrap metals, or yard waste in dumpsters and/or containers designated for solid waste use by commercial and/or industrial entities.
- C. It shall be a violation of this chapter for any person to bury and/or burn solid waste material on public or private property, unless authorized by the applicable village or town.
- D. It shall be a violation of this chapter for any person to throw, dump, deposit or place solid waste, recyclables, construction and demolition debris, scrap metals, and/or yard waste along the roadside or on public and/or private property within the County without the express consent of the owner of such property.
- E. It shall be a violation of this chapter for any person to cause to be thrown, dumped, deposited, or placed solid waste, recyclables, construction and demolition debris,

scrap metals, or yard waste along any public or private road or on lands bordering such roads.

- F. It shall be a violation of this chapter for any person to burn, break, destroy, scatter, scavenge, collect or take any recyclables without the consent of the owner of such materials.
- G. It shall be a violation of this chapter for any person to burn, break, destroy, scatter, scavenge, collect or take any recyclables from any recyclables drop-off location in the County or other designated facility.

§ 350-15. Enforcement; penalties for offenses.

- A. Presumptions. The following shall be rebuttable presumptions in the enforcement of the provisions of this chapter:
- (1) The placement or presence of any container which is marked or identified with the name of any hauler, at any location within the County, shall be presumptive evidence that said hauler is providing solid waste, construction and demolition debris, scrap metals, or recyclables collection services at said location within the County as of the date of said placement or presence.
 - (2) Evidence of solid waste, construction and demolition debris, scrap metals, or designated recyclables in a container, and subsequent observation of the same container empty, shall be presumptive evidence that solid waste, construction and demolition debris, scrap metals, or designated recyclables were collected from the container by the hauler whose name is marked on the container. If such container does not bear the name of any hauler, the presumption shall be that solid waste, construction and demolition debris, scrap metals, or designated recyclables were collected by the hauler who is

responsible by contract or otherwise for collection of solid waste, construction and demolition debris, scrap metals, and/or designated recyclables at that location.

- (3) The failure to deliver any yard waste, solid waste, construction and demolition debris, scrap metals, and/or designated recyclables to a designated facility within three days of the collection of such yard waste, solid waste, construction and demolition debris, scrap metals, and/or designated recyclables from any location within the County shall be presumptive evidence that the yard waste, solid waste, construction and demolition debris, scrap metals and/or designated recyclables were illegally dumped or disposed of at a location other than a designated facility.
- (4) Service upon any person, landscaper, or hauler in a manner consistent with the requirements of applicable law shall be presumptive evidence that such notice was received by that person, landscaper, or hauler.

B. Enforcement by civil penalties.

- (1) The provisions of this chapter may be enforced as deemed appropriate by the Commissioner of the Department of Health.
- (2) The Commissioner of the Department of Health shall prescribe and impose administrative sanctions and/or civil penalties up to \$1,000 for the violation of or failure to comply with any provision of this chapter or any regulation promulgated hereunder, as prescribed below.
- (3) The Commissioner of the Department of Health shall be empowered to exercise all quasi-judicial powers conferred by the New York State Public Health Law, including but not limited to the issuance of

subpoenas; designation of members of the Department of Health to issue subpoenas; issuance of warrants to the Sheriff of the County to bring to its aid the power of the County whenever it shall be necessary to do so; compel the attendance of witnesses; administer oaths to witnesses and compel them to testify; cause to be held a hearing on any violation of the provisions of this chapter after adequate notice to the person, landscaper, or hauler concerned; and maintain actions in any court of competent jurisdiction to restrain by injunction violators of the provisions of this chapter or any of the Commissioner's orders, rules and regulations, or any of the Authority's rules and regulations, promulgated in furtherance of the provisions of this chapter.

- (4) For purposes of penalties, each day during which a violation continues shall be deemed to be a separate violation.

C. Administrative sanctions and civil penalties.

- (1) Violation letter. Upon any violation of the provisions of this chapter or any regulation of the Department of Health or the Authority promulgated hereunder, the Commissioner of Health or his designee may serve notice of the violation on the person, landscaper, or hauler to be charged in accordance with applicable law.
- (2) Formal hearing on violation. The Commissioner of Health, or his designee, shall hold a hearing on the alleged violation in accordance with the provisions of Article I of the Rockland County Sanitary Code governing hearings.
- (3) Civil penalties.
 - (a) Any person, landscaper, or hauler who violates, disobeys or disregards the terms of any lawful

notice, order or regulation of the Commissioner of Health or the Authority shall be subject to the imposition of a civil penalty by the Commissioner, not exceeding \$1,000 for each single violation or failure or omission to act.

- (b) In determining the administrative penalty to be imposed, the Commissioner of Health shall take into account the severity of the violation, the impact upon the public health and welfare of the County, the environment, or the designated facility, and any past violations.
- (c) The penalty provided for by this section may be sued for and recovered by the Commissioner in the name of the County in any court of competent jurisdiction.
- (d) Each day or a part of a day on which violation(s) or failure continues shall constitute a separate violation.
- (e) For serious, repeated or persistent violations of any of the provisions of this chapter or any regulations promulgated hereunder, the Commissioner of Health may maintain an action in any court of competent jurisdiction to restrain by injunction violators of the provisions of this chapter or any of the Commissioner of Health's orders, rules and regulations, or of the Authority, promulgated in furtherance of the provisions of this chapter.
- (f) In addition to, or in lieu of, any administrative monetary penalty, the Commissioner of Health may suspend or revoke the right of any permittee covered by this chapter to transport solid waste, construction and demolition debris, scrap metals, yard waste, or designated recyclables within the County or to dispose of such materials at a designated facility.

- (4) Enforcement other than by prosecution.
- (a) In lieu of enforcement of this chapter by way of recovery of civil penalties, revocation of permits, seizure, embargo and condemnation or other means, the Commissioner of Health, or his duly authorized representative, may seek to obtain the voluntary compliance with this chapter by way of notice, warning or educational means, as deemed appropriate in the discretion of the Commissioner of Health taking into consideration all of the circumstances surrounding such violation.
- (b) This section shall not be construed to require that such noncompulsory methods must be employed or attempted before proceeding by way of compulsory or other legally proscribed procedures.

§ 350-16. Implementation.

The Authority shall cause to be drawn up an implementation schedule or schedules which shall list all portions of this chapter which remain to be implemented. Such schedule or schedules shall be mailed by certified mail, return receipt requested, to the Clerk of the County Legislature, the County Clerk, and to each municipality, addressed to the clerk of each such municipality. Said schedule or schedules shall be effective upon the date of such mailing.

§ 350-17. Severability.

If any part of this chapter is found to be illegal by a court of competent jurisdiction, the remaining sections shall remain in full force and effect.

§ 350-18. When effective.

This chapter shall be effective immediately upon filing with the New York State Secretary of State

ROCKLAND COUNTY SOLID WASTE MANAGEMENT AUTHORITY

**RULES AND REGULATIONS TO THE COUNTY FLOW CONTROL LAW
REGULATING THE COUNTY-WIDE COLLECTION AND DISPOSITION OF SOLID
WASTE GENERATED IN ROCKLAND COUNTY**

**ROCKLAND COUNTY
ROCKLAND COUNTY SOLID WASTE MANAGEMENT AUTHORITY**

**RULES AND REGULATIONS TO THE COUNTY FLOW CONTROL LAW
REGULATING THE COUNTY-WIDE COLLECTION AND DISPOSITION OF SOLID
WASTE GENERATED IN ROCKLAND COUNTY**

Amended March 16, 2010 and October 28, 2010

RULE 1. PURPOSE

These Rules and Regulations serve to establish the requirements for increasing the rate of recycling, and for eliminating or reducing the amount of County-generated Solid Waste disposed of in landfills. These Rules and Regulations are to be administered by the Rockland County Solid Waste Management Authority (the "Authority") in cooperation with the Department of Health (the "Department").

The purposes of these Rules and Regulations are:

- (A) to establish provisions applicable to Commercial entities requesting Authority approval of their Recycling Programs for purposes of Section 350-11 (C) of Chapter 350 of the Laws of Rockland County;
- (B) to establish provisions applicable to Landscapers, tree service companies, and green waste recyclers requesting Authority approval of their green waste recycling programs for purposes of Section 350-13 (D) of Chapter 350 of the Laws of Rockland County;
- (C) to establish procedures for the appeal of the determination of Designated Facilities; and
- (D) to clarify certain provisions of Chapter 350 of the Laws of Rockland County.

RULE 2. AUTHORITY

These Rules and Regulations are promulgated pursuant to the requirements and provisions of Chapter 350 of the Laws of Rockland County.

RULE 3. FINDINGS AND POLICY

The findings and policy enumerated by the legislature in Section 350-1 of Chapter 350 of the Laws of Rockland County, as amended, are hereby adopted as the administrative findings and policy upon which these Rules and Regulations are based.

RULE 4. APPLICATION

The terms and provisions of these Rules and Regulations shall be construed to permit the Authority and the Department to effectuate the purposes of Chapter 350 of the Laws of Rockland County, goals, and policies.

RULE 5. DEFINITIONS

For the purposes of these Rules and Regulations the general definitions and abbreviations set forth in Chapter 350 of the Laws of Rockland County shall apply to these Rules and Regulations.

“Authority” means the Rockland County Solid Waste Management Authority, a public benefit corporation organized and existing under the Rockland County Solid Waste Management Authority Act, Title 13-M of Article 8 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State of New York, as amended from time to time.

“Brush” means undergrowth, shrubs, vines, and similar plant material.

“Commercial” means any firm, company, corporation, partnership, association, institution, multi-family residence, townhouse, cooperative or condominium apartment building or complex, joint stock association or any other group of individuals, or other entity providing a public service or engaged in a business for profit, and includes the plural as well as the singular.

“County” means the County of Rockland.

“Department of Health” means the Rockland County Department of Health.

“Designated Facility” means any publicly owned solid waste facility(ies) and/or any solid waste facility(ies) owned and/or operated by the Authority, and designated by the Authority for acceptance or disposal of Yard Waste, Solid Waste, Construction and Demolition Debris, Scrap Metals, and/or Recyclables, including but not limited to transfer stations, materials recovery facilities, drop off centers, and resource recovery facilities.

“Facility” means any structure occupying more than 10,000 square feet, other than a single family dwelling.

“Hauler” means each such individual or carting company, or any municipality providing such collection service, authorized by a valid permit issued by the department of health to collect, pickup, remove, transport and/or dispose or cause to be collected, picked up, removed, transported or disposed any yard waste, solid waste, construction and demolition debris, scrap metals, and/or recyclables generated within the county and placed at curbside or other designated area for collection by such hauler.

“Infectious Waste” means any material containing any organism (such as a virus or bacterium) that is capable of being communicated by invasion and multiplication in body tissues and is capable of causing disease or adverse health impacts in humans.

“Landscape” means any person or entity, commercial or otherwise, who performs the following services for customers within Rockland County for financial consideration: cutting, trimming, lawn care, and maintenance of trees and shrubs; collection, consolidation, and removal of Yard Waste.

“Municipality” means the County, any village, town, city, school district, special district, or public authority located in the County, or any combination thereof.

“Person” shall mean and include any individual; landlord, tenant, owner or manager of a multi-family residence, townhouse, cooperative or condominium apartment building or complex; chief executive officer, owner or manager of a commercial entity; director or manager of any institution, including non-profit or tax-exempt organizations; firm; public or private corporation; municipality; political subdivision; association; partnership; institution; public body; joint stock association or any other group of individuals, including apartment, condominium, and townhouse association, and the term person shall include plural as well as singular.

“Putrescible” means that the material in question is capable of undergoing the process of decomposition resulting in the formation of malodorous byproducts.

“Recyclables” means any material generated within the County and which under any applicable law, is not hazardous and which is designated to be separated from the waste stream to be recycled.

“Recycling Program” means a program that (1) separates for recycling or re-use all source separated materials generated by such entity such as clean paper product (including newspapers, cardboard, and all grades of paper), containers made of all grades of plastic (except Styrofoam), aluminum, glass, and ferrous metals; (2) educates or trains its employees and/or custodial staff about the requirements of the recycling program; and (3) provides for disposal of Recyclables to a facility whose business is to recycle or reuse such materials, or market them for recycling or reuse,

“Regulated Medical Waste” means any medical waste that is a solid waste that is generated in the diagnosis, treatment (e.g., provision of medical services), or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, that is not excluded or exempted under 6 NYCRR Part 360-17.2(h)(2).

“Solid Waste” means all Putrescible and non-Putrescible solid wastes resulting from handling, preparation, cooking, serving or consumption of food and other non-recyclable household waste products, as well as residue from the burning of coal or wood, as well as Bulk Items, which are generated within the County. It shall include, but not be limited to, materials or substances discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, or that are being accumulated, stored, or physically, chemically or biologically treated prior to being discarded or rejected, having served their intended use, or as a manufacturing by-product, including, but not limited to, garbage, refuse, industrial, commercial and agricultural waste, rubbish, ashes, contained gaseous material, incinerator residue, offal, but not including sewage sludge and other highly diluted water-carried materials or substances and those in gaseous form, special nuclear or by-product material within the meaning of the Atomic Energy Act of 1954, as amended, or waste which appears on the list or satisfies the characteristics of hazardous waste promulgated by the Commissioner of the New York State Department of Environmental Conservation.

“Tree” means a woody perennial plant, typically with a single stem or trunk growing to a considerable height and bearing lateral branches. “Tree” shall also include wood chips, saw logs, pulpwood, firewood and wood fibers.

“Yard Waste” means grass (not including ornamental grass) clippings, leaves, and brush which are generated within the County, and excluding Trees and Tree stumps, and which shall be separated from the Solid Waste stream for collection and/or delivery to a Designated Facility. Yard Waste may also include other types of green waste as designated by the Authority, and modified from time to time, by resolution.

