

Feasibility Study for the Formation of GUS a New, Multi-County Solid Waste Authority

March 2018

Prepared for:

Ulster County Resource Recovery Agency
Sullivan County
Greene County



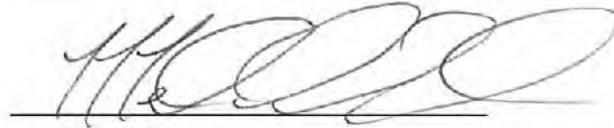
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REPORT CERTIFICATION

Feasibility Study

The material and data in this report were prepared under the supervision and direction of the undersigned.

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1 INTRODUCTION

The Ulster County Resource Recovery Agency (UCRRA) has retained Cornerstone Engineering and Land Surveying, PLLC (Cornerstone) on the behalf of the counties of Greene, Ulster, and Sullivan for the preparation of an engineering feasibility study addressing the possible formation of a new Greene, Ulster and Sullivan (GUS) solid waste management authority. Formation of a new solid waste management authority is being considered with the goals of improving waste management operations, creating efficiencies among the three counties, and the potential for reduction of both long-haul truck miles and their associated greenhouse gas emissions. Currently each of the three counties has existing systems in place for the management of waste and recyclable materials. Formation of the new authority is predicated upon the expectation that the combination of the various county and UCRRA assets under one organization will facilitate a greater level of efficiency and provide a broader range of services than can currently be obtained through each county maintaining independent operations.

Creating a three county authority between Greene, Ulster, and Sullivan (GUS) creates a larger geographical area where synergies with logistics for local waste transportation can benefit outlying communities of one county to a possible closer disposal options of the adjoining county within the authority. Aggregating solid waste volumes can result in a better position for negotiation of disposal contracts with larger solid waste volumes being collected for lower disposal fees, along with any and all recyclable materials collected within each county should result in a better position with recycling markets and all three counties will have access to Authority educational outreach programs. Additionally, in the absence of local disposal facilities, waste from all three counties is currently transported long distances for disposal. Together, the waste generated from all three counties creates the potential for facilities such as a local organics management or other means of disposal to be financially and environmentally viable.

In evaluating the feasibility of establishing GUS, Cornerstone has performed a general overview of the waste management operations of each of the three entities in order to:

- Observe the general compatibility of the waste management systems within each operating unit.
- Evaluate the extent to which each entity manages materials relative to population and national statistics.
- Perform a high-level review of annual operating costs including transportation and disposal.

- Identify the potential for environmental enhancements resulting from the combination of operations of the three existing entities.

To help understand and comprehend the logistics of each county's solid waste operations, site visits were performed along with review of financial statements and annual operating reports for solid waste tonnages received and disposed, along with recyclable materials processed for each operating unit.

Based upon this assessment and assuming that further accounting, legal and engineering study confirm the data reviewed, Cornerstone believes that formation of the GUS Solid Waste Authority is feasible. The information supporting this opinion is presented in the following sections of this report.

2 COUNTY & UCRRA SWMP OVERVIEW

2.1 Solid Waste Management Plans (SWMP)

Each of the three operating units of Greene County, UCRRA, and Sullivan County have Solid Waste Management Plans that have been in place since the early 1990's. The operating units of Greene County and UCRRA currently have updated draft SWMPs under review. Sullivan County will be soliciting a RFP in 2018 to update their current SWMP.

The current SWMPs and pending draft SWMPs each manage their solid waste consistent with the policies set forth in the New York State Solid Waste Management Plan criteria. New York State has established solid waste management policy objectives under a "preferred hierarchy" that is generally described as follows (in order of descending preferences):

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

2.2 Greene County

Green County is on file with NY State as the solid waste planning unit for its represented area. The county currently operates under a Solid Waste Management Plan that was approved in the late 1990's. Greene County currently has a draft updated Solid Waste Management Plan (SWMP) waiting for county review and approval, before submitting the SWMP to NYSDEC for their review and approval. Membership within Green County SWMP has not changed from the previous SWMP. All municipalities within the county are included within the plan.

Greene County owns and operates four transfer stations and services two municipal recycling drop-off centers (MRDC). The four transfer stations (TS) are located in the towns/villages of Hunter, Catskill, Coxsackie, and Windham. **Figure 1 - Map Greene County** provides an overview of the facilities located in the county. The primary transfer station, Catskill Transfer Station, is the only permitted transfer station the County Operates.

The other three facilities are registered. All four transfer stations are currently utilizing dual stream recycling practices. Greenville and Halcott are the only two MRDCs that Greene County provides roll-off containers to for the pickup of MSW as well as recycling. Durham, Cairo, and New Baltimore are three additional MRDCs in the county. The county does provide transportation services for recycling containers to these facilities. Evergreen Disposal Corp. located in the Town of Cairo and Green-Del Sanitation (County Waste) located in Prattsville, NY are two private facilities that operate within Greene County. (Residential CD, MSW, Recycling).

The County has contracts with (Waste Connections) Dunn Landfill for disposal of C&D collected from the transfer stations and (Waste Connections) Seneca Meadows Landfill for the disposal of MSW. MBI Trucking is the sub-contractor to (Waste Connections) Seneca Meadows and provides transportation services to the landfills. These contracts expire in December 2020. Recycling redemption vendors change periodically throughout the year depending on market values. Recycling products are brought directly to the redemption centers by county owned and operated trucks from the respective transfer station or MRDCs within the County.

Solid waste within the County is generated from multiple sources. There are six school districts, commercial retail centers, municipal buildings, nursing homes, entertainment venues and resorts, three prisons, industrial manufacturers, development activities, and year-round residents. The solid waste stream is comprised of four major components which include Municipal Solid Waste, Construction and Demolition Debris (C&D), Industrial Waste, and Biosolids. C&D cost analysis has revealed that it is cheaper to landfill the material as opposed to transporting the material to a recycling facility. Industrial Waste is no longer an issue as the two major producers within the County have closed. Biosolids (sewage waste) is handled by the municipalities and disposed of privately. Biosolids do not enter the waste stream for the County. Greene County currently utilizes County Waste's recyclables handling and recovery facility in Cairo, New York for single stream recycling.

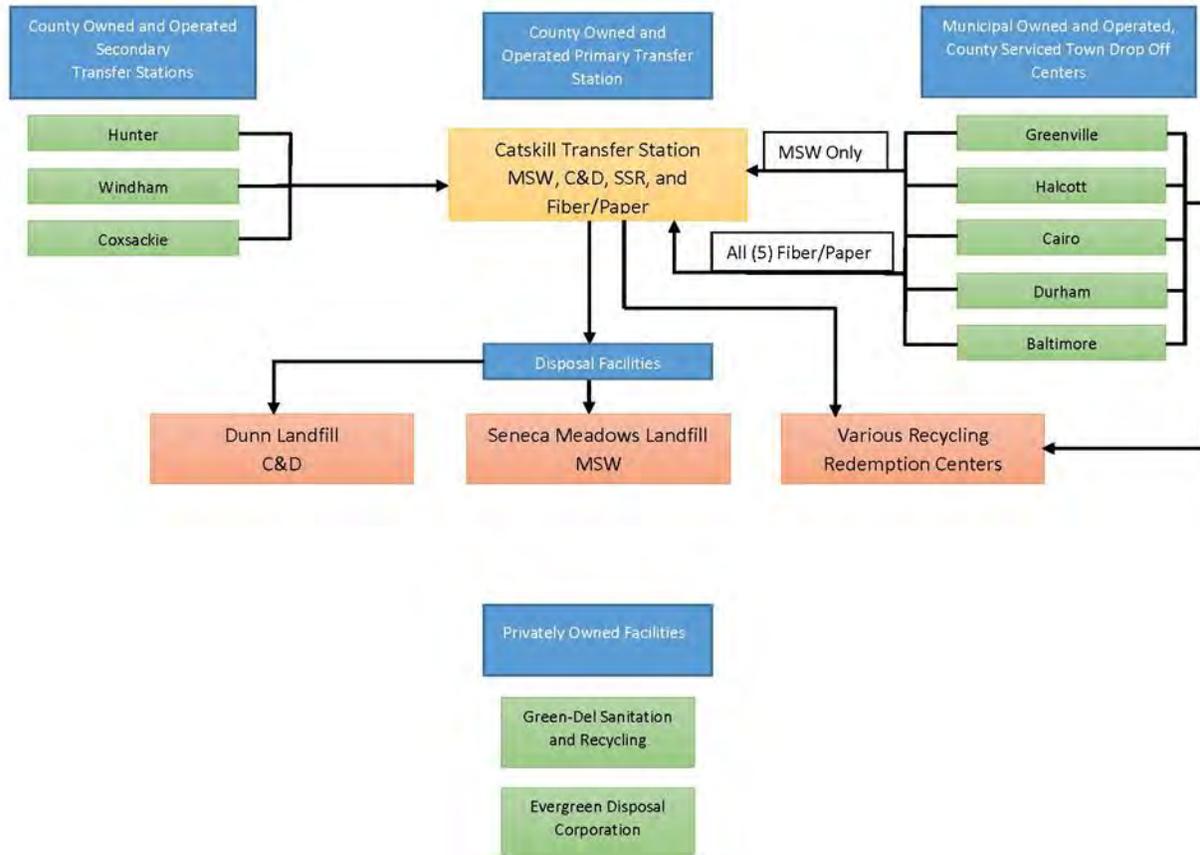
2.2.1 Operations

Greene County hauls MSW and C&D from their county-owned transfers stations of Hunter, Coxsackie, and Windham back to the Catskill Transfer Station as well as provides transportation and disposal service for MSW from the Greenville and Halcott MRDCs to the primary Catskill Transfer Station via county-owned and operated trucks. Transfer facility upgrades are planned for Coxsackie and Hunter. In the near future, the plan is to haul MSW and C&D from Windham to the upgraded Hunter transfer station and then have MBI directly haul to the landfills. Direct hauling is also anticipated to occur at the Coxsackie Transfer Station once this station is upgraded rather than trucking all the material back to Catskill. This will hopefully save in-house transportation costs.

Transfer stations other than Catskill are solely for residential use. Private commercial haulers can unload trucks onto the Catskill TS tipping floor. From here, operators using an excavator load MSW and C&D into the respective long-haul trailers for transportation to Waste Connection's Seneca Meadows Landfill or Dunn Landfill, respectively.

Greene County only operates a dual stream recycling system. Commodities other than cardboard and paper are brought directly from TS to the various redemption centers. Cardboard and paper products are brought back to the Catskill TS where they are compacted and bailed for shipment. The Greene County Draft SWMP had 19 private haulers that served both commercial and residential accounts. Thirteen of the 19 haulers used the high-volume rate that is offered by the County. It is assumed that currently a similar number of haulers are using the high-volume rate. Waste must be brought to the Catskill facility to limit double handling and transportation costs. There are no flow control constraints within the county. Furthermore, not all private haulers bring their recyclables to the County for recycling. Instead they use their own markets, which in turn represents a potential loss of revenue for the County and makes potential volumes of revenue unknown. Based on the annual report for Evergreen Disposal found through the NYSDEC website, the facility collected a total of 45.53 tons of commingled paper and 9,313.9 tons of SSR material in 2016. A report for Green-Del Sanitation and Recycling was not found. In addition, one day each year the County hosts a household hazardous waste collection event.

Greene County Operational Flow Chart



2.2.2 Infrastructure

The Catskill Transfer Station, in comparison to the other county-owned and operated transfer stations (Hunter, Cocksackie and Windham), is larger in size and utilizes more recycling and waste collection equipment. There is a dedicated area specifically for residential recycling and household waste drop-off. The resident drop-off center has a scale, scale house, and compactor which use roll-off containers. Sheds and containers used for collection vary in size. There are two tipping floors – one that is 7,600 sq. ft. and one that is 14,400 sq. ft. - for the County to run their recycling program as well as handle MSW and C&D. Equipment and infrastructure located at the Catskill Transfer Station include a bailer, auto lift, break room, parts storage, restroom and shower, a loader, backhoe, excavator, 2,000-gallon leachate storage tank, a box truck, road tractors, road trucks, trailers, service truck and crew leader vehicle. The facility is paved and has a perimeter fence. The county overall has a team of 16 staff members.

Catskill Transfer Station (back) and Residential Town Drop Off Center (front right)



Catskill Transfer Building and Tipping Floor



The other three county owned and operated transfer stations have a scale, scale house, rest rooms, compactor, and recycling sheds. Hunter and Windham use roll-off containers and Coxsackie uses injection trailers for material collection. The number of containers at each location vary depending on the flow of material. Each location also has a backhoe for snow removal and to assist with container placement. The areas are blacktopped and have a perimeter fence. The County owned and operated secondary transfer stations are staffed with one operator and one laborer.

The Municipal Recycling Drop-off Centers (MRDC) of Greenville, Halcott, Cairo, Durham and Baltimore are all municipality owned and operated by one municipal employee. Greene County provides transportation and disposal services at each location back to their Catskill transfer station and various recycling redemption centers. Market needs for recyclable material are assessed using existing management practices. The goal of the County is always to obtain the highest market prices available at that time. In the past the County has used several different vendors to obtain the best market price.

Due to the rural setting of Greene County, the County does not provide separation or management of organic materials or composting operations controlled by the county.

There are no operating landfills within the County and there are no closed landfill facilities owned by the County requiring long term post closure monitoring or maintenance.

2.3 UCRRA (Ulster County)

In 1986, the Ulster County Legislature obtained authorization from the State Legislature for the creation of the Ulster County Resource Recovery Agency (UCRRA). A public benefit corporation which was formed for the purpose of developing, financing, and implementing a comprehensive countywide solid waste management program. In the mid-1980's due to siting criteria and operating disposal facilities under new stricter guidelines, many communities found it beyond their financial and managerial capability to continue to manage their solid waste. Consequently, many of the local municipalities in Ulster County requested that the Ulster County government assume the responsibility for solid waste management, and the Agency was created by the New York State Legislature pursuant to Chapter 936 of the Public Authorities Law, approved December 1986. The Agency organizational structure consist of a five-member Board of Directors, an Executive Director, Agency Counsel and 30 administrative and operation personnel.

The Ulster County Resource Recovery Agency (UCRRA) currently owns and operates two transfer stations. The first is located at 999 Flatbush Road in the Town of Kingston and the other on Clearwater Road in the Town of New Paltz. The property for the New Paltz Transfer Station is leased from the town.

UCRRA currently services 15 of the 19 Municipal owned, Material Recycling Drop-off Centers (MRDC's) within the county. UCRRA had implemented flow control of municipal solid waste (MSW) so that all MSW generated in the county must enter one of the two (2) UCRRA run facilities. The MRDC's and other privately owned transfer station within the County, if they choose, can collect and dispose of C&D material and recyclables on their own and not utilize the UCRRA services that are provided.

UCRRA is responsible for providing post-closure services to two closed landfills (Ulster and New Paltz). Responsibilities at the landfills include mainly leachate management, groundwater monitoring, gas emissions, and mowing. UCRRA has a contract with Seneca Meadows Landfill for the disposal of MSW and C&D which expires in 2019. UCRRA also has a contract with Chemung Landfill for the disposal of bio-solids that expires in 2020. MBI Trucking has the hauling contract for the transportation of material directly with UCRRA.

Within the county there are 15 school districts, agricultural communities, year-round residents, four State Correction Department Facilities and a youth facility, colleges, art centers, hospitals and nursing homes, hunting and fishing areas, resorts and other recreational parks, retail centers and continued commercial and residential development that all contribute to the solid waste stream.

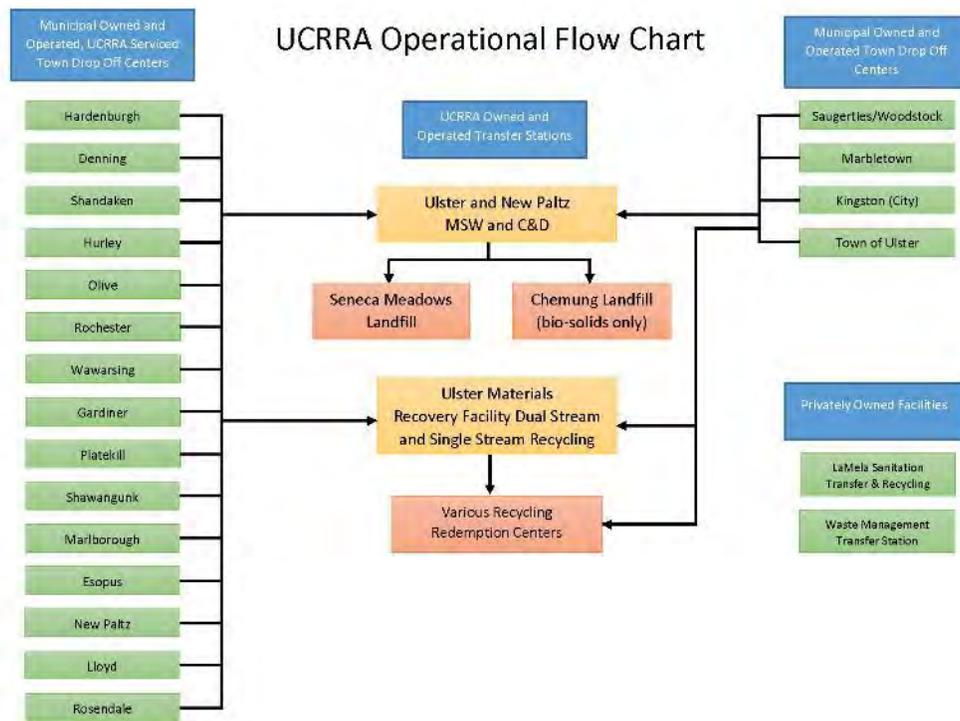
Figure 2 provides an overview of the solid waste facilities located within Ulster County.

2.3.1 UCRRA Operations

MSW and C&D material are collected and transported to one of the two UCRRA owned and operated transfer stations from the Municipal Recycling Drop-off Centers (MRDCs). The MRDC roll-off containers are emptied onto the tipping floors at either the Ulster or New Paltz TS. The MSW and C&D is combined and transported directly to Seneca Meadows Landfill by MBI Trucking in long haul trailers. Commercial haulers are able to unload at both the Ulster and New Paltz TS. C&D Private haulers can also bring C&D waste to be processed at one private facility in Ulster County (LaMela's in Marlborough) and two additional facilities, Taylor's in Orange County and Recycling Depot in Dutchess County. The county has flow control over MSW only. Compliance and monitoring on private facilities is routinely performed.

UCRRA operates a dual-stream collection system. Recycling occurs at the MRDCs. At each MRDC, each town that operates the facility provides one staff member during the hours of operation to facilitate and ensure proper sorting of material by residents into their respected containers. All containers from the MRDCs are brought back to the Ulster TS where they are then sorted. The New Paltz TS does not accept recycling. The MRF located at the Ulster TS has three different areas for drop-offs which include commingled containers, corrugated cardboard, and mixed paper. Staff sorts the commingled containers on the separate short

lines and corrugated cardboard is dumped directly on the floor for direct deposit on the conveyor system leading to the bailer. The Ulster TS does accept single stream materials from private haulers within the County. UCRRA collects a tipping fee from the haulers and then loads the material into long haul trailers which are brought for processing to a single stream MRF located in Albany, New York. A flow chart is provided below.



The current operations at the Ulster MRF are set up for processing dual stream only. A conversion to single stream would be costly and possibly hinder flow of dual stream processing during construction. A study prepared by Dvirka and Bartilucci Consulting Engineers in February 2011 indicated a capital cost of \$2.4 million to convert the MRF to a single stream recycling operation.

The Ulster TS has a large composting area. Brush is chipped into piles and decomposition is enhanced with the use of several aeration blowers cycling 5 minutes on, 15 minutes off. When piles are ready for final processing they are sent through a trommel separator for filtering of large material. The finished product is available for residents to purchase. In addition, UCRRA held three household hazardous waste collection events every year.

Leachate is collected from several locations within Ulster County. UCRRA collects leachate at two closed landfills (Ulster and New Paltz). Leachate is also collected from the Town of Hurley and Jockey Hill (City of Kingston) closed landfills. Leachate is trucked to the City of Kingston POTW for treatment. Large quantities are generated by the Ulster and New Paltz, despite being capped several years ago. It should be noted that the landfills are not lined. Studies and testing are in place to help identify a solution.

2.3.2 Infrastructure

The New Paltz TS has a scale, scale house, excavator, front end loader, large tipping floor, and a sludge containment area within the large collection building. The Ulster TS has office buildings, restrooms, several buildings for material processing, fire suppression unit, excavators, loaders, trommel separator, composting processing equipment, company vehicles, a compactor, conveyor system, containers, and trucks. The area is paved and surrounded by a perimeter fence. The MRDCs typically have a building for the operator, a shed for material storage, several roll-off containers, and are black-topped with a perimeter fence.

New Paltz Transfer Station (left) and New Paltz Town Drop Off Center (right)



Ulster Transfer Station



Material Recovery Facility located at Ulster Transfer Station



2.4 Sullivan County

Sullivan County is on file with NY State as the solid waste planning unit for its represented area. The county currently operates under a Solid Waste Management Plan that was approved in the late 1990s. Sullivan County is currently considering issuing a RFP in 2018 to update its current Solid Waste Management Plan. Currently, all municipalities within the county are included within the plan.

Figure 3 provides an overview of the solid waste facilities located within Sullivan County.

2.4.1 Operations

The County has one main transfer station, Monticello. Located at this transfer station is a residential drop-off center for MSW, C&D, recyclables, scrap metal, electronics, textiles, propane cylinders, tires, oil and antifreeze. Three closed landfills that the County maintains are also located on the same property as the Monticello Transfer Station. Secondary transfer stations that the County owns and operates include Ferndale, Highland, and Mamakating. Commercial haulers are able to use the Monticello Transfer Station only. All other facilities are for residential and small contractor use. Rockland and West Sullivan transfer stations are owned by the municipality and operated and serviced by the County. Bethel and Neversink Recycling Centers are owned and operated by the municipality and serviced by the County.

MSW and C&D is kept separate at each facility in an effort to understand specific tonnages for potential future planning purposes. Recycling is collected in separate roll-off containers. All MSW and C&D is brought back to the Monticello Transfer Station where it is dumped on the tipping floor within the export building. Recycling roll-offs containing commingled products, such as glass, plastic and paper are brought back to the Monticello Transfer Station. Recyclables such as textiles, metal, electronics, and propane cylinders are picked up by the vendor or brought directly to a redemption center. Single Stream recycling from commercial haulers is also unloaded on the tipping within the export building. The export building is operated by Waste Connections at a monthly cost of \$16,589 plus a per ton fee of around \$75 for transportation and disposal to the landfill.

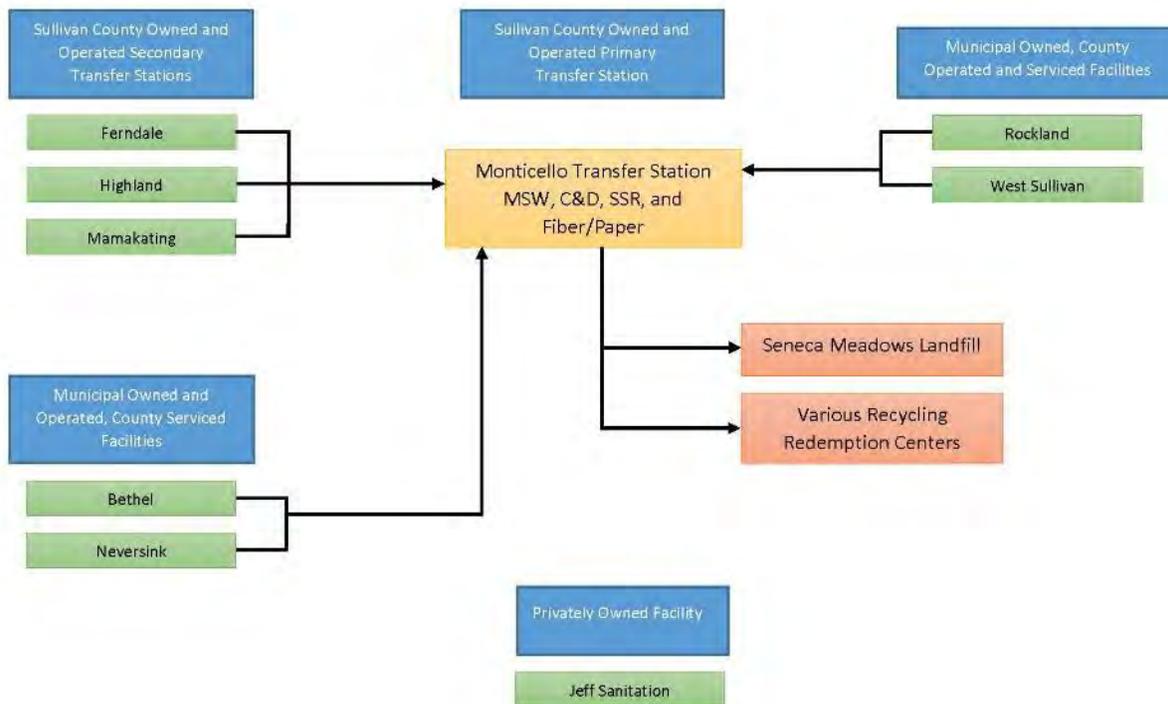
From the export building, MSW and C&D is loaded into long haul trailers and transported to Seneca Meadows Landfill by MBI Trucking. Single stream recyclables are brought to a facility in Beacon. A small fee may be assessed for contamination of recyclable material, and occasionally, if markets are favorable, the County is paid for the material. Fiber and cardboard material is brought back to Monticello from the various facilities. This material is bailed and sent to market. The scrap metal roll-offs at each location are picked up periodically by the vendor and the county is paid \$102.68 per ton.

Located at the Monticello Transfer Station are three closed landfills that the County is responsible for maintaining post-closure care. Responsibilities include leachate collection, groundwater monitoring on and off site, mowing, landfill gas emissions, and cleaning of stormwater swales and channels.

Currently, the County does not offer composting services. The County received a grant to develop an organics management plan in 2018 for \$77,500. The County holds two household hazardous waste collection days each year at the Monticello Transfer Station. The county also provides free services to residents in times of need. Recently, they allowed for free disposal of material that was destroyed from flooding.

The only known private facility within the County is Jeff Sanitation. The exact operation of this facility is not known and if any registration or permits have been acquired from the NYSDEC. A flow chart for the county is provided below.

Sullivan County Operational Flow Chart



2.4.2 Infrastructure and Personnel

The County has one building mechanic, one truck mechanic, one recycling coordinator, 14 drivers/transfer station operators and one director. Monticello Transfer Station has a scale, scalehouse, office building, residential drop of center, MRF which includes a conveyor and

fiber bailer (currently utilized), sorting bins (currently not utilized), various sheds and buildings for collection of recyclables, large leachate tanks, leachate treatment plant, stormwater treatment plant, export building, fuel tanks, roll-off containers, front end loaders, skid steers, backhoe, trucks, and two flares.

The Rockland and Ferndale transfer stations have roll-off containers, a scale, small office, a backhoe, building for loading MSW and C&D, are black topped and have perimeter fencing.

Mamakating has several roll-off containers, a backhoe and a large building for collection of MSW which has a compactor to load trailers. West Sullivan and Highland are similar to Mamakating in that it does not have a scale. Bethel and Neversink have roll-off containers provided by the County that are periodically picked up and brought to the Monticello Transfer Station.

Export Facility Located at the Monticello Transfer Station



Overview of the Monticello Transfer Station and Property



3 POPULATION, GENERATED WASTE VOLUMES

Greene and Ulster County for the period of 2017 to 2022 are anticipated to increase in population as current census rates would suggest. Sullivan County however, has observed a decline in population during the last few years and a decline in population growth is expected to continue through 2022. All population data information came from ArcGIS Online and Esri demographic data. **Figure 6** illustrates a map of the three counties and compares county population from 2017 to projected populations in 2022 based on current trends and population changes. The table below presents those estimated populations.

County	2017 Estimated Population	2022 Estimated Population	% Increase/ Decrease
Greene	49,876	50,508	0.98 % increase
Ulster	185,613	187,704	0.98 %increase
Sullivan	77,508	76,664	0.98 % decrease

In an attempt to help comprehend the amount of solid waste generated for each county, Key Performance Indicators (KPI's) based off of population census for each County were used as a per capita basis for municipal solid waste produced per person. The 2013 EPA waste generation rate of 4.4 lbs. of waste & recyclables per day/per person (2.9 lbs. for MSW and 1.5 lbs. for recyclables) were used in estimating volumes. This was a way to compare captured volumes by each county in comparison of estimated volumes based off of population information as shown in **Figure 7**. C&D is not considered in the EPA waste generation rate.

This exercise allowed us to compare captured volume by the counties as compared to the estimated volumes based off of population. For those counties not implementing flow control it was a way to see if there were any significant variance in tonnages being influenced by third party solid waste companies operating within the county.

County populations and economic growth play an important role in waste management and volume of material produced. As the 2013 EPA waste generation rate can account for MSW and recyclables produced per person, it does not capture volume generated from economic development, mainly construction demolition (C&D) material produced in a certain demographic area. Pending the demographic area, C&D material can account for up to 30% of all solid waste collected in that area.

The table below compares 2016 county captured tons of MSW, C&D & Recyclables to estimated volume tons based on County Population.

	Greene Actual – 2016 Tons Collected	Greene Population based – Est. Tons 2017	UCRRA Actual – 2016 Tons Collected	Ulster Population based – Est. Tons 2017	Sullivan Actual – 2016 Tons Collected	Sullivan Population based – Est. Tons 2017
MSW	58,038.32	26,396.87	125,348	98,235.68	39,756.51	41,021.11
C&D	Included in MSW	N/A	Included in MSW	N/A	21,017.95	N/A
Recycling	1,346.57	13,653.56	14,566	50,811.56	4,912.97	21,217.82
Total Combined MSW, CD & Recycling	59,384.89	40,050	139,914	149,047	65,687.43	62,238.924

Note: N/A – not included in EPA per person/ton

From the table above, both Sullivan County and Greene County are capturing material volumes above what would be expected based upon the population estimates. This is a strong indicator that little to no third-party volume is leaving the county. The fact that more waste tonnage is collected than would be expected based upon the population is suggestive of an impact caused by seasonal volume and C&D volume entering the waste stream. Even with a decreasing population in Sullivan County, seasonality and tourism play a significant role in volume of waste generated for this area. The building of new hotel and casino for this area will contribute for additional waste volume entering the system.

UCRRA’s 2016 total combined volumes collected are below the estimated volume based upon population. MSW collection is above the estimated tonnage based on population. Although flow control is in place for the County, it is for MSW only and not for C&D material. With three private haulers operating transfer stations within the County it appears as though a measurable fraction of the C&D material is being moved through the private facilities.

Recycling efforts for all three counties as compared to estimated Population Volumes are listed below.

- Green County: 9.8% of recyclables collected compared to Population Volumes.
- Sullivan County: 23.1 % of Recyclables collected compared to Population Volumes.
- UCRRA: 28.6 % of recyclables collected compared to Population Volumes.

It is important to note that not all recyclables go through the county or UCRRA systems; individual town drop-off centers and private haulers collect and recycle materials through their own means of operations and use of third party recycling redemption centers.

Much of Greene County's population (73%) is rural. Many tourist attractions are available in Greene County including art centers, camping, fall apples and pumpkins, hiking, and skiing. This creates a large influx of seasonal visitors and contributes to the increase of solid waste during the summer and winter seasons. At these events and tourist attractions, recycling is often minimal and difficult to enforce.

The close proximity of Ulster County to New York City and Westchester County makes weekend trips practical for tourists. The area observes a high influx of tourism during the summer and fall seasons. Minnewaska State Park and Mohonk Preserve offer swimming, hiking, biking, hotels, and scenic overlooks that many people take advantage of throughout the year. Also, contributing to the tourist inflow are local farms for apple and pumpkin picking, wine tours, and fall foliage. The Town of New Paltz has several small shops and eateries as well as overnight accommodations.

Sullivan County has a small ski resort and waterpark, horse race track and casino, hunting and fishing opportunities, and several seasonal camps. A seasonal increase in population is observed as a result of many hunting, fishing, and religious camps. Despite the attractions, the overall year-round population has been in a decline like many areas in the Hudson Valley area of New York State. Sullivan County along with Greene County do see seasonal volume pick up for waste collected during those peak tourist seasons.

4 OPERATING COST OVERVIEW

In response to our request, each county has provided financial statements for their solid waste programs. As Cornerstone is not a certified public accountant, the review of these financial statements was for information, and also to establish an understanding of current operating cost. Utilizing this information, a cost per ton ratio will be expressed for each county. The cost per ton represents total operating expense over a one-year period applied to the total quantity of solid waste and recyclable materials processed in that same year. The financial statements for 2016 are listed in Appendix A. The 2016 annual solid waste and recycling reports are listed in Appendix B and Appendix C respectively. These two sets of data were used to prepare this summary of operating costs and brief financial overview.

4.1 Greene County

For 2016 Green County incurred operating expenses of \$5,014,016 and reported revenue generated of \$4,884,812, leaving a balance deficit of \$129,204 for the year. As stated by a County representative, the deficit is not rolled forward into the next calendar year but made up through reimbursement from the county General Fund.

Greene County 2016 Actual	
Total Revenue Generated	\$ 4,884,812
Total Operating Expense	\$ 5,014,016
Net Difference	(\$ 129,204)

From the table listed above and the submitted annual tonnage and recycling reports (Appendix B and C) Greene County collected and processed a total 59,385 Tons of MSW, C&D and Recyclables combined in 2016. With total operating costs of \$5,014,016 we calculate 2016 operating cost per ton of \$84.43.

$$(\text{Total \$ Operating Expense}) / (\text{Total Tons Processed}) = \text{Operating Cost Per/Ton}$$

$$\$ 5, 014,016 / 59,385 = \$ 84.43/\text{ton}$$

Greene County charges a tip Fee of \$105/ton for Commercial and Residential haulers as compared to the operating Cost of \$84.43/ton. While the tipping fee for MSW exceeds the average cost per ton for disposal, the County does not receive a tipping fee on all tons, such as recyclables and tires. Consequently, the Net Difference between Total Revenue Generated and Total Operating Expense is negative.

It is important to note that Green County has not been subject to long-term debt service since 2015. As a way to create a more equitable comparison of Green County's operating cost to the costs incurred in the other two operating units (Sullivan and UCRRA), long term debt service will not be accounted for in the calculated operating cost per ton for the other two units.

4.2 UCRRA (Ulster County)

For 2016, UCRRA had an operating expense of \$11,537,957 and revenue generated of \$14,530,699, for a net difference of \$3,142,586.00. Note, no long-term debt services are included in the operating expenses. UCRRA does carry a long-term debt service for various bonds, resulting on average of \$2,000,000 per year out to the year 2026.

UCRRA 2016 Actual	
Total Revenue Generated	\$ 14,530,699
Total Operating Expense	\$ 11,537,957
Net Difference	\$ 2,992,742

From operating expenses listed above and submitted annual tonnage and recycling reports (Appendix B and C), UCRRA collected and processed a total of 139,914 Tons of MSW, C&D and Recyclables combined in 2016. With a total operating expense of \$11,537,957 we calculate a 2016 Operating Cost Per Ton of \$82.46

$$\begin{aligned} & (\text{Total \$ Operating Expense}) / (\text{Total Tons Processed}) = \text{Operating Cost Per/Ton} \\ & \$ 11,537,957 / 139,914 = \$ 82.46/\text{ton} \end{aligned}$$

UCRRA charges a tip Fee of \$103/ton for Commercial and Residential haulers as compared to the operating Cost of \$82.46/ton. Total Revenue Generated exceeds product of the tipping fee times the number of tons processed. While the County does not receive a tipping fee on all tons processed, it receives additional revenues for such items such as recyclables, grants, interest income, and other revenues.

4.3 Sullivan County

For 2016, Sullivan County had an operating expense of \$6,929,628 and a revenue generated of \$12,446,428, for a net difference of \$5,516,800. As stated by a County representative, the deficit is not rolled forward into the next calendar year but made up through reimbursement from the County General Fund. Note, no long-term debt services are

included in the operating expenses. Sullivan County does carry a long-term debt service for various bonds, resulting on average of \$4,819,000 per year out to the year 2030.

Sullivan County 2016 Actual	
Total Revenue Generated	\$ 12,446,428
Total Operating Expense	\$ 6,929,628
Net Difference	\$ 5,516,800

From operating expenses listed above and submitted annual tonnage and recycling reports (Appendix B and C), Sullivan County collected and processed a total of 139,914 tons of MSW, C&D and Recyclables combined in 2016. With a total operating expense of \$6,929,628, we calculated a 2016 Operating Cost per Ton of \$105.49

$$\text{(Total \$ Operating Expense)} / \text{(Total Tons Processed)} = \text{Operating Cost Per/Ton}$$

$$\$ 6,929,628 / 65,687 = \$ 109.07/\text{ton}$$

Sullivan County charges a tip Fee of \$95/ton for Commercial and Residential haulers as compared to the operating Cost of \$105.49/ton. The variance in difference are somewhat accounted for by revenues not generated by tip fees such as sales of recyclables, tires and general fund reimbursement. A large revenue generating item accounting for this variance is \$5,782,383 in Misc. Revenue- Mics Fee/Reimbursement (R2770.R247). The expected revenue shortfall is largely made up through a solid waste tax fee charged to residential and commercial property owners of Sullivan County. This solid waste tax fee generated \$5,782,383 in 2016.

The table below categorizes the summarized operating expense from the provide 2016 financial statement of each operation unit (Appendix A) to the actual amount of MSW and Recyclables tons processed. The table does not incorporate any long-term debt services for any of the operating units.

As noted in the higher operating expense cost for Sullivan County, the county has additional expense due to having the maintain treatment for Leachate disposal and treatment for storm water prior to discharge.

Financial Statement Accounts	Greene Co.		UCRRA (Ulster County)		Sullivan Co.	
	(total)	(per ton)	(total)	(per ton)	(total)	(per ton)
Personnel (.1's)	\$ 848,727	\$ 14	\$ 1,681,880	\$ 12	\$ 955,898	\$ 15
Fixed Assets (.2's)	\$ 145,309	\$ 2	\$ 921,370	\$ 7	\$ -	\$ -
Op. Exp (.4's/.5's)	\$ 3,497,133	\$ 59	\$ 7,907,152	\$ 57	\$ 5,443,561	\$ 83
Benefits/Taxes (.8's)	\$ 522,846	\$ 9	\$ 1,027,555	\$ 7	\$ 530,169	\$ 8
Total Operating Expense	\$ 5,014,015	\$ 84	\$ 11,537,957	\$ 82	\$ 6,929,628	\$ 105
NYDEC 2016 MWS, C&D& Recy tonnages.	59,385		139,914		55,687	

2016 Total expenditures	\$ 5,014,015.00	\$ 11,537,957.00	\$ 6,929,528.00
2016 MWS, C&D& Recy tonnages.	59,385.00	139,914.00	55,687.00
Operating Cost Per Ton 2016	\$ 84.43	\$ 82.46	\$ 105.49

5 TIP FEES, TRANSPORTATION & DISPOSAL COSTS

5.1 Greene County

Greene County charges commercial and residential customers a tipping fee of \$105/ton. Greene County currently has a transportation and disposal contract with Seneca Meadow Landfill. The contract is a four-year term started on January 1st, 2017 and end term date of December 31st, 2020. The first-year base rate is \$58/ton for MSW and or C&D waste disposed of at Seneca Meadow's Landfill. By year 4 the rate will increase to \$62.28/ton. The contract has a separate transportation and disposal rate for C&D material only to the Dunn Landfill located in Rensselaer, NY. The first-year rate would be set at \$51.60 per ton, with the fourth-year rate increasing to \$ 55.96/ton. Transportation to Sierra Recycling for glass disposal is \$28.60 per ton plus a fuel cost for the first 20 tons, then the per ton rate is reduced to \$26.65. In addition to the tipping fee, revenues are also generated through the sale of recyclables.

5.2 UCRRA (Ulster County)

Ulster County charges commercial and residential customers a tipping fee of \$103/ton for MSW and C&D. Along with the tipping fee, revenues are also generated through sales of recyclables and compost. Disposal and Transportation costs for MSW or C&D at Seneca Meadows Landfill is \$22.11/ton and \$25.10/ton respectively, for 2017. Disposal and Transportation costs were \$21.67/ton and \$24.49/ton respectively, for 2016. MBI is allotted 95 gallons of fuel per run from either the Ulster or New Paltz TS for MSW and C&D. The 95 gallons allotted for a 35 tons waste per trip at the diesel fuel rate of \$ 2.00/gal is estimated at \$ 5.43 per ton. MBI is allotted 70 gallons per trip to Chemung Landfill for Sludge disposal. T & D costs from the New Paltz Transfer Station to Chemung Landfill were \$33.75/ton in 2017. With an average of 31 tons/trip hauled, this resulted in a fuel cost of approximately \$4.52/ton.

5.3 Sullivan County

The County charges a \$95 per ton tipping fee or \$2 per residential bag to residential and commercial haulers for MSW and C&D. Sullivan County currently has a transportation and disposal contract with Seneca Meadows Landfill. The contract is a 10-year term signed in December 2009. The contract had a base T&D price of \$ 57.50/ton for year 1 and subject to CPI-U increase/decrease due every September 1st. Currently, to date the County's T&D cost is \$73.18 per ton plus a variable fuel surcharge for 2016. T&D for 2017 is at a cost of \$74.49 per ton plus a variable fuel surcharge. The Contract has a minimum annual average of 50,000 tons of waste to be transported and disposed of per year. If volumes drop below 50,000 tons annually then an increase of \$ 1.50/ton will be charged.

Cardboard, newsprint, and mixed paper are bailed and sold to market at varying prices. Electronics are collected at no cost to the customers. Recycling of these items are reimbursed by the state at 50%. Scrap metal is paid to the County at \$102.68 per ton. Tires are charged at \$300 per ton to the customer and the vender charges \$150 which includes transportation. Single Stream Recycling is free. Occasionally, the county pays a contamination fee and sometimes the vendor will pay the county a small amount if markets are favorable. Commercial hauler licenses cost \$150. A large portion of the revenue is generated from the tax imposed on county residents and commercial businesses.

The chart below shows the transportation, disposal, and fuel costs per operating unit to Seneca Meadows Landfill for 2017.

Operating Unit	Transportation	Disposal	Fuel Charge	Total
Greene	\$25.36	\$23.00	Variable per month Avg. \$9.64/ ton	\$58
UCRRA	\$25.10	\$22.11	95 gallons allotted per trip @ Avg. \$2.00/gal for 35 tons = \$ 5.43/ton	\$52.64
Sullivan	Lump Sum	Lump Sum	Variable per month at base rate of \$3.00/gallon or \$ 9.50/ton	\$74.49

All three operating units currently have disposal contracts with Seneca Meadows Landfill. Sullivan County and UCRRA have contracts with the landfill through December 31,2019. Greene County's disposal contract is valid through December 31, 2020.

According to the 2016 Annual Landfill Operations Report, as of December 31, 2016, there is an estimated 8-year 1-month life expectancy at an average fill rate of 2,300,000 tons per year. Plus or minus annual fill rates from the estimated average can increase or decrease landfill life expectancy. At the current estimated fill rate, the landfill is expected to cease accepting waste in January 2025 if no further permit expansions or modifications are submitted.

6 CONCEPTUAL GUS SOLID WASTE AUTHORITY CONCEPTS

In an effort to determine the feasibility of a multi-county waste authority (GUS) it is necessary to develop a conceptual model for what a new authority might look like and how the new authority would be advantageous to the residents of each of the counties. Based upon the foregoing presentation, each of the three subject counties currently has a working waste and recyclable material strategy. The strategies, while comparable, have some distinct differences that will likely need to be modified in order to develop a single unified system. The newly formed authority will have an area of approximately 2,792 square miles, include 49 towns, 13 villages and 1 city. It is anticipated to be able to manage and process 264,000 tons annually of municipal solid waste, construction and demolition and recyclable material a year.

Over the years, history has shown us that many of the existing solid waste authorities were formed primarily for one of two reasons, or both. First, dwindling regional landfill airspace availability and second, escalating operational expenses. In the late 1980s, many towns and counties were faced with the regulatory requirement for all landfills to come into compliance with EPA Subtitle D standards. The then, new, Subtitle D standards would require significant capital cost and expenses to come into compliance with these new regulations. These new standards, along with strict siting requirements to construct a new landfill, resulted with the closure of many town and county owned landfills in New York and across the country. This prompted discussion among towns and or counties to review their current solid waste management plans and devise a new plan and or model with emphasis to protect public health and the environment, promote sustainable materials management, and implement the best solid waste practices available. Combining solid waste assets in relation to geographical area in many instances resulted in reduced operating expenses and leverage to lower pricing for disposal and obtain better commodity pricing on larger combined tonnages for recyclable materials. In some cases, the newly formed authorities also developed their own, in solid waste management unit, disposal facility.

With the high level of environmental regulation and the increasing sophistication of waste and recyclable material management systems, waste management is no longer an afterthought and must be addressed head on in order to assure the health and welfare of the general public and for each management unit to be fiscally responsible.

From this review it is clear that each of the three counties is serious about the management of waste and recyclable materials generated within its respective border. It is also clear, that absent a significant paradigm shift, each county will be limited with respect to future material management alternatives as a result of the total volume of material managed on an annual basis. Development of a multi-county authority, and the ability to aggregate the

total quantity of materials managed within the new authority boundary will expand the potential opportunities and synergies.

6.1 Legislature Approval GUS Solid Waste Authority

This feasibility study is just one of many steps along the way to aid the decision making process of forming a new solid waste authority. If by the end of the process a decision has been rendered to move forward with the formation of a new solid waste authority, this will require state legislature approval pursuant to Chapter 936 of the Public Authorities Law. The Enabling Legislation of a newly formed solid waste authority will provide that authority with the power to construct, operate and maintain solid waste resource management facilities for the benefit of Greene, Ulster and Sullivan Counties. The authority will provide solid waste services to the Counties through a system of Transfer stations, town drop-off centers and material recovery facilities located within the newly formed operating area.

UCCRA, one of the three operating units, is an existing public benefit corporation operating with Ulster County authorization and State Legislature approval with the purpose of developing, financing, and implementing a comprehensive solid waste management program. It is noted, should a new GUS SWA (Green/Ulster/Sullivan Solid Waste Authority) be formed that UCCRA would need to be dissolved as a public benefit corporation with its assets to be negotiated and incorporated as part of the GUS SWA. Sullivan and Green Counties, while they would not need to dissolve, would need to transfer appropriate solid waste assets for incorporation into the business model of GUS SWA.

6.2 Combined Solid Waste Operating Units

The first part of the feasibility study described a brief overview of three solid waste operating units, Greene County, Sullivan County and UCCRA as separate operating units. For the purpose of this section we will highlight some key factors for consideration upon creating a newly formed authority by combining fixed assets, labor operations, revenue, expenditures and geographical area.

6.2.1 Combined Geographical Operating Area

Figure 4 illustrates the geographic operating area of the proposed GUS Solid Waste Authority (SWA). As evident from **Figure 4**, the geographic area will include Greene, Ulster and Sullivan County. The operating area will cover 2,792.8 Square miles and includes 49 towns, 13 villages, and one city.

Operating Area	Square Miles	Towns	Villages	Cities
Greene County	653	14	5	0
Ulster Co (UCRRA)	1,142.8	20	3	1
Sullivan County	997	15	5	0
Total	2,792.8	49	13	1

If combined today, **Figure 4** demonstrates the locations of all the solid waste operations that GUS would need to consider and or incorporate in the planning and modeling of the new SWA. A radius distance circle shown on **Figure 4** shows the miles radiated out from those primary transfer to the secondary transfer stations and town drop-off centers. The primary transfer stations are those stations where solid waste and recyclable material is trucked back to, in preparation of final transportation and disposal, or to recycling redemption centers. These individual solid waste facilities/locations are categorized below in an attempt to better relate the description and the logistics of those assets and how they would need to be considered when forming a GUS operating model.

1. County/UCRRA-Owned Transfer Stations

- Catskill TS (Greene CO) Primary TS
- Hunter TS (Greene CO)
- Windham TS (Greene CO)
- Cocksackie TS (Greene CO)
- Monticello TS (Sullivan CO) Primary TS
- Ferndale TS (Sullivan CO)
- Highland TS (Sullivan CO)
- Mamakating TS (Sullivan CO)
- Ulster, Kingston TS (UCRRA) Primary TS
- New Paltz TS (UCRRA) Primary TS
- Ulster Materials Recovery (UCRRA)

2. Municipal Owned & Operated, County/UCRRA Serviced TS

- Greenville (Greene CO)
- Halcott (Greene CO)
- Cario (Greene CO)
- Durham (Greene CO)
- Baltimore (Greene CO)
- Bethel (Sullivan CO)
- Neversink (Sullivan CO)
- Hardenburgh (UCRRA)
- Denning (UCRRA)
- Shandaken (UCRRA)
- Hurley (UCRRA)
- Olive (UCRRA)
- Rochester (UCRRA)
- Wawarsing (UCRRA)
- Gardiner (UCRRA)
- Platekill (UCRRA)

- Shawangunk (UCRRA)
- Marlborough (UCRRA)
- Esopus (UCRRA)
- New Paltz (UCRRA)
- Lloyd (UCRRA)
- Rosendale (UCRRA)

3. Municipal Owned & Operated TS/Town Drop-Off Centers

- Saugerties/Woodstock (Ulster CO)
- Marletown (Ulster CO)
- Kingston City (Ulster CO)
- Town of Ulster (Ulster CO)

4. Municipal Owned, County Operated Transfer Stations

- Rockland TS (Sullivan CO)
- Western Sullivan TS (Sullivan CO)

5. Privately Owned Solid Waste Facilities in GUS Operating Area

- Greene-Del Sanitation & Recycling (Greene CO)
- Evergreen Disposal Corp. (Greene CO) Waste Connections

- Jeff Sanitation (Sullivan CO)
- LaMela Sanitation (Ulster CO)
- Waste Management Kingston (Ulster CO)

6. Landfills Under Post Closure Monitoring and Maintenance

These closed landfills are earmarked as they still require post closure maintenance and monitoring as part of the operating budget of those operating units that needed to provide that service.

- New Paltz Landfill (UCRRA)
- Ulster Landfill (UCRRA)
- Sullivan County Landfill (Sullivan CO) noted that three individual landfills located on this site require post closure monitoring and maintenance.
- There are no Greene County owned landfills under post closure monitoring and maintenance.

6.2.2 Combined Revenue

The revenue generated by each of the combined operating units for 2016 were a combination of tip fees collected at the operating transfer station and redemption/sale of recyclable materials. UCRRA had additional generation of revenue from grants obtained for recycling efforts and education, although this type of revenue cannot be counted on from year to year.

The table below lists the three operating units from 2016 with the total tons of material processed and revenue generated for that year, keeping in mind that not all revenue is generated from tip fees. While each operating unit does not receive a tipping fee on all tons

processed, they receive additional revenues for such items such as recyclables, grants, interest income, and other revenues.

Operating Unit	2016 Tons Processed	2016 Revenue
Greene CO	59,384	\$ 4,884,812
UCRRA	139,914	\$ 14,530,699
Sullivan CO	65,687	\$ 12,446,424
Total	264,985	\$ 31,861,935

It is important to note, a large revenue generating item of \$5,782,383.00 for Sullivan County is collected as a solid waste tax fee, charged to residential and commercial property owners of Sullivan County (Misc. Revenue- Mics Fee/Reimbursement (R2770.R247, Sullivan County 2016 Financial Statement Appendix A). The legalities of this revenue to be incorporated in the new GUS SWA will need to be discussed.

6.2.3 Combined Labor

The three operating units currently have collective bargaining agreements for their employees. Both Greene County and UCRRA have bargaining agreements with the Teamsters Union. Greene County with local Teamster hall # 294 and UCRRA with local Teamster hall # 445. Sullivan County has a collective bargaining agreement with Labor Union # 17. Negotiations and discussions will need to be held for combining labor forces into one operating entity under GUS. The total head count under each bargaining unit is as follows:

Operating Unit	Bargaining Unit	# Employees in Bargaining Unit
Greene Co	Teamster Local # 294	17
Greene Co	CSEA	1 (Clerical)
UCRRA	Teamster Local # 445	21
UCRRA	Non-Union (Director/ Admin)	9
Sullivan Co	Laborers Local # 17	17
Sullivan Co	Non-Union (Director)	1
Total Combined Head Count		66

6.2.4 Combined Operating Expenses

The feasibility study reviewed and compared previous financial statements for major changes over the years. As revenues from the past were driven by the economy with volumes of waste and recyclables fluctuating, operating expenses remained generally constant. The table below represents the most recent financial statements of the operating expenses for all three operating units for the year 2016 (Appendix A). The total combined operating expenses of all three operating units are also shown in the chart below.

2016 Operating Expenses

	Greene Co Operating Expenses	UCRRA Operating Expenses	Sullivan Co Operating Expenses	Total Combined Operating Expenses
Personnel	\$ 848,727	\$ 1,681,880	\$ 955,898	\$ 3,486,505
Fixed Assets	\$145,309	\$ 921,370	\$0.0	\$ 1,066,679
Operating Expense	\$ 3,497,133	\$ 7,907,152	\$ 5,443,561	\$ 16,847,846
Benefits/Taxes	\$ 522,846	\$ 1,027,555	\$ 530,169	\$ 2,080,570
Total Combined Operating Expenses	\$5,014,015	\$11,537,957	\$ 6,929,628	\$23,481,600

6.2.5 Combined Long Term Debt Services

When referring to operating expenses, the long-term debt service has been excluded in order to facilitate the comparison of the operating units cost per ton. Long-term debt services can be highly variable between all three operating units. For Example, Greene County has not had any long-term debt services since 2015, while both Sullivan and UCRRA continue to pay down their long-term debt service. When calculating the previous operating cost per ton for each unit, long term debt service was not included. This allowed for a more accurate comparison of the operating expenses of all three operating units.

Long-term debt service is a mechanism allowing for each operating unit to pay down debt services on bonds for capital projects or any large pay items over time. The financial mechanism can vary pending on the financial institutions holding the bonds, along with various payment terms and schedules.

The table below represents the estimated long-term debt services carried annually over every year and the duration of time until debt has been met. These amounts can vary slightly from year to year as certain bonds are paid off earlier than other bonds and or the

terms of the financial mechanisms are modified. The amounts listed below are an estimated average of the long-term debt services listed for each operating unit.

Operating Unit	Term of Debt Service	Average Annual Long Term Debt Service Amount
Greene CO	0 Years	\$ 0.0
UCRRA	2018-2025	\$ 2,000,000
Sullivan CO	2018- 2026	\$ 1,724,000

6.2.6 Combined Expenditures

In consideration of this feasibility study the operating expenses for each the operating unit along with the long-term debt services were combined to provide the total annual Expenditures incurred per each operating unit for 2016. The combined expenditures for all three operating units for 2016 was \$30,301,535.

Operating Unit	2016 Operating Expenses	2016 Long Term Debt Services	Total 2016 Expenditures
Greene Co	\$ 5,014,015	\$ 0.0	\$ 5,014,015
UCRRA	\$ 11,537,957	\$ 2,000,000	\$ 13,537,957
Sullivan Co	\$ 6,929,628	\$ 4,819,935	\$ 11,749,563
Total Combined 2016 Expenditures	\$ 23,481,600	\$6, 819,935	\$ 30,301,535

6.2.7 Combined Financial Overview

The table below represents an estimated financial overview of the combination of all three operating units' revenues and expenditures based of 2016 Financial Statements.

Operating Unit	Total Expenditures	Total Revenue	Variance
Greene Co	\$ 5,014,015	\$ 4,884,812	(\$ 129,203)
UCRRA	\$ 13,537,957	\$ 14,530,699	\$ 992,742
Sullivan Co	\$ 11,749,563	\$ 12,446,424	\$ 696,861
Total Combined	\$ 30,301,535	\$ 31,861,935	\$ 1,560,400

It is important to note that this is an overall comparison of 2016 financial information provide to Cornerstone. This is not to be considered or anyway to represent a certified financial audit or accounting report. It is the suggestion of Cornerstone that a complete financial audit and accounting review be complete by a certified public accountant.

Based in review of the 2016 financial statements, Greene County indicate a negative balance in their operations. As stated by County representative the negative balance is supplemented by revenue from the county’s general fund. There are no carry overs of this negative balance brought over into the next operating year. UCRRA and Sullivan Counties indicate a positive balance in their operations for 2016.

6.2.8 Combined Fixed Assets and Rolling Stock

As each of the operating units have fixed assets they own along with rolling stock of trucks, trailers and containers, a combined list of those assets was not broken out as part of this study. For the formation of GUS to move forward a comprehensive review and evaluation of those assets will need to be completed to establish what assets will be incorporated into the GUS working model and what the value of those assets are. It is important to note that for some of the building assets can be incorporated into the GUS model under operating agreements instead of purchasing those assets.

Currently each entity operates independently and has an adequate number of fixed assets and equipment to operate. On this basis we can assume that the combined total of the three entities will provide more than adequate equipment to continue operations. Some of this equipment will be duplicative and will allow for older equipment to come out of service without the necessity for need of immediate replacement and may serve to postpone the need for purchase of new equipment.

6.3 New Solid Waste Management Plan

In consideration of the possible formation of a new solid waste authority, a new and combined Solid Waste Management Plan will need to be developed and approved by

NYSDEC. Currently, all three operating units have approved solid waste county plans that were approved in the 1990s. Two of the operating units, Greene and UCRRA, have updated draft solid waste plans that are currently under review. Sullivan County is looking to update their solid waste plan in 2018. Typically, most plans are to be updated every ten years, as some of the plans of the operating units are approaching 20 years since being approved last. The NYSDEC will be looking to have these plans submitted for review and approval under the new guidelines of New York State Solid Waste Management Plan.

The current SWMP's and pending draft SWMP's each manage their solid waste consistent with the policies set forth in the New York State Solid Waste Management Plan criteria. New York State has established solid waste management policy objectives under a "preferred hierarchy" that is generally described as follows (in order of descending preferences):

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

6.4 GUS SWA Board of Directors Representation

As with many solid waste authorities, consideration will need to be taken for the number of board members to comprise the Board of Directors. To address board representation of the three existing operating units of Sullivan, Greene and Ulster (UCRRA) County, it would be recommended that board members be appointed by each of the county legislatures to a set term to be determined. The number of board members should be reflective of the population for each county with a minimum representation of 2 board members per county.

When dealing with multiple representation of various operating units sitting on the board of directors, it is essential to have representation in a way that no single previous operating unit has a controlling number of board director representation. The total number of appointed board of directors of a single operating unit should not be greater than the total sum of the other two operating units appointed to the board of directors.

Seven Member Board of Directors

County	2017 Estimated Population	Suggested # of Board Members
Greene	49,876	2
Ulster	185,613	3
Sullivan	77,508	2

The suggested table above would be based on a minimum two board members per County and or a board member per every 50,000 people represented per county, resulting in a total of seven (7) members on the board of directors. The listed number of board members are merely a recommendation of this feasibility study. Consideration and discussion among the governing entities should be engage for this process.

If it is desired to have more representing for each of the operating areas, we would suggest an eleven (11) member board of directors. Again, stating that the total number of appointed board of directors of a single operating unit should not be greater than the total sum of the other two operating units appointed to the board of directors.

Eleven Member Board of Directors

County	2017 Estimated Population	Suggested # of Board Members
Greene	49,876	3
Ulster	185,613	5
Sullivan	77,508	3

6.5 Flow Control Consideration

Of the three combined operating units UCRRA is the only operating unit that has flow control in place for all municipal solid waste (MSW) generated in Ulster County to be received at one of the UCRRA owned transfer stations. Both Greene and Sullivan County do not implement flow control. As earlier discussed and demonstrated in section 3.0, it does not appear that there is a third-party influence of generated waste volumes in both Greene and Sullivan County leaving the county. For both Greene and Sullivan Counties the estimated volume of waste generated based off of county population is at or exceeds those

estimated waste volumes. The lack of any other disposal options within the county to the distance of transportation for third party haulers to get to a different disposal site, is keeping those generated volumes in the county system. For areas on the borders of those counties that do not impose flow control, you may find some limited amount of waste leaving the operating area in favor of lower disposal fees but the quantity of material and or these operations cannot be confirmed or denied.

It is important to realize, that a new solid waste authority will need to rely upon the revenue generated as a result of the volume of waste entering their system. The authority will no longer be able to rely upon influx from county budgets. If flow control is not implemented, the risk of generated waste volume leaving the operating area is possible. For example, in Greene County, 50 % of the waste volume generated is collected by a third-party hauler. Currently, all of the waste collected by this third-party hauler is entering the Greene County transfer stations. If this third-party hauler finds other means of final disposal at a cheaper rate than currently being charged at the county transfer station, then that volume and revenue can potentially be lost. The same can apply for third party haulers operating in Sullivan County

It is recommended that if a new solid waste authority is to be formed, **that flow control should be implemented** as part of the authority's enabling legislation. Flow control will give the new solid waste authority the ability to estimate volumes of waste generated from year to year and budget appropriately for those revenues generated and allow proper pricing and set tip fees.

The mechanism for flow control would need to be initiated and approved at the county level for all three counties of Ulster, Sullivan and Greene.

7 PREVIOUS MULTI-COUNTY AUTHORITIES

7.1 General

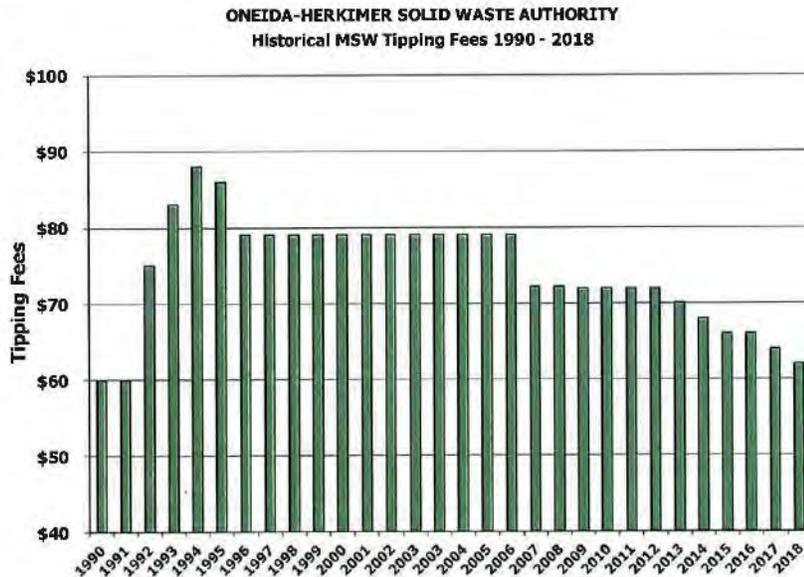
It is important for contextual purposes to look at the creation of a new authority in the light of other authorities within New York State. For this section we have selected the Oneida-Herkimer Solid Waste Authority and MOSA, the Montgomery, Otsego, Schoharie Solid Waste Authority. These two authorities serve as examples of both a successful authority and an authority that ceased to be an entity.

7.2 Oneida-Herkimer Solid Waste Authority

We consider Oneida-Herkimer to represent the successful implementation of a solid waste authority model. The Oneida-Herkimer Solid Waste Authority is one of a few solid waste authorities that formed in the early 1990's. Their history and public information of tipping fees provides an informative time line of tip fees implemented over the years to operating cost and generated revenues. The below chart is the Oneida-Herkimer historical MSW tipping fees provided for reference. The information provided is from the Oneida-Herkimer web-site and part of their 2018 proposed budget and tip fees.

For reference of this feasibility study, we interviewed Bill Rabbia, Director of the Oneida-Herkimer solid waste authority. Mr. Rabbia has been with the Authority since its formation in the early 1990. We specifically were interested in the historical tip fees, their decreasing tips fees over time and what factors played a major role in the Authority's success and for the decline of tip fees over the years.

It is important to note that Oneida-Herkimer has implemented flow control for materials generated within its border. Oneida-Herkimer also owns and operates its own regional landfill and material recovery facility, providing them will full control of waste disposal operations and costs. Oneida-Herkimer in 2016 had a \$ 24 million operating budget of which they handed and processed 295,000 tons of waste and processed 37,900 tons of recyclables.



- 1990-1991. Tip fees \$ 60/Ton. The formation of the Solid Waste Authority has been created, and flow control has been implemented. Operations continue with smaller transfer stations and volume of waste being transported and disposed of at out of state disposal sites.
- 1992-1995, Tip fees increase to \$ 87/Ton. The authority implements capital improvements of new construction of a state of the art transfer station and Material Recovery Facility. Increase tip fee in part for capital improvement made during that time period.
- 1996-2006, Tip fees steady around \$ 79/ton. For this 10-year period the authority was able to maintain their budget. They had steady revenue generated through flow control for volume of waste entering the system and were able to maintain operating cost with long term disposal contracts in state. Since revenues were maxed out for the volume of waste received within the authority operating area, they looked at ways to cut operating cost. As with any solid waste operating unit without a regional end disposal facility nearby, a large part of the operating cost will be for the transportation and disposal of waste to a landfill or incinerator. Oneida Herkimer being in that situation looked at ways to either reduce the amount of waste heading to a final disposal destination or cut down the distant of transport to a disposal facility.

Regional disposal options in consideration were:

- Waste Diversion- Remove as much recyclable and organic material from the waste stream prior to final disposal.
- Energy from Waste: Combustions/Incineration- Develop a regional incinerator as a part of the authority.
- Mechanical and Biological treatment: This process involves mechanical sorting operations on the front end to remove as much recyclable material as possible followed by biologic treatment where shredded MSW is dried, creating an approved fuel source to be used in operations such as cement kilns. This technology is gaining popularity in the European markets and some interest in the US.
- Conventional Landfilling- would require the approval of the NY state, Part 360 regulations and sub-title D EPA guidelines standards.

In 1996 the authority decided to create its own regional landfill within its operating area. It took the authority over 10 years to site and permit a regional landfill. They restructured long term debt for capital improvements of the construction of the landfill and their cost savings for third party transportation and disposal were significant enough to bring down tip fees to about \$72/ton once the landfill was open in late 2006

- 2007-2013, Tip fees \$ 72/Ton. With the creation of the regional landfill Tips fees remained constant through 2013.
- 2013-2018, Tip Fee \$ 62/ton. The decline of Tip fees during this period is largely due to the long-term debt service being paid down, processing some outside third party recyclables for some increase revenue and best management practices being offered in the industry to be more cost effective and keeping operating expenses down.

7.3 Montgomery, Otsego, Schoharie (MOSA)

The Montgomery-Otsego-Schoharie Solid Waste Management Authority (MOSA), for the purposes of this report serves as an example of an authority that ceased to be a multi-county authority around 2012. Some of the specific information is provided below however based upon available information we understand several things related to this authority. First there was no flow control legislation in place directing materials to the MOSA facilities. While there were guaranteed tonnage agreements in place with each of the contributing entities, these were funding mechanisms and did not assure that waste materials actually were delivered.