RULE 6. COMMERCIAL ENTITIES REQUESTING APPROVAL OF RECYCLING PROGRAMS PURSUANT TO SECTION 350-11(C) OF CHAPTER 350 OF THE LAWS OF ROCKLAND COUNTY

Pursuant to Section 350-11(C) of Chapter 350 of the Laws of Rockland County, Commercial entities with a Recycling Program approved by the Authority are not required to follow the provisions of Section 350-11 of Chapter 350 of the Laws of Rockland County with respect to the requirements for set out, collection, and disposal of Commercial Recyclables. In order to qualify a Recycling Program as an approved Recycling Program for the purposes of Section 350-11(C) of Chapter 350 of the Laws of Rockland County, a Commercial entity seeking application of the exemption must:

- (A) be operating within the County and have had a Recycling Program in place with a source separation plan on file with the Department of Health on or before June 30, 2008. For Commercial entities with more than one location within the County, the Commercial entity must have had one location with a Recycling Program within the County at such date.
- (B) generate Recyclables as part of, but not as a product of, its normal business operations. The exemption shall not apply to recyclers or other businesses that handle, transfer, or process Recyclables.
- (C) comply with all applicable laws.
- (D) own or operate a Facility of 10,000 square feet or larger and have at least 50 employees. Commercial entities with more than one location within the County may aggregate numbers for Facility space or employees from different locations within the County.
- (E) generate and handle annual quantities of Recyclables at an amount less than the 6 NYCRR Part 360 regulations for registered solid waste facilities.
- (F) have a recycling coordinator or a designated employee that serves as recycling coordinator;
- (G) not receive Recyclables collected on behalf of any Municipality.
- (H) file a written request for approval of a Commercial entity’s Recycling Program with information requested by the Authority. Commercial entities with an approved Recycling Program must thereafter file an annual report with the Authority documenting the continuation of the approved Recycling Program, or indicating any changes thereto.

Approval of a Commercial Recycling Program shall be revoked if a Commercial entity ceases to meet any of the requirements set forth above.

RULE 7. REGULATIONS APPLICABLE TO LANDSCAPERS, TREE SERVICE COMPANIES AND GREEN WASTE RECYCLERS REQUESTING AUTHORITY APPROVAL OF GREEN WASTE RECYCLING PROGRAMS PURSUANT TO SECTION 350-13(D) OF CHAPTER 350 OF THE LAWS OF ROCKLAND COUNTY

Pursuant to Section 350-13(D) of Chapter 350 of the Laws of Rockland County, Landscapers, tree service companies, and green waste recyclers with green waste recycling programs approved by the Authority are not required to follow the provisions of Section 350-13 of Chapter 350 of the Laws of Rockland County with respect to the requirements for Landscaper waste collection and disposal. In order to qualify a green waste recycling program as an approved program for the purposes of Section 350-13(D) of Chapter 350 of the Laws of Rockland County, a Landscaper, tree service company, or green waste recycler seeking application of the exemption must:

- (A) own a facility that:
1. is located within the County and that is in compliance with all applicable law, rule, regulation, requirement, guideline, action, determination or order of, or legal entitlement issued by, any governmental body having jurisdiction, applicable from time to time to such facility;
 2. services Yard Waste generated by a Landscaper's, tree service company's or green waste recycler's own business;
 3. does not accept or process Yard Waste from another Landscaper, tree service company or green waste recycler located within the County;
 4. does not accept or process Yard Waste collected on behalf of a Municipality located within the County; and
 5. processes Yard Waste into marketable product.
- (B) present proof, to the Authority's satisfaction, of a Yard Waste recycling business located within the County and in place on or before June 30, 2008.
- (C) designate a recycling coordinator.
- (D) file a written request for approval of a green waste recycling program with information requested by the Authority. Landscapers, tree service companies, or green waste recyclers with an approved recycling program must thereafter file an annual report with the Authority documenting the continuation of the approved green waste recycling program, or indicating any changes thereto.

Approval of a green waste recycling program shall be revoked if a Landscaper, tree service company, or green waste recycler ceases to meet any of the requirements set forth above.

RULE 8. RECONSIDERATION OF FACILITY DESIGNATION

- (A) Any Hauler may request that the Authority reconsider the designation of a Designated Facility as applied to that Hauler's collection route.
- (B) A request for reconsideration must be in writing.
- (C) The Authority shall review a request for reconsideration and may either request further information or issue a written affirmance of the original designation or a modified designation.
- (D) In reviewing a request for reconsideration, the Authority may consider the following factors:
 - (1) The location of the Hauler's route in relation to the Designated Facility, in terms of travel time and/or distance; and
 - (2) Other considerations deemed relevant by the Authority, including but not limited to other health, safety, and welfare considerations.
- (E) A request for reconsideration shall not stay the designation of a subject Designated Facility pending resolution of the request.

RULE 9. CLARIFICATION OF HANDLING AND DISPOSAL OF INFECTIOUS WASTE AND REGULATED MEDICAL WASTE

Section 350-5(D) of Chapter 350 of the Laws of Rockland County shall not be read to be limited to medical facilities such as doctor's offices, clinics, nursing homes and hospitals. Section 350-5(D) of Chapter 350 of the Laws of Rockland County shall apply to all businesses with lawful disposal and handling programs in place for Infectious Waste and Regulated Medical Waste.

RULE 10. CLARIFICATION OF SECTION 350-9 OF CHAPTER 350 OF THE LAWS OF ROCKLAND COUNTY – REQUIREMENTS FOR SET OUT, COLLECTION AND DISPOSAL OF CONSTRUCTION AND DEMOLITION DEBRIS.

- (A) For the purposes of Section 350-9(A) of Chapter 350 of the Laws of Rockland County, the term "dumpster container" shall also include but not be limited to truck beds of any size and areas where construction and demolition debris is placed for disposal purposes.
- (B) Pursuant to Section 350-9(B) of Chapter 350 of the Laws of Rockland County, each person and commercial entity shall dispose of each construction and demolition debris material separately (i.e., concrete and asphalt shall be deposited for disposal in separate dumpster containers for pick up by a hauler and delivery to the designated facility).

RULE 11. RESERVED

RULE 12. ENFORCEMENT

Any Person that fails to meet the requirements of these Rules and Regulations shall be subject to administrative penalties as authorized by Section 350-15 of Chapter 350 of the Laws of Rockland County.

RULE 13. SEVERABILITY

If any provision of these Rules and Regulations or the application thereof to any Person or circumstance is held invalid by a court of competent jurisdiction, the remainder of these Rules and Regulations shall not be affected thereby. The invalidity of any section or sections or parts of any section or sections shall not affect the validity of the remainder of these Rules and Regulations.

RULE 14. EFFECTIVE DATE

The foregoing "Amended Rules and Regulations Regulating the County-Wide Collection and Disposition of Solid Waste Generated in Rockland County", after due notice, shall be mailed to the clerk of the Rockland County Legislature and the clerk of each municipality within Rockland County and shall become effective three (3) days thereafter.

APPENDIX G

DETAILED TECHNOLOGY EVALUATION

Waste To Energy Technologies

Waste has been converted to beneficial use on a large scale for well over 100 years. Incineration with electric power generation was first applied to municipal solid waste in 1894 in New York City. Since that time, the burning of municipal solid waste with energy recovery (now known as WTE) has matured into a safe, effective and environmentally acceptable technology. The proven large-scale waste processing methods include incineration and starved-air combustion, as defined below:

Incineration: This is the controlled combustion of organic or inorganic waste with more than the ideal air (stoichiometric) requirement – excess air -- to assure that complete burning occurs.

Starved air combustion: Starved air incineration utilizes less air than conventional incineration, and it produces ash similar in appearance to that from a conventional incineration process. The lower air requirement leads to smaller equipment sizes. This process, however, is an incineration process.

Other methods of MSW disposal are being used, such as mixed-waste composting and landfill, but they are becoming less and less attractive in some areas. Mixed-waste composting requires large land areas or high capital investment. It also can create significant odor and the compost is limited in its application. Landfill is not a processing technology; it is storage. It also requires large land areas, generates methane (a greenhouse gas that is more than 20 times as potent as carbon dioxide, which is generated from WTE), and may create other environmental impacts, such as water pollution.

WTE has proven to be a reliable method for waste processing and disposal. Modern plants are compatible with aggressive recycling programs and have an environmentally acceptable track record.

While new WTE procurements have declined in the United States, the market for this equipment has increased in Europe and in Eastern Asia, with European and Japanese systems suppliers actively marketing their systems, and consistently improving their performance. This technology is well tested and is used more than any other for large waste processing facilities in the United States and overseas. Table 1 demonstrates the extent of use of WTE technology throughout the world.

Table 1: Use of Waste-to-Energy Facilities Worldwide

Location	Number of Facilities	Amount of MSW Managed by WTE as a percent of Total MSW Generated
USA	86	8 to 15 percent based on MSW reported by EPA and <i>BioCycle</i>
Europe	400	varies from country to country
Japan	100	70 to 80 percent
Other nations: (Taiwan, Singapore, China, etc.)	70	varies from country to country

Source: Energy Recovery Council website (www.energyrecoverycouncil.org).

In New York State, there are 10 WTE facilities currently operating, with capacity to process about 12,319 tons per day (TPD) of MSW. Table 2 describes those plants.

Table 2: Waste-to-Energy Plants in New York

Location	Size (TPD)	Start Date	Energy Product
Babylon	750	1989	17 MW
East Northport	750	1991	25 MW
Fulton	200	1985	4 MW
Hudson Falls	472	1991	14.4 MW
Jamesville	990	1995	39.2 MW
Niagara Falls	2,250	1996	50 MW
Peekskill	2,250	1984	63 MW
Poughkeepsie	450	1988	9.25 MW
Ronkonkoma,	486	1989	12 MW
Westbury	2,671	1989	75 MW

Source: ERC 2010 Directory, Energy Recovery Council (www.energyrecoverycouncil.org).

Proven Waste to Energy Technologies

The following sections describe each of the basic types of MSW combustion technologies, which have been in use for decades in the U.S., and then discuss vendors providing such technologies and their national and international experience.

Mass-Burn/Waterwall Combustion

Mass-Burn/Waterwall Process Description

In mass-burn waterwall combustion, MSW is placed directly into the system for incineration with no pre-processing, except for removal of large non-combustible items (refrigerators, washing machines, microwave ovens, etc.). Waste is fed onto a grate at the bottom of a combustion chamber in a furnace with walls built of water tubes, as shown in Figure 1.



Figure 1: Waterwall Furnace Section

Source: Babcock & Wilcox.

Half of the heat generated from the burning waste is absorbed by the water walls and the balance heats water in the boiler (evaporator, super heater and economizer), as shown Figure 2.

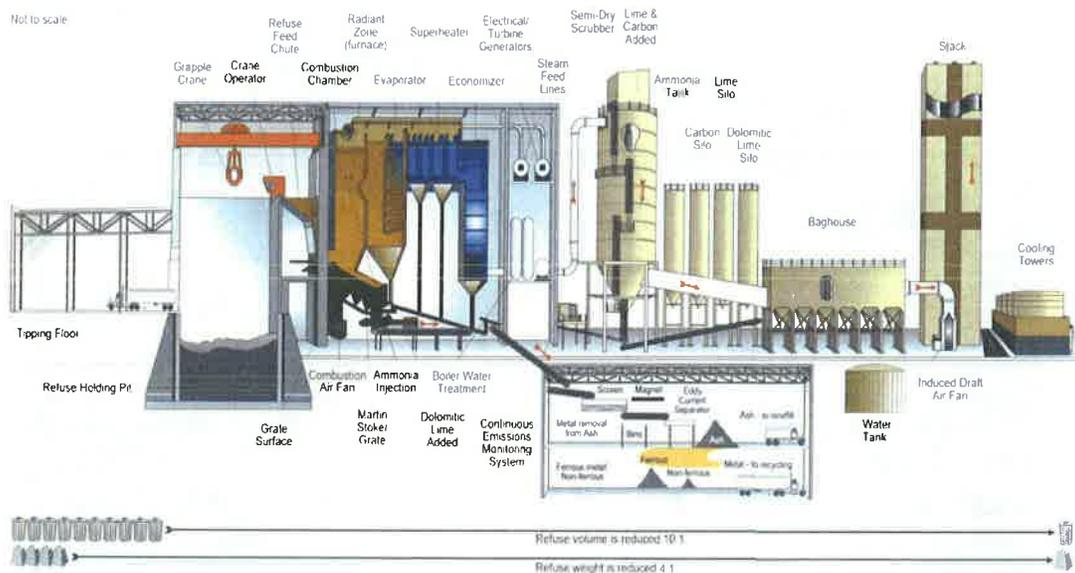


Figure 2: Typical Mass-Burn Waterwall System

Source: Source: Fairfax County, VA.

The off-gas exiting the boiler passes through an air pollution control system, where pollutants are removed, and is then discharged, through a stack, to the atmosphere. Waste is burned out to an ash in the furnace. Heat extracted from the waterwalls and the boiler section generates steam, which, in most facilities, is directed to a turbine generator for electric power production. Waterwall systems are fabricated on-site. They generally have larger unit sizes, 200 TPD up to 750 TPD, and multiple units are used when higher capacity is required. Much of the equipment is field-erected, requiring extended contracting schedules of 28-32 months. They are forgiving in their operation and are reasonably efficient in the burnout of waste and in the generation of energy.

Mass-Burn/Waterwall Worldwide Experience and Vendors in the United States

No new mass-burn WTE facilities have been built in the United States for more than ten years, although there have been acquisitions and ownership and operator changes at certain existing facilities, as well as some plant expansions. As a result, the firms associated with mass-burn WTE are either operators or owners of existing facilities. As shown in the Table 3, Covanta and Wheelabrator own and operate the majority of privately-owned WTE facilities. Most of the WTE plants, both public and private, are operated by Covanta or Wheelabrator.

Table 3: U.S. Mass-Burn/Waterwall Facilities

Entity	Owned	Operated
Covanta	18	41
Public	45	12
Wheelabrator	11	16
Other	12	17
Total	86	86

Source: ERC 2010 Directory, Energy Recovery Council (www.energyrecoverycouncil.org).

Some of the mass-burn facilities were designed by American firms with proprietary technology, such as Detroit Stoker, Combustion Engineering, and Babcock & Wilcox, but the majority of these existing systems are of European design. The two leading suppliers of WTE grate systems in the United States and overseas are The Martin Company of Germany and Von Roll of Switzerland, represented in the U.S. by Covanta and Wheelabrator respectively.

While new WTE facility procurements have declined in the United States, the market for this equipment has increased in Europe and in Eastern Asia, with European and Japanese systems suppliers actively marketing their systems, they have been consistently improving both their energy production and environmental performance. This technology is mature and is used more than any other for large WTE facilities in the United States and overseas.

Mass-Burn/Modular Combustion

Mass-Burn/Modular Process Description

Modular combustion is another incineration process. Unprocessed MSW is placed directly into a refractory lined chamber. The primary chamber of the incinerator includes a series of charging rams which push the burning waste from one level to another until it burns out to an ash and is discharged to a wet ash pit, as in Figure 3.

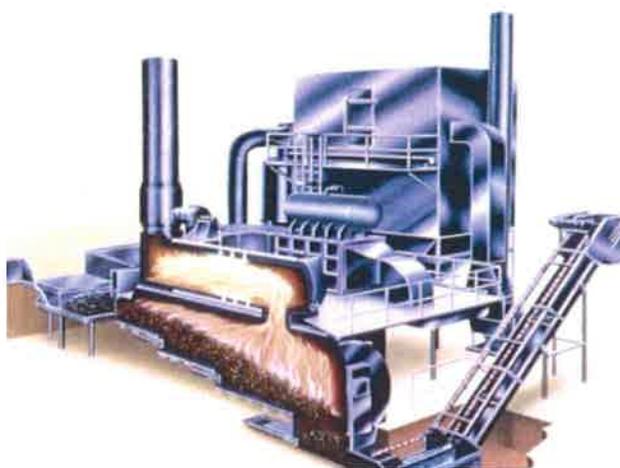


Figure 3: Typical Modular Combustion System

Source: Consutech Systems, Richmond, VA

Less than the ideal amount of combustion air is injected into the primary combustion chamber, and the gas from the burning waste does not fully burn out at this location. It is directed to a secondary combustion chamber where additional air is added to complete the burning process. Hot gases pass through a separate waste heat boiler for steam generation, and then through an air pollution control system, before discharge through the stack to the atmosphere.

A major advantage of this system is injection of less air than ideal in the primary combustion chamber. With less air, the fans can be smaller and the chamber itself can be smaller than with other systems. Also, with less air flow, less particulate matter (soot) enters the gas stream, resulting in the air pollution system being sized for a smaller load.

Modular systems are factory built and can be brought to a site and set up in a relatively short period of time, e.g., 18-24 months. They are less efficient than waterwall units in waste burn-out and in energy generation. They have been built in unit sizes up to 150 tons per day (TPD).

Mass-Burn/Modular Worldwide Experience and Vendors in the United States

Modular systems are used for smaller WTE facilities and for industrial applications. There are a number of American firms supplying such systems in the United States, and they are very competitive in overseas markets as well. The more active of these suppliers are Consutech Systems (formerly Consumat) of Richmond, Virginia; Enercon Systems, Inc. of Elyria, Ohio; and Basic Environmental Engineering of Chicago, Illinois. They have each been supplying incineration systems for MSW and other wastes for over 25 years.

Other U.S. firms, such as Energy Answers of Albany, NY, and Covanta Energy of Fairfield, NJ, are marketing project development and management services for modular WTE facilities.

Refuse Derived Fuel/Dedicated Boiler

Refuse Derived Fuel/Dedicated Boiler Process Description

In the refuse derived fuel systems, MSW is mechanically processed in a “front end” system to produce a more homogenous and easily burned fuel called Refuse Derived Fuel (RDF). RDF, as shown in Figure 4, in its simplest form, is shredded MSW with ferrous metals removed. Additional processing can be applied to the incoming waste stream to remove other non-combustible materials such as glass and aluminum. Additional screening and shredding stages can be placed in the processing line to further enhance the RDF.

In Figure 4, the RDF produced is blown into the furnace from the left, above the grate. What does not burn in suspension (above the grate) will burn on the grate, and the hot gases generated will pass through a waterwall section and then a boiler section. This system is similar to the mass-burn waterwall facility except in the nature of waste charging and burnout.

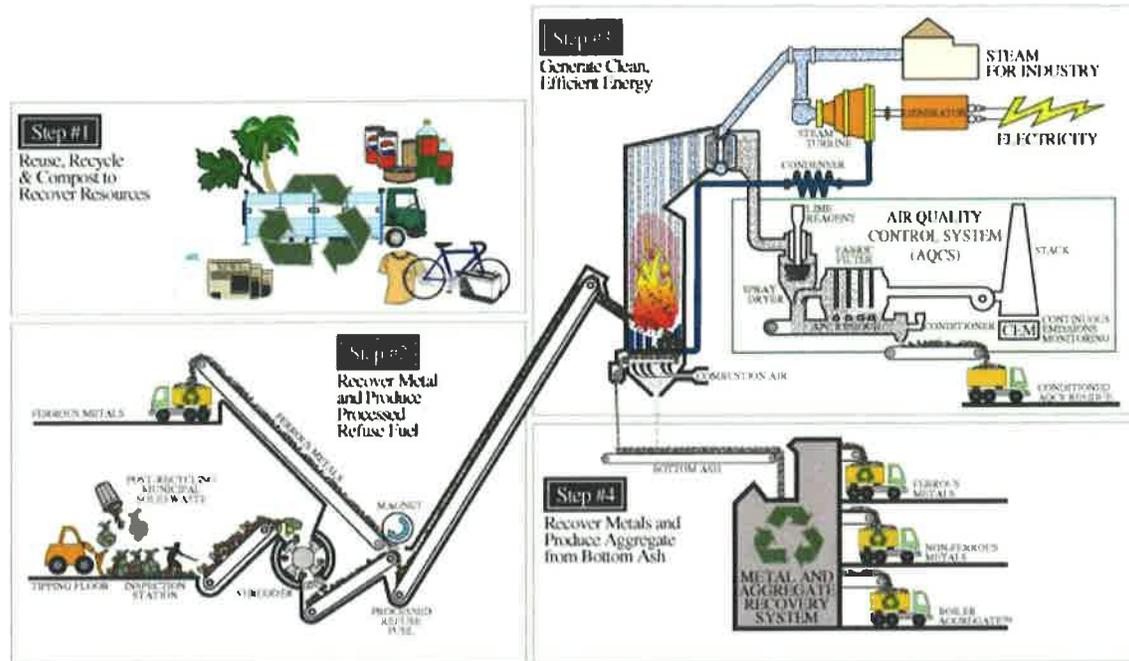


Figure 4: Typical RDF Combustion Facility

Source: Energy Answers Corporation.

The unique feature of RDF systems is in the pre-processing of waste. As seen in the diagram of a typical RDF processing facility, shown as Figure 5, MSW enters the facility and then passes through a pre-trommel, where bags of waste are broken open. Materials dropping out of the pre-trommel pass through another trommel, but the majority of waste goes through a shredder. A magnetic separator removes ferrous metals and the balance of the material is fired in the furnace.

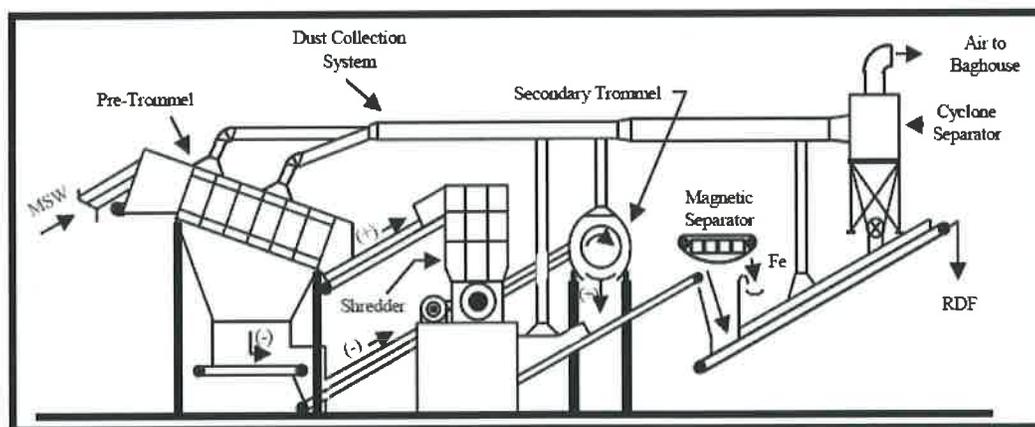


Figure 5: Typical RDF Processing Facility

Source: generic.

Other configurations may include additional separating equipment, or may not use any trommels, but the RDF generated is always shredded, so that it is capable of being blown into a furnace. Although results vary with the

processing configuration, in general about 80 percent of the incoming waste stream is converted into RDF for the thermal process.

An advantage of this system is in the removal of metals and other materials from the waste stream. While not all of these facilities include this step in the processing line, those that do can realize revenue from the sale of recovered metal. For instance, at the North County Resource Recovery Project in West Palm Beach, Florida, the nominal 3,000 TPD facility removed and sold over 36,000 tons of ferrous metals in 2004, which represents over 3 percent of the weight of the incoming waste stream. With the removal of non-combustibles, the specific heat content of the RDF can be increased by 10 percent over the original MSW.

Refuse Derived Fuel/Dedicated Boiler Worldwide Experience and Vendors in the United States

As with mass-burn systems, there have not been any new RDF systems constructed in the United States in the past decade. For most of the RDF WTE facilities currently in operation, Excel and Covanta Energy are the operating contractors.

Equipment used in this technology is largely adapted from equipment provided in coal-fired electricity generation plants, and there are many established U.S. system and equipment suppliers, such as Foster Wheeler, Riley Power Inc. (a Babcock Power Inc. company, formerly Riley Stoker Corp.), and Babcock & Wilcox.

Refuse-derived Fuel/Fluidized Bed

Refuse-derived Fuel/Fluidized Bed Process Description

For fluidized bed combustion, MSW is shredded to less than four inches mean particle size using an RDF process, similar to that described above, to produce the fuel. The RDF is blown into a bed of sand at the bottom of a vertical cylindrical furnace, as shown in Figure 6: Typical RDF Fluid Bed System. Hot air is also injected into the bed from below, and the sand has the appearance of a bubbling fluid as the hot air agitates the sand particles. Moisture in the RDF is evaporated almost instantaneously upon entering the bed, and organics burn out both within the bed and in the freeboard, the volume above the bed. Steam tubes are embedded within the bed and a transverse section of boiler tubes captures heat from the flue gas exiting the furnace. Figure 6: Typical RDF Fluid Bed System shows an Energy Products of Idaho (EPI) RDF/fluidized bed system. This EPI fluidized bed system in La Crosse, WI is fueled by RDF and hogged waste wood. It consists of two 251 TPD units. The RDF is produced in a remote facility, located in Elbe River, WI.

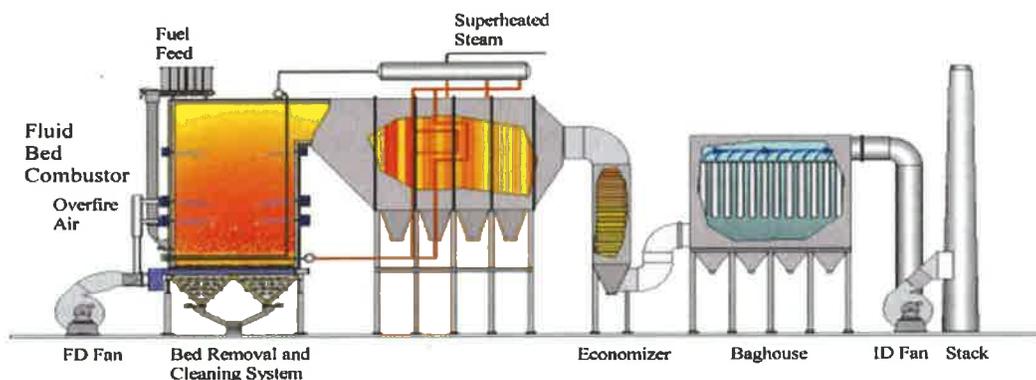


Figure 6: Typical RDF Fluid Bed System

Source: Energy Products of Idaho, Coeur D'Alene, ID.

Fluid bed incineration is more efficient than grate burning-based incineration systems. The fluid bed is very effective in waste destruction and requires less air flow than mass-burn or modular systems. The fluid bed, however, does require relatively uniform sized material and removal of certain slagging materials, therefore RDF preparation is necessary. It is required for operation of the fluidized bed, not, as with the above systems, for materials recovery.

An RDF/Gasification/Incineration technology similar to that described above is a product of Ebara Corporation of Tokyo. They have four such systems in operation for MSW and industrial wastes in Japan, ranging in size from 185 TPD to 460 TPD. Their variation of the fluid bed system described above is the fluidized-bed gasifier, shown in Figure 7.

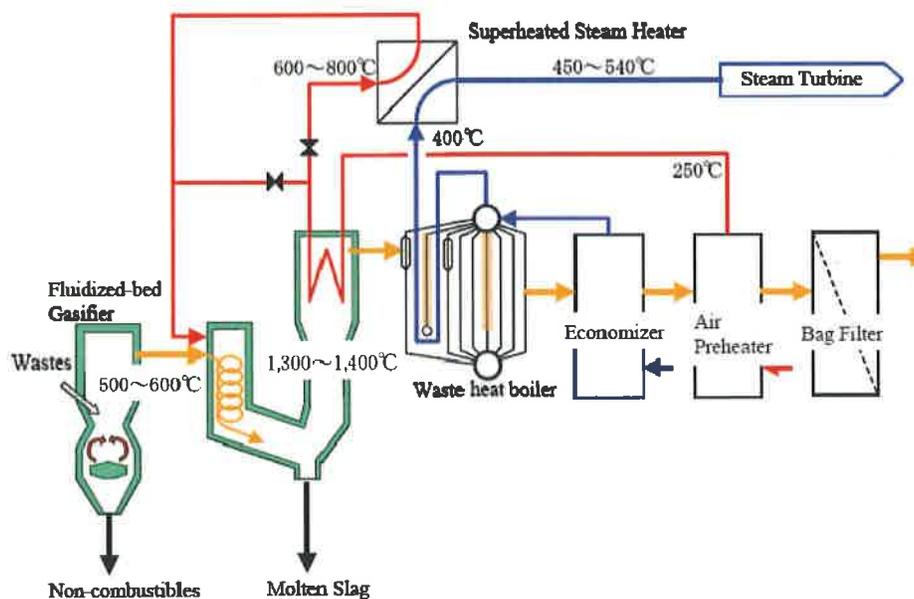


Figure 7: RDF Fluidized Bed Gasification System

Source: Ebara Corporation, Tokyo, Japan.