MOSA did not have an operating landfill facility and had to bear the cost of maintaining older, closed landfill facilities and the transport of relatively low quantities of materials to other, out-of-area facilities. Year over year, MOSA was requiring additional infusion of funds from each of the subject counties. The following information is noted:

- In 1987 the Montgomery-Otsego-Schoharie Solid Waste Management Authority (MOSA) was created as a public benefit Corporation under New York State legislature. A board of directors comprised by 8 members with representation of 3 members from Montgomery and Schoharie County.
- In 1989 MOSA began the operations with the acquisitions of 2 landfills located in Montgomery County. As part of the acquisitions MOSA would assumed the responsibility to carry out the mandated closure of these landfills. The ownership of the landfills along with the associated transfer station transferred to MOSA as a result of a facility Acquisition agreement between MOSA and Montgomery County. Additional transfer stations in Otsego County were transferred to MOSA under a similar acquisition agreement between MOSA and Otesgo County.
- 1989-1990, MOSA acquired funds through the issuance of tax-exempt bonds in order to Plan, develop, construct, acquire, restore or replace MOSA facilities. The initial issuance of the bonds were in 1990, with additional funds borrowed in 1994 at the same time the prior bonds were refinanced. In 2003 the 1994 issuance was refinanced. To collateralize the borrowing, MOSA entered into a service agreement with the Counties, whereas the Counties guaranteed the delivery of 95% of the estimated waste to be generated within their respective Counties to MOSA facilities for 25-year period. The term of the agreement was from 1989 to 2014.
- In 1993 MOSA closes the Central landfill located in Root NY. Followed by the closing of Eastern Landfill in Amsterdam NY in 1996 and the small C&D landfill located in Otsego NY in 1997.
- In 1999 MOSA formally ends all activity in siting a new landfill, concerns with the economy of scale as to a Supreme Court decision in 1994 declaring flow control unconstitutional (Carbone Decision). MOSA felt this was a major blow to their assumption that the counties would not be able direct waste flows to MOSA.
- With the landfills closed, MOSA enters into Transportation and Disposal agreements from 1997 through 2012.
- 2009 Debt Defeasance, MOSA uses approximately \$ 10 Million of restricted and reserved funds to eliminate all long-term debt services (Bonds). This was a way to reduced tip fess by \$20/ton from the previous operating year.

- 2009 Post Closure Agreement, MOSA along with Montgomery, Otsego and Schoharie Counties signs the Post Closure Monitoring and Maintenance Agreement. This agreement formalizes the existing responsibilities of the counties for the post-closure monitoring and maintenance of the three closed landfills.
- 2010, Service Agreement Amendment. MOSA, along with Montgomery, Otsego and Schoharie Counties agreed to modifications of the service agreement which provides that any future shortfall to Guaranteed Annual Tonnage (GAT) be billed at the MOSA operations rate with Transportation & Disposal costs removed from any short fall payments.
- 2012 Home Rule Legislation -Otsego County. In January 2012 the New York State Senate was presented with legislation to grant Otsego County a home rule request - essentially outlining a process to terminate Otsego County's membership in MOSA. The legislation proposes that the Authority and the Counties of Montgomery, Otsego and Schoharie shall execute a plan to allow for Otsego County's assumption of its proportional and equitable share of MOSA's assets and liabilities. In February 2012 the legislation is enacted.

There is much to be learned from both of these examples. The ability to flow control waste and recyclables is a critical component of the long-term success of an Authority. Also, the ability to have multiple options and/or even the ability to manage the final disposal of wastes is an important factor in controlling long-term operating costs.

8 ENVIRONMENTAL IMPACTS

8.1 General

Creation of a new authority has been reviewed from the perspective of environmental impact. Operation of the solid waste and recyclable material facilities is at its core an environmental care activity. Creation of a new authority should be accompanied by an improvement in the overall environmental footprint of the newly created organization over its predecessor organizations.

Environmental improvements can result in several ways including:

- Enhanced educational programs resulting in improved capture of waste and recyclable materials.
- Increase the availability and size of residential and public recycling receptacles.
- Increasing the quantity of fractional waste stream components that could contribute to and facilitate new diversion opportunities (ultimately reducing the quantity of disposed waste).
- In-unit hauling and back-hauling synergies reducing the number of in-unit material transfer miles.
- Optimizing operational best practices that enhance both the quantity and quality of recovered materials going to market.
- Managing final disposal options to reduce long-haul miles to the minimum necessary.

8.2 Educational Programs

The key element to successful system operation is education. The waste and recyclable material system relies heavily upon the general public's knowledge of waste and recycling practices. Creation of the new authority will allow each of the three counties and their recycling coordinator to take advantage of the educational programs already existing and to create a unified waste management public education program that will increase recyclable material collection, reduce waste, and optimize recyclable material revenue. A unified education program will increase participation from residents both internal to each county. For those residents who routinely cross county boundaries the unified program will be readily recognizable and will therefore facilitate use in each county.

8.3 Diversion

Waste reduction through diversion is an important component of future material management strategies. Organic materials have been identified as one of the components of the waste stream that can be captured, segregated and converted for beneficial use through composting or anaerobic digestion. Studies have determined that organics in MSW, including brush and green waste, can contribute to 30% of that volume. Individually, only one of the existing entities is making active use of composting operations. Collectively the quantity of material that could be composted would increase and would in turn increase the viability of future diversion activities.

Currently, UCRRA is the only unit utilizing composting and recycling of brush. The formation of GUS will allow for aggregating potentially compostable materials along with the sharing of composting equipment and experience, as well as provide educational programs within the local communities.

Diversion of organics from the waste stream will also have a positive impact on reducing greenhouse gases created from landfills. Reduction of organics will decrease leachate and provide more capacity for waste that is not recyclable or reusable. The organics can be composted and used as fertilizer both residentially and commercially. Alternatively, organic material can be digested to produce gas for energy generation.

8.4 Recyclable Material Quality

Markets for recyclable materials have, over the past decade, be somewhat volatile and highly subject to the quality of the material collected/produced/segregated. The China markets have had significant effect on these commodity pricing. Over the years, as China aggressively improves their recycling efforts nationally, the demand on US imports of recyclables materials is less, thus making commodity pricing volatile.

With the potential to manage larger volumes of recyclable materials through the combination of three entities into one authority, the sensitivity of the market to a higher quality product is noticeable. The larger aggregate quantities encourage the application of systems that will provide the highest quality product possible and in turn, the highest potential for economic return.

8.5 Reducing Greenhouse Emissions

Transportation of material within each operating unit to the final destination landfill is not only a large operating cost, but also negatively impacts the environment with the consumption of fuel and production of combustion emissions from vehicle exhaust. With consideration of possible regional disposal options in the newly formed solid waste authority operating area, reductions in transportation cost, fuel consumption, and

greenhouse gas emissions will be immediately observed. In addition, with trucks traveling less miles, maintenance costs will be lowered with less frequent oil changes and replacement of tires. Third party haulers are transporting waste long distances to Seneca Meadows, Dunn Landfill, and Chemung Landfill in Upstate NY. The table below shows the approximated miles traveled and fuel costs from each facility to the respective final destination. The final destination locations are shown on **Figure 4**.

Location	Destination	Miles Round Trip	Fuel Cost at \$2.75/gallon and 5 mile/gal per trip	Gallons per Trip
New Paltz	Chemung Landfill	370	\$203.50	74
New Paltz	Seneca Meadows Landfill	476	\$261.80	95.2
Ulster	Seneca Meadows Landfill	466	\$256.30	93.2
Catskill	Seneca Meadows Landfill	428	\$235.40	85.6
Catskill	Dunn Landfill	70	\$38.50	14
Monticello	Seneca Meadows Landfill	400	\$220.00	80

9 SUMMARY

As with any solid waste plan or operations thereof, the goal to manage that solid waste operating unit in a cost effective and environmental sound manner, while keeping in compliance with state and federal coded regulations is essential for of the success of that operating unit. All three operating units reviewed (Greene Co., UCRRA, and Sullivan Co.) in this study have demonstrated well maintained, operationally sound and environmentally compliant solid waste facilities. While the economics and cost effectiveness can be challenging, it pushes operators of these facilities to be innovative in best managing practices & educational initiatives, all to help create revenue while keeping operating cost down.

Based upon the information reviewed for this study, the formation of a multi-county, Greene, Ulster and Sullivan (GUS) Solid Waste Authority **is a feasible project**. The synergies demonstrated in demographics, operating area, operations, comparable assets and all the necessary components for a successful Solid Waste Authority do exist.

9.1 Comparable Proposed Solid Waste Management Plans

In review of the draft solid waste management plans proposed for both Greene County and UCRRA and the existing plan for Sullivan County. They all are consistent for the policy set forth in the New York State Solid Waste Management Plan with the policy objectives to:

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

The creation of Solid Waste Management Plan for GUS SWA along with the goals of the three operating units will continue to maintain the policy objectives in one combined Solid Waste Management Plan.

9.2 Compatible GUS Operating Area

In review of the proposed operating area of GUS, the combined area of Greene, Ulster and Sullivan counties are compatible for the logistics of moving material within the operating

Area. The area is linear in nature (**Figure 5**) with Ulster County sitting between Greene co to the north and Sullivan County to the South. All three counties are located on the west side of the Hudson River so having to move material across the river will not be an issue. The highway infrastructure is excellent with I-87 NY Thruway running north and south through Greene and Ulster counties. Route 17 providing a highway corridor running east to west. Secondary routes are well maintained to industrial and commercial activities in the Hudson Valley and Route 17 corridor in Sullivan County. All three counties are influenced by the Catskill Mountains making much of the west side of GUS operating area limited to state and county routes to service this area.

Solid waste disposal destination points for each county are shown on **Figure 4** along with the overall layout of the facilities within each county. **Figure 5** shows a 30-mile radius, at 10-mile increments from the primary transfer stations within each county distances back to each of the primary transfer stations and shows the proximity of nearby MRDCs along county borders. Combining certain MRDCs may help to decrease travel and operational costs if GUS was formed. The Formation of Gus can also see benefits in combined truck routes for those areas where all three of the operating units are servicing those areas (town drop-off centers and TS) furthest away from the primary transfer stations. A combination of these services can possibly reduce the number of fixed assets (Truck) and labor needed to service these areas.

9.3 Well Distributed Infrastructure of Fixed Assets

As represented in **Figure 5**, the Primary transfer stations operating in the proposed GUS area are well positioned to the secondary transfer stations and other town transfer stations and or drop off centers to be serviced by GUS. Most of the secondary transfer stations and town drop off centers fall within a 20-mile radius of a primary transfer. There are a few town transfer stations and or drop off areas located about 30 miles from a primary or secondary transfer station, all located on the Western side of the operating area and in the Catskill Mt. range. In combination of these fixed assets, may offer better and more efficient truck routs to service some of rural town drop off centers.

9.4 Combined Waste Streams for Lower Disposal Fees

As of now all three operating units have three separate transportation and disposal agreements. By combining the waste stream under one operating contract for transportation and disposal, GUS can leverage for reduced disposal fees for larger volume of waste committed for disposal.

The chart below shows the transportation, disposal, and fuel costs per operating unit to Seneca Meadows Landfill for 2017. 2017 transportation and disposal cost were used, since Greene County was not utilizing Seneca Meadows in 2016 as a disposal landfill. It is assumed that volumes for 2017 will be similar to those in 2016.

Operating Unit	Transportation	Disposal	Total	Tons Disposed	Fuel Charge
Greene	\$25.36	\$23.00	\$58	58,038	\$9.64/ton
UCRRA	\$25.10	\$22.11	\$52.64	125,348	95 gallons allotted per trip (\$ 5.43/ton)
Sullivan	Lump Sum	Lump Sum	\$74.49	60,773	Variable per month (\$9.50/ton)

The Combined total volume of MSW & CD disposed of for all three units was 244,159 Tons in 2016.

The financial benefit of reduced transportation and disposal costs resulting from the formation of GUS should be able to be realized immediately. In 2017, UCRRA had the lowest combined transport and disposal (T&D) cost of \$52.64/ton. This cost is \$5.36 less than Greene County and \$21.85 less than Sullivan County.

Case in point, if we were to look at just the Sullivan County transportation & disposal (T&D) rate of \$74/ton for 2017 and were able to negotiate a contract in line to more current average market rates for T&D \$56/ton, as compared to Greene and UCRRA, the average difference would be \$18/ton. With an estimated annual tons processed of 60,773 for Sullivan County, this can result in a cost savings of approximately \$1,093,914.

For Greene County, the initial anticipated savings would be on the order of \$116,076. The illustrations for Sullivan and Greene do not include any additional savings that could be potentially realized by the overall combined volume being greater than what Ulster currently collects and disposes.

Additional savings can also be realized by the GUS authority by utilizing the fuel allotment model currently utilized by UCRRA. UCRRA currently provides the fuel for transportation. This fuel is purchased as a municipal agency without the taxes that would otherwise need to be paid by a private hauler. Fuel surcharges have been historically associated with transportation and disposal agreements as a result of fluctuating fuel markets. These fuel surcharges are in place to protect both parties that may enter in long term T&D agreements where prices can fluctuate over the term of the agreement. Often the case, the fuel is purchased by the contractor awarded the T&D agreement thus charging related fuel taxes accordingly. Under a new SWA operating as a public benefit corporation could see additional cost savings in tax exemption status for purchase of materials including fuel. For example, each \$0.50 per ton savings of fuel tax will result in an additional annual savings of \$50,000 for the combined authority.

Diversion of waste materials can contribute to T & D savings. Each ton of material diverted can potentially save T & D costs on an average of \$56. Conceptually, assuming that 30% of the waste stream consists of organic material and half of this quantity or 15% could be diverted this would potentially represent in excess 17,821 tons of material. The initial T&D savings from this diversion could be as much as \$1,000,000 per year. A portion of this savings could be utilized to develop new diversion programs and/or enhance and grow existing diversion programs.

All together it is anticipated that the synergies of the existing programs and economies of scale can result in more than \$2,500,000 in savings associated with the transport and disposal of waste materials.

9.5 GUS Financial Overview

Of the three operating units to make up the GUS SWA, UCRRA was the only operating unit operating above their budget with positive cash flow. The operating units of both Greene and Sullivan County or 2016 demonstrated a negative balance to their operating budget. This negative balance was compensated with monies from the county’s general fund at the end of each year to balance out the short fall. If one was to combine the 2016 financial statements as listed in Section 6.2.7, theoretically GUS as operating unit will still have a positive operating balance of \$ 1,560,400 and not need subsidies from the county’s general fund.

Operating unit	Total Expenditures	Total Revenue	Variance
Greene Co	\$ 5,014,015	\$ 4,884,812	(\$ 129,203)
Sullivan Co	\$ 11,749,563	\$ 12,446,424	\$ 696,861
UCRRA	\$ 13,537,957	\$ 14,530,699	\$ 992,742
Total Combined	\$ 30,301,535	\$ 31,861,935	\$ 1,560,400

Although the snap shot represents 2016 financial information of the three operating units as one, it does not reflect the positive ability a newly formed authority could have on combined services for negotiating better contracts on goods services resulting in lower operating expenses.

9.6 Best Management Practices for Solid Waste

Sometimes best management practices implemented in a smaller operating unit may not have a significant effect in cost saving and or revenue generated as that of a larger

operating unit and the success seen there. It is the organization and effort made by that operating unit to strive to create, implement and execute these practices to have a positive and beneficial result to its program. With the formation of a new solid waste authority one would see a more focused structure to execute the goals set forth of the authority. Have the ability to use all of its combined resources on a larger scale to maximize those best management practices resulting in cost savings and or new revenue generated for that operating unit.

10 CONCLUSION AND RECOMMENDATIONS:

10.1 Formation of GUS

Based upon the foregoing evaluation, and pending the outcome of the suggested recommendations listed below. Cornerstone concludes that the formation of the GUS Solid Waste Authority is feasible. Based upon the information reviewed the following is noted.

- The existing programs for management of waste and recyclable materials in each of the three operating units are compatible. Facilities currently exist to manage these materials. These facilities are staffed by competent and capable employees and the infrastructure appears to be capable of handling current and anticipated material throughput.
- Based upon the comparison of actual activity to population each entity, barring variation potentially caused by seasonal residents and activity, are handling the approximate anticipated amount of waste material. Recyclable material and material diversion could be enhanced through coordinated efforts.
- Operating costs varied among the three entities suggesting that overall operating expenses could be reduced through a combination of activities. In particular, the cost of transportation and disposal for a combined entity should be able to be reduced to the lowest cost paid by any one of the entities. Further cost benefits should also be able to be realized through greater volume to recycling markets, reduction in fuel tax, and the opportunity for material diversion projects.
- Recycling rates are currently lower than anticipated and should be able to be improved through a combination of educational programs and flow control. Through these efforts the formation of the GUS Solid Waste Authority should result in an overall environmental benefit to the three counties served.

10.2 Financial Review/Audit

For consideration of moving forward as part of the process for the formation of the new solid waste authority it is Cornerstone's recommendation that a third party financial review be performed by a certified professional. Consideration and evaluation of long term debt services and those financial institutions involved should be reviewed and summarized in preparation as one of many financial items for analysis.

10.3 Legal Review

Cornerstone recommends that the services of a third party legal firm specializing in the formation of public benefit corporation be retained to outline the steps involved and time line thereof to create a new solid waste authority. It is anticipated that at a minimum, legal counsel will be needed for support of the details of enabling legislation and consideration for flow control of waste and recyclable materials within the newly formed entity.

10.4 Detailed Engineering/Operations Facility Review and Evaluation

Historically, as to any solid waste business merger or acquisition thereof, a review and evaluation of those fixed assets building structures looking to be transferred or purchased by the newly formed entity is performed. The evaluations should consist of technical review of each asset to assess its permit compliance, general acceptance with industry standard operating practices, potential future capital and operating improvements that may be needed. The evaluations would include a record review of documents of facility plans, permits, approvals, general operations, housekeeping and environmental compliance. For those assets that may carry potential liability in environmental compliance and continual annual maintenance a more detailed evaluation should be performed.

10.5 Yellow Iron & Rolling Stock Evaluation

For the evaluation of heavy equipment and solid waste vehicles, Cornerstone recommends that a qualified third-party representative with knowledge and experience to evaluate such equipment be retained to provide estimated values thereof. The evaluation should consist of the make, model, year and operating hours for each piece of equipment. Maintenance records and major repairs performed on individual units should be part of the evaluation process.

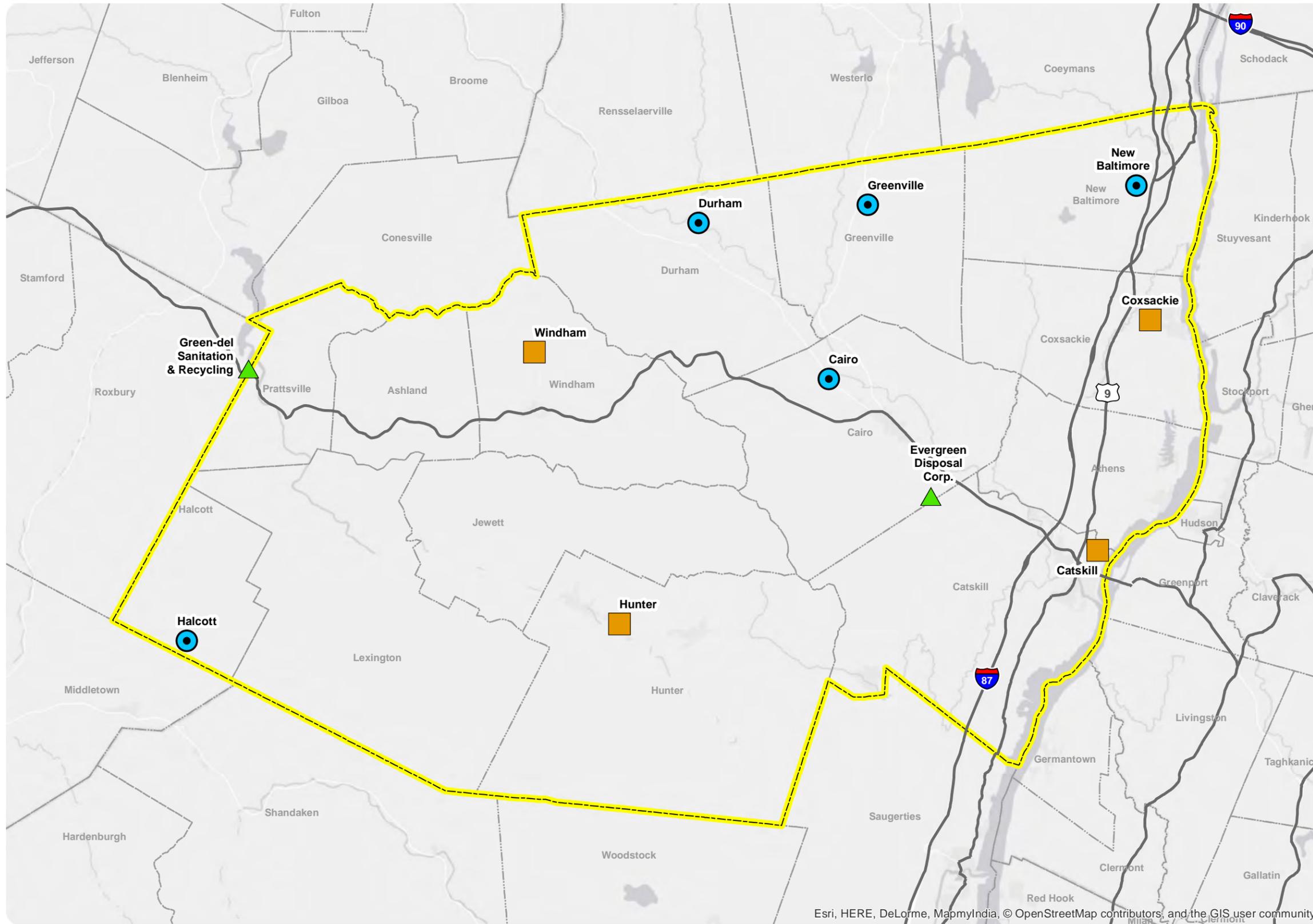
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FIGURES

C:\PROJECTS\GIS\Solid Waste Authority\Map\Final\Map_1 - Greene County - Solid Waste Facilities - Final.mxd



Legend

- County Owned and Operated Facilities
- Municipal Owned and Operated, County Served Facilities
- Privately Owned Facilities
- Highway & Limited Access
- Greene County
- Municipal Boundaries

Data Sources

1. Data provided by Cornerstone Environmental Group and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online



PREPARED BY: AJW	DATE CREATED: 1/3/2018	APPROVED BY: RS
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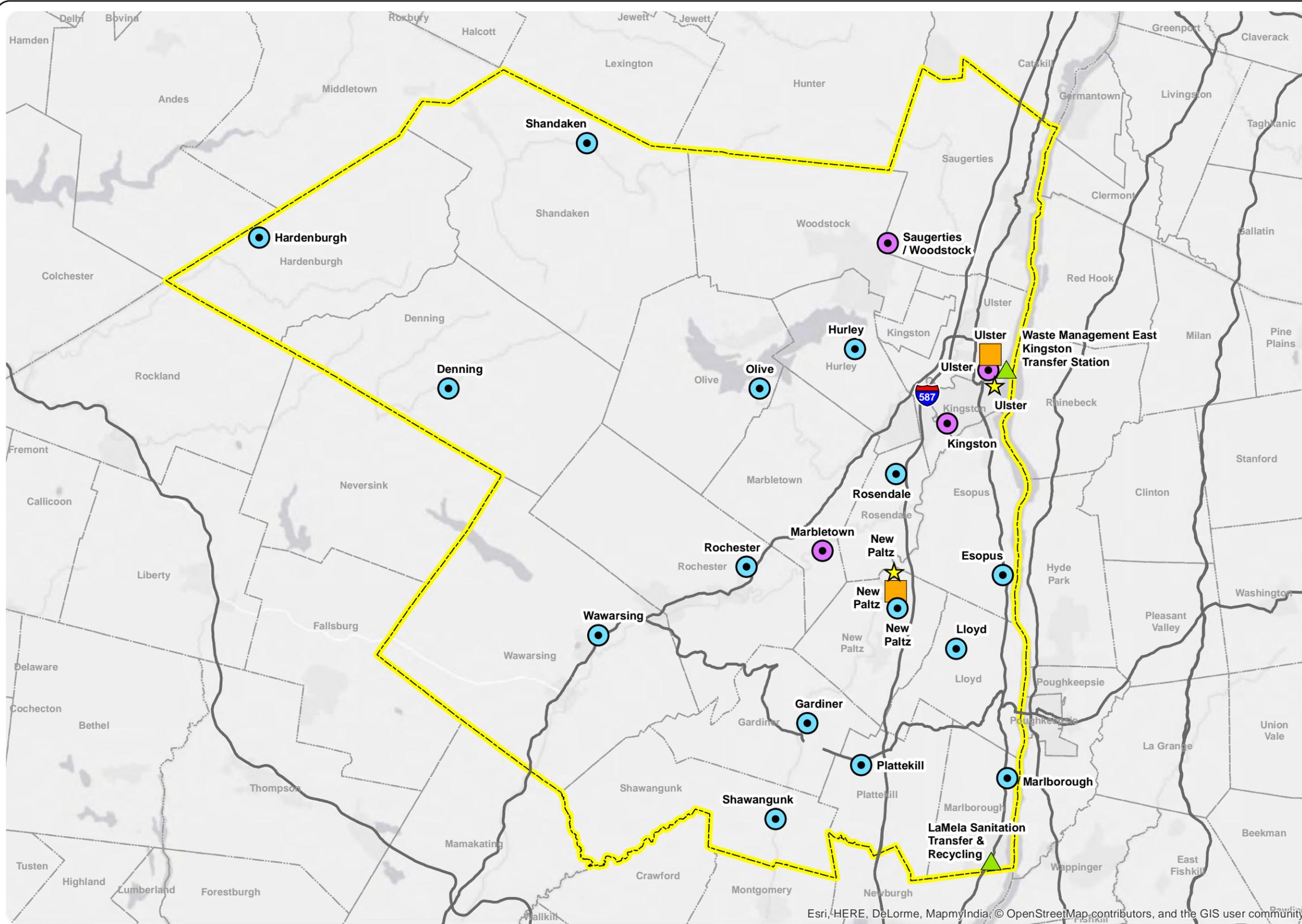
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Datum: WGS 1984

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SOLID WASTE FACILITIES LOCATED IN GREENE COUNTY

FIGURE NO.
1
PROJECT NO.
170589

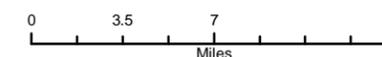


Legend

- UCRRA Post-Closure Maintained Landfills
- Municipal Owned and Operated Facilities
- Municipal Owned and Operated, UCRRA Served Facilities
- UCRRA Owned and Operated Facilities
- Privately Owned, Self Served Facilities
- Highway & Limited Access
- Ulster County
- Municipal Boundaries

Data Sources

1. Data provided by Cornerstone Environmental Group and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online



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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
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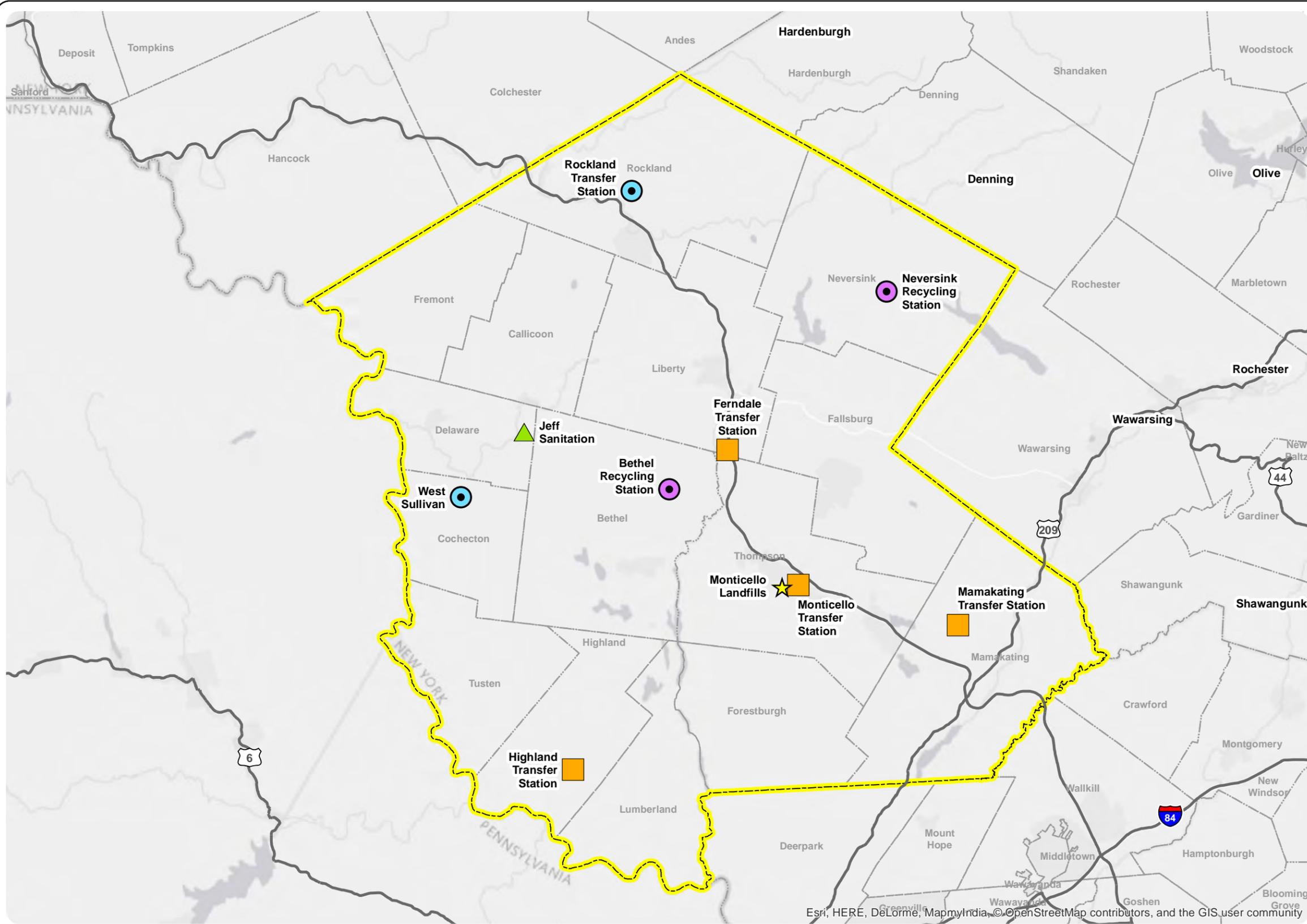
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**SOLID WASTE FACILITIES LOCATED IN
ULSTER COUNTY**

FIGURE NO.
2
PROJECT NO.
170589



Legend

- ★ County Post-Closure Maintained Landfills
- Municipal Owned and Operated, County Served
- Municipal Owned, County Operated and Served
- County Owned and Operated Facilities
- ▲ Privately Owned Facilities
- Highway & Limited
- Sullivan County
- Municipal Boundaries

Data Sources

1. Data provided by Cornerstone Environmental Group and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online



PREPARED BY: AJW	DATE CREATED: 1/3/2018	APPROVED BY: RS
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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984

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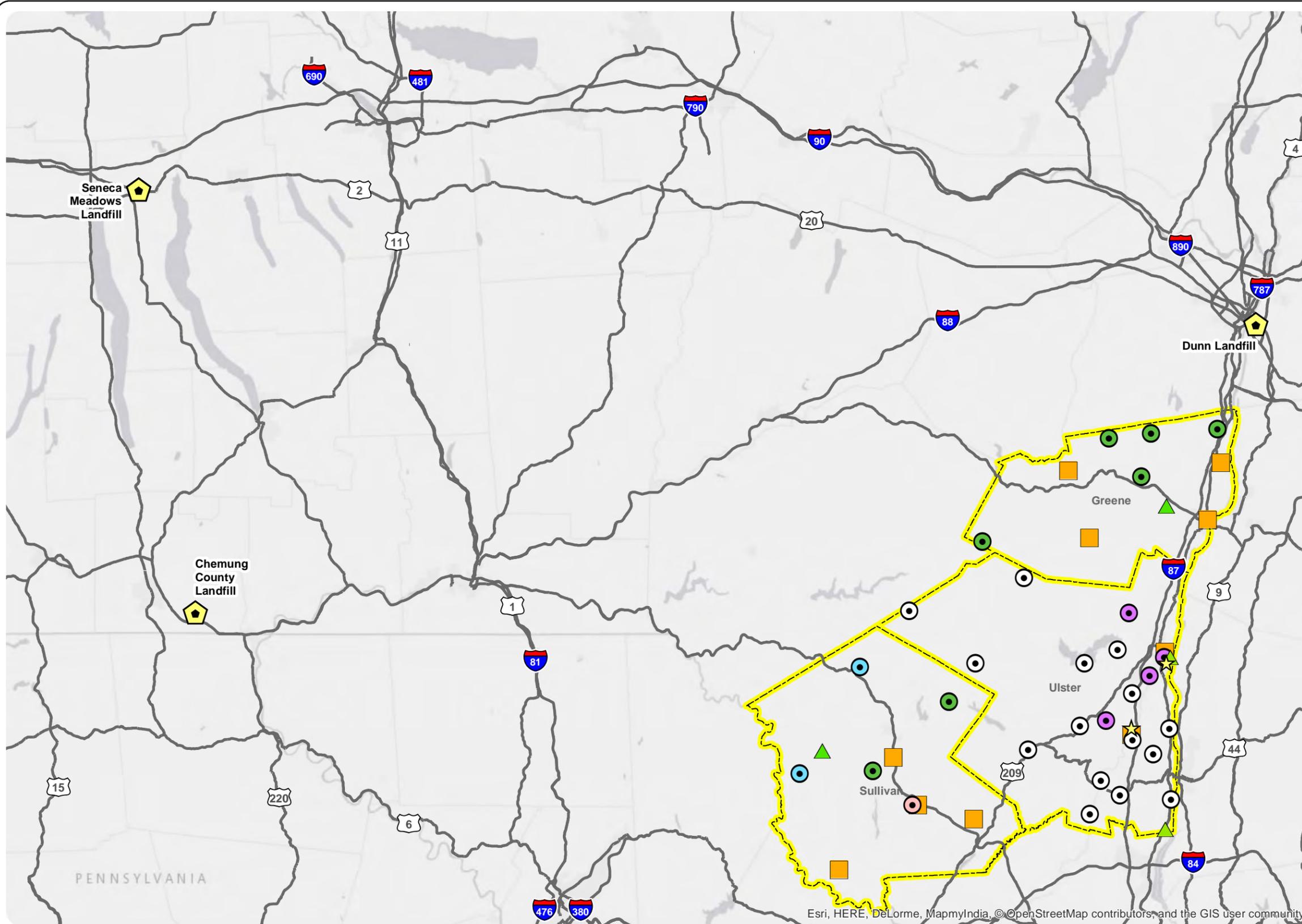
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**SOLID WASTE FACILITIES LOCATED IN
SULLIVAN COUNTY**

FIGURE NO.
3
PROJECT NO.
170589

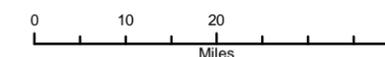


Legend

- Solid Waste Disposal Destination Points
- UCRRRA Post-Closure Maintained Landfills
- County Owned and Operated Facilities
- County Post-Closure Maintained Landfills
- Municipal Owned and Operated
- Municipal Owned and Operated, County Serviced
- Municipal Owned, County Operated and Serviced
- Municipal Owned, UCRRRA Serviced Facilities
- Privately Owned Facilities
- Highway & Limited Access

Data Sources

1. Data provided by Cornerstone Environmental Group and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online



PREPARED BY: AJW	DATE CREATED: 2/27/2018	APPROVED BY: RS
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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984

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C:\PROJETS\GIS\Solid Waste Authority\Map\FinalMap_4 - GUS Operating Area - Final.mxd

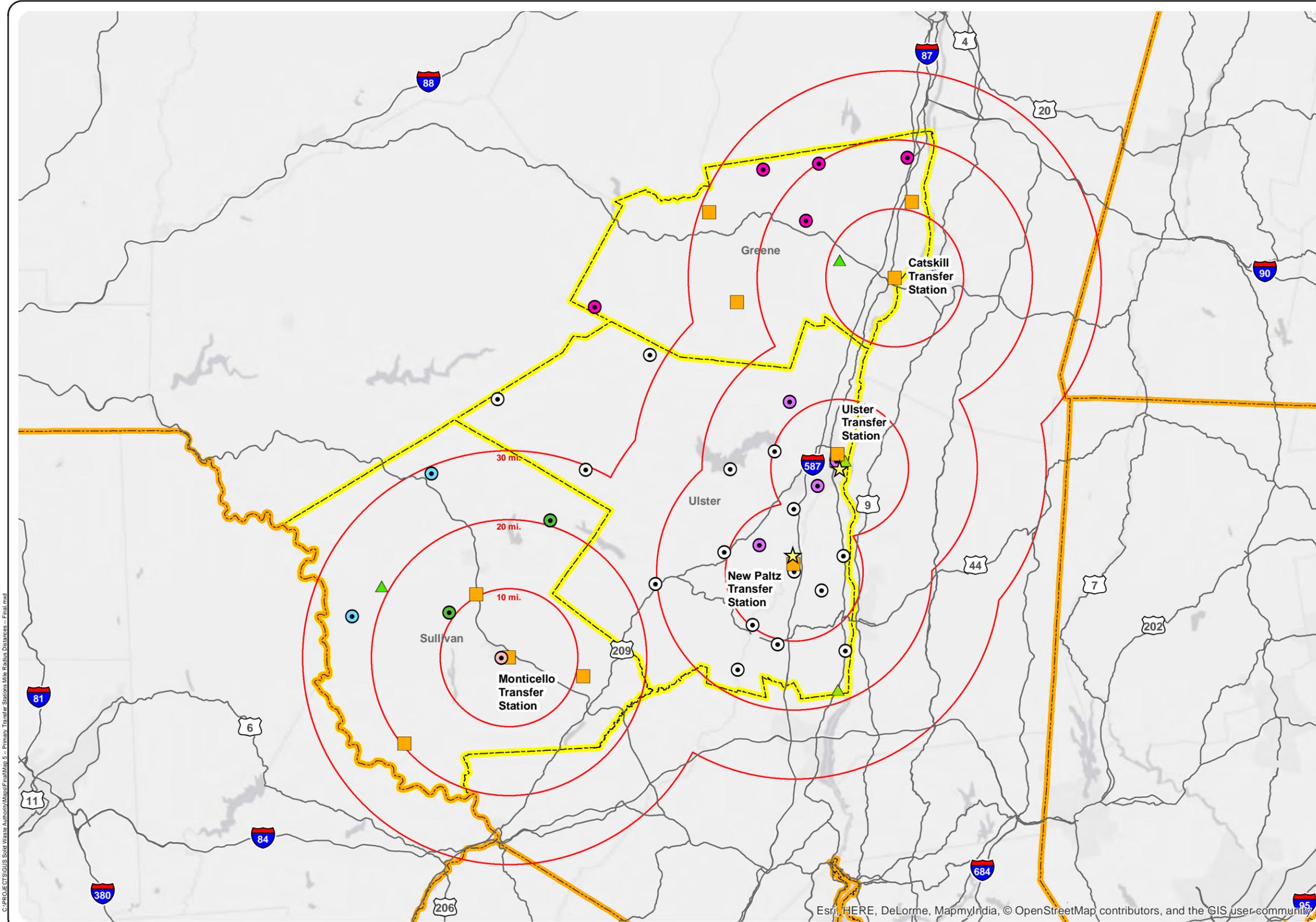
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GUS OPERATING AREA

FIGURE NO.
4
PROJECT NO.
170589



Legend

- ★ UCRR Post-Closure Maintained Landfills
- County Owned and Operated Facilities
- County Post-Closure Maintained Landfills
- Municipal Owned and Operated
- Municipal Owned and Operated, County Served
- Municipal Owned, County Operated and Served
- Municipal Owned, County Served Facilities
- Municipal Owned, UCRR Served Facilities
- ▲ Privately Owned Facilities
- Highway & Limited Access
- States

Data Sources

1. Data provided by Cornerstone Environmental Group and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online



PREPARED BY: AJW	DATE CREATED: 2/27/2018	APPROVED BY: RS
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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984

C:\PROJECTS\GUS Solid Waste Authority\Map\Final\Map 5 - Primary Transfer Stations Mile Radius Distances - Final.mxd

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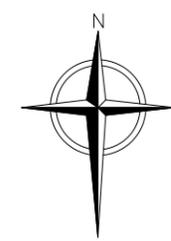
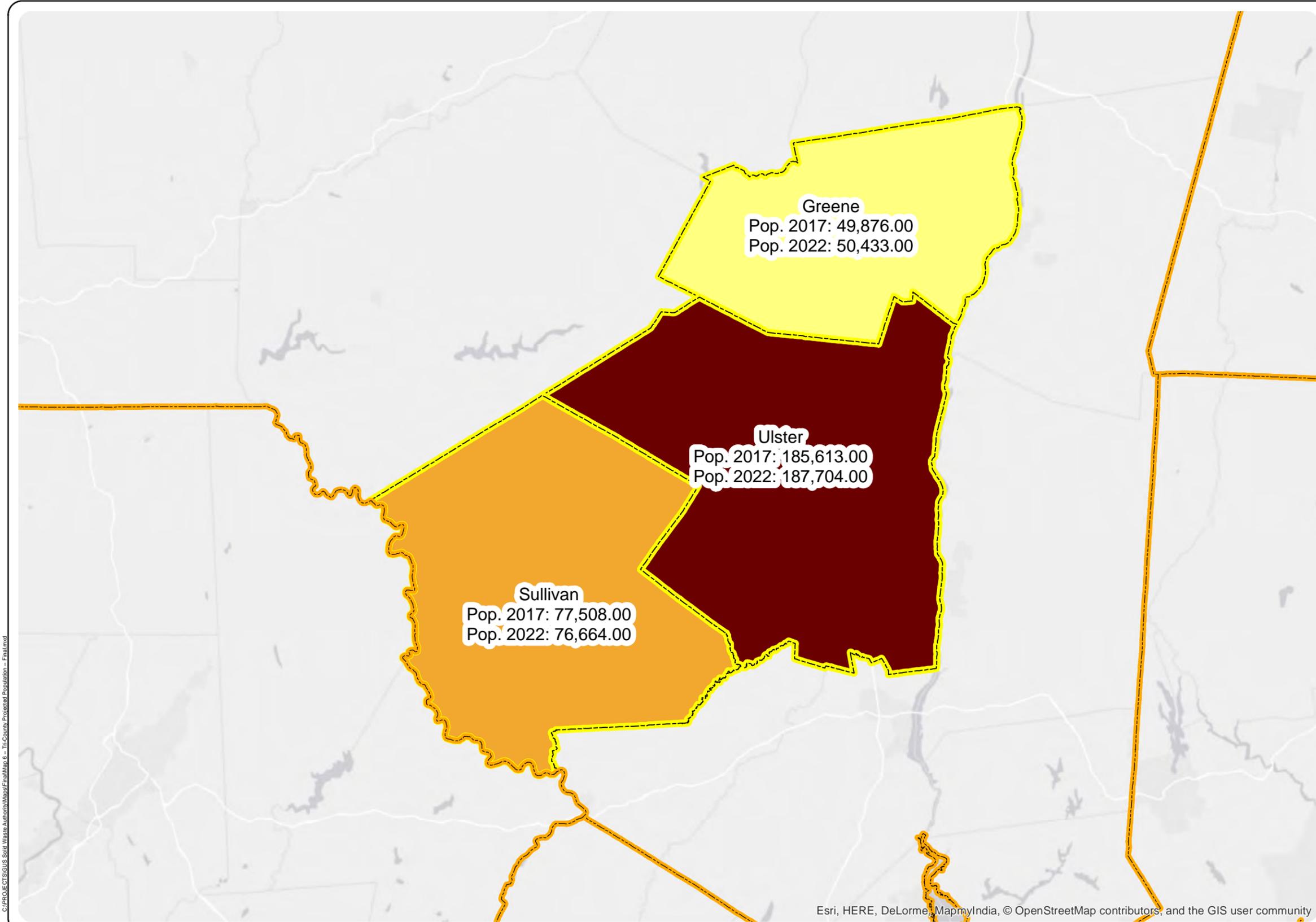
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**GUS PRIMARY TRANSFER
STATIONS MILE RADIUS DISTANCES**

FIGURE NO.
5
PROJECT NO.
170589



Legend

- Population 2017**
- 49,876
 - 77,508
 - 185,613
- Population 2022**
- 50,433
 - 76,664
 - 187,704
- States

Data Sources

1. Data provided by CEG and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online



PREPARED BY: AJW	DATE CREATED: 1/3/2018	APPROVED BY: RS
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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984

C:\PROJECTS\SUS Solid Waste Auth\Map\FinalMap 6 - Tri-County Projected Population - Final.mxd

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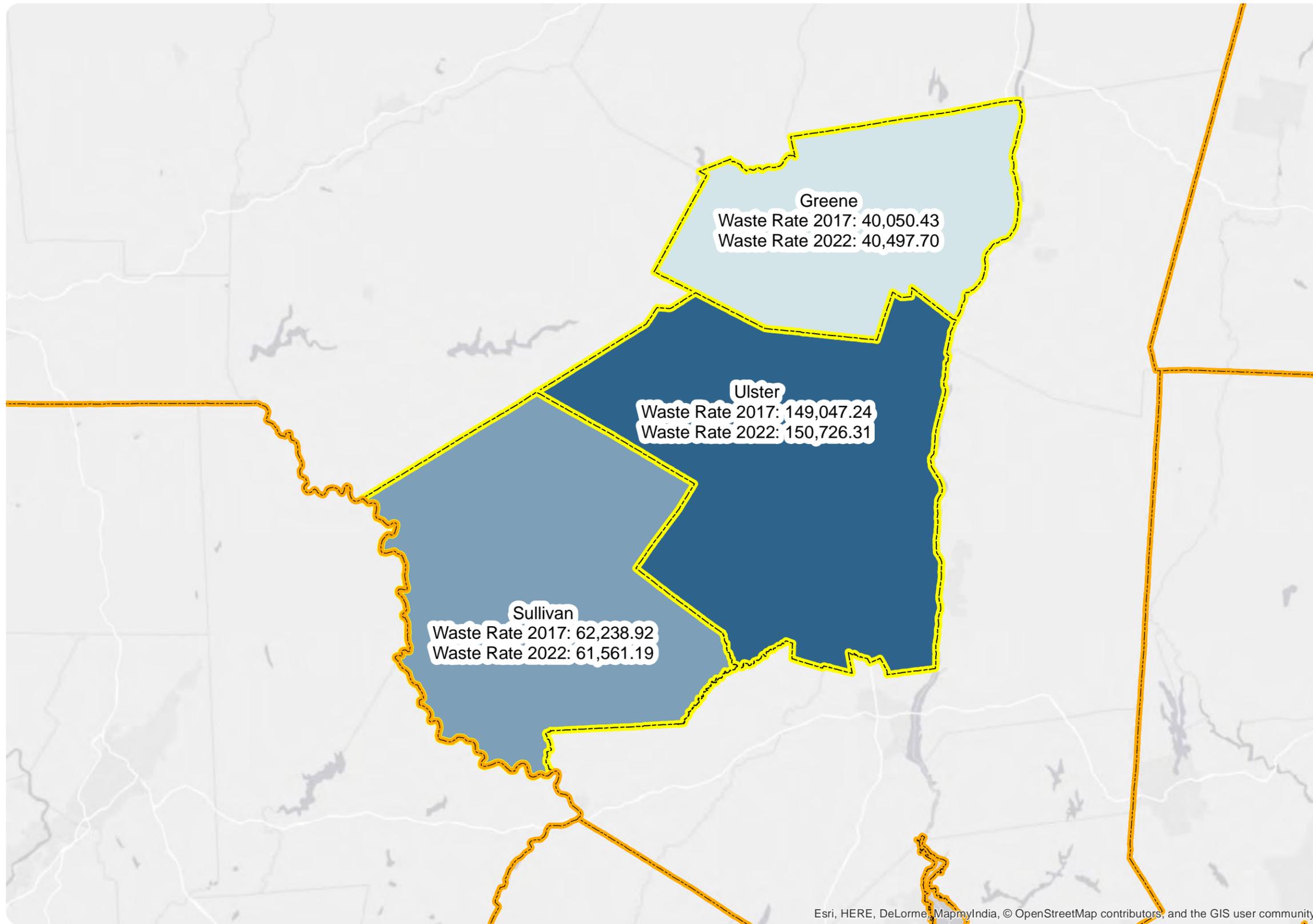
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TRI-COUNTY PROJECTED POPULATION

FIGURE NO.
6
PROJECT NO.
170589

C:\PROJECTS\SUS Solid Waste Authority\Map\Final\Map 7 - Tri-County Projected Annual Waste Tonnage Based Off Population - Final.mxd

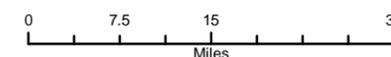


Legend

- Waste 2017**
Waste / Year (tons)
- 40,050
 - 62,239
 - 149,047
- Waste 2022**
Waste / Year (tons)
- 40,498
 - 61,561
 - 150,726
- States

Data Sources

1. Data provided by CEG and Waste Business Journal 2016
2. County, State, and Transportation layers from ArcGIS Online
3. Waste / year calculated by multiplying the County Population by 4.4 lbs / person / day (2.9 lbs for waste and 1.5 lbs for recyclables) times 365 days / year divided by 2,000 lbs / ton.
4. Waste generation per capita from the EPA <https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/>



PREPARED BY: AJW	DATE CREATED: 1/3/2018	APPROVED BY: RS
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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984

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TRI-COUNTY PROJECTED ANNUAL WASTE
TONNAGE BASED OFF POPULATION

FIGURE NO.
7
PROJECT NO.
170589

APPENDIX A
2016 FINANCIAL STATEMENTS

Appendix A

2016 Financial Statements

Greene County

Annual Budget Cross Organization by Account Number Report

	2013 Actual Amount	2014 Actual Amount	2015 Actual Amount	2016 Actual Amount	2017 Adopted Budget
Revenue					
<u>Account: 2130 - Refuse and Garbage</u>					
A-8160 - General, Solid Waste	\$4,314,093.00	\$4,300,514.77	\$4,333,593.52	\$4,789,200.56	\$4,133,506.00
Account 2130 Totals:	\$4,314,093.00	\$4,300,514.77	\$4,333,593.52	\$4,789,200.56	\$4,133,506.00
<u>Account: 2651 - Sale of Recyclables</u>					
A-8160 - General, Solid Waste	\$163,211.71	\$148,987.71	\$112,914.26	\$88,616.51	\$90,000.00
Account 2651 Totals:	\$163,211.71	\$148,987.71	\$112,914.26	\$88,616.51	\$90,000.00
<u>Account: 2705 - Gifts and Donations</u>					
A-8160 - General, Solid Waste	\$12,680.65	\$10,163.20	\$7,511.15	\$6,995.40	\$0.00
Account 2705 Totals:	\$12,680.65	\$10,163.20	\$7,511.15	\$6,995.40	\$0.00
Revenue Totals	\$4,489,985.36	\$4,459,665.68	\$4,454,018.93	\$4,884,812.47	\$4,223,506.00
Expenditures					
<u>Account: 1000 - Personal Service</u>					
A-8160 - General, Solid Waste	\$700,231.24	\$677,607.81	\$730,778.52	\$741,981.58	\$755,923.00
Account 1000 Totals:	\$700,231.24	\$677,607.81	\$730,778.52	\$741,981.58	\$755,923.00
<u>Account: 1093 - Longevity Stipend</u>					
A-8160 - General, Solid Waste	\$0.00	\$0.00	\$0.00	\$500.00	\$0.00
Account 1093 Totals:	\$0.00	\$0.00	\$0.00	\$500.00	\$0.00
<u>Account: 1095 - Vacation Buy-backs</u>					
A-8160 - General, Solid Waste	\$15,003.81	\$20,305.83	\$24,876.79	\$26,428.98	\$25,000.00
Account 1095 Totals:	\$15,003.81	\$20,305.83	\$24,876.79	\$26,428.98	\$25,000.00
<u>Account: 1096 - Termination Pay</u>					
A-8160 - General, Solid Waste	\$19,631.04	\$2,031.59	\$857.87	\$24,670.08	\$42,110.00
Account 1096 Totals:	\$19,631.04	\$2,031.59	\$857.87	\$24,670.08	\$42,110.00
<u>Account: 1099 - Personal Service Overtime</u>					
A-8160 - General, Solid Waste	\$43,464.09	\$56,751.69	\$57,472.28	\$55,147.24	\$55,000.00
Account 1099 Totals:	\$43,464.09	\$56,751.69	\$57,472.28	\$55,147.24	\$55,000.00
<u>Account: 2000 - Equipment</u>					
A-8160 - General, Solid Waste	\$4,513.98	\$0.00	\$15,535.64	\$9,236.95	\$15,000.00
Account 2000 Totals:	\$4,513.98	\$0.00	\$15,535.64	\$9,236.95	\$15,000.00
<u>Account: 2500 - Equipment - Vehicles</u>					
A-8160 - General, Solid Waste	\$106,600.00	\$0.00	\$0.00	\$113,582.00	\$65,000.00
Account 2500 Totals:	\$106,600.00	\$0.00	\$0.00	\$113,582.00	\$65,000.00
<u>Account: 2600 - Capital Improvement Program</u>					
A-8160 - General, Solid Waste	\$0.00	\$0.00	\$0.00	\$22,490.00	\$0.00
Account 2600 Totals:	\$0.00	\$0.00	\$0.00	\$22,490.00	\$0.00

Annual Budget Cross Organization by Account Number Report

	2013 Actual Amount	2014 Actual Amount	2015 Actual Amount	2016 Actual Amount	2017 Adopted Budget
<u>Account: 4011 - Maintenance Agreements</u>					
A-8160 - General, Solid Waste	\$4,825.71	\$5,495.26	\$5,819.85	\$5,972.97	\$10,000.00
Account 4011 Totals:	\$4,825.71	\$5,495.26	\$5,819.85	\$5,972.97	\$10,000.00
<u>Account: 4013 - Repairs</u>					
A-8160 - General, Solid Waste	\$87,517.16	\$138,013.26	\$120,146.96	\$136,946.08	\$140,000.00
Account 4013 Totals:	\$87,517.16	\$138,013.26	\$120,146.96	\$136,946.08	\$140,000.00
<u>Account: 4014 - Automobile Expense</u>					
A-8160 - General, Solid Waste	\$79,367.20	\$75,204.58	\$52,379.59	\$53,418.85	\$55,000.00
Account 4014 Totals:	\$79,367.20	\$75,204.58	\$52,379.59	\$53,418.85	\$55,000.00
<u>Account: 4021 - Office Supplies</u>					
A-8160 - General, Solid Waste	\$1,204.33	\$748.72	\$1,404.21	\$856.16	\$1,500.00
Account 4021 Totals:	\$1,204.33	\$748.72	\$1,404.21	\$856.16	\$1,500.00
<u>Account: 4023 - Postage</u>					
A-8160 - General, Solid Waste	\$478.23	\$524.63	\$507.13	\$534.32	\$550.00
Account 4023 Totals:	\$478.23	\$524.63	\$507.13	\$534.32	\$550.00
<u>Account: 4025 - Copying Costs</u>					
A-8160 - General, Solid Waste	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Account 4025 Totals:	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<u>Account: 4027 - Printing Fees</u>					
A-8160 - General, Solid Waste	\$3,826.10	\$3,917.81	\$4,321.58	\$3,907.98	\$4,250.00
Account 4027 Totals:	\$3,826.10	\$3,917.81	\$4,321.58	\$3,907.98	\$4,250.00
<u>Account: 4029 - Travel</u>					
A-8160 - General, Solid Waste	\$1,263.64	\$1,592.33	\$1,325.22	\$1,395.37	\$1,500.00
Account 4029 Totals:	\$1,263.64	\$1,592.33	\$1,325.22	\$1,395.37	\$1,500.00
<u>Account: 4031 - Telephone</u>					
A-8160 - General, Solid Waste	\$3,682.40	\$3,681.41	\$3,658.46	\$3,757.94	\$3,800.00
Account 4031 Totals:	\$3,682.40	\$3,681.41	\$3,658.46	\$3,757.94	\$3,800.00
<u>Account: 4033 - Utilities</u>					
A-8160 - General, Solid Waste	\$32,317.25	\$38,019.88	\$35,289.19	\$32,529.01	\$40,000.00
Account 4033 Totals:	\$32,317.25	\$38,019.88	\$35,289.19	\$32,529.01	\$40,000.00
<u>Account: 4041 - Advertising</u>					
A-8160 - General, Solid Waste	\$469.26	\$355.43	\$474.91	\$741.47	\$1,000.00
Account 4041 Totals:	\$469.26	\$355.43	\$474.91	\$741.47	\$1,000.00
<u>Account: 4043 - Education/Training</u>					
A-8160 - General, Solid Waste	\$0.00	\$0.00	\$0.00	\$0.00	\$1,000.00
Account 4043 Totals:	\$0.00	\$0.00	\$0.00	\$0.00	\$1,000.00

Annual Budget Cross Organization by Account Number Report

	2013 Actual Amount	2014 Actual Amount	2015 Actual Amount	2016 Actual Amount	2017 Adopted Budget
<u>Account: 4046 - Insurance</u>					
A-8160 - General, Solid Waste	\$29,801.35	\$22,714.81	\$21,309.50	\$10,004.93	\$25,000.00
Account 4046 Totals:	\$29,801.35	\$22,714.81	\$21,309.50	\$10,004.93	\$25,000.00
<u>Account: 4047 - Sub Contractors</u>					
A-8160 - General, Solid Waste	\$43,719.04	\$43,227.53	\$31,423.79	\$40,021.37	\$55,000.00
Account 4047 Totals:	\$43,719.04	\$43,227.53	\$31,423.79	\$40,021.37	\$55,000.00
<u>Account: 4049 - Miscellaneous</u>					
A-8160 - General, Solid Waste	\$2,721.15	\$4,296.44	\$7,741.37	\$7,815.42	\$9,000.00
Account 4049 Totals:	\$2,721.15	\$4,296.44	\$7,741.37	\$7,815.42	\$9,000.00
<u>Account: 4417 - Coxsackie Transfer</u>					
A-8160 - General, Solid Waste	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$1.00
Account 4417 Totals:	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$1.00
<u>Account: 4418 - Municipal Solid Waste</u>					
A-8160 - General, Solid Waste	\$3,188,625.94	\$2,970,184.69	\$3,040,571.90	\$3,179,231.68	\$3,095,062.00
Account 4418 Totals:	\$3,188,625.94	\$2,970,184.69	\$3,040,571.90	\$3,179,231.68	\$3,095,062.00
<u>Account: 8010 - Retirement</u>					
A-8160 - General, Solid Waste	\$153,224.90	\$139,817.75	\$138,654.08	\$125,684.72	\$122,597.00
Account 8010 Totals:	\$153,224.90	\$139,817.75	\$138,654.08	\$125,684.72	\$122,597.00
<u>Account: 8010 1000 - Retirement Payroll System Calc</u>					
A-8160 - General, Solid Waste	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Account 8010 1000 Totals:	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<u>Account: 8030 - FICA</u>					
A-8160 - General, Solid Waste	\$58,785.14	\$56,959.31	\$61,285.60	\$63,615.27	\$57,831.00
Account 8030 Totals:	\$58,785.14	\$56,959.31	\$61,285.60	\$63,615.27	\$57,831.00
<u>Account: 8040 - Workers' Compensation</u>					
A-8160 - General, Solid Waste	\$24,501.00	\$25,863.00	\$25,255.00	\$23,579.00	\$22,507.00
Account 8040 Totals:	\$24,501.00	\$25,863.00	\$25,255.00	\$23,579.00	\$22,507.00
<u>Account: 8055 - Disability</u>					
A-8160 - General, Solid Waste	\$1,254.00	\$963.65	\$1,195.00	\$1,194.00	\$1,194.00
Account 8055 Totals:	\$1,254.00	\$963.65	\$1,195.00	\$1,194.00	\$1,194.00
<u>Account: 8060 - Health Insurance</u>					
A-8160 - General, Solid Waste	\$461,150.91	\$307,742.18	\$305,618.19	\$308,772.81	\$354,884.00
Account 8060 Totals:	\$461,150.91	\$307,742.18	\$305,618.19	\$308,772.81	\$354,884.00
Revenue Grand Totals:	\$4,489,985.36	\$4,459,665.68	\$4,454,018.93	\$4,884,812.47	\$4,223,506.00
Expenditure Grand Totals:	\$5,088,178.87	\$4,616,019.59	\$4,707,902.63	\$5,014,016.18	\$4,959,709.00
Net Grand Totals:	(\$598,193.51)	(\$156,353.91)	(\$253,883.70)	(\$129,203.71)	(\$736,203.00)

Appendix A

2016 Financial Statements

UCRRA (Ulster County)

ULSTER COUNTY RESOURCE RECOVERY AGENCY

FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015



Teal, Becker & Chiaramonte™
CERTIFIED PUBLIC ACCOUNTANTS & ADVISORS

A Higher Standard of Excellence



Ulster County Resource Recovery Agency

Year in Review 2015-2016

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To The Board of Directors
Ulster County Resource Recovery Agency
Kingston, New York

Independent Auditors' Report

Report on the Financial Statements

We have audited the accompanying financial statements of the Ulster County Resource Recovery Agency, a component Unit of the County of Ulster (the Agency), as of and for the year ended December 31, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the Agency's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The Agency's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the Agency's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Agency's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Ulster County Resource Recovery Agency, as of December 31, 2016 and 2015, and the respective changes in financial position and, where applicable, cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and pension information on pages 3 through 14 and 37 and 38 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated March 23, 2017, on our consideration of the Agency's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Agency's internal control over financial reporting and compliance.

Teal Becker & Charamonte, CPAs PC

Albany, New York
March 23, 2017

What is the Agency?

In 1986, the Ulster County Legislature obtained authorization from the State Legislature for the creation of the Ulster County Resource Recovery Agency (the "Agency"), a public benefit corporation which was formed for the purpose of developing, financing, and implementing a comprehensive Countywide solid waste management program. In the mid-1980's, after new initiatives to close non-complying existing landfills were undertaken by the NYSDEC and strict requirements for the siting, construction, and operation of new disposal facilities were enacted, many communities found it beyond their financial and managerial capability to continue to dispose of waste in traditional ways. Consequently, many of the local municipalities in Ulster County requested that the Ulster County government assume the responsibility for solid waste management, and the Agency was created by the New York State Legislature pursuant to Chapter 936 of the Public Authorities Law approved December of 1986. The Agency's organizational structure consists of a five-member Board of Directors, an Executive Director, Agency Counsel, and thirty administrative and operations personnel.

UCRRA's Mission

To protect public health and the environment and to promote sustainable materials management practices in Ulster County by efficiently managing solid waste materials with a focus on resource conservation.

A Message from the Executive Director

Board:

Chairman - Fred Wadnola

Vice Chairman - David Gordon, Esq.

Treasurer - Charles Landi

Member - Jack Hayes

Member - Brian Devine



Staff:

Executive Director - Timothy Rose, P.E.

Agency Counsel - Kenneth Gilligan, Esq.

Controller - Timothy DeGraff, C.P.A.

Operations Manager - Charlie Whittaker

Compliance Officer - Thomas Briggs

Chief Accounting Clerk - Amy Lopiano

Recycling Coordinator - Merlyn Akhtar

Data Analyst - Lisa Piratzky

Administrative Assistant - Melinda France

Clerical Secretary - Brenna Whitaker

Two thousand and sixteen proved to be a year of transition and progress for the Agency. The dynamics of the Board changed with three new appointments; two due to expired terms and one due to a resignation. The new Board has brought with it members of different backgrounds in both academia and career in nature which has no doubt resulted in new ideas and initiatives. The staff continues to provide the users of the solid waste and recycling systems with exceptional service through their commitment to efficiency, the environment, and fiscal responsibility.

Highlights of those projects and programs that have experienced positive results in 2016 can be seen in the following pages.

Ulster & New Paltz Transfer Stations, Material Recovery Facility, & Agency Closed Landfills

- Security fences were installed around the leachate tanks at the New Paltz and Ulster landfills.
- New security fences were installed at the access roads to the New Paltz and Ulster landfills.
- More than 80 new recycling roll-off boxes were bought at a cost of nearly \$400,000 to service the 15 towns we are in contract with.
- An evaluation to determine the condition of the gas vents and solar flares at the Ulster landfill commenced.
- Security cameras were installed throughout the New Paltz and Ulster facilities.

Communications & Public Outreach

- The Agency participated in the St. Patrick's Day Parade in the Town of Wallkill to promote the Agency's Household Hazardous Waste Events and to distribute Agency recycling brochures.
- The Agency participated in Earth Day events at several local schools including but not limited to Kerhonkson Elementary, Phoenicia Elementary, and Bennett Elementary schools.
- The Agency conducted numerous tours of the facility throughout the year. Some of those that toured the facilities include the Town of Gardiner, Girl Scout Troops, Mt. Marion Green Team, Ellenville School, Saugerties School, Marist College, Councilmen from the Town of Cortlandt, and the Poughkeepsie Journal.
- The Agency participated in a Boy Scout Camporee, Olive Day (which was hosted by the town of Olive), and Sustainable Saturday (which was hosted by the County of Ulster). Information regarding Agency recycling and composting programs was distributed at these events.
- The Agency participated on a TV interview for the Town of Esopus public access TV.
- Numerous radio campaigns regarding recycling, HHW events, composting, and plastic bag recycling have aired throughout the year on various radio stations.

Household Hazardous Waste & Pharmaceutical Program

Product	Weight
Antifreeze	153 gal.
Pesticides (solid)	5,200 lbs.
Pesticides (liquid)	1,012 gal.
Fluorescent Bulbs	1,610 lbs.
Hazardous Paint	2,356 gal.
Hazardous Household Batteries	1,177 lbs.
Mercury-Containing Devices	55 lbs.
Other HHW (solid)	8,267 lbs.
Other HHW (liquid)	1,597 gal.
Misc. Solid Waste	704 lbs.
Pharmaceuticals	610 lbs.

In 2016, the Agency's three Household Hazardous Waste & Pharmaceuticals Collections, offered for free to Ulster County residents, recovered the following quantities of hazardous waste and expired or unused medications.

Cumulatively, the Agency's program helped prevent 17,623 lbs. and 5,118 gallons of hazardous materials from potentially being disposed of improperly and/or ending up in a landfill.

Recycling/Composting Program

- The Agency increased the compost facility's footprint for the active portion from 40 ft. x 90 ft. to 90 ft. x 125 ft.
- The Agency received 1,275.88 tons of source-separated food waste and sold approximately 850.85 tons.
- The Agency collected a total of 576,156 lbs. of electronics from residents, small businesses (less than 50 employees), local municipal governments, and non-profit organizations (less than 75 employees).

In closing, I'd like to thank the Board and staff for their continued commitment to providing exceptional service to the users of the solid waste and recycling systems. Many great initiatives have resulted because the Board and staff have come together to share their ideas to promote environmentally and fiscally sound solid waste and recycling paradigms.