This system is described as fluidized bed gasification, and the difference from fluidized bed incineration is that a gasifier exports a burnable gas. RDF is first prepared, using a process similar to the ones illustrated in Figures 4

and 5. The RDF (called “wastes” in Figure 7) is then charged to the fluid bed and the gas generated is directed to a combustion chamber, as shown above, with molten slag dropping out to a water-cooled sump. The molten slag solidifies into a glass-like material which can be used as a construction material or fill. Heat from the gas fired in the combustion chamber is captured in hot water tubes to generate steam which can be used for electric power generation. Without the generation of a usable gas stream, and with the necessity of a combustion chamber for gas burn-out, this system functions as an incinerator.

Refuse-derived Fuel/Fluidized Bed Worldwide Experience and Vendors in the United States

There are several RDF/fluid bed systems operating in Europe, particularly in Scandinavia, where a number of fluid bed incinerator manufacturers are located. In the United States, fluidized bed combustion systems using RDF as a fuel include: French Island, WI, owned and operated by Excel Energy of Minneapolis and a Tacoma, Washington Municipal Utility. The equipment for these plants was supplied by Energy Products of Idaho in Coeur d’Alene, the only U.S. firm currently manufacturing fluid bed furnaces for RDF firing. Other U.S. firms, Foster Wheeler, Babcock & Wilcox, and others, have provided fluidized bed units utilizing coal, rice hulls, and other feedstocks.

Emerging Waste Technologies

There are many technologies currently being proposed for the treatment and disposal of MSW throughout the world. Most of these involve thermal processing, particularly those of gasification and pyrolysis. These technologies have been employed as early as the 18th century in the thermal processing of coal and wood to produce various chemicals and fuels. However, their application to MSW has been limited. While there are some commercial scale plants in Japan, the United Kingdom, and certain other countries, processing MSW, sometimes as a secondary feedstock, and while significant advances have been made with these technologies, they are still considered to be “emerging” as a commercial scale technology for MSW processing in the U.S. Some others involve the biological or chemical decomposition of the organic fraction of the waste to produce useful outputs like compost or energy products, notably synthetic gas (“syngas”) for downstream combustion.

Thermal processing refers to a number of different types of technologies utilizing heat as the mode of waste treatment. There are over 100 offerors of such thermal technologies as gasification, pyrolysis, plasma arc, and anaerobic digestion technologies. Some example companies were selected to illustrate the technologies and their respective installations; but no endorsement is implied.

There is a general perception that gasification technologies are more advantageous than combustion technologies and have lower costs, greater efficiency, less emissions, and overall reduced adverse impacts. There is merit to certain claims associated with gasification technology; however, many of the perceived benefits are unfounded or have yet to be confirmed through a reasonable period of operation at a reasonable commercial scale. Also, there is no reason to believe these technologies are less expensive than conventional combustion technologies when considering the all-in costs, particularly when in many cases, they are more complex.

Pyrolysis

In the pyrolysis process, an organic waste (MSW) is heated without oxygen (or air), similar to the generation of coke from coal or charcoal from wood. Both a char and a gas are generated. The gas is burned out in a gaseous phase, requiring much less oxygen than incineration, and the char will usually melt at the temperatures within the pyrolysis chamber and will be discharged as a black gravel-like substance, termed frit. Advantages of this process are in the lack of air entering the chamber and the resulting smaller size of system components. Without air, there is little nitrogen oxide generation, and low particulate (soot) formation. There have been many attempts to develop this technology outside a laboratory or a pilot plant. In past demonstrations in the 1970s, it was difficult to maintain a sealed chamber to keep air out, and waste variability created problems in maintaining consistent operation. When the pyrolysis gas is fired in a combustion chamber that is part of the system, the system is classified as an incinerator. Currently, there are no full-scale pyrolysis systems in commercial operation on MSW in the United States.

A pilot demonstration system has been operating in southern California for a number of years. It was built and is operated by International Environmental Solutions, of Romoland, CA, whose process is shown in Figure 8. Their process shreds MSW down to a uniform size capable of feeding into the thermal converter, or pyrolysis chamber. The pyrolysis gas generated is fired in a secondary combustion chamber, or thermal oxidizer, and passes through a waste heat boiler for heat recovery. Char drops out the bottom of the pyrolysis chamber for disposal or further processing for recovery of metals and other constituents. Although this system is marketed as a pyrolysis system, a combustion chamber is necessary for its operation (to destroy organics in the off-gas) and the presence of this chamber classifies the system as an incinerator.

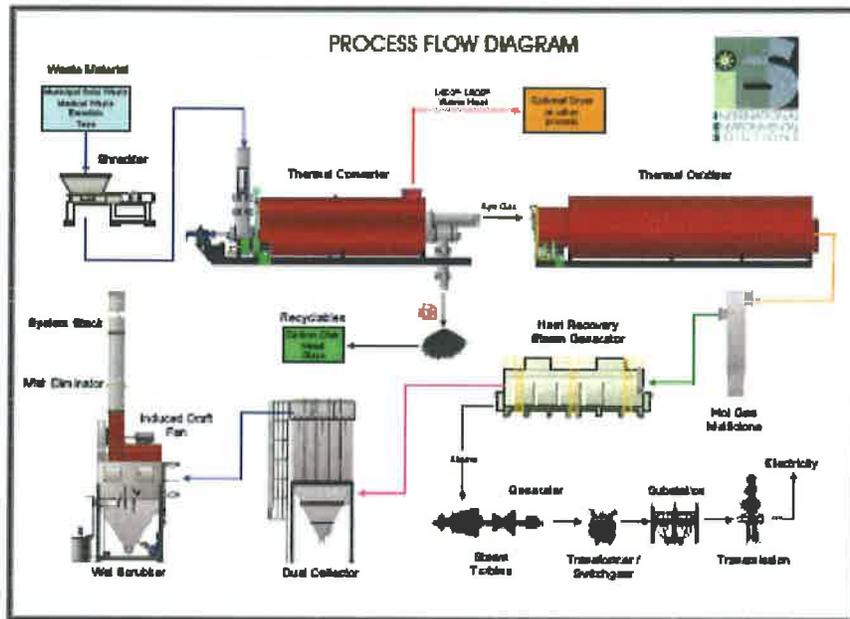


Figure 8: Process Diagram of a Pyrolysis System

Source: International Environmental Solutions, Inc., Romoland, CA.

Gasification

Gasification is the heating of an organic waste (MSW) to produce a burnable gas (approximately 85 percent hydrogen and carbon monoxide mix) for use off-site. While pyrolysis systems are primarily focused on waste destruction, a gasifier is designed primarily to produce a usable gas. As shown in Figure 2, Thermostelect, a European firm represented in the U.S. by Interstate Waste Technologies (IWT) of Malvern, PA, has developed a system composed of 400 TPD modules processing MSW.

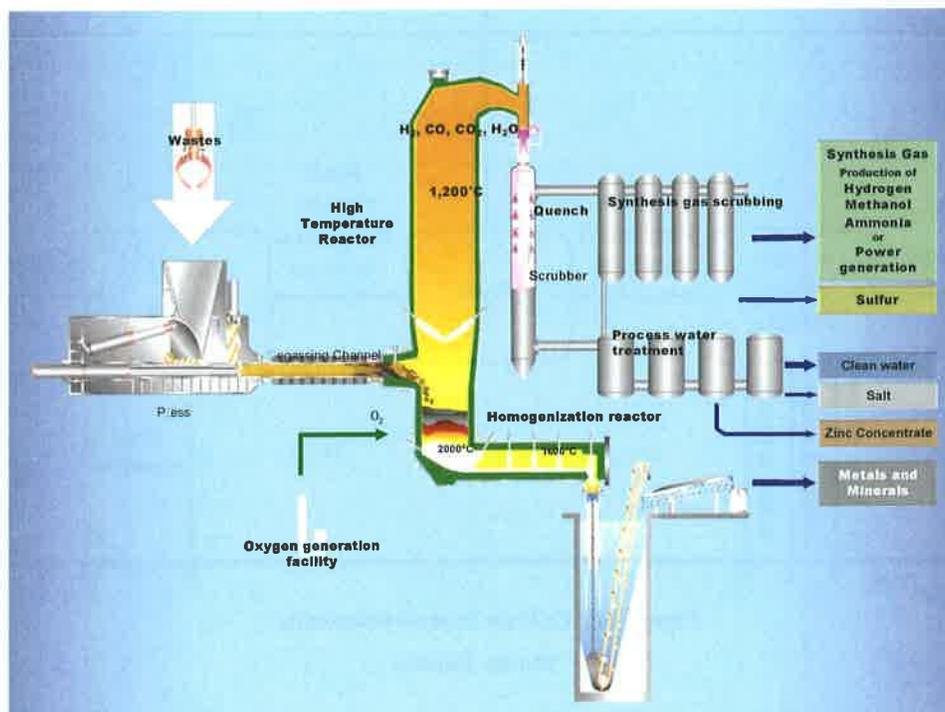


Figure 9: Typical Gasification System

Source: Interstate Waste Technologies, Malvern, PA.

Waste is fed into a gasification chamber to begin the heating process, first having been compressed to remove entrapped air. Some oxygen, sufficient only to maintain the heat necessary for the process to proceed, is injected into the reactor, where temperatures in excess of 3,000 degrees Fahrenheit are generated. At this high temperature, organic materials in the MSW will dissociate into hydrogen, methane, carbon dioxide, water vapor, etc., and non-organics will melt and form a glass-like slag. The gas is cleaned, water is removed, and it can be used for power generation, heating, or for other purposes. The glass-like slag can be used as fill or as a building material for roads, etc.

Seven plants with this technology are currently operating in Japan, with at least two of them firing MSW. The largest of these plants in Kurashibi has a reported furnace size of 185 TPD, with three units of this size. Their largest facility fires up to 555 (Metric) TPD of MSW.

Another gasifier marketed for MSW is built by EnTech of Devon, England. This system generates, in addition to a salable gas (synthetic natural gas, or syngas), recyclable plastics and other potential revenue streams. As shown in Figure 3, MSW is classified by a combination bag breaker and gravity separator process, termed a Kinetic Streamer. Oversize materials, which are basically inorganic, are directed either to a plastics recycler or a non-plastics recycling station, while the majority of waste (presumably organic) is directed to a dryer to remove entrained moisture. The dryer utilizes the latent heat inherent in the organic content of the waste which produces the heat necessary to drive the gasification process. The syngas can be fired in a waste heat boiler for steam and subsequent electric power production.

Approximately 20 of these facilities are in operation on MSW in Europe and Asia. Most of them are relatively small (less than 10 tons per day), with none designed for more than 70 tons per day throughput.

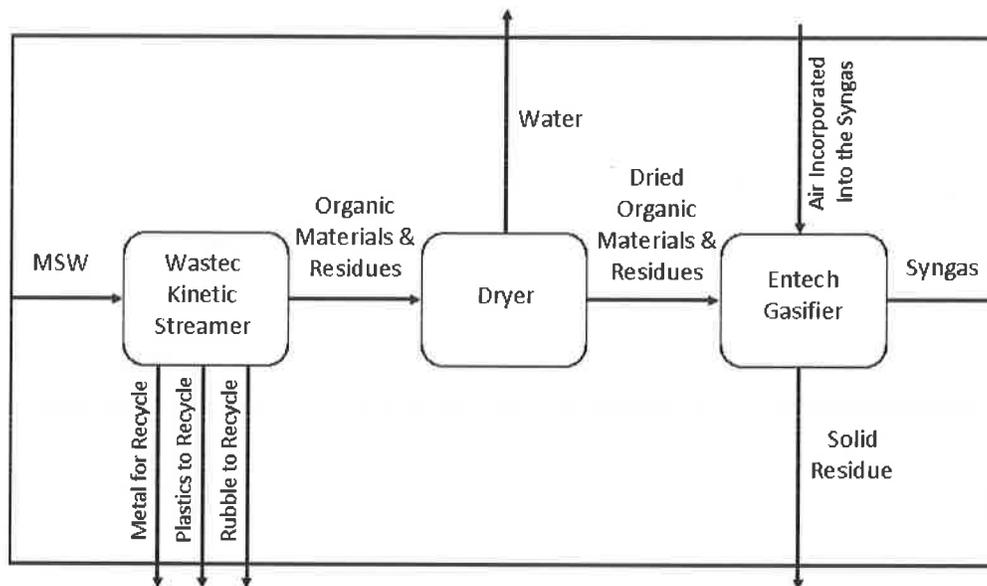


Figure 10: EnTech Process Schematic

Source: Entech.

Two Canadian firms have advanced gasification. Enerkem, headquartered in Montreal, Quebec, has an operating pilot gasification facility in Sherbrooke, Quebec, is building a commercial facility in Edmonton, Alberta, and developing one in Pontotoc, Mississippi. These facilities produce ethanol. The Plasco Energy Group, which has a five-TPD research facility in Spain, operates a 100-TPD pilot plant in Ottawa, Ontario. Plasco has a letter of intent from the City of Ottawa for a 400-TPD commercial facility.

Anaerobic Digestion

As applied to the processing of MSW, anaerobic digestion is a wet treatment process where waste is first pre-sorted and then fed into water tanks. Using agitators, pumps, conveyors and other materials handling equipment, MSW is wetted and formed into slurry. Metals, glass and other constituents of MSW that have no affinity for water are eventually discharged from the system into dedicated containers for recycling, further processing, or final disposal. The paper, garbage, soluble components, etc., generate “black water” which has a relatively high organic content. This stream is processed in a series of sealed digesters without air where microorganisms break down the solids and generate gas containing methane. The time in the chamber and the residence time will be sufficient to generate the gas. (The process is shown in the schematic in Figure 10.)