Sincerely,

Timothy B. Rose, P.E., BCEE, QEP, M.P.A.
Executive Director

Overview of the Financial Statements

Statements of Net Position

The statements of net position present the assets, liabilities, and net position of the Agency at the end of each year. The purpose of the statements of net position is to present to the readers of the financial statements a fiscal snapshot of the Agency. From the data presented, readers of the statements of net position are able to determine the assets available to continue the operations of the Agency. They are also able to determine how much the Agency owes vendors, employees, and others. Finally, the statements of net position provide a picture of the net position (assets minus liabilities) and their availability for use by the Agency.

Condensed Statements of Net Position

	2016	2015
Assets:		
Assets, other than capital assets	10,442,210	9,718,353
Capital assets	9,741,717	9,326,438
Total assets:	20,183,927	19,044,791
Deferred outflows of resources	1,407,132	429,697
Liabilities:		
Current Liabilities	3,780,120	3,660,057
Long-term liabilities	12,065,232	13,568,423
Total liabilities:	15,845,352	17,228,480
Deferred inflows of resources	259,986	81,168
Net position (deficit):		
Investments in capital assets	9,741,717	9,326,438
Unrestricted (deficit)	(7,822,900)	(10,653,519)
Restricted	3,566,904	3,491,921
Total net position:	5,485,721	2,164,840

Statements of Revenue, Expenses, and Changes in Net Position

Changes in total net position as presented on the statements of net position are based on the activity presented in the statements of revenue, expenses and changes in net position. The purpose of the statement is to present the revenue received by the Agency, both operating and non-operating, and the expenses paid by the Agency, operating and non-operating, and any other revenue, expenses, gains and losses received or spent by the Agency.

Generally speaking, operating revenues are received for providing goods and services to the various private customers and municipalities that use the Agency's facilities. Operating expenses are those expenses paid to acquire or produce the goods and services provided in return for the operating revenues, and to carry out the mission of the Agency.

	2016	2015
Revenue:		
Operating revenue	14,016,578	13,994,484
Non-operating revenue	514,121	212,347
Total revenue:	<u>14,530,699</u>	<u>14,206,831</u>
Expenses:		
Operating expenses	11,133,131	10,128,964
Non-operating expenses	254,982	325,398
Total expenses:	<u>11,388,113</u>	<u>10,454,362</u>
Increase in net position	3,142,586	3,752,469
Reduction in estimated liability for land fill post-closure care costs	178,295	205,842
Net position (deficit):		
Beginning of year	2,164,840	(1,433,945)
Restatement of beginning balance	-	(359,526)
Net position - beginning of year - restated	2,164,840	(1,793,471)
End of year	<u>5,485,721</u>	<u>2,164,840</u>

Revenue
Increased
2.3%



Expenses
Increased
8.9%



Statements of Cash Flows

The final statement presented by the Agency is the statements of cash flows. The statements of cash flows present detailed information about the cash activities of the Agency during the year. The first section of the statements of cash flows deals with operating cash flows and shows the net cash provided by the operating activities of the Agency. The second section reflects the cash flows from capital and related financing activities and shows capital construction and capital asset acquisition. The third section reflects principal/interest on capital debt.

Condensed Statements of Cash Flows

	2016	2015
Net cash provided by operating activities	3,567,023	3,855,330
Net cash used in capital and related financing activities	(3,187,093)	(2,861,573)
Net cash provided by investing activities	<u>122,456</u>	<u>117,176</u>
Net increase in cash and equivalents	502,386	1,110,933
Cash and equivalents at beginning of year	<u>5,273,367</u>	<u>4,162,434</u>
Cash and equivalents at end of year	<u>5,775,753</u>	<u>5,273,367</u>



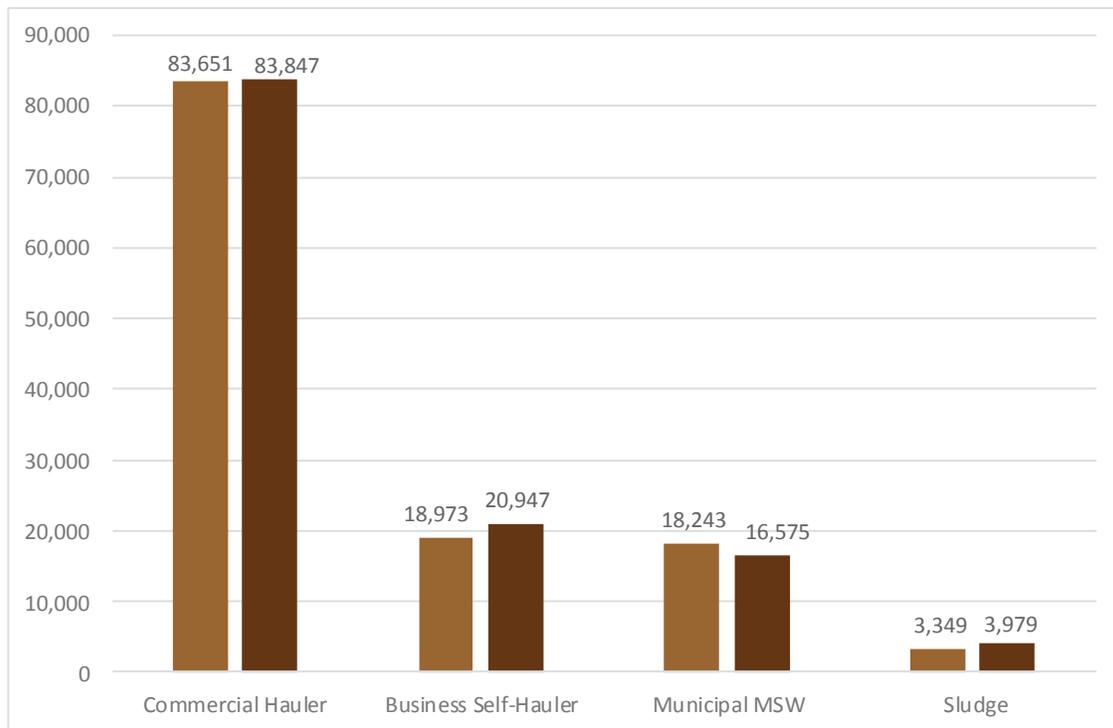
Financial Highlights

The Agency's net position improved by \$3.3 million, from \$2.2 million at December 31, 2015 to \$5.5 million at December 31, 2016.

Total revenue in 2016 reflects a \$300,000 increase from the previous year to \$14.5 million. During 2016, the Agency experienced a minor increase in volume and related solid waste service fees, but this was offset due to a decrease in revenues from fuel surcharge. A majority of revenue increases were due to the receipt of grant monies related to Agency recycling and composting programs.

Total expenses in 2016 amounted to \$11.4 million, a \$900,000 increase from 2015. During 2016, the Agency realized contractual increases for transportation and disposal costs. A majority of expenditure increases were due to changes in the Agency's proportionate share of pension costs.

Waste



2015

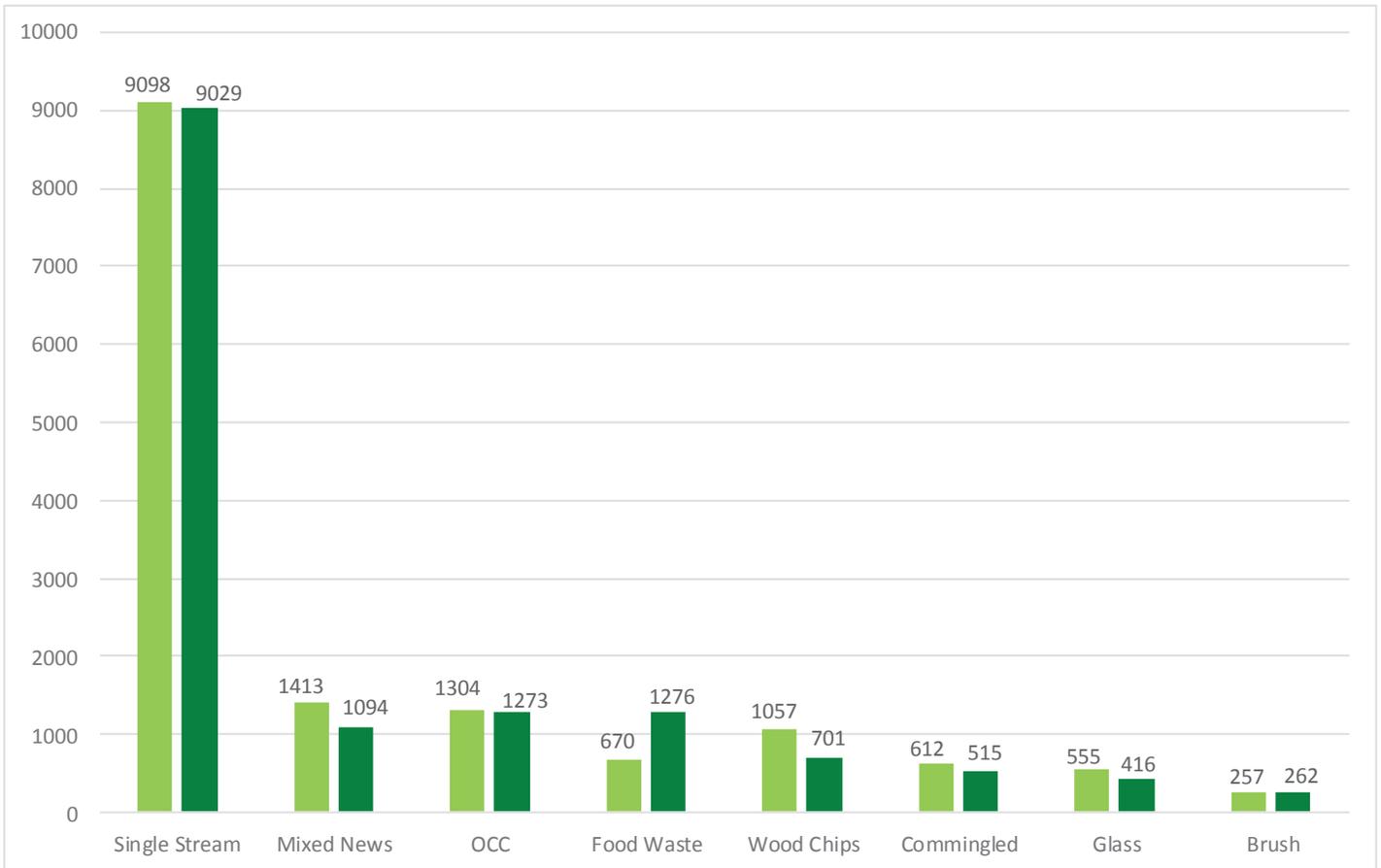
124,216
tons

2016

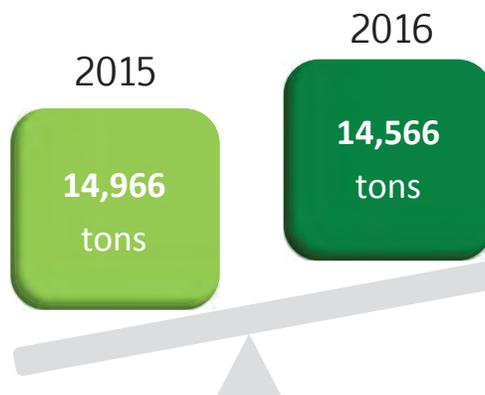
125,348
tons

Waste volume increased 0.9% from the prior year. Predicting waste volume can be very difficult from year to year, but the implementation of Flow Control has allowed for less unpredictability. A majority of the increased volume was from sewage sludge. This increase came from a single local municipality and is expected to continue through 2017.

Recycling



Dual stream recycling volume delivered to the Agency has continued on a downward trend due to increases in Single Stream Recycling (“SSR”) by commercial haulers, the City of Kingston, and a few Town Transfer Stations. SSR volume has plateaued, while still adversely affecting other recycling volumes. In 2016, the Agency began the expansion of its composting program, which led to an increase in food waste volume and corresponding revenues. The Agency expects continued increases in its composting revenues in the years to come.



How We Calculate Our Tipping Fee

The Agency calculates its annual tipping fee rate/ton with the expectation to, at minimum, break even. The following chart breaks down the 2017 approved tipping fee rate with relation to its major cost categories. Overall, revenues and expenses are expected to remain constant from the prior year. A minor contractual increase in transportation and disposal costs was offset by lower debt service requirements. The result was a flat tip fee of \$103/ton from 2016 to 2017.



*Other

Capital Outlay: \$6

Administrative Costs: \$5

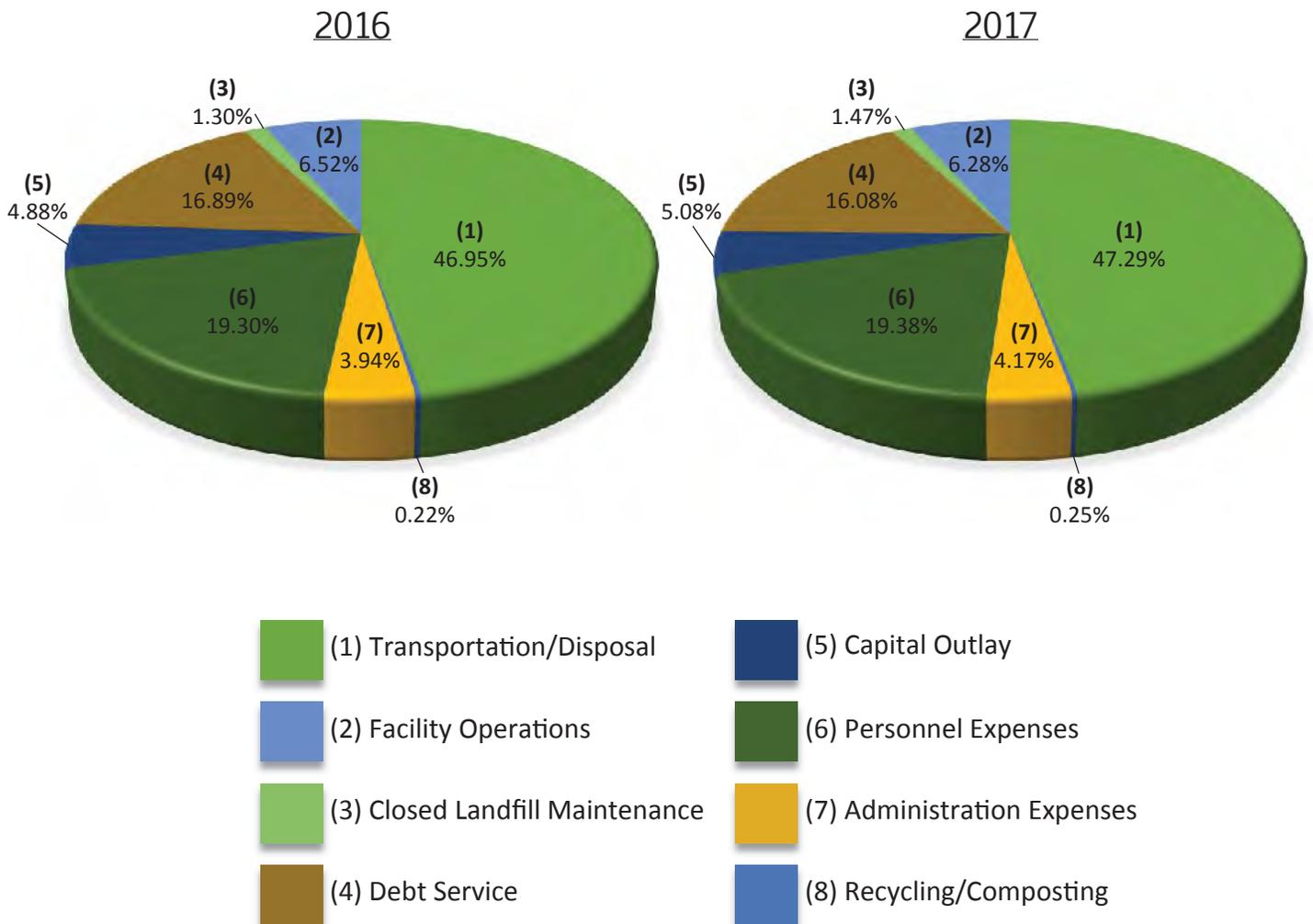
Closed Landfill Maintenance/Monitoring: \$2

Transfer Station Costs: \$2

Host Community Benefit: \$1

Budget

The Agency completed a very successful 2016 and anticipates consistent continued results in the upcoming year. The Agency's budget is highly contingent on volume received at the Agency's two regional transfer stations. Over 80% of Agency costs are tied to contractual agreements, making the budgeting of these items less susceptible to high variances with the actual results when volume is consistent. The implementation of Flow Control has allowed for consistent volume and more precise budgeting. The Agency currently has separate five year agreements for transportation and disposal of waste. Based on these major cost certainties and the revenue consistency associated with Flow Control, the Agency is expecting tipping fees to remain static over the next three years.



Additional Information

The report is compiled for the use of the Agency's Governing Board, management, appropriate officials of the County of Ulster and State of New York, and members of the public interested in the Agency's affairs. Questions with regard to this financial report or requests for additional information may be addressed to the Controller, Ulster County Resource Recovery Agency, P.O. Box 6219, 999 Flatbush Road, Kingston, New York 12402.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Statements Of Net Position

December 31

Assets	<u>2016</u>	<u>2015</u>
Current assets:		
Cash and equivalents	\$ 5,775,753	\$ 5,273,367
Investments	2,542,949	2,542,949
Receivables, net of allowance of \$500 in 2016 and \$300 in 2015	1,682,129	1,440,185
Accrued interest	38,577	38,677
Prepaid expense	<u>402,802</u>	<u>423,175</u>
Total current assets	10,442,210	9,718,353
Capital assets, net	<u>9,741,717</u>	<u>9,326,438</u>
Total assets	<u><u>\$ 20,183,927</u></u>	<u><u>\$ 19,044,791</u></u>
Deferred Outflows of Resources		
Unamortized loss on bond defeasement	\$ 51,251	\$ 85,417
Pension - Employees' Retirement System, gross	<u>1,355,881</u>	<u>344,280</u>
Total Deferred Outflows of Resources	<u><u>\$ 1,407,132</u></u>	<u><u>\$ 429,697</u></u>
Liabilities		
Current liabilities:		
Accounts payable	\$ 566,727	\$ 499,179
Accrued interest	55,207	79,160
Host community benefits payable	13,370	14,613
Customer advances	7,800	12,800
Other payables	45,212	29,738
Current installments of long-term debt	2,294,955	2,247,327
Current installment of long-term pension	37,592	34,807
Current portion of landfill post-closure care costs	173,421	187,136
Current portion of workers' compensation assessment	-	10,512
Compensated absences	<u>585,836</u>	<u>544,785</u>
Total current liabilities	3,780,120	3,660,057
Long-term debt, excluding current installments, net of premium	8,101,192	10,209,349
Long-term pension, excluding current portion	770,475	808,067
Landfill post-closure care costs, excluding current portion	1,907,631	2,245,632
Workers' compensation assessment, excluding current portion	-	36,598
Net pension liability - proportionate share - Employees' Retirement System	<u>1,285,934</u>	<u>268,777</u>
Total liabilities	<u><u>\$ 15,845,352</u></u>	<u><u>\$ 17,228,480</u></u>
Deferred inflows of resources		
Pension - Employees' Retirement System, gross	<u>\$ 259,986</u>	<u>\$ 81,168</u>
Net position:		
Investments in capital assets	\$ 9,741,717	\$ 9,326,438
Restricted for:		
Landfill closure	-	96,145
Debt repayment	3,566,904	3,395,776
Unrestricted (deficit)	<u>(7,822,900)</u>	<u>(10,653,519)</u>
Total Net Position	<u><u>\$ 5,485,721</u></u>	<u><u>\$ 2,164,840</u></u>

The accompanying notes are an integral part of these financial statements

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Statements of Revenue, Expenses And Changes In Net Position

For The Years Ended December 31

	<u>2016</u>	<u>2015</u>
Operating revenue:		
Charges for sales and services:		
Sales of recyclable materials	\$ 447,314	\$ 343,459
Solid waste service fees	13,524,706	13,583,309
Other revenue	<u>44,558</u>	<u>67,716</u>
Total operating revenue	<u>14,016,578</u>	<u>13,994,484</u>
Operating expenses:		
Costs of sales and services	7,106,444	6,903,327
Salaries and wages	1,681,879	1,643,282
Administration	658,275	561,122
Depreciation	574,882	520,321
Benefits	<u>1,111,651</u>	<u>500,912</u>
Total operating expenses	<u>11,133,131</u>	<u>10,128,964</u>
Operating income	<u>2,883,447</u>	<u>3,865,520</u>
Nonoperating revenue (expenses):		
Investment income	122,356	117,179
Gain on disposal of assets	105,698	56,279
Grant revenue	286,067	38,889
Interest expense	<u>(254,982)</u>	<u>(325,398)</u>
Total nonoperating revenue (expenses)	<u>259,139</u>	<u>(113,051)</u>
Increase in net position	<u>3,142,586</u>	<u>3,752,469</u>
Decrease in estimated liability for landfill post-closure care costs	<u>178,295</u>	<u>205,842</u>
Net position (deficit):		
Beginning of year	2,164,840	(1,433,945)
Restatement of beginning balance due to change in accounting principle	<u>-</u>	<u>(359,526)</u>
Total net position - beginning of year, as restated	<u>2,164,840</u>	<u>(1,793,471)</u>
End Of Year	<u>\$ 5,485,721</u>	<u>\$ 2,164,840</u>

The accompanying notes are an integral part of these financial statements

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Statements Of Cash Flows

For The Years Ended December 31

	<u>2016</u>	<u>2015</u>
Cash flows from operating activities:		
Receipts from services	\$ 13,769,634	\$ 13,984,993
Payments to suppliers	(7,647,525)	(7,620,522)
Payment to employees	<u>(2,555,086)</u>	<u>(2,509,141)</u>
Net cash provided by operating activities	<u>3,567,023</u>	<u>3,855,330</u>
Cash flows from capital and related financing activities:		
Purchases of capital assets	(829,851)	(191,956)
Proceeds from disposal of assets	107,637	15,857
Grant revenue	286,067	38,889
Landfill post-closure care costs	(173,421)	(187,136)
Principal paid on long-term debt	(2,296,969)	(2,191,864)
Principal paid on long-term pension	(34,807)	(32,229)
Interest paid on long-term obligations	<u>(245,749)</u>	<u>(313,134)</u>
Net cash used in capital and related financing activities	(3,187,093)	(2,861,573)
Cash flows from investing activities - investment income received	<u>122,456</u>	<u>117,176</u>
Net increase in cash and equivalents	502,386	1,110,933
Cash and equivalents at beginning of year	<u>5,273,367</u>	<u>4,162,434</u>
Cash and equivalents at end of year	<u>\$ 5,775,753</u>	<u>\$ 5,273,367</u>
Reconciliation of operating income to net cash provided by operating activities:		
Operating income	\$ 2,883,447	\$ 3,865,520
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation expense	574,882	520,321
Pension expense	185,354	(353,861)
C-I-P reclass	74,191	-
Changes in:		
Receivables	(241,944)	(16,491)
Prepaid expenses	20,373	28,634
Accounts payable and other payables	81,779	(210,011)
Workers' compensation assessment	(47,110)	(9,636)
Customer advances	(5,000)	7,000
Compensated absences	<u>41,051</u>	<u>23,854</u>
Net Cash Provided By Operating Activities	<u>\$ 3,567,023</u>	<u>\$ 3,855,330</u>

The accompanying notes are an integral part of these financial statements

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements

(1) Organization

The Ulster County Resource Recovery Agency (the Agency), a Public Benefit Corporation, was established on December 31, 1986, for the purpose of establishing a solid waste management plan, and to develop, finance, construct, and operate facilities and projects to implement the plan in the County of Ulster, New York (the County). On December 14, 1992, the Agency began landfill operations under its interim “landfill consolidation plan” at the Town of New Paltz landfill. In February 1993 and May 1993, commencement of landfill operations under this plan began at the Towns of Ulster and Lloyd, respectively. All three landfill operations were closed as of December 31, 1996. As of January 1, 1997, the Agency started transporting solid waste to other counties.

(2) Summary of Significant Accounting Policies

(a) Financial Reporting Entity

The Agency is governed by Article 13-g of the Public Authorities Law (Act) and other laws of the State of New York, as indicated in such Act. The governing body is referred to herein as the “Board of Directors.” The scope of activities included within the accompanying financial statements are those transactions which comprise Agency operations, and are governed by, or significantly influenced by, the Board of Directors.

The financial reporting entity includes all funds, functions and organizations over which the Agency officials exercise oversight responsibility. Oversight responsibility is determined on the basis of financial interdependency, selection of governing authority, designation of management, ability to significantly influence operations, and accountability for fiscal matters. No other governmental organizations have been included or excluded from the reporting entity.

The Agency is considered a component unit of the County and is included in the financial statements of the County. The Agency’s Board of Directors is appointed by the Chairperson of the County Legislature and confirmed by the Legislature as a whole, for terms of three years. As such, the County can impose its will indirectly on the Agency.

The accompanying basic financial statements of the Agency have been prepared using the economic resources measurement focus and the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America as prescribed by the Governmental Accounting Standards Board (GASB).

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(2) Summary of Significant Accounting Policies (Continued)

(a) Financial Reporting Entity, Continued

The Agency reports as a special purpose government engaged in business-type activities, as defined by GASB Statement No. 34. Business-type activities are those that are financed in whole or in part by fees charged to external parties for goods or services. The basic financial statements of the Agency consist of statements of net position, statements of revenue, expenses and changes in net position, that distinguishes between operating and nonoperating revenues and expenses, and statements of cash flows, using the direct method of presenting cash flows from operations. The business type activity presentation includes all of the Agency's funds and account groups.

The Agency's policy for defining operating activities in the statements of revenue, expenses and changes in net position are those that generally result from exchange transactions such as the payment received for services and payment made for the purchase of goods and services. Certain other transactions are reported as non-operating activities in accordance with GASB Statement No. 34. These non-operating activities include the Agency's operating revenues from net investment income, grant revenue, interest expense, and gains from the disposal of assets.

GASB Statement No. 34 requires that resources be classified for accounting and financial reporting purposes into the following four net asset categories:

- Net investment in capital assets - Capital assets, net of accumulated depreciation and outstanding principal balances of debt attributable to the acquisition, construction, repair, or improvement of those assets. See unrestricted below.
- Restricted - Net position with constraints placed on their use either by (1) external groups such as creditors or laws or regulations of other governments; or (2) law through constitutional provisions or enabling legislation.
- Unrestricted - All other categories of net position. Included in unrestricted net position are amounts not available for other purposes. The liability for debt is shown as a reduction of unrestricted since it was not possible to distinguish the amount that is related to capital assets.

(b) Basis of Accounting

The accompanying financial statements have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America (GAAP) as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standards setting body for establishing governmental accounting and financial reporting principles.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(2) Summary of Significant Accounting Policies, Continued

(c) Budgetary Policies

The budget policies are as follows:

- Agency administration compiles a proposed budget for approval by the Board of Directors by August of each year for the ensuing year consistent with accounting principles generally accepted in the United States of America.
- The budget is then submitted to the County Executive for review. This is followed by a public hearing process. Finally, the budget is adopted in October of each year by the Board of Directors.

(d) Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Significant estimates used in preparing these financial statements include those assumed in calculating the landfill post-closure care cost liability. Accordingly, actual results could differ from those estimates.

(e) Cash and Equivalents

For financial statement purposes, the Agency considers all highly liquid investments with maturities of three months or less to be cash equivalents. Due to debt service reserve requirements, varying amounts of cash equivalents may need to be restricted throughout the year.

(f) Receivables and Allowance for Doubtful Accounts

Receivables are stated at the amount management estimates will be collected on outstanding balances. Management provides for probable uncollectible amounts through a provision for bad debt expense and an adjustment to a valuation allowance based on its assessment of the current status of individual receivables. Balances that are still outstanding after management has used reasonable collection efforts are written off through a charge to the valuation allowance and a credit to the applicable accounts receivable.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(2) Summary of Significant Accounting Policies, Continued

(g) Capital Assets

Capital assets are stated at cost, or in the case of gifts, fair value at the date of the receipt. The Agency's policy is to capitalize equipment which has a cost in excess of \$1,000 and has a useful life of at least three years. Building renovations, building additions, machinery and equipment, heavy equipment, computers, software, vehicles, trailers, and furniture and fixtures with a unit cost of greater than \$1,000 are capitalized. Agency capital assets, with the exception of land, are depreciated on a straight-line basis over their useful lives, which range from 3 to 50 years.

(h) Interfund Transfers

During the course of operations, the Agency has minimal transactions between funds, including expenditures and transfers of revenues to provide services, construct assets, and repay debt. This interfund activity has no effect on the basic financial statements as a whole and, therefore, was eliminated from the entity wide financial statements.

(i) Net Position

Restricted/Unrestricted Resources - Portions of net position are segregated for future use; and are, therefore, not available for current appropriation or expenditure. If an expense is incurred for purposes for which both restricted and unrestricted assets are available, the policy is to follow a Board of Directors resolution when deciding which assets to use.

(j) Advertising Costs

Advertising costs are expensed as incurred.

(k) Subsequent Events

The Agency has evaluated events after December 31, 2016, and through March 23, 2017, which is the date the financial statements were available to be issued, and determined that any events or transactions occurring during this period that would require recognition or disclosure are properly addressed in these financial statements.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(3) Cash Equivalents and Investments

The Agency’s investment policies are governed by New York State statutes and the Agency’s investment policy adopted August 6, 1993. Cash equivalents and investments at year-end were either fully insured by Federal Deposit Insurance Corporation (FDIC) and/or are collateralized with U.S. Government obligations held in the Agency’s custodial bank in the Agency’s name. Coverage was less than 100% of the balances on deposit. Investments consist primarily of guaranteed investment contracts (GICs) purchased directly by the Agency. Cash equivalents and investments are categorized into these three categories of custodial risk:

- (1) Insured or registered, or investments held by the Agency, or the Agency’s agent in the Agency’s name.
- (2) Uninsured and unregistered, with the investments held by the financial institution’s trust department or agent in the Agency’s name.
- (3) Uninsured and unregistered, with investments held by the financial institution or its trust department or agent, but not in the Agency’s name.

At December 31, 2016, the Agency’s cash equivalents and investment balances were as follows:

	<u>Category</u>			<u>Reported Amount/ Fair Value</u>
	<u>1</u>	<u>2</u>	<u>3</u>	
Cash and equivalents	\$4,035,688	\$1,740,065	\$ -	\$5,775,753
Investments	<u>-</u>	<u>2,542,949</u>	<u>-</u>	<u>2,542,949</u>
Total	<u>\$4,035,688</u>	<u>\$4,283,014</u>	<u>\$ -</u>	<u>\$8,318,702</u>

At December 31, 2015, the Agency’s cash equivalents and investment balances were as follows:

	<u>Category</u>			<u>Reported Amount/ Fair Value</u>
	<u>1</u>	<u>2</u>	<u>3</u>	
Cash and equivalents	\$3,640,533	\$1,632,834	\$ -	\$5,273,367
Investments	<u>-</u>	<u>2,542,949</u>	<u>-</u>	<u>2,542,949</u>
Total	<u>\$3,640,533</u>	<u>\$4,175,783</u>	<u>\$ -</u>	<u>\$7,816,316</u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(4) Capital Assets

Capital asset activity for the years ended December 31 is as follows:

	2016			
	<u>Beginning</u>			<u>Ending</u>
	<u>Balances</u>	<u>Additions</u>	<u>Retirements</u>	<u>Balances</u>
Land	\$ 683,172	\$ -	\$ -	\$ 683,172
Buildings	10,654,688	26,067	(48,594)	10,632,161
Machinery and equipment	3,555,442	619,740	(378,977)	3,796,205
Trailers	552,655	-	-	552,655
Computers	47,281	-	(2,431)	44,850
Software	39,536	-	-	39,536
Vehicles	1,362,476	322,506	-	1,684,982
Furniture and fixtures	74,655	27,505	(23,780)	78,380
Infrastructure	22,416	31,345	-	53,761
Construction in process	<u>74,191</u>	<u>39,128</u>	<u>(74,191)</u>	<u>39,128</u>
Total capital assets	<u>17,066,512</u>	<u>1,066,291</u>	<u>(527,973)</u>	<u>17,604,830</u>
Less accumulated depreciation:				
Buildings	3,194,980	277,861	(47,035)	3,425,806
Machinery and equipment	2,709,711	223,646	(378,977)	2,554,380
Trailers	419,392	23,765	-	443,157
Computers	31,936	6,160	(2,431)	35,665
Software	37,952	1,056	-	39,008
Vehicles	1,281,930	36,479	-	1,318,409
Furniture and fixtures	60,714	4,010	(23,400)	41,324
Infrastructure	<u>3,459</u>	<u>1,905</u>	<u>-</u>	<u>5,364</u>
Total accumulated depreciation	<u>7,740,074</u>	<u>574,882</u>	<u>(451,843)</u>	<u>7,863,113</u>
Capital Assets, Net	<u>\$ 9,326,438</u>	<u>\$ 491,409</u>	<u>\$ (76,130)</u>	<u>\$ 9,741,717</u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(4) Capital Assets, Continued

	2015			
	<u>Beginning</u>			<u>Ending</u>
	<u>Balances</u>	<u>Additions</u>	<u>Retirements</u>	<u>Balances</u>
Land	\$ 683,172	\$ -	\$ -	\$ 683,172
Buildings	10,577,587	77,101	-	10,654,688
Machinery and equipment	3,536,587	360,063	(341,208)	3,555,442
Trailers	552,655	-	-	552,655
Computers	47,281	-	-	47,281
Software	39,536	-	-	39,536
Vehicles	1,328,238	34,238	-	1,362,476
Furniture and fixtures	74,655	-	-	74,655
Infrastructure	19,751	2,665	-	22,416
Construction-in-process	<u>74,191</u>	<u>-</u>	<u>-</u>	<u>74,191</u>
Total capital assets	<u>16,933,653</u>	<u>474,067</u>	<u>(341,208)</u>	<u>17,066,512</u>
Less accumulated depreciation				
Buildings	2,917,855	277,125	-	3,194,980
Machinery and equipment	2,854,862	188,479	(333,630)	2,709,711
Trailers	395,627	23,765	-	419,392
Computers	24,851	7,085	-	31,936
Software	33,625	4,327	-	37,952
Vehicles	1,266,175	15,755	-	1,281,930
Furniture and fixtures	57,984	2,730	-	60,714
Infrastructure	<u>2,404</u>	<u>1,055</u>	<u>-</u>	<u>3,459</u>
Total Accumulated depreciation	<u>7,553,383</u>	<u>520,321</u>	<u>(333,630)</u>	<u>7,740,074</u>
Capital Assets, Net	<u>\$ 9,380,270</u>	<u>\$ (46,254)</u>	<u>\$ (7,578)</u>	<u>\$ 9,326,438</u>

(5) Deferred Outflow of Resources

As of December 31, 2016, the Agency had deferred outflows of resources amounting to \$51,251 related to the unamortized loss on defeasement recognized in 2016 in connection with the advance refunding of a portion of the 2002 Serial Bonds.

In addition, the Agency had deferred outflows of resources amounting to \$1,355,881 at December 31, 2016 related to the NYS Employees' Retirement System. See Note (6).

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(6) Retirement Plan

(a) Plan Description and Benefits Provided

The Agency is a participant in the New York State and Local Retirement System (the System). Employees had the option to buy past service credits with the retirement system at no cost to the Agency. This is a cost sharing multiple public employer cost-sharing retirement system. The System provides retirement benefits as well as death and disability benefits. Obligations of employers and employees to contribute and benefits to employees are governed by the New York State Retirement and Social Security Law (NYSRSSL). As set forth in the NYSRSSL, the Comptroller of the State of New York (the Comptroller) serves as sole trustee and administrative head of the System. The Comptroller shall adopt and may amend rules and regulations for the administration and transaction of the business of the System and for the custody and control of their funds. The System issues a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to the New York State and Local Retirement Systems, 110 State Street, Albany, New York 12244.

The System is noncontributory except for employees who joined after July 27, 1976 and prior to January 1, 2010, who have less than ten years of service or membership, are required to contribute 3% of their salary throughout their active membership. Employees who joined on or after January 1, 2010 and before April 1, 2012 are required to contribute 3.5% throughout their active membership. Those joining on or after April 1, 2012 are required to contribute between 3% and 6%, dependent upon their salary, for their entire working career. Under the authority of the NYSRSSL, the Comptroller annually certifies the actuarially determined rates used in computing the employers' contributions based on salaries paid during the Systems' fiscal year ending March 31st. Employer contribution rates ranged from 9.3% to 16.0% of salaries for the year ended December 31, 2016 and 10.5% to 18.8% of salaries for the year ended December 31, 2015. Contributions for the current year and two preceding years were equal to 100% of the contributions required, and were as follows:

2016	\$ 343,636
2015	391,230
2014	389,080

Participating employers are required to make payments on a current basis, while amortizing existing unpaid amounts relating to the fiscal years when the local employer opts to participate in the program. The total unpaid liability as of December 31, 2016 and 2015 was \$808,067 and \$842,874, respectively.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(6) Retirement Plan (Continued)

(b) Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2016 and 2015, the Agency reported a liability of \$1,285,934 and \$268,777, respectively, for its proportionate share of the net pension liability. The net pension liability was measured as of March 31, 2016 and 2015 and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation of as of that date. The Agency's proportion of the net pension liability was based on a projection of the Agency's long-term share of contributions to the pension plan relative to the projected contributions of all participating members, actuarially determined.

At March 31, 2016 and 2015, the Agency's proportion was 0.0080119 and 0.0079561 percent, respectively.

For the year ended December 31, 2016 and 2015, the Agency recognized pension benefit (expense) of (\$439,630) and \$65,405, respectively. At December 31, 2016 and 2015, the Agency reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<u>2016</u>		<u>2015</u>	
	<u>Deferred Outflows Of Resources</u>	<u>Deferred Inflows Of Resources</u>	<u>Deferred Outflows Of Resources</u>	<u>Deferred Inflows Of Resources</u>
Differences between expected and actual experience	\$ 6,498	\$ 152,426	\$ 8,604	\$ -
Changes of assumption	342,920	-	-	-
Net difference between projected and actual earnings on plan investments	762,887	-	46,683	-
Changes in proportion and differences between the Agency's contributions and proportionate share of contributions	1,198	107,560	-	81,168
Agency's contributions subsequent to the measurement date	<u>242,378</u>	<u>-</u>	<u>288,993</u>	<u>-</u>
Total	<u><u>\$ 1,355,881</u></u>	<u><u>\$ 259,986</u></u>	<u><u>\$ 344,280</u></u>	<u><u>\$ 81,168</u></u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(6) Retirement Plan (Continued)

(b) Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions (Continued)

Agency contributions subsequent to the measurement date will be recognized as a reduction of net pension liability in the year ended December 31, 2017. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended December 31:

2017	\$211,786
2018	211,786
2019	211,786
2020	218,159

(c) Actuarial Assumptions

The total pension liability as of the measurement date was determined by using an actuarial valuation as of April 1, 2015, with update procedures used to roll forward the total pension liability to March 31, 2016. The actuarial valuation used the following actuarial assumptions.

Significant actuarial assumptions used in the April 1, 2015 valuation were as follows:

Inflation	2.5%
Salary scale	3.8% in ERS
Investment rate of return including inflation	7.0% compounded annually, net of investment expenses
Cost of living adjustments	1.3% annually
Decrements	Developed from the Plan's 2015 experience study of the period April 1, 2010 through March 31, 2015
Mortality improvement	Society of Actuaries Sale MP-2014

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected return, net of investment expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(6) Retirement Plan (Continued)

(c) Actuarial Assumptions (Continued)

The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target allocation</u>	<u>Long-Term Expected Real Rate Of return</u>
Domestic Equity	38%	7.30%
International Equity	13%	8.55%
Private Equity	10%	11.00%
Real Estate	8%	8.25%
Absolute Return Strategies	3%	6.75%
Opportunistic Portfolio	3%	8.60%
Real Assets	3%	8.65%
Bonds and Mortgages	18%	4.00%
Cash	2%	2.25%
Inflation-Indexed Bonds	<u>2%</u>	4.00%
	<u>100%</u>	

(d) Discount Rate

The discount rate used to calculate the total pension liability was 7.0%. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(6) Retirement Plan (Continued)

(e) Sensitivity of the Proportionate Share of the Net Pension Liability to the Discount Rate Assumption

The following presents the Agency's proportionate share of the net pension liability calculated using the discount rate of 7.0%, as well as what the Agency's proportionate share of the net pension asset/(liability) would be if it were calculated using a discount rate 1-percentage point lower (6.0%) or 1-percentage point higher (8.0) than the current rate:

	1% Decrease <u>(6.0%)</u>	Current Assumption <u>(7.0%)</u>	1% Increase <u>(8.0%)</u>
Employer's proportionate share of the net pension asset/(liability)	\$ (2,899,688)	\$ (1,285,934)	\$ 77,619

(f) Pension Plan Fiduciary Net Position

The components of the current-year net pension asset/(liability) of the employers as of March 31, 2016 were as follows:

	(Dollars in Millions)
	Employees Retirement System
Employers' total pension liability	\$(172,304)
Plan net position	<u>156,253</u>
Employers' net pension asset/(liability)	<u>\$ (16,051)</u>
Ratio of plan net position to the Employers' total pension asset/(liability)	<u>(90.70%)</u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(6) Retirement Plan (Continued)

(g) Restatement of Net Position

For the fiscal year ended December 31, 2015, the Agency implemented GASB Statement No. 68, Accounting and Financial Reporting for Pensions-Amendment to GASB Statement No. 27. The implementation of Statement No. 68 resulted on the reporting of an asset, deferred outflow of resources, liability, and deferred inflow of resources related to the Agency's participation in the New York State Employees' Retirement System. The Agency's net position at the beginning of 2015 has been restated as follows:

Net position (deficit) beginning of year, as previously stated	\$(1,433,945)
GASB Statement No. 68 implementation:	
Beginning System liability	<u>(359,526)</u>
Net Position, Beginning of Year, As Restated	<u>\$(1,793,471)</u>

(7) Long-Term Debt

Long-term debt at December 31, 2016 and 2015 consists of the following:

(a) Long-Term Debt

Serial bonds, term bonds, capital appreciation bonds, and long-term notes - The Agency borrows money in order to acquire or construct assets or to pay for landfill closure costs. This enables the cost of these capital assets to be borne by the present and future users, who will benefit from the capital assets. The assets of the Agency have been pledged as security for the outstanding debt.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(7) Long-Term Debt (Continued)

(b) Changes

The changes in the Agency's indebtedness during the years ended December 31 are summarized as follows:

	2016				
	Balances			Balances	Due Within
	January 1	Additions	Deductions	December 31	One Year
Term notes	\$ 275,000	\$ -	\$ (135,000)	\$ 140,000	\$ 140,000
Term bonds	479,990	-	(275,000)	204,990	204,990
Serial bonds	5,905,000	-	(1,720,000)	4,185,000	1,785,000
Capital appreciation bonds	5,448,755	-	-	5,448,755	-
Capital lease	<u>269,861</u>	<u>236,440</u>	<u>(135,739)</u>	<u>370,562</u>	<u>133,735</u>
Subtotal	12,378,606	-	(2,265,739)	10,349,307	2,263,725
Unamortized premium	<u>78,070</u>	<u>-</u>	<u>(31,230)</u>	<u>46,840</u>	<u>31,230</u>
Total	<u>\$12,456,676</u>	<u>\$236,440</u>	<u>\$(2,296,969)</u>	<u>\$10,396,147</u>	<u>\$2,294,955</u>

	2015				
	Balances			Balances	Due Within
	January 1	Additions	Deductions	December 31	One Year
Term notes	\$ 410,000	\$ -	\$ (135,000)	\$ 275,000	\$ 135,000
Term bonds	749,990	-	(270,000)	479,990	275,000
Serial bonds	7,570,000	-	(1,665,000)	5,905,000	1,720,000
Capital appreciation bonds	5,448,755	-	-	5,448,755	-
Capital lease	<u>126,384</u>	<u>234,111</u>	<u>(90,634)</u>	<u>269,861</u>	<u>86,097</u>
Subtotal	14,305,129	234,111	(2,160,634)	12,378,606	2,216,097
Unamortized premium	<u>109,300</u>	<u>-</u>	<u>(31,230)</u>	<u>78,070</u>	<u>31,230</u>
Total	<u>\$14,414,429</u>	<u>\$234,111</u>	<u>\$(2,191,864)</u>	<u>\$12,456,676</u>	<u>\$2,247,327</u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(7) Long-Term Debt (Continued)

(c) Maturity

The following is a summary of maturity of indebtedness as of December 31, 2016:

<u>Description of issue</u>	<u>Issue date</u>	<u>Final maturity</u>	<u>Interest rate</u>	<u>Outstanding at 12/31/16</u>
Term bonds	12/30/1998	08/01/2016	2.23%	\$ -
Term bonds	07/01/1999	03/01/2017	2.20%	204,990
Term note	05/01/2000	03/01/2017	2.82%	140,000
Serial bonds	12/18/2002	03/01/2018	3.75 - 5.25%	665,000
Serial bonds	07/21/2006	03/01/2021	4.50 - 5.00%	880,000
Serial bonds	05/25/2012	03/01/2018	2.00 - 3.00%	2,640,000
Capital appreciation bonds	12/18/2002	03/01/2025	4.96 - 5.29%	5,448,755
Capital lease	09/19/2013	09/19/2017	3.017%	43,386
Capital lease	03/23/2015	03/23/2019	3.13%	140,378
Capital lease	03/01/2016	03/01/2020	2.49%	186,798
				<u>10,349,307</u>
Unamortized bond premium				<u>46,840</u>
Total Long-Term Debt, Net				<u>\$10,396,147</u>

The maturities of these issues as of December 31, 2016 are as follows:

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2017	\$ 2,263,725	\$ 139,724	\$ 2,403,449
2018	1,942,889	66,330	2,009,219
2019	1,081,067	1,005,502	2,086,569
2020	994,974	1,042,843	2,037,817
2021	904,371	1,079,904	1,984,275
2022 - 2026	<u>3,162,281</u>	<u>6,252,719</u>	<u>9,415,000</u>
	10,349,307	9,587,022	19,936,329
Unamortized bond premium	<u>46,840</u>	-	<u>46,840</u>
Total	<u>\$10,396,147</u>	<u>\$9,587,022</u>	<u>\$19,983,169</u>

Interest payments are higher in later years. The capital appreciation bonds accrue interest but do not have scheduled payments.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(7) Long-Term Debt, Continued

(d) Advance Refunding of Debt

The Agency entered into agreements in prior years with M & T Bank (as escrow agent) for the advance refunding of bonds. The purpose of this advance refunding was to reduce aggregate debt service payments. M & T Bank is Trustee of the escrow funds paid to them by the Agency for the payment of the debt. The balances of the defeased bonds (2000 bond issue) not yet paid at December 31, 2016 amounted to \$-0-.

The Agency entered into an agreement in 2012 with M & T Bank (as escrow agent) for the advance refunding of bonds. The purpose of this advance refunding was to reduce aggregate debt service payments. M & T Bank is Trustee of the escrow funds paid to them by the Agency for the payment of the debt. The balances of the defeased bonds (2002 refunded bonds) not yet paid at December 31, 2016 amounted to \$2,660,000.

The escrow assets and liabilities for the defeased obligations are not included in the Agency's financial statements. Any differences between the cash flow requirements of the defeased debt and replacement debt are unknown.

(8) Customer Advances

As of December 31, 2016 and 2015, the Agency had advances amounting to \$7,800 and \$12,800, respectively.

The December 31, 2016 and 2015 balances consist of payments received from customers in 2016 for their 2017 permits and payments received from customers in 2015 for their 2016 permits, respectively. The issuances of these permits began in February 2013 and were issued as part of the new countywide flow-control law.

(9) Unrestricted Net Deficit

The Agency's unrestricted net deficit as of December 31 consists of the following:

	<u>2016</u>	<u>2015</u>
General unrestricted	\$ 4,654,299	\$ 4,235,925
Related to outstanding debt	(10,396,147)	(12,456,676)
Landfill post-closure care costs	<u>(2,081,052)</u>	<u>(2,432,768)</u>
Total	<u>\$ (7,822,900)</u>	<u>\$(10,653,519)</u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(10) Compensated Absences

Employees of the Agency are entitled to reimbursement of unused sick and vacation time at the time of retirement or other termination of service. The Agency’s policy is to accrue the cost of compensated absences as earned and vested by the Agency’s employees. This amount is included as a payable in the accompanying statements of net position in the amount of \$585,836 and \$544,785 as of December 31, 2016 and 2015, respectively.

(11) Contingencies

Contingencies at December 31, 2016 consist of the following:

(a) Risk Financing and Related Insurance

The Agency maintains insurance policies with commercial insurers. The Agency’s deductible for environmental liability insurance is \$100,000. Other deductibles for various policies range from \$1,000 to \$5,000 for each event.

(b) Landfill Closure and Post-Closure Care Costs

New York State and Federal laws required the Agency to place a final cover on its landfill sites when it stopped accepting waste and to perform certain maintenance and monitoring functions at the site for 30 years after closure. The Agency is currently in the post-closure phase at each of the landfills. The post-closure period goes throughout the year 2028. In 2016 and 2015, the annual post-closure monitoring and maintenance cost for all three landfills was \$173,421 and \$187,136, respectively. In 2010, a study was initiated to analyze the projected costs. Current projections prepared by the Agency, of annual post-closure monitoring and maintenance costs for all three landfills, are \$173,421 for each of the remaining 12 years as follows:

	<u>Ulster Landfill</u>	<u>New Paltz Landfill</u>	<u>Lloyd Landfill</u>	<u>Total</u>
Environmental monitoring	\$ 7,700	\$ 6,000	\$7,309	\$ 21,009
Leachate disposal	75,075	57,250	-	132,325
Facility maintenance	<u>13,325</u>	<u>6,762</u>	<u>-</u>	<u>20,087</u>
Total Annual Cost	<u>\$96,100</u>	<u>\$70,012</u>	<u>\$7,309</u>	<u>\$173,421</u>

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(11) Contingencies (Continued)

(b) Landfill Closure and Post-Closure Care Costs, Continued

The liability for landfill post-closure care costs at December 31, 2016 consists of the following:

Total annual cost	\$ 173,421
Remaining years	<u>12</u>
Total liability	2,081,052
Less: current portion	<u>(173,421)</u>
Landfill Post-Closure Care Costs, Excluding Current Portion	<u>\$1,907,631</u>

(c) Workers' Compensation Assessment

For the years 1999-2007, the Agency participated in a Workers' Compensation Trust that became inactive on December 31, 2008. The Trust has seen adverse claims development for the years in which the Agency was a member. Due to the continuation of these claims, the Trust's reserves were weakened and assessments have now been required. As a Member of the Trust, the Agency is legally obligated to meet this assessment demand as part of its joint and several liability agreements under the New York State Workers' Compensation Law, the Trust Agreement, and the Indemnity Agreement the Agency executed upon joining the Trust. The Agency's membership obligations exist until all claims of the Trust are liquidated or transferred to an insurance carrier. During 2013, a Memorandum of Understanding (MOU) was drafted. The MOU was executed in 2014 and was originally in effect until July 1, 2015. In September 2015, a rider to the MOU was executed, effectively extending the MOU until June 1, 2016. During 2016, all obligations were transferred to an insurance carrier and a settlement was offered to all members. The Agency agreed to the settlement terms as offered, and were issued a full release. Agency obligations amounted to \$-0- and \$47,110 as of December 31, 2016 and 2015, respectively.

(d) Litigation

In the normal course of business, it is not uncommon for the Agency to incur litigation surrounding certain events. There are outstanding lawsuits involving amounts that have been filed against the Agency. Based on the facts presently known, management and in-house legal counsel do not expect these matters to have a material adverse effect on the Agency's financial condition or results of operations.

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Notes To Financial Statements, Continued

(12) Concentrations of Credit Risk

The Agency has a credit risk with respect to receivables, due to its concentration of customers within a single industry and the possible effect of economic factors in a single geographic area.

(13) Grant Revenue

The Agency received grant revenue from two different sources for programs as follows:

(a) Municipal Waste Reduction and Recycling Program

This program is funded by the New York State Department of Environmental Conservation's Environmental Protection Fund. In accordance with Ulster County's Mandatory Source Separation and Recycling Law, the Agency continues to develop its programs with regards to waste reduction and recycling education. Grant revenue received represents a 50% reimbursement of Agency disbursements with regards to operating this program. The Agency received \$119,674 for this program during the year ended December 31, 2016. No funds were received for this program during the year ended December 31, 2015.

(b) Household Hazardous Waste State Assistance Program

The Agency received grant revenue from Household Hazardous Waste State Assistance Program. This program is funded by the New York State Department of Environmental Conservation's Environmental Protection Fund. The Agency administers household hazardous waste events several times per year. This collection provides a safe disposal alternative for electronics, hazardous pesticides, solvents, and other household chemicals to the residents of Ulster County. Grant revenue received represents a 50% reimbursement of Agency disbursements with regards to operating these events. The Agency received \$37,216 and \$38,889 for this program during the years ended December 31, 2016 and 2015, respectively.

(c) Ulster County Food Waste Composting Project

This project is funded by the New York State Department of Environmental Conservation's Environmental Protection Fund. The pilot project commenced in 2012 and the Agency began accepting food waste in August 2012. The project has been very successful for the Agency, and an expansion of the project commenced in 2016. Grant revenue received represents a 50% reimbursement of Agency disbursements with regards to operating this project. The Agency received \$129,176 for this project during the year ended December 31, 2016. No funds were received for this project during the year ended December 31, 2015.

**REQUIRED SUPPLEMENTARY INFORMATION
(OTHER THAN MD&A)**

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Schedule of Ulster County Resource Recovery Agency's (UCRRA) Contributions

NYSLRS Pension Plan
Last 10 Fiscal Years
(Dollar amounts in thousands)

	<u>2015*</u>	<u>2016*</u>
Contractually required contributions	\$ 288,993	\$ 242,378
Contributions in relation to the contractually required contributions	<u>288,993</u>	<u>242,378</u>
Contributions Deficiency (Excess)	<u>\$ -</u>	<u>\$ -</u>
UCRRA's covered-employee payroll	\$1,512,837	\$1,553,441
Contributions as a percentage of covered-employee payroll	19.10%	15.60%

* The amounts presented for the fiscal year were determined as of the measurement date March 31.

See paragraph on supplementary schedules included in independent auditors' report

ULSTER COUNTY RESOURCE RECOVERY AGENCY

Schedule of Ulster County Resource Recovery Agency's (UCRRA)
Proportionate Share of the Net Pension Liability

NYSLRS Pension Plan
Last 10 Fiscal Years
(Dollar amounts in thousands)

	<u>2015*</u>	<u>2016*</u>
UCRRA's proportion of the net pension (liability) asset	0.0079561%	0.0080119%
UCRRA's proportionate share of the net pension (liability) asset	\$ (268,777)	\$(1,285,934)
UCRRA's covered-employee payroll	\$1,512,837	\$1,553,441
UCRRA's proportionate share of the net pension (liability) asset as a percentage of its covered-employee payroll	17.77%	82.78%
Plan fiduciary net position as a percentage of the total pension liability	97.95%	90.69%

* The amounts presented for the fiscal year were determined as of the measurement date March 31.

See paragraph on supplementary schedules included in independent auditors' report



**Report On Internal Control Over Financial Reporting
And On Compliance And Other Matters Based On An Audit
Of Financial Statements Performed In Accordance
With *Government Auditing Standards***

To The Board of Directors
Ulster County Resource Recovery Agency

Independent Auditors' Report

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Ulster County Resource Recovery Agency, a Component Unit of the County of Ulster (the Agency), as of and for the year ended December 31, 2016, and the related notes to the financial statements which, collectively comprise the Agency's basic financial statements, and have issued our report thereon dated March 23, 2017.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Agency's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Agency's internal control. Accordingly, we do not express an opinion on the effectiveness of the Agency's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Agency's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Agency's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Agency's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Agency's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in cursive script that reads "Teal Becker & Charbonnet, CPAs PC". The signature is written in dark ink and is positioned to the right of the date and location information.

Albany, New York
March 23, 2017

Appendix A

2016 Financial Statements

Sullivan County

County of Sullivan
GENERAL FUND OPERATING BUDGET

Account Number	Description	2017		2018		2018	
		ACTUAL	AMENDED BUDGET	DEPARTMENT REQUEST	RECOMMENDED		
Department : CL-6160 - SOLID WASTE							
Budgetary Appropriations							
10.1011	REGULAR PAY	\$883,500	\$985,385	\$991,978	\$991,978		
10.1012	OVERTIME PAY	\$34,474	\$10,000	\$12,750	\$12,750		
10.1013	LONGEVITY	\$37,825	\$40,000	\$37,200	\$37,200		
Total: Personal Services		\$955,800	\$1,036,385	\$1,041,928	\$1,041,928		
21.2101	LAND/LAND IMPROVEMENTS	\$0	\$105,000	\$235,000	\$255,000		
21.2102	BUILDINGS AND BUILDING IMPROVTS	\$0	\$400,000	\$40,000	\$1,000,000		
21.2103	MACHINERY/EQUIPMENT	\$0	\$204,000	\$0	\$0		
21.2105	AUTOMOTIVE EQUIP	\$0	\$0	\$555,000	\$0		
Total: Equipment		\$0	\$799,000	\$890,000	\$1,255,000		
40.4006	ENGINEER/ARCHITECT/DESIGN SERV	\$97,810	\$110,000	\$295,000	\$295,000		
40.4013	CONTRACT OTHER	\$4,615,513	\$5,025,000	\$5,125,000	\$5,200,000		
40.4015	PROPERTY MAINTENANCE	\$0	\$85,000	\$140,000	\$170,000		
41.4102	LODGING	\$0	\$740	\$500	\$800		
41.4103	MEALS	\$0	\$202	\$200	\$200		
41.4104	MILEAGE/TOLLS	\$478	\$500	\$500	\$500		
41.4105	REGISTRATION FEES	\$0	\$1,400	\$1,080	\$1,080		
41.4106	REPAIRS/MAINTENANCE	\$144,907	\$178,000	\$220,000	\$190,000		
41.4109	CO FLEET CHARGEBACK	\$1,101	\$800	\$500	\$600		
42.4201	ADVERTISING	\$2,443	\$2,500	\$5,000	\$5,000		
42.4203	OFFICE SUPPLIES	\$639	\$800	\$1,000	\$5,000		
42.4204	POSTAGE	\$236	\$300	\$500	\$500		
42.4205	PRINTING	\$3,479	\$5,500	\$7,000	\$7,000		
42.4206	PUBLICATIONS	\$0	\$281	\$0	\$0		
43.4301	FURNITURE	\$0	\$100	\$500	\$500		
44.4401	SUPPLIES	\$6,942	\$5,500	\$7,000	\$7,000		
44.4401	ELECTRIC	\$90,337	\$110,000	\$110,000	\$110,000		
44.4404	PROPANE	\$23,755	\$45,000	\$45,000	\$45,000		
44.4405	PHONE LAND LINES	\$8,554	\$7,700	\$9,000	\$9,000		
44.4406	WIRELESS COMMUNICATIONS	\$623	\$851	\$900	\$900		
44.4407	UTILITY OTHER	\$8,103	\$6,500	\$8,500	\$8,500		
44.4408	CABLE/SATELLITE	\$1,231	\$1,400	\$1,400	\$1,400		
45.4501	SPEC DEPT SUPPLY MISC/OTHER	\$5,142	\$5,023	\$6,000	\$6,000		
45.4505	BLDG/PROP MAINTENANCE	\$1,666	\$4,795	\$5,000	\$5,000		
45.4526	PAINT	\$20	\$250	\$500	\$500		
45.4527	MISC STONE	\$0	\$2,150	\$2,500	\$2,500		
45.4532	SEED/MULCH ETC	\$0	\$400	\$500	\$500		
45.4540	PARTS/FLUIDS/FILTERS	\$646	\$2,438	\$3,000	\$3,000		
45.4541	SM EQUIP TOOLS APPRINGS, SM ELEC	\$1,073	\$4,841	\$2,000	\$2,000		
45.4542	WELDING	\$146	\$500	\$550	\$550		
45.4547	CHEMICALS	\$19,097	\$18,000	\$19,000	\$19,000		
45.4549	SAFETY	\$883	\$2,296	\$3,000	\$3,000		
46.4602	EMPL MEAL ALLOWANCE	\$10	\$50	\$50	\$50		
46.4603	EMPL UNIFORM ALLOWANCE	\$4,360	\$5,316	\$5,500	\$5,500		

County of Sullivan
GENERAL FUND OPERATING BUDGET

Account Number	Description	2016 ACTUAL	2017 AMENDED BUDGET	2018 DEPARTMENT REQUEST	2018 RECOMMENDED
Department : CL-8160 - SOLID WASTE					
Budgetary Appropriations					
46.4607	ANSWERING SERVICE	\$1,596	\$1,600	\$0	\$0
46.4609	SPECIAL-SERV/OTHER	\$34,493	\$1,25,000	\$1,25,000	\$1,25,000
46.4611	EMPL SAFETY/PHYSICAL EXAMS	\$1,103	\$1,000	\$3,000	\$3,000
46.4644	INTERDEPARTMENTAL CHARGEBACK	\$96,483	\$90,000	\$120,729	\$120,729
47.4701	RENTALS	\$15,000	\$15,000	\$24,000	\$24,000
47.4703	DUES	\$75	\$150	\$700	\$200
47.4708	INSURANCE	\$7,205	\$9,000	\$14,000	\$14,000
47.4710	DEPT MISC/OTHER	\$49,633	\$60,000	\$144,000	\$144,000
47.4712	EQUIP CALIBRATION	\$0	\$5,000	\$5,000	\$5,000
47.4717	BLDG/PROP/EQUIP RT PAIRS&MAINTNCE	\$91,942	\$177,522	\$220,000	\$220,000
47.4720	LABORATORY/RAY EXPENSE	\$94,451	\$97,390	\$95,000	\$95,000
47.4730	JANITORIAL EXPENSE	\$499	\$950	\$550	\$550
47.4732	BLDG/PROP ELECTRONIC MONITORING	\$2,212	\$2,112	\$2,500	\$2,500
47.4733	INDIRECT COST ALLOCATION	\$0	\$0	\$0	\$0
47.4767	NYS/US REGISTRY FEE/FINES/ASSESS	\$9,575	\$23,707	\$40,000	\$264,415
Total: Contract Services		\$5,443,561	\$6,262,068	\$6,809,169	\$7,097,485
Total: Employee Benefits					
80.8001	FICA AND MEDICARE	\$72,128	\$79,659	\$78,963	\$78,963
80.8002	HLTH INSUR ACTIVE EMPLOYEE	\$762,989	\$349,641	\$287,407	\$287,407
80.8004	HLTH INSUR OPT OUT	\$3,000	\$3,500	\$1,500	\$0
80.8005	RETIREMENT	\$146,048	\$165,797	\$165,213	\$157,278
80.8006	WORKERS COMPENSATION	\$44,104	\$48,240	\$51,629	\$37,187
80.8007	DISABILITY	\$1,642	\$1,728	\$2,147	\$1,824
Total: Employee Benefits		\$530,169	\$546,564	\$586,069	\$562,839
90.9006	TRANSFERS DEBT SERVICE	\$1,319,935	\$2,962,705	\$3,487,690	\$3,487,690
90.9007	TRANSFERS GENERAL FUND	\$500,000	\$508,010	\$0	\$500,000
Total: Interfund Transfer Debt Service		\$4,819,935	\$4,470,713	\$3,487,690	\$3,987,690
Total Budgetary Appropriations for CL-8160					
Total: Budgetary Revenues		\$11,749,463	\$13,114,727	\$12,766,676	\$13,944,742
R2130.R148	REF/GARBAGE FEE - COMMERCIAL HAUL FR LICENSE	\$13,575	\$3,500	\$3,000	\$3,000
R2130.R247	REF/GARBAGE FEE - MISC FEE/REIMBURSMT	\$15,450,531	\$5,550,000	\$5,470,000	\$5,470,000
R2130.R410	REF/GARBAGE FEE - FERNDALE TRANSFER STATION	\$120,922	\$190,000	\$210,000	\$210,000
R2130.R411	REF/GARBAGE FEE - HIGHLAND TRANSFER STATION	\$147,666	\$140,000	\$145,000	\$145,000
R2130.R412	REF/GARBAGE FEE - MAMAKATING TRANSFER STATION	\$66,918	\$59,000	\$66,000	\$66,000
R2130.R413	REF/GARBAGE FEE - ROCKLAND TRANSFER STATION	\$169,598	\$170,000	\$170,000	\$170,000
R2130.R414	REF/GARBAGE FEE - WESTERN BULL TRANSFER	\$88,674	\$67,000	\$67,000	\$67,000
R2401.R223	INTEREST EARNED - INTEREST	\$660	\$0	\$0	\$0
R2651.R247	SALE REF/RECYCLING - MISC FEE/REIMBURSMT	\$204,058	\$200,000	\$160,000	\$160,000
R2651.R310	SALE REF/RECYCLING - TIRES	\$133,081	\$50,000	\$135,000	\$135,000
R2710.R338	PREMIUM ON DEBT - OTHER	\$4,969	\$0	\$0	\$0
R2720.R247	MISC REVENUE - MISC FEE/REIMBURSMT	\$5,795,000	\$5,795,000	\$5,795,000	\$5,795,000
Total: Departmental Revenue		\$12,183,586	\$12,224,500	\$12,146,000	\$12,146,000

**County of Sullivan
GENERAL FUND OPERATING BUDGET**

Account Number	Description	2016		2017		2018	
		ACTUAL	AMENDED BUDGET	DEPARTMENT REQUEST	RECOMMENDED		
Department : CL-8160 - SOLID WASTE							
Budgetary Revenues							
R3285.R167	ST ALO HOBLE/COMM ASSIST - DEPARTMENTAL AID	\$ (12,273)	\$ (32,500)	\$ (55,000)	\$ (55,000)		
Total: State Aid		\$ (12,273)	\$ (32,500)	\$ (55,000)	\$ (55,000)		
R5031.R166	INTERFUND TRANSFR - DEBT SERVICE FUND	\$ (565)	\$ 0	\$ 0	\$ 0		
R5031.R209	INTERFUND TRANSFR - GENERAL FUND	\$ (250,000)	\$ (650,000)	\$ 0	\$ (1,155,000)		
Total: Interfund Transfer General Fund		\$ (250,565)	\$ (650,000)	\$ 0	\$ (1,155,000)		
Total Budgetary Revenues for CL-8160							
	COUNTY SHARE	\$ (12,446,424)	\$ (12,907,000)	\$ (12,203,000)	\$ (13,558,000)		
		\$ (696,861)	\$ (707,723)	\$ (563,676)	\$ (245,742)		

APPENDIX B
2016 NYSDEC ANNUAL TONNAGES MSW

Appendix B

2016 NYSDEC Annual Tonnages MSW

Greene County

PERMITTED TRANSFER STATION ANNUAL REPORT

(If you need assistance filling out this form please email swmfannualreport@dec.ny.gov or call 518-402-8678.)