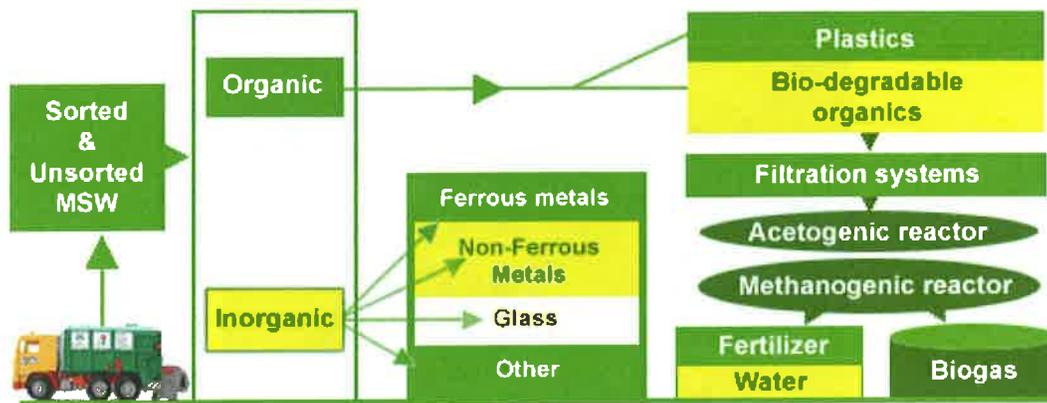


Figure 11: Process Flow for Anaerobic Digestion System

Source: ArrowBio.

This gas is rich in methane and other organics and can be burned as a fuel for heating or for electric power generation. The solid residual from the digestion process is similar to compost and can be used as a soil amendment. The process also separates out recyclable materials such as glass and metals. There are many such facilities processing sewage sludge, manure, and other homogeneous wastes.

ArrowBio of Haifa, Israel, is a vendor offering to construct anaerobic digestion facilities to process MSW in the United States. They have responded to procurements in Los Angeles and New York. They operate a 300-TPD, full-scale MSW demonstration process line in Tel Aviv and have a 270-TPD, commercial scale plant for MSW operating in Sydney, Australia, as illustrated in Figure 5.

The system operates without high temperatures or pressure. In theory, it is extremely simple, relying on non-specialized mechanical equipment (pumps, screens, macerators, tanks, conveyors, etc.) for operation. Digestion occurs through the presence of natural microorganisms in MSW, so charging with specialty or unique bacteria is not necessary.



Figure 5: ArrowBio Facility in Sydney, Australia

Mixed Waste Composting

Composting is a natural process that depends on the action of microscopic organisms to break down organic matter. Composting has been used for hundreds of years to process a variety of agricultural wastes. There are two types of micro-organisms that digest the organic materials: aerobic and anaerobic. The first need oxygen or air to function and the latter work without oxygen. Anaerobic composting produces combustible biogas as a byproduct. There are five factors that influence the composting process: (1) moisture, (2) oxygen or air, (3) temperature, (4) chemical balance of carbon and nitrogen, and (5) particle size. Large scale mixed waste composting facilities are industrial plants which receive waste and then grind the material in large shredders, removing inert materials by screening and other processes. The feed material is then moved to the composting vessel where the organic materials are digested by the micro-organisms. The process and factors 1 through 3 are controlled by computer. After initial processing the resulting compost product is stored to “cure” and then it is ready to be sold. Using California post-recycling waste composition data,¹ it is estimated that aerobic composting would reduce the waste landfilled to 25 percent of the initial feed. There would be 43 percent recovered as compost and material products and 32 percent released to the atmosphere as gases (mainly CO₂ and water vapor).

There are several hundred mixed waste composting plants in Europe, both aerobic and anaerobic. The trend seems to be toward segregating bio-wastes and then composting to produce biogas. In the United States, composting is used primarily to process yard waste and sewage sludge, and there are thousands of successful projects. BioCycle reports² that there are 13 mixed solid waste composting facilities operating in the United States. These are generally small units processing less than 120 tons per day, with two facilities processing 200 to 250 tons per day. Large scale plants have been built in Portland, OR; Baltimore, MD; Miami, FL; Atlanta, GA; and Pembroke Pines, FL, all of which failed for technical reasons, like odor control, or financial difficulties. A key problem has been that the quality of the products produced was lower than expected, which reduced the revenues and made the projects too costly and/or non-competitive with other available waste processing alternatives.

¹ Statewide Waste Characterization Study, California Integrated Waste Management Board, December 1999.

² BioCycle Magazine, JG Press, Inc., November 2008.

Plasma Arc

Plasma arc refers to the means of introducing heat into the process. Essentially a plasma arc system is a pyrolysis or starved air process generating heat by firing the waste with a plasma torch using electric current to produce a syngas, which is then combusted to produce steam and/or electricity, and is classified as an incinerator. If the system generates an off-gas that contains burnable gases (e.g., hydrogen and carbon monoxide) that can be used off-site, it can be classified as a gasifier. A typical plasma arc unit is shown in Figure .

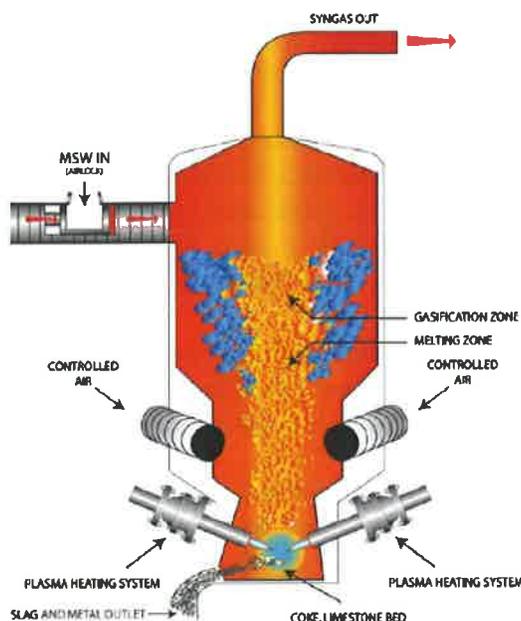


Figure 6: Cross-section of a Plasma Arc Furnace

Source: Westinghouse Plasma Corporation

Plasma is a collection of free-moving electrons and ions across a gas volume at reduced pressure. The gas molecules, losing one or more electrons, become positively charged ions capable of transporting electric current and generating heat when the electrons go into a stable state and release energy similar to lighting in the atmosphere. Plasma can reach temperatures exceeding 7,000 degrees Fahrenheit. Molten slag from the process is about 3000 degrees Fahrenheit. The by-products of plasma gasification are similar to those produced in other high-temperature gasification technologies. Also similar to other gasification technologies, plasma gasification requires the pre-processing of the MSW feedstock to reduce the particle size before its introduction into the plasma reactor. One of the primary drawbacks of plasma arc technology is the huge parasitic load of the plasma torches. Therefore, the net electric output of the conversion process, if generating electricity for sale from the system, would be substantially reduced.

There are no commercial-scale plasma arc facilities processing MSW in the U.S., although several companies are marketing some form of this technology and proposing facilities. There are three small plasma arc facilities processing MSW and/or auto-shredder residue in Japan, reportedly using the Westinghouse plasma technology. Few, if any of the plasma arc pilot facilities have been able to generate a fuel gas (synthetic natural gas, or syngas), and air emissions have been found to be no better than conventional incineration systems. The firm Geoplasma, from Atlanta, GA has been negotiating a contract for construction of a plasma arc facility processing

MSW in St. Lucie County, FL, which is also proposed to be used for processing mined landfill waste. Currently, the development agreement has been signed and the County is waiting on Geoplasma to secure customer agreements for the sale of the syngas to the local energy companies before proceeding with construction.

Chemical Decomposition

Chemical decomposition, also referred to as depolymerization, is a process whereby waste feedstocks are directly liquefied into useful chemical feedstocks, oils and/or gases. The oils are a replacement for fuel oil and the gases consist of carbon monoxide, hydrogen and methane. The process generally utilizes medium temperature and pressure to break large complex molecules into smaller ones. If higher temperatures are employed, chemical decomposition becomes indistinguishable from gasification.

The solid waste feedstock for chemical decomposition will generally be pre-processed to remove recyclable and inert materials and to reduce the particle size. Moisture is favorable to the process and may need to be added to create steam reforming reactions. The process is multi step: gas recovery, liquid separation to isolate the oil product, and processing the solids to separate carbon char from inerts. Chemical decomposition processes require an external energy source to make the reactions take place.

Changing World Technologies (CWT) offers a chemical decomposition process that they indicate can be applied to mixed solid waste. Currently, they have a plant operating on poultry waste in Carthage, MO, which was commissioned in 2005. CWT was selected for further consideration by the City of Los Angeles, CA.

One form of chemical decomposition is used to break cellulose into sugars for fermenting to produce ethanol. This is the hydrolysis process, of which two types have been applied to the organic components of solid waste: acid hydrolysis and enzyme hydrolysis. They have also been used in combination. The National Renewable Energy Laboratory developed and has operated pilot processes, which have demonstrated technical feasibility. No production plants, however, have been built to date. The City of Los Angeles, CA, received nine submissions in response to a solicitation for hydrolysis processes, including those from Arkenol and Iogen, a DOE demonstration and commercialization project contractor. No hydrolysis process was selected by the City of Los Angeles.

Microwaves can be used as the external heat source for chemical decomposition or depolymerization. Microwave systems have been built to decompose some special wastes, particularly tires. Goodyear obtained a patent to “de-vulcanize” tires and built a facility to process in-plant scrap in the late 1970s. Several small units have been operated on tires. The application of microwaves to drying and decomposition of various wastes, including medical waste and nuclear waste, is proven, but its application to MSW has not been proven but is being promoted by Molecular Waste Technologies, Inc. Global Resource Corporation also proposes microwave plants for MSW, but has not constructed one.

Taylor Biomass Energy Project

An innovative renewable energy project has been proposed for nearby Orange County, New York, that could play a significant role in the long-term management of solid waste in Rockland County. It is based on an MSW gasification technology similar to those described above. Taylor Biomass Energy, LLC has proposed a 20 net megawatt plant that would convert 340 TPD of RDF to a medium heating value syngas that will be burned in a combustion turbine for power generation.

The Taylor Biomass Energy Technology

The project consists of three major subsystems: (1) feedstock preparation, (2) gasification to produce the syngas, and (3) a combined-cycle combustion turbine power block.

Feedstock Preparation

The project is designed to produce 340 TPD of RDF from 500 TPD of MSW and 100 TPD of waste wood. The RDF preparation system will be similar to those used in other RDF-to-energy systems, using commercial equipment to remove metals, glass and certain plastics to produce a 2-inch minus product for gasification. The system is also designed with the capability to produce marketable recyclables.

Gasification

The gasification system is based on pilot work performed at Batelle's Columbus Laboratory, and has been demonstrated at a similar scale on wood waste at the Burlington Electric O'Neil Station in Burlington Vermont. The Taylor gasification design uses a system comprised of three fluidized beds: a circulating bed gasifier, a bubbling bed gas conditioning reactor and a circulating bed combustor. The feed is heated with steam and hot sand in the gasifier to about 1,500 degrees Fahrenheit, producing the syngas, char and a small amount of tar. The syngas and tar are heated further in the gas conditioning reactor to decompose/crack the tars to make additional syngas. The syngas is then sent to heat recovery to produce a clean gas. The char that is formed in the gasifier mostly remains in the sand bed of the gasifier. The gas is then compressed for introduction into the gas turbine. The process flow diagram of the Taylor Biomass Energy process is provided in the Figure 7 below.

Materials Recovery Facility

Recyclable materials collected at the curb or at drop-off centers require processing to remove contaminants to meet the specifications of industrial markets, and storage to collect sufficient quantity to ensure economical shipping. This processing takes place in a Material Recovery Facility (MRF). MRFs are critically important because they maximize the value of discarded materials while simultaneously decreasing the amount of refuse that goes to the local landfills.

Materials recovery facility, or MRF, refers to an enclosed facility consisting of areas for receiving, processing, and product storage and loading. The design of a MRF is geared to the type(s) of materials collection employed locally. For example, if dual-stream collection is used, the receiving area will have two infeed conveyors that feed the two processing areas: one for mixed paper fiber (newspaper, cardboard, junk mail, magazines, etc.) and one for commingled containers (aluminum, steel cans, plastic, and glass). If the local recycling collection is done single-stream, there is a single conveyor in the receiving area which feeds a set of screens and other equipment that produce the dual streams for further processing. The processing of commingled containers uses magnets, eddy current separators, pneumatics, and screens to separate steel, aluminum and glass, respectively. Plastics can be sorted manually or by using an optical or other electro-magnetic spectrum scanning and air blast separator. These are processes using sensors that determine the type of resin in plastic and the color of material thereby triggering separation of predetermined material with a high percentage of reliability. The mixed paper fraction is separated using screens and manual sorters. All the products except glass are baled to increase the density for economical shipping. Bales are stored until one or more trucks or containers constitute a shipment. MRFs also are testing additional material identification and sorting methods.

Technologies and Equipment

This section presents a discussion of alternative specific processing technologies for MRF processing systems. The purpose of this technology discussion is to describe the methods and techniques that could be utilized locally to meet recovery goals.

A MRF processing system involves the combination of manual and automated material size separation and sorting. Over the past 35 years, the capability of MRF processing equipment available from U.S. and European markets has made significant advances. As of 2009, equipment is available to separate and recover recyclable materials from MRF loads with greater than 70 percent of separation accomplished by automation.

Discussions of the equipment and technologies that could be utilized for MRF systems are presented in the following subsections. There are a number of firms that specialize in materials recovery systems that will provide machinery on a turn-key basis. These include: Bulk Handling Systems (BHS), Van Dyke Baler, CP, Machinex, and others.

Conveyors

Four different main types of conveyors are utilized in MRF systems:

- Steel bed overlapping pan type roller chain conveyors are used as the horizontal and inclined feed conveyors to feed the pre-sort area. Normal chain/belt pitch for this type of conveyor would be 12”, with heavy-duty frame construction utilizing structural steel shapes to support the frame. The conveyors often include steel chains and rollers of heavy-duty capacity ride on crane rail tracks to resist impact and abrasive loading condition that commonly occur in MRF facilities.
- Rubber belt roller chain combination-style conveyors with the same heavy-duty frame construction as the steel bed chain conveyor described above. This type of conveyor utilizes a 6” pitch chain, an applied rubber belt, support members bolted to the chain and rubber belting and cleats that are attached to the support members as required. A chain belt conveyor is normally used for the inclined conveyor following the steel bed type, or when a steeper angle is required to change elevation within the system.
- Slider bed-style conveyors that utilize a steel pan on which the rubber belt, usually bare bottom, two-layer belt that utilizes a PVC or other smooth bottom layer material in lieu of rubber, to contact the steel pan. The steel pan would be equipped with “slots” placed in strategic locations to release abrasive materials which may migrate under the belt during normal operations to prevent premature wear on the bed and possible tearing of the belt. The frame construction is typically of heavy-duty design, made up of structural steel shapes for longer life to handle MRF material. The normal use for this type of conveyor is for sorting conveyors where a flat surface is required as well as the absence of rotating idlers and pinch points that could cause injury to the sorters.
- The most commonly used type conveyor for smaller particle material is the trough idler style conveyor. Trough idlers provide a trough for the conveyed materials to ride in and reduce the amount of skirting required to contain the materials. The frames of the trough idler conveyors are also of heavy-duty construction using structural steel shapes suitable for long term use for the harsh MRF application.

Manufacturers that are experienced in the design of conveyors for MRF applications include Mayfran International, Hustler Conveyor Corp., Krause Manufacturing, CP Manufacturing, and Karl W. Schmidt & Associates, Inc.

Trommel

One of the major pieces of equipment that is often utilized in a MRF system is a rotary screen, commonly known as a trommel. These have particular application in “dirty MRFs” which separate recyclables from trash when collected together. The trommel would typically have a screening cylinder of a minimum 12 feet in diameter and 60 feet long for this application. The trommel barrel is fabricated from wide flange structural shapes to form a framework. The framework has drilled holes for attaching the screen plates. The framework is attached to the solid plate end rings with forged or cast steel tires that are, in turn, supported by independently adjustable cast steel trunnion wheels.

The trommel is sloped on an angle as recommended by the manufacturer for the application, and contains thrust roller(s) as required to prevent downhill movement of the trommel. The trommel

drive is typically constructed of steel chain type wrapped around the feed section ring for positive rotation. The cylinder screen plates are generally of minimum ½” thickness with proper size perforations to produce the desired size products. Bag breaking metal spikes are sometimes located at the first screening section and bolted to the cylinder beams. Lifters would be located on the first screening section and bolted to the cylinder beams as well. The trommel would be designed to automatically break bags, loosen material with rotary motion and produce different material size products.

The screen cylinder would be totally enclosed for personnel safety and control of airborne dust. This enclosure would include hoppers to collect the screened material and a dust hood over the trommel. The end rings of the trommel would be bolt-on sections that can be changed as wear dictates. The trunnion wheels would be designed to allow adjustment along the rotating axis of the trommel barrel.

The trommel hoppers and hoods would be equipped with access doors, as required to readily access the screen plates for cleaning. In addition, access doors would be required in all discharge chutes and hoppers of the trommel, including access for cleaning the interior discharge chute along the entire length of the trommel barrel. The trommel would employ a hole cleaning system (either air or brush or combination of both) in order to keep the trommel holes cleared and maintain separation efficiency. Trommel inspection on a regular schedule would be required to monitor the condition of the trommel screen.

Manufacturers that are experienced in the design of trommels for MRF applications include McLanahan Corp., Triple/S Dynamics, and Central Manufacturing.

Disc Screens

The disc screens utilized for MRF processing would be designed to function in a similar manner to a trommel, but with lower capacity and a pre-sized feed stream. The discs rotate forward in an upward motion causing the material to elevate and tumble down, which allows it to untangle and spread out on the bed. It also gives time for the small pieces to fall through the disc inter-face openings (IFO). The IFO would be properly spaced to produce the desired size products. Discs would be constructed of hardened steel for longer wear. The angle of inclination of the bed can be fixed type or adjustable depending on the application. The disc screens would have multiple disc sections with independent drives of varying speed to control material flow.

Manufacturers that are experienced in the design of disc screens for MRF applications include CP Manufacturing, Bulk Handling Systems, Hustler Conveyor Corp., and Krause Manufacturing.

Magnets

Magnets for a MRF system are usually suspended, overhead electromagnetic belt magnets. These suspended types consist of a magnet box with a cleated belt encircling the box. Inside the magnet box is a series of aluminum coils submerged in cooling oil that are charged with direct current to produce a magnetic field. This type magnet has proven to be effective in MRF and MRF facilities for ferrous recovery. Additional designs that may have application in MRFs include drum magnetic separators and magnetic head pulleys on conveyors.

Manufacturers that are experienced in the design of magnets for MRF applications include Eriez, Dings Magnetic Group, and Walker Magnetics.

EMS Scanner Separators

A number of materials can be sorted using various parts of the electromagnetic spectrum (EMS) to scan the material to identify its characteristics. When visible light is used these are referred to as optical scanners¹. The scanning is followed by a separation stage. Most commonly this is a computer controlled jet of high pressure air that is timed to blow the identified material into a chute designated for that material while the remaining materials fall into the reject chute. Glass can be sorted into different colors, plastics can be separated by resin, and office paper can be separated by color and grade.

Manufacturers that are experienced in the design of EMS scanner separators for MRF applications include MSS and Lubo.

De-stoner

The de-stoner is a device that separates material according to the different weights (density) of each type of material in the feed stream. For example, a feed stream containing metal, fiber, plastic film, broken glass, inert material, etc., is conveyed forward by the vibrating bed of the unit as a high volume of air is injected into the chamber, causing the lighter material (paper and plastic film) to elevate and follow the air stream into a drop out compartment designed to decelerate the air velocity and then by gravity the material falls, while the air rises and exits the chamber. Meanwhile, the heavier materials (metals, glass, inerts) remain on the vibratory bed and are discharged through the bed opening.

Manufacturers that are experienced in the design of de-stoners for MRF applications include General Kinematics and Triple/S Dynamics.

Eddy Current Separator (ECS)

The eddy current separator (ECS) is the most commonly used equipment for non-ferrous metals recovery from a MRF processing system. The technology is similar to a magnet where a magnetic field of opposing poles is used to attract the object, while in the ECS system a magnetic field of a similar pole with a metallic object is created to make the object repel. The ECS system consists of a conveyor belt to take the material around the magnetic rotor inside the head pulley of the conveyor. Once contact is made between the feed stream and the magnetic field, non-ferrous objects such as aluminum, copper, and brass are repelled and separated as the remaining materials fall through a discharge chute. An adjustable “splitter gate” in the discharge box of the ECS is installed to keep residuals from contaminating the non-ferrous product.

¹ For further information on optical sorting, see: “Low Cost Optical Sorter for Recyclable Materials: Final Report” Sonora Environmental Research Institute, Inc. by Monika L. Crank, Jamie M. Kern, Jennifer L. Lindquist, Anna H. Spitz, Ann Marie A. Wolf, and Anita Zavodska.

Manufacturers that are experienced in the design of eddy current separators for MRF applications include Eriez, Dings Magnetic Group, Huron Valley Steel Corporation, and Steinert.

Estimated Material Recovery Rates

Based upon the aforementioned conceptual equipment and the experience in operating MRF around the country the overall estimated recovery by a MRF will range from as low as 65 percent to a high of 97 percent of delivered quantities. The recovery depends upon what materials are collected and how they are collected. Single stream collection generally results in a lower recovery rate and/or additional processing than dual stream collection. Glass can be a contaminant in both recovered paper and plastic. Collection programs which exclude glass or where glass is recovered separately will have lower such contamination. The lower recovery rates in the range of 65 to 75 percent usually indicate that the collection system needs adjusting or that the MRF is undersized for the amount of feed material.

Revenue Estimates for Recovered Materials

Projections of revenue that can potentially be realized from marketing materials recovered from a MRF depends on estimated material recovery rates in tons per day and tons per year to develop annual quantities. Conservative estimates of the value of these materials can be made using the annual quantities estimates. The actual revenues will depend upon specific markets obtained for a MRF in a specific location and any pricing fluctuations or contracts.

Examples of those materials which can be assumed to result in positive revenues on a per-ton basis are provided below as examples:

- **Recyclable Containers:** The recovered containers are expected to be a mixture of plastics, steel, and aluminum cans, the proportion of which are not empirically identified at the level of conceptual MRF design. The blended estimated value of this material is \$100 per ton. Container Redemption Regulations, or Bottle Bills, can increase this value significantly, as each qualifying container is reimbursed based on the number of containers and not on commodity weight.
- **Ferrous cans and bulky ferrous materials** will be recovered through the use of electromagnetic equipment. The estimated value of the recovered ferrous is \$50 per ton.
- **Old Corrugated Containers (OCC) and Mixed Waste Paper (MWP)** are recovered through screening and manual sorting. Their estimated values are \$65 and \$35 per ton, respectively. The stated estimated values for OCC and MWP are based on manual sorting of these materials from the sorting lines and recovery of the grades at market specifications. As is the case with typical MRFs, so as not to cause shipment downgrades, excessively wet or otherwise contaminated OCC would not be hand-picked from the conveyor and placed in the OCC chute, but instead would be allowed to continue to the residue line. In the case of MWP, with the goal of maximizing overall facility recovery, sorters could positively sort a certain amount of contaminated paper and place it into the MWP chute, however, depending upon the portion of the total MWP that

is lower quality paper, recovery of contaminated MWP could result in downgraded pricing in the range of \$10 to \$20 per ton for MWP.

- Modest amounts of scrap aluminum are sometimes recovered at a MRF, having come in with other recyclables. The estimated value of recovered non-ferrous is \$700 per ton.

PAYT Case Studies & Implementation Considerations

PAYT is applicable in all sizes of communities but it works best when tailored to the local needs of each community. For example, communities ranging from Austell, GA with a population of 6,200 to San Jose, CA, with a population of 850,000 have implemented PAYT. These communities use different container and billing systems, as applicable to their particular locality. A PAYT system works no matter who provides collection services; a municipal department or a private hauler.

Case Study: Fort Worth Texas - Fort Worth with 661,850 residents / 172,000 Households implemented Citywide PAYT in July 2003. This was preceded by 7-Year Pilot Program in 8 routes of approximately 10,000 households. Operation of the system was contracted to a private firm. The figure below shows a Ft. Worth bumper sticker for the program.

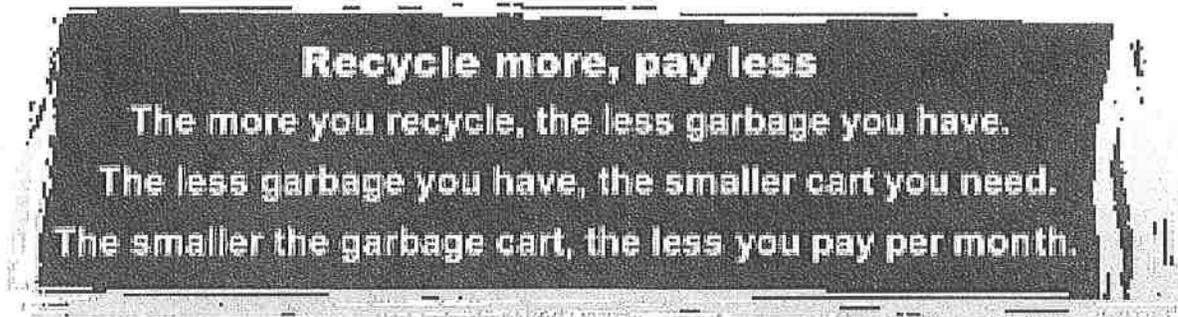


Figure 1 - PAYT promotional bumper sticker

The residential curbside collection services offered by Ft. Worth are weekly collection of garbage, recyclables, and yard trimmings with up to 10 cubic yards of loose brush. On a monthly basis, up to 10 cubic yards of bulky items can also be picked up per household. The customers are billed monthly on their City water bill with the following fees:

- Recycling 64-gallon cart = No charge
- Garbage cart monthly fee:
 - 32-gallon = \$11.45
 - 64-gallon = \$16.45
 - 96-gallon = \$21.45
 - Bags for excess garbage = \$15.00 for 5 (Special bags are provided to assure payment has been made.)
- Optional yard trimmings cart fee:

- 96-gallon = \$50.00

The disposal fee at the landfill is \$12.94 per ton, which is included in the fees paid by the residential collection customers.

The program is enforced by City solid waste staff and code officers but the policy is “educate first”. However, it was recognize that enforcement actions must come to bear eventually, starting with the “bad areas” first. The code officers are not garbage collectors but they were involved in the process of PAYT implementation in order to be trained. The figure below shows an enforcement tag placed by code officers on waste which was set out in violation of the PAYT program. Based on the needs of the local community, the violation information is provided in multiple languages.

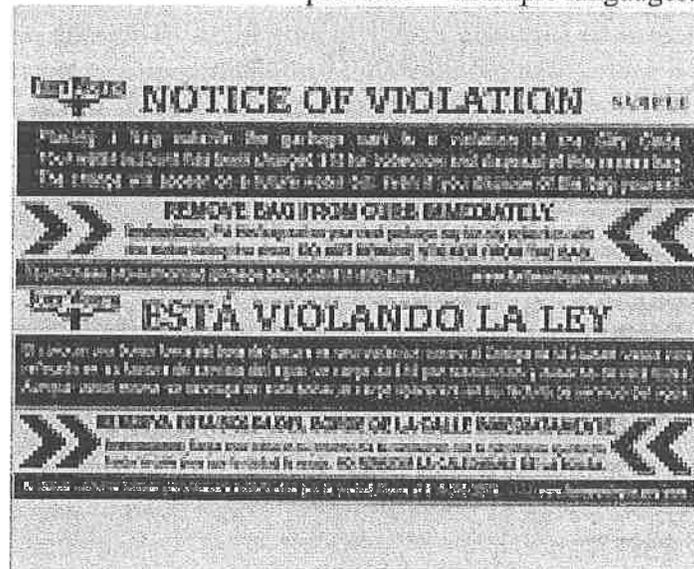


Figure 2 - PAYT violation sticker

In order for the program to succeed, the City recognized that they needed backing of the City Council and the Political Will to follow through. The first year results included an increase in recycling /diversion: from 6% up to 20%, with the number of households that recycle increasing from 38 to 70 percent. The sales of collected recyclables generated \$540,000 in revenue and the costs for MSW disposal were reduced from \$32M to \$24M. Further, 92 percent of residents pay less than before the PAYT system was implemented.

Case Study: City of Austell, Georgia - The City of Austell has a population of 6,200 with 2,955 households receiving collection service from the Division of Solid Waste. The City implemented PAYT City wide in October 1993 by local ordinance. Residential collection services include weekly garbage on Monday. The waste must be in designated City bags which must be tied closed; yard debris is NOT considered household garbage and is collected at no charge (twice per week). Recycling, which is mandatory by ordinance, is collected on Wednesday through a contracted hauler. On a bi-annual basis the City collects bulky and household items. The residents are billed for these services monthly on their City water bill.