Complete and submit this form by March 2, 2017.

This annual report is for the year of operation from January 01, 2016 to December 31, 2016

SECTION 1 – GENERAL INFORMATION

FACILITY INFORMATION			
FACILITY NAME: Catskill Transfer Station			
FACILITY LOCATION ADDRESS: 183 Route 385	FACILITY CITY: Catskill	STATE: NY	ZIP CODE: 12414
FACILITY TOWN: Catskill	FACILITY COUNTY: Greene	FACILITY PHONE NUMBER: 518.943.0341	
FACILITY NYS PLANNING UNIT: (A list of NYS Planning Units can be found at the end of this report). Greene County			NYSDEC REGION #: 4
360 PERMIT #:(Refer to DEC Permit) #4-1926-00109/00001	DATE ISSUED: 8/19/2016	DATE EXPIRES: 8/18/2021	NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER: (Refer to DEC Permit)
FACILITY CONTACT: Paul Vosburgh	<input type="checkbox"/> public <input type="checkbox"/> private	CONTACT PHONE NUMBER: 518.943.0341	CONTACT FAX NUMBER: 518.943.9247
CONTACT EMAIL ADDRESS: n/a			
OWNER INFORMATION			
OWNER NAME: Greene County	OWNER PHONE NUMBER: 518.943.4600	OWNER FAX NUMBER: 518.943.3868	
OWNER ADDRESS: PO Box 485	OWNER CITY: Catskill	STATE: NY	ZIP CODE: 12414
OWNER CONTACT: Robert J. Van Valkenburg	OWNER CONTACT EMAIL ADDRESS: rvanvalkenburg@discovergreene.com		
OPERATOR INFORMATION			
OPERATOR NAME: <input checked="" type="checkbox"/> same as owner		<input type="checkbox"/> public <input type="checkbox"/> private	
PREFERENCES			
Preferred address to receive correspondence: <input type="checkbox"/> Facility location address <input checked="" type="checkbox"/> Owner address <input type="checkbox"/> Other (provide):			
Preferred email address: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			
Preferred individual to receive correspondence: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			

Did you operate in 2016? Yes; Complete this form.

No; Complete and submit Sections 1 and 11. If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, also complete the "Inactive Solid Waste Management Facility or Activity Notification Form" located at: <http://www.dec.ny.gov/chemical/52706.html> .

SECTION 2 - SOLID WASTE RECEIVED

Please provide the tonnages of solid waste received. Include all waste received. Report Recyclable Materials in Section 5. DO NOT REPORT IN CUBIC YARDS!

Specify the methods used to measure the quantities disposed and the percentages measured by each method:
 100% Scale Weight _____% Estimated
 _____% Truck Count _____% Other (Specify: _____)

Type of Solid Waste	January (tons)	February (tons)	March (tons)	April (tons)	May (tons)	June (tons)	July (tons)
Asbestos							
Construction & Demolition (C&D) Debris							
Industrial Waste (Including Industrial Process Sludges)							
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	3476.83	3430.26	3838.83	4049.12	3950.10	4574.65	4593.45
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge							
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							
Total Tons Received	3476.83	3430.26	3838.83	4049.12	3950.10	4574.65	4593.45

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 2 - SOLID WASTE RECEIVED (continued)

Type of Solid Waste	Tip Fee (\$/ton)	August (tons)	September (tons)	October (tons)	November (tons)	December (tons)	Total Year (tons)	Daily Avg. (tons)
Asbestos								
Construction & Demolition (C&D) Debris								
Industrial Waste (Including Industrial Process Sludges)								
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	\$105	4980.22	4592.90	4073.95	4121.73	3821.96	49504.00	156.67
Oil/Gas Drilling Waste								
Petroleum Contaminated Soil								
Sewage Treatment Plant Sludge								
Treated Regulated Medical Waste								
Emergency Authorization Waste (Storm Debris)								
Other (specify)								
Total Tons Received		4980.22	4592.90	4073.95	4121.73	3821.96	49504.00	156.67

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SERVICE AREA OF SOLID WASTE RECEIVED (where the waste is coming from)						
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED	TONS RECEIVED
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	Windham Transfer Station	NY	Greene County	Greene County	2382.30	
	Hunter Transfer Station	NY	Greene County	Greene County	2919.87	
	Coxsackie Transfer Station	NY	Greene County	Greene County	3232.15	
	Direct Haul	NY	Greene County	Greene County	49504.00	
Oil/Gas Drilling Waste						
Petroleum Contaminated Soil						
Sewage Treatment Plant Sludge						
Treated Regulated Medical Waste (TRMW)*						
Emergency Authorization Waste (Storm Debris)						
Other (specify)						
TOTAL RECEIVED (tons):					58038.32	

* List generators that provide you Certificates of Treatment forms and quantities of TRMW from each

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 4 - TRANSFER OR DISPOSAL DESTINATION

Please identify destination of waste. Please only include waste sent off-site for disposal or further transfer prior to disposal. Exclude Recyclable Material amounts reported in Section 5. DO NOT REPORT IN CUBIC YARDS!

- If the waste is being sent to another facility for transfer or processing prior to disposal (e.g. Transfer station or C&D debris processing facility), please identify name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the transfer destination and the amount of waste transferred in the "Amount to Transfer Destination" column.
- If the waste is being sent to a landfill or combustor, please identify the name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the disposal destination and the amount of waste being sent for disposal in the "Amount to Disposal/Destination" column.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100 % Road: Waste Type(s): _____ % Rail: Waste Type(s): _____
 _____ % Water: Waste Type(s): _____ % Other (specify: _____): Waste Type(s): _____

TRANSFER OR DISPOSAL DESTINATION									
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT <small>(Name & Address)</small>	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT <small>(See Attached List of NYS Planning Units)</small>	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)		
Asbestos									
Construction & Demolition (C&D) Debris									
Industrial Waste (Including Industrial Process Sludges)									

TRANSFER OR DISPOSAL DESTINATION

TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT <i>(Name & Address)</i>	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT <i>(See Attached List of NYS Planning Units)</i>	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	Ontario County Landfill					50854.02	50854.02
	Stanley	NY	Ontario County	Ontario County			
	Seneca Meadows						
	Waterloo	NY	Seneca County	Seneca County		7184.30	7184.30
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge							
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other <i>(specify)</i>							

TOTAL SENT (tons): 58038.32

If the waste type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other waste name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other waste name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS

Is your facility also a permitted or registered Recyclables Handling & Recovery Facility?

- Yes; Complete Section 5 for material recovered from the mixed solid waste stream. Complete a Recyclables Handling & Recovery Facility (RHRF) form for material received as source separated. The RHRF form is located at: <http://www.dec.ny.gov/chemical/52706.html>.
- No; Complete Section 5 for material recovered from the mixed solid waste stream and for material received as source separated.

A. Service Area of Recyclable Material Received

Please identify where the recyclable materials are coming from. DO NOT REPORT IN CUBIC YARDS!

- If the materials **WERE** received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the materials **WERE NOT** received from another solid waste management facility, please write in “**Direct Haul**” along with the appropriate state, county and planning unit/municipality where the recyclables were generated.

SERVICE AREA OF RECYCLABLE MATERIAL RECEIVED (where the material is coming from)					
MATERIAL	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR “Direct Haul”	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Commingled Containers (metal, glass, plastic)	Greene County Recycling Report to follow. Recyclables are tracked on a countywide basis, not broken down by station.				
Commingled Paper (all grades)					
Single Stream (total)					
Brush, Branches, Trees, & Stumps					
Food Scraps					
Yard Waste (curbside)					
Other (specify)					
TOTAL RECEIVED (tons):					

If the material type is not listed, use one of the “Other” lines and fill in the name of the material. If more “Other” lines are needed, cross out an unused type and fill in the other materials name. If still more “Other” lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

Please identify destination of recovered materials. Indicate the name of the facility, address, corresponding State/Country, County/Province, Destination Planning Unit/Municipality and the amount of material transferred. **DO NOT REPORT IN CUBIC YARDS!**

Specify transport method, list type of material(s) and percentages of total waste transported by each:

_____ % Road: Material(s): _____ % Rail: Material(s): _____

_____ % Water: Material(s): _____ % Other (specify: _____): Material(s): _____

PAPER RECOVERED					
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)
Commingled Paper (all grades)					
Corrugated Cardboard					
Junk Mail					
Magazines					
Newspaper					
Office Paper					
Paperboard/Boxboard					
Other Paper (specify)					
TOTAL PAPER RECOVERED (tons):					

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

GLASS RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Container Glass						
Industrial Scrap Glass						
Other Glass (specify)						
TOTAL GLASS RECOVERED (tons):						
METAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Aluminum Foil / Trays						
Bulk Metal (from MSW)						
Bulk Metal (from CD debris)						
Enameled Appliances / White Goods						
Industrial Scrap Metal						
Tin & Aluminum Containers						
Other Metal (specify)						
TOTAL METAL RECOVERED (tons):						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

PLASTIC RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Plastic (#1 - #7)						
PET (plastic #1)						
HDPE (plastic #2)						
Other Rigid Plastics (#3 - #7)						
Industrial Scrap Plastic						
Plastic Film & Bags						
Other Plastics (specify)						
TOTAL PLASTIC RECOVERED (tons):						
MISCELLANEOUS MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Electronics						
Textiles						
Other (specify)						
TOTAL MISCELLANEOUS MATERIAL RECOVERED (tons):						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

MIXED MATERIAL RECOVERED						
RECOVERED MIXED MATERIAL	DESTINATION <small>(Name & Address)</small>	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT <small>(See Attached List of NYS Planning Units)</small>	TONS RECOVERED <small>(out of facility)</small>	
Commingled Containers <small>(metal, glass, plastic)</small>						
Commingled Paper & Containers						
Single Stream <small>(total)</small>						
Other <small>(specify)</small>						
TOTAL MIXED MATERIAL RECOVERED (tons): _____						
ORGANIC MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION <small>(Name & Address)</small>	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT <small>(See Attached List of NYS Planning Units)</small>	TONS RECOVERED <small>(out of facility)</small>	
Brush, Branches, Trees, & Stumps						
Food Scraps						
Yard Waste <small>(curbside)</small>						
Other <small>(specify)</small>						
TOTAL ORGANIC MATERIAL RECOVERED (tons): _____						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 6 – UNAUTHORIZED SOLID WASTE

Has unauthorized solid waste been received at the facility during the reporting period?

Yes No If yes, give information below for each incident (attach additional sheets if necessary):

Date Received	Type Received	Date Disposed	Disposal Method & Location

Radiation Monitoring

Does your facility use a fixed radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

Does your facility use a portable radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

If the radiation monitors have been triggered give information below for each incident:

Incident Number	Received		Hauler	Origin	Truck Number	Reading	Disposal Status	Removed	
	Date	Time						Date	Time

SECTION 7 - COST ESTIMATES AND FINANCIAL ASSURANCE DOCUMENTS

Are there required cost estimates and financial assurance documents for closure?

Yes No If yes, attach additional sheets reflecting annual adjustments for inflation and any changes to the Closure Plan?

SECTION 8 – PROBLEMS

Were any problems encountered during the reporting period (e.g., specific occurrences which have led to changes in facility procedures)?

Yes No If yes, attach additional sheets identifying each problem and the methods for resolution of the problem.

SECTION 9 – CHANGES

Were there any changes from approved reports, plans, specifications, and permit conditions?

Yes No If yes, attach additional sheets identifying changes with a justification for each change.

SECTION 10 - PERMIT/CONSENT ORDER REPORTING REQUIREMENTS

Are there any additional permit/consent order reporting requirements not covered by the previous sections of this form?

Yes No If yes, attach additional sheets identifying the reporting requirements with their respective responses.

SECTION 11 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit one completed form with an original signature to the appropriate Regional Office (See attachment for Regional Office addresses and Solid Waste Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

**New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Permitting and Planning
625 Broadway
Albany, New York 12233-7260
Fax 518-402-9041
Email address: SWMFannualreport@dec.ny.gov**

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have the authority to sign this report form pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Signature

Date

Robert J. Van Valkenburg

Superintendent

518 943 4600

Name (Print or Type)

Title (Print or Type)

Phone Number

PO Box 485

Catskill

NY, 12414

Address

City

State and Zip

rvanvalkenburg@discovergreene.com

Email (Print or Type)

ATTACHMENTS: YES NO (Please check appropriate line)

**Division of Materials Management
New York State Department of Environmental Conservation
Albany, New York 12233-7260**

TRANSFER STATION

A transfer station is a solid waste management facility where solid waste is received for the purpose of subsequent transfer to another solid waste management facility for further processing, treatment, transfer or disposal. Further information and a listing of the transfer stations are available online at <http://www.dec.ny.gov/chemical/23678.html>.

If your facility is authorized to process construction and demolition debris you need to submit a Construction & Demolition Debris Processing Facility Annual Report. If your facility is authorized to operate as a transfer station and to process construction and demolition debris you must submit both annual reports.

If your facility is authorized to operate as a recyclables handling and recovery facility you need to submit a Recyclables Handling and Recovery Facility Annual Report instead of a Transfer Station Annual Report. If your facility is authorized to operate as a transfer station and a recyclables handling & recovery facility you must submit both annual reports.

Forms for all solid waste management facilities can be found at <http://www.dec.ny.gov/chemical/52706.html> and a brief description of each type of facility can be found at <http://www.dec.ny.gov/chemical/8495.html>.

Annual Report

Submit the Annual Report no later than March 2, 2017.

Reporting of the information indicated on this Transfer Station Annual Report form is required pursuant to 6 NYCRR 360-1.4(c); 360-1.8(e)(1)(ii), (h)(8); 360-1.14(e)(2), (i)(1); 360-11.1(a), (b)(1)(viii), 360-11.4(h) and (j). Failure to provide the required information requested is a violation of Environmental Conservation Law. Timely submission of a properly completed form to the Department's Regional Office that has jurisdiction over your facility and to the Department's Central Office is required to meet the Annual/Quarterly Report requirements of 6 NYCRR Part 360.

Where the Annual Report requirements have been modified, appropriate Sections (as necessary to reflect the modification) must be completed and submitted with a copy of the Department's written notification which allows the modification.

Entries on the report forms should be either typewritten or neatly printed in black ink. Attach additional sheets if space on the pages is insufficient or supplementary information is required or appropriate.

Solid Waste Volume To Weight Conversion Factors

MATERIAL	EQUIVALENT	
Construction and Demolition Debris	1 cubic yard	0.75 tons
Compacted Solid Waste	1 cubic yard	0.5 tons
Uncompacted Solid Waste	1 cubic yard	0.1 tons

Recyclables Volume To Weight Conversion Factors

MATERIAL	EQUIVALENT		MATERIAL	EQUIVALENT	
GLASS - w hole bottles	1 cubic yard	0.35 tons	PLASTIC - PET - w hole	1 cubic yard	0.015 tons
GLASS - semi crushed	1 cubic yard	0.70 tons	PLASTIC - PET - flattened	1 cubic yard	0.04 tons
GLASS - crushed	1 cubic yard	0.88 tons	PLASTIC - PET - baled	1 cubic yard	0.38 tons
GLASS - uncrushed	55 gallon	0.16 tons	PLASTIC - styrofoam	1 cubic yard	0.02 tons
			PLASTIC - HDPE - w hole	1 cubic yard	0.012 tons
PAPER - high grade loose	1 cubic yard	0.18 tons	PLASTIC - HDPE - flattened 1	1 cubic yard	0.03 tons
PAPER - high grade baled	1 cubic yard	0.36 tons	PLASTIC - HDPE - baled	1 cubic yard	0.38 tons
PAPER - mixed loose	1 cubic yard	0.15 tons	PLASTIC - mixed (grocery bags)	45 gallon bag	0.01 tons
NEWSPRINT - loose	1 cubic yard	0.29 tons			
NEWSPRINT - compacted	1 cubic yard	0.43 tons	ALUMINUM - cans - w hole	1 cubic yard	0.03 tons
CORRUGATED - loose	1 cubic yard	0.015 tons	ALUMINUM - cans - flattened	1 cubic yard	0.125 tons
CORRUGATED - baled	1 cubic yard	0.55 tons	FERROUS METAL - cans w hole	1 cubic yard	0.08 tons
			FERROUS METAL - cans	1 cubic yard	0.43 tons
			WHITE GOODS - uncompacted	1 cubic yard	0.10 tons
			WHITE GOODS - compacted	1 cubic yard	0.5 tons

SECTION 3 – SERVICE AREA OF SOLID WASTE RECEIVED

Identify the facility's service area by indicating the type of solid waste received, the Solid Waste Management facility (SWMF) from which it was received by your facility (or Direct Haul), the corresponding State/Country, the County/Province, and the NYS Planning Unit from which waste was received. **Refer to the list of NYS Planning Units that can be found at the end of this report.** The Total Tons Received reported below should equal the Total Tons Received in Section 2 (Solid Waste Received). DO NOT REPORT IN CUBIC YARDS!

Additional Service Area Guidance:

- 1) Direct hauled from the generator of the waste. In the case where the waste is hauled to your facility from the generator (i.e. hauled from residences, commercial establishments, etc.), **"Direct Haul"** is the appropriate response in Column 2 under "Service Area." Please report the tonnage by waste type and identify the state, county and planning unit where it was generated;
- 2) Sent to your transfer station from another solid waste management facility. Waste may be sent to your transfer station from another solid waste management facility. In this case, please report the tonnage by waste type from each sending solid waste management facility, as well as the sending facility's name, address, county, and the planning unit where the sending facility is located.

SECTION 5 – TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS

A. Service Area of Recyclable Material Received

Identify the facility's service area by indicating the type of material received, the Solid Waste Management facility (SWMF) from which it was received by your facility (or Direct Haul), the corresponding State/Country, the County/Province, the NYS Planning Unit from which waste was received. **Refer to the list of NYS Planning Units that can be found at the end of this report.** DO NOT REPORT IN CUBIC YARDS!

Additional Service Area Guidance:

- 1) Direct hauled from the generator of the recyclables. In the case where the recyclables are hauled to your transfer station from the generator (i.e. hauled from residences, commercial establishments, etc.), **"Direct Haul"** would be the appropriate response in Column 2 under "Service Area". Please report the tonnage by material type and identify the state, county and planning unit where it was generated; or
- 2) Sent to your transfer station from another solid waste management facility. Recyclables may be sent to your transfer station from another solid waste management facility. In this case, please report the tonnage by material type from each sending solid waste management facility, as well as the sending facility's name, address, county, and the planning unit where the sending facility is located.

New York State Planning Units & Regions

When completing the annual report, please use the Planning Unit listed below that corresponds with the municipality and county. **Note: The Planning Unit is not the DEC Region.**

DEC Region	Planning Unit	County	Municipality
1	Glen Cove	Nassau	Glen Cove
	Hempstead		Hempstead
	Long Beach		Long Beach
	North Hempstead Solid Waste Management Authority		North Hempstead, <i>except 10 villages (see below)</i>
	Oyster Bay Solid Waste Disposal District		Oyster Bay, <i>except 17 villages (see below)</i>
	Babylon	Suffolk	Babylon
	Brookhaven		Brookhaven
	East Hampton		East Hampton
	Fishers Island Waste Management District		Fishers Island
	Huntington		Huntington
	Islip Resource Recovery Agency		Islip
	Riverhead		Riverhead
	Shelter Island		Shelter Island
	Smithtown		Smithtown
	Southampton		Southampton
Southold	Southold, <i>except Fishers Island</i>		
2	New York City	Bronx	Bronx
		Kings	Kings (Brooklyn)
		New York	New York (Manhattan)
		Queens	Queens
		Richmond	Richmond (Staten Island)
3	Dutchess County	Dutchess	
	Orange County	Orange	
	Putnam County	Putnam	
	Rockland County Solid Waste Management Authority (RCSWMA)	Rockland	
	Sullivan County	Sullivan	
	Ulster County Resource Recovery Agency (UCRRA)	Ulster	
	Westchester County	Westchester	
4	Colonie	Albany	Cohoes
			Colonie (Town)
			Colonie (Village)
			Menands
	Capital Region Solid Waste Management Partnership	Albany	Albany
			Altamont
			Berne
			Bethlehem
			Green Island
			Guilderland
			Knox
			New Scotland
			Rensselaerville
			Voorheesville
Westerlo			
Rensselaer	East Greenbush		

			Rensselaer	
4	Eastern Rensselaer County Solid Waste Management Authority	Rensselaer	Castleton-on-Hudson	
			Hoosick Falls	
			Nassau (Village)	
			Pittstown	
			Schaghticoke	
			Stephentown	
			Valley Falls	
			Berlin	Inactive Members
			Grafton	
			Hoosick	
			Nassau (Town)	
			Petersburg	
			Poestenkill	
			Columbia County	Columbia
Delaware County	Delaware			
Greene County	Greene			
Montgomery County	Montgomery			
Otsego County	Otsego			
Schoharie County	Schoharie			
Schenectady County	Schenectady			
5	Clinton County	Clinton		
	Essex County	Essex		
	County of Franklin Solid Waste Management Authority (CFSWMA)	Franklin		
	Fulton County	Fulton		
	Hamilton County	Hamilton		
	Saratoga County	Saratoga		
	Warren County	Warren		
	Washington County	Washington		
6	Development Authority of the North Country (DANC)	Jefferson		
		Lewis		
		St. Lawrence		
	Oneida-Herkimer Solid Waste Authority	Oneida		
	Herkimer			
7	Broome County	Broome		
	Cayuga County	Cayuga		
	Chenango County	Chenango		
	Cortland County	Cortland		
	Madison County	Madison		
	Onondaga County	Onondaga	All municipalities, except Town and Village of Skaneateles (See below)	
	Oswego County	Oswego		
	Tioga County	Tioga		
	Tompkins County	Tompkins		
8	Chemung County	Chemung		
	GLOW Region Solid Waste Management Committee	Genesee		
		Livingston		
	Monroe County	Monroe		
	Ontario County	Ontario		
	Orleans County	Orleans		
	Schuyler County	Schuyler		
	Seneca County	Seneca		
Steuben County	Steuben			

	Wayne County	Wayne		
	Yates County	Yates		
9	Allegany County	Allegany		
	Cattaraugus County	Cattaraugus		
	Chautauqua County	Chautauqua		
	GLOW Region Solid Waste Management Committee	Wyoming		
	Niagara	Niagara		
	Northeast-Southtowns Solid Waste Management Board (NEST)		Erie	Akron
				Alden
				Angola
				Aurora
				Blasdell
				Boston
				Brant
				Cheektowaga
				Clarence
				Colden
				Collins
				Concord
				Depew
				East Aurora
				Eden
				Elma
				Evans
				Farnham
				Gowanda
				Hamburg
Holland				
Lackawanna				
Lancaster				
Marilla				
Newstead				
North Collins				
Orchard Park				
Sardinia				
Sloan				
Springville				
Wales				
West Seneca				
Northwest Communities Solid Waste Management Board (NWCB)		Erie	Amherst	
			Grand Island	
			Kenmore	
			Tonawanda	
			Williamsville	

Municipalities Not Currently Affiliated With a Recognized Planning Unit

DEC Region	County	Non-Member Municipality	
1	Nassau	North Hempstead	Great Neck Estates
			Great Neck Plaza
			Mineola
			New Hyde Park
			Old Westbury
			Plandome
			Plandome Manor
			Roslyn Harbor
			Westbury
			Williston Park
		Oyster Bay	Bayville
			Brookville
			Centre Island
			Cove Neck
			East Hills
			Glenwood
			Lattington
			Laurel Hollow
			Matinecock
			Mill Neck
			Muttontown
			Old Brookville
			Old Westbury
			Oyster Bay Cove
			Roslyn Harbor
Sea Cliff			
Upper Brookville			
4	Albany	Coeymans	
		Ravena (Village)	
		Watervliet	
	Rensselaer	Brunswick	
		North Greenbush	
		Sand Lake	
		Schodack	
	Troy		
Columbia	Canaan		
7	Onondaga	Skaneateles (Town and Village)	
9	Erie	City of Buffalo	

MATERIAL MANAGEMENT PROGRAM CONTACTS

CENTRAL OFFICE

Bureau of Permitting and Planning
625 Broadway
Albany, NY 12233-7260
Phone: (518) 402-8678

For Submission of Annual Reports only:

Fax: (518) 402-9041

Email: For solid waste management facilities - swmfannualreport@dec.ny.gov

REGIONAL OFFICE ADDRESS & LEAD CONTACT PERSON

REGION 1 (Nassau, Suffolk)

Syed Rahman
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790
Phone: (631) 444-0375

REGION 2 (Bronx, Kings, New York, Queens, Richmond)

Joseph O'Connell
47-40 21st Street
Long Island City, NY 11101-5407
Phone: (718) 482-4896

REGION 3 (Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester)

James Lansing
21 South Putt Corners Road
New Paltz, NY 12561
Phone: (845) 256-3123

REGION 4 (Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady, Schoharie)

Victoria Schmitt
1130 North Westcott Road
Schenectady, NY 12306
Phone: (518) 357-2243

REGION 5 (Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren, Washington)

David Mt. Pleasant
232 Golf Course Road
Warrensburg, NY 12885
Phone: (518) 623-1230

REGION 6 (Herkimer, Jefferson, Lewis, Oneida, St. Lawrence)

Yuan Zeng
317 Washington Street
Watertown, NY 13601
Phone: (315) 785-2584

REGION 7 (Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, Tompkins)

Thomas Annal
615 Erie Boulevard West
Syracuse, NY 13204
Phone: (315) 426-7419

REGION 8 (Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Yates)

Greg MacLean
6274 East Avon-Lima Road
Avon, NY 14414
Phone: (585) 226-5408

REGION 9 (Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming)

Peter Grasso
270 Michigan Avenue
Buffalo, NY 14203
Phone: (716) 851-7220

Appendix B

2016 NYSDEC Annual Tonnages MSW

UCRRA (Ulster County)

PERMITTED TRANSFER STATION ANNUAL REPORT

(If you need assistance filling out this form please email ewmannualreport@dec.ny.gov or call 518-402-6678.)

Complete and submit this form by March 2, 2017.

This annual report is for the year of operation from January 01, 2016 to December 31, 2016

SECTION 1 - GENERAL INFORMATION

FACILITY INFORMATION			
FACILITY NAME: <u>Ulster County Resource Recovery Agency (Ulster Regional Transfer Station)</u>			
FACILITY LOCATION ADDRESS: <u>999 Flatbush Rd</u>	FACILITY CITY: <u>Kingston</u>	STATE: <u>NY</u>	ZIP CODE: <u>12401</u>
FACILITY TOWN: <u>Ulster</u>	FACILITY COUNTY: <u>Ulster</u>	FACILITY PHONE NUMBER: <u>(845) 336-0600</u>	
FACILITY NYS PLANNING UNIT: (A list of NYS Planning Units can be found at the end of this report). <u>Ulster County Resource Recovery Agency (UCRRA)</u>			NYSDEC REGION #: <u>3</u>
360 PERMIT #: (Refer to DEC Permit) <u>3-5154-00125-00001</u>	DATE ISSUED: <u>8/13/09</u>	DATE EXPIRES: <u>8/17/19</u>	NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER: (Refer to DEC Permit) <u>56T02</u>
FACILITY CONTACT: <u>Charles Whittaker</u>	<input checked="" type="checkbox"/> public <input type="checkbox"/> private	CONTACT PHONE NUMBER: <u>(845) 336-0600</u>	CONTACT FAX NUMBER: <u>(845) 336-4129</u>
CONTACT EMAIL ADDRESS: <u>cwhi@ucrra.org</u>			
OWNER INFORMATION			
OWNER NAME: <u>Public Benefit Corp.</u>	OWNER PHONE NUMBER: <u>(845) 336-0600</u>	OWNER FAX NUMBER: <u>(845) 336-4129</u>	
OWNER ADDRESS: <u>PO Box 6219</u>	OWNER CITY: <u>Kingston</u>	STATE: <u>NY</u>	ZIP CODE: <u>12402</u>
OWNER CONTACT: <u>Charles Whittaker</u>	OWNER CONTACT EMAIL ADDRESS: <u>ucrra@ucrra.org</u>		
OPERATOR INFORMATION			
OPERATOR NAME: <input type="checkbox"/> same as owner <u>Charles Whittaker</u>	<input checked="" type="checkbox"/> public <input type="checkbox"/> private		
PREFERENCES			
Preferred address to receive correspondence: <input type="checkbox"/> Facility (location) address <input type="checkbox"/> Other (provide):		<input checked="" type="checkbox"/> Owner address	
Preferred email address: <input checked="" type="checkbox"/> Facility Contact <input type="checkbox"/> Other (provide):		<input type="checkbox"/> Owner Contact	
Preferred individual to receive correspondence: <input checked="" type="checkbox"/> Facility Contact <input type="checkbox"/> Other (provide):		<input type="checkbox"/> Owner Contact	

Did you operate in 2016? Yes; Complete this form.

No; Complete and submit Sections 9 and 11. If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, also complete the "Inactive Solid Waste Management Facility or Activity Notification Form" located at: <http://www.dec.ny.gov/chemical/52706.html>

SECTION 2 - SOLID WASTE RECEIVED

Please provide the tonnages of solid waste received. Include all waste received. Report Recyclable Materials in Section 5. DO NOT REPORT IN CUBIC YARDS!

Specify the methods used to measure the quantities disposed and the percentages measured by each method:

LCQ % Scale Weight _____ % Estimated

_____ % Truck Count _____ % Other (Specify: _____)

Type of Solid Waste	January (tons)	February (tons)	March (tons)	April (tons)	May (tons)	June (tons)	July (tons)
Asbestos							
Construction & Demolition (C&D) Debris	1,159.05	1,092.60	1,632.78	1,687.44	1,691.97	1,784.86	1,689.77
Industrial Waste (Including Industrial Process Sludges)							
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	4,337.29	4,300.14	4,734.10	4,475.38	4,833.67	5,550.99	5,221.92
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge							
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							
Total Tons Received	5,496.34	5,392.74	6,366.88	6,162.82	6,525.59	7,335.85	6,911.69

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

308 days

SECTION 2 - SOLID WASTE RECEIVED (continued)

Type of Solid Waste	Tip Fee (\$/ton)	August (tons)	September (tons)	October (tons)	November (tons)	December (tons)	Total Year (tons)	Daily Avg. (tons)
Asbestos								
Construction & Demolition (C&D) Debris (Including Industrial Process Sludges)	\$103/ton	1,855.56	1,926.13	1,866.56	1,606.89	1,377.48	19,271.09	62.56
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	\$103/ton	5,576.33	5,238.62	4,803.29	5,078.21	4,843.58	58,943.47	191.37
Oil/Gas Drilling Waste								
Petroleum Contaminated Soil								
Sewage Treatment Plant Sludge								
Treated Regulated Medical Waste								
Emergency Authorization Waste (Storm Debris)								
Other (specify)								
Total Tons Received		7,431.89	7,164.75	6,669.85	6,635.10	6,121.06	78,214.56	253.93

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 3 – SERVICE AREA OF SOLID WASTE RECEIVED

Please identify where the waste is coming from. The total tons received reported below should equal the total tons received in Section 2 (Solid Waste Received). DO NOT REPORT IN CUBIC YARDS!

- If the waste WAS received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the waste WAS NOT received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the waste was generated.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100 % Road; Waste Type(s): C&D (m.s.w.)

% Rail: Waste Type(s):

% Other (specify):

); Waste Type(s):

SERVICE AREA OF SOLID WASTE RECEIVED (where the waste is coming from)					
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Asbestos					
Construction & Demolition (C&D) Debris	"Direct Haul" Ulster County Regional Transfer Station, entire County of Ulster & Ulster County Municipalities	NY	Ulster	WDRRA	19,271.09
Industrial Waste (including Industrial Process Sludges)					

SERVICE AREA OF SOLID WASTE RECEIVED (where the waste is coming from)						
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED	
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	"Direct Haul" Ulster County Regional Transfer Station, entire County of Ulster & Ulster County Municipalities	NY	Ulster	(UCRRA)	58,943.47	
Oil/Gas Drilling Waste						
Petroleum Contaminated Soil						
Sewage Treatment Plant Sludge						
Treated Regulated Medical Waste (TRMW)*						
Emergency Authorization Waste (Storm Debris)						
Other (specify)						
TOTAL RECEIVED (tons):					78,214.56	

* List generators that provide you Certificates of Treatment forms and quantities of TRMW from each

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 4 - TRANSFER OR DISPOSAL DESTINATION

Please identify destination of waste. Please only include waste sent off-site for disposal or further transfer prior to disposal. Exclude Recyclable Material amounts reported in Section 5. DO NOT REPORT IN CUBIC YARDS!

- If the waste is being sent to another facility for transfer or processing prior to disposal (e.g. Transfer station or C&D debris processing facility), please identify name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the transfer destination and the amount of waste transferred in the "Amount to Transfer Destination" column.
- If the waste is being sent to a landfill or combustor, please identify the name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the disposal destination and the amount of waste being sent for disposal in the "Amount to Disposal Destination" column.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100% Road: Waste Type(s): MSW % Rail: Waste Type(s): _____
 % Water: Waste Type(s): _____ % Other (specify: _____): Waste Type(s): _____

TRANSFER OR DISPOSAL DESTINATION							
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Asbestos							
Construction & Demolition (C&D) Debris							
Industrial Waste (including Industrial Process Sludges)							

TRANSFER OR DISPOSAL DESTINATION

TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	Seneca Meadows Landfill, Waterloo 1786 Salaman Rd. Waterloo, NY 13165	(NY)	(Seneca)	(Seneca County)		76,559.43	76,559.43
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge							
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							

TOTAL SENT (tons): 76,559.43

If the waste type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other waste name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other waste name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS

Is your facility also a permitted or registered Recyclables Handling & Recovery Facility?

Yes; Complete Section 5 for material recovered from the mixed solid waste stream. Complete a Recyclables Handling & Recovery Facility (RHRF) form for material received as source separated. The RHRF form is located at: <http://www.dcc.ny.gov/chemical/52706.html>.

No; Complete Section 5 for material recovered from the mixed solid waste stream and for material received as source separated.

A. Service Area of Recyclable Material Received

Please identify where the recyclable materials are coming from. DO NOT REPORT IN CUBIC YARDS!

- If the materials WERE received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the materials WERE NOT received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the recyclables were generated.

MATERIAL	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Commingled Containers (metal, glass, plastic)					
Commingled Paper (all grades)					
Single Stream (total)					
Brush, Branches, Trees, & Stumps					
Food Scraps					
Yard Waste (curbside)					
Other (specify)					
TOTAL RECEIVED (tons):					

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

Please identify destination of recovered materials. Indicate the name of the facility, address, corresponding State/Country, County/Province, Destination Planning Unit/Municipality and the amount of material transferred. DO NOT REPORT IN CUBIC YARDS!

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100 % Road: Material(s): Cardboard

% Water: Material(s): _____

% Rail: Material(s): _____

% Other (specify: _____): Material(s): _____

PAPER RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Paper (all grades)						
Corrugated Cardboard	Materials Recovery Facility 999 Flatbush Rd. Kingston, NY.	NY	Ulster	WCDEA	48.24	
Junk Mail						
Magazines						
Newspaper						
Office Paper						
Paperboard / Boxboard						
Other Paper (specify)						
TOTAL PAPER RECOVERED (tons):					48.24	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

GLASS RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Container Glass						
Industrial Scrap Glass						
Other Glass (specify)						
TOTAL GLASS RECOVERED (tons):						
METAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Aluminum Foil / Trays						
Bulk Metal (from MSW)	B. Millens + Sons Inc 4 Kieffer Ln, Kingston, NY 12401	NY	Ulster	UCRRA	102.62	
Bulk Metal (from CD debris)	Tam Enterprises PO Box 2234 Kingston, NY 12402	NY	Ulster	UCRRA	113.92	
Enameled Appliances / White Goods						
Industrial Scrap Metal						
Tin & Aluminum Containers						
Other Metal (specify)	B. Millens Kingston NY Tam Enterprises Kingston NY	NY	Ulster	UCRRA	1.61	
Aluminum					1.45	
TOTAL METAL RECOVERED (tons):					219.60	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

PLASTIC RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Plastic (#1 - #7)						
PET (plastic #1)						
HDPE (plastic #2)						
Other Rigid Plastics (#3 - #7)						
Industrial Scrap Plastic						
Plastic Film & Bags						
Other Plastics (specify)						
TOTAL PLASTIC RECOVERED (tons):						
MISCELLANEOUS MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Electronics	Electronic Recyclers International (see attachment)				40.67	
Textiles						
Other (specify)	Casings Inc. 169 Maple Ave Catskill, NY	NY	Green	Green County	16.00	
TOTAL MISCELLANEOUS MATERIAL RECOVERED (tons):					56.67	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

MIXED MATERIAL RECOVERED						
RECOVERED MIXED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Containers (metal, glass, plastic)						
Commingled Paper & Containers						
Single Stream (total)	Materials Recovery Facility 999 Flatbush Rd. Kingston, NY	NY	Ulster	UCRRA	37.08	
Other (specify)						
TOTAL MIXED MATERIAL RECOVERED (tons):					37.08	
ORGANIC MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Brush, Branches, Trees, & Stumps						
Food Scraps						
Yard Waste (curbside)						
Other (specify)						
TOTAL ORGANIC MATERIAL RECOVERED (tons):						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 6 - UNAUTHORIZED SOLID WASTE

Has unauthorized solid waste been received at the facility during the reporting period?

Yes No If yes, give information below for each incident (attach additional sheets if necessary):

Date Received	Type Received	Date Disposed	Disposal Method & Location
1/1/16 to 12/31/16	Lead Acid Batteries	1/1/16 to 12/31/16	1/1/16 6/15/16 Bimberns + Sons Inc 12/31/16 Kuffer In. Kingston, NY
1/1/16 to 12/31/16	Fluorescent bulbs + ballast	1/1/16 to 12/31/16	Clean Newbury Envir. Svc. Inc. Glenmont, NY 12077
1/1/16 to 12/31/16	Propan Tanks	1/1/16 to 12/31/16	Brett + Graft Inc, Broadview Fort Ewen, NY 12466
1/1/16 to 12/31/16	Green appliances	1/1/16 to 12/31/16	Interstate Refrigerant Recovery PO Box 517 South, MA 02035

6/16/16 Tam Enterprises Inc
P.O. Box 2234
12/31/16 Kingston, NY 12402

Radiation Monitoring

Does your facility use a fixed radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

Does your facility use a portable radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

If the radiation monitors have been triggered give information below for each incident:

Incident Number	Received		Hauler	Origin	Truck Number	Reading	Disposal Status		Removed	
	Date	Time					Date	Time	Date	Time

SECTION 7 - COST ESTIMATES AND FINANCIAL ASSURANCE DOCUMENTS

Are there required cost estimates and financial assurance documents for closure?

Yes No If yes, attach additional sheets reflecting annual adjustments for inflation and any changes to the Closure Plan?

SECTION 8 – PROBLEMS

Were any problems encountered during the reporting period (e.g., specific occurrences which have led to changes in facility procedures)?

Yes No If yes, attach additional sheets identifying each problem and the methods for resolution of the problem.

SECTION 9 – CHANGES

Were there any changes from approved reports, plans, specifications, and permit conditions?

Yes No If yes, attach additional sheets identifying changes with a justification for each change.

SECTION 10 - PERMIT/CONSENT ORDER REPORTING REQUIREMENTS

Are there any additional permit/consent order reporting requirements not covered by the previous sections of this form?

Yes No If yes, attach additional sheets identifying the reporting requirements with their respective responses.

SECTION 11 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit one completed form with an original signature to the appropriate Regional Office (See attachment for Regional Office addresses and Solid Waste Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

**New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Permitting and Planning
625 Broadway
Albany, New York 12233-7260
Fax 518-402-9041
Email address: SWMFannualreport@dec.ny.gov**

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have the authority to sign this report form pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.


Signature

2/21/2017
Date

Charles Whittaker Operations Manager (845) 336-0600
Name (Print or Type) Title (Print or Type) Phone Number

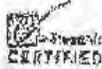
999 Flatbush Rd. Kingston NY 12401
Address City State and Zip

cwhi@ucarra.org
Email (Print or Type)

ATTACHMENTS: YES NO (Please check appropriate line)



Electronic Recyclers International, Inc.[®]
1-800-ERI-DIRECT (374-3473)



Tisha Cortoni-Zafferano
National Account Executive



7815 N Palm Avenue, Ste. 140
Fresno, CA 93711

Office (559) 442-3989

Cell (559) 974-5189

Email tisha.zafferano@electronicrecyclers.com

Web www.electronicrecyclers.com

DEPARTMENT USE ONLY	
DEC APPLICATION NO.	
ACTIVITY NUMBER(S)	

APPLICATION FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

Please read all instructions before completing this application

Reset Form

Please TYPE or PRINT clearly

1. APPLICATION TYPE (CHECK ALL APPLICABLE BOXES):		2. APPLICANT IS:	3. IS APPLICATION FILED BY OR ON BEHALF OF A MUNICIPALITY? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Initial (New)	<input type="checkbox"/> Renewal	<input checked="" type="checkbox"/> Facility Owner	If Yes, Name: <u>Ulster County Resource Recovery Agency</u>
<input type="checkbox"/> Subsequent Landfill Stage (New)	<input checked="" type="checkbox"/> Modification	<input checked="" type="checkbox"/> Facility Operator	

4. FACILITY OWNER'S INFORMATION	5. FACILITY OPERATOR'S INFORMATION	6. ENGINEER'S INFORMATION
Name: <u>Ulster County Resource Recovery Agency</u>	Name: <u>Ulster County Resource Recovery Agency</u>	Name: <u>Rodney L. Aldrich, P.E.</u>
Address: <u>P.O. Box 6219</u>	Address: <u>P.O. Box 6219</u>	License #: <u>059778</u>
City: <u>Kingston</u>	City: <u>Kingston</u>	Firm Name: <u>Sterling Environmental Engineering, P.C.</u>
Date/Zip: <u>NY 12402</u> Phone: <u>845-336-0600</u>	Date/Zip: <u>NY 12402</u> Phone: <u>845-336-0600</u>	Address: <u>24 Wade Road, LaFarge, NY</u>
Email: <u>trose@ucr-ra.org</u>	Email: <u>trose@ucr-ra.org</u>	Phone: <u>518-456-4900</u> Email: <u>Ses Box 10</u>

7. FACILITY NAME AND LOCATION (Attach USGS Topo Map showing exact location)	8. SITE OWNER'S INFORMATION
Name: <u>Ulster Transfer Station</u>	Name: <u>Ulster County Resource Recovery Agency</u>
Street: <u>999 Flatbush Road</u>	Address: <u>P.O. Box 6215</u>
City/Town/Zip: <u>Kingston, New York, 12401</u>	City/Town: <u>Kingston</u>
Town: <u>Ulster</u> County: <u>Ulster County</u>	State/Zip: <u>NY 12402</u> Phone: <u>845-336-0600</u>
Coordinates: NYTM-E <u>509 626</u> NYTM-N <u>4647 813</u>	Email: <u>trose@ucr-ra.org</u>

9. TYPE OF FACILITY (Check all applicable boxes)

Composting/Thermal Treatment (360-3) Composting/Other Organics Process (360-4)

C & D Debris Processing (360-16) Land Application/Associated Storage (360-5)

Landfill (Specify category): _____

Recyclables Handling & Recovery (360-12) Refused Derived Fuel Processing (360-3)

Regulated Medical Waste (360-10, 17) Transfer Station (360-11)

Waste Oil (360-14) Waste Tire Storage (360-13)

Other (Describe): _____

10. NAME(S) OF ALL MUNICIPALITIES SERVED:

All Ulster County Municipalities

Roll 5 Continued:
rodney.aldrich@sterlingenv.com

11. SOLID WASTES ACCEPTED: Identify facility capacity and throughput of each waste type, as applicable.

MSW and C&D: 650 tons/day, 3,900 tons/week

Yard Waste: 10,000 cubic yards/year

Source Separated Organics: 2,500 tons/year

Animal Carcasses: 10 tons/year

12. FACILITY SIZE

a. Facility size proposed (acres): 42

b. Total site area (acres): 42

c. Landfill only: Facility size ultimately planned (acres): N/A

d. Existing landfill area on this site and adjacent properties (acres): N/A

e. Landfill only: Ultimate facility height above ground level (feet): N/A

13. IS A VARIANCE REQUESTED FROM ANY PROVISION OF 6 NYCRR PART 360?

Yes No If yes, describe provision(s): _____

14. CERTIFICATION:

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have authority or am authorized as _____ (Title) _____ of (and/or) Ulster County Resource Recovery Agency

By filing this application pursuant to 6 NYCRR Part 360, I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Date: 12/25/16 Signature: Timothy B. Rose Print Name: Timothy B. Rose

Short Environmental Assessment Form

Part 1 - Project Information

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information			
Ulster County Resource Recovery Agency			
Name of Action or Project: Food Waste Modification to Part 360 Permit			
Project Location (describe, and attach a location map): Ulster County Resource Recovery Agency, 999 Flatbush Road, Kingston NY (see Figure 1 attached)			
Brief Description of Proposed Action: Expand composting activities by increasing source-separated organics from 500 tons per year to 2,500 tons per year			
*Short Environmental Assessment Form, Question 19: The proposed action is designated in a previously disturbed area.			
Name of Applicant or Sponsor: Timothy B. Rose, P.E.		Telephone: (845) 335-0600 E-Mail: tbrs@ucrra.org	
Address: P.O. Box 621B, 999 Flatbush Road			
City/PO: Kingston		State: NY	Zip Code: 12402
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.			NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: NYS Department of Environmental Conservation - Part 360 Solid Waste Management Permit			NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>
3.a. Total acreage of the site of the proposed action?		42 acres	
b. Total acreage to be physically disturbed?		0 acres	
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?		42 acres	
4. Check all land uses that occur on, adjoining and near the proposed action.			
<input type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential (suburban) <input checked="" type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Aquatic <input checked="" type="checkbox"/> Other (specify): <u>Route 199</u> <input type="checkbox"/> Parkland			

18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: _____ _____ _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____ UCRRA Transfer Station	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____ _____ _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>
I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE		
Applicant/sponsor name: Timothy B. Ross, P.E.		Date: 12/21/16
Signature: <u>Timothy B. Ross</u>		

PERMITTED TRANSFER STATION ANNUAL REPORT

(If you need assistance filling out this form please email swm7annualreport@dec.ny.gov or call 616-402-8878.)

Complete and submit this form by March 2, 2017.

This annual report is for the year of operation from January 01, 2015 to December 31, 2016

SECTION 1 – GENERAL INFORMATION

FACILITY INFORMATION			
FACILITY NAME: <u>Ulster County Resource Recovery Agency (New Paltz Regional Transfer Station)</u>			
FACILITY LOCATION ADDRESS: <u>1 Clearwater Rd</u>	FACILITY CITY: <u>New Paltz</u>	STATE: <u>N.Y.</u>	ZIP CODE: <u>12561</u>
FACILITY TOWN: <u>Albion Paltz</u>	FACILITY COUNTY: <u>Ulster</u>	FACILITY PHONE NUMBER: <u>(845) 255-6358</u>	
FACILITY NYS PLANNING UNIT: (A list of NYS Planning Units can be found at the end of this report.) <u>Ulster County Resource Recovery Agency (UCRRA)</u>			NYSDEC REGION #: <u>3</u>
380 PERMIT #: (Refer to DEC Permit) <u>3-538-00089/00001</u>	DATE ISSUED: <u>7/30/09</u>	DATE EXPIRES: <u>7/29/19</u>	NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER: (Refer to DEC Permit) <u>56T03</u>
FACILITY CONTACT: <u>Charles Whittaker</u>	<input checked="" type="checkbox"/> public <input type="checkbox"/> private	CONTACT PHONE NUMBER: <u>(845) 336-0600</u>	CONTACT FAX NUMBER: <u>(845) 336-4129</u>
CONTACT EMAIL ADDRESS: <u>cwhi@ucrra.org</u>			
OWNER INFORMATION			
OWNER NAME: <u>Public Benefit Corp.</u>	OWNER PHONE NUMBER: <u>(845) 336-0600</u>	OWNER FAX NUMBER: <u>(845) 336-4129</u>	
OWNER ADDRESS: <u>PO. Box 6219</u>	OWNER CITY: <u>Kingston</u>	STATE: <u>NY</u>	ZIP CODE: <u>12402</u>
OWNER CONTACT:	OWNER CONTACT EMAIL ADDRESS:		
OPERATOR INFORMATION			
OPERATOR NAME: <u>Charles Whittaker</u>	<input type="checkbox"/> same as owner		<input checked="" type="checkbox"/> public <input type="checkbox"/> private
PREFERENCES			
Preferred address to receive correspondence: <input checked="" type="checkbox"/> Facility location address <input type="checkbox"/> Owner address <input type="checkbox"/> Other (provide):			
Preferred email address: <input checked="" type="checkbox"/> Facility Contact <input type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			
Preferred individual to receive correspondence: <input checked="" type="checkbox"/> Facility Contact <input type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			

Did you operate in 2016? Yes; Complete this form.

No; Complete and submit Sections 1 and 11. If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, also complete the "Inactive Solid Waste Management Facility or Activity Notification Form" located at: <http://www.dec.ny.gov/chemical/52706.html>.

SECTION 2 - SOLID WASTE RECEIVED

Please provide the tonnages of solid waste received. Include all waste received. Report Recyclable Materials in Section 5. DO NOT REPORT IN CUBIC YARDS!

Specify the methods used to measure the quantities disposed and the percentages measured by each method:
 100% Scale Weight _____ % Estimated _____ % Other (Specify: _____)

_____ % Truck Count _____ % Other (Specify: _____)

Type of Solid Waste	January (tons)	February (tons)	March (tons)	April (tons)	May (tons)	June (tons)	July (tons)
Asbestos							
Construction & Demolition (C&D) Debris	304.60	379.59	498.92	561.65	591.97	592.78	479.17
Industrial Waste (Including Industrial Process Sludges)							
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	2,593.35	2,498.80	3,005.51	3,001.22	3,177.23	3,407.30	3,343.74
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge	309.35	298.60	341.89	383.72	357.87	342.38	348.16
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							
Total Tons Received	3,207.30	3,176.99	3,846.32	3,946.59	4,127.57	4,342.46	4,171.07

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 3 – SERVICE AREA OF SOLID WASTE RECEIVED

Please identify where the waste is coming from. The total tons received reported below should equal the total tons received in Section 2 (Solid Waste Received). DO NOT REPORT IN CUBIC YARDS!

- If the waste **WAS** received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the waste **WAS NOT** received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the waste was generated.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100% Road: Waste Type(s): CMSW + d+d + Sludge % Rail: Waste Type(s): _____

% Water: Waste Type(s): _____ % Other (specify: _____): Waste Type(s): _____

SERVICE AREA OF SOLID WASTE RECEIVED (where the waste is coming from)					
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Asbestos					
Construction & Demolition (C&D) Debris	Direct Haul Ulster County Regional Transfer Station, entire County of Ulster + Ulster County Municipalities	NY	Ulster	ULP.R.A	5910.52
Industrial Waste (Including Industrial Process Sludges)					

SERVICE AREA OF SOLID WASTE RECEIVED (where the waste is coming from)					
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	"Direct Haul" Ulster County Regional Transfer Station, entire County of Ulster + Ulster County Municipalities	NY	Ulster	ULSRA	37,241.69
Oil/Gas Drilling Waste					
Petroleum Contaminated Soil					
Sewage Treatment Plant Sludge	"Direct Haul" Ulster County Regional Transfer Station + Ulster County Municipalities	NY	Ulster	ULSRA	39,787.73
Treated Regulated Medical Waste (TRMW)*					
Emergency Authorization Waste (Storm Debris)					
Other (specify)					
TOTAL RECEIVED (tons):					43,130.94

* List generators that provide you Certificates of Treatment forms and quantities of TRMW from each if the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 4 - TRANSFER OR DISPOSAL DESTINATION

Please identify destination of waste. Please only include waste sent off-site for disposal or further transfer prior to disposal. Exclude Recyclable Material amounts reported in Section 5. DO NOT REPORT IN CUBIC YARDS!

- If the waste is being sent to another facility for transfer or processing prior to disposal (e.g. Transfer station or C&D debris processing facility), please identify name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the transfer destination and the amount of waste transferred in the "Amount to Transfer Destination" column.
- If the waste is being sent to a landfill or combustor, please identify the name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the disposal destination and the amount of waste being sent for disposal in the "Amount to Disposal Destination" column.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100% Road: Waste Type(s): MSW, Sludge % Rail: Waste Type(s): _____

% Water: Waste Type(s): _____ % Other (specify: _____): Waste Type(s): _____

TRANSFER OR DISPOSAL DESTINATION							
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Asbestos							
Construction & Demolition (C&D) Debris							
Industrial Waste (Including Industrial Process Sludges)							

TRANSFER OR DISPOSAL DESTINATION

TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	Seneca Meadows Landfill 1786 Selamon Rd Waterloo, NY 13165	(NY)	(Seneca)	(Seneca) (County)		43,037.05	43,037.05
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge	Chemung County Landsill, P.O. Box 1372 Williston, VT 05495	(NY)	(Chemung)	(Chemung) (County)		3,930.80	3,930.80
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							

TOTAL SENT (tons): 46,967.85

If the waste type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other waste name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other waste name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS

Is your facility also a permitted or registered Recyclables Handling & Recovery Facility?

Yes; Complete Section 5 for material recovered from the mixed solid waste stream. Complete a Recyclables Handling & Recovery Facility (RHRF) form for material received as source separated. The RHRF form is located at: <http://www.dec.ny.gov/chemical/52706.html>

No; Complete Section 5 for material recovered from the mixed solid waste stream and for material received as source separated.

A. Service Area of Recyclable Material Received

Please identify where the recyclable materials are coming from. **DO NOT REPORT IN CUBIC YARDS!**

- If the materials WERE received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the materials WERE NOT received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the recyclables were generated.

SERVICE AREA OF RECYCLABLE MATERIAL RECEIVED (where the material is coming from)					
MATERIAL	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Commingled Containers (metal, glass, plastic)					
Commingled Paper (all grades)					
Single Stream (total)					
Brush, Branches, Trees, & Stumps					
Food Scraps					
Yard Waste (curbside)					
Other (specify)					
TOTAL RECEIVED (tons):					

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

Please identify destination of recovered materials. Indicate the name of the facility, address, corresponding State/Country, County/Province, Destination Planning Unit/Municipality and the amount of material transferred. DO NOT REPORT IN CUBIC YARDS!

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100 % Road: Material(s): Old & Electronics _____ % Rail: Material(s): _____

_____ % Water: Material(s): _____ % Other (specify: _____): Material(s): _____

PAPER RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Paper (all grades)						
Corrugated Cardboard	Materials Recovery Facility 999 Flatbush Rd. Kingston, NY	Ny	Ulster	ULSTER	4.48	
Junk Mail						
Magazines						
Newspaper						
Office Paper						
Paperboard / Boxboard						
Other Paper (specify)						
TOTAL PAPER RECOVERED (tons):					4.48	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

GLASS RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Container Glass						
Industrial Scrap Glass						
Other Glass (specify)						
TOTAL GLASS RECOVERED (tons):						
METAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Aluminum Foil / Trays						
Bulk Metal (from MSW)						
Bulk Metal (from CD debris)						
Enameled Appliances / White Goods						
Industrial Scrap Metal						
Tin & Aluminum Containers						
Other Metal (specify)						
TOTAL METAL RECOVERED (tons):						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

PLASTIC RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Corningled Plastic (#1 - #7)						
PET (plastic #1)						
HDPE (plastic #2)						
Other Rigid Plastics (#3 - #7)						
Industrial Scrap Plastic						
Plastic Film & Bags						
Other Plastics (specify)						
TOTAL PLASTIC RECOVERED (tons):						

MISCELLANEOUS MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Electronics	Electronic Recycles International (see attachment)				9.80	
Textiles						
Other (specify)	Casinas Inc 169 Maple Ave Catskill, NY	Ny	Green	Green Country	6.04	
Tires						
TOTAL MISCELLANEOUS MATERIAL RECOVERED (tons):						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

MIXED MATERIAL RECOVERED						
RECOVERED MIXED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Containers (metal, glass, plastic)						
Commingled Paper & Containers						
Single Stream (total)						
Other (specify)						

TOTAL MIXED MATERIAL RECOVERED (tons):

ORGANIC MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Brush, Branches, Trees, & Stumps						
Food Scraps						
Yard Waste (curbside)						
Other (specify)						

TOTAL ORGANIC MATERIAL RECOVERED (tons):

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 6 – UNAUTHORIZED SOLID WASTE

Has unauthorized solid waste been received at the facility during the reporting period?

Yes No If yes, give information below for each incident (attach additional sheets if necessary):

Date Received	Type Received	Date Disposed	Disposal Method & Location
11/16 to 12/31/16	Flammable bushes + pallets	11/16 to 12/31/16	Clean Harbors Envir Sys, Inc. Caledonia NY 12017
1/1/16 to 12/31/16	Propane tanks	1/1/16 to 12/31/16	Britt + Grall 201 Broadway Port Jervis NY 12416
1/1/16 to 12/31/16	Freezer appliances	1/1/16 to 12/31/16	Interstate Refrigerant Recovery PO Box 517 Foxboro, MA 02035

Radiation Monitoring

Does your facility use a fixed radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

Does your facility use a portable radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

If the radiation monitors have been triggered give information below for each incident:

Incident Number	Received		Hauler	Origin	Truck Number	Reading	Disposal Status		Removed		
	Date	Time					Date	Time	Date	Time	

SECTION 7 - COST ESTIMATES AND FINANCIAL ASSURANCE DOCUMENTS

Are there required cost estimates and financial assurance documents for closure?

Yes No If yes, attach additional sheets reflecting annual adjustments for inflation and any changes to the Closure Plan?

SECTION 8 - PROBLEMS

Were any problems encountered during the reporting period (e.g., specific occurrences which have led to changes in facility procedures)?

Yes No If yes, attach additional sheets identifying each problem and the methods for resolution of the problem.

SECTION 9 - CHANGES

Were there any changes from approved reports, plans, specifications, and permit conditions?

Yes No If yes, attach additional sheets identifying changes with a justification for each change.

SECTION 10 - PERMIT/CONSENT ORDER REPORTING REQUIREMENTS

Are there any additional permit/consent order reporting requirements not covered by the previous sections of this form?

Yes No If yes, attach additional sheets identifying the reporting requirements with their respective responses.

SECTION 11 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit one completed form with an original signature to the appropriate Regional Office (See attachment for Regional Office addresses and Solid Waste Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Permitting and Planning
625 Broadway
Albany, New York 12233-7260
Fax 518-402-9041
Email address: SWMAnnualreport@dec.ny.gov

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have the authority to sign this report form pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Charles Whittaker
Signature

2/21/2017
Date

Charles Whittaker Operations Manager (845) 336-0600
Name (Print or Type) Title (Print or Type) Phone Number

999 Flatbush Rd Kingston NY 12401
Address City State and Zip

cwhi@terra.org
Email (Print or Type)

ATTACHMENTS: YES NO (Please check appropriate line)

Appendix B

2016 NYSDEC Annual Tonnages MSW

Sullivan County

PERMITTED MONTICELLO TRANSFER STATION ANNUAL REPORT

(If you need assistance filling out this form, please email swmannualreport@dec.ny.gov or call 518-402-8078.)

Complete and submit this form by **March 2, 2017**.

This annual report is for the year of operation from January 01, 2016 to December 31, 2016

SECTION 1 – GENERAL INFORMATION

FACILITY INFORMATION			
FACILITY NAME: Monticello Transfer Station			
FACILITY LOCATION ADDRESS: 237 Landfill Drive	FACILITY CITY: Sullivan County	STATE: NY	ZIP CODE: 12701
FACILITY TOWN: Thompson	FACILITY COUNTY: Sullivan	FACILITY PHONE NUMBER: 845.807.0294	
FACILITY NYS PLANNING UNIT: (A list of NYS Planning Units can be found at the end of this report.) Sullivan County			NYSDEC REGION#: 3
360 PERMIT #: (Refer to DEC Permit) 3-4846-00079/00031	DATE ISSUED: 5/6/2015	DATE EXPIRES: 5/6/2020	NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER: (Refer to DEC Permit)
FACILITY CONTACT: Donna Egan	<input checked="" type="checkbox"/> public <input type="checkbox"/> private	CONTACT PHONE NUMBER: 845.807.0294	CONTACT FAX NUMBER: 845-807-0335
CONTACT EMAIL ADDRESS: donna.egan@co.sullivan.ny.us			
OWNER INFORMATION			
OWNER NAME: Sullivan County Division of Public Works	OWNER PHONE NUMBER: 845-807-0261	OWNER FAX NUMBER: 845-807-0335	
OWNER ADDRESS: 100 North Street, P.O. Box 5012	OWNER CITY: Monticello	STATE: NY	ZIP CODE: 12701
OWNER CONTACT: Donna Egan	OWNER CONTACT EMAIL ADDRESS: donna.egan@co.sullivan.ny.us		
OPERATOR INFORMATION			
OPERATOR NAME: <input checked="" type="checkbox"/> same as owner			<input checked="" type="checkbox"/> public <input type="checkbox"/> private
PREFERENCES			
Preferred address to receive correspondence: <input type="checkbox"/> Facility location address <input checked="" type="checkbox"/> Owner address <input type="checkbox"/> Other (provide): 100 North Street, Monticello, NY 12701			
Preferred email address: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			
Preferred individual to receive correspondence: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			

Did you operate in 2016? Yes; Complete this form.

No; Complete and submit Sections 1 and 11. If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, also complete the "Inactive Solid Waste Management Facility or Activity Notification Form" located at: <http://www.dec.ny.gov/chemical/52706.html>.

SECTION 2 - SOLID WASTE RECEIVED

Please provide the tonnage of solid waste received. Include all waste received. Report Recyclable Materials in Section 5. DO NOT REPORT IN CUBIC YARDS!

Specify the methods used to measure the quantities disposed and the percentages measured by each method:

100 % Scale Weight _____ % Estimated
 _____ % Truck Count _____ % Other (Specify _____)

Type of Solid Waste	January (tons)	February (tons)	March (tons)	April (tons)	May (tons)	June (tons)	July (tons)
Asbestos							
Construction & Demolition (C&D) Debris	829.94	983.08	1550.9	1647.24	2205.43	3079.22	2693.1
Industrial Waste (Including Industrial Process Sludges)							
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	1933.1	1820.9	2423.93	2237.66	2838.07	3274.81	6906.34
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge							
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							
Total Tons Received	2763.04	2803.98	3974.83	3884.9	5043.5	6354.03	9599.44

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 2 - SOLID WASTE RECEIVED (continued)

Type of Solid Waste	Tip Fee (\$/ton)	August (tons)	September (tons)	October (tons)	November (tons)	December (tons)	Total Year (tons)	Daily Avg. (tons)
Asbestos								
Construction & Demolition (C&D) Debris	\$95	2348.7	1933.72	1481.16	1467.43	798.03	21017.95	67.37
Industrial Waste (Including Industrial Process Sludges)								
Mixed Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	\$95	7622.11	3535.47	2554.52	2360.43	2249.17	39756.51	127.42
Oil/Gas Drilling Waste								
Petroleum Contaminated Soil								
Sewage Treatment Plant Sludge								
Treated Regulated Medical Waste								
Emergency Authorization Waste (Storm Debris)								
Other (specify)								
Total Tons Received		9970.81	469.19	4035.68	3827.86	3047.2	60774.46	194.79

the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 3 – SERVICE AREA OF SOLID WASTE RECEIVED

Please identify where the waste is coming from. The total tons received reported below should equal the total tons received in Section 2 (Solid Waste Received). DO NOT REPORT IN CUBIC YARDS!

- If the waste WAS received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the waste WAS NOT received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the waste was generated.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100% Road: Waste Type(s): _____ % Rail: Waste Type(s): _____
 _____ % Water: Waste Type(s): _____ % Other (specify: _____): Waste Type(s): _____

SERVICE AREA OF SOLID WASTE RECEIVED					
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Asbestos					
Construction & Demolition (C&D) Debris	Monticello, Ferndale, Highland, Mamakating, Rockland, Western Sullivan, Bethel and Neversink Transfer Stations	NY	Sullivan	Sullivan County	4383.61
	Direct Haul	NY	Sullivan	Sullivan County	16634.34
Industrial Waste (Including Industrial Process Sludges)					

SERVICE AREA OF SOLID WASTE RECEIVED (Attach the separate Service Area Report)						
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED	
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	Monticello, Ferndale, Highland, Mamakating, Rockland, Western Sullivan, Bethel and Neversink Transfer Stations	NY	Sullivan	Sullivan County	3322.25	
	Direct Haul	NY	Sullivan	Sullivan County	36434.26	
Oil/Gas Drilling Waste						
Petroleum Contaminated Soil						
Sewage Treatment Plant Sludge						
Treated/Regulated Medical Waste (TRMW)*						
Emergency Authorization Waste (Storm Debris)						
Other (specify)						
TOTAL RECEIVED (tons): 60774.46						

* List generators that provide you Certificates of Treatment forms and quantities of TRMW from each

If the solid waste type is not listed, use one of the "Other" lines and fill in the name of the waste. If more "Other" lines are needed, cross out an unused type and fill in the other solid waste name. If still more "Other" lines are needed, attach another copy of this page, cross out an unused type, and fill in the other solid waste name.

SECTION 4 - TRANSFER OR DISPOSAL DESTINATION

Please identify destination of waste. Please only include waste sent off-site for disposal or further transfer prior to disposal. Exclude Recyclable Material amounts reported in Section 5. DO NOT REPORT IN CUBIC YARDS!

- If the waste is being sent to another facility for transfer or processing prior to disposal (e.g. Transfer station or C&D debris processing facility), please identify name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the transfer destination and the amount of waste transferred in the "Amount to Transfer Destination" column.
- If the waste is being sent to a landfill or combustor, please identify the name, address, corresponding State/Country, County/Province, and Destination Planning Unit of the disposal destination and the amount of waste being sent for disposal in the "Amount to Disposal Destination" column.

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100 % Road: Waste Type(s): All _____ % Rail: Waste Type(s): _____
 % Water: Waste Type(s): _____ % Other (specify: _____): Waste Type(s): _____

TRANSFER OR DISPOSAL DESTINATION							
TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Asbestos							
Construction & Demolition (C&D) Debris	Seneca Meadows Landfill, 1786 Salcman Rd., Waterloo, NY 13165	NY	Seneca	Seneca County			21018
Industrial Waste (Including Industrial Process Sludges)							

TRANSFER OR DISPOSAL DESTINATION

TYPE OF SOLID WASTE	SOLID WASTE MANAGEMENT FACILITY TO WHICH IT WAS SENT (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS PLANNING UNITS)	AMOUNT TO TRANSFER DESTINATION (TONS)	AMOUNT TO DISPOSAL DESTINATION (TONS)	TOTAL YEAR (TONS)
Municipal Solid Waste (MSW) (Residential, Institutional & Commercial)	Seneca Meadows Landfill, 1786 Salcman Rd., Waterloo, NY 13165	NY	Seneca	Seneca County			39757
Oil/Gas Drilling Waste							
Petroleum Contaminated Soil							
Sewage Treatment Plant Sludge							
Treated Regulated Medical Waste							
Emergency Authorization Waste (Storm Debris)							
Other (specify)							
TOTAL SENT (tons):							60775

If the waste type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other waste name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other waste name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS

Is your facility also a permitted or registered Recyclables Handling & Recovery Facility?

Yes: Complete Section 5 for material recovered from the mixed solid waste stream. Complete a Recyclables Handling & Recovery Facility (RHRF) form for material received as source separated. The RHRF form is located at: <http://www.dec.ny.gov/chemical/52706.html>.

No: Complete Section 5 for material recovered from the mixed solid waste stream and for material received as source separated.

A. Service Area of Recyclable Material Received

Please identify where the recyclable materials are coming from. DO NOT REPORT IN CUBIC YARDS!

- If the materials WERE received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the materials WERE NOT received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the recyclables were generated.

SERVICE AREA OF RECYCLABLE MATERIAL RECEIVED						
MATERIAL	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS PLANNING UNITS)	TONS RECEIVED	
Commingled Containers (metal, glass, plastic)						
Commingled Paper (all grades)	Monticello, Ferndale, Highland, Mamakating, Rockland, Western Sullivan, Bethel and Neversink Transfer Stations	NY	Sullivan	Sullivan County	1548.30	
Single Stream (total)	Monticello, Ferndale, Highland, Mamakating, Rockland, Western Sullivan, Bethel and Neversink Transfer Stations	NY	Sullivan	Sullivan County	2794.05	
Brush, Branches, Trees, & Stumps						
Food Scraps						
Yard Waste (curbside)						
Other (specify) Tires	Monticello, Ferndale, Highland, Mamakating, Rockland, Western Sullivan, and Neversink Transfer Stations	NY	Sullivan	Sullivan County	158.78	
TOTAL RECEIVED (tons):					4501.13	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

Please identify destination of recovered materials. Indicate the name of the facility, address, corresponding State/Country, County/Provinces, Destination Planning Unit/Municipality and the amount of material transferred. DO NOT REPORT IN CUBIC YARDS!

Specify transport method, list type of material(s) and percentages of total waste transported by each:

100% Road: Material(s): All; % Rail: Material(s): ; Material(s):

% Water: Material(s): ; % Other (specify:): Material(s):

PAPER RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Paper (all grades)						
Corrugated Cardboard	Fox Run Recycling, P.O. Box 446, Callicoon, NY 12723	NY	Sullivan	Sullivan County	988.54	
Junk Mail						
Magazines						
Newspaper	Cellmark Recycling, 81 Washington Street, Norwalk, CT 06854	CT	Middlesex, CT	NA	96.04	
	Fox Run Recycling, P.O. Box 446, Callicoon, NY 12723	NY	Sullivan	Sullivan County	22.26	
Office Paper						
Paperboard / Boxboard						
Other Paper (specify)	Fox Run Recycling, P.O. Box 446, Callicoon, NY 12723	NY	Sullivan	Sullivan County	441.46	
Mixed Paper						
TOTAL PAPER RECOVERED (tons):					1548.30	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

GLASS RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Container Glass						
Industrial Scrap Glass						
Other Glass (specify)						
TOTAL GLASS RECOVERED (tons):						
METAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Aluminum Foil / Trays						
Bulk Metal (from MSW)						
Bulk Metal (from CD debris)						
Enameled Appliances / White Goods						
Industrial Scrap Metal						
Tin & Aluminum Containers						
Other Metal (specify)	Upstate Shredding, 15 West Main Street, Owego, NY 13827	NY	Tioga	Tioga County	274.02	
Miscellaneous Scrap Metal						
TOTAL METAL RECOVERED (tons):					274.02	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

PLASTIC RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Plastic (#1 - #7)						
PET (plastic #1)						
HDPE (plastic #2)						
Other Rigid Plastics (#3 - #7)						
Industrial Scrap Plastic						
Plastic Film & Bags						
Other Plastics (specify)						
TOTAL PLASTIC RECOVERED (tons):						
MISCELLANEOUS MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Electronics	Advanced Recovery, Inc., 41 Mechanic Street, Port Jervis, NY 12771	NY	Orange	Orange County	16.09	
Textiles	Salvation Army, Rt. 211, Middletown, NY 10940	NY	Orange	Orange County	120 (est.)	
Other (specify) Tires	Textile Recovery Services, Inc., 70 Crossway E., Bohemia, NY 11716	NY	Suffolk	Suffolk County	1.93 (est.)	
	Casings, Inc., 169 Maple Ave., Catskill, NY 12414	NY	Greene	Greene County	158.78	
TOTAL MISCELLANEOUS MATERIAL RECOVERED (tons):					296.80 (est.)	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 – PERMITTED TRANSFER STATION RECYCLABLE & RECOVERED MATERIALS (continued)

B. Material Recovered

MIXED MATERIAL RECOVERED						
RECOVERED MIXED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Containers (metal, glass, plastic)						
Commingled Paper & Containers						
Single Stream (total)	ReCommunity Recycling, 508 Fishkill Ave., Beacon, NY 12508	NY	Dutchess	Dutchess County	2794.05	
Other (specify)						
TOTAL MIXED MATERIAL RECOVERED (tons):					2794.05	
ORGANIC MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Brush, Branches, Trees, & Stumps						
Food Scraps						
Yard Waste (curbside)						
Other (specify)						
TOTAL ORGANIC MATERIAL RECOVERED (tons):						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 6 – UNAUTHORIZED SOLID WASTE

Has unauthorized solid waste been received at the facility during the reporting period?

Yes No If yes, give information below for each incident (attach additional sheets if necessary):

Date Received	Type Received	Date Disposed	Disposal Method & Location

Radiation Monitoring

Does your facility use a fixed radiation monitor? Yes No

Identify Manufacturer ThermoFisher Scientific and Model ASME-SE3000 of fixed unit.

Does your facility use a portable radiation monitor? Yes No

Identify Manufacturer _____ and Model _____ of fixed unit.

If the radiation monitors have been triggered give information below for each incident:

Incident Number	Received		Hauler	Origin	Truck Number	Reading	Disposal Status	Removed	
	Date	Time						Date	Time

SECTION 7 - COST ESTIMATES AND FINANCIAL ASSURANCE DOCUMENTS

Are there required cost estimates and financial assurance documents for closure?

Yes No If yes, attach additional sheets reflecting annual adjustments for inflation and any changes to the Closure Plan?

SECTION 8 – PROBLEMS

Were any problems encountered during the reporting period (e.g., specific occurrences which have led to changes in facility procedures)?

Yes No If yes, attach additional sheets identifying each problem and the methods for resolution of the problem.

SECTION 9 – CHANGES

Were there any changes from approved reports, plans, specifications, and permit conditions?

Yes No If yes, attach additional sheets identifying changes with a justification for each change.

SECTION 10 - PERMIT/CONSENT ORDER REPORTING REQUIREMENTS

Are there any additional permit/consent order reporting requirements not covered by the previous sections of this form?

Yes No If yes, attach additional sheets identifying the reporting requirements with their respective responses.

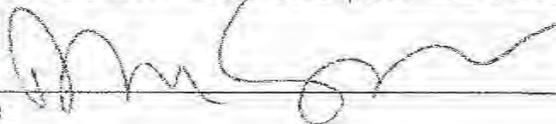
SECTION 11 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit one completed form with an original signature to the appropriate Regional Office (See attachment for Regional Office addresses and Solid Waste Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Permitting and Planning
625 Broadway
Albany, New York 12233-7260
Fax 518-402-9041
Email address: SWMFannualreport@dec.ny.gov

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have the authority to sign this report form pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.


Signature

March 01, 2017
Date

Donna Egan
Name (Print or Type)

Director of Solid Waste
Title (Print or Type)

(845) 807-0294
Phone Number

100 North Street, PO Box 5012
Address

Monticello
City

New York 12701
State and Zip

donna.egan@co.sullivan.ny.us
Email (Print or Type)

ATTACHMENTS: YES NO (Please check appropriate line)

APPENDIX C

2016 NYSDEC ANNUAL TONNAGES RECYCLABLES

Appendix C

2016 NYSDEC Annual Tonnages Recyclables

Greene County



NOTE: WHEN FILLING OUT THIS FORM, PLEASE REPORT ALL WASTE/MATERIAL GENERATED WITHIN THE PLANNING UNIT (NOT JUST THOSE FACILITIES OWNED/OPERATED BY THE PLANNING UNIT). ATTACH ADDITIONAL SHEETS AS NECESSARY.

REPORT YEAR: 2016		PLANNING UNIT NAME: Greene County	
ADDRESS: PO Box 485, Catskill, NY 12414		COUNTY: Greene	
CONTACT PERSON: Robert J. Van Valkenburg		TELEPHONE NUMBER: 518.943.4600	
EMAIL: rivanvalkenburg@discovergreene.com			
LIST ALL FACILITIES IN YOUR PLANNING UNIT FOR WHICH DATA ARE INCLUDED IN THIS REPORT (MUNICIPAL AND PRIVATE)			
	FACILITY NAME		
1.	Catskill Transfer Station		REGISTRATION/PERMIT NO. 4-1926-00109/00001
2.	Hunter Transfer Station		20T36
3.	Coxsackie Transfer Station		20T01
4.	Windham Transfer Station		20T46
5.	Greenville Recycling Center		20T02
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			

WASTE GENERATED IN PLANNING UNIT SENT FOR DISPOSAL (MATERIAL NOT RECYCLED)

- In this section, report all material sent for disposal.
- Using this data, material generated within the planning unit can be tracked from the point of generation to the place of final disposal.
- An ***intermediate destination facility*** is a facility used for processing, sorting or consolidation before being sent to a disposal facility.
- A ***final destination facility*** includes facilities that accept waste for final disposal (landfills, municipal waste combustors, out-of-state disposal facilities).

WASTE STREAMS	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, C&D Debris Processor)	TONS	FINAL DESTINATION FACILITY (Landfill, Municipal Waste Combustor, Out-of-State)	TONS	
Municipal Solid Waste (MSW)	1.		Ontario County Landfill	50854.02	Facility Survey
	2.		Seneca Meadows	7184.30	Facility Survey
	3.				
C&D Debris	1.				
	2.				
	3.				
Non-Hazardous Industrial Waste	1.				
	2.				
	3.				
Biosolids	1.				
	2.				
	3.				

RECYCLABLES RECOVERED

- Do not report recyclables that result from the Returnable Container Act (Bottle Bill) or are part of a Beneficial Use Determination.
- Report all recyclable material quantities as marketed tonnages.

Municipal (Mixed Material)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Single Stream	1.				
	2.				
Commingled Containers (metal, plastic, glass)	1.				
	2.				
Commingled Paper (mixed, all grades)	1.				
	2.				

Municipal (Paper)	NAME AND COMPLETE ADDRESS					DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS		
Newspaper	1.			County Waste, PO Box 790 Clifton Park, NY 12065	143.73	Facility Survey
	2.					
Corrugated Cardboard	1.			Fox Run Recycling Inc. PO Box 446 Callicoon, NY 12723	228.68	Facility Survey
	2.					
Paperboard/ Boxboard (cereal, shoe and gift boxes)	1.					
	2.					
Office Paper	1.					
	2.					
Magazines	1.					
	2.					
Junk Mail	1.					
	2.					

Municipal (Metal)	NAME AND COMPLETE ADDRESS					DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	TONS	
Tin/Aluminum Containers	1.		Calvetta Enterprises, 5650 Cauterskill Road, Catskill, NY 12414		65.61	Facility Survey
	2.					
Aluminum Foil/ Trays	1.					
	2.					
White Goods/ Enameled Appliances	1.					
	2.					
Propane Tanks	1.					
	2.					
Bulk Metal (from residents)	1.		Calvetta Enterprises, 5650 Cauterskill Road, Catskill, NY 12414		658.07	Facility Survey
	2.					
Metal from Municipal Waste Combustor Ash	1.					
	2.					

Municipal (Glass)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Glass Containers (separated, only clear)	1.				
	2.				
Glass Containers (separated, only brown)	1.				
	2.				
Glass Containers (separated, only green)	1.				
	2.		County Waste PO Box 790, Clifton Park, NY 12065	159.82	Facility Survey
Glass Containers (mixed colors)	1.				
	2.				
Non-container Glass (vases, windows)	1.				
	2.				

Municipal (Plastic)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Commingled Plastic Containers (#1-7)	1.		Fox Run Recycling, Inc. PO Box 446, Callicoon, NY 12723	44.91	Facility Survey
	2.				
PET Containers (plastic #1, soda and water bottles)	1.				
	2.				
HDPE Containers (plastic #2, milk jugs, laundry and soap bottles)	1.				
	2.				
Plastic #3-7 Containers	1.				
	2.				
Rigid Plastics (buckets, laundry baskets)	1.				
	2.				
Plastic Film & Bags (plastic wrap)	1.				
	2.				

Municipal (Organics)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Leaves/Grass	1.				
	2.				
Brush/Branches /Trees/Stumps (from residents)	1.				
	2.				
Food Scraps (kitchen, grocery stores, restaurants, schools)	1.				
	2.				
Fats, Oils and Grease	1.				
	2.				

Municipal (Miscellaneous)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Textiles	1.	Greene Co. Vol. Firemen's Assoc., 25 Volunteer Drive, Cairo, NY 12413		45.75	Facility Survey
	2.	Salvation Army, 452 Clinton Ave. Albany, NY 12206			
Electronics	1.				
	2.				
Tires	1.				
	2.				
Wood Pallets	1.				
	2.				

HOUSEHOLD HAZARDOUS WASTE FROM MUNICIPAL COLLECTION EVENTS

If the planning unit has a permanent HHH facility, please provide below its name and permit number.

Facility name:	Registration/Permit No.	
Location of Collection Event:	Number of Events:	
1. Antifreeze	Gallons	2. Hazardous Paint Gallons
3. Automotive Batteries	Pounds	4. Hazardous Household Batteries Pounds
5. Pesticides (Solids)	Pounds	6. Pesticides (Liquids) Pounds
7. Mercury Containing Devices	Pounds	8. Bulk Mercury Pounds
9. Fluorescent Bulbs	Pounds	10. # CRTs Pounds
11. # TVs	Pounds	12. Other Electronics Pounds
13. Other HHW (Solids)	Pounds	14. Other HHW (Liquids) Pounds
15. Miscellaneous Solid Waste (Solids)	Pounds	16. Miscellaneous Solid Waste (Liquids) Gallons

C&D Debris	NAME AND COMPLETE ADDRESS						DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, C&D Debris Processor)		END USE/FINAL DESTINATION FACILITY (Market)		TONS		
	1.	2.	1.	2.	1.	2.	
Asphalt							
Brick							
Concrete							
Wallboard (drywall)							
Petroleum Contaminated Soil (PCS)							
Rock							
Soil (clean)							
Roofing Shingles							

Wood (clean)	1.							
	2.							
Wood (contaminated)	1.							
	2.							
Land Clearing Debris <small>(including brush, stumps, trees, etc. NOT included in Organics section)</small>	1.							
	2.							
C&D Debris Bulk Metal <small>(not from residents)</small>	1.							
	2.							

	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Non-Hazardous Industrial	1.				
	2.				
Metal Reported from Automobile Dismantlers	1.				
	2.				
Metal Reported by Scrap Metal Processors	1.				
	2.				
Industrial Scrap Metal <small>(pre-consumer)</small>	1.				
	2.				

Industrial Scrap Glass (pre-consumer)	1.							
	2.							
Industrial Scrap Plastic (pre-consumer)	1.							
	2.							
Industrial Scrap Paper (pre-consumer)	1.							
	2.							
Food Processing Waste (brewery, fish, fruit, vegetable and dairy waste)	1.							
	2.							
Wood (furniture)	1.							
	2.							

Biosolids	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Biosolids (WWTP sludge)	1.				
	2.				
Septage (septic tank sludge)	1.				
	2.				

PLANNING UNIT RECYCLING SYSTEM INFORMATION

- Please answer the following survey

WHAT RECYCLING SYSTEMS ARE AVAILABLE IN YOUR PLANNING UNIT?	<input type="checkbox"/> Single stream recycling (Commingled)
<input checked="" type="checkbox"/>	Dual stream recycling
<input type="checkbox"/>	Both, single and dual recycling

WHAT IS THE PERCENTAGE (ESTIMATE) OF THE PLANNING UNIT POPULATION THAT HAVE ACCESS TO EACH ONE OF THE RECYCLING SYSTEMS?	Single stream recycling (Commingled) %
100	Dual stream recycling %
	Both, single and dual recycling %

NAME: Robert J. Van Valkenburg	DATE:
SIGNATURE:	TITLE & ORGANIZATION: Superintendent, Greene Co. Solid Waste Department

COMMENTS/SUGGESTIONS:

SEND COMPLETED FORM VIA EMAIL TO planning@dec.ny.gov

IF EMAIL IS NOT AN OPTION SEND IT TO THE ADDRESS LISTED BELOW:

NYS Department of Environmental Conservation
 Division of Materials Management
 Attn: Bureau of Permitting and Planning
 625 Broadway, 9th Floor
 Albany, NY 12233-7253
 P: (518) 402-8678 F: (518) 402-9041

Appendix C

2016 NYSDEC Annual Tonnages Recyclables

UCRRA (Ulster County)

RECYCLABLES HANDLING & RECOVERY FACILITY ANNUAL REPORT

(If you need assistance filling out this form please email swmfannualreport@dec.ny.gov or call 518-402-8678.)

Complete and submit this form by March 2, 2017.

This annual report is for the year of operation from January 01, 2016 to December 31, 2016

SECTION 1 - GENERAL INFORMATION

FACILITY INFORMATION			
FACILITY NAME: MATERIAL RECOVERY FACILITY (MRF)			
FACILITY LOCATION ADDRESS: 999 FLATBUSH RD	FACILITY CITY: KINGSTON	STATE: NY	ZIP CODE: 12401
FACILITY TOWN: ULSTER	FACILITY COUNTY: ULSTER	FACILITY PHONE NUMBER: (845) 336-8717	
FACILITY NYS PLANNING UNIT: (A list of NYS <u>Planning Units</u> can be found at the end of this report). UCRRA			NYSDEC REGION #: 3
360 PERMIT #: (Refer to DEC Permit)	DATE ISSUED: 3/28/02	DATE EXPIRES:	NYS DEC ACTIVITY CODE OR REGISTRATION NUMBER: (Refer to DEC Registration) 56M02
FACILITY CONTACT: CHARLES WHITTAKER	<input checked="" type="checkbox"/> public <input type="checkbox"/> private	CONTACT PHONE NUMBER: (845) 336-0600	CONTACT FAX NUMBER: (845) 336-4129
CONTACT EMAIL ADDRESS:			
OWNER INFORMATION			
OWNER NAME: UCRRA	OWNER PHONE NUMBER: (845) 336-0600	OWNER FAX NUMBER: (845) 336-4129	
OWNER ADDRESS: PO BOX 6219	OWNER CITY: KINGSTON	STATE: NY	ZIP CODE: 12402
OWNER CONTACT: TIMOTHY ROSE	OWNER CONTACT EMAIL ADDRESS: Tros@ucrra.org		
OPERATOR INFORMATION			
OPERATOR NAME:	<input checked="" type="checkbox"/> same as owner	<input type="checkbox"/> public <input type="checkbox"/> private	
PREFERENCES			
Preferred address to receive correspondence: <input type="checkbox"/> Facility location address <input checked="" type="checkbox"/> Owner address <input type="checkbox"/> Other (provide):			
Preferred email address: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			
Preferred individual to receive correspondence: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Owner Contact <input type="checkbox"/> Other (provide):			

Did you operate in 2016? Yes; Complete this form.

No; Complete and submit Sections 1 and 8. If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, also complete the "Inactive Solid Waste Management Facility or Activity Notification Form" located at: <http://www.dec.ny.gov/chemical/52706.html>.

SECTION 3 – SERVICE AREA OF MATERIAL RECEIVED

Please identify where the material is coming from. The total tons received reported below should equal the total tons received in Section 2 (Solid Waste Received). DO NOT REPORT IN CUBIC YARDS!

- If the material WAS received from another solid waste management facility, please write in the name and address of the facility along with the appropriate state, county and planning unit/municipality.
- If the material WAS NOT received from another solid waste management facility, please write in "Direct Haul" along with the appropriate state, county and planning unit/municipality where the material was generated.

Specify transport method, list type of material(s) and percentages of total material transported by each:

100 % Road; Material(s): _____
 % Water; Material(s): _____
 % Rail; Material(s): _____
 % Other (specify: _____); Material(s): _____

MATERIAL	SOLID WASTE MANAGEMENT FACILITY FROM WHICH IT WAS RECEIVED (Name & Address) OR "Direct Haul"	SERVICE AREA STATE OR COUNTRY	SERVICE AREA COUNTY OR PROVINCE	SERVICE AREA NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECEIVED
Commingled Containers (metal, glass, plastic)	DIRECT HAUL	NY	USFEC		930.59
Commingled Paper (all grades)	DIRECT HAUL				2362.73
Single Stream (total)	DIRECT HAUL				902887
Other (specify)					
TOTAL MATERIAL RECEIVED (tons)					1,164,170

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 4 - RESIDUE

Total residue (tons) = 6.83
 Residue destination (Name & Address) UCKRA 999 Flatbush Rd Kingston, NY
 Percent Residue Calculation: Total tons residue / Total tons material received x 100 = 105

SECTION 5 - RECYCLABLES & RECOVERED MATERIALS

Please identify destination of recyclable materials. Indicate the name of the facility, address, corresponding State/Country, County/Province, Destination Planning Unit/Municipality and the amount of material recovered. DO NOT REPORT IN CUBIC YARDS!

Specify transport method, list type of material(s) and percentages of total material transported by each:
 % Road: Material(s) _____ % Rail: Material(s) _____
 % Water: Material(s) _____ % Other (specify: _____): Material(s) _____

PAPER RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Paper (all grades)						
Corrugated Cardboard	American Indep. Fox Run	NY NY	Westchester Sullivan	R3 R3	449.98 990.60	
Junk Mail						
Newsprint Newspaper	All American American Independent Caselle	ND NY NY	Wetzel Saratoga	R3 R5	126.74 902.08 162.35	
Office Paper						
Paperboard / Boxboard						
Other Paper (specify)						
TOTAL PAPER RECOVERED (tons)					2599.75	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - RECYCLABLES & RECOVERED MATERIALS (continued)

GLASS RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Container Glass						
Industrial Scrap Glass						
Other Glass (specify)						
TOTAL GLASS RECOVERED (tons):					0	
METAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Aluminum Foil / Trays						
Bulk Metal	15 MILLERS PO BOX 1904 KEN TOWN	NY	ULSTER	R3	1.61	
Enamelled Appliances / White Goods		NY	ULSTER	R3	1.56	
Industrial Scrap Metal						
Tin & Aluminum Containers	Casella EKMAN	NY	Saratoga	RS	40.45	
Other Metal (specify)	Conti	NJ	KINGS	R2	42.89	
		NY			40.83	
TOTAL METAL RECOVERED (tons):					127.34	

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 5 - RECYCLABLES & RECOVERED MATERIALS (continued)

PLASTIC RECOVERED

RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)
Commingled Plastic (#1 - #7)	Waste Greener Inc Casella	NY	Westchester	R3	5.89
PET (plastic #1)	Ekman Conti Group	NY	Westchester	R5	56.05
HDPE (plastic #2)	Ekman	NJ	Kings	R2	43.30
Other Rigid Plastics (#3 - #7)					40.47
Industrial Scrap Plastic					41.27
Plastic Film & Bags					
Other Plastics (specify)					
TOTAL PLASTIC RECOVERED (tons):					180.98

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

VOLUME TO WEIGHT CONVERSION FACTORS

MATERIAL	EQUIVALENT	MATERIAL	EQUIVALENT	MATERIAL	EQUIVALENT
GLASS - whole bottles	1 cubic yard	GLASS - crushed mechanically	1 cubic yard	ALUMINUM - cans - whole	1 cubic yard
GLASS - semi crushed	1 cubic yard	GLASS - uncrushed manually	55 gallon drum	ALUMINUM - cans - flattened	1 cubic yard
PAPER - high grade loose	1 cubic yard	PLASTIC - PET - whole	1 cubic yard		
PAPER - high grade baled	1 cubic yard	PLASTIC - PET - flattened	1 cubic yard		
PAPER - mixed loose	1 cubic yard	PLASTIC - PET - baled	1 cubic yard	WHITE GOODS - uncompactd	1 cubic yard
NEWSPRINT - loose	1 cubic yard	PLASTIC - styrofoam	1 cubic yard	WHITE GOODS - compactd	1 cubic yard
NEWSPRINT - compactd	1 cubic yard	PLASTIC - HDPE - whole	1 cubic yard		
CORRUGATED - loose	1 cubic yard	PLASTIC - HDPE - flattened	1 cubic yard		
CORRUGATED - baled	1 cubic yard	PLASTIC - HDPE - baled	1 cubic yard	FERROUS METAL - cans whole	1 cubic yard
		PLASTIC - mixed (grocery bags)	45 gallon bag	FERROUS METAL - cans	1 cubic yard

SECTION 5 - RECYCLABLES & RECOVERED MATERIALS (continued)

MIXED MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Commingled Containers (metal, glass, plastic)						
Commingled Paper & Containers						
Single Stream (total)	Recommunity All American Skerra Prc	NY NJ NY	Orange Albany	R3 R4	5837.99 660.23 2893.45	
Other (specify)						
TOTAL MIXED MATERIAL RECOVERED (tons): 9821.67						
MISCELLANEOUS MATERIAL RECOVERED						
RECOVERED MATERIAL	DESTINATION (Name & Address)	DESTINATION STATE OR COUNTRY	DESTINATION COUNTY OR PROVINCE	DESTINATION NYS PLANNING UNIT (See Attached List of NYS Planning Units)	TONS RECOVERED (out of facility)	
Electronics						
Textiles						
Other (specify)						
TOTAL MISCELLANEOUS MATERIAL RECOVERED (tons): 0						

If the material type is not listed, use one of the "Other" lines and fill in the name of the material. If more "Other" lines are needed, cross out an unused type and fill in the other materials name. If still more "Other" lines are needed, attached another copy of this page, cross out an unused type, and fill in the other materials name.

SECTION 6 – UNAUTHORIZED SOLID WASTE

Has unauthorized solid waste been received at the facility during the reporting period?

Yes No If yes, give information below for each incident (attach additional sheets if necessary).

Date Received	Type Received	Date Disposed	Disposal Method & Location

SECTION 7 – PROBLEMS

Were any problems encountered during the reporting period (e.g., specific occurrences which have led to changes in facility procedures)?

Yes No If yes, attach additional sheets identifying each problem and the methods for resolution of the problem

SECTION 8 - SIGNATURE AND DATE BY OWNER OR OPERATOR

Owner or Operator must sign, date and submit one completed form with an original signature to the appropriate Regional Office (See attachment for Regional Office addresses and Solid Waste Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Permitting and Planning
 625 Broadway
 Albany, New York 12233-7260
 Fax 518-402-9041
 Email address: SWMAnnualreport@dec.ny.gov

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have the authority to sign this report form pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.


Signature

2/22/17
Date

CHARLES WHITTAKER
Name (Print or Type)

OPERATIONS MANAGER
Title (Print or Type)

CWI@UCRRA.org
Email (Print or Type)

PO BOX 6219
Address

Kingston
City 336-0600

NY 12402
State and Zip

(845) 349-3415
Phone Number

ATTACHMENTS: YES NO

Destination facilities;

Metal:

B. Millens	P.O. Box 1940 Kingston, NY 12402
Ekman Recycling	1608 Route 88 West Brick, NJ 08724
TAM Enterprises	PO BOX 2234 Kingston, NY 12402
Conli Group	1661 46 th Street Brooklyn, NY 112401

Paper:

American Independent	15 South Depot Plaza Tarrytown, NY 10591
Casella	1770 rt 9 Suite 304 Clifton Park, NY 12065
Fox Run Recycling	PO Box 446 Callicoon, NY 12723
All American	2 Hope Street Jersey City, NJ 07307

Plastic:

Ekman Recycling	1608 Route 88 West Brick, NJ 08724
Casella	1770 rt 9 Suite 304 Clifton Park, NY 12065
Ulster Greene Arc	471 Albany Avenue Kingston, NY 12401
Conli Group	1661 46 th Street Brooklyn, NY 11204

Single Stream:

ReCommunity	237 Dupont Avenue Newburgh, NY 12551
Sierra Processing	P.O. Box 797 Clifton Park, NJ 12065
All American	2 Hope Street Jersey City, NJ 07307

Appendix C

2016 NYSDEC Annual Tonnages Recyclables

Sullivan County



**SULLIVAN COUNTY
DIVISION OF PUBLIC WORKS**

100 NORTH STREET, P.O. BOX 5012
MONTICELLO, NY 12701-3835

VIA CERTIFIED MAIL, # 7003 1010 0002 3767 2544

March 31, 2017

New York State Department of Environmental Conservation
Division of Materials Management
625 Broadway, 9th Floor
Albany, NY 12233-7260

Attention: Bureau of Permitting and Planning

Subject: 2016 Sullivan County Annual Planning Unit Recycling Report

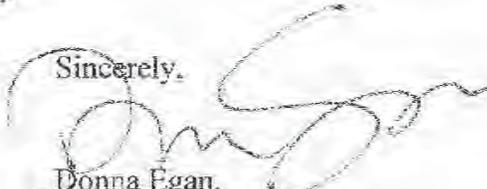
Electronic Version: 2016 NYSDEC Annual Planning Unit Recycling Report.pdf

Dear Bureau of Permitting and Planning:

Attached is the 2016 Annual Planning Unit Recyclables Report and supporting documentation submitted electronically and via hard copy for Sullivan County, New York.

An electronic copy of this report has been transmitted to NYSDEC Region 3 Recycling Specialist Terry Laibach. If you have any questions or desire additional information, please contact this office at 845-807-0294 or via email to: recycling@co.sullivan.ny.us Thank you.

Sincerely,


Donna Egan,
Director of Solid Waste

Y:\Annual Reports 2016\letNYSDECAnnualPlanningUnitRecyclingReport2016CoverLetter033117a.doc

eCopy: Edward McAndrew, P.E., Commissioner of Public Works
Bill Cutler, Recycling Coordinator
NYSDEC Region 3 – Terry Laibach, Recycling Specialist
File

NOTE: WHEN FILLING OUT THIS FORM, PLEASE REPORT ALL WASTE/MATERIAL GENERATED WITHIN THE PLANNING UNIT (NOT JUST THOSE FACILITIES OWNED/OPERATED BY THE PLANNING UNIT). ATTACH ADDITIONAL SHEETS AS NECESSARY.

REPORT YEAR: 2016	PLANNING UNIT NAME: Sullivan County
ADDRESS: Sullivan County Dept. of Solid Waste, 100 N. St., P.O. Box 5012, Monticello, NY 12701	COUNTY: Sullivan
CONTACT PERSON: Bill Cutler	TELEPHONE NUMBER: 845-807-0291
EMAIL: recycling@co.sullivan.ny.us	
LIST ALL FACILITIES IN YOUR PLANNING UNIT FOR WHICH DATA ARE INCLUDED IN THIS REPORT (MUNICIPAL AND PRIVATE)	
REGISTRATION/PERMIT NO.	
1. Sullivan County Landfill/Recycling Center	3-4846-00079/00021
2. Click here to enter text.	Click here to enter text.
3. Click here to enter text.	Click here to enter text.
4. Click here to enter text.	Click here to enter text.
5. Click here to enter text.	Click here to enter text.
6. Click here to enter text.	Click here to enter text.
7. Click here to enter text.	Click here to enter text.
8. Click here to enter text.	Click here to enter text.
9. Click here to enter text.	Click here to enter text.
10. Click here to enter text.	Click here to enter text.
11. Click here to enter text.	Click here to enter text.
12. Click here to enter text.	Click here to enter text.
13. Click here to enter text.	Click here to enter text.
14. Click here to enter text.	Click here to enter text.
15. Click here to enter text.	Click here to enter text.
16. Click here to enter text.	Click here to enter text.
17. Click here to enter text.	Click here to enter text.
18. Click here to enter text.	Click here to enter text.
19. Click here to enter text.	Click here to enter text.
20. Click here to enter text.	Click here to enter text.
21. Click here to enter text.	Click here to enter text.
22. Click here to enter text.	Click here to enter text.
23. Click here to enter text.	Click here to enter text.
24. Click here to enter text.	Click here to enter text.
25. Click here to enter text.	Click here to enter text.

WASTE GENERATED IN PLANNING UNIT SENT FOR DISPOSAL (MATERIAL NOT RECYCLED)

- * In this section, report all material sent for disposal.
- * Using this data, material generated within the planning unit can be tracked from the point of generation to the place of final disposal.
- * An intermediate destination facility is a facility used for processing, sorting or consolidation before being sent to a disposal facility.
- * A final destination facility includes facilities that accept waste for final disposal (landfills, municipal waste combustors, out-of-state disposal facilities).

WASTE STREAMS	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, C&D Debris Processor)	TONS	FINAL DESTINATION FACILITY (Landfill, Municipal Waste Combustor, Out-of-State)	TONS	
Municipal Solid Waste (MSW)	1. Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	39,757	Seneca Meadows Landfill, Waterloo, NY 13165	39,757	Scale Weight
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	3. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
C&D Debris	1. Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	21,018	Seneca Meadows Landfill, Waterloo, NY 13165	21,018	Scale Weight
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	3. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Non-Hazardous Industrial Waste	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	3. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Biosolids	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	3. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

RECYCLABLES RECOVERED

- * Do not report recyclables that result from the Returnable Container Act (Bottle Bill) or are part of a Beneficial Use Determination.
- * Report all recyclable material quantities as marketed tonnages.

Municipal (Mixed Material)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Single Stream	1. Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	2794 (Tons)	ReCommunity Recycling, 508 Fishkill Ave., Beacon, NY 12508	2794 (Tons)	Scale Weight
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Commingled Containers (metal, plastic, glass)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Commingled Paper (mixed, all grades)	1. Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	441 (Tons)	Fox Run Recycling, P.O. Box 446, Callicoon, NY 12723	441 (Tons)	Scale Weight
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

Municipal (Paper)	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Newspaper	1. Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	118 (Tons)	Cellmark Recycling, 81 Washington St., Norwalk, CT 06854	118 (Tons)	Scale Weight
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Corrugated Cardboard	1. Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	1058 (Tons)	Fox Run Recycling, P.O. Box 446, Callicoon, NY 12723	1058 (Tons)	Scale Weight
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

Paperboard/ Boxboard (cereal, shoe and gift boxes)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Office Paper	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Magazines	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Junk Mail	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)	
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS		
Municipal (Metal)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Tin/Aluminum Containers	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Aluminum Foil/ Trays	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
White Goods/ Enameled Appliances	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

Propane Tanks	1.	Ferndale, Highland, Mamakating, Monticello, Rockland & Western Sullivan Transfer Stations*	5	Combined Energy Services, Monticello, NY 12701	5	Estimate
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Bulk Metal (from residents)	1.	Ferndale, Highland, Mamakating, Monticello, Neversink, Rockland & Western Sullivan Transfer Stations, etc.**	944	Upstate Shredding, 15 West Main St., Owego, NY 13827	944	Scale Weight
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Metal from Municipal Waste Combustor Ash	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)	
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS		
Municipal (Glass)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Glass Containers (separated, only clear)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Glass Containers (separated, only brown)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Glass Containers (separated, only green)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Glass Containers (mixed colors)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Non-container Glass (vases, windows)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

NAME AND COMPLETE ADDRESS							
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)		TONS	END USE/FINAL DESTINATION FACILITY (Market)		TONS	DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	1.	2.		1.	2.		
Municipal (Plastic)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
Commingled Plastic Containers (#1-7)	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
PET Containers (plastic #1, soda and water bottles)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
HDPE Containers (plastic #2, milk jugs, laundry and soap bottles)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
Plastic #3-7 Containers	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
Rigid Plastics (buckets, laundry baskets)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	
Plastic Film &	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.	

Bags (plastic wrap)	2.	Click here to enter text.	{Tons}	Click here to enter text.	{Tons}	Choose an item.
NAME AND COMPLETE ADDRESS						
Municipal (Organics)	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)		TONS	END USE/FINAL DESTINATION FACILITY (Market)		TONS
Leaves/Grass	1.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
	2.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
Brush/Branches /Trees/Stumps (from residents)	1.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
	2.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
Food Scraps (kitchen, grocery stores, restaurants, schools)	1.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
	2.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
Fats, Oils and Grease	1.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
	2.	Click here to enter text.	{Tons}	Click here to enter text.		{Tons}
DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)						
						Choose an item.

NAME AND COMPLETE ADDRESS						
Municipal (Miscellaneous)	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)		TONS	END USE/FINAL DESTINATION FACILITY (Market)		TONS
Textiles	1.	Ferndale, Highland, Mamakating, Monticello, Rockland & Western Sullivan Transfer Stations*	12	Textile Recovery Services, Inc., 70 Crossway E., Bohemia, NY 11716		12
	2.	Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	120	Salvation Army, Rt. 211, Middletown, NY 10940		120
DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)						
						Estimate
						Estimate

Electronics	1.	Ferndale, Highland, Mamakating, Monticello, Rockland & Western Sullivan Transfer Stations*	40	Advanced Recovery, Inc., 41 Mechanic St., Port Jervis, NY 12771	40	Scale Weight
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Tires	1.	Monticello Transfer Station, 237 Landfill Drive, Monticello, NY 12701	159	Casings, Inc., 169 Maple Ave., Catskill, NY 12414	159	Scale Weight
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Wood Pallets	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

HOUSEHOLD HAZARDOUS WASTE FROM MUNICIPAL COLLECTION EVENTS

If the planning unit has a permanent HHW facility, please provide below its name and permit number.

Facility name:	Click here to enter text.	Registration/Permit No.	Click here to enter text.
Location of Collection Event:	Sullivan County Landfill	Number of Events:	Two
1. Antifreeze			
3. Automotive Batteries	50 Gallons	2. Hazardous Paint	900 Gallons
5. Pesticides (Solids)	720 Pounds	4. Hazardous Household Batteries	(Pounds)
7. Mercury Containing Devices	1000 Pounds	6. Pesticides (Liquids)	400 Gallons
9. Fluorescent Bulbs	(Pounds)	8. Bulk Mercury	30 Pounds
11. # TVs	350 (Pounds)	10. # CRTs	(Pounds)
13. Other HHW (Solids)	1200 Pounds	12. Other Electronics	(Pounds)
15. Miscellaneous Solid Waste (Solids)	1800 Pounds	14. Other HHW (Liquids)	450 Gallons
		16. Miscellaneous Solid Waste (Liquids)	(Gallons)

C&D Debris	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, C&D Debris Processor)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS	
Asphalt	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Brick	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Concrete	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Wallboard (drywall)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Petroleum Contaminated Soil (PCS)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Rock	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Soil (clean)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Roofing Shingles	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

Wood (clean)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Wood (contaminated)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Land Clearing Debris <small>(including brush, stumps, trees, etc. NOT included in Organics section)</small>	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
C&D Debris Bulk Metal (not from residents)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

	NAME AND COMPLETE ADDRESS			DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)	
	INTERMEDIATE DESTINATION FACILITY (Transfer Station, Recyclables Handling and Recovery Facility)	TONS	END USE/FINAL DESTINATION FACILITY (Market)		TONS
Non-Hazardous Industrial	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Metal Reported from Automobile Dismantlers	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Metal Reported by Scrap Metal Processors	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Industrial Scrap Metal (pre-consumer)	1. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2. Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

Industrial Scrap Glass (pre-consumer)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Industrial Scrap Plastic (pre-consumer)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Industrial Scrap Paper (pre-consumer)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Food Processing Waste (brewery, fish, fruit, vegetable and dairy waste)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Wood (furniture)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

Biosolids	NAME AND COMPLETE ADDRESS				DATA SOURCE (Hauler/Facility Survey, Scale Weight, Truck, Estimate, Other)	
	INTERMEDIATE DESTINATION FACILITY (Transfer Station)	TONS	END USE/FINAL DESTINATION FACILITY (Market)	TONS		
Biosolids (WWTP sludge)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
Septage (septic tank sludge)	1.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.
	2.	Click here to enter text.	(Tons)	Click here to enter text.	(Tons)	Choose an item.

PLANNING UNIT RECYCLING SYSTEM INFORMATION

* Please answer the following survey

WHAT RECYCLING SYSTEMS ARE AVAILABLE IN YOUR PLANNING UNIT?	Single stream recycling (Commingled)	<input type="checkbox"/>
	Dual stream recycling	<input type="checkbox"/>
	Both, single and dual recycling	<input checked="" type="checkbox"/>

WHAT IS THE PERCENTAGE (ESTIMATE) OF THE PLANNING UNIT POPULATION THAT HAVE ACCESS TO EACH ONE OF THE RECYCLING SYSTEMS?	Single stream recycling (Commingled)	<input type="checkbox"/>	%
	Dual stream recycling	<input type="checkbox"/>	%
	Both, single and dual recycling	<input type="checkbox"/>	100

NAME: Donna Egan	DATE: 03-31-17
SIGNATURE: 	TITLE & ORGANIZATION: Director of Solid Waste, Sullivan Co. Division of Public Works

COMMENTS/SUGGESTIONS:
Click here to enter text.

SEND COMPLETED FORM VIA EMAIL TO planning@dec.ny.gov

IF EMAIL IS NOT AN OPTION SEND IT TO THE ADDRESS LISTED BELOW:

NYS Department of Environmental Conservation
 Division of Materials Management
 Attn: Bureau of Permitting and Planning
 625 Broadway, 9th Floor
 Albany, NY 12233-7253
 P: (518) 402-8678 F: (518) 402-9041

2016-Data Year Annual Planning Unit Recycling Report, Out-of-Network* Data:**

The following Planning Unit-generated recyclables were identified from 2017 Sullivan County Solid Waste Hauler/Account Holder License Renewal Applications, and report 2016 data from Hauler Surveys.

Recyclables / Recoverable Materials:	Sullivan Co. Private Haulers / Account Holders	Walmart # 2547 -- NA 2016	Home Depot # 6172 - NA 2016	Totals
OCC tons	1697			1697
ONP tons	10			10
OMG tons				
Tin Cans tons				
Mixed Glass tons	8			8
Mixed Plastic tons				
Single Stream Recyclables tons	367			367
Mixed Electronic Scrap tons	21			21
Textiles tons	62			62
Tires tons	38			38
Scrap Metal tons	310			310
White Goods tons				
Fluorescent Lamp count	170			170
Fluorescent Bulbs tons				
Auto Batteries tons				
Mixed Batteries tons				
Pallets tons				
Used Motor Oil gallons	2487			2487
Used Motor Oil tons				
MSW tons				
C&D tons	9143			9143
Organics tons				
Used Cooking Oil tons				
Food Donations tons				
Bone-Fat-Meats tons				

FILM lbs.			
Shrink Wrap tons			
Hangers lbs.			
PET lbs.			
Office Paper lbs.			
Mixed Paper lbs.			
HDPE lbs.			
Other Plastics lbs.			
MSW tons			

2016 Planning Unit Report – Sullivan County:

* Ferndale, Highland, Mamakating, Monticello, Rockland and Western Sullivan Transfer Stations; please see individual Transfer Station Annual Reports and Electronic Scrap Annual Reports for specific tonnage detail for these locations.

**Includes mixed tonnage complement from Ferndale, Highland, Mamakating, Monticello, Neversink, Rockland and Western Sullivan Transfer Stations, plus Barryville DPW Shop and Maplewood DPW Shop. Please see specific Transfer Station Annual Reports for tonnage detail.

***For purposes of this report the term *Out-of-Network* refers to Municipal Solid Waste & Recyclables that were generated in the Planning Unit (Sullivan County), but do not enter our transfer facilities for processing, transfer, weighing or official tabulation. Private Haulers are not required to use County Facilities to handle their materials, hence a number of accounts prefer to transport and sell materials privately in order to recoup greater margins on sale of materials. Double-counting is avoided by separate reporting requirements for generators.

2016 Data Year Sullivan County Out-of-Network*

Annual Planning Unit Recycling Report

The following planning unit-generated recyclables were identified from 2017 Sullivan County Solid Waste Hauler License Renewal Applications, and report 2016 data from Hauler Surveys:

RECYCLABLES:	QUANTITY:
Corrugated Cardboard	1,697 tons
Newsprint	10 tons
Glass Containers	8.0 tons
Bulk Scrap Metal	310 tons
Plastic Containers	0
SSR (Single Stream Recyclables)	367 tons
Tin Cans	0
Textiles	62 tons
Electronics	21 tons
Tires	38 tons
Fluorescent Lamps	Count = 170 lamps
Used Oil	2487 gallons @ 7 lbs./gal. = 9 tons
C & D Debris	9143 tons
GRAND TOTAL:	11,665 tons**

*The term *Out-of-Network* refers to Municipal Solid Waste & Recyclables that were generated in the Planning Unit (Sullivan County), but that do not enter our transfer facilities for processing, transfer or official tabulation. Private Haulers are not required to use County Facilities to handle their materials, hence a number of accounts prefer to transport and sell materials privately in order to recoup greater margins. Double-counting is avoided by separate reporting requirements for generators.

**Voluntarily reported Out-of-Network Recyclables from prior - year (2016 data) Licensed Applicants.

2016 Sullivan County Electronic Scrap Recycling Program Vendor Data Summary:

Ferndale Transfer Station

2016 Data Year NYSDEC Annual Electronic Scrap Vendor Documentation:

	Vendor 1	Vendor 2	Advanced Recovery	TS TOTAL in LBS.:
Computers			327	327
Computer Peripherals (CRT)			1058	1058
Computer Peripherals (non-CRT)			0	0
Small Electronic Equipment			951	951
Small Scale Servers			0	0
Televisions (CRT)			6329	6329
Televisions (non-CRT)			415	415
VENDOR TOTALS:			9080	9080

Highland Transfer Station

2016 Data Year NYSDEC Annual Electronic Scrap Vendor Documentation:

	Vendor 1	Vendor 2	Advanced Recovery	TS TOTAL in LBS.:
Computers			283	283
Computer Peripherals (CRT)			505	505
Computer Peripherals (non-CRT)			0	0
Small Electronic Equipment			2113	2113
Small Scale Servers			0	0
Televisions (CRT)			5123	5123
Televisions (non-CRT)			973	973
VENDOR TOTALS:			8997	8997

Con't.

Mamakating Transfer Station

2016 Data Year NYSDEC Annual Electronic Scrap Vendor Documentation:

	Vendor 1	Vendor 2	Advanced Recovery	TS TOTAL in LBS.:
Computers			514	514
Computer Peripherals (CRT)			0	0
Computer Peripherals (non-CRT)			26	26
Small Electronic Equipment			1284	1284
Small Scale Servers			0	0
Televisions (CRT)			6626	6626
Televisions (non-CRT)			628	628
VENDOR TOTALS:			9078	9078

Rockland Transfer Station

2016 Data Year NYSDEC Annual Electronic Scrap Vendor Documentation:

	Vendor 1	Vendor 2	Advanced Recovery	TS TOTAL in LBS.:
Computers			760	760
Computer Peripherals (CRT)			883	883
Computer Peripherals (non-CRT)			100	100
Small Electronic Equipment			1224	1224
Small Scale Servers			0	0
Televisions (CRT)			8563	8563
Televisions (non-CRT)			2091	2091
VENDOR TOTALS:			13621	13621

Con't.

Western Sullivan Transfer Station

2016 Data Year NYSDEC Annual Electronic Scrap Vendor Documentation:

	Vendor 1	Vendor 2	Advanced Recovery	TS TOTAL in LBS.:
Computers			300	300
Computer Peripherals (CRT)			521	521
Computer Peripherals (non-CRT)			125	125
Small Electronic Equipment			1260	1260
Small Scale Servers			0	0
Televisions (CRT)			5429	5429
Televisions (non-CRT)			234	234
VENDOR TOTALS:			7869	7869

Monticello Transfer Station

2016 Data Year NYSDEC Annual Electronic Scrap Vendor Documentation:

	Vendor 1	Vendor 2	Advanced Recovery	TS TOTAL in LBS.:
Computers			1071	1071
Computer Peripherals (CRT)			1907	1907
Computer Peripherals (non-CRT)			0	0
Small Electronic Equipment			5965	5965
Small Scale Servers			0	0
Televisions (CRT)			20581	20581
Televisions (non-CRT)			2651	2651
VENDOR TOTALS:			32175	32175

Con't.

2016 Sullivan County E-Scrap Collection Totals:

2016 Data Year NYSDEC Annual Electronic Scrap Transfer Station & Vendor Summary:

TS → Vendor ↓	Ferndale	Highland	Mamakating	Rockland	West. Sull.	Monticello	Vendor Totals:
Advanced Recovery	9080	8997	9078	13621	7869	32175	80820
STATION TOTALS:	9080	8997	9078	13621	7869	32175	80820
GRAND TOTAL:	80,820 lbs. (40.41 tons)						lbs. or tons

2016 Data Year NYSDEC Annual Electronic Scrap Material Summary by Transfer Station:

TS → Material ↓	Ferndale	Highland	Mamakating	Rockland	West. Sull.	Monticello	Material Totals:
Computers	327	283	514	760	300	1071	3255
Computer Peripherals (CRT)	1058	505	0	883	521	1907	4874
Computer Peripherals (non-CRT)	0	0	26	100	125	0	251
Small Electronic Equipment	951	2113	1284	1224	1260	5965	12797
Small Scale Servers	0	0	0	0	0	0	0
Televisions (CRT)	6329	5123	6626	8563	5429	20581	52651
Televisions (non-CRT)	415	973	628	2091	234	2651	6992
STATION TOTALS:	9080	8997	9078	13621	7869	32175	80820
GRAND TOTAL:	80,820 lbs. (40.41 tons)						lbs. or tons

APPENDIX D
UCRRA DRAFT SWMP

Ulster County



DRAFT

Solid Waste Management Plan

Prepared: September 2011

NYSDEC Approved: _____

Modified: _____

(changes incorporated herein)

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INTRODUCTION

The Ulster County Resource Recovery Agency (hereinafter defined as the “Agency” or “UCRRA”) is a public benefit corporation of the State of New York which is empowered by Chapter 13-G of the Public Authorities Law to manage solid waste and recyclables in the County of Ulster, New York (the “County”). It has been designated by the County Legislature as the County’s solid waste planning unit (the “Planning Unit”), and has previously developed and issued the Ulster County Solid Waste Management Plan, the County’s local solid waste management plan (“SWMP”), which was approved by the New York State Department of Environmental Conservation (“NYSDEC”) in December, 1991. A copy of the original SWMP is available from the Agency, and the original SWMP is incorporated by reference into this document.

The Agency administers the SWMP pursuant to an agreement with the County entitled the Solid Waste Service Agreement (the “Service Agreement”). Pursuant to its designation as the County’s solid waste planning unit and the Service Agreement, and as required by NYSDEC, the Agency has prepared this 2011 update to the SWMP (the “Plan Update”).

The Agency manages solid waste consistent with the policies set forth in the New York State Solid Waste Management Plan. New York State has established solid waste management policy objectives under a “preferred hierarchy” that is generally described as follows (in order of descending preferences):

First, to reduce the amount of waste generated within New York State.

Second, to reuse material for the purpose for which it was originally intended or recycle material that cannot be reused (composting is considered a form of recycling).

Third, to recover, in an environmentally acceptable manner, energy from solid waste that cannot be economically and technically reused or recycled.

Fourth, to dispose of solid waste that is not being reused or recycled, or from which energy is not being recovered, by land burial or other methods approved by the NYSDEC.

The Agency is responsible for compliance with State and Federal laws, rules and regulations regarding the management and long-term obligations of closed solid waste management facilities and currently operating facilities under its direct control. The Agency’s responsibilities also include education and public outreach efforts to encourage, support, and foster participation by the public with respect to reducing, reusing, and recycling portions of the existing solid waste stream. Historically, the Agency’s solid waste programs have relied on both public and private participation to manage a variety of waste streams and recyclable products. These efforts have resulted in the current recycling rate of 41 percent.

In sum, the mission of the Agency is to provide its constituency with a comprehensive program for managing solid waste, which is consistent with New York State's Hierarchy for solid waste management, in an economically sound and environmentally safe manner. To this end, potential program expansion elements under this Plan Update will build off of the following existing efforts:

Safe and reliable disposal of municipal solid waste (MSW).

Recyclables acceptance and processing through contracts with private companies for single stream recycling.

Continued efforts and promotion with local municipalities (MRDCs) and private haulers for residential MSW and recyclables.

Yard waste composting.

Periodic household hazardous waste collection for residents and small businesses.

Periodic electronics recycling for residents and small businesses.

Development of guidelines and educational materials in support of the Agency's programs, including updating the web site.

Public outreach and assistance to businesses and institutions to assist in setting up recycling programs.

Purchasing and distributing recycling bin containers.

Assistance with backyard composting, including compost bins for sale and distribution.

Tracking and monitoring of recycling participation through mailers, surveys and reports.

1. PLANNING UNIT

1.1 LOCATION

The Agency's jurisdiction as Planning Unit includes all of Ulster County, which is located in the Mid-Hudson Valley region of New York State, approximately 90 miles from New York City and approximately 50 miles from Albany. It is bordered on the East by the Hudson River, on the north by Greene County, on the west by Sullivan and Delaware Counties and on the south by Orange County. It is comprised of 1,142.8 square miles. Within the County are a variety of recreational, commercial, educational, residential and cultural facilities. The County includes a large part of the Catskill and Shawangunk Mountains. A substantial portion of the County is located within the Catskill State Park and the New York City watershed. These areas are sparsely

populated and subject to extensive land use restrictions. A map showing the location of the County is annexed as Exhibit 1.

1.2 POLITICAL SUBDIVISIONS

All political subdivisions within the County are covered by the Planning Unit. They are:

Towns

Denning	Hurley	Marlborough	Rochester	Shawangunk
Esopus	Kingston	New Paltz	Rosendale	Ulster
Hardenburgh	Lloyd	Olive	Saugerties	Wawarsing
Gardiner	Marbletown	Plattekill	Shandaken	Woodstock

Villages

Ellenville New Paltz Saugerties

City

Kingston

The communities of the County reflect great diversity: Kingston is the County seat and service center, and is located on the Hudson River; immediately north of Kingston is the Town of Ulster, the retail/commercial center of the County; Woodstock is an art colony and cultural center located in the deeply wooded area slightly northwest of Kingston; New Paltz is the location of a State University of New York liberal arts college and is situated on the Wallkill River, 20 miles south of Kingston. The seventeenth century homes and churches along Huguenot Street in New Paltz comprise a national historic site; Saugerties, a Hudson River town is 10 miles north of Kingston. Phoenicia is a hunting and fishing center 24 miles northwest of Kingston in the Catskill Mountains and is a year-round resort and residential area; Hurley, one of the oldest communities in the County, is dotted with rugged, seventeenth-century stone homes, and is an agricultural and residential center; Highland is the center of the Hudson Valley wine industry with apple, peach and grape orchards and a growing manufacturing and retail base tied closely with the Poughkeepsie urbanized area on the east side of the Hudson. The southern tier of the County is experiencing residential growth pressure from neighboring Orange County. Ellenville is a vacation center and home of the County's mountain resort hotels and is a recreational and trading center for several counties.

1.2.1 EDUCATION

Elementary and secondary education facilities are provided by 15 school districts. Seven of the districts are completely within the County and an additional eight are partially within the County. Higher education facilities are available at the State University of New York at New Paltz offering undergraduate and graduate degree programs in the liberal arts, business administration, and sciences, the fine and performing arts and education. The 257-acre campus has an enrollment of approximately 8,250. Ulster County Community College at Stone Ridge is a two-year college offering programs in liberal arts and sciences, nursing, fire protection technology, water quality monitoring, GIS and Computer Technology and business and secretarial courses.

1.3 DEMOGRAPHICS

1.3.1 POPULATION

According to the U.S. Census Bureau, the population of the County was 177,749 in 2000 and 182,493 in 2010, a growth rate of 2.7%. Extending the rate of population growth to 2021, the end of the planning period, it is estimated that the population of the County should increase from 182,493 to 184,200. See Table 1. In light of the above, it is highly unlikely that population growth during the planning period will have a significant impact on solid waste management.

1.3.2 EMPLOYMENT

The level of Employment in the County is depicted in Table 2. The percentage of employment in the various fields of endeavour is depicted in Table 3. As indicated, private, non-farm employment is heavily weighted toward the retail, hospitality and service sectors. Government employment (including education, health care and corrections) makes up a significant share of the County workforce. Farm employment, while declining over the prior planning period, is a factor, as well. There is limited heavy industry, and high-tech manufacturing plays only a minor role.

1.3.3 ECONOMIC GROWTH

While the County actively pursues economic growth initiatives, the County's economic growth strategy document predicts only a small increase over the next planning period. See Table 4. Tourism and agriculture are important contributors to the economy of the County. The County offers easy accessibility from the NY City metropolitan area and a variety of seasonal activities, including skiing, hiking, wine tours and trout fishing. Major hotels include Mohonk Mountain House, Hudson Valley Resort Spa & Conference Center, Super 8, Holiday Inn, Courtyard by Marriott, Rocking Horse Ranch, Quality Inn, Comfort Inn, Pine Grove and Emerson Inn and Spa. Additional hotels include the Hampton Inn, Minnewaska Lodge, Howard Johnson Hotel and Ramada Inn. The tourism industry also generates significant sales tax revenues, and continues to be a major growth sector for the County. For 2009 visitor spending in Ulster

County is estimated to be \$420 million with direct labor income estimated to be \$257 million. The tourism industry generated an estimated \$26.0 million in sales and bed tax revenues County wide.

The County is able to offer a variety of seasonal activities, including skiing, hiking, wine tours and trout fishing. Race-horse breeding has become a major industry as the County is host to over 50 horse facilities of which 10 are used for breeding race horses (Source: Ulster County Horse Facilities). The County is the State's largest producer of fresh market apples and sweet corn. Agricultural sales have been steadily increasing with a total now estimated in excess of \$50 million dollars. The County has over 70,000 acres within State certified Agricultural Districts to help protect this valuable industry.

New York State and institutional employers are also major components of the County's economic base. The State University of New York at New Paltz currently employs 1,500 persons. New Paltz, with its proximity to New York City and Long Island is steadily increasing in enrollment. Ulster County Community College currently employs 300 persons. Its enrollment is expected to continue to increase at approximately 2% per year for the next 5 years.

The State Correctional Department operates four major detention facilities in the County. There are two such facilities located in Napanoch. One is the Eastern Correction Facility (maximum security), which employs approximately 650 people, the other is the Ulster Correctional Facility (medium security) which employs approximately 422 persons. The State Correctional Facility (Shawangunk, mixed security) presently employs approximately 397 persons and the Wallkill Correctional Facility presently employs approximately 278 persons. In addition, the New York State Unified Court System employs approximately 50 judiciary employees within Ulster County. The State also operates a youth residential facility in Highland that employs approximately 219 persons.

The hospitals in the County are also major employers as well as providing important services. The three hospitals in the County are Benedictine with approximately 940 employees, Kingston Hospital with approximately 950 and Ellenville Community with approximately 175. Skilled nursing facilities are also located in the county and the recently completed life-cycle community of Woodland Pond in New Paltz represents an investment of over 94 million dollars and has created 80 full time jobs.

The County is a retail center, not only for its own residents but also for sections of neighboring counties. Large shopping centers serve the area; five in Kingston; two in New Paltz; one in Saugerties; one in Highland; three in rural areas of the County of Ulster and two near Ellenville. Major chains such as Sears Roebuck & Company, Wal-Mart, Sam's Club, Lowes, Home Depot, Target, J.C. Penney Co. Inc., Macy's, Best Buy, Barnes & Noble, Sports Authority, Modell, H & M and Kohl's are represented as are a wide range of specialty shops and restaurants (Starbucks,

Ninety-Nines, Ruby Tuesdays, Texas Roadhouse and Applebee’s). Various retail chains continue to open operations in a variety of towns throughout the County.

Finally, the County has been able to utilize its geographic location, cost advantages, quality of life issues, associated with its open spaces to attract a solid base of small, highly successful knowledge based companies, the so called “creative economy”. These are exemplified by companies like Sono Tek, Woodstock Percussion, Se’Lux, Fala Technologies, Venture Information Systems, and 721 Media Center. Overall manufacturing provides approximately 3,500 jobs with a direct payroll of \$183 million and an approximate average pay of \$45,000 and are further buttressed by traditional arts and culture businesses. The County has also developed a significant cluster in green energy (solar) manufacturing that has resulted in an increase in average wages.

1. Major Employers

In addition to the larger employers previously discussed, the following business concerns, each with approximately 100 or more employees, are located in the County.

<u>Non-Retail Businesses</u>			
<u>Name</u>	<u>Employees</u>	<u>Product</u>	<u>City</u>
County of Ulster	A	Government	Kingston
State Correctional Facilities	A	Correctional Services	Wallkill/Napanoch
SUNY New Paltz	A	Educational Services	New Paltz
Bank of America, N.A.	B	Finance	Kingston
Benedictine Hospital	B	Health Services	Kingston
Kingston Hospital	B	Health Services	Kingston
Mohonk Mountain House	B	Resort/Hotel	New Paltz
SUNY Ulster	B	Educational Services	Stone Ridge
BOCES	C	Educational Services	New Paltz/Port Ewen
City of Kingston	C	Government	Kingston
Hudson Valley Resort & Spa	C	Resort/Hotel	Kerhonkson

Kingston Consolidated School District	C	Educational Services	Kingston
Northeast Center for Special Care	C	Health Services	Lake Katrine
Ten Broeck Commons	C	Health Services	Lake Katrine
The Fallsview	C	Resort/Hotel	Ellenville
Ulster Savings/Ryan Insurance	C	Finance/Insurance	Kingston
Ametek Rotron	D	Electrical Manufacturing	Woodstock
Brooklyn Bottling Company	D	Machinery Manufacturing	Milton
CH Energy Group	D	Utility	Kingston
Ellenville Central School District	D	Educational Services	Ellenville
Elna Magnetics	D	Electrical Manufacturing	Woodstock
Empire Merchants North LLC	D	Whole Distribution	Kingston
Fair Rite Products	D	Electronic Manufacturing	Wallkill
Fala Technologies	D	Electronic Manufacturing	Kingston
Gateway Community Industries	D	Miscellaneous Manufacturing	Kingston
GHI Insurance	D	Insurance	Lake Katrine
Highland Central School District	D	Educational Services	Highland
HUCK International	D	Metal Manufacturing	Kingston
Marlboro Central School District	D	Educational Services	Marlboro
Mid Hudson Family Health	D	Health Services	Kingston
Mid-Hudson Valley Federal Credit Union	D	Finance	Kingston/Saugerties/Highland
New Paltz Central School District	D	Educational Services	New Paltz
NY City DEP	D	Government	Kingston
NYS Bridge Authority	D	Government	Kingston/Highland
NYSDEC	D	Government	New Paltz
Onteora Central School District	D	Educational Services	Boiceville
Partsearch Technologies	D	Wholesale	Kingston
Precision Flow Technologies	D	Metal Manufacturing	Saugerties

Rocking Horse Ranch	D	Resort/Hotel	Highland
Rondout Valley School District	D	Educational Services	Marbletown
Saugerties Central School District	D	Educational Services	Saugerties
Se'lux	D	Electrical Manufacturing	Highland
Simulaids	D	Miscellaneous Manufacturing	Saugerties
Sunwize Technologies	D	Electrical Manufacturing	Kingston
The Children's Annex	D	Educational Services	Lake Katrine

<u>Non-Retail Businesses - Continued</u>			
<u>Name</u>	<u>Employees</u>	<u>Product</u>	<u>City</u>
The Emerson	D	Resort/Hotel	Mount Tremper
Tower Products/Markertek	D	Electronic Manufacturing	Saugerties
Ulster Greene ARC	D	Specialized Health	Kingston
United Cerebral Palsy	D	Specialized Health	Kingston
Verizon	D	Utility	Kingston
Vertis	D	Commercial Printing	Saugerties
Viking Industries	D	Wood/Paper Manufacturing	New Paltz
VirTis	D	Bio-Pharma Manufacturing	Gardiner
Wallkill Central School District	D	Educational Services	Wallkill
Wingate at Ulster	D	Health Services	Highland
Zumtobel Staff Lighting	D	Electrical Manufacturing	Highland
<u>Retail Businesses</u>			
Wal-Mart	B	Retail – All	Kingston
Hannaford	C	Retail - Grocery	Kingston (2)/Highland / Plattekill
Adams Fairacre Farms	D	Retail – Grocery/Garden	Kingston
Home Depot	D	Retail – Home Supply	Kingston
Kohl's	D	Retail – Department Store	Kingston
Lowe's	D	Retail – Home Supply	Kingston/Highland
Price Chopper	D	Retail – Grocery	Saugerties
Sam's Club	D	Retail – All	Kingston
Shop Rite	D	Retail – Grocery	Kingston/New Paltz

Target	D	Retail – Department Store	Kingston
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Key

- A Greater than 1,000 employees
- B 500-999 employees
- C 250-499 employees
- D 100-249 employees

¹ Source: Ulster County Development Corporation and Commerce Register Inc.

2. Recent Economic Developments

While the national economy has seen decline, the County’s economic picture continues to be relatively stable. The County’s labor force has decreased to 90,400 as of August 2009, from 92,700 in 2006, a decrease of approximately 2.5%. According to the New York State Department of Labor, the County lost 200 private sector jobs from August 2007 to August 2008. The unemployment rate at 7.4% (September 2010) is below the State average of 8%. Total Non-farm jobs are up 300 from September 2009 to 61,500 and private sector employment rose 600 during the same period.

The County has also seen an increase in personal income and per capita income. Both levels currently exceed State non-metropolitan area rates of increase. The median family income as estimated by the Department of Housing and Urban Development for 2010 is \$70,100, up from \$66,700 for 2008 (see also “Wealth and Income Indicators”.)

The County’s real estate sectors, residential and commercial, continue to be robust. Residential housing prices have doubled in the last six years, with the median price now at \$230,000. Rental vacancy rates are at 1.8% as shown in 2007 Rental Housing Survey by the Ulster County Planning Board. The market response to the high demand has been major projects with over 5,900 new units pending approval. These changes have had a dramatic effect on full taxable values within the County which have increased by almost \$2.3 billion from 2006-2007. This data does not assimilate recent negative economic conditions and updated figures are currently unavailable.

Additional residential development is expected to continue. Over 4,000 units located in major projects are involved in the development review process. The County Health Department indicates that they have issued more than 800 new permits for single family housing septic systems for units not on central sewers. See also “Building Projects” and “Building Permits” herein. According to the County Planning Department, the average cost of the new condominiums and townhouses is estimated to be in excess of \$250,000 and the average cost of a single-family home is estimated to be between \$350,000 and \$450,000.