Residents pay for recycling and the fee is fixed at \$2.54 per household per month. The solid waste is charged per bag, as residents prepay for each of the specially designated City garbage bags. The cost of each garbage bags is \$1.50 for a 20 gallon yellow garbage bag and \$2.75 for a 32 gallon blue garbage bag. Even though all garbage must be in designated City bags, the City has no real level of enforcement in effect and it is possible that non-City bags of trash are collected. However, in a small community, resident cooperation is easier to obtain than in large cities.

The city of Austell feels that their program is a success because it is low cost to the residents and has a low administrative cost. Their key to successful implementation is that they took their time in addition to maintaining a good education / outreach program which includes: mailings, local media, annual calendars/resource guides, E-mail Updates, water bill inserts, and a web site.

Implementation of PAYT

Implementation of PAYT involves developing an implementation strategy. Developing this strategy needs to include a number of steps, such as:

1. Setting program goals
2. Establishing a PAYT team
3. Address barriers
4. Build public consensus
5. Design PAYT program

The goals set by the program should be realistic and clearly defined with measurable objectives. Measurable objectives will facilitate monitoring and progress evaluation. The goals also should help build community consensus. One clear goal needs to be the design of an equitable rate structure based on actual costs. The PAYT system cannot be a major inconvenience to the citizens or there will be no political support. Additional goals could include:

- Manage solid waste like a business
- Raise revenues to cover program costs
- Encourage recycling
- Generate revenue to ancillary programs

To be an effective, the PAYT program will need to establish a dedicated planning and implementation team. The core of the team will be drawn from the local solid waste staff. Elected officials will need to be incorporated early in the process because there will be policy decisions to be made and the entire program will need to be marketed to the citizens. Others that may be asked to contribute to the PAYT planning and implementation team include:

- Civic leaders

- Affected businesses
- Outside advisors
- Equipment suppliers
- Service providers or contractors

The PAYT team will need to identify potential barriers to successful implementation and ways to address them. The barriers include resistance to change on the part of citizens and all impacted; initial skepticism and opposition is typical. The key is to communicate the advantages to the customers including:

- Transparency
- Equity
- Waste reduction
- Waste management costs reduction
- Municipal improvement

The public consensus building activities should be broad band and include a variety of techniques including:

- Public meetings, which should be interactive and provide a forum for the public's concerns. Discussion charettes have been successful for this type of exchange.
- Briefings, plus backup information, for public officials. Public officials will be at center of debate and need to make and market the policy decisions. A well-informed leadership can raise issues to attract residents' interest.
- Press Releases, to keep local radio, TV, and newspapers well informed in order to generate press coverage, which helps prepare the community for upcoming change.
- Involve retailers to help with citizen education by displaying poster and other information about the program.
- Conduct a Pilot Program, modeling collection for some citizens, who can then share their experiences with their neighbors, and providing real local data on results.

The decisions needed to design a PAYT program will range over all the program components. These will include decision concerning:

- Volume-based or weight-based system
- Containers, bags, or carts and in what sizes
- Pricing structure, which could be a single fee or one broken into components including collection, disposal, systems benefit charge, etc.
- Billing system and delivery
- Program service options
- Multi-family treatment
- Special needs residents

The lessons learned from the case study communities like Fort Worth and the City of Austell indicate that a successful PAYT system has to:

- Cover costs
- Be simple and convenient for residents
- Encourage waste reduction
- Minimize administrative burden

PAYT Considerations

The tradeoffs must be considered between things like simplicity and maximized services provided. There are complementary programs that can increase efficiency of PAYT program such as adopting a separate yard waste collection and removing that material from the refuse stream. Rate structure decisions will be the community's main solid waste concern and the overriding factor so will need to be addressed to prevent PAYT from being regarded as "just another tax".

PAYT systems provide direct economic incentive to residents to reduce their waste generation and increase their recycling. Generally such systems assess cost by a per-bag fee, or a set fee based on the size of the container provided. Direct weighing of disposal material is less common because of equipment requirements and cost of billing. Billing may be directly by private hauler in accord with local law, through a special tax district, or through local property tax bills. In many communities where the fee is collected by a local government, additional services may be provided, such as seasonal or regular yard waste collection, e-waste collection, or household hazardous waste collection events.

PAYT systems work for both commercial and residential systems because they require disposers to think about the amount of material they are disposing of, provide an economic incentive of avoided costs for reducing disposal, and show clear support for recycling. Used in thousands of communities across the United States, PAYT systems have reported 25-35% reductions in waste disposal.

The noted advantages of PAYT include the direct benefit of reduced disposal and commensurate conservation of landfill space, along with potential reductions in greenhouse gases generated by the waste disposal process. These systems have shown increased participation in composting and recycling programs, both in terms of quantity of materials diverted and quality of material, as measured by contaminated materials, which has been attributed to a general increased awareness of program requirements. The disadvantages could include the initial capital investment in the system (fee collection, containers, collection trucks); new costs to residents and businesses that may find it difficult to pay; and potential increase of illegal dumping in order to avoid disposal costs. Depending on the baseline system that is in place prior to PAYT, there may be substantial initial effort in education and training of residents, businesses, participating vendors and planning unit or local government staff. However, there are numerous examples of private haulers having established a form of PAYT system with minimal disruption to the

consumer, and municipalities looking to establish such a system are encouraged to work with and learn from private haulers in their territory.

A commitment to a PAYT system is also desirable as it shows a commitment to establishing a public information and awareness program. Such programs have had varying levels of support from the State through the years, and local priorities have often led to limited public information in support of waste reduction, recycling and composting programs. PAYT creates a renewed opportunity for a dialogue with the public to develop and reinforce an understanding of the waste management system, the true costs of disposal, and the benefits of waste reduction and recycling.

APPENDIX H

EXPORT CERTIFICATION FORMS

EXPORT CERTIFICATION OF CAPACITY

Facility Name: Clean Harbors Env. Services Inc.

Facility Address: 2900 Rockefeller Avenue
Cleveland Ohio 44115

Facility Contact Person: Michael Petkovich

Facility Type (check all that apply)

- Landfill Transfer Station Materials Recovery Facility
 Incinerator Compost Facility Electronics Recycling
 Other: wastewater treatment facility

This Facility has contracted with / is prepared to contract with Rockland County to accept up to _____ (tons or cubic yards per year) of materials for disposal and/or recycling.

Is this a permitted facility? Yes No

Facility permit number: OH0000724153 4953-200-437ES06

Expiration date of facility permit: October 15-2011

Total Facility Capacity for Duration of Permit: 480,000 gallons

Does the Facility have any Daily, Weekly, or Monthly Capacity Limitations? Yes No

Please specify: Discharge allowance up to 325,000 gallons

Does the Facility have additional capacity in the event the Permit is renewed? Yes No

What is the estimated additional capacity? Ø

Certification:

I hereby certify that the above information is true to the best of my knowledge and belief.

Michael Petkovich

Signed

MICHAEL PETKOVICH

Printed

1 / 10 / 11

Date

Transportation & Disposal

El Dorado, Arkansas Facility Facts



Clean Harbors El Dorado incineration facility specializes in the treatment of hazardous wastes (RCRA regulated) and non-hazardous wastes by high temperature incineration. RCRA liquids are fed into the rotary kilns and the secondary combustion chamber, depending on the specific characteristics of the waste.

Two rotary kilns are utilized for treatment of solids and sludge. RCRA solids and sludge may be received from the customer, packaged for ram feed into the rotary kilns, repacked for ram feed, or fed directly into the kilns through an automated shredder auger machine. This system enables the El Dorado facility to accept waste that is packaged in any size Department of Transportation (D.O.T.) approved container.

Permits

- EPA ID No. ARD069748192
- RCRA Part B Permit No. 10H-M018
- NPDES Permit No. AR0037800
- ADEQ Operating Air Permit No. 1009-AOP-R1



Clean Harbors El Dorado, LLC • 309 American Circle • El Dorado, AR 71730 • 870.863.7173 • www.cleanharbors.com

Facility Description & General Information

Start-up Date: 1974

Facility Size: 370 acres (50 acres are currently active for waste management)

Services Provided:

- Incineration of all types of hazardous and non hazardous wastes (solids, liquids, and sludge), drums, tankers and rail
- Storage prior to incineration
- Management of a wide variety of cylinders, large C-Class cylinders, ISO, and multi tube trailers of compressed gas
- Alternative and comparable fuels for reuse at waste fired boiler

Typical Customers: chemical facilities, pharmaceutical companies, manufacturers, R&D facilities, colleges and universities, government research facilities, state and municipal agencies, medical facilities.

Typical Waste Streams: contaminated process wastewaters, oils, spent flammable solvents, organic and inorganic laboratory chemicals, paint residues, debris from toxic or reactive chemical cleanups, off-spec commercial products, cylinders and labpacks.

Treatment, Storage and Disposal Capabilities

- RCRA Solids Containerized Storage Capacity: 1,459,645 gallons (26,539 55-gallon drums)
- RCRA Liquid Tank Storage Capacity: 1,859,444 gallons
- Total Incineration Capacity: 42,410 lbs./hour
 - 39,011 lbs./hour for the Secondary Combustion Chamber (SCC) and its associated equipment (kilns)
 - 3,399 lbs./hour for the Resource Recovery Boiler

EXPORT CERTIFICATION OF CAPACITY

Facility Name: Clean Harbors El Dorado, LLC

Facility Address: 309 American Circle
El Dorado, AR 71730

Facility Contact Person: Ron Hines - General manager

Facility Type (check all that apply)

Landfill Transfer Station Materials Recovery Facility

Incinerator Compost Facility Electronics Recycling

Other: Solvent Recovery, Fluorescent Bulb Crusher
+ 10 day hub

This Facility has contracted with / is prepared to contract with Rockland County to accept up to _____ (tons or cubic yards per year) of materials for disposal and/or recycling.

Is this a permitted facility? Yes No

Facility permit number: RCRA Permit 1PH-RN1

Expiration date of facility permit: March 2018

Total Facility Capacity for Duration of Permit: See attached

Does the Facility have any Daily, Weekly, or Monthly Capacity Limitations? Yes No

Please specify: See attached

Does the Facility have additional capacity in the event the Permit is renewed? Yes No

What is the estimated additional capacity? _____

Certification:

I hereby certify that the above information is true to the best of my knowledge and belief.

Kelly Smith
Signed

Kelly Smith
Printed

1/25/11
Date

Transportation & Disposal

Deer Park, Texas Facility Facts



The Deer Park facility is fully permitted to manage a wide variety of regulated materials including RCRA hazardous waste, PCBs, APHIS soils, and non-regulated waste materials. Properly packaged infectious wastes and witness-burned DEA-controlled substances can also be incinerated at the Deer Park facility.

Utilized for incineration, the Deer Park facility is self-supported with ancillary units. It is a stand-alone disposal facility with an on-site landfill, a wastewater treatment plant and storage/processing units. A full staff of technical, operational and administrative personnel handles the most complex customer needs.

Permits

- US EPA ID No. TXD055141378
- TCEQ Facility Permit for Industrial Solid Waste Management Site No. HW-50089 (Part B)
- TCEQ Compliance Plan CP-50089
- TCEQ Water Permit No. WQ0001429000
- TCEQ New Source Review Air Permit Nos. 5064 and N001
- TCEQ Federal Operating Permit No. O-1566 (Title V Air Permit)
- US EPA TSCA Authorized for Commercial PCB Storage and Incineration
- USDA Soil Permit



- Harris Galveston Coastal Subsidence District Permit No. 100601
- TCEQ Water Well Permit No. 1487

Facility Description & General Information

Start-up Date: 1971

Facility Size: 145 acres

Services Provided:

- Incineration of all types of wastes (solids, liquids, sludge and gas), drums, tankers and rail
- Storage prior to Incineration
- On-Site Landfill of incineration residues
- On-Site Wastewater Treatment of self-generated aqueous by-products
- Alternative and comparable fuels for reuse

Typical Customers: chemical facilities, pharmaceutical companies, manufacturers, R&D facilities, colleges and universities, government research facilities, state and municipal agencies, medical facilities.

Typical Waste Streams: contaminated process wastewaters, oils, spent flammable solvents, organic and inorganic laboratory chemicals, paint residues, debris from toxic or reactive chemical cleanups, off-spec commercial products, cylinders and labpacks.

Treatment, Storage and Disposal Capabilities

- Incineration: Train I, 180 MM BTU/HR; Train II, 153.5 MM BTU/HR
- Tank Storage Capacity: 830,000 gallons
- Drum Storage Capacity: 1,490,000 gallons (25,000 drums)
- Tanker Storage Capacity: 132,000 gallons (24 tankers)
- Bin Storage Capacity: 6,120 cubic yards (200 bins)
- PCBs - Incineration Authorized on Train I: 575,000-gallon tank capacity; 300,000-gallon drum capacity.
- Most non-Dioxin waste codes are permitted for incineration.

EXPORT CERTIFICATION OF CAPACITY

Facility Name: Winn HARBORS Debra Porrie LLC

Facility Address: 2027 INDEPENDENCE PARKWAY South
Mc Pointe, TX 77571

Facility Contact Person: Kevin Hancock

Facility Type (check all that apply)

- Landfill Transfer Station Materials Recovery Facility
 Incinerator Compost Facility Electronics Recycling
 Other: _____

This Facility has contracted with / is prepared to contract with Rockland County to accept up to See ATTACHED (tons or cubic yards per year) of materials for disposal and/or recycling.

Is this a permitted facility? Yes No

Facility permit number: Permit No IHW 50089

Expiration date of facility permit: 3/2015

Total Facility Capacity for Duration of Permit: _____

Does the Facility have any Daily, Weekly, or Monthly Capacity Limitations? Yes No

Please specify: _____

Does the Facility have additional capacity in the event the Permit is renewed? Yes No

What is the estimated additional capacity? See ATTACHED

Certification:

I hereby certify that the above information is true to the best of my knowledge and belief.