Despite the general economic slowdown, there continues to be business expansion in the county. Tech City, a former IBM facility, is being transformed into a niche manufacturing facility with a focus on green technologies. However, even with the positive transformations underway, there has been some other recent news that will affect Ulster County. The Bank of America is ending

its contract with New York State to process income tax returns, potentially jeopardizing hundreds of seasonal jobs in the bank's office at Tech City. Bank of America expects to stop processing New York tax returns at the end of the 2011 tax season, which would be in the spring of 2012, largely because of the upsurge in returns being filed electronically. It is not immediately clear how many people will be affected by the move or exactly how many are employed by Bank of America at TechCity. In 2004, when Bank of America bought Fleet Bank and took over the tax processing operation, its TechCity employment was reported to be 2,000 seasonal workers and 500 year-round employees. Losing these employees will be a major blow to TechCity's owners, who have been struggling for 13 years to fill empty space at the former IBM plant. Bank of America currently occupies about 300,000 square feet in a building on the west side of Enterprise Drive. In Saugerties, a new 500 seat conference center with a 47 unit hotel is being developed, and Elna Magnetics, a manufacturing facility, has moved to a new 32,000 square foot building. In Lloyd, skilled nursing facility, shopping center, solar manufacturing projects are underway.

The Ulster County Development Corporation (UCDC) has been involved in many of the above projects totaling millions in committed private sector expansion and start-up capital investments and hundreds of committed jobs in 200 and 2010. These are accomplished through a variety of funds including: Ulster County Revolving Loan Fund, Catskill Watershed Corporation, Town of Esopus Waterfront Development Loan Fund, Town of Lloyd Revolving Loan Fund and Town of New Paltz Revolving Loan Fund.

1.3.4 LAND USE

The major land use in Ulster County is residential, followed by retail, recreation and government uses. The City of Kingston, the Town of Ulster, and the Towns and Villages of Saugerties and New Paltz are the employment and service centers of the County. Kingston, the County's only city, is home to the County government and the County's major healthcare facilities, and is the County's banking center. It is situated on the Hudson River, and its waterfront area has many restaurants and a marina. The Town of Ulster is the location of major retail businesses. The Town and Village of New Paltz is the location of the SUNY New Paltz campus, many retail establishments and a major resort the Mohonk Mountain House. The Town and Village of Saugerties together comprise the largest residential population in the County. The Town of Woodstock is a major art center which attracts thousands of patrons each year. The Towns of New Paltz, Shandaken, Rochester, Olive, Hurley, Woodstock and Gardiner offer recreational opportunities associated with the Catskill Park and Shawangunk mountains. A rail trail presently runs from Gardiner to Lloyd, and now connects to a major tourist attraction, the Walkway over the Hudson, a rebuilt historic railroad bridge which is now a State park. Lloyd also is home to some of the manufacturing companies in the County. The Towns of Marlborough, Plattekill, Shawangunk, Esopus and Gardiner are essentially rural agri-business based communities noted for orchards and vineyards. Esopus is the site of several monasteries along the Hudson River, which, in the main, serve as retreat centers. The Town of Wawarsing is home to a State prison

facility and a large resort hotel. The Village of Ellenville is home to major hotels. The Town of Kingston, and the Towns of Denning and Hardenburgh are small communities in the Catskill Park.

1.4 CURRENT SOLID WASTE AND RECYCLING AMOUNTS

Ulster County

Table 1-1 Municipal Solid Waste (MSW) Detailed Composition Analysis Year - 2010

Material	MSW GENERATED									Planning Unit/ Municipality Percentages
	Rural			Suburban			Urban			
	41.40%			55.30%			3.30%			
	Residential	Com/Inst.	Combined	Residential	Com/Inst.	Combined	Residential	Com/Inst.	Combined	
	60.00%	40.00%	100.00%	55.00%	45.00%	100.00%	58.00%	42.00%	100.00%	100.00%
Newspaper	5.20%	1.90%	3.88%	5.00%	1.90%	3.61%	6.60%	2.00%	4.67%	3.75%
Corrugated Cardboard	6.60%	13.90%	9.52%	6.60%	13.90%	9.89%	6.90%	13.70%	9.76%	9.73%
Other Recyclable Paper										
Paperboard	3.20%	1.10%	2.36%	3.30%	1.00%	2.27%	3.60%	0.90%	2.47%	2.31%
Office Paper	0.80%	3.80%	2.00%	0.90%	4.20%	2.39%	1.10%	5.80%	3.07%	2.25%
Junk Mail	3.00%	0.70%	2.08%	3.20%	0.70%	2.08%	3.50%	0.70%	2.32%	2.09%
Other Commercial Printing	1.70%	2.30%	1.94%	1.70%	2.40%	2.02%	2.30%	2.60%	2.43%	2.00%
Magazines	1.10%	0.90%	1.02%	1.00%	0.80%	0.91%	1.10%	1.00%	1.06%	0.96%
Books	0.50%	0.30%	0.42%	0.50%	0.30%	0.41%	0.60%	0.40%	0.52%	0.42%
Bags	0.50%	0.20%	0.38%	0.50%	0.20%	0.37%	0.60%	0.20%	0.43%	0.37%
Phone Books	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.20%	0.26%	0.30%
Poly-Coated	0.20%	0.30%	0.24%	0.20%	0.20%	0.20%	0.30%	0.20%	0.26%	0.22%
Other Recyclable Paper (Total)	11.30%	9.90%	10.74%	11.60%	10.10%	10.93%	13.40%	12.00%	12.81%	10.91%
Other Compostable Paper	6.80%	6.80%	6.80%	6.40%	6.40%	6.40%	6.80%	6.80%	6.80%	6.58%
Total Paper	29.90%	32.50%	30.94%	29.60%	32.30%	30.82%	33.70%	34.50%	34.04%	30.97%
Ferrous/Aluminum Containers										
Ferrous Containers	1.90%	1.00%	1.54%	1.20%	0.70%	0.98%	1.40%	0.70%	1.11%	1.21%
Aluminum Containers	0.70%	0.40%	0.58%	0.60%	0.30%	0.47%	0.50%	0.40%	0.46%	0.51%
Ferrous/Aluminum Containers (Total)	2.60%	1.40%	2.12%	1.80%	1.00%	1.44%	1.90%	1.10%	1.56%	1.73%
Other Ferrous Metals	5.20%	5.40%	5.28%	5.00%	5.80%	5.36%	3.30%	3.70%	3.47%	5.26%
Other Non-Ferrous Metals										
Other aluminum	0.20%	0.30%	0.24%	0.20%	0.30%	0.25%	0.20%	0.30%	0.24%	0.24%
Automotive batteries	0.80%	0.50%	0.68%	0.70%	0.40%	0.57%	0.20%	0.20%	0.20%	0.60%
Other non-	0.50%	0.30%	0.42%	0.30%	0.40%	0.35%	0.40%	0.20%	0.32%	0.38%

aluminum											
Other Non-Ferrous Metals (Total)	1.50%	1.10%	1.34%	1.20%	1.10%	1.16%	0.80%	0.70%	0.76%	1.22%	
Total Metals	9.30%	7.90%	8.74%	8.00%	7.90%	7.96%	6.00%	5.50%	5.79%	8.21%	
PET Containers	1.10%	0.80%	0.98%	0.90%	0.80%	0.86%	1.20%	1.00%	1.12%	0.92%	
HDPE Containers	1.10%	0.60%	0.90%	0.90%	0.70%	0.81%	1.00%	0.70%	0.87%	0.85%	
Other Plastic (3-7) Containers	0.20%	0.10%	0.16%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.18%	
Film Plastic	5.70%	5.90%	5.78%	5.50%	5.80%	5.64%	5.80%	5.80%	5.80%	5.70%	
Other Plastic											
Durables	3.10%	3.20%	3.14%	3.00%	3.20%	3.09%	3.20%	3.30%	3.24%	3.12%	
Non-Durables	1.60%	1.80%	1.68%	1.60%	1.80%	1.69%	1.80%	1.90%	1.84%	1.69%	
Packaging	1.40%	1.10%	1.28%	1.40%	1.10%	1.27%	1.50%	1.10%	1.33%	1.27%	
Other Plastic (Total)	6.10%	6.10%	6.10%	6.00%	6.10%	6.05%	6.50%	6.30%	6.42%	6.08%	
Total Plastics	14.20%	13.50%	13.92%	13.50%	13.60%	13.55%	14.70%	14.00%	14.41%	13.73%	
Glass Containers	4.10%	3.80%	3.98%	3.90%	3.80%	3.86%	4.30%	3.80%	4.09%	3.91%	
Other Glass	0.50%	0.40%	0.46%	0.30%	0.40%	0.35%	0.40%	0.40%	0.40%	0.39%	
Total Glass	4.60%	4.20%	4.44%	4.20%	4.20%	4.20%	4.70%	4.20%	4.49%	4.31%	
Food Scraps	12.70%	13.30%	12.94%	12.90%	15.50%	14.07%	17.20%	25.20%	20.56%	13.82%	
Yard Trimmings	3.10%	1.10%	2.30%	11.30%	9.10%	10.31%	4.20%	1.50%	3.07%	6.75%	
Total Organics	15.80%	14.40%	15.24%	24.20%	24.60%	24.38%	21.40%	26.70%	23.63%	20.57%	
Clothing Footwear, Towels, Sheets	4.60%	3.00%	3.96%	4.40%	3.20%	3.86%	4.80%	2.50%	3.83%	3.90%	
Carpet	1.40%	1.30%	1.36%	1.70%	1.40%	1.57%	1.70%	0.90%	1.36%	1.47%	
Total Textiles	6.00%	4.30%	5.32%	6.10%	4.60%	5.43%	6.50%	3.40%	5.20%	5.37%	
Total Wood	4.10%	9.00%	6.06%	2.90%	4.10%	3.44%	2.00%	3.50%	2.63%	4.50%	
C&D Materials	8.00%	7.60%	7.84%	3.80%	2.70%	3.31%	4.40%	3.80%	4.15%	5.21%	
Other Durables	1.90%	1.70%	1.82%	1.60%	1.50%	1.56%	1.90%	1.50%	1.73%	1.67%	
Diapers	1.90%	1.10%	1.58%	2.10%	1.20%	1.70%	2.30%	1.10%	1.80%	1.65%	
Electronics	1.30%	1.40%	1.34%	1.60%	1.70%	1.65%	1.30%	1.30%	1.30%	1.51%	
Tires	1.80%	1.80%	1.80%	1.70%	1.40%	1.57%	0.50%	0.40%	0.46%	1.63%	
HHW	0.60%	0.00%	0.36%	0.60%	0.00%	0.33%	0.50%	0.00%	0.29%	0.34%	
Fines	0.60%	0.60%	0.60%	0.10%	0.20%	0.15%	0.10%	0.10%	0.10%	0.33%	
Total Miscellaneous	16.10%	14.20%	15.34%	11.50%	8.70%	10.24%	11.00%	8.20%	9.82%	12.34%	
Total	100.00%										

See Appendix for Table 1-2 Ulster County Municipal Solid Waste (MSW) Combined Composition Analysis and Projections 2010-2020

1.5 SOLID WASTE AND RECYCLING PROJECTIONS

1.5.1 SOLID WASTE PROJECTIONS

The volume of solid waste received is dependent on several factors. One factor is directly related to the economy. When the economy is strong, the volume of solid waste received will typically be higher than when the economy is weak. Another factor is directly related to population. As the population increases, the volume of solid waste received will typically increase and conversely, when the population decreases so does the volume of solid waste received. However, it is expected that through the continuation of educating the public in solid waste reduction, reuse, and recycling that even if the economy is strong and the population grows, the volume of solid waste received may stay static or even may reduce as more citizens follow these practices.

1.5.2 RECYCLING PROJECTIONS

1. Achieving additional recycling progress

To continue progress in increasing recycling we must address two challenges: first, working with global markets and demand for recyclable materials and second, increasing the supply of recyclable materials that are separated for use in recycling markets.

2. Changes in market demand

Recycling markets have fluctuated widely over the last decade, presenting challenges for the recycling industry and for cities and towns that run recycling programs. After all-time highs in recyclable material values that were seen in 2006 through the first half of 2008, the value of recyclables dropped dramatically in the second half of 2008 along with the global economic recession. Since then, many recycling markets have rebounded. These rapid changes indicate the need to develop recycling programs that are based primarily on diverting material from disposal and the associated cost savings. These programs need to have the flexibility to cope with material values that fluctuate widely over time (rather than relying on expectations of recycling revenue that may or may not be realized). The establishment of new local and regional markets for diverted materials can help to buffer and absorb changes in export markets, which points to the need to develop home-grown industries that will use material diverted from Ulster County's waste.

3. Flat supply of separated recyclables

In New York, and most states around the country, recycling rates have remained level or dropped slightly in recent years. The fact that many citizens, municipalities, and businesses have embraced recycling as a way to protect the environment has resulted in tremendous gains. However, many of the initial gains have been made and further recycling advances require new strategies by the public, government, business, and the waste industry to maximize the separation of recyclables from trash. The *Ulster County Solid Waste Management Plan 2010-2020 Plan* includes a series of success stories about municipalities, businesses, and institutions that have

been able to increase their recycling and composting and, in many cases, save money at the same time. Ulster County can make great strides in increasing recycling and composting by learning from and replicating these successful strategies on a broader scale.

2. SOLID WASTE CHARACTERISTICS

The actual and estimated quantities of each category of recyclable materials and solid waste generated in Ulster County are contained in Table 1-2. The following is a general description of how the recyclable and waste materials are generated and which are currently handled through the Ulster County system. This information is based upon actual data collected by the Ulster County Resource Recovery Agency as we operate the Solid Waste Management and Recycling System on a day-to-day basis.

2.1 RECYCLABLES

There are two basic methods for collecting and processing recyclable materials at a Materials Recovery Center (MRF): Dual-stream and single-stream.

Under the dual-stream recycling scheme, the citizen separates paper and cardboard from the cans, plastics and glass, either by using two recycling bins, by placing the papers in a paper bag on the top of the other recyclables in the recycling bin, or by simply placing the papers loose on top of the other recyclables in the recycling bin. The two categories of recyclables are kept separate as they are placed in two separate compartments in the truck picking them up, and the two categories of recyclables are dumped separately at the MRF.

Under the single-stream recycling scheme, all of the recyclables (paper and cardboard, plastic, metal and glass) are mixed in one bin by the citizen, the bin is dumped into a truck with one compartment when they are picked up, then dumped into one pile at the MRF. The MRF then sorts these materials into paper, metals, plastics and glass. The Agency however, does not have the capability to sort single-stream recyclable material since it is a dual-stream facility.

The Ulster County Mandatory Source Separation and Recycling Law requires that all residents recycle materials specified by the County. As explained more fully in Section 3, effective July 1, 2010, the Agency modified its source separation requirements to begin accepting single-stream recyclables in the MRF. Currently in Ulster County, recyclables are being collected and delivered using both systems, single and dual stream. Residential recyclables are either collected at curbside by public or private haulers via single-stream, or they are delivered to one of the 19 County Municipal Recycling Drop-off Centers (MRDCs) in dual-stream form. In both cases, the recyclables are delivered to the County MRF where the material is inspected, gross contaminants are removed, and material is separated in the facility. The dual-stream recyclables are sorted in the MRF by commodity while the single-stream recyclables are loaded in transfer trailers for

delivery to the County Waste Single-Stream MRF in Albany, New York. The Ulster County Mandatory Source Separation and Recycling Law also requires that businesses, industries, and institutions recycle materials specified by the County. However, delivery to the County MRF is optional so long as the generator delivers the recyclables to a facility that provides for the reuse, recovery, or recycling of the recyclable material. Refer to Table 3-5 for the Ulster County Recyclable Material Definitions and Category List.

2.2 GREEN WASTE/YARD WASTE

This refers to the grass clippings, leaves, brush, vegetable, and other similar organic wastes generated principally by residences, although some materials may be generated at commercial establishments. This material is delivered to one of nineteen designated Municipal Recycling Drop-off Centers by residents, collected through a local municipal program, or recovered through simple backyard composting.

2.3 HOUSEHOLD HAZARDOUS WASTE (HHW)

This refers to the wide-range of materials including, but not limited to oil-based paints, cleaners, solvents, pesticides, herbicides, pool chemicals, household batteries, photographic chemicals, laboratory chemicals, lubricating oils and similar materials generated by residents and delivered to the Agency during one of the HHW collection events. It should also be noted that waste oil and electronics are also accepted at the MRDCs.

2.4 PHARMACEUTICAL WASTE AND MEDICAL SHARPS PROGRAM

Home generated medical waste is only a small fraction of Ulster County's waste stream but represents a large potential danger to residents and small children. Sharps – needles, syringes, lancets, and other sharp materials that come in contact with human blood or other body fluid – should be disposed of properly. Hospitals and other health care facilities, which generate medical waste, are strictly regulated, however, residents are not. To assure there are safe places for residents to bring “*SHARPS*” all Article 28 Health Care Facilities in New York are required by law to accept medical waste from residents in appropriate, puncture-proof containers. In Ulster County, the health facilities have coordinated a pre-scheduled collection program. In addition, all of these facilities have agreed to distribute free *SHARPS* containers, which have been donated by Becton-Dickinson, a medical supply manufacturer.

Pharmaceutical waste is currently being collected for free from residents of Ulster County at the Household Hazardous Waste Collection Events held a few times throughout the year at multiple locations. Residents can bring any prescription or over-the-counter pills, ointments, lotions and liquids for disposal. The collection procedures are as follows: 1. Residents sign a declaration

form stating that they are an Ulster County resident. 2. The entire container along with its medicine will be placed into a sealed waste receptacle. 3. Law enforcement will be on site to control the collection of these medications as well as to witness the best means of permanent disposal of medications at the Dutchess County Energy-From-Waste Facility in Poughkeepsie. There is no charge for this collection program.

Another option for safe disposal of unused medications is to visit a participating pharmacy. Walgreens, along with several other major national and local pharmacies (CVS and Rite Aid), have signed on to the Safe Medication Disposal Program, designed by Sharps Compliance Inc., to create an outlet for the unwanted medication. Since the program was launched, it has collected and incinerated more than 123,000 pounds of medication, most of which has been collected in the last 10 months. Residents purchase the pre-paid envelope for \$3.99, take it home, and in the privacy of their own home, place their unused medications into the envelope. Some of the pharmacies, including many independent ones, have larger boxes where they collect medicine onsite, for free, and it is sent to Sharps Compliance when its bin is full. In total, more than 22,000 pharmacies across the country have access to the program. The drugs are sent to Sharps Compliance's Carthage, Texas, facility where they are processed by a police officer and put in a Drug Enforcement Agency cage before being incinerated. The packages are never opened. If for some reason residents are unable to participate in one of the Agency collection events held during the year, they also have the opportunity to safely dispose of the medications at their convenience by using the mail back program.

2.5 ELECTRONICS

Currently there are no Federal laws regarding recycling of e-waste. However, used CRTs exported for recycling must comply with requirements that are specified in 40 CFR 261.39(a)(5).¹ Many states have instituted mandatory electronics recovery, recycling or producer take-back programs. The NYS Electronic Equipment Recycling and Reuse Act was signed into law on May 28, 2010. The law will ensure that every New Yorker will have the opportunity to recycle their electronic waste in an environmentally responsible manner. The law requires manufacturers to establish a convenient system for the collection, handling, and recycling or reuse of electronic waste. Manufacturers of covered electronic equipment (CEE) will be responsible for implementing and maintaining an acceptance program for the discarded electronic waste, with oversight by the NYS Department of Environmental Conservation.²

Used electronic equipment can encompass a variety of equipment including, but not limited to computers, CRTs, wireless telephones, electronic keyboards, mice, televisions, printers, monitors, portable digital music players, video cassette recorders, DVD players, Blu-ray disc players, digital video recorders, digital converter boxes, cable or satellite receivers, electronic game consoles, PDAs, facsimile machines, and photocopiers, etc.

Much of this used electronic equipment contains hazardous elements and compounds, including lead, mercury, and cadmium, which can be toxic if released into the environment. Therefore, it is important that used electronic equipment is managed properly. The Agency collects electronics for recycling at the HHW collection events. The Agency also collects used electronic equipment during business hours (7:30am – 3:30 pm) Monday through Friday at the Agency facility located at 999 Flatbush Road in Kingston. Businesses (less than 50 employees), non-profits (less than 75 employees) can also recycle their used electronic equipment for free per the New York State Law at the Agency. Electronics are also being collected for recycling at the Municipal Recycling Drop-Off Centers (MRDCs).

1 Source: EPA website. <http://www.epa.gov/epawaste/hazard/recycling/electron/index.htm>

2 Source: NYSDEC website. <http://www.dec.ny.gov/chemical/8788.html>

2.6 SCRAP METALS/FREON/WHITE GOODS

This refers to the miscellaneous scrap metal (including freon appliances and white goods) delivered by residents, waste haulers, and some small businesses. The scrap metal received is not sorted by type by the Agency, but rather is sold as mixed scrap metal.

2.7 TIRES

Tires include car and truck tires. Tires are not routinely received by the Agency at its transfer stations or through the Municipal Drop-off Centers. Occasionally, tires come into the facilities by error. They are then processed for recycling through a tire recycling vendor.

2.8 WOOD

This refers to scrap wood, principally dimensional lumber used in construction, the movement of goods and products, demolition of structures, and discards from trucking, warehousing and retail operations. (From time to time, it may also include small volumes of unwanted tree limbs and trunks.) Most of the wood has been painted or preserved, or is otherwise contaminated, thereby eliminating the potential for recycling and it is currently disposed of at a landfill.

2.9 ORGANICS

Enhanced Yard Waste Composting

In its simplest form, composting is the biological breakdown and stabilization of organic materials. In nature, this occurs over time through the presence (aerobic) or absence (anaerobic) of air, and the addition of moisture that supports microbial activity and decomposition of organics over a range of temperatures. Formal composting procedures are intended to create a controlled biological process that accelerates the decomposition and stabilization of organics,

which can then be reused as a soil amendment. Enhanced yard waste composting is an organics management strategy that would allow the County to compost other source-separated organics with their current green waste composting operations in a systematic and potentially “phased” approach. A variety of composting methods and engineered systems could be utilized to expand the current green waste composting operations. The following discussion presents an overview of the options that may be available to the County.

1. Feedstock Availability

For an enhanced green waste composting program, ideal circumstances for quality feedstock are those materials that can be collected at the source of generation and provide consistent “non-contaminated” (no inorganic materials or paper) feedstock. Although a consistent supply of feedstock can be difficult to achieve, there are also methods and procedures that can be utilized to manage inconsistent feedstock but would require additional capital investment in equipment. The following are typical organic feedstocks that are most suitable for co-composting with leaf and yard waste:

Biosolids from wastewater treatment facilities.

Source-separated food waste from residential, commercial, and institutional facilities.

Food waste is often categorized as “pre-consumer” food waste (prior to consumption by consumers, e.g., grocery store organics, food preparation businesses, food processing industries, etc.) or “post-consumer” food waste which is discarded organics that are not consumed after serving (vegetable and meat scraps, spoiled foods, etc.). Pre-consumer food waste will generally have less paper and plastics than post-consumer food waste, but it is rare for food waste to be completely free of paper and plastics. The benefit of each of these types of organic feedstock is that they offer a higher percentage of nitrogen to carbon-rich green waste. Early blending of feedstock to achieve appropriate carbon: nitrogen ratios can accelerate the active composting phase of the material to achieve stable compost in less time. The advantages and challenges of these feedstocks are summarized as follows:

TYPE OF FEEDSTOCK	ADVANTAGES	CHALLENGES
Wastewater sludge	Readily available High nitrogen content	Regular testing at source Strong odors Inconsistent moisture content Requires more processing controls
Pre-consumer food waste	Relatively low odor Excellent source of nitrogen Many potential sources locally available	Requires some preprocessing for size reduction Variable quantity and quality Requires outreach program
Post-consumer food waste	Source of nitrogen Locally available	Potentially higher odors Requires pre-processing Collection challenges

2. System Components and Alternative Composting Methods

There are a variety of composting methods that may be utilized to co-compost multiple organic waste streams. However, given the sensitivity for odor generation, outdoor windrow composting is not the most suitable for nitrogen-rich materials since oxygen is rapidly consumed by microorganisms and compost must be mixed regularly to reintroduce oxygen into the compost. This can often result in the release of fugitive odors that are generated if oxygen is depleted, and ammonia and other gases are generated through anaerobic activity. However, if the compost site is isolated from downwind odor receptors, windrow composting is the least expensive option to the County. Where odors are a concern, the recommended composting methods are as follows:

2a. Aerated Static Piles

This is a process where source-separated organics are received and mixed with green waste and placed on an aeration pad for processing. The pad includes a system of perforated pipes and aeration blowers that regularly feeds air from the bottom of the piles through the organic materials to control the rate of decomposition and compost production. This method does not require the material to be turned, and generally completes the active phase of composting within 30 days, when the material can then be removed from the pad and cured in windrow piles for final processing. The Onondaga Resource Recovery Agency recently completed a pilot test program utilizing static aerated piles to compost green waste and pre-consumer food waste with excellent results, and therefore plans to pursue full-scale development at their site.

2b. Covered Aerated Static Piles

Similar to aerated static pile systems, this process utilizes similar forced aeration systems but adds a fabric cover (the Gore Cover System or equivalent) over the piles to control moisture content and to further prevent the escape of fugitive emissions. These cover systems allow air to circulate and escape through the (breathable) fabric while retaining moisture and off-gases that are bound by moisture. These types of systems are popular in Europe and have recently been developed in the western portion of the United States for green waste and biosolids co-composting.

2c. In-Vessel Systems

In-vessel composting systems are those that process organics in a vessel, container, or building by controlling moisture addition and oxygen as required, and mixing the material as decomposition of the material proceeds. The primary advantage of these systems is that they allow the greatest processing controls to accelerate the overall composting process. In-vessel systems generally control odors by retaining or collecting them and treating them prior to release to the atmosphere. In-vessel systems range from relatively small containers for farms (to compost manure) and universities (food waste) to building systems like the IPS Agitated BinSystem for composting biosolids (similar to the Rockland County Solid Waste Authority Co-compost Facility). The larger systems are generally suited to higher volumes of organic processing due to economy of scale.

3. Applicability to the Waste Stream

There has been a variety of experiences in both the United States (recently) and Europe (historically) related to organics composting and the trend to divert greater volumes of organic material from landfills. The Western Region of the United States has shown greater activity with source-separated food waste programs than other portions of the U.S. Biocycle Magazine (December 2008) reports that there are nearly 70 food waste composting facilities in Alaska, Arizona, California, Nevada, Oregon, and Washington. The most challenging and expensive portions of the program relate to collection, public outreach, and management of consistent feedstock. For Ulster County, the most readily available source-separated organics are from the wastewater treatment facilities located within the County and at institutional facilities (food waste).

4. Volume Reduction and Diversion Potential

Source-separated compost facilities can achieve a very high volume reduction of the organic waste received since it primarily consists of compostable materials. For food waste, however, there will always be a fraction of inorganic waste that will need to be screened from the final product. For pre-consumer food waste, the volume reduction can be over 90 percent. For post-consumer waste, the volume reduction will be somewhat less but should still achieve over 80 percent reduction. The challenge is to manage residuals that are removed from the compost on site without cross contamination of the final compost product. The overall program challenge for food waste composting is to achieve reasonable participation through the implementation of effective collection methods at a reasonable cost. It has also been noted by those communities that have implemented these programs that success often occurs at the “grass roots” level where individuals, businesses, and institutions have a strong desire and commitment to implement organics recycling programs since it generally takes more efforts to succeed.

5. Environmental Considerations

For composting operations, the most significant challenges for controlling environmental impacts relate to control of odors, fugitive dust emissions, stormwater management, and prevention of leachate generation. New York State requirements pertaining to composting operations are presented in the 6 NYCRR Part 360-5 Solid Waste Rules and Regulations. For those composting operations greater than 3,000 cubic yards per year, the NYSDEC requires the facility to be registered. For operations greater than 10,000 cubic yards per year, the facility will require a solid waste permit. In addition, if biosolids are processed in any volume, it will require a solid waste permit.

6. Residuals

For source-separated organics, there will be some inorganic materials that will need to be removed from the final compost product. Depending on the materials, this could range from 25 percent by volume to less than 10 percent by volume. Residuals would require disposal in the landfill if it consists of paper, plastics, or large organic material. Wood waste could be reused as a bulking agent for feedstock as part of the composting process.

2.10 TEXTILES

This refers to used and discarded clothing from residents. All such textile material is delivered to one of the Municipal Recycling Drop-off Centers which are equipped with specialized 4-6 cubic yard containers. There are also non-profit agency sponsored clothing drop boxes at multiple locations throughout the County for public use.

2.11 PRIVATE RECYCLABLES

This refers to all the recyclable material generated by private entities and sent by those companies to a materials recovery facility (or final end user) other than a facility in the UCRRA System.

2.12 WASTE WATER TREATMENT PLANT SLUDGE

Sludge is the solid residue left after the treatment of sewage and other wastewater usually at a publicly-owned treatment works (POTW). This represents the solids residue from all such water treatment facility (POTW) in Ulster County, plus the same type of residue from the septage pumped from individual septic tanks throughout the County which is delivered to a water treatment facility. Currently, the Agency is collecting and transporting sludge to a BFI landfill in Niagara Falls, New York.

The Agency is currently assessing other options for composting the material. The Agency contacted the City of Kingston for a possible partnership, but since the Agency is the contingency plan for the City of Kingston, a joint venture is very unlikely. The City of Kingston uses an innovative system to make lawn fertilizer and fuel from its waste water sludge. The City of Kingston partnered with the Aslan Group to develop the first system for managing wastewater treatment plant residuals in an economical and environmentally sound manner. Waste "biogas" is captured from the plant's digesters and used as the only required fuel to turn 10 wet tons per day of municipal wastewater sludge into one ton per day of an EPA-recognized, pelletized "biosolid." The biosolid is distributed free of charge for use as a lawn fertilizer or furnace fuel, which costs less than the previous practice of landfill disposal. The Agency is also in discussions with Rockland County about handling the County's waste water treatment plants sludge. The Rockland County Co-composting Facility recycles biosolids from the five wastewater treatment plants in Rockland County. The biosolids are mixed with clean wood waste and then composted. 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 Co-composting Facility is a state-of-the-art in-vessel agitated bin composting plant which processes clean brush, wood waste, biosolids and other organic residues in the production of an exceptional quality (EQ) compost. The

Facility was designed and constructed by Waste Management of New York, and is operated by WeCare Organics under contract to the Authority. It is located about 70 miles from Kingston in Hillburn, New York, adjacent to the Authority's Materials Recovery Facility and Transfer Station.

2.13 LEACHATE

Leachate is the liquid remained of the solid waste decomposition process. The Agency collects leachate at its closed landfills (Ulster, New Paltz, and Lloyd) and the Rochester transfer station. Leachate is also collected from the Town of Hurley and Jockey Hill (City of Kingston) closed landfills. Leachate is trucked to the City of Kingston POTW for treatment.

The amount of leachate collected from the closed landfills remains extremely high, even though the landfills were capped about 14 years ago. It should be noted that the closed landfills are not lined. When the Agency took over the landfills from the respective municipalities, the landfills were under NYSDEC consent order to close. The Agency negotiated an agreement with the landfill municipalities to take over operation and management of the landfills, and with NYSDEC to extend the useful life of the landfills. This satisfied the goal of the Agency to provide county-wide MSW disposal on an interim basis while it was studying permanent county-wide MSW disposal alternatives. However, NYSDEC required new consent orders for the landfills which were subject to updated 6 NYCRR Part 360 requirements, including the requirement for leachate collection systems at New Paltz and Ulster. The result has been continuous generation of large amounts of leachate at the two closed landfills, even though effective landfill caps have been in place for many years.

In 2008, the Agency determined to study the leachate problems at New Paltz and Ulster closed landfills, beginning with the New Paltz closed landfill. The intent of the study was to find why, after all the years since capping and closure so much leachate was still being captured, and once the cause was discovered, to take appropriate action to mitigate the problem. The first phase of the study determined that the New Paltz system was capturing large amounts of ground water, resulting in vast amounts of diluted leachate. The results of the first phase of the study were provided to NYSDEC. In 2011, the Agency commenced the second phase of the study at New Paltz, which involves additional testing and a recommendation for a mitigating solution. NYSDEC has been consulted on and supports the scope of professional work to be undertaken in this phase. The third phase will consist of the construction and implementation of the mitigation system. Similar studies will be undertaken at the Ulster closed landfill after the New Paltz solution has been determined.

In summary, the proposed study consists of several milestones. Firstly, it must be determined what sections of the leachate collection system, if any, collect only groundwater. This will be done through the installation of a monitoring well through the center of the landfill and by

sampling the leachate at various points throughout the collection system. Secondly, the sections of the system that have been identified as collecting groundwater only will be removed from the collection system thereby reducing the overall volume of liquid collected.

2.14 CONSTRUCTION AND DEMOLITION DEBRIS

The Agency does not have a specific Construction and Demolition (“C&D”) Debris program, however C&D debris is defined part of Solid Waste (means uncontaminated solid waste resulting from the construction, remodeling, repair and demolition of utilities, structures and roads; and uncontaminated solid waste resulting from land clearing. Such waste includes, but is not limited to bricks, concrete and other masonry materials, soil, rock, wood (including painted, treated and coated wood and wood products), land clearing debris, wall coverings, plaster, drywall, plumbing fixtures, non-asbestos insulation, roofing shingles and other roof coverings, asphaltic pavement, glass, plastics that are not sealed in a manner that conceals other wastes, empty buckets ten gallons or less in size and having no more than one inch of residue remaining on the bottom, electrical wiring and components containing no hazardous liquids, and pipe and metals that are incidental to any of the above)¹, and the Agency routinely receives C&D waste at its transfer stations. C&D waste is primarily generated by residential construction, demolition or renovation, and consists of building materials (wood, brick, shingles and concrete), household items (couches, beds, chairs, mattresses) and like items. C&D waste is processed at one private facility in southern Ulster County (LaMela’s in Marlborough), and two others in the region (Taylor’s in Orange County and Recycling Depot in Dutchess County).

¹ Source: NYSDEC website. <http://www.dec.ny.gov/chemical/23700.html>

2.15 MUNICIPAL SOLID WASTE

Municipal Solid Waste (MSW) is a refinement of the definition of Solid Waste set forth in 2050-b.15 of the Act. It is defined as combined household, commercial and institutional waste materials generated in a given area. MSW is collected by the Agency at the MRDCs and received by the Agency at the transfer stations. Totals of MSW collected and received in 2010 are set forth in Table 1-2.

CURRENT SOLID WASTE MANAGEMENT SYSTEM

3.1 MATERIALS RECOVERY FACILITY

1. Dual Stream Recycling

The Ulster County Resource Recovery Agency presently utilizes a dual stream collection system at the Materials Recovery Facility. Residents are asked to separate paper (newspapers,

magazines, junk mail, office/school papers, inserts, phone books) from commingled containers (glass bottles and jars, plastic bottles, aluminum and tin cans.) Private recycling and waste hauling companies provide curbside recycling trucks for pick-up that are designed to keep containers separate from paper products, and compartmentalized. Roll-off recyclables containers at transfer stations are placed to keep commingled containers separate from the mixed paper. Three designated areas in the Materials Recovery Facility were designed for drop off of three different groups of material: containers in one bay, corrugated cardboard in another area and mixed paper in the third area. Processing is split into two sections, with elevated sort lines for containers and another for paper products. Corrugated is dumped directly onto the floor for direct deposit on the conveyor system leading to the baler. Staff sorts the commingled containers on the separate sort lines. The presently configured system is geared totally to a dual stream collection and processing, so changing to single stream would entail costs to change the processing system within the Materials Recovery Facility. Refer back to Section 2.1, for preparation guidelines, as well as the Appendix for a copy of the Ulster County Recycling Instructions Brochure.

2. Single Stream Recycling

The Agency is currently accepting single stream material from private haulers operating in Ulster County. The Agency is not able to process the single-stream material due to operating a dual-stream MRF. The Agency collects a tipping fee from haulers for the material and then loads it into long-haul trailers which are then brought for processing to a single-stream MRF.

3.2 HOUSEHOLD HAZARDOUS WASTE (HHW), PHARMACEUTICAL WASTE AND ELECTRONICS COLLECTION

1. Household Hazardous Waste

Household hazardous waste (HHW) typically makes up a small portion of the municipal solid waste (MSW) stream by volume (less than 1%), however HHW contains potentially hazardous ingredients that warrant their diversion from landfills, transfer stations, waste-to-energy facilities, water supplies, etc. ¹ Collection programs for these materials play an important role in the integrated solid waste management systems of communities throughout the country. HHW includes household products that contain corrosive, toxic, flammable, or reactive ingredients such as, but not limited to: cleaners, pool chemicals, herbicides, pesticides, automotive supplies, paints, stains, glue, batteries, fluorescent bulbs, mercury thermometers, etc.

The Household Hazardous Waste Collection Event, which is partially funded by the New York State Department of Environmental Conservation, was created to bring hazardous waste disposal services into the community and to provide a drop off location for Ulster County residents. By offering alternatives for the safe disposal of household hazardous waste, Ulster County is taking a proactive role in protecting the environment by preventing these items from ending up in landfills or contaminating water sources and wastewater treatment plants. Currently, the Ulster County Resource Recovery Agency hosts bi-annual HHW collection events for residents. The

Agency contracts with a hazardous waste management and disposal/recycling company for the packaging, transport and disposal of the HHW. Materials not accepted in the County's program include radioactive materials, smoke detectors, medical or infectious waste, explosives, and compressed gas cylinders.

¹ Source: Waste Age/Recycling Times' Recycling Handbook by John Aquino, 1995

See Appendix for Table 3-2 for Quantities of HHW Collected per Event through Ulster County's HHW Collection Program

2. Electronic Waste

Used electronics or "e-waste" includes discarded computers, cell phones, televisions and other electronic products. Those with cathode ray tubes (CRTs), such as color computer monitors and televisions, are considered hazardous when discarded because of the presence of lead in the CRT. Televisions and computer monitors contain, on average, four pounds of lead (the exact amount depends on size and make).² Lead is not considered an environmental problem while the monitor or television is intact; however the lead can leach when compacted or broken and create an environmental hazard.

In addition to lead, electronics can contain chromium, cadmium, mercury, beryllium, nickel, zinc, and flame retardants. When electronics are not disposed of or recycled properly, these toxic materials can present environmental threats. Based on studies conducted by the United States Environmental Protection Agency (EPA), the CRTs and LCDs are likely to fail the Toxicity Characteristic Leaching Procedure (TCLP) test for heavy metals.

The EPA estimates that consumer electronics make up only 2% of the MSW stream, however the quantities of these materials being disposed has been steadily increasing for the past decade.³ The Agency accepts certain electronics from residents at its HHW Collection Events including computers, monitors, printers, laptops, keyboards, radios, stereos, modems, televisions, VCRs, fax machines, mobile phones and pagers. Currently, the events are free of charge to residents to recycle electronics and small household appliances (e.g., microwaves, vacuum cleaners, etc.). There is a limit of five televisions and/or computers per visit. Per the NYS Electronic Equipment Recycling and Reuse Act, electronics are also being collected from businesses (less than 50 employees), non-profits (less than 75 employees) for recycling for free at the Agency facility during business hours as well as at the collection events.

² Source: "Electronics: A New Opportunity for Waste Prevention, Reuse, and Recycling," EPA, 2001.

http://www.epa.gov/osw/conservew/downloads/elec_fs.pdf

³ Source: EPA website. <http://www.epa.gov/epawaste/conservew/materials/ecycling/manage.htm>

3. Pharmaceutical Waste

As part of the HHW Program, with approval from both the NYSDEC and the New York State Department of Health, in order to address the emerging environmental and public health concerns associated with improper disposal of medications, the Ulster County Resource Recovery Agency, in cooperation with the Ulster County Sheriff's Office and the Dutchess

County Waste-to-Energy Facility collects household pharmaceutical waste such as; controlled substances, prescription medications, unwanted medications, over-the-counter medications, or any pharmaceutical waste that is no longer needed, wanted or expired for proper disposal.

TABLE 3-1 LIST OF ACCEPTABLE ITEMS FOR ULSTER COUNTY’S HHW COLLECTION PROGRAM

Household Hazardous Waste, Pharmaceutical Waste and Electronics Collection is **FREE** to all Ulster County Residents. You must sign a Declaration of Residency and Non-Commercial Waste form when you arrive.

CANCELLATION or RESCHEDULE: Please call the Agency to cancel or reschedule your appointment. Please call our 24 hour hotline at (845) 336-3336 and leave a message; or call (845) 336-0600 during business hours, Mon – Fri. Informing the Agency of a cancellation enables other residents to utilize the Collection Event. Thank you!

DIRECTIONS: Ulster County Resource Recovery Agency Collection Event located at 999 Flatbush Road, Kingston (Town of Ulster):
From the Thruway Circle: Take Route 28W to the first exit after the light by Johnson Ford car dealership. Enter on Route 209 North/Rhinecliff Bridge (approx 4.5 miles). The last exit before the bridge toll is Route 32. At end of ramp make a left on Route 32S (also Flatbush Road). Sign on left: Ulster County Solid Waste Transfer Station. Follow road to collection site.
From Route 9W: Take Route 9W North into Kingston. Make right at light at intersection of 9W and Route 32 (also Flatbush Road). Take Route 32N approximately 2 miles to UCRRA sign for Ulster County Solid Waste Transfer Station just before Rhinecliff Bridge exit and 209 overpass. Follow road to collection site.

HOUSEHOLD HAZARDOUS WASTE & PHARMACEUTICAL WASTE – ACCEPTABLE ITEMS		ELECTRONICS – ACCEPTABLE ITEMS	
___	Oil based paints, stains, varnishes- NO LATEX PAINT	___	Monitors
___	Paint thinner, solvents, and strippers	___	CRTs
___	Lighter fluid	___	TVs
___	Waste fuels: Kerosene, Gasoline	___	Telephones
___	Pesticides and insecticides	___	Copy machines
___	Poisons, weed killers, mothballs	___	Keyboards
___	Mercury, thermostats, thermometers	___	Terminals
___	Hobby supplies, artist supplies	___	Printers and scanners
___	Photo chemicals, chemistry sets	___	Modems
___	Oven, toilet and drain cleaners	___	CPUs
___	Rug and upholstery cleaners	___	VCRs
___	Automotive products	___	Fax Machines

	- used oil filters	—	Typewriters
	- antifreeze, engine degreaser	—	Cables
	- carburetor cleaner, brake fluid	—	Cell Phones
	- transmission fluid	—	Batteries
	- automotive batteries	—	Video game players
—	Swimming pool chemicals	—	Answering machines
—	Rubber cement, airplane glue	—	Tape recorders
—	Furniture, floor, and metal polishes	—	Stereos and radios
—	Dry cleaning solvents and spot removers	—	DVD players
—	Fluorescent bulbs (CFLs, UV, tubes, spirals, etc.)	—	Microwaves
—	Pharmaceutical Waste includes: Expired/unused medications, pet medications, liquid medications, ointments, lotions, prescription medications, over-the-counter medications	<p><u>NOTE:</u> Electronics Collection does NOT include appliances such as: AIR CONDITIONERS, REFRIGERATORS, VACUUM CLEANERS</p> <p><u>Electronics Recycling Collection ONLY:</u> Ulster County Households, Businesses w/ less than 50 employees and Nonprofit Organizations w/ less than 75 employees can participate per New York State law</p>	

DO NOT BRING THE FOLLOWING:

1. Any empty containers, including empty paint cans which should be disposed of in the trash;	5. Explosives, ammunition, or fireworks;
2. Waste in containers larger than 10 gallons	6. Etiological, pathological, or medical wastes (SHARPS);
3. Non-Hazardous products like laundry detergent;	7. Controlled Substances; Propane tanks or fire extinguishers (call your propane or fuel provider)
4. Smoke detectors and radioactive materials;	

HHW, PHARMACEUTICAL WASTE AND ELECTRONICS WILL BE ACCEPTED FROM ULSTER COUNTY RESIDENTS/HOUSEHOLDS ONLY.

MATERIALS FROM BUSINESSES, SCHOOLS, FARMS OR ORGANIZATIONS ARE NOT ACCEPTED. CALL NYSDEC FOR MORE INFORMATION AT 1-877-SWEEPNY or VISIT www.cleansweepny.org/ or CALL THE RECYCLING HOTLINE AT (845) 336-3336 or VISIT OUR WEBSITE AT www.ucrra.org

The Household Hazardous Waste Collection Program is partially funded by the NYS Department of Environmental Conservation

3.3 MARKETS FOR RECOVERED RECYCLABLES

1. Market Overview

There has been an overall increase in value for recovered recyclables from the mid-1990s through 2007, including steel, aluminum, glass, old corrugated cardboard (OCC), old newspaper pulp (ONP), and mixed paper. However, in response to the downturn of the global economy (at the end of 2008), the market for all of these and other recovered recyclables suddenly and drastically dropped in price. Because of the overall value drop of materials, a site-specific evaluation of potential markets with cost analysis will not be completed at this time. However, the Agency currently holds no long-term contracts with any vendor or broker. The Agency markets recyclables on a month-to-month system using commodity market indicators such as the Official Board Market (OBM) for fiber.

The addition of any other potential items to the Agency's existing program is researched to determine the economic impact, the impact on the space available for processing and storing recyclables, as well as the manpower needed and any infrastructure and operating and maintenance (O&M) costs for equipment and buildings. Potential markets must be researched, along with the potential revenue to be gained by another product. Public education is also a factor, and some programs are done as pilots to determine their viability before announcing them to the public. This is done because the Agency does not want to offer a program to the public, and then discontinue it if markets fail, so that recycling guidelines remain consistent.

Currently, recyclables processing and the current program has not been impacted to date. The major impact to loss of revenue for the Materials Recovery Facility has been due to the introduction of single stream recycling within the County by private haulers which will be further discussed in Section 4.2.

2. Restrictions to Market Development

There are both physical and institutional restrictions to increasing recycling participation in the County. The first is reliance on the private sector, where they would have to expand their facilities and collection services. With recyclables taken out of the County or collected by outside organizations, the benefits to the County are compromised and market development is restricted. Institutional restrictions include the control, flow, and processing of solid waste within the County in order to fund expanded programs. Flow control is not currently legislated by the County.

The materials collected from residents, commercial, industrial, and institutional establishments and separated for sale in secondary markets include:

Paper - old corrugated cardboard (OCC), newspaper, mixed paper, old boxboard (OBB), old magazines/catalogs (OMG), household office paper and mail (HOMP), phone books, and beverage boxes.

Plastic - (1-7 including polyethylene terephthalate (PET) and high density polyethylene

(HDPE).

Metals - (aluminum, steel).

Glass - (flint and colored).

TABLE 3-3 TABLE OF RECYCLABLES DESTINATIONS OUTSIDE PLANNING UNIT

DESTINATION	RECYCLABLE MATERIALS
Haycore Canada Inc. 3144 Gregoire Road, Russell ON K4R 1E5	HDPE natural, HDPE colored, PET, tin
B. Millens & Son 209 E. Strand Street, Kingston, NY 12401	Scrap metal, aluminum
American Independent 15 South Depot Plaza, Tarrytown, NY 10591	OCC
KC International 1608 Route 88 West Suite 301, Brick, NJ 08724	HDPE natural, HDPE colored, PET, Tubs and lids (#3-7 plastics)
Sierra Recycling PO Box 1528, Clifton Park, NY 12065	Mixed news, books (no hard covers)
FCR Trilogy Glass Stanley, NY 14561	Glass
Metro Waste Paper Recovery 71 Fuller Road, Albany, NY 12205	Mixed news
North Shore Recycling 53 Jefferson Ave, Salem, MA 01970	Mixed news
R Kelly Freeman PO Box 1531, Green Island, NY 12183	Scrap metal, aluminum
RD Mountain Trucking/Mountain View Recycling PO Box 924, Little Falls, NY 13365	Beverage containers (deposit bottles)
Mike's Bottles and Cans 9A Vatrano Road, Albany, NY 12205	Beverage containers (deposit bottles)

TABLE 3-4 TABLE OF AVAILABLE AND POTENTIAL RECYCLABLES MARKETS FOR ADDITIONAL MATERIALS

RECYCLABLE MATERIAL	MARKET
Tires	Casings, Unity Tire Creations
Vehicle batteries	B Millens & Sons,

Electronics	WeRecycle!
Fluorescent bulbs	American Lamp Recycling, WeRecycle!, Home Depot
Freon	Interstate Refrigerant
Textiles	Salvation Army, Goodwill Industries, Planet Aid
Rechargeable batteries & cell phones	RBRC, UCRRA, retail locations (i.e. Staples, Best Buy, Verizon)

TABLE 3-5 MATERIAL DEFINITIONS AND CATEGORY LIST

PAPER PRODUCTS	
Newspaper (ONP)	Printed “ground wood” newsprint, including glossy and semi glossy advertisements and inserts typically found in newspapers.
Household Office Paper and Mail (HOPM)-recyclable	Also referred to as “mixed paper” or “junk mail”, paper that would be included in residential “mixed mail” or commercial “office” recycling programs, not including the grades identified above. Examples include “junk” mail, printer paper, envelopes of all types, file folders and notebooks, card stock, key punch cards and computer printouts, financial statements, annual reports, other report-like documents, books, brightly colored paper, calendars, tablets with colored glue bindings, shredded paper, fax paper, onion skin paper, and Post-It Notes.
Magazines/Catalogs (OMG)	Magazines, catalogs including any “seasonal circular” catalog clearly recognized as such from direct mail (e.g., LL Bean, Nordstrom’s, etc.).
Phone Books	Clean telephone directories printed for or by telephone directory publishers.
Uncoated Old Corrugated Cardboard(OCC) and Brown Paper Grocery Bags	Uncoated cardboard with a wavy core and not contaminated with other materials such as wax, plastic coating, Styrofoam, or food, and all paper bags. Examples include large packing boxes, clean pizza delivery boxes, and paper bags-including brown Kraft bags.
Old Boxboard (OBB)	Chipboard boxes not coated with wax, plastic or metal. Examples include cereal boxes, other clean chipboard food containers, shirt boxes, and shoeboxes, egg cartons, and tissue roll cores.
Beer, Pop (Soda) & Water Boxes	Also, referred to as “carrier stock”. Used as “wet-strength”, coated boxboard. Includes 12-pack and 24-pack cartons used for cans of beer, pop (soda), water, etc.
Other Paper Items	Includes those items not currently collected by Ulster County, such as milk and juice cartons, frozen pizza boxes and frozen food packaging.
PLASTIC	
#1 Polyethylene Terephthalate (PET)Containers	Plastic containers and bottles coded #1 without a New York deposit label.
#1 PET Deposit Bottles	Plastic bottles coded #1 with a New York deposit label.
#2 High Density Polyethylene (HDPE)	Plastic containers and bottles such as milk jugs, shampoo

Containers	bottles, and laundry detergent bottles coded #2.
#3-7 Plastic Containers	Plastic containers coded #3, #4, #5, #6, #7.

METALS	
Aluminum Beverage Containers	All beverage containers made from aluminum without a New York deposit label.
Aluminum Deposit Beverage Containers	All beverage containers made from aluminum with a New York deposit label.
Ferrous Food and Beverage Containers	Food and beverage containers composed primarily of iron/steel.
Other Aluminum	Other aluminum items such as aluminum pans and clean foil.

GLASS	
Glass bottles and jars	All glass food, beverage, wine, liquor and beer containers without a New York deposit label.
Glass deposit containers	All glass food, beverage, wine, liquor and beer containers with a New York deposit label.

NON-TARGETED MATERIALS (i.e., “trash” or “rejects” as collected)	
Other paper trash	All other non-recyclable paper; contaminated paper (i.e., paper used to dispose of chewing gum, soaked with food spills, sprayed with paint, covered in tape, OCC with Styrofoam attached); paper or boxboard coated with wax; tissue papers, napkins, cups, coffee filters, tea bags, wax paper, and cellophane, carbon paper, wallpaper, bathroom waste paper, photos, slides, and transparencies.
Plastic bags and other film plastic	Includes trash bags, grocery bags, storage bags, plastic wrap, film, etc.
Other trash	All other non-recyclable items including other scrap metal (ferrous and non-ferrous), rope, string, twine, cotton balls, tape, cups, silverware, trays, and foam packaging. Includes “Non-Recyclable Glass/Ceramics” such as windowpanes, mirrors, bulbs of any type, dishes, glasses, pottery, and ceramics. Also, includes “Non-Recyclables Plastics” such as plastic toys, clothes hangers, extruded pipes, etc., including anything not coded with a #1-#7. Also includes “Non-Recyclable Cans” such as aerosol cans, paint cans, motor oil containers, and gasoline containers. Also includes “Medical Waste” such as sharps (e.g., needles/syringes, razors), medicine containers, etc.
Fines	Residuals on the sort table after the sample has been sorted. Includes dirt, broken glass, etc.

3.4 PUBLIC EDUCATION, PROGRAM OUTREACH AND ENFORCEMENT OF RECYCLING LAWS

Continued enforcement of the local laws mandating source separation for recycling through a system of public education and outreach is essential to having a successful recycling program.

1. The Recycling Coordinator

A professional Recycling Coordinator is currently employed at the Agency to spread the recycling message and to bring technical assistance to the residents, schools, and businesses in Ulster County. The Recycling Coordinator explores inquiries and complaints about business, apartment, and institutional recycling. The Recycling Coordinator visits local businesses, apartment complexes, and schools to offer assistance in designing recycling programs as well as free recycling containers and decals. In addition, the Recycling Coordinator is a certified educator, who speaks to thousands of students in hundreds of classrooms each year. The Agency also conducted educational programs with schools including school tours of the Materials Recovery Facility. The Ulster County waste reduction and recycling public education programs are promoted through distribution of information on recycling practices and general information on reuse, waste reduction and recycling to County residents. These programs include publication of recycling information in the Ulster County phonebooks, availability of the Recycling Coordinator from 8:00am to 4:00pm, a 24-hour Recycling Hotline for information, questions or concerns regarding recycling, distribution of recycling posters and recycling bin labels, a website (www.ucrra.org) dedicated to the Solid Waste Management and Recycling Program of Ulster County, availability of backyard compost bins, assistance with implementing a composting program, billboard public outreach campaign, Ulster County Green Schools Program and Ulster County Partner in Recycling Program for commercial, institutional, and industrial waste generators.

The Recycling Coordinator currently plays two roles and also acts as the Agency Recycling Compliance Officer. When needed, the Recycling Compliance Officer, is also available to call on businesses and apartment buildings when it is determined that other approaches have not resulted in cooperation. The Ulster County Environmental Committee encouraged the Agency to increase its recycling education budget and in the County Legislature appointed a Hearing Officer to provide assistance for recycling compliance issues. The Recycling Coordinator will visit any waste generator that may be in violation of the Ulster County Mandatory Source Separation and Recycling Law to determine the source of the problem and to assist in designing or amending a recycling program which will capture the mandated recyclables.

2. Communications

In order to maintain a high recycling rate, frequent communications from the Agency is necessary to advise those who recently moved to the area as to the local recycling rules, to remind current residents of what's recyclable, and to inform the public of special events. To keep the public informed of the recycling program, an ongoing and extensive public communication

program has been established. All advertising/educational campaigns emphasize the Agency’s website, www.ucrra.org as a community resource. This communication program consists of an advertising campaign focusing on humor, ‘real-life’ images and basic recycling rules. It has been shown that it is important to provide a public message that promotes the “why” of recycling and the difference one person can make in preserving natural resources for future generations. To answer this question, the Agency developed a waste reduction and recycling campaign to promote good recycling practices through use of an informational video. This video, “The Importance of Recycling in Ulster County,” contains footage of the Ulster Transfer Station, the Ulster Materials Recovery Facility and discusses the environmental impact of landfilling. The main purpose of the video is to remind the public about the importance of recycling. This video was made into a DVD for distribution to all Ulster County Schools, Ulster County Libraries and Local Public Access TV Stations. It is also available for viewing on the main page of our website at www.ucrra.org and a copy of the video is available in the Appendix. Continuing to grow the Agency waste reduction and public outreach campaign, the Agency created a roadside billboard program for public display using ‘real-life’ images to promote recycling. The designs currently being used for the billboard campaign are shown below.





3. The Importance of Commercial Recycling

In Ulster County, most of the public discussion about recycling seems to involve residential recycling. While residential recycling is important, that segment of the solid waste stream does not have the greatest potential for recovering significant volumes of discarded material. The largest volume of recyclable material is probably on the commercial recycling area (including multiple-unit dwellings), based upon the experience of other recycling programs.

The Onondaga County (OCRRA) recycling program is a case in point:

For the calendar year 2009, OCRRA calculated a recycling rate of 64 percent. That is, 64 percent of the solid waste stream was recycled, while 36 percent was sent for disposal.

In addition, OCRRA provides the following breakdown of recycling for residential vs. commercial sources of material:

Curbside recycling (primarily residential recycling) 42, 014 tons
 Commercial recycling (primarily business recycling) 539,467 tons

 Total 581,481 tons
 $42,014 \text{ tons} / 581,481 \text{ tons} = 7 \text{ percent}$
 $539,467 \text{ tons} / 581,467 \text{ tons} = 93 \text{ percent}$

So, for the OCRRA recycling program, which is a decidedly ambitious recycling program, only seven percent of the recycled materials are the result of residential recycling, while 93 percent of the recycled materials are the result of commercial recycling.

To look at this situation in terms of the overall solid waste stream, 581,481 tons is 64 percent.

Therefore, OCRRA’s total solid waste stream for 2009 was 908,564 tons, of which 42,014 tons was residential recycled material while 539,467 tons was commercial recycled material.

Residential recycled material accounted for 42,014 tons/908,564 tons = 4.6 percent, while commercial recycled material accounted for 539,467 tons/908,564 tons = 59.4 percent of the total solid waste stream. Meanwhile, 327,083 tons was disposed of in some other way.

While there may be some variation from community to community in terms of the percentage of the solid waste stream which is recyclable, the proportions are probably very similar to OCRRA’s.

There are conclusions which may be drawn from the above information:

1) As much as the County may try to improve the rate of residential recycling, it is unlikely to significantly improve the overall recycling rate of the total non-organic portion of the solid waste stream by more than a few percent. This does not mean that the improvement of residential recycling should not be pursued, but the County should recognize its limits in improving the overall recycling rate.

2) There is great potential for recovering recyclable materials from the commercial sector of the solid waste stream. The commercial sector deserves as much of the educational and enforcement resources as the residential sector, and more. Mandatory source separation of recyclables from commercial, industrial and institutional sources was established in Section 10: Commercial and Institutional Sector Recycling of the Ulster County Mandatory Source Separation and Recycling Law. Multiple-unit dwellings of more than five units are considered commercial buildings and are subject to this section of the recycling law. Multiple-unit dwellings of five or fewer units are subject to the same provisions of the recycling law which applies to individual residences. The Ulster County Business and Commercial Property Compliance Program focuses primarily on the commercial and institutional sectors. More efforts to increase recycling in these areas will be pursued and details of this program are explained in Section 5.2.2

TABLE 3-6 EDUCATION SCHEDULE

MONTH	PROGRAM	OUTREACH
January-February	HHW and electronics recycling	Advertisement in newspaper. Outlines accepted materials & collection days for the year, press release, posting on County & Agency website, printed schedules & submitted to free news outlet (community calendar). Billboard recycling campaign to begin
March-April	Recycling, waste reduction	Advertisement in newspaper to promote recycling/provide tips, posted on County & Agency websites, press releases, & printed guides.
March-April	Backyard composting	Sell bins at discounted rate, press releases, posted on County & Agency websites, distribute posters & brochures on composting, promote at farmers markets & special events.

April	Earth Fest & outdoor Public events	Community event-display table & disbursement of informational guides. Provide ClearStream or Clear Canables recycling public event containers to events for public use
April-May	Farmer markets	Participate in a few events & promote composting, recycling, HHW & electronics recycling.
May-July	Grass recycling	Radio advertisements (one week in May, one week in July), press release, posted on the Agency website (composting page), printed brochure.
May-October	Electronics collections offsite	Advertisements in newspaper, press release, letter to area clerk offices, posted on County and Agency websites, posters, libraries, posted at Town Transfer Stations, submitted to free news outlet (community calendar).
November-December	Waste reduction/holiday tips, buy recycled, recycling	Advertisement in newspaper, press release, posted on Agency website.
Year-round	Recycling programs, MRF tours	Conduct year round specific school & community group programs regarding recycling, HHW, electronics, composting. Promoted through direct contact with teachers, the Agency website and email correspondence. Plan to utilize free social marketing tools including FaceBook, Twitter and YouTube

3.5 MUNICIPAL RECYLCING DROP-OFF CENTERS (MRDCs), A PAY-AS-YOU-THROW (PAYT) SYSTEM

Introduction

Traditionally, municipal solid waste collection and disposal services have been financed through property taxes or by fixed annual fees charged to households. At the same time, households are charged according to their rate of use for other utilities such as water and sewer service or electricity. As a result, residents often mistakenly perceive that solid waste services are free because of the separation between cost of services and how they pay for them. Citizens have little direct financial incentive to reduce the amount of waste they produce. Also, because each household is generally charged the same amount, small generators subsidize garbage services for those who throw away more.

Many local governments are adopting Pay-As-You-Throw (PAYT) programs for both curbside and drop-off collection systems. With PAYT, customers are charged by weight, by volume, or by a combination of the two per unit of garbage disposed. Market-based approaches such as these are proving to be important tools for dealing with environmental issues. Thousands of communities across the country are using PAYT to manage trash in a way that is fair, economically sound, and environmentally sustainable.¹

Benefits of PAYT

Pay-as-you-throw programs offer a myriad of benefits for local governments. Furthermore, PAYT programs can be structured to maximize particular benefits. Some benefits of PAYT are:

Equity – Households and businesses are charged based on the amount of waste generated for disposal. This approach minimizes the need for small generators to subsidize the waste disposal of larger generators resulting in an equitable approach to paying for solid waste management.

Economic Incentives to Reduce – PAYT creates a direct link between waste disposal and cost resulting in a true economic incentive to reduce the amount of waste generated and recycle as much as possible.

Reduced Solid Waste Tonnage – In most communities, the realization of costs associated with waste management results in a decreased tonnage of waste to be disposed. This decrease is attributable to both source reduction and increased recycling. A reduction in the tonnage of waste disposed generally results in savings from reduced tipping fees.

Increased Recycling – The easiest way system users can save money is through increasing recycling. Increases will vary in size based on public education programs and the level of services available. Communities that receive revenues from recycling will see an increase in recycling revenues, however, these revenue increases may be quickly off-set by increased recycling hauling costs.

Revenue Stability – Programs that receive inconsistent funding or revenues can develop revenue stability through directly charging system users. This is particularly true for two-tiered systems that charge a set fee to all users to cover fixed costs and a variable fee to cover costs associated with disposal.

Environment – Natural resources and energy are conserved through source reduction and recycling. In addition, these resource and energy savings lead directly to reductions in greenhouse gas emissions.

1 Source: U.S. EPA website. <http://www.epa.gov/epawaste/consERVE/tools/payt/index.htm>

Program Types

The type of PAYT program developed will ultimately be based on the needs and goals of a community. Although there are many ways to design and operate a program, most programs are usually described based on the collection method (curbside/drop-off), the collection unit (volume/weight) and the pricing system (fully variable/two-tiered). A short discussion of these aspects follows.

Collection Method – The collection method is simply the manner in which solid waste is collected. There are two basic types, curbside and drop-off, however, there are multiple variations of each type of collection that will dictate other aspects of the program. Other collection types include backdoor collection, shared alley collection, commercial dumpster, etc.

Collection Unit – Since PAYT charges system users based on the amount of waste disposed, a unit base needs to be used to accurately charge system users. Once again, there are two methods for charging by the unit; volume and weight.

Volume-Based – Volume-based systems are easily the most common in the United States. Volume-based systems can be curbside or drop-off and generally use either bags, cans, or stickers/tags to charge for solid waste disposal.

Bags – Bag systems generally require system users to purchase special bags to dispose of garbage. Bags are purchased from local retail outlets (grocery stores, hardware stores, etc.) or directly through the public works or solid waste department. Bags are marked up to pay for the appropriate costs (e.g., a box of 15 bags may cost \$15) and often have special graphics such as the community’s symbol on them so that they are easily distinguished.

Tags / Stickers – Tags and stickers work similarly to bags in that they are purchased from local stores or government departments and are marked up to cover the cost of the program. A tag or sticker is then required to be attached to each bag disposed and can be designated for specific size bags (e.g., 13 gallon, 30 gallon, etc.). Furthermore, tags or stickers also can be attached to bulky items allowing for cost recovery of bulky item programs as well.

Containers – In container systems, users pay based on the size and/or number of containers that are placed out for collection. The most common container system is the variable can system in which users subscribe to a specific size container (32, 64, 96 gallon) and must reduce their can size to see any savings. Backdoor or manual collection systems generally use smaller cans (20 or 32 gallon) but allow users to subscribe to multiple cans.

Other Options – There are many other methods or hybrid PAYT systems that utilize combinations of the above options. Perhaps the most common are container based systems that allow residents to set out overflow materials, but require special bags, stickers or tags be used.

Weight-Based – Weight-based systems, although less common, provide the most equitable approach to charging for solid waste disposal. Weight systems require the collector to weigh garbage at the curb or drop-off center and then charge the generator by the pound collected. Unlike volume-based systems that may require substantial reductions to decrease the can size or number of bags set out, savings from waste reduction are realized immediately in weight systems. The main drawback with weight systems is cost. Weight systems require scales to be placed either at the drop-off center or on the collection trucks, raising the capital costs required to implement the system. There are currently two drop-off centers in Ulster County that use some type of weight system. There are no weight-based curbside collection systems in Ulster County.

Pricing Systems– Unlike collection type and collection units which are generally determined by the existing factors and preferences, developing a pricing system requires a little more thought. Explanations of the four most common pricing systems follows.

Fully Variable – In fully variable systems, all or most of the programs costs are recovered through the unit fees paid by system users. For example, in a bag system, the fees collected through the sale of bags would need to cover all of the costs of running the solid waste

management system. This would include all direct and indirect, fixed and variable (disposal) costs. As can be expected, a fully variable pricing system provides the maximum incentive to reduce, however, given the uncertainties surrounding potential waste reduction, it is more difficult to set the unit costs (bag, sticker, etc.) and requires an in-depth knowledge of all program costs.

Two-Tiered – Two-tiered systems are probably the most common pricing systems in the United States. These systems charge multiple fees for solid waste management services. The first fee is set to cover the fixed costs of the system such as staffing, capital purchases and general operation. The fixed fee can be recovered through the tax base, utility bills, etc. The second fee is set to cover the variable costs of the system such as disposal and possibly hauling or collection. Hauling and collection costs are generally considered fixed costs, but in some cases are included with variable costs. In many ways two-tiered systems resemble phone bills in that the customer is charged a specific amount (fixed fee) to have the phone service available regardless of use, and variable costs (long distance/disposal) are determined based on use. Rate setting in a two-tiered system still requires a good understanding of full-costs, but tends to be easier than in fully variable systems and provides some security in that fixed costs are covered regardless of the level of waste reduction that occurs. Because the variable or unit fee charged in two-tiered systems is usually lower than in fully-variable systems, the incentive to reduce is not as strong. Some two-tiered systems use an alternative method for setting fees in that the fixed fee is set to cover the costs of a particular program such as recycling. This design option can provide a good incentive for reduction, but requires careful rate setting to ensure other program costs are adequately recovered.