Kevin Hancock

Signature

Kevin D Hancock

Printed

1/13/2011

Date

Jeff,
Need these
items
answered.
TX Anna

EXPORT CERTIFICATION OF CAPACITY

Facility Name: Hyland Facility Associates
Facility Address: 6653 Headman Rd
Angelica, NY 14709
Facility Contact Person: Joe Boyles

Facility Type (check all that apply)

- Landfill Transfer Station Materials Recovery Facility
 Incinerator Compost Facility Electronics Recycling
 Other: _____

This Facility has contracted with is prepared to contract with Rockland County to accept up to 240,000 (tons or cubic yards per year) of materials for disposal and/or recycling.

Is this a permitted facility? Yes No

Facility permit number: 9-0232-00003/00002

Expiration date of facility permit: 5/1/2015

Total Facility Capacity for Duration of Permit: 2,496,000 tons

Does the Facility have any Daily, Weekly, or Monthly Capacity Limitations? Yes No

Please specify: Annual 312,000/yr

Does the Facility have additional capacity in the event the Permit is renewed? Yes No

What is the estimated additional capacity? 15 years @ 312,000/yr

Certification:

I hereby certify that the above information is true to the best of my knowledge and belief.

Raymond E. Dwee
Signed
Raymond E. Dwee
Printed
9/23/2011
Date

EXPORT CERTIFICATION OF CAPACITY

Facility Name: ONTARIO COUNTY LANDFILL

Facility Address: 1079 STATE ROUTES 5620

STANLEY, NY 14561

Facility Contact Person: CARLA CANTAR- ENVIRONMENTAL MANAGER

Facility Type (check all that apply)

- Landfill Transfer Station Materials Recovery Facility
 Incinerator Compost Facility Electronics Recycling
 Other: _____

This Facility has contracted with / is prepared to contract with Rockland County SWMA to accept up to 150,000 (tons or cubic yards per year) of materials for disposal and/or recycling.

Is this a permitted facility? Yes No

Facility permit number: 8 -32-44--00004 /00001-0

Expiration date of facility permit: 01/20/2015

Total Facility Capacity for Duration of Permit: +/- 5 MILLION CY

Does the Facility have any Daily, Weekly, or Monthly Capacity Limitations? Yes No

Please specify: 2,999 TONS PER DAY

Does the Facility have additional capacity in the event the Permit is renewed? Yes No

What is the estimated additional capacity? +/- 8 MILLION CY

Certification:

I hereby certify that the above information is true to the best of my knowledge and belief.

Raymond E. Dveer

Signed

Raymond E. Dveer

Printed

2/1/2011

Date

APPENDIX I

COMPLIANCE REPORT (2011 – 2012)

1 COMPLIANCE REPORT (2011-2012)

1.1 Introduction

As detailed in the letter sent to Mr. Vitale on April 30, 2014 (attached), the NYSDEC and RCSWMA agreed to incorporate the information typically contained in the Biennial Compliance Report into the Final LSWMP. Since the majority of the information required to be included in the Biennial Compliance Report can be found within the content of this LSWMP, the following sections focus on the status and accomplishments RCSWMA has made through 2011 and 2012, as well as the recycling rates achieved.

1.2 Status and Accomplishments

This Section summarizes RCSWMA activities during 2011 and 2012 to further reduce waste and increase reuse, recycling and composting within the Planning Unit. The following updates have been organized to coincide with the categories used in the Implementation Schedules found in Section 8 of this LSWMP.

1.2.1 Implementation Schedule No. 1 – General

Laws and Legislation

- **Periodic Review of Legislation & Overall Program:** Rockland County's 2008 "flow control" ordinance ("Rockland Law") was upheld by United States District Court Southern District of New York (3/24/14).
- **Enforcement:** continued to meet with DOH

Finance

- **Contracts:** incorporated conditions into the Transfer Station contract renewals to increase fuel and load efficiencies and reduce emissions
 - **Establish 501c3:** RCSWMA has taken the first step in establishing a 501(c)(3) by meeting with Board to review by-laws.
 - **Renewable Energy Opportunities:** the exploration of several opportunities were initiated relative to CNG, renewable natural gas (RNG) and solar.
 - NYSERDA grant for dual fuel long haul trucks
 - Discussions regarding Biogas utilization associated with food digesters
 - Investigated solar panel integration into MRF building
-

APPENDIX I

COMPLIANCE REPORT (2011-2012)

1.2.2 Implementation Schedule No. 2 – Recyclables and Waste Reduction

Materials Recovery Facility - Increase Participation and Recyclables Through Facility

- **Residential and Multifamily Participation:**
 - RCSWMA partnered with AmeriCorps to produce and distribute informational door hangers (copies are attached). Specific door hangers were created for both single family residences and multi-family residential complexes, with English printed on one side, and Spanish printed on the other side. The door hangers ask that everyone help keep disposal costs down by recycling the proper material in the proper containers, explain what can and cannot be recycled, and have contact information for RCSWMA. AmeriCorps members worked with the five towns to identify neighborhoods and multi-family residential complexes that would benefit from the door hangers.
 - AmeriCorps members attended four ShopRite stores in the County and distributed 675 reusable tote bags with educational literature and attended three farmer's markets and distributed 400 reusable tote bags with educational literature.
 - As part of their community outreach, RCSWMA presented at public exhibit events throughout 2011 and 2012, reaching over 1,000 residents each year. Venues included libraries, public buildings, Earth Day events and health fairs.
 - RCSWMA identified communities that have lower than expected participation and dealt with a community liaison on avenues to increase community involvement. Staff met with the Rabbi (former and current) that represents the Orthodox and Hassidic communities in unincorporated Town of Ramapo. Staff also met and worked with the Villages of New Square and Kaser.
 - **Schools (K-12)**
 - In 2011, RCSWMA presented to over 500 students, teachers and faculty (Kindergarten through 12th grade) at either school exhibit events (e.g. health fairs) or designated presentations. In 2012, RCSWMA presented to over 650 students, teachers and faculty.
 - In December 2012, RCSWMA visited 52 Elementary and Middle Schools (Kindergarten through 8th grade) to deliver an informational tote bag to the school administration. The tote bag included a cover letter, information on recycling within the district, a survey form to be filled out about the school's current recycling practices, and promotional materials. The RCSWMA is keeping a running spreadsheet of what each school recycles through survey results and other school visits. The RCSWMA made several attempts at
-

setting up a meeting with school district superintendents but was unsuccessful at doing so.

- RCSWMA started a pilot program with Nanuet School District to track diversion rates. RCSWMA purchased the recyclable containers in exchange for Nanuet to record the weight of recyclables being diverted from the waste stream.
- **Colleges:** worked with the NYSAR3 College Council to promote recycling on college campuses within the district. RCSWMA has worked with and assisted the larger colleges, including Dominican College, Rockland Community College (RCC), and St. Thomas Aquinas College (STAC), in applying for grants through NYSAR3.
- **Commercial/ Institutional & Municipal/Government:** RCSWMA's Recycling Coordinator met with all 24 municipalities within the district, over 300 businesses in 2011, and over 400 businesses in 2012 to discuss the challenges and needs for each to increase their recycling participation.
- **Evaluate Single Stream Recycling:** The Village of West Haverstraw was contacted regarding the possibility of performing a single stream recycling pilot. Activities continue to begin pilot project (grants applications for trucks, research on bins, etc.)

Yardwaste Composting – Increase Participation at Facilities and Promote Backyard-Yard Composting Efforts:

- **Additional Yard Waste Facility:** evaluated multiple properties for additional yard waste facility
- **Increase Participation and Back-Yard Composting:**
 - RCSWMA started providing rain barrels and compost bins at cost for sale at events. They have also partnered with Cornell Cooperative Extension for the rain barrels and compost bins to be sold through the Cooperative Extension.
 - The development of a grass recycling brochure was started in 2012.

Food Waste Recycling – Evaluate Incorporating Into Program

- **Pilot Program:** began developing program elements (location, size, technology, etc.) and participants in coordination with NYSDEC.

Recyclables Pre-processing Facility

- **Evaluation and Implementation:** evaluation of opportunistic uses for the pre-processing facility incorporated into MRF RFP issued in 2013.
-

Public Spaces Recycling

- **Parks, Sports Fields, Municipal Curbside:** set up a recycling program for Rockland Boulders Ballpark in 2012.
- **Special Events:** The following events used RCSWMA's Clear Stream Recyclers (recycling containers) in 2011: Rockland County Ice Festival (10 recyclers), Nyack Earth Day (3 recyclers), The Reach Foundation Run (6 recyclers), and Suffern Farmers Market (2 recyclers). The following events used RCSWMA's Clear Stream Recyclers in 2012: Rockland County Ice Festival (4 recyclers), The Reach Foundation Run (6 recyclers), and Pearl River's St. Patrick's Day (15 recyclers).

Carcass Composting Program:

- **Evaluation and Implementation:** RCSWMA reached out to municipalities regarding carcass composting. Most municipalities had their own carcass composting program so future efforts will focus on re-education.

1.2.3 Implementation Schedule No. 3 – Reuse and Reduction

Household Hazardous Waste Facility

- **Continue to Optimize HHW Operations:** began evaluation of additional E-waste drop off areas and began accepting E-waste at transfer station

Materials Exchange/Reuse

- **Implementation & Expansion Evaluation:** began exploring different options to increase reuse infrastructure within the Planning Unit; such as, reuse containers and developing a material exchange/reuse website.

1.2.4 Implementation Schedule No. 4 – Non-Recyclables

Data Collection and Alternative Disposal

- **Data Collection and Operations:**
 - RCSWMA started to internally distinguish between MSW and C&D tonnage at their Transfer Stations by using a different code for C&D loads. This data collection will help them further evaluate their C&D waste stream and determine alternative options for C&D handling, recycling, and disposal.
 - In order to further increase landfill diversion rates, RCSWMA started working with various customers to assist with recycling applications for construction
-

projects for LEED certification (Bloomberg building in Orangeburg resulted in 35.05 tons of recycled material)

Alternatives

- **Evaluate Alternative Waste Treatment Techniques and Transportation Methods:** RCSWMA continues to attend conferences and seminars in order to evaluate alternative techniques for waste treatment and transportation methods for waste hauling.

1.2.5 Implementation Schedule No. 5 – Education and Outreach

Overall Program Initiatives

- **Continue to Expand Education and Outreach Initiatives:**
 - In 2011, RCSWMA hosted approximately 2,050 students, teachers, residents, and boy/girl scouts on their tours of their Environmental Education Center and Native Plants Garden. In 2012, they hosted approximately 2,700 students, teachers, residents, and boy/girl scouts.
 - See “door hanger” program discussed in Section 1.2.2. Implementation Schedule No. 2.
 - See “public event” program discussed in Section 1.2.2. Implementation Schedule No. 2.
 - **Website Utilization:** major website update was ongoing in 2012 in effort to utilize the website as the primary source of information for the public.
 - **Annual Rockland Recycles Awards Program & Environmental Day:** RCSWMA continued to host the Annual Environmental Day at their Hillburn Facility where they present the Rockland Recycles Awards. Awards are given to businesses, institutions, schools, municipalities and other entities for excellence in waste reduction and recycling. Award recipients for both years included Good Samaritan Hospital, Pearl River Pastry, Suffern Middle School, Arri Inc., BOCES Jesse Kaplan School, Town of Clarkstown, and Lillian Merrill.
 - **Support Local, State & National Organizations:** continue to support PSC, SWANA, NYSAR, KRB, AmeriCorps, CCE, and RFA. RCSWMA’s Education Coordinator has been the Region 3 board member for NYSAR3 since 1999 and served as board President from 2011-2012. RCSWMA’s Executive Director served as a board member of SWANA for 2011-2012 and also serves on the PSC board. The RCSWMA has been an ongoing sponsor for KRB’s Great American Clean-up and is also a KAB member.
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1.3 Solid Waste Quantities and Recycling Rates

As described in Section 4 of this LSWMP, RCSWMA tracks its total waste stream and a recycling rate is calculated to illustrate the impact of the Planning Unit's comprehensive recycling program on its solid waste management. Rockland County solid waste quantities and recycling rates for 2011 and 2012 are shown in the Table I-1 below.

Table I-1: 2011 & 2012 Solid Waste Quantities¹

Material	2011		2012	
	Tonnage	% of Total Waste	Tonnage	% of Total Waste
MSW landfilled	224,208	59.59%	200,503	59.15%
C&D landfilled	33,358	8.87%	22,278	6.57%
HHW disposed	321	0.09%	346	0.10%
Total landfilled	257,566	68.46%	222,781	65.72%
Mixed paper	17,217	4.58%	12,968	3.83%
Cardboard	3,949	1.05%	3,623	1.07%
Mixed containers	15,466	4.11%	9,522	2.81%
Biosolids	4,373	1.16%	3,904	1.15%
Yard waste	40,120	10.66%	55,331	16.32%
HHW	375	0.10%	370	0.11%
Metals	12	0.00%	17	0.01%
Tires	113	0.03%	106	0.03%
Asphalt	12,388	3.29%	9,887	2.92%
Concrete	24,321	6.46%	20,122	5.94%
Total recycled	118,334	31.45%	115,850	34.18%
MSW recycled	77,252	25.60%	81,937	28.97%
Total waste	376,221	100.00%	338,977	100.00%
Total MSW	301,781	80.21%	282,786	83.42%

The total solid waste generated in the County in 2011 was approximately 376,221 tons. In 2012, the County generated approximately 338,997 tons. The average per capita generation of solid waste for 2011 and 2012 was calculated using the population projections in Section 4.1 of this LSWMP (population of 313,260 for 2011 and population of 314,833 for 2012). The average per-capita generation of solid waste, including recycling and disposal, in the County for 2011 was 1.20 tons per person per year. This equates to 6.57 pounds per person per day. The average per-capita generation of solid waste, including recycling and disposal, in the County for 2012 was 1.08 tons per

¹Tonnage provided by the Authority.

person per year. This equates to 5.92 pounds per person per day. These daily generation rates are higher than the 4.34 pounds per person per day that USEPA shows as the nationwide waste generation rate.²

In 2011, 31 percent of the County's total waste stream was recycled. The recycling rates for the various components of the County's waste stream were:

- MSW: 26 percent
- C&D: 52 percent
- Biosolids: approximately 100 percent

Similarly, in 2012, 34 percent of the County's total waste stream was recycled. The recycling rates for the various components of the County's waste stream were:

- MSW: 29 percent
- C&D: 57 percent
- Biosolids: approximately 100 percent

² "Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2009," U.S. EPA.