Limited Base Service – Limited base service is the third system and probably the most common system in Ulster County. In this system, customers pay a set amount per month or year for a basic level of service, such as one 32-gallon container picked up weekly. Any additional service, such as overflow materials, requires additional payment. In Ulster County, the customer contracts the private hauler of their choice and pays the monthly fee directly to the company. Recycling is included for free with the monthly garbage service.

Hybrid Systems – Hybrid systems can provide a great boost to local governments recycling efforts. However, they tend to lack incentives to actually reduce the amount of waste generated. The typical hybrid system is either incentive-based or penalty-based and may or may not require altering existing financing mechanisms. In a penalty-based system, system users are charged to dispose waste only if recyclables are found in the waste. This, of course, limits their usefulness to staffed convenience centers. However, penalty based systems are relatively easy to implement and can greatly improve program participation. Incentive based systems more truly reflect typical PAYT systems. Users are required to pay for materials disposed. However, if the generator of the waste recycles, free or discounted disposal may be received for a set amount of material (e.g., 30-gallon bag). Once again, these systems tend to be limited to staffed drop-off centers.

Advantages/Disadvantages

Each program type and the specific options for each program discussed thus far all have advantages and disadvantages. What may work well in one community may not work well in another. A critical aspect of designing a PAYT program is to identify the goals of the system as well as the advantages and disadvantages of each design element. This process should help identify which program will work best in a community as well as which areas may create problems. These problems will need to be addressed early to ensure a successful program. Table 3-7 identifies some advantages and disadvantages associated with various design elements.

Implementation Issues

The ease or difficulty experienced while implementing a PAYT program will vary greatly from community to community. The following items are issues important to program implementation. Thoroughly addressing these issues early in the process will greatly increase the chance of a smooth conversion.

Elected Officials/Public Buy-in – Educating and gaining the support of both elected officials and the public is perhaps the most critical component of implementing a PAYT program. Without support for the program, the chances of successful implementation will be minimal. A good public/elected official education program will start very early and continue throughout program development. Expect resistance to PAYT initially. Over time, however, a good education program can decrease public resistance.

Program Goals – To design a program that properly fits a community, the goals of the program need to be identified early in the planning process. Program goals will vary from community to community and can range from revenue stability to meeting waste reduction goals to providing more equitable service.

Staffing Resources – Depending on the type of program implemented, additional staff resources may be necessary. It is important to identify the level of additional resources necessary and the area(s) in which they are needed (e.g., administrative, illegal disposal enforcement, etc.)

TABLE 3-7 ADVANTAGES AND DISADVANTAGES OF PAYT PROGRAM ELEMENTS

Collection Unit	Advantages	Disadvantages
Bag Programs	<ul style="list-style-type: none"> - Easy for residents to understand. - Lower distribution, storage, and inventory costs. - Inexpensive to implement. 	<ul style="list-style-type: none"> - Uncertain revenues as citizens purchase on an as-needed basis. - Potential for bag to rip or may be incompatible with automated collection systems. - Bags are not reused and, unless recycled, contribute to the waste stream. - Bags can be torn by animals.
Sticker/Tag Programs	<ul style="list-style-type: none"> - The cost of producing stickers/tags for sale to residents is cheaper than bags. - Easy for residents to understand. 	<ul style="list-style-type: none"> - Potential for poor sticker adhesion in bad weather and possible counterfeiting. - Uncertain revenues.

	- Inexpensive to implement.	
Variable Can System	- Constant revenue stream.	- Little flexibility between can sizes. Citizen must lower needs to next can size or reduce collection frequency. - Need method to deal with waste beyond subscription level like bulky items or extra waste such as on holidays. - Higher start-up costs for can purchase. - May require specialized equipment. - Higher administrative costs for storage of cans, distribution, and billing.
Weight-Based Program	- Citizen realizes immediate savings from reduction.	- High equipment demands for trucks outfitted with certified weighing devices and equipment to record weights and addresses. - At staffed drop-off centers, requires more staff time to weigh garbage. - Specialized curbside or drop-off equipment. - Higher start-up costs.
Pricing Systems	Advantages	Disadvantages
Fully-Variable Pricing	- Greatest waste reduction incentive.	- More difficult to set rates. - Some risk associated with not recovering all program costs.
Two-Tiered Pricing	- Guaranteed recover of fixed costs. - Rates setting is not as complicated as fully-variable.	- Lower unit charge decreases the waste reduction incentive.
Limited Base Service Pricing	- Relatively easy to implement.	- No incentive to reduce below the base level of service.
Hybrid Systems	- Requires little or no financing changes to implement.	- Limited incentive to reduce and reuse.

Public Education – As with any program change, educating the public is crucial. Public education campaigns should cover: what PAYT is, new requirements that they will have to meet, and additional means such as backyard composting that will allow them reduce their disposal costs.

Existing Waste Reduction Programs – The comprehensiveness of existing waste reduction programs should be reviewed. A community with a limited recycling program and no source reduction or reuse options available to the public may need to add programs to help residents reduce, reuse and recycle as much as possible.

Rate Setting – Rate setting is a critical step in implementing a PAYT program. It is extremely important to understand your full costs prior to trying to set rates. Two key concerns are: 1) setting rates too low, not recovering necessary costs, and 2) setting rates too high, creating public resistance to the program.

Subsidies – Some communities will choose to offer subsidies to low income residents and senior citizens while other communities will feel that subsidies are inappropriate. Although this decision will likely be left up to elected officials, it is wise to design the program with enough flexibility to handle either option.

Illegal Disposal – Illegal disposal is likely to be one of the larger concerns surrounding PAYT

programs. Case studies and research from around the country indicate that, in reality, illegal disposal does not create the problems that one would expect. Nonetheless, it is important to have an enforcement program in place to deal with the issue if it does arise.

Multi-Family/Commercial – Although not an issue for every community, multi-family housing and, to a lesser extent, commercial establishments may create problems during program design. There is no one answer as to how to plan to PAYT program that includes multi-family housing and may require considerable attention prior to implementation.

Neighboring Communities – In rural areas, neighboring communities or drop-off centers in other counties may notice an impact from a community implementing a PAYT system. It is a good idea to discuss plans to switch to PAYT with other communities in the area.

Other Issues – Depending on program design, community demographics, and other aspects, other issues can and will arise.

How PAYT May Affect a Community

Pay-as-you-throw will affect communities differently based on program design, community receptiveness, and existing waste reduction programs. A community with high recycling participation and a comprehensive waste reduction program may not see huge changes in tonnages, while a community with low participation and a more standard waste reduction program may see substantial changes in disposal and reduction. In general, however, most communities can expect the following:

- increased recycling tonnage
- increased source reduction and reuse
- an overall reduction in the amount of waste destined for disposal

Another area in which a community may potentially be affected is cost. It is hard to determine how overall programs costs will be affected by PAYT. Most research indicates that costs are likely to stay about the same. However, it is likely that programmatic shifts in cost will occur. A community that is implementing PAYT is likely to see the following:

- increased education costs
- decreased solid waste hauling costs
- decreased disposal costs (i.e., tip fees)
- increased recycling hauling costs

Once again, these changes will vary greatly from community to community and will be dependent on current tip fees and hauling distances. With a careful review of existing operations, it may be possible to estimate how costs will change with program implementation.²

² Source: NC Division of Pollution Prevention and Environmental Assistance Fact Sheet. <http://www.p2pays.org/ref/01/00365.pdf>

PAYT in Ulster County

As part of its initial solid waste plan, the Agency funded the design and construction of Municipal Residential Drop-off Centers (MRDCs). These were constructed in various municipalities at the site of former landfills, for the purpose of providing residents the opportunity to self-haul their municipal solid waste (MSW) and recyclables. The Agency removes the MSW and recyclables from the MRDCs to its transfer stations and Materials Recovery Facility, respectively, for transfer and disposal or processing and marketing. The Ulster County MRDC system is an exceptional example of the Pay-As-You-Throw Program. To understand how pay as you throw works, let's look at how we buy other products. We pay for apples by the pound, gasoline by the gallon, electricity by the kilowatt hour, etc... PAYT operates the same way. You pay for the amount of garbage you throw away. Although the concept may seem relatively new, there are now more than 4,000 communities in the United States using PAYT programs, including 18 in Ulster County. The MRDCs require the resident using the facility to purchase an annual permit and the rate is used to help cover the cost of operations of the transfer station. The PAYT program allows residents to better control their trash disposal expenses and provides the opportunity to recycle more. As with other utilities, residents will only be responsible for paying for the trash they produce. It is expected that residents will recycle a greater portion of their waste which will have at least these benefits: reduced cost to individual residents and families for waste disposal; reduced waste going to landfills. Residents pay a per bag fee for MSW disposal at the MRDC, and can recycle the regulated recyclables for free in all municipalities. The trash bags accepted for disposal are typically 30 gallons in capacity for household trash to ensure that residents who generate less waste pay less. Some MRDCs accept bags up to 55 gallons in capacity and fees are adjusted according to bag capacity. The price per bag (varying from \$1.75 to \$4.00) helps to offset fees charged to the MRDC related to the pull charges and tipping costs involved in the disposal of that garbage as collected by the Agency. Taking a closer look at some of the MRDCs, we can see more clearly see the effectiveness of this program. For example, the Town of New Paltz has about 1,500 residents that use the MRDC annually. In 2010, the residents of New Paltz generated 531.48 tons of trash while recycling 299.31 tons of materials (only accounting for regulated materials collected by the Agency; paper, cardboard and commingled containers-glass, metal and plastic). The town currently has a recycling rate of 56.3% which is almost 20 percent higher than the NYS recycling rate. The Town of Hurley MRDC also has about 1,500 permitted users and in 2010, generated 617.59 tons of trash. Residents recycled 323.50 tons of materials and the current recycling rate is 52.4%. The Town of Saugerties MRDC accepts residents from both the towns of Saugerties and Woodstock and has about 5,000 permitted residents using the facility each year. In 2010, the MRDC collected 2,213.88 tons of trash and 671.70 tons of recycling, which yields a 30.3% recycling rate. About 25% of Ulster County residents currently utilize the MRDC system while the other 75% subscribe to a private hauler curbside pick-up system. To increase the number of Ulster County residents using the MRDCs, the Agency plans to assist each town with promoting both the economic and environmental values of the MRDCs to the public

through various publications (Agency and Town brochures, town welcome packet, Agency website, etc.) and outlets (Town Halls, Libraries, Agency and Town websites).

3.6 TRANSFER STATIONS

The Agency owns and operates two solid waste transfer stations. The Ulster transfer station is located on Agency-owned property at 999 Flatbush Road in the Town of Ulster, New York. It services primarily the municipalities in the Central and Northern regions of the County. The Ulster transfer station is permitted by the New York State Department of Environmental Conservation under permit #3-5154-00125/00001. The permit expires on August 17, 2019. It has a rated capacity of 650 tons/day and 3,000 tons /week of MSW and C&D waste and the permitted capacity is 440 tons/day and 2640 tons/week. The Agency has advised NYSDEC that the tons per day limit is inadequate. During discussions in the permitting process various alternatives were explored with NYSDEC, but the NYSDEC has not yet agreed to increase the permitted capacity limit which was established by modification of the previous permit in 2000. In the summer of 2009 a privately-owned transfer station in the vicinity of the Ulster transfer station ceased operations and approximately 40,000 tons of MSW was diverted to the Ulster transfer station. This caused the Agency to exceed the daily tonnage limit on multiple occasions and to exceed the weekly limit on limited occasions. The Agency advised NYSDEC of these situations and filed an application for an increase in the permitted limits. The matter is still pending. The Agency, a public benefit corporation acting in a governmental capacity, has continued to receive and process MSW at the Ulster transfer station pending resolution of this matter. As there are no other facilities in this region of the County that can receive municipal solid waste, the Agency, in the public service, is impelled to receive it. The Agency has demonstrated that it has the capacity to receive and manage the waste at the Ulster transfer station in a manner that complies with the conditions of its permit and the laws of the State.

The MSW received at the Ulster transfer station comes from the Agency's roll-off vehicles which service the MRDCs, private sector solid waste collectors and residents who self-haul their solid waste. Residents are encouraged to utilize the MRDCs whenever possible. C&D waste is segregated from putrescible waste and is held for the minimum regulatory period inside the transfer station. Recyclable materials are removed from the C&D and processed in the Materials Recovery Facility. All waste coming into the transfer station is visually inspected, weighed, processed in the transfer station and loaded into transfer trailers owned and provided by private sector companies for shipping to the Agency's contracted landfills. See Section 3.7 below. At the present time, no trailers loaded with MSW are parked outside. All loads are "live-loaded".

The second transfer station is located on Clearwater Road in the Town of New Paltz, on property leased from the Town. The leasehold term extends until all of the Agency's bonded indebtedness is retired. The New Paltz transfer station is permitted by NYSDEC under permit #3-5138-00089/00001. The permit expires on July 29, 2019. It has a rated capacity of 1,560 tons/week of

MSW and C&D waste and 100 tons/week of sewage sludge and is permitted for 390 tons per day and 1560 tons per week. In 2010, the Agency processed 35,337.80 tons at the New Paltz transfer station. The design and operation of the New Paltz transfer station is similar to the Ulster transfer station except that the New Paltz transfer station is permitted to process up to 100 tons of sewage sludge per week. The sewage sludge deposited in a designated area of the transfer station and is hauled by a long distance trucking company to a permitted facility in Buffalo, New York.

3.7 LONG-DISTANCE WASTE HAULING

Long distance solid waste haulers have been selected through a public bid. The companies truck the solid waste to the Agency's contracted landfills (Seneca Meadows in Waterloo, New York and High Acres Landfill in Fairport, New York). The Agency has contracts with the haulers and High Acres landfill that expire on December 31, 2012. The contracts can be extended. The haulers are paid on a per ton basis. They are required to use specific routes between the transfer stations and the landfills. The Agency has contracts with the Seneca Meadows landfill through December 2014.

A different hauler transfers sewage sludge from the New Paltz transfer station to the Browning Ferris Industries landfill in Buffalo, New York. The Agency pays a per ton hauling fee and a disposal fee.

3.8 LANDFILL DISPOSAL

The Agency has contracts with Seneca Meadows in Waterloo, New York and High Acres Landfill in Fairport, New York for the disposal of MSW and C&D received at the transfer stations. The contracts expire on December 31, 2014 and December 31, 2012, respectively. Both landfills are permitted in New York State and are convenient to the New York State Thruway. The Agency is charged on a per ton basis for disposal.

3.9 PRIVATE C&D DISPOSAL

C&D debris that is not received by the Agency at its transfer stations is disposed of at private facilities – one of which is in southern Ulster County (LaMela in Marlborough, NY), one in northern Orange County (Taylor Industries) and one in central Dutchess County (Recycle Depot).

3.10 CLOSED LANDFILLS

The Agency utilized three former municipal landfills in Ulster County for disposal before developing the current long-haul disposal system. The landfills are the former Town of Lloyd

landfill off Chodikee Lake Road in Lloyd, NY, the former Town of New Paltz Landfill on Clearwater Road in the Town of New Paltz, NY and the former Town of Ulster landfill on Frank Sottile Boulevard, Town of Ulster, NY. The Agency remains responsible for post-closure care and monitoring of the landfills. Financial assurance is currently provided under the Agency's Solid Waste Service Agreement with the County of Ulster.

3.11 ULSTER COUNTY MANDATORY SOURCE SEPARATION AND RECYCLING AND SOLID WASTE MANAGEMENT LAWS

The Ulster County Legislature adopted the Ulster County Mandatory Source Separation and Recycling Law (Local Law No. 8 of 1991) in 1991 and amended it in 2007. The local law requires that regulated recyclable materials (as defined in the law) be separated at the source from solid waste by citizens, businesses, institutions, and governmental entities such as schools, towns and villages. The Agency is responsible to implement and enforce the local law by education, and, when necessary, administrative procedures. Educational programs directed at schools and local businesses have been successful, and recycling plans have been implemented by public and private entities. Required reporting of recycled materials is an important part of the law as accurate reporting is essential to a successful recycling program. An advisory committee created by the local law reviews and recommends changes to regulated recyclable materials, and an independent hearing officer has been appointed by the County to preside over and determine the outcome of administrative enforcement procedures commenced by the Agency against violators of the law.

The Ulster County Legislature also adopted the Solid Waste Management Law (Local Law No. 9 of 1991). This law provides the Agency with the authority to direct solid waste generated in or originated in Ulster County to facilities owned and operated by the Agency. The Agency has promulgated rules and regulations for implementing the Solid Waste Management Law. This solid waste "flow control" power was essential to ensuring that sufficient waste would be brought into the Agency's facilities so that public health and revenue goals would be achieved. The cost to the public of operating the Solid Waste Management system in the County is greater than that incurred by private sector companies because the public sector must provide for recycling and other essential waste related services, no matter what their cost and the Agency was required to be the market of last resort for many materials which the private sector found too expensive to handle. The Agency must provide solid waste and recycling services to all of its citizens no matter where they are situated – not to selected customers, as is the case with the private sector. Finally, the Agency is required by State law to have a solid waste management plan, and must bear the regulatory expense of implementing and maintaining that plan – a financial obligation not shared by the private sector. While this law was found to be constitutional by the New York State Supreme Court in 1993, its effectiveness became suspect in 1994 when the United States Supreme Court found a flow control law unconstitutional in the

case of *Carbone v. Village of Clarkstown*. The Agency determined not to enforce the flow control law, but to rely on negotiated “put or pay” contracts with its major customers, the private sector solid waste collection companies operating in Ulster County, in order to ensure that the solid waste originated and generated in the was delivered to Agency facilities. Since the Agency could not charge the full cost of the services it provides under the solid waste management plans in the agreements (the tipping fees covering the full costs of the system were unacceptable to these private companies), and the Agency had determined not to enforce the flow control authority provided by Local Law No. 9 of 1991, the revenues received by the Agency were insufficient to pay for the costs of the system. This resulted in the payment of “Net Service Fees” to the Agency by the County, a requirement of the Solid Waste Service Agreement between the Agency and the County which, in its essence, requires the Agency to make the solid waste management system available to the County, and requires the County to pay the Agency Net Service Fees if the Agency cannot raise sufficient revenues from its customers, and the Agency provided the system as required. Thus the costs of the system, originally envisioned to be paid by the users of the system, are now paid by the users of the system and the taxpayers of the County. While there has been some consternation as to the dual source of revenues, the bottom line is that the total cost of the service provided by the Agency to the residents of the County is modest when compared to the costs of such services in other counties in the state, and the Agency’s recycling program is one of the most successful.

In 2006, the United States Supreme Court, in the case of *United Haulers v. Oneida Herkimer*, found that a “flow control” law, which was fair and served a system of publically owned facilities, was constitutional. This caused a new look at the Ulster County Local Law by the Agency and the County Legislature. An amendment to Local Law No.9 enhancing the flow control authority contained therein is currently under consideration by the County Legislature. If Local Law No. 9 of 1991 is enforced, it is quite possible that the payment of net service fees would no longer be required, and net service fees previously paid could be reimbursed to the County.

3.12 ORGANICS DIVERSION

The Agency currently provides several options for residents and businesses in the County to divert organics (yard waste, food scraps, wood waste) from the waste stream including:

☐ **LargeScale Composting** – Yard waste (including leaves, brush, grass clippings and tree limbs) must also be separated and kept out of landfills. Yard waste may either be managed on-site or brought to a Municipal Recycling Drop-off Center (MRDC). At each of the MRDCs, finished compost is usually offered to residents for free or for a nominal fee, while supplies last. The Agency also accepts brush, tree limbs and clean wood from the commercial sector at the Agency facility. However, the Agency is not currently permitted to process leaves and grass clippings at the facility. The City of Kingston offers curbside collection of yard waste as part of

their regular collection service. Some commercial haulers in the area provide organics collection services to customers including Wal-Mart, Sam's Club and SUNY New Paltz. This material is brought to McEnroe Farms located in Dutchess County for processing at their facility using the covered aerated static pile method of composting. Currently, several Ulster County schools, including Phoenicia Elementary, Marbletown Elementary and Woodstock Elementary compost food waste on-site and use the finished compost in their school gardens.

Backyard Composting– The Agency encourages backyard composting and offers a fact sheet and basic information on the Agency's web site, www.ucrra.org. The Agency also works with Cornell Cooperative Extension (CCE) for direct educational outreach and CCE has a composting education program that includes home composting. Together the County and CCE promote backyard composting through workshops, classroom programs, bin sales and ad campaigns. Backyard composters are made available for purchase at public events throughout the County and at the Agency facility. The Forsyth Nature Center located in Kingston also provides composting workshops for area residents. Since 2008, over 1,000 backyard compost bins have been sold to the public.

Grasscycling– The Agency encourages residents to leave grass clippings on the lawn instead of bagging them, as a waste reduction measure. The Agency has a Grasscycling brochure posted on the web site and encourages residents to call CCE for more information. Due to the rural nature of the County, many residents dispose of grass clippings, branches and leaves on their own property through grasscycling and backyard composting.

Food Donation – The Agency encourages donation of non-perishable food items to local food pantries and lists several locations that accept food donations on the Agency web site.

4. TECHNOLOGY EVALUATION

4.1 CURRENT STATUS OF THE MATERIALS RECOVERY FACILITY

The Material Recovery Facility (MRF) accepts both dual-stream recycling as-well-as single-stream recycling. The dual-stream recycling is sorted and baled by UCRRA equipment and employees and then shipped to market. Because the MRF cannot process single-stream recycling the material is delivered by various private collection vehicles and then loaded into various long haul private trailers for transport to several private single-stream MRF processing facilities. During the past year, the Agency has seen a trend by the private collection companies to move toward single-stream recycling while with the exception of the City of Kingston, the MRDCs have not indicated their desire to do so. While the MRF continues to generate revenue it is expected that soon, if the trend continues to move toward single-stream recycling, this revenue may transform to a loss.

Dvirka and Bartilucci Consulting Engineers, South Plainfield, NJ, were commissioned by the UCRRA Board of Directors (Board) to conduct a study of the MRF. The purpose of the study was to analyze the current as-well-as the future financial stability of the MRF given the trend toward single-stream recycling. To summarize, the study titled and dated, “Material Recovery Facility Strategic Options Analysis”, February 2011, concluded the MRF should be shut down and all recyclables, with the exception of OCC and mixed news, should be transferred to alternate facilities. OCC should continue to be baled while the mixed news should continue to be loose loaded and sent to market. A decision by the Agency Board has not been made.

4.2 SINGLE-STREAM RECYCLING

The MRF does not currently have the ability to process single-stream recycling. According to Dvirka and Bartilucci Consulting Engineers’ February 2011 MRF study the capital cost to convert the MRF to accept single-stream recycling would be approximately \$2.4 million. It is not known at this point as to whether-or-not the Board will decide to proceed with this option.

4.3 MRDC IMPROVEMENTS

During August 2010 the UCRRA installed a compactor unit at the Town of Saugerties transfer station for the sole purpose of MSW. The UCRRA provided the compactor, two receiving boxes, and the installation of such. The Town was responsible for the electrical connection to the compactor unit.

The Town of Wawarsing transfer station is scheduled to have compactor installed for the sole purpose of accepting MSW. The UCRRA will provide the compactor, two receiving boxes, and installation of such. The Town will be responsible for connection of the electrical service to the compactor unit. Installation is expected in May 2011.

4.4 TRANSFER STATION IMPROVEMENTS

Ulster Transfer Station

Recent improvements to the transfer station include:

- Repairs to the knee wall – the steel wrap had been worn and was separating from the concrete underpinnings. The steel over the concrete knee wall was replaced and was installed down below the floor elevation. Concrete was replaced at the point where the steel meets the floor.
- A section of the tipping floor in the eastern section of the building was replaced after cracks were noted.

New Paltz Transfer Station

Recent improvements to the transfer station include:

- The replacement of the scale is currently in the design/approval stage. Once approved by NYSDEC and the Town of New Paltz, a Request for Proposal will be issued and once awarded, the scale will be replaced.
- The knee wall will need to be replaced soon. Most of the wall has deteriorated to the point where large portions of it no longer exist. As a temporary measure, a telephone pole was horizontally bolted to the floor in the area where the most deterioration is located.

4.5 CONSTRUCTION AND DEMOLITION DEBRIS PROCESSING

Any C&D brought to either of the two UCRRA transfer stations is loaded into long haul trailers and taken to either the Seneca Meadows or High Acres Landfill.

4.6 LANDFILL EXPORT

The Agency exports MSW and C&D to two landfills; Seneca Meadows landfill in Seneca Falls, NY and High Acres landfill in Fairport, NY. Approximately 2/3 of the MSW is sent to the Seneca Meadows landfill while approximately 1/3 is sent to the High Acres landfill. The contracts expire 12/31/14 and 12/31/12, respectively.

4.7 EVALUATION OF ALTERNATIVE TECHNOLOGIES

The objective of the alternative technologies evaluation is to analyze preferred downstream conversion technologies to determine their applicability to Ulster County and its solid waste stream. The evaluation process included the following:

- Develop a list of technologies for initial screening.
- Conduct initial screening as part of a continuous improvement workshop with Agency staff.
- Identify a shortlist of alternative technologies as candidates for further review.
- Identify a set of screening criteria to apply to shortlist of technologies.
- Select two technologies for more detailed analysis.
- Develop recommendations concerning the implementation of these technologies.

INITIAL TECHNOLOGY SCREENING

At the September 2010 workshop with Agency staff, the project team discussed an overview of these technologies, including a general description, industry status, and landfill diversion potential. Based on the discussions, the following technologies were identified for review:

- Anaerobic digestion and waste-to-ethanol
- Pyrolysis/gasification/plasma technology
- Enhanced composting, including MSW composting
- WTE (summary only)

DESCRIPTION OF SHORTLIST OF ALTERNATIVE TECHNOLOGIES

Overview of Anaerobic Digestion

Anaerobic digestion (AD) is one of the downstream technologies being considered by the Agency as an option for managing waste that is not targeted upstream to be reduced, reused, recycled or composted. AD is a technology that can potentially reduce methane emitted from agricultural waste and landfills through a biological process in which organic matter is broken down by bacteria. AD has the potential to reduce the volume of waste while producing methane and digestate (i.e., fibrous by-product and water). The co-products of the AD process are a medium-Btu content biogas and slurry referred to as digestate. The biogas contains approximately 60 to 70 percent methane and is water saturated. The balance of the biogas mixture is carbon dioxide, and parts/million (ppm) of hydrogen sulfide. The digestate consists of undigested solids, cell-mass, soluble nutrients, other inert materials, and water.

A wide variety of engineered systems have been specifically developed for the rapid “in-vessel” digestion of the organic fractions of MSW (OFMSW) and other types of organic wastes. Most of these systems are located in Europe. Although the U.S. has been treating agricultural and municipal wastewater with anaerobic digesters for years, no commercial-scale solid waste digesters are operating today.¹ There are two AD facilities that currently process MSW located near Toronto, Canada. Most AD systems are classified as either wet or dry, and each has its own benefits and constraints. Although hybrids exist, six basic types of AD systems reduce volume and recover energy from solid wastes: (1) wet single-step; (2) wet multi-step; (3) dry continuous; (4) dry sequencing batch; (5) dry multi-step; and (6) percolation (dry two step). One-step wet systems are primarily designed to co-digest source-separated OFMSW with a liquid substrate, such as manure or sewage sludge. They are not typically used for the AD of the full OFMSW stream. Approximately 50 of the 90 wet systems in Europe co-digest the OFMSW with manure. Most of them are located in Germany, Sweden, Spain, and Denmark.² Generally, wet digestion is economically feasible when the residual liquids can be reused. If the MSW contains relatively high concentrations of heavy metals, this substrate may not be appropriate for beneficial use on agricultural fields.

¹ Source: “Current Anaerobic Digestion Technologies Used for Treatment of Municipal Organic Solid Waste,” Contractor’s Report to the California Integrated Waste Management Board, 2008.

² Source: “Anaerobic Digestion Feasibility Study for the Bluestem Solid Waste Agency and the Iowa Department of Natural Resources,” by R. W. Beck, Inc., 2004.

The dry systems have been effective for managing the OFMSW outside the U.S. without the need for a liquid substrate, such as manure. High solids digesters (dry) process a thick slurry requiring more energy input than low solids digesters (wet) to move and process the feedstock, but will typically have a lower land requirement due to the lower volumes of moisture in the process. Several dry continuous and batch technologies, including Linde, Dranco, and Valorga, are being successfully applied to manage the organic fractions within MSW in several locations in Europe.

A. Feedstocks. An ideal circumstance for quality feedstock is when the organic fraction can be collected at the source of generation, (e.g., food processing industries, pulp and paper mills, etc.). In addition to the low degree of contamination, there is a more consistent composition of the waste over time that makes it easier to achieve a steady level of biogas production. This is optimal for conversion into a useful energy byproduct. The following are possible organic components for feedstock to the AD facility:

- Green waste.
- Residential and commercial food waste.
- Non-recyclable, but compostable paper.
- Biosolids (wastewater sludge).
- MSW.
- Other organic sludges.

B. Anaerobic Digestion Facility Components. An AD facility will consist of an enclosed building, including an enclosed waste receiving and storage area, digester area, and ancillary equipment room; operations control center; utilities service area; biogas engine-generator area; and residue storage area. Windrow composting of the AD process residue will occur on a large concrete pad outdoors with storm water control. The composted residue will require an on-site storage area. Initially, the facility should include digesters with available space to expand the waste receiving and storage enclosure, and potentially add another identical processing unit and biogas engine generator. The selected site should exist near a major road for ease of access, water supply source, wastewater discharge point to treat wastewater, and electrical interconnection.

C. Applicability to the Waste Stream. Program experience in Europe and the U.S. has shown that comprehensive source separation of organics provides the best quality feedstock for AD, with a minimum of heavy metal and plastic contamination. Where source separation has been mandated in Europe, the results have been encouraging. The experience of some European communities indicates that 30 to 50 percent of the total OFMSW can be successfully collected and managed separately. Moreover, industrial organics collected at the source of generation (e.g., food processing industries, pulp and paper mills, etc.) may provide an economically viable opportunity to apply AD for optimal conversion into a useful energy by-product. For Ulster County to consider this alternative technology, a program would need to be implemented that

minimizes contamination and ensures the collection of a significant proportion of the organic fraction of the disposed MSW to take advantage of needed economies of scale. In addition, a reliable market for the purchase of the biogas would need to be tapped.

D. Volume Reduction and Diversion Potential. Anaerobic digestion facilities can result in a 65 to 75 percent volume reduction of the organic solid waste received. Potentially, mixed MSW could be received at an AD facility, and a “dirty” materials recovery facility (MRF) could be integrated into the facility to process the non-organics. However, this approach creates greater risks related to the quality of the feedstock, directly impacts biogas production, increases the capital investment, and increases the quantities of residue.

E. Environmental Considerations. As with other solid waste processes, the AD facility may emit fugitive dust (particulate matter) and odors associated with the materials handling components of the process. Depending on the extent of potential fugitive dust, proper industrial ventilation design and control with a baghouse may be required. Organic emissions and odors in materials handling areas may also require local ventilation and control with activated carbon systems. Assuming that the process vents are completely leak-free, no air emissions or odor nuisances are likely to occur from the AD process since it is fully enclosed. A scrubber will remove hydrogen sulfide and moisture, directing the cleaned biogas (composed primarily of methane) to a low nitrogen oxides (NO_x) reciprocating engine to cogenerate electricity and/or thermal energy to heat the digesters. Combustion of the biogas will result in emissions of NO_x, carbon monoxide (CO), volatile organic compounds (VOC), particulate matter, and sulfur dioxide (SO₂). The AD process will produce some wastewater which would need treatment and disposal. Proper process design and moisture management can minimize this by-product to a negligible level or eliminate this stream. In some instances, the moisture resulting from the process has been treated and used for irrigation or reintroduced into the composting process for the residue. The AD facility will likely require, at a minimum, both air quality and solid waste permits to construct and operate.

F. Residuals. An anaerobic digestion facility can process approximately 95 percent by weight of the diverted organic wastes received. The preprocessing system mechanically separates unacceptable material, which is disposed of at the landfill. The system will employ bag breaking and screening. Depending on the volatile content and quality of the feedstock, the AD facility will produce combined residue that is 25 to 35 percent by weight of the material processed. After the digestion process, post-processing of the resulting residue will occur. The post-processing system includes mechanical dewatering followed by biological treatment by windrow composting outdoors for 10 to 15 days. The final product could be sold as soil conditioner.

Overview of Waste-to-Ethanol

Waste-to-ethanol is considered an emerging chemical/biological technology that uses hydrolysis and other processes to break down the organic fraction of the waste (paper, food waste, yard waste) into sugars, which are then distilled into ethanol. For implementation in Ulster County, a waste-to-ethanol facility would most likely need a preprocessing step such as using the existing MRF to remove contaminants from the organic portion of the waste stream. There are several recently proposed U.S. waste-to-ethanol processing facilities including, but not limited to, the following:

Fulcrum BioEnergy – Reno, NV

Enerken – Pontotoc, MS

Bluefire – LA. County, CA

One waste-to-ethanol facility that has been in the planning stages by Masada Oxynol LLC for more than six years is in Middletown, NY. Masada also has several projects in development in Latin America. Masada employs a process that uses strong acid hydrolysis to convert the cellulosic fraction of waste to sugars. The sugars are then fermented to ethanol using conventional yeasts. The non-cellulosic fraction of the waste is either recycled from a front-end materials recovery plant (plastics, metals, glass, etc.) or is burned to provide energy to the process. It is our understanding the project has secured most of the needed environmental permits, but construction has yet to be initiated.

Thermal-Based Conversion Technologies

Thermal-based conversion technologies utilize higher temperatures and have higher conversion rates when compared to other conversion pathways. In addition to the traditional combustion technology of WTE, thermal conversion pathways also include emerging processes such as pyrolysis, gasification, plasma arc, and advanced thermal recycling. Each process operates within a specific temperature range and operating pressure. Pyrolysis and gasification are not new technologies, having been used in the coal industry since the early 20th Century. Attempts were made in the 1970s to apply pyrolysis to the processing of MSW waste at several facilities in the U.S., but the projects failed primarily due to difficulties with the front-end waste processing of the solid waste. While the application of these technologies to solid waste, feedstocks is once again emerging in the United States, these technologies have been applied in other parts of the world, such as Japan and Europe. In most instances, the Agency would need to consider the import of applicable waste streams from outside the County to take advantage of the needed economies of scale for these options to be considered competitive. For the purpose of this section of the Plan, the review of thermal technologies includes proven and emerging thermal technologies. The emerging thermal conversion technologies included pyrolysis, gasification; plasma arc; and advanced thermal recycling. The proven technologies include mass burn combustion in waterwall furnaces and refuse-derived firing in dedicated boilers (WTE). For WTE, we have provided a high level summary.

A. Pyrolysis. Pyrolysis is a process that produces pyrolytic oils and fuel gases that can be used directly as boiler fuel or refined for higher quality uses, such as engine fuels, chemicals, adhesives, and other products. Solid residues from pyrolysis contain most of the inorganic portion of the feedstock, as well as large amounts of solid carbon or char. Pyrolysis typically occurs at temperatures in the range of 750°F to 1,500°F and thermochemically degrades the feedstock without the addition of air or oxygen. Because neither air nor oxygen are intentionally introduced or used in the reaction, pyrolysis requires thermal energy that is typically applied indirectly by thermal conduction through the walls of the containment reactor. The reactor is usually filled with an inert gas to aid in heat transfer from the reactor walls and to provide a transport medium for removal of the gaseous products. The composition of the pyrolytic product is changed by the temperature, speed of process, and rate of heat transfer. Lower pyrolysis temperatures usually produce more liquid products, and higher temperatures produce more gases. Slow pyrolysis is used to maximize the yield of solid char and is commonly used to make charcoal from wood feedstock. Fast or “flash” pyrolysis is a process that uses a shorter exposure time to temperatures of approximately 930°F. Typical exposure times for fast pyrolysis are less than 1 second. Rapid quenching of pyrolytic decomposition products is used to “freeze” the decomposition products and condense the liquids before they become low molecular weight gaseous products. This process results in a product that is up to 80 percent liquid by weight.

Combustion of the gases produced during the pyrolytic reaction in a separate reaction chamber releases significant thermal energy. This thermal energy can serve multiple purposes, including producing steam for electricity generation, heating the pyrolytic reaction chamber, or drying the feedstock that enters the reaction chamber. If pyrolytic gases are combusted to produce electricity, air emission control equipment will be needed to meet regulatory standards. The MSW feedstock typically requires shredding to a 12-inch maximum size prior to charging the pyrolysis reactors.

The net energy generation rate for the pyrolysis conversion technology can reportedly approach 700 kWh per ton of waste processed. Two facilities using MSW feedstock with WasteGen technology are operating in Germany, where the oldest facility has operated continuously for 22 years. The largest operating unit with over three years of experience processing MSW and similar waste is rated at 175 tons per day (TPD) in Hamm-Uentrop, Germany. A facility built by Brightstar Environmental in Wollongong, New South Wales, Australia, has had problems with the char gasification component of the process and corresponding financial problems with the plant. A proposed facility in the United States with the same conversion technology in Collier County, FL was canceled a few years ago. There are no full-scale facilities in commercial operation in the U.S. However, there are a few proposed U.S. projects that should be monitored in the near future.

B. Gasification. Two types of gasification technologies exist: (1) fluid bed gasification; and (2) two-stage (pyrolysis-gasification) fixed bed. The thermal conversion of organic carbon-based materials occurs in the presence of internally produced heat (typically at temperatures of 1,400°F

to 2,500°F) and with a limited supply of air/oxygen (less than stoichiometric, or less than is needed for complete combustion) to produce a synthetic gas (syngas) composed primarily of hydrogen (H₂) and carbon monoxide (CO). Inorganic materials are converted either to bottom ash (low temperature gasification) or to a solid, vitreous slag (high temperature gasification that operates above the melting temperature of inorganic components). Some of the oxygen injected into the system is used in reactions that produce heat, so that pyrolysis (endothermic) gasification reactions can initiate; after which, the exothermic reactions control and cause the gasification process to be self-sustaining. Like pyrolysis, most gasification systems are closed systems and do not generate waste gases or air emission sources during the gasification phase.

An important aspect of gasification is that the chemical reactions can be controlled for the production of different products. The gases produced by gasification can be cleaned to remove any unwanted particulates and compounds prior to use as fuel. After cooling and cleaning in an emission control system, the syngas can be utilized in boilers, gas turbines, or internal combustion engines to generate electricity or to make chemicals. Synthetic gases can produce methanol, ethanol, and other fuel liquids and chemicals. The MSW feedstock requires shredding from a 2- to 12-inch maximum size prior to charging the fluid bed gasification reactors. Several suppliers' two-stage (pyrolysis-gasification) fixed bed technologies require minimal preprocessing of the MSW before compaction. One fixed bed technology reportedly needs size reduction of the MSW feedstock to a 3-inch maximum size prior to feeding the fixed bed gasification reactors. In low temperature gasification, below the melting point of most inorganic constituents, a powdery to clinker-type bottom ash is formed. In high temperature gasification, the inorganic ash materials exit the bottom of the gasifier in a molten state, where the slag falls into a water bath and is cooled and crystallized into a glassy, non-hazardous slag. The slag is crushed to form grit that can be easily handled. Slag can be used in the manufacture of roofing tiles, sandblasting grit, and as asphalt filler. Bottom ash may require landfilling, although some suppliers have been able to manufacture ceramic-like bricks or paving stones.

One system that utilizes oxygen injection creates extremely high temperatures in the bottom of the gasifier, reaching the melting temperature of some metals. In that process, metals can be recovered in "ingot" form. Fly ash from the air emission control system is the primary process residue. Reuse of the slag after metal recovery would result in the high reduction rate. A facility with the gasification conversion technology reportedly can reduce the feedstock by more than 90 percent by weight. If this rate of reduction is correct, it would represent an improvement over traditional thermal conversion technologies that can reduce the volume of MSW by 90 percent, but the weight by only 75 percent.

No MSW processing facilities employing the gasification conversion technology are commercially operating in the United States. However, there is a commercial operation in Sanford, FL that processes sewage sludge through a gasifier, and there are several suppliers of the technology that claim to have commercially operating facilities outside of the U.S. and that have proposed projects in the U.S. For fluid bed technologies, the net energy generation rate

ranges from almost 400 to 450 kWh per ton of waste processed, which is somewhat lower than the conversion rate of traditional thermal conversion technologies. For two-stage (pyrolysis-gasification) fixed bed technologies, the net energy generation rate reportedly ranges from almost 700 to over 900 kWh per ton of waste processed, which is significantly higher than traditional thermal conversion technologies. Global Energy Solutions has the largest operating unit rated at 180 TPD in Tokyo, Japan, with over three years of experience while processing MSW.

Locally, Taylor Biomass Energy LLC, a biomass gasification plant under construction in Montgomery (Orange County), N.Y., will receive its \$100 million loan guarantee to begin construction. It has been estimated that it will be capable of generating 20MW of renewable energy in the form of biomass electricity. This will mean that it will be able to power around 27,000 homes per year based on the assumption of 500 kwh/month per residence. Titled ‘The Montgomery Project’, it will use the proprietary “Taylor Energy Solution” as the foundational technology for a three-part, integrated system design that converts the organic biomass portion of mixed solid waste (MSW) to electric power, through gasification.

The Montgomery Project will:

- Expand the Taylor Sorting and Separating Process to accept mixed solid waste (“MSW”), in addition to wood waste, and waste from construction and demolition debris (“C&D”) as inputs.
- Produce a stable, cost-effective, biomass-processed fuel supply from suitable feedstock, reducing landfill waste in the process.
- Use the biomass-processed fuel to feed its proprietary gasification process, producing a medium calorific value synthesis gas (syngas), capable of serving as a direct substitute for natural gas.
- Connect to the power grid as a first-generation MSW product, providing clean, renewable energy.
- Maximize financial investment by conducting the Montgomery Project with a view to cost efficiency, widespread commercial replication; flexible facility design that can meet local needs, and diverse potential for future development of product slate.

The project will generate a net 20 MW clean, renewable energy and produce enough electricity to power approximately 27,000 homes based 500 kwh/month usage per residence, with an estimated cost over 20 years of around 5 cents per KW.

The Montgomery Project will be located on 95 acres of interchange development property, at 350 Neelytown Road, Montgomery, in Orange County, New York. The site is the current location of Taylor Recycling Facility (TRF) and is “shovel ready” due to local site control and the extensive permitting work completed to date.

The Montgomery Project will expand from its current capacity of 307 TPD of C&D waste and 100 TPD of wood waste, to accommodate a new inflow of 450 TPD of C&D waste, 100 TPD of wood waste, and 500 TPD of municipal solid waste. Proposed site modifications include improvements to the existing C&D Processing Structure, and construction of a new Post Collection Separation Facility Structure, two Biomass Storage Silos, the Gasification Unit and a Power Generation Pad. The Taylor Post Collection Separation Structure will prepare a portion of the biomass feedstock for the gasifier. Additional wood and biomass for the project may be supplied as needed from the existing Construction and Demolition (“C&D”) Processing Structure. Biomass will be stored in two storage silos with a combined storage capacity of five days. The storage silos will be supplied by Ladig and Weaver, vendors with extensive experience in storage and handling of materials. The current silo design is based on performance specifications; the actual design of the equipment will be by the supplier. The current PBF feed design is subject to review and modification by Tom Miles of TR Miles Technical Consultants, a leader in the design of handling and feeding of biomass, including RDF materials.

The design of the Taylor Gasification Process uses three, fluidized-bed reactors: a gasification reactor, a gas conditioning reactor, and a combustion reactor. The gasification and combustion reactors are circulating fluidized beds, while the gas conditioning reactor is of the bubbling fluidized bed type. TBE expects to use a Solar Titan gas turbine as the prime power generation component. A steam turbine based bottoming cycle will complete the power generation system. Grading, concrete work and installation of utilities necessary for the gasification and power generation islands will be completed as part of the project scope. In the final step, all piping associated with the gasification and power generation structure will be completed. Interconnection to the power grid will be completed by Central Hudson Gas and Electric Corporation. The Taylor site has a Central Hudson 13.2/69kv electric transmission line through the center of the 95 acres and a 69kv substation referred to as the Central Hudson Gas and Electric Maybrook substation on its property border. This will simplify the interconnection activities and allow for rapid completion of this task. All unit operations, including all heat recovery and gas compression steps, will be included as a part of the facility.¹

¹ Source: Taylor Biomass Energy website. http://www.taylorbiomassenergy.com/taylorbiomass04_mont_mn.html

C. Plasma Arc. Plasma arc technology is a heating method that can be used in both pyrolysis and gasification systems. This technology was developed for the metals industry in the late 19th Century. Plasma arc technology uses very high temperatures to break down the feedstock into elemental by-products. Plasma is a collection of free-moving electrons and ions that is typically formed by applying a large voltage across a gas volume at reduced or atmospheric pressure.

When the voltage is high enough and the gas pressure low enough, electrons in the gas molecules break away and flow toward the positive side of the applied voltage. The gas molecules, losing one or more electrons, become positively charged ions that are capable of transporting an electric current and generating heat when the electrons drop to a stable state and release energy. This same phenomenon creates lightning. Plasma arc devices or “plasma torches” can be one of two

types: (1) the transferred torch; and (2) the non-transferred torch. The transferred torch creates an electric field between an electrode, at the tip of the torch, and the reactor wall or conducting slag bath. When the field strength is sufficiently high, an electric arc is created between the electrode and reactor, much like an automotive spark plug. The non-transferred torch creates the electric arc internal to the torch and sends a process gas, such as air or nitrogen, through the arc where it is heated and then leaves the torch as a hot gas. Very high temperatures are created in the ionized plasma. The plasma can reach temperatures of 7,000°F and above; the non-ionized gases in the reactor chamber can reach 1,700°F to 2,200°F; and the molten slag is typically around 3,000°F. For applications in processing MSW, the intense heat actually breaks up the molecular structure of the organic material to produce simpler gaseous molecules such as CO, H₂, and carbon dioxide (CO₂). The inorganic material is vitrified to form a glassy residue. A main disadvantage of the plasma arc systems used in power generation is that a large fraction of the generated electricity is required to operate the plasma torches, which reduces net electrical output of the facility.

The MSW feedstock typically requires shredding to a 6-inch maximum size prior to charging the plasma arc reactors. By-products of plasma gasification are similar to those produced in high temperature gasification, as noted previously. Due to the very high temperatures produced in plasma gasification, carbon conversion nears 100 percent. The net energy generation rate can reportedly vary significantly depending on the facility throughput. The parasitic load of the torches at plasma arc facilities is significant. Hitachi Metals, Inc., has developed two commercial plasma arc facilities with the Westinghouse Plasma system in Japan. The facility in Utashinai has the largest operating unit rated at 83 TPD with over three years of experience while processing MSW and auto shredder residue. Existing systems use two operating and one spare torch per reactor. The scale of technology has also been used in a General Motors plant in Defiance, OH since 1989. The plasma arc-based facility melts scrap metal for engine block castings. The plasma heating elements there have logged more than 500,000 hours of operation. A leading supplier of the plasma arc technology, Westinghouse Plasma system, is Alter NRG. Alter NRG (formerly Geoplasma) was selected to build a 3,000 TPD facility in St. Lucie County, FL nearly five years ago. The project has been revisited and resized to less than 500 TPD and is still in the development stages. Koochiching County, MN is developing a plasma arc facility using MSW, along with other special wastes as feedstock. A independent review is presently being conducted, and funding is being secured from the state and federal governments to support project development. Plasco Energy Group, a plasma arc technology developer, has signed agreements with two provincial governments in Canada to design, build, and operate plasma arc facilities that will use MSW as feedstock. However, no facilities employing the plasma arc conversion technology to manage MSW are presently commercially operating in the United States.

D. Advanced Thermal Recycling. Advanced thermal recycling represents a second generation advancement of technology that utilizes complete combustion of organic carbon-based materials in an oxygen-rich environment, typically at temperatures of 1,300°F to 2,500°F, producing an

exhaust gas composed primarily of CO₂ and water (H₂O) with inorganic materials converted to bottom ash and fly ash. The hot exhaust gases flow through a boiler, where steam is produced for driving a steam turbine-generator, thereby generating electricity. The cooled waste gases flow through an advanced emission control system designed to capture and recover components in the flue gas, converting them to marketable by-products, such as gypsum (e.g., for wallboard manufacture) and hydrochloric acid (used for water treatment). Typical recovery rates of gypsum and hydrochloric acid from MSW on a weight basis are 0.3 and 1.3 percent, respectively. The bottom ash and fly ash are segregated, allowing for recovery/recycling of metals from the bottom ash and use of the bottom ash as a road base and construction material. The advanced recycling and emission control systems with recovery/recycling reportedly go beyond the technology utilized at conventional resource recovery plants. The feedstock for advanced thermal recycling systems can be unprocessed MSW or refuse-derived fuel (RDF). Using lower moisture content, RDF improves the heating value of the feedstock, resulting in higher efficiency and lower throughput per kWh of electricity generated. To improve economics and efficiency, facilities can incorporate preprocessing to remove marketable recyclables, such as paper, plastics, metals, and glass. Materials handling involves extensive recycling and reuse of solid and liquid residues which can include various by-products, such as hydrochloric acid, gypsum, metal scrap, and road base. In addition, some facilities will extract recyclables out of the feedstock before processing. These innovations reportedly result in disposal of less than 5 percent of process residues, which will be inert. The weight reduction rate of the advanced thermal recycling technology can reportedly range from almost 80 percent to over 95 percent. No facilities employing the advanced thermal recycling conversion technology are commercially operating in the United States. However, Waste Recovery Seattle International LLC (WRSI) is a licensee of the Muellverwertung Rugenberger Damm (MVR) advanced thermal recycling conversion technology. The MVR technology is proven in two full-scale commercial facilities in Hamburg, Germany. Müllverwertung Borsigstrasse Damm (MVB), the oldest facility, has been operational since 1994. The MVR facility has reportedly operated at over 90 percent annual availability. The net energy generation rate is 580 kWh per ton of waste processed.

Overview of Enhanced MSW Composting

In accordance with New York State Regulations, leaf and yard waste (green waste) is not allowed to be disposed of in Ulster County. As a service to County residents and businesses, the Agency currently operates a yard waste and clean wood composting area at the facility to process and recycle green wastes through use of the grinder and static pile method of composting. All of the Municipal Recycling Drop-off Centers (MRDCs) collect leaf and yard waste from town residents. These services are provided for a nominal annual permit fee to residents of that town. Other private enterprises within the County also offer facilities for the processing and recycling of green wastes. Backyard composting of yard waste is also popular with residents of Ulster County, especially in the more rural towns. In consideration of expanding the County's current composting operations to increase downstream diversion of organic waste, and in light of recent

New York State initiatives to promote greater diversion of organics from landfills, there are two potential management strategies that could enhance and expand composting operations. The first is the addition of other types of organic feedstock to the green waste currently being processed; the second is through a large-scale commercial MSW co-composting facility similar to that built for Delaware County, NY.

MSW Co-Composting. MSW co-composting is a waste diversion and organics recycling technology that processes a single mixed stream of solid waste and captures and composts the organic fraction of the waste. The advantage of this technology is that it does not require special separation or collection programs for the organic fraction of the waste stream (utilizes existing waste collection programs) and integrates well with existing recycling programs. MSW co-composting technologies are aerobic processes that do not produce synthetic gases for conversion to energy; however, the Nantucket Facility in Massachusetts recently received an approved protocol from the Chicago Climate Exchange for receipt of carbon credits.

A. Feedstock Availability. The following types of feedstock can be processed through an MSW co-composting facility:

- Mixed MSW
- Green waste
- Wastewater treatment plant sludges
- Non-contaminated waste liquids
- Other organic sludges
- Food waste
- Liquid sludges

As previously discussed, all of these organic materials are readily available within the County. The advantage of this process for feedstock is that inorganics are removed as part of the process and it does not rely on separation of organics at the point of generation. In addition, the process anticipates various levels of moisture content for different feedstocks and can be adjusted throughout the process.

B. MSW Co-composting Facility Components. MSW co-composting facilities are fully enclosed facilities that generally consist of a waste receiving area (solid waste, biosolids, liquid waste); an aerobic digester (rotating drum or other mixer); primary refining area where large inorganic material is separated from organic material; an active composting area; a secondary refining area where small inorganics are removed from the compost; operations control center; pre- or post-sorting areas for dry recyclables; automated instrumentation systems; and site utility systems. In some instances, there are enclosed storage areas for compost. The facilities can be developed as modular systems and can be sized for almost any throughput, although economy of scale is a key consideration.

C. Applicability to the Waste Stream. *Biocycle Magazine* (November 2008) reports that there are 13 MSW composting facilities operating in the United States ranging in size from 33 to 350 TPD. The largest MSW composting facility in North America is located in Alberta, Canada, and

processes over 350 TPD of MSW. The newest facilities to come on line were Delaware County, NY (2006) and Rapid City, SD (2005). Both of these facilities process both MSW and biosolids and are very well run facilities that sell their final compost product. A significant advantage of MSW co-composting is that it does not require changes to the County's current solid waste collection methods nor does it require residents to modify habits with respect to separation of recyclables and solid waste. It also potentially allows for greater processing of solid waste, which will lower the volume of material into the landfill to extend the overall life of the facility. However, like all alternative technologies, this process can be more expensive than disposal of waste in a landfill. The economic benefits occur with respect to the longevity of the landfill, the ability to process greater volumes of waste, the ability to utilize alternative energy resources to reduce operating costs, and the receipt of economic incentives such as carbon credits – all of which are potentially available to the County.

D. Volume Reduction and Diversion Potential. MSW co-composting facilities can achieve volume reductions of between 50 and 75 percent, depending on the equipment and systems utilized. Where the focus is on maximizing landfill diversion, additional capital expenditures are utilized for greater separation and reuse of materials (similar to the Conporec Facility in Canada). Where facilities are integrated with an active recycling program, the focus is on capturing the organic fraction of the waste stream and not spending additional money on recovering recyclables within the facility (similar to the Delaware County model). Delaware County reports that their total solid waste management program is achieving nearly 85 percent recycling with the implementation of the MSW co-composting facility (includes their MRF). From a volume perspective, Delaware County is achieving a 70 percent diversion rate for their landfill air space.

E. Environmental Considerations. For MSW co-composting operations, the most significant challenges for controlling environmental impacts relate to control of odors, fugitive dust emissions, and compost quality. New York State requirements pertaining to composting operations are presented in the 6 NYCRR Part 360-5 Solid Waste Rules and Regulations. All MSW co-composting facilities require a New York State solid waste permit to construct and operate the facility. Registration of odor control facilities is also required under the air regulations. Extensive odor control systems are utilized that maintain negative pressures throughout the processing areas and treat air through scrubbers or bio-filters prior to releasing to the atmosphere. Dust collection and removal systems are also used to remove particulates from the air during internal screening and processing of the final compost product.

Worker health and safety is also a significant consideration, and local ventilation systems are utilized extensively in the facilities, as well as sanitary facilities and clean-up areas.

F. Residuals. An MSW co-composting facility can process a variety of organic materials in a single stream. Biosolids and liquid waste have very little residuals left after processing, while MSW has a significant component of inorganic materials. Depending on the type of feedstock,

the MSW co-composting facility may produce combined residuals of 25 to 40 percent by weight of the material processed. This number may be a bit misleading since moisture is added throughout the process so weight comparisons may not be completely representative of the diversion potential compared to volume reduction. The inorganic material must be disposed of in a landfill or approved solid waste disposal facility. The final compost product is tested and sold as a soil amendment.

Overview of Waste-to-Energy

The WTE industry emerged in the United States in the 1970s due to several factors. The Arab Oil Embargo resulted in oil and energy prices increasing substantially. Second, there was growing recognition of the potential risks of groundwater contamination at existing unlined landfills. This led to new regulations requiring the construction of lined sanitary landfills, which increased solid waste landfilling cost. Third, WTE facilities were considered viable alternatives for waste disposal and energy production. In 1980, less than 60 WTE facilities were operating. By 1993, the number of operating facilities reached a peak of approximately 150. From 1993 to present, the number of operating WTE facilities has declined to approximately 89. The decline was caused in part by an abundance of landfill space with lower tipping fees than WTE facilities, loss of ordinance-based flow control, and implementation of more stringent federal air quality standards. Currently, WTE facilities process approximately 12 percent of all MSW generated in the United States, according to the USEPA.

It is important to note that the last “greenfield” WTE facility utilizing mass burn technology was constructed in the United States in the early 1990s. Since that date, several WTE vendors have exited the business (Westinghouse, Foster Wheeler, and General Electric), and multiple acquisitions have taken place. Covanta Energy, Montenay Power/Veolia, and Wheelabrator Technologies represent the three primary remaining WTE vendors. Several existing facilities are proceeding with expansion, including but not limited to, Lee County, FL; Rochester, MN; Honolulu, HI; and Lancaster County Solid Waste Authority. Higher energy prices over the last two to three years have resulted in a renewed interest in WTE technologies.

A. WTE Facility Components. Generally, a mass burn WTE facility will consist of a large building, including an enclosed waste receiving and storage area, furnace-boiler room, central operations control center, water treatment area, turbine-generator hall, and residue storage area. An air-cooled condenser, air emissions control systems, a continuous emissions monitoring system enclosure, and stack with multiple flues will be located outdoors. The WTE facility should be situated on a minimum of an 8- to 10-acre site surrounded by additional buffer area. The selected site should exist near a major road for ease of access, water supply source, wastewater discharge point to treat wastewater, and electrical interconnection. The design of a new WTE facility can incorporate on-site wastewater reuse. The anticipated energy content (higher heating value) of the solid waste will range from 4,500 to 5,000 Btu per pound. Typically, food waste is the highest moisture laden component with the lowest energy value of the potential waste stream for the WTE facility.

B. Commercially Proven Technologies.

1. Mass Burn WTE Systems. Mass burn WTE systems can be basically divided into three separate technologies: (a) modular starved air systems; (b) modular excess air systems; and (3) field-erected excess air systems. The modular starved air systems were historically used for small applications (under 400 TPD). These facilities would typically combine several refractory lined combustors, each rated for around 90 TPD, in the number necessary to dispose of the quantities of waste available in the area. These refractory lined combustors generally had two chambers in which the MSW was introduced and pushed through several steps during which the fuel was first dried, then combusted, and then completely burned with the ash removed into a submerged conveyor. The combustion was conducted without adequate amounts of oxygen; additional air was introduced in the secondary chamber where the combustion was fully completed. Many of these modular starved air systems were used in small applications for incineration only. If energy recovery was desired, a separate waste heat boiler was included to convert the hot gases from incineration into steam to drive a steam turbine connected to an electric generator. The modular excess air WTE system can be described as the rotary combustor systems currently in use in several facilities in the United States. These facilities use a rotating cylindrical combustor in combination with a waste heat boiler to create steam for electrical production. The combustors are constructed with tube material that circulates water to absorb the heat of combustion and to heat the water being used in the waste heat boiler to create the steam for use in the steam turbine generator. The MSW tumbles through the inclined combustor and falls out of the combustor onto an after burning grate system, which allows for the complete burn-out of the MSW fuel.

The type of WTE facility most prevalent in the United States uses the field-erected excess air technology. With this technology, the incinerator and boiler are one system; the walls of the incinerator are constructed of tubing in which water circulates as part of the steam generation process. The mass burn technology typically utilizes an overhead crane to feed municipal solid waste from a pit into a chute that deposits the municipal solid waste onto an inclined surface upon which the municipal solid waste burns in the presence of more than enough air (oxygen) to achieve complete combustion. The heat generated during combustion is transferred through the water walls to create steam. In addition, the water wall boilers are typically provided with additional tubing in other sections of the boiler to create superheated steam that improves the generation of electricity and other tubes to preheat the water, which improves the efficiency of the boiler process. The super-heated steam is sent to a steam turbine connected to an electrical generator to create electric power. Some facilities use steam turbines that allow for extraction of steam at some specific pressure level to be sold to an adjacent industry that may require process steam.

2. RDF Systems. RDF systems have been employed as a means to increase the quality of the MSW as a fuel and to provide a means to recover materials prior to combustion. RDF systems in use today are being used in combination with field-erected water wall boilers. RDF systems can be used to prepare fuel to be used with different types of combustors, including fluid bed

combustors and other industry boilers (cement kilns, pulverized coal units, etc.). On average, RDF systems have a larger design capacity than mass burn facilities. Most RDF facilities in the U.S. process 1,000 TPD or more. RDF systems can be arranged in several different forms. There are several systems typically used in an RDF plant, including shredders, magnets, eddy current separators, trommels, and picking stations. The combination of and order in which the systems are arranged are what differentiates one from the other. Two or three types of shredders can be employed, including slow speed shear-type shredders, bag-breaking “flail mill”-type shredders, and size-reducing hammermill-type shredders. Magnets can be used to remove ferrous metals such as steel cans and other iron. Eddy current separators can be used to remove non-ferrous metals such as aluminum, brass, tin, etc. Trommel systems can be used to separate materials by size using a rotating cylindrical drum with sides made of screens with holes of certain size. Picking stations provide a means to pick targeted items for recovery. In the United States, three types of RDF systems are normally employed, including the shred-and-burn system, the trommel-first systems, and the shred-first systems. All three designs use ferrous removal magnets. The shred-and-burn system in use at the SEMASS facility in Rochester, MA basically removes the non-processible waste, shreds everything else, removes ferrous metals, and burns the remainder. The trommel first system at SPSA in Portsmouth, VA and one of the Miami, Dade County, FL systems use trommels to open bags and remove glass and grit; then sends the material into another trommel to separate those items already sized appropriately for the combustor, which also concentrates the aluminum cans; then shreds the oversized material for use in the boiler.

Typically magnets are used to remove ferrous metal from each stream, and eddy current separators remove aluminum prior to the size reducing shredder. The shred-first systems typically use a flail mill to open bags of MSW, then magnets and trommels remove small residues and size materials, and hammermills size the remaining materials. H-POWER in Honolulu, HI uses the shred-first system. All of the RDF systems operating in the United States use grate-type combustion units. Typically, the boilers used in the RDF systems are very similar to those used in mass burn systems: field-erected water wall units with super heaters and economizers. The differences between mass burn and RDF combustion units are associated with the grate systems. The RDF units use a horizontal grate system; the mass burn facilities use inclined grate systems.

C. Residuals. Unprocessable (i.e., large, bulky) solid waste is separated in the waste receiving area for recycling or landfill disposal. Unprocessable solid waste components include demolition/renovation/construction debris, durables, household hazardous wastes, and special wastes. The remaining solid waste components are compatible with mass burn technology.

GENERAL COST COMPARISON

Based on the initial evaluation of alternative technologies for downstream diversion, the Agency conducted a preliminary overall comparison of costs for each technology which would allow a comparison with current waste management approaches. As each alternative technology requires

a minimum waste volume for the technology to be viable, a 500 TPD facility was selected to compare costs. As bioreactor landfills do not present an opportunity for diverting waste from landfill disposal, it was excluded from further consideration. Waste-to-energy facilities typically require a minimum of 1,000 TPD to be economically viable. Since Ulster County does not generate that volume of waste and is not interested in importing waste, this technology was also excluded from further consideration.

The cost for each remaining alternative technology will be compared with a \$60/ton landfill cost (tipping fee and transport) which represents the expected average cost of the current landfill disposal approach over the proposed planning period. As a majority of the alternative technologies have limited full-size facilities in operation in the United States, the opinion of probable costs (both capital and operations) is based on information available in literature. The following sections present our general opinion of probable costs for each of the three remaining alternative technologies.

4.7.1 Anaerobic Digestion

A. Technology Options. Most anaerobic digestion technologies are classified as either wet or dry. This processing technology reduces the volume of solid waste and recovers energy through the process. AD systems may be classified as follows:

- wet single-step
- wet multi-step
- dry continuous
- dry sequencing batch
- dry multi-step
- percolation (dry two-step)

Presently, there are several wet and dry AD systems commercially operating in Europe that use the organic fractions of MSW as feedstock. In addition, digesters have been used in the U.S. to manage biosolids and manures for several decades. However, there are no commercially operating facilities in the U.S. using the organic fraction of the MSW as feedstock.

Wet and dry systems are not typically used for the AD of the full MSW stream, but target the OFMSW. Wet systems are primarily designed to co-digest OFMSW with a liquid substrate, such as manure or sewage sludge. Because the Ulster County disposed solid waste stream includes large quantities of both organics and biosolids, we have selected the wet AD system for further review. For purposes of this evaluation, we have identified a facility sized to process 220 TPD based on our characterization of the solid waste stream.

B. Selected Technology for Cost Comparison. For the purposes of a cost comparison, the wet AD system technology was selected based on the following considerations:

1. **Status of Technology.** Wet AD has been used in the U.S. for decades to manage manures and

sewage sludge. It is presently used in Europe and Canada to manage OFMSW. For example, since 2002, the City of Toronto has been operating an anaerobic digestion facility at its Dufferin solid waste transfer station using the BTA technology, a wet two-step process. There are several other commercially operating AD facilities in Europe that are co-digesting OFSWM (e.g., yard waste, kitchen waste, and compostable paper) with sewage sludge.

2. Regulatory Acceptance. Wet AD has been permitted as a management approach for biosolids in the U.S., including New York. Therefore, the technology is understood by the regulators, but its application to the organic fraction of the MSW would require additional information and analysis. The technology also fits within the State's Solid Waste Management Hierarchy to Reduce, Reuse, and Recycle.

3. Operating Flexibility. Wet AD co-digesting systems accept a range of OFMSW and sludges for processing. The proposed technology includes some up-front processing to remove the contaminants and optimize the process. Feedstock may include source separated organics (food waste), biosolids, non-hazardous liquid waste, paper sludge, yard waste, and non-recycled organic material such as soiled paper or cardboard. Thus, some flexibility exists in both the type of materials and the proportional mix of organics that can be processed.

4. Landfill Preservation/Diversion Goals. Wet AD systems accepting targeted OFSWM and sludges typically divert up to 80 percent of the materials processed from landfill disposal through volume reduction, composting of the solids, and reuse and/or land application of the process water. Keys to maximizing landfill diversion include finding markets for the compost byproduct and process water. The compost by-product can be used as soil conditioner. The process water and its constituents need to be evaluated prior to identifying reuse opportunities.

C. Cost Considerations. When evaluating the economic viability of alternative waste processing technologies, the basic business model holds true as for many industrial facilities. There is the need for a raw product (feedstock), preparation of the raw product (feedstock mixing and preparation), management of residual products (nonprocessibles), consistent and reliable processing methods and controls (the AD process), the marketing and distribution of the final end products (compost/biogas/process water), and applicable regulatory compliance and reporting (environmental controls).

In addition, it must also be recognized that AD facilities utilize a biological process that must be applied consistently within the system. Unlike landfills, these facilities cannot accept more waste than what they are designed to process. Landfill operators have the ability to accept a wide range of daily volumes of waste. However, an anaerobic facility designed to accept 220 TPD of materials cannot accept 500 TPD of materials since the throughput volume is limited and the organics would not be adequately processed.

D. Preliminary Cost Evaluation for Screening Purposes. To determine if this technology is worthy of further economic evaluation, a preliminary cost review was completed based on reported costs for similar AD facilities, published articles, and technical presentations at waste conferences. However, it should be noted there are no commercially operating facilities in the

U.S. The purpose of this screening is to determine if the range of cost for an AD facility compares favorably with Ulster County's existing landfill export disposal cost, which is estimated at \$60/ton over the planning period. This analysis is not intended to determine if an AD facility is a viable option for Ulster County. The intent is to determine if this technology is potentially economically viable as an option to the County for increasing reuse and recycling opportunities and thus should be further evaluated through a more detailed cost analysis. The following is a summary of the preliminary cost evaluation completed as part of this task based on processing 220 TPD of solid waste composed of OFMSW and wastewater sewage sludges.

1. Facility Processing Input (Feedstock)

- a. OFMSW – 120 TPD (42,000 tons per year [TPY]).³
- b. The OFMSW projected quantity includes the following segments of Ulster County's MSW stream:
 - Compostable paper
 - Food waste
 - Yard waste
 - Other organics
- c. WWTP Sludges – 100 TPD (35,000 TPY).
- d. Total – 220 TPD (77,000 TPY).

2. Facility Processing Outputs

- a. Fiber (solids from digestate for composting) – 60 TPD (21,000 TPY) .
- b. Filtrate (liquids in digestate) – 140 TPD (49,000 TPY).
- c. Preprocessing residuals for landfill disposal -10 TPD (3,500 TPY).
- d. Biogas – 3,000 cubic feet per ton of waste (70,000,000 cubic feet per year).

3. Site Requirements

- a. Buildings – 2 to 4 acres.
- b. Land Requirements – 7 to 10 acres.
- c. Electricity – Varies.

4. Summary of Facility Components. The following is a summary of the key components required:

³ Quantities of organics composing the OFMSW were estimated using the waste characterization developed as part of the solid waste plan.

- a. Waste pre-processing area, to remove materials that cannot be anaerobically digested (such as metals, glass, and concrete) to preprocess the remaining materials into a uniform feedstock and adding the sludges providing moisture to form a slurry in the digester.
- b. Anaerobic digester, where large organic compounds are broken down into smaller compounds in an airtight vessel called a reactor or digester. The biogas produced by AD can be used with minimal treatment in boilers to generate heat and in reciprocating engines or turbines to generate electricity. If the gas is purified, it can be used in place of natural gas or compressed natural gas as a vehicle fuel.
- c. Gas flaring, steam, and/or power generation using the digester as a fuel.
- d. Emissions control on units combusting the gas produced.
- e. Residue composting and beneficial use.

5. Capital Cost Consideration

- a. Costs adjusted to reflect 2009 Cost Index.
- b. Economies of scale are applicable depending on size and optimization of equipment throughput.

c. The estimated capital costs for an AD facility of 77,000 TPY are \$250 to \$275 per ton of annual capacity.⁴

d. Estimate for a 220 TPD MSW AD facility including (42,000 TPY MSW + 35,000 TPY sludge = 77,000 TPY) is \$25,000,000 to \$35,000,000.

6. Operation and Maintenance Cost Considerations

a. Personnel costs for 5 to 10 staff.

b. Facility operates seven days per week.

⁴ This is a planning level estimate based on R.W. Beck studies conducted for King County, Washington; Hawaii County, Hawaii; and Linn County, Iowa. There is very limited publicly available data.

c. Includes utilities, materials, equipment rentals, environmental monitoring, reporting, equipment maintenance.

d. Include a capital replacement fund of \$500,000 per year.

e. Electrical costs at \$0.12/kw-hour.

f. Residual disposal cost of \$60/ton

g. No host community fee considerations.

7. Gross Cost on Equivalent Per Ton Basis

a. Operating costs - \$55 to \$65/ton.

b. Capital cost amortized over 20 years at 4 percent interest (public finance) equals \$24 to \$34/ton.

c. Gross operating cost, including debt retirement: \$79 to \$99/ton.

8. Potential Annual Revenue Streams

a. Sale of biogas for direct end use or power purchase agreement using relevant electric utility renewable energy pricing – potential of \$500,000 to \$1,000,000 net revenue depending on selected market (energy credits and other tax credits not considered).

b. Sale of compost assumed to be offset by cost of building material and mixing/handling.

c. Total Gross Revenue Potential: \$6.50 to \$13.00/ton

9. Net Cost on Equivalent Per Ton Basis. \$72 to \$86/ton.

E. Results of Preliminary Screening. The preliminary results of the screening process for AD reflect that the gross operating costs are higher than the Agency's current \$60/ton tip fee and transport cost. Based on the cost analysis, AD is not competitive as an option for increasing diversion and recycling opportunities unless the potential revenue streams can be increased to address the net cost differential.

4.7.2 Gasification

A. Technology Options. In addition to the traditional thermal conversion technology of WTE, thermal conversion alternatives include several emerging technologies as outlined in the previous discussion. The emerging thermal conversion technologies discussed in the previous section included pyrolysis, conventional gasification, plasma arc, and advanced thermal recycling.

Pyrolysis and gasification are not new technologies, having been used in the coal industry since the early 20th Century. Plasma arc has been applied in an industrial setting to manage hazardous waste for decades. Advanced thermal recycling represents second generation combustion-to-energy technology that has recently been considered for MSW. All of these technologies have been applied in other parts of the world, such as Japan and Europe, but there are no commercially operating facilities in the U.S. However, there are operating demonstration plants and commercial facilities in the planning stage in the U.S.

Because of the lack of commercially operating facilities in the U.S., cost data is very limited. The Agency has gathered some preliminary planning level capital and O&M cost information based on previous discussions with suppliers of various gasification technologies. It is worth noting the County would likely need to consider the import of applicable waste streams from outside the County to take advantage of the needed economies of scale for conventional gasification to be considered competitive. For purposes of this evaluation, we have selected conventional gasification for further review because there are commercially operating facilities in Europe and demonstration facilities in North America.

B. Selected Technology for Cost Comparison. For the purposes of a cost comparison, conventional gasification technology was selected based on the following considerations:

1. **Proven Technology.** This emerging technology has a commercially operating status in Europe and Japan. In addition, there are demonstration facilities in the U.S. that reflect that this emerging technology offers potential. Several facilities are planned for development in the U.S. in the future and should offer a frame of reference for additional consideration.

2. **Regulatory Acceptance.** As the technology evolves, the permitting issues will be clarified. Gasification technology has been applied in other energy production settings providing relevant information for the regulators. The key issues are the air emissions and management of the slag/ash.

3. **Operating Flexibility.** Conventional gasification offers operating flexibility because it can process most all of the MSW stream with limited materials considered non-processible. Moreover, some of the other emerging technologies such as plasma arc typically require more materials preprocessing and greater energy input for application of the technology.

4. **Landfill Diversion Goals.** For conventional gasification, up to 90 percent of the incoming waste stream may be diverted from landfill disposal. Fly ash from the emissions control system is the primary process residue that may need disposal. The slag resulting from the gasification process has beneficial reuse potential in building and road materials.

C. Cost Considerations

1. **Preliminary Cost Evaluation for Screening Purposes.** To determine if this technology is worthy of further economic evaluation, a preliminary cost review was completed based on reported costs for similar types of conventional gasification facilities, published articles, and technical presentations at waste conferences. The purpose of this screening is to determine if the range of costs for conventional gasification compares favorably with Ulster County's existing landfill disposal cost, which is estimated at \$60/ton over the planning period. This analysis is not intended to determine if gasification is a viable option for Ulster County. It is intended to determine if this technology is potentially economically viable as an option to the County for increasing reuse and recycling opportunities and thus should be further evaluated through a more detailed cost analysis. The following is a summary of the preliminary cost evaluation completed as part of this task based on processing 500 TPD of MSW.

2. **Facility Processing Input (Feedstock).** MSW – 500 TPD (175,000 TPY).

3. **Facility Processing Outputs.** Conventional gasification has the potential to reduce the volume of materials received by up to 90 percent. Various process outputs are provided below. Specific quantity estimates are not provided because of the lack of reliable materials flow data.

- a. Syngas.
- b. Ash/char.
- c. Non-processibles.
- d. Recyclable metals .

However, it is anticipated that non-processibles needing landfilling will compose approximately 5 to 10 percent of the throughputs by weight.

4. **Site Requirements**

- a. Buildings – 3 to 5 acres.
- b. Land Requirements – 10 to 15 acres.
- c. Electricity – Varies.

5. **Summary of Facility Components.** The following is a summary of the key components required:

- a. Waste pre-processing area, to remove materials that cannot be thermally degraded (such as metals, glass, and concrete) and some pre-processing of the remaining materials into a uniform feedstock.
- b. Reactor/gas refining, where gasification reactions occur and the resulting product (gases, oils) is refined, as needed, to produce gas of suitable quality. The gas produced is often referred to as “synthesis gas” or “syngas,” because it is predominantly a combination of methane and hydrogen.
- c. Power generation or chemical production using the syngas and/or oils as a fuel or feedstock. Unrefined or minimally refined gas can be burned directly in boilers with heat recovery to produce steam for electricity generation. More refined gas can be used in reciprocating engines, gas turbines, or for chemical production.
- d. Emissions control on units combusting the gas produced.
- e. Ash, char, or slag handling and disposal.

6. **Capital Cost Consideration**

- a. Costs adjusted to reflect 2009 Cost Index.
- b. Economies of scale are applicable depending on size and optimization of equipment throughput.
- c. For conventional gasification facilities, planning level capital cost ranges from \$150,000 to \$180,000 per ton of daily capacity.
- d. Estimate for a 500 TPD MSW gasification facility is \$75,000,000 to \$92,500,000.

7. **Operation and Maintenance Cost Considerations**

- a. Personnel costs for 15 to 20 staff.
- b. Facility operates seven days per week.
- c. Includes utilities, materials, equipment rentals, environmental monitoring, reporting, equipment maintenance.
- d. Include a capital replacement fund of \$ 500,000 per year.
- e. Electrical costs at \$0.12/kw-hour.
- f. Residual disposal cost of \$60/ton
- g. No host community fee considerations.

8. **Gross Cost on Equivalent Per Ton Basis**

- a. Operating and Maintenance Costs - \$60 to \$70/ton (based on data from demonstration facilities without facility scale-up).
- b. Capital cost amortized over 20 years at 4 percent interest (public finance) equals \$32 to \$38/ton.
- c. Gross operating cost, including debt retirement: \$92 to \$108/ton.

9. Potential Annual Revenue Streams

- a. Power purchase agreement with renewable energy pricing – Potential for \$2,000,000 to \$5,000,000 in net revenues depending on end-use markets (energy credits and other tax credits no considered).
 - b. Gross Total Revenue Potential: \$12 to \$30/ton.
10. Net Cost on Equivalent Per Ton Basis: \$70 to \$85/ton.

D. Results of Preliminary Screening. The preliminary results of the screening process for conventional gasification reflect that the gross operating costs are higher than the Agency's current \$60/ton disposal cost. Based on the cost analysis, conventional gasification is not competitive as an option for increasing diversion and recycling opportunities unless the potential revenue streams can be increased to address the net costs differential.

The Agency will however, take into consideration, transporting MSW to the Taylor Biomass Facility currently under construction and located in Montgomery, NY which is approximately 50 miles from the Agency's Kingston Facility and approximately 30 miles from the Agency's New Paltz Facility. For more information about this facility, refer to the section describing Thermal-Based Conversion Technologies in part B. Gasification. The Agency is currently in discussion with Taylor regarding potential fees.

4.7.3 Enhanced MSW Composting

As part of the evaluation of alternative technologies, enhanced MSW composting included two potential management strategies that could expand the County's current yard waste composting operations and increase diversion opportunities. The first was the expansion of yard waste composting with the addition of other organics on a small-scale basis, and the second was through a large-scale commercial MSW composting facility. The Agency recognized that an enhanced yard waste composting strategy was a potentially viable option, with relatively modest capital investment and risk, and thus should be further considered under the Local Solid Waste Management Plan. It was also agreed that while the economic advantages of MSW composting were not immediately apparent, it does offer a comparative basis to other alternative waste diversion technologies. As a next step in the evaluation process of alternative diversion technologies, a screening of cost considerations was completed to compare the County's current solid waste management operating costs with other alternative technologies, including MSW Composting.

A. Technology Options. There are a variety of composting processes for Municipal Solid Waste (MSW) that has been used throughout the world with varying degrees of success. These include:

- In-vessel aerated systems (containerized processes).
- Aerated static systems on pads (outdoor facilities),

Aerated static systems with fabric covers (outdoor windrows covered with fabric).

Rotary drum aerobic systems (fully enclosed within buildings).

All of these options apply the basic principles of composting: feedstock preparation, active maturation of the compost (mixing with the addition of air and water), curing, storage, residuals disposal, and compost marketing and sales. However, large-scale MSW composting results in material handling challenges and associated environmental mitigation challenges that are not as easily managed as some of the less automated compost technologies. Therefore, for the purposes of this evaluation, the rotary drum composting technology (large-scale composting) will be evaluated since there is a similar recently developed project in New York State that is currently operating in Delaware County, NY.

B. Selected Technology for Cost Comparison. For the purposes of a cost comparison, the rotary drum composting technology was selected based upon the following considerations:

1. **Proven Technology.** Although rotary drum composting has been utilized dating back to the early 1960s, its success was often dependent on the cost for alternative local disposal options, such as landfilling. Where facilities needed to compete on a “tip fee basis” against relatively low landfill cost, the success rate was poor since capital investments and operating controls relating to compost quality and odor management were less than adequate. Over the past 20 years, owners and operators of MSW composting facilities have made proper capital investments, and a number of successful projects are currently in operation. The compost process works and is technically and economically manageable. Today there are approximately a dozen MSW Composting projects operating in the United States, with a number of additional facilities in Europe and Australia.

2. **Regulatory Acceptance.** The rotary drum composting process has been successfully permitted in New York State through the NYSDEC. While the details of each project are unique in terms of site access, environmental sensitivities, public considerations, access, etc., the 6 NYCRR Part 360 Solid Waste Regulations are clear with respect to permitting requirements. Thus, the time needed to receive a permit is reasonable. The technology also fits within the State’s Solid Waste Management Hierarchy to Reduce, Reuse, and Recycle.

3. **Operating Flexibility.** MSW composting facilities can accept a wide range of feedstock without disrupting the composting process. Feedstock could include MSW, source separated organics (food waste), biosolids, non hazardous liquid waste, paper sludge, yard waste, and non-recycled organic material such as soiled paper or cardboard. The technology does not require pre-sorting and can integrate effectively with existing recycling programs and strategies. It also allows operators to maximize their recycling revenue by focusing on high-value recyclables while capturing a significant volume of organic materials for reuse.

4. **Landfill Preservation/Diversion Goals.** For MSW co-composting facilities (MSW and biosolids), less than 30 percent of the incoming waste stream is sent to the landfill after processing (the inorganic fraction). The material is also inert, resulting from the removal of organics, and thus reduces the amount of contaminants within the landfill leachate.

C. Cost Considerations. When evaluating the economic viability of alternative waste processing technologies, the basic business model holds true as for many industrial facilities. There is the need for a raw product (feedstock), preparation of the raw product (feedstock mixing and preparation), management of residual products (inorganics), consistent and reliable processing methods and controls (the compost process), the marketing and distribution of the final end product (soil amendment/ compost), and applicable regulatory compliance and reporting (environmental controls). The primary difference with MSW composting facilities is that most of the revenue generation occurs through the acceptance of the raw product (feedstock) with limited revenue resulting from the final product. The paradigm shift in this business model leads to an important consideration for these facilities – revenue generation from multiple types of feedstock versus a consistent raw product. This offers both opportunities and challenges for MSW composting facilities. However, operating costs and the establishment of “tip fees” are usually based on a variety of feedstock and estimates of volume processed on an annual basis. Therefore, the greater variety of feedstock that can be processed provides for greater opportunities for revenue.

In addition, it must also be recognized that MSW composting facilities utilize a biological process that must be applied consistently from day to day. Unlike landfills, these facilities cannot accept more waste than what they are designed to process. Landfill operators have the ability to accept a wide range of daily volumes of waste. However, an MSW composting facility designed to accept 500 TPD of MSW cannot accept 750 TPD of MSW since the throughput volume is limited and the organics would not be adequately processed.

D. Preliminary Cost Evaluation for Screening Purposes. To determine if this technology is worthy of further economic evaluation, a preliminary cost review was completed based on reported costs for similar MSW compost facilities, published articles, and technical presentations at waste conferences. The purpose of this screening is to determine if the range of cost for an MSW composting facility compares favorably with the Agency’s existing landfill export disposal cost, which is estimated at \$60/ton over the planning period. This analysis is not intended to determine if MSW composting is a viable option for Ulster County; it is simply intended to determine if this technology is potentially economically viable as an option to the County for increasing reuse and recycling opportunities and thus should be further evaluated through a more detailed cost analysis. The following is a summary of the preliminary cost evaluation completed as part of this task based on a “prototype facility” processing 500 TPD of MSW.

1. Facility Processing Input (Feedstock)

- a. MSW – 500 TPD (175,000 TPY).
- b. WWTP Sludges – 100 TPD (35,000 TPY).
- c. Liquid Waste – 100 TPD (35,000 TPY).

2. Facility Processing Outputs

- a. Compost – 125 to 150 TPD (50,000 TPY).

- b. Residuals for Landfill Disposal – 150 TPD (50,000 TPY).
- c. Recyclable Metals – 10 TPD (3500 TPY).
- d. Waste Liquids – 0.

3. Site Requirements

- a. Buildings – 6 to 8 acres.
- b. Land Requirements 13 to 15 acres.
- c. Electricity – 1.0 to 1.3 MW.

4. Summary of Facility Components

- a. Fully enclosed waste receiving area with three days storage for MSW.
- b. Sludge receiving area.
- c. Operator controls and automated instrumentation systems.
- d. Waste feeding systems.
- e. Rotary drum for waste processing.
- f. Conveyance and transfer systems.
- g. Active compost aeration system (windrows, concrete wall, aeration systems, mixing equipment, and support systems),
- h. Compost refining systems and equipment.
- i. Curing and storage area
- j. Air handling and odor control systems, including dust collection and odor treatment.
- k. Post-sorting area for capture of recyclable metals.
- l. Building and support systems.
- m. Site access and site storm water management features.

5. Capital Cost Consideration

- a. Cost adjusted to reflect 2009 Cost Index.
- b. Economy of scale is noted incrementally depending on size and optimization of equipment throughput.
- c. For larger MSW composting facilities, capital cost ranges from \$280 to \$300/ton of annual capacity (for small facilities it increases to \$450 to \$550/ton).
- d. Estimate for a 500 TPD MSW compost facility including sludge processing (175,000 TPY MSW + 35,000 TPY sludge = 210,000 TPY) is \$58,000,000 to \$63,000,000.

6. Operation and Maintenance Cost Considerations

- a. Personnel costs for 25 to 30 people.
- b. Facility operates seven days per week.
- c. Includes utilities, materials, equipment rentals, environmental monitoring, reporting, and equipment maintenance.
- d. Include a capital replacement fund of \$200,000 per year.
- e. Electrical costs at \$0.12/kw-hour.
- f. Residual disposal cost of \$60/ton.
- g. No host community fee considerations.

7. Gross Cost on Equivalent per Ton Basis

- a. Capital cost amortized over 20 years at 4 percent interest (public finance).
- b. Residual value for facility at the end of the 20-year finance period of 35 percent.
- c. Estimated gross cost on an annual basis: \$10,500,000 to \$11,500,000.
- d. Estimated annual processing fees for privatized operator: \$3,000,000 to \$3,500,000 (before taxes).
- e. Gross operating cost, including debt retirement: \$64 to \$72/ton.

8. Potential Annual Revenue Streams

a. Compost Sale: Assumes 30 percent of incoming waste stream at \$3 to \$10/ton = \$262,500.

b. Total Gross Revenue Potential: \$1 to \$3/ton.

9. Net Cost on Equivalent Per Ton Basis: **\$63 to \$69/ton**

E. Results of Preliminary Screening Process. The preliminary results of the screening process for MSW composting show that gross operating costs are competitive with tipping fees in other portions of the Northeast United States that range between \$65 and \$80 per ton. As an option for increasing diversion and recycling opportunities, MSW composting appears to offer some potential, but not without significant capital investment. As a future consideration, MSW composting may be a reasonable alternative and worthy of additional evaluation in terms of specific site considerations and site suitability, costs, integration of existing County programs, comparative long-term economic value, landfill life considerations, and risk assessment.

However, given the Agency's past and present capital investments, personnel experience, and operations success related to exporting solid waste for landfill disposal, a phased organics diversion and recycling strategy would integrate more effectively with the Agency's existing programs.

CONCLUSION AND RECOMMENDATIONS

Considering a variety of outputs from the alternative technology evaluation process, including:

- required tonnage
- required feedstocks
- applicability to the waste stream
- diversion potential
- environmental considerations
- residuals management
- commercial viability
- anticipated costs

it appears that organics processing through enhanced composting presents the best technological, economical, and environmental option for increasing downstream waste diversion for Ulster County. Anaerobic and thermal conversion technologies do not appear as viable or cost effective. However, this evaluation of alternative technologies, including the general cost comparison, was originally developed as a potentially significant downstream diversion approach. As the actual evaluation progressed and further discussions/work sessions were held, it became evident that a major program change from the current export landfill approach, which is currently more cost effective, was not likely. As a result, a more modest, sequenced, and scalable approach was considered for Ulster County. An approach that focuses on organics would satisfy both the County's interest in increasing recycling and diversion and NYSDEC's interest in organics diversion.

In keeping with enhanced composting as the preferred technology, this approach would most likely begin with expansion of the existing yard waste composting program. The first step in expanding the existing program would be the addition of food waste (preconsumer) or biosolids.

The addition of pre-consumer food waste from institutions (universities, prisons) and commercial enterprises (grocery stores, processors) typically represents the least contaminated (and therefore most cost effective) source of food waste for composting. Collection of pre-consumer food waste would also require the least change to current collection practices.

In addition, the Agency has had some initial discussions related to the economic viability of a County-wide biosolids management facility. The volume of food waste or biosolids that could be diverted will be a function of the volume of bulking agent (brush/yard/wood waste) that is available. Based on approximately 450 tons of yard waste processing per year, approximately 300 tons of food waste or biosolids could be processed annually without importing bulking material. This tonnage would be appropriate for an initial demonstration project. In order to expand processing capacity, the Agency could integrate biosolids disposal with wood waste disposal for interested municipalities.

Typically, a biosolids composting facility would be enclosed to minimize management of odor and other environmental impacts (such as leachate). Low volume food waste composting would not typically require a completely enclosed facility. However, the Federal Aviation Administration has expressed their concern with composting facilities and the potential to attract vectors compared to current open landfilling. Considering the processing capacity available with current wood waste tonnage, vector concerns, and other food waste/biosolids composting facilities in the region, an initial, outdoor, demonstration composting facility may be an appropriate first step in pursuing additional downstream organics diversion. A project of this nature would be pursued to demonstrate required mix ratios, processing options, processing times, finished product quality, the potential for vector attraction, and required environmental impact management.

For a demonstration project, a “low tech” approach to material processing could be used that would utilize the County’s existing equipment. The Agency currently owns a Peterson Pacific Grinder (model 4700B). The Agency would need to invest in a windrow turner and screen. This equipment, along with a front-end loader, could be adequate to operate a static, turned windrow demonstration facility depending on the nature of the food waste. As part of the demonstration, the Agency could also employ a forced aeration static pile processing approach by adding blowers and piping, in lieu of turning windrows, to compare the two processes. Biosolids and food waste could be composted separately and together to evaluate individual and combined processing details.

If this first step of enhanced composting shows promise, the next step in expanding organics diversion could be to construct a larger, enclosed composting facility that utilizes more process controls and automation. The nature of that facility (size, feedstock, processing capacity, processing approach, type of enclosure, etc.) would be determined as part of the demonstration project. Further expansion of enhanced composting as an alternative technology would require the diversion of more organic waste from the MSW stream. Inclusion of source separated

organic waste is one option for capturing organic material. The Agency has identified a “Phased Organics Diversion Strategy” that begins with the County’s existing yard waste composting program (the baseline) and builds upon the program as follows:

A demonstration project that utilizes a forced aeration composting method for processing yard waste and food waste or biosolids.

A full-scale (outdoor) forced aeration composting operation to process 100 percent of the County’s existing yard waste and food waste or biosolids.

A fully enclosed composting facility to process 100 percent of the County’s existing biosolids that is expandable for processing additional organic feedstock.

Table 4-2 presents a summary of the incremental costs associated with the proposed Phased Organics Diversion Strategy.

TABLE 4-1 ALTERNATIVE SOLID WASTE REDUCTION TECHNOLOGIES

TECHNOLOGY	APPLICABILITY TO ULSTER COUNTY WASTE STREAM	COMMERCIAL STATUS	RISKS (I.E., TECHNOLOGY, ENVIRONMENTAL, FINANCIAL)	WASTE DIVERSION POTENTIAL
Anaerobic Digestion (AD)	The overall waste stream is composed of nearly 70 percent of organics including, but not limited to, food waste, yard waste, paper, and wood. This estimate excludes the yard waste that is separated from the mixed refuse by homeowners and businesses. AD can be applied to this fraction of the waste stream to convert organics into biogas and digestate (i.e., solid residues).	A few pilot facilities using MSW as feedstock have operated in the U.S. in the past. The wastewater treatment industry has used AD to manage biosolids and generate biogas for decades. There are more than 100 commercially operating facilities using the organic fraction of the MSW stream and/or organic industrial wastes located in Europe, with a few in other locations, including Canada	Technology risks may include inadequate materials processing because of an underperforming digestion process caused by contaminated feedstock, inadequate moisture content. Environmental risks may include odor from pre-processing and/or digestion activities; exceeding air emissions limits when using the biogas as a fuel; and the inability to site a facility due to perceived threats to water, air, and property values. Financial risks may include lack of markets for biogas and/or residues and failure to receive adequate quantities of materials to ensure needed economies of scale.	Volume reduction is projected up to 75 percent assuming the pre-processing of the feedstock to remove non-organics and the beneficial reuse of digestate. Without beneficial use of the digestate, the potential volume reduction is projected to be approximately 50 to 60 percent.

TABLE 4-1 (continued)

TECHNOLOGY	APPLICABILITY TO ULSTER COUNTY WASTE STREAM	COMMERCIAL STATUS	RISKS (I.E., TECHNOLOGY, ENVIRONMENTAL, FINANCIAL)	WASTE DIVERSION POTENTIAL
Pyrolysis/ Gasification	<p>This technology process converts the carbon-based portion of the waste stream into a syngas that can be used to generate electricity or fuels. The organic content, which is carbon- based, composes approximately 70 percent of the waste stream. The carbon content of the overall waste stream would exceed this value.</p>	<p>There are a handful of commercially operating gasification plants operating worldwide using MSW as feedstock. A small number of pilot facilities reportedly are operating or have operated in the U.S. using pre-processed MSW as feedstock to produce syngas. Operating data is very limited for the application of this technology to MSW; therefore, this technology is not considered fully commercialized. The technology has been used for other types of feedstock, such as coal and uniform types of biomass. Plasma arc thermal gasification, a variation of conventional gasification, has reportedly been used in Japan to manage pre-processed MSW and other types of homogeneous solid wastes, such as auto shredder fluff in commercially proven settings.</p>	<p>Technology risks may include inadequate materials processing because of underperforming gasification process due to lack of uniform feedstock and/or issues associated with scaling up demonstration projects. Environmental risks may include odor at the preprocessing stage; air emissions when using the syngas as a fuel in a boiler; disposal of residues (i.e., char, silica, slag, and ash); and inability to site a facility due to perceived threats to water, air, and property values. Financial risks may include lack of markets for sales of syngas and uncertain capital and operating costs due to lack of full-scale projects with MSW as the feedstock.</p>	<p>Volume reduction for pyrolysis/ gasification can reach up to 90 percent with limited pre-processing. However, limited operating data using MSW as feedstock exists to confirm this projection.</p>

TABLE 4-1 (continued)

TECHNOLOGY	APPLICABILITY TO ULSTER COUNTY WASTE STREAM	COMMERCIAL STATUS	RISKS (I.E., TECHNOLOGY, ENVIRONMENTAL, FINANCIAL)	WASTE DIVERSION POTENTIAL
Waste-to-Energy (WTE)	The overall waste stream is composed of approximately 85 percent combustible materials by weight.	MSW combustion is a fully commercialized processing technology with nearly 90 WTE projects (mass burn and RDF) operating in the U.S. alone. Many others are operating throughout the world. Most of the facilities in the U.S. are sized to process, on average, approximately 1,000 tons per day. Some smaller WTE facilities of less than 250 TPD (i.e., limited economies of scale) are operating in the U.S, but in many instances struggle to remain economically competitive with landfill disposal options. In the last decade, many of these smaller WTE facilities have had to be retrofitted for additional air pollution control equipment, which has dramatically increased overall costs.	Technology risks may include inefficient energy production due to waste variability, as well as excessive unscheduled maintenance. Environmental risks may include odor at tipping floor/pre-processing stage; exceeding of air emissions limits (including dioxins and furans); metals in ash; and inability to site a facility due to perceived threats to water, air, and property values. Financial risks may include large capital costs, variable operating costs, and variability in energy sales.	Volume reduction for WTE facilities is 75 to 80 percent, depending on the type of technology and system used.

TABLE 4-1 (continued)

TECHNOLOGY	APPLICABILITY TO ULSTER COUNTY WASTE STREAM	COMMERCIAL STATUS	RISKS (I.E., TECHNOLOGY, ENVIRONMENTAL, FINANCIAL)	WASTE DIVERSION POTENTIAL
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Enhanced Composting	A. Expanded Organic Composting with the Existing Yard Waste Composting Operations			
	<p>Readily available wastewater sludges</p> <p>Institutional food waste is available</p> <p>Potential partnering opportunities with SUNY New Paltz or other schools and institutions</p> <p>Potential partnering opportunity with the Town of Ulster MRDC</p>	<p>The Northeast U.S. is primarily focused on yard waste, but communities are recently adding other source-separated organics, such as food waste (e.g., OCRRA).</p> <p>The western region of the U.S. is very active, with nearly 70 food waste composting facilities spread throughout 6 states.</p>	<p>Outdoor odor management</p> <p>Reliability of consistent feed stock</p> <p>Public perception of dangers of biosolids</p> <p>Risk of compost sales</p>	<p>Over 90 percent of the material processed, but at lower volumes</p>
B. MSW Composting				
	<p>Single stream process to convert organic content of MSW to compost</p> <p>Integrates easily with existing recycling and collection programs</p> <p>Eligible for Carbon Credits</p> <p><i>Other:</i> New York State is considering incentives for removing organics from landfills (Europe has already implemented organics waste bans to landfills).</p>	<p>13 operating facilities in the U.S.</p> <p>One operating facility in New York State (fully permitted through NYSDEC regulations)</p>	<p>Odor control management</p> <p>Worker health and safety</p> <p>Siting challenges at the landfill site with the FAA</p> <p>Perceptions of compost quality and available markets</p> <p>Capital reinvested over the long term</p>	<p>60 to 75 percent of the incoming MSW; high volume processing</p>

**TABLE 4-2 INCREMENTAL COST SUMMARY FOR PHASED ORGANICS
DIVERSION STRATEGY**

PROGRAM ELEMENT DESCRIPTION	ORGANIC FEEDSTOCK TYPE AND VOLUME	INCREMENTAL CAPITAL COST INVESTMENT (Δ\$)	INCREMENTAL OPERATION & MAINTENANCE COST (Δ\$)	EQUIVALENT ANNUAL INCREMENTAL COST (Δ\$/YEAR)	EQUIVALENT ANNUAL INCREMENTAL PROCESSING COST (Δ\$/TON)
1. Existing Program: Outdoor composting of yard waste	Yard waste 450 tons/year	\$0	Included within existing operations cost.	NA	NA
2. Demonstration Project: Yard waste plus food waste or biosolids	Yard waste 300 CY (135 tons) Food waste or biosolids 100 CY (60-80 tons)	Temporary pad with blowers and air distribution system - approximately \$30,000	\$5,000/year	\$35,000(1)	\$167
3. Forced Aeration Outdoor Composting: 100 percent of existing yard waste plus food waste or biosolids	Yard waste 1,000 CY (450 tons) Food waste or Biosolids 330 CY (300 tons)	Site development, pad, equipment, utilities, blowers, and air distribution system - approximately \$250,000	\$20,000/year	\$45,000(2)	\$70
4. Enclosed Composting Facility for 100 percent of County biosolids (with expandability to other feedstock)	Biosolids 20,000 tons Wood chips or sawdust 10,500 tons	Buildings, roadways, utilities, processing equipment, bulking agent, odor controls, etc. – approximately \$8,000,000	\$600,000/year	\$1,200,000(3)	\$60 (biosolids portion only)

(1) Assumes no financing and only a one-year demonstration period.

(2) Assumes 10-year financing at 5 percent interest.

(3) Assumes 20-year financing at 4 percent interest.

5. COMPREHENSIVE SOLID WASTE MANAGEMENT SYSTEM – THE NEXT 10 YEARS

5.1 SYSTEM GOALS

Over the next ten years, the Agency will strive to improve on its essential mission of the last twenty years – to provide a comprehensive solid waste management system for the citizens of Ulster County that is efficient, economical and environmentally sound. The Agency will accomplish this not only by maintaining and upgrading its current system components, but testing and applying new technology and changing its fundamental system of controlling solid waste originated in or generated in the County. Specifics are discussed below.

5.2 SYSTEM COMPONENTS

5.2.1 REDUCTION AND REUSE : EVALUATION OF UPSTREAM AND DOWNSTREAM DIVERSION OPPORTUNITIES

Given Ulster County’s existing programs, past and current investments, and future opportunities, the Agency completed a series of team work sessions that evaluated past, present, and future solid waste management program elements and potential areas for improvement. In addition, New York State is currently developing draft guidelines for Local Solid Waste Management Plans based on a proposed policy framework that could also include increased requirements for organics diversion. As a baseline, the Agency selected 2009 as a representative year to examine current operations, waste generation volumes, and recycling rates (2008 was considered to be impacted by economic slowdown and reduced waste volumes). Based on County reporting, approximately 64,735 tons of materials were recycled through the combined efforts of local municipalities, private companies and commercial sector.

TABLE 5-1 ULSTER COUNTY REPORTED WASTE COMPOSTION IN 2009

WASTE STREAM	TONNAGES	DIVERTED
Landfill Disposal		
MSW including C&D Debris	159,043.40	
Subtotal Landfill Disposal	159,043.40	
Recycling		
Paper		8,808.74
Corrugated Cardboard		10,087.89
Plastic		29.51
Metals		8,149.09
Glass		711.90
Commingled Containers		5,946.04
Tires		2,079.55
Organics		305.00
Yard Waste		6,906.99

C & D Debris		16,696.43
HHW		636.74
Electronics		248.06
Sewage Sludge		2,004.80
Other		1,216.55
Subtotal Recycling		64,734.48
Total Waste Generated	223,777.88	64,734.48

Table 5-1 presents a summary of the estimated waste composition for the MSW that is exported to out-of-county landfills and the reported recycling efforts that resulted in a County-wide recycling rate of 41 percent for 2009. To increase recycling efforts, the Agency was interested in further examination of “upstream diversion opportunities” (capture, control, and processing of recycling streams prior to disposal) and “downstream diversion opportunities” (alternative disposal and diversion through waste conversion technologies). The following topics were selected for further consideration under upstream diversion opportunities:

1. Environmentally Preferable Purchasing (EPP) Practices & Recycled Content - Policy that encourages communities to purchase materials and services that offer specific environmental benefits.
2. Increase CII&M Recycling Participation – A target strategy directed at the largest generators or under-served portion of the County with respect to recycling efforts.
3. C&D Recycling – Source separation of demolition debris to remove reusable and recyclable products.
4. Expand the Existing Household Hazardous Waste (HHW) and Electronics Recycling to a permanent facility – In consideration of growing demands for electronics disposal.
5. Organics Diversion – Efforts to divert organics from the landfill through the participation of residents, businesses, and institutions.

For downstream diversion opportunities, the following technologies were considered during an evaluation of alternative technologies:

1. Anaerobic digestion.
2. Thermal technologies, including gasification, pyrolysis and plasma technologies.
3. Enhanced composting, including MSW composting.
4. Waste-to-energy.

An evaluation of alternative technologies was then developed for each of the four technologies listed above and is presented in Section 4.7.

1. Upstream Diversion Options

1a. Commercial, Institutional, Industrial & Multi-Family Recycling. This program expansion will focus on recycling collection programs at commercial and industrial sites; institutional facilities (i.e., schools, universities, hospitals, prisons, etc.); and multi-family buildings of five or more families. It is estimated that this program could encompass 2,000 to 4,000 building units. The potential to increase recycling participation is significant depending on the amount of staff time and funds that are dedicated to these efforts. Some of the challenges and program implementation needs are summarized in Table 5-2.

TABLE 5-2 SUMMARY OF INITIAL PROGRAM CHALLENGES FOR INCREASING CII&M RECYCLING RATES

CHALLENGE	PROGRAM IMPLEMENTATION ACTIVITIES	IMPLEMENTATION NEEDS
Lack of space in apartments, offices, and buildings for containers	Establish a CII&M building ordinance requiring recyclables storage in or near the building with individual containers available to transport materials to the central location	Dedicated staff time to work with Ulster County Building Code Officer
High resident, manager, and building owner turnover rate	Track recycling programs for participation, educational and collaborative opportunities for each building	Dedicated staff time to outreach
Small incentive for building occupants to recycle	Survey building occupants to determine appropriate methods to encourage recycling in that building	Dedicated staff time to outreach
Ineffective recycling and waste education	Improve and advertise the county's solid waste website and information; produce and handout simple and innovative educational materials; provide buildings with appropriate signage	Dedicated staff time to outreach and educational materials
Lack of recycling regulations enforcement	Periodically monitor and analyze recycling data for a statistically significant number of buildings	Dedicated staff time and tracking software

1b. Household Hazardous Waste and Electronics Recycling. This initiative involves expansion of the Agency's existing Household Hazardous Waste and E-waste Collection Program. Household Hazardous Wastes are household products that contain corrosive, toxic, flammable, or reactive ingredients, warranting their diversion from the landfill, transfer stations, and other waste disposal sites in order to protect ground and surface waters from accidental release. E-waste and HHW currently comprise about 1 percent of the MSW stream by volume and have high potential for harmful toxins to enter the surrounding groundwater. Regulations are already in place banning HHW from landfills, but this waste stream is not yet fully captured. Issues and methods to increase diversion are shown in Table 5-3.

TABLE 5-3 SUMMARY OF INITIAL PROGRAM CHALLENGES FOR INCREASING HHW AND E-WASTE PARTICIPATION

CHALLENGE	PROGRAM IMPLEMENTATION ACTIVITIES	IMPLEMENTATION NEEDS
Limited HHW collection events because of required staff involvement and budget constraints	Increase the Agency's HHW Collection Program through more one-day collection events and explore opening a permanent collection facility	Dedicated staff time to increase number of collection events and permitting approval process for permanent collection site
Low public participation rates	Increase educational activities and encourage product stewardship programs	Dedicated staff time for outreach and educational materials
Large amount of usable products going to the landfill	Explore opening a reuse center for certain items	Dedicated staff time to operate re-use center and storage area

1c. C&D Debris Recycling. This program would encourage separation of C&D debris for recycling or reuse at the job site of a construction, demolition, or remodeling project. As more buildings are built to achieve LEED⁵ accreditation, deconstruction versus demolition will increase since one of the LEED accreditation points involves utilization of recycled or reused construction materials. Table 5-4 highlights the issues and potential activities associated with C&D debris recycling.

⁵ LEED (Leadership in Energy and Environmental Design): According to the U.S. Green Building Council website: LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

TABLE 5-4 SUMMARY OF INITIAL PROGRAM CHALLENGES FOR IMPLEMENTATION OF C&D DEBRIS RECYCLING (UPSTREAM)

CHALLENGE	PROGRAM IMPLEMENTATION ACTIVITIES	IMPLEMENTATION NEEDS
Small incentive to spend extra to save material	Increase public and construction workers' education and awareness of LEED certification and the benefits of green building. Promote public recognition programs for those that participate.	Dedicated staff time for outreach
More time and effort needed for deconstruction versus demolition	Increase public and construction workers' education; offer guidance or incentives for C&D recycling such as preferred disposal rates for non-recycled C&D after separation has occurred or for site MSW	Dedicated staff time for outreach and program cost for incentives (lost revenue)

1d. Organics Diversion. This program would involve expansion of the current organics (yard waste, food scraps, wood waste) diversion program, including backyard composting, grasscycling, food donations, and small-scale vermicomposting (worm composting in containers). The primary issue associated with upstream diversion of organics is described in Table 5-5.

TABLE 5-5 SUMMARY OF INITIAL PROGRAM CHALLENGES FOR ENCOURAGING UPSTREAM DIVERSION OF ORGANICS

CHALLENGE	PROGRAM IMPLEMENTATION ACTIVITIES	IMPLEMENTATION NEEDS
Educating the public	Have an organics diversion team work with outreach groups to develop a comprehensive program to educate food waste generators and the general public	Dedicated staff time for outreach and educational materials

2. Downstream Diversion Options

2a. C&D Debris Recycling. This program expansion opportunity is targeted for implementation in 5 to 10 years and would involve diverting C&D debris from the landfill by processing material on site. Even with the clean wood diversion program on-site at the Agency facility, a minimum of 20,000 tons of C&D debris, of which 70 percent consisted of highly marketable materials was sent to the landfill. Table 5-6 identifies challenges that will need to be addressed prior to implementation of a C&D processing facility.

TABLE 5-6 SUMMARY OF INITIAL PROGRAM CHALLENGES FOR IMPLEMENTING DOWNSTREAM C&D RECYCLING

CHALLENGE	PROGRAM IMPLEMENTATION ACTIVITIES	IMPLEMENTATION NEEDS
Determination of waste composition of C&D debris	Identify space at the Ulster Transfer Station to complete a C&D composition demonstration study, including rental of appropriate processing equipment. Explore opportunities for beneficial reuse of non-recycled materials as bulking agents for compost operations.	Storage and processing equipment, staff time, and maintenance
Daily value variation of recyclable materials	Conduct a market assessment for materials as well as the site’s potential recovery of recyclable materials	Dedicated staff time for research

2b. Organics Diversion. Choosing the best downstream diversion activity involved considering a variety of outputs from the alternative technology evaluation process, including:

- required tonnage
- required feedstocks
- applicability to the waste stream
- diversion potential
- environmental considerations
- residuals management
- commercial viability
- anticipated costs

It appears that organics processing through enhanced composting presents the best technological, economical, and environmental option for increasing downstream waste diversion for Ulster County. Anaerobic and thermal conversion technologies do not appear as viable or cost effective. However, the Evaluation of Alternative Technologies in Section 4.7, including the general cost comparison, was originally developed as a potentially significant downstream diversion approach. As the actual evaluation progressed and further discussions/work sessions were held, it became evident that a major program change from the current, more cost-effective landfill export approach was not likely. As a result, a more modest, sequenced, and scalable approach was considered for Ulster County. An approach that focuses on organics would satisfy both the Agency's interest in increasing recycling and diversion and NYSDEC's interest in organics diversion. In keeping with enhanced composting as the preferred technology, this approach would begin with expansion of the existing yard waste composting program. The first step in expanding the existing program would be the addition of food waste (pre-consumer) or biosolids. The addition of pre-consumer food waste from institutions (universities, prisons) and commercial enterprises (grocery stores, processors) typically represents the least contaminated (and therefore most cost-effective) source of food waste for composting. Collection of pre-consumer food waste would also require the least change to current collection practices.

In addition, the Agency has had some initial discussions related to the economic viability of a County-wide biosolids management facility. The volume of food waste or biosolids that could be diverted will be a function of the available volume of bulking agent (brush/yard/wood waste). Based on approximately 450 tons of yard waste disposed per year, approximately 300 tons of food waste or biosolids could be processed annually without importing bulking material. This tonnage would be appropriate for an initial demonstration project. To expand processing capacity, Ulster County could integrate biosolids disposal with wood waste disposal for interested municipalities.

Typically, a biosolids composting facility would be enclosed to minimize management of odor and other environmental impacts (such as leachate). Low volume food waste composting would not typically require completely enclosed facilities. However, the Federal Aviation Administration has expressed their concern with composting facilities and the potential to attract vectors. Considering the processing capacity available with current wood waste tonnage, vector

concerns, and other food waste/biosolids composting facilities in the region, an initial outdoor demonstration composting facility may be an appropriate first step in pursuing additional downstream organics diversion. A project of this nature would be pursued to demonstrate required mix ratios, processing options, processing times, finished product quality, the potential for vector attraction, and required environmental impact management.

For a demonstration project, a “low tech” approach to material processing could utilize the Agency’s existing equipment. The Agency currently owns a Peterson Pacific Grinder (model 4700B). The Agency would need to invest in a windrow turner and screen. This equipment, in addition to a front-end loader, could be adequate to operate a static, turned windrow demonstration facility depending on the nature of the food waste. As part of the demonstration, the Agency could also employ a forced aeration static pile processing approach by adding blowers and piping, in lieu of turning windrows, to compare the two processes. Biosolids and food waste could be composted separately and together to evaluate individual and combined processing details. The next step in expanding organics diversion would then be to construct a larger, enclosed composting facility that utilizes more process controls and automation. The nature of that facility (size, feedstock, processing capacity, processing approach, type of enclosure, etc.) would be determined as part of the demonstration project.

Further expansion of enhanced composting as an alternative technology would require the diversion of more organic waste from the MSW stream. Inclusion of source-separated organic waste is one option for capturing organic material. However, processing the MSW stream may ultimately present a more cost-effective approach for significant capture and diversion of organics from the landfill than source separation methods.

Based on the above discussion, a phased organics diversion strategy was recommended that begins with the Agency’s existing yard waste composting program (the baseline) and builds upon the program as follows:

A demonstration project that utilizes a forced aeration composting method for processing yard waste and food waste or biosolids.

A full-scale (outdoor) forced aeration composting operation to process 100 percent of the County’s existing yard waste (as currently delivered to the site) and food waste or biosolids.

A fully enclosed composting facility to process 100 percent of the County’s existing biosolids that is expandable for processing additional organic feedstock.

3. Diversion Strategies

Diversion strategies to achieve the next incremental level of diversion for a municipality require targeting select sectors and materials. Strategies to enhance waste prevention and diversion can be classified into the following four categories:

3a. Regulatory – includes actions such as adopting extended producer responsibility mandates (i.e., producer-funded take-back programs), instituting bans on certain types of materials, charging user-fees on disposable items, or mandating recycling at construction sites.

3b. Policy – includes changing the rate structure for refuse collection, implementing environmentally preferable purchasing guidelines to emphasize recycled or reused materials in government projects, or adding materials that may be integrated into the traditional recycling and organics waste collection service.

3c. Programmatic – includes education, market development, or implementing changes in the actual collection of materials, including the frequency of collection and the size and type of containers used by residents and business.

3d. Contractual – includes structuring solid waste service contracts to compensate contractors, vendors, and suppliers based on performance objectives that are aligned with the community’s waste reduction or product stewardship goals. In order to achieve higher waste diversion, it is important to focus efforts in areas with the greatest diversion potential and strong cost/benefit potential.

4. Application of Diversion Strategies

The diversion strategies listed above can be applied to a local government’s various solid waste, recycling, and waste reduction programs. Some example applications are provided below for the Agency to consider.

4a. Single-Family Residential Programs

Enhancements to curbside recycling and refuse collection programs can be used to optimize diversion and manage costs. Variables that can be modified include rate structures, collection frequencies, container sizes, and items collected. All Ulster County communities have volume-based garbage collection also referred to as “pay-as-you-throw” (PAYT) available at every Municipal Recycling Drop-off Center (MRDC) while other communities set limits on the amount of garbage that can be set out for collection. Residents also have the option to contract private hauling companies for garbage and recycling curbside pick-up and the payment for services is on a monthly basis. However no County-wide, uniform PAYT approach is currently in place. Even though the Agency does not oversee the collection of garbage throughout the County, it is possible to implement a uniform PAYT program through hauler licenses.

For example, the City of Sioux Falls, South Dakota has a subscription-based hauling system in which residents choose their own garbage hauler. As a requirement of the annual hauler license, each hauler must submit their variable rate pricing schedule to the City. Per the City Ordinance, “All licensed garbage haulers shall file, as a part of their application for a business license, a general statement of their use rate structures and billing systems consistent with the City’s comprehensive plan of solid waste reduction and recycling program which shall include the following elements:

1. A rate to reward people who reduce their level of solid waste collection service based either upon volume or weight.

2. A rate to provide customers with adequate options and incentives to reduce their weekly level of solid waste collection service and the amount of solid waste collected as a result of their participation in waste reduction and recycling programs.
3. A rate that includes the combined cost of solid waste, using the above elements, and recycling collection services.”¹⁰

In an attempt to provide a larger financial incentive to recycle and reduce quantities of garbage set out for collection, some municipalities in the U.S. have implemented a more aggressive pricing schedule (i.e., with greater increments between service levels) to encourage more recycling. For example, in Seattle, Washington, residents may choose their own subscription levels for garbage collection service. (The fees include recycling service.) The City of Seattle offers a "micro-can" level of service. The micro-can is a 12-gallon container at a price of \$14.05 per month compared to a 96-gallon cart for \$66.90 per month. This represents a significant financial incentive to encourage diversion and waste prevention.

One measure of Seattle's success using a variable can rate to reduce waste generation is that in 2008, 62 percent of the City's residents were one-can (32-gallon) customers, 25 percent were mini-can (20-gallon) customers, and 5 percent subscribed to the micro-can (12-gallon) service. Only 8 percent subscribe to 2 or more cans of service. These percentages contrast with the situation prior to the introduction of variable rates, when 60 percent of single-family customers subscribed to one can and 39 percent subscribed to two or more cans.

The City of Austin, Texas has one of the most mature variable rate programs in the country. The program is designed as an economic incentive to increase diversion. Billing occurs monthly and residents have the choice of three cart sizes. The 2008 base rate of \$8.75 per month includes unlimited curbside recycling and yard debris collection. Cart sizes and prices are \$4.75 for 30 gallons, \$10.00 for 60 gallons, and \$16.50 for 90 gallons, and the cart exchange fee is waived for customers seeking smaller cart sizes.

The City of Minneapolis offers a unique program to attempt to reward those who recycle. Residents are billed a flat monthly fee of \$24.00 for solid waste services that includes collection of refuse, recyclable materials, yard waste, and bulky materials. They offer a large cart for a \$4.00 per month disposal fee and a small cart for \$2.00 per month. If the resident participates in the recycling program, they receive a \$7 per month credit on their bill. In other words, the resident receives a recycling rebate.

A relatively new approach to recycling incentives is the RecycleBank™ program which offers rewards to residents based on the quantities of materials set out for recycling. Each recycling container has an identification tag that is scanned and recorded by the collection truck each time the address is serviced. The amount of materials recycled is converted to RecycleBank Points, which can be redeemed for gift cards and/or coupons to local retailers. The incentives in the RecycleBank program are derived from two sources – donations of discounts and gift certificates

by local businesses (in exchange for advertisement) and the City's payment to RecycleBank to participate in the program. The City of Minneapolis' \$7 per-month credit is budgeted as part of an expense that the City pays to operate the program. In essence, the user fees pay the rebate to those who choose to participate in the recycling program, which is appropriate, as the cost of recycling collection and processing (when markets are strong) is typically less costly than the collection and disposal of garbage. Recycling program user fees should be assessed periodically as participation changes. The success of enhancing residential diversion hinges on both convenience and adequate financial incentives. Collection services offered must be comprehensive and convenient. Residents need to be adequately rewarded in order for the residential programs to maximize diversion.

10 Source: Revised Ordinances of Sioux Falls, South Dakota, Chapter 18, Article IV. Commercial Haulers, Sec. 18-59. Solid Waste Collection Rates. <http://www.siouxfalls.org/Council/Cityclerk/ordinances>

4b. Multifamily Residential Programs

Most communities find the implementation of effective multifamily programs to be a challenge. Multifamily recycling and refuse collection tend to be regulated the same as the commercial sector, but the waste generated is more like the residential sector. Part of the challenge in the multifamily sector, is that there is little direct link between recycling goals or requirements and the behavior of individual tenants. Tenants have little to no control over the location, capacity or convenience of the recycling system at their residence. Property managers and owners have no control over the actual recycling and disposal behavior of the tenants. Overcoming multifamily recycling barriers requires tenant education as well as oversight of property managers and owners. Details of multifamily recycling issues and overcoming barriers are addressed in Section 5.2.2 Commercial and Multifamily Recycling.

An example of a successful multifamily recycling program can be found in Portland, Oregon. A City ordinance was passed in 2005 requiring standardized recycling systems at every multifamily property. Glass is collected in one container and all other recyclables (paper, metal, plastic) are commingled in a second container. A consistent and predictable collection system at the multifamily properties makes recycling education for tenants more effective. While all properties must be in compliance, City staff has assisted about one half of the complexes in converting to this standard. All properties are expected to be in compliance by 2010. Other requirements for Portland's multifamily properties include:

- Multifamily property owners are required to provide a recycling system for tenant use at each property;
- The collection system for recyclable materials must be as convenient as that provided for garbage; and
- Property managers are required to provide tenants with recycling education materials within 30 days of move-in, and on an annual basis.

4c. Commercial Sector Programs

In most communities, the commercial sector generally has a moderate recycling or waste diversion rate, while generating the greatest portion of disposed waste. Disposed commercial waste includes significant volumes of recyclable materials, including glass, metal, paper and cardboard, wood, food, plastics, and yard debris. Details of commercial, industrial, and institutional recycling issues and overcoming barriers are addressed in Section 5.2.2 - Commercial and Multifamily Recycling.

The City of Seattle offers a commercial diversion incentive by offering businesses that generate low volumes of waste (i.e., less than 90 gallons per week) a less expensive, residential-type collection service, including recycling.

The City of Portland, Oregon provides for commercial collection of recyclable materials through permitted private contractors. The City has adopted a goal of diverting 75 percent of the commercial waste stream by 2015. A key to this program is that waste haulers providing service within the City must also collect specifically listed recyclables, report collection volumes to the City, and pay a tip fee surcharge for disposal (no fee is imposed on recyclables). In addition, Portland has a mandatory food waste recycling requirement for the City's largest food-producing businesses. Also, all building projects in Portland with a permit value of \$50,000 or more are required to separate and recycle the following construction and demolition (C&D) materials from the job site:

- Rubble (concrete/asphalt);
- Land clearing debris;
- Corrugated cardboard;
- Metals; and
- Clean Wood.

One additional commercial diversion strategy implemented by the City of Portland, is a ban of polystyrene foam containers. Since 1990, the City has prohibited restaurants, grocery stores and other retail vendors from using polystyrene foam containers for prepared food.¹¹

Many corporate businesses have adopted a zero waste policy. One example is Subaru's Indiana automotive manufacturing plant in Lafayette, Indiana which attained "zero landfill" status in 2004 and has remained that way ever since.¹² In 2006, the plant recycled 97 percent of its materials including steel, plastic, wood, paper and glass. The remaining three percent was sent to a waste-to-energy incinerator where steam is produced to heat some of Indianapolis' downtown buildings.

¹¹ Source: City of Portland website. <http://www.portlandonline.com/osd/index.cfm?a=109474&c=41472>

¹² Source: Subaru website. http://subarudrive.com/Sum05_SubaruDifference.htm

4d. C&D Debris Programs

As discussed in detail in Section 5.2.7 - C&D Debris Recycling, common recyclable C&D materials include wood, drywall, metals, masonry (brick, concrete, etc.), carpet, roofing debris,

rocks, soil, paper, cardboard, and land clearing debris. There are typically two primary methods of improving C&D diversion. The first is facility-based, and involves improving customer access to drop-off facilities and support for the development of mixed C&D recycling facilities in a region. This could also include take-back programs for used building materials and the expansion of salvage and re-use stores and materials exchange programs. The second primary method for enhancing C&D diversion is based on directing generator behavior, which can be done with the use of rate incentives, building permit requirements, and market development. This could include such methods as:

- Adopting rate incentives that make disposal of mixed C&D waste more expensive than recycling;
- Mandating submittal of a recycling plan for all building projects over a certain dollar value;
- Mandating that C&D waste be delivered only to a licensed recycler;
- Setting a C&D diversion rate goal;
- Developing and promoting pilot projects that show the benefit of de-constructing and recycling as compared to demolition; and/or
- Developing markets for building products made with recyclable materials.

4e. Food Waste Programs

Several communities throughout the country are beginning to collect residential food waste in the same container as curbside yard waste. This is possible in places where processing facilities receiving the materials are permitted to accept both food and yard waste. In addition, a few pilot programs have been implemented around the U.S. collecting residential food waste and non-recyclable materials separately from yard waste. The cost effectiveness of such an approach is still being evaluated.

Currently, there are no facilities in Ulster County that actively compost food waste or co-compost food and yard waste. Nevertheless the following examples of food waste diversion programs are provided for the Agency to consider, as food waste diversion opportunities may arise in the future and is discussed as part of the Alternative Technology Evaluation in Section 4.7.

In Seattle, post-consumer commercial food, such as cafeteria waste contaminated with takeout containers, paper plates, cups, etc. is diverted and processed by co-composting it with yard waste. A key to success with post-consumer food waste is that the containers and cutlery must be compostable. Many products advertise that they are “biodegradable,” although whether a material that claims to be biodegradable can *actually* be composted is dependent on the receiving facility and its processes. Therefore a material testing and approval program, such as the one managed by Cedar Grove Composting¹³, the private company that processes Seattle’s post-consumer cafeteria waste, is suggested before biodegradable items are accepted in the food waste program.

¹³ Source: Cedar Grove Composting website. <http://www.cedar-grove.com/services/compost.asp>

The St. Paul, Minnesota Independent School District recently implemented a large scale, post-consumer food waste composting program. This district has more than 42,000 students and 80 different schools. In the 2007/08 school year, 52 schools within the district implemented a food-for-livestock program. Each of these sites has trained its students and staff to source-separate their food waste in the cafeterias. The food waste is then cooked per Minnesota Animal Health Standards and fed to pigs. The program is estimated to reduce the volume of commercial waste requiring disposal by nearly 30 percent. This has resulted in cost savings to the district because of reduced MSW collection costs realized through a resource management program.

Pre-consumer commercial food waste, such as trimmings produced by restaurants and grocery stores, is compatible with a source-separated collection and processing program because it tends to be produced in higher volumes and is less likely to be contaminated with packaging. Grocery stores have a financial incentive to reduce their waste stream because not only is trash service expensive, but trash takes up valuable space. Some stores have contracts for organics collection service, while others backhaul compostable materials to a distribution center where it is directed to a composting facility. Examples include Safeway¹⁴ and Whole Foods.¹⁵ Whole Foods even markets its own bags of finished compost in some of its stores.

14 Source: Safeway website. <http://www.safeway.com/IFL/Grocery/CSR-Recycling>

15 Source: BioCycle, November 2004. <http://www.jgpress.com/archives/free/000309.html>

Large-scale food waste diversion, whether collected with yard waste or as a separate commodity, is relatively new in the U.S. As such, compost facilities are becoming better at managing the material, and energy recovery technologies such as anaerobic digestion, are being considered by the public and private sectors alike. (Anaerobic digestion is discussed in more detail in the Evaluation of Alternative Technologies in Section 4.7.) As collection and processing capacity develop over time, it is expected that communities will begin to consider mandatory diversion and/or disposal bans for food waste.

4f. Mandatory Recycling Ordinances/Disposal Bans

Regulatory options that include mandatory recycling ordinances and disposal bans have the potential to increase diversion at little cost to the local government. (Most costs incurred are related to enforcement of the ordinances/bans.) However, reliable management options must be available upon implementing such an approach. Mandatory recycling ordinances typically require generators to separate a defined list of materials for recycling, or to recycle a certain percentage or number of the materials they generate. Enforcement of mandatory recycling ordinances is typically directed at the generator.

Disposal bans prohibit disposal of certain materials and/or limit solid waste loads to a maximum percentage of banned materials. Enforcement of disposal bans is usually directed at collectors, but can focus on generators and/or disposal facilities such as landfills and transfer stations. In 1991, the County banned recyclables from landfill disposal by enacting the Ulster County Mandatory Source Separation and Recycling Law. Based upon experiences in other

communities, it is observed that the most successful disposal bans have certain essential features in common including:

- Reasonably available alternatives to disposal exist and are relatively convenient for the generator;
- The disposal ban and alternatives to disposal are widely publicized;
- Support is built among stakeholders such as haulers, businesses, and residents; and
- A phase-in or grace period is used to introduce the program and allow a collection and processing infrastructure to develop or mature before strict enforcement is implemented.

In general, bans that are enacted without provision for enforcement, or with weak enforcement, are not effective. In 2003 Portland Metro (Oregon) commissioned a study to determine the impact that mandatory recycling ordinances and disposal bans aimed at the commercial sector have on markets for recycled paper. The study investigated the impact of mandatory recycling and disposal bans on the quantity, quality, and price of recycled paper in five North American communities. The study found that these policies increased the amount of commercial fiber recovered, and that they had limited impact on fiber quality or price. Since most programs were adopted concurrently with other enhancements to recycling programs and measurement methodology, the study did not attempt to isolate any specific impact on diversion rates.

The study also identified a number of factors that should be considered in terms of how they might impact government, collectors, processors and end-users when mandatory recycling or disposal bans are under consideration. A few are listed here as examples:

Government

- Outreach efforts need to include broad-based activities for the entire commercial sector, as well as sector-specific programs aimed at large volume sources (e.g., packing and shipping, office buildings, etc.) and “problem” sources (e.g., food service and multi-tenant).
- Recycling collection costs and logistical problems for small generators tend to be prohibitive. Moreover, it is difficult for small generators to achieve savings from reduced trash service to offset their recycling costs. The jurisdiction should work to identify viable strategies such as shared bins, commercial rates that include the cost of recycling services, distributing and sharing costs among larger and smaller generators, drop-off sites, etc. that help reduce the economic burden for small- and medium-sized enterprises.
- Enforcement is essential. It must be integrated with outreach activities and not simply punitive.

Collectors

□ Mandatory recycling ordinances and disposal bans increase the “demand” for recycling services and thus tend to increase competition among collection service providers. Traditional waste collection companies have more incentive to offer recycling services and compete against established commercial fiber recycling companies.

Processors

□ Processors have experienced some increase in contamination after implementation of mandatory recycling ordinances and disposal bans, but not beyond what they can handle. Processors continue to be able to readily meet market specifications for the paper grades they produce.

End Users

□ End users are generally “insulated” from local program issues. They draw supply from many sources, and local processors must deal with problem loads. Those contacted could not identify specific quality problems due to the mandatory recycling ordinances and/or disposal bans. A list of example ordinances and disposal bans is provided in Section 9. - Resources.

5. Diversion Potential

Most U.S. communities claim to have a diversion rate in the 40 to 50 percent range. The City of San Francisco, California announced in May of 2009 that the City had achieved a 72 percent recycling rate for 2007, up from 70 percent the year before.¹⁶ The City has a goal of 75 percent landfill diversion by 2010 and zero waste by 2020 and is making strides to achieving those goals. A mandatory C&D debris recovery ordinance was passed in 2006 and plays a large role in the City’s high recycling rate. It is important to note, however, that comparing diversion and recycling rates among communities is challenging due to the manner in which different communities define and measure recycling and waste reduction, as well as the MSW stream.

16 Source: City & County of San Francisco website. <http://sfgov.org/site/frame.asp?u=http://www.sfenvironment.org>

A number of diversion programs could be considered by the Agency to enhance diversion beyond its current rate of just over 40 percent. These programs may include a mix of targeted programs focusing on specific materials (i.e., food waste) and/or specific sectors (i.e., commercial sector). Strategies for consideration include regulatory (i.e., disposal bans), policy changes (i.e., upgraded pay-as-you-throw), and programmatic (i.e., larger container sizes). Tables 2-1 through 2-7 provide strategies for the Agency to consider for each sector (single family, multi-family, commercial, etc.) as well as strategies for increasing food waste diversion and strategies related to disposal bans and producer responsibility.

The Agency can use these strategies as a guide to develop official waste diversion or zero waste goals. Each strategy could be ranked by diversion potential, as determined by the Agency.

One means of ranking diversion potential was developed by Skumatz Economic Research Associates, Inc. (SERA) for Metro Vancouver’s (British Columbia) solid waste management system in 2007. SERA’s diversion code ranking is provided in Table 5-7 below.

Table 5-7 Diversion Range Codes¹

Diversion	Value Diversion Description	Diversion Code
Very High	Over 5.0%	VH
High	Up to 5.0%	H
Medium	Up to 2.0%	M
Low	Up to 1.0%	L
Very Low	Up to 0.3%	VL
Super Very Low	Up to 0.06%	SVL

¹Source: Skumatz Economic Research Associates, Inc.

The ranking should be based upon a qualitative estimate of diversion potential, ease of implementation, and estimated cost to implement.

5a. Single-Family Residential Waste Diversion Strategies

Table 5-8 Single-Family Residential Diversion Strategies

<ul style="list-style-type: none"> • Implement a residential food waste disposal ban • Add food waste to yard waste collection (pilot program at UCRRA Kingston Facility) • Implement collection and separation of C&D waste (at MRDCs) • Implement collection of electronic waste (at MRDCs) • Enhance waste screening at the Transfer Station for exclusion of banned recyclables • Adopt a compostable plastic bag or brown paper bag mandate for yard waste/organics collection (City of Kingston and pilot program at UCRRA Kingston Facility) • Offer a thermometer exchange to replace mercury-containing fever thermometers with digital thermometers • Develop a pesticide container recycling program • Enforce Ulster County Mandatory Source Separation and Recycling Law of recyclable materials instituting a fine structure • Add additional materials to curbside recycling program • Require all haulers to leave education tags for customers who set out improperly prepared items and/or contamination as part of the recycling enforcement program
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5b. Multifamily Residential Waste Diversion Strategies

Table 5-9 Multi-family Residential Diversion Strategies

- Establish mandatory recycling requirement for all multifamily buildings
- Monitor multifamily properties to verify that adequate recycling is provided and is as convenient as garbage disposal
- Expand residential food and yard waste collection to multifamily properties (City of Kingston)
- Inform multifamily properties about bulky item recycling (at MRDCs)
- Adopt minimum requirements for space for recycling containers at new multifamily developments
- Increase recycling education to multifamily residents
- Provide apartment-sized recycling totes, bags or bins to multifamily dwelling units

5c. Commercial Waste Diversion Strategies

Table 5-10 Commercial Diversion Strategies

- Establish an overall mandatory recycling requirement for businesses to achieve by a prescribed date/year
- Expand inspection & enforcement program (Ulster County Mandatory Business and Commercial Property Waste Reduction and Recycling Program)
- Conduct/expand commercial and institutional waste audits
- Require commercial haulers to offer recycling service of all regulated recyclable materials and to add additional recyclable items
- Work with commercial haulers to offer residential garbage rates to businesses who generate <90 gallons/week
- Work with commercial haulers to implement weight-based commercial garbage rates (incorporates disincentive to dispose organics)
- Work with commercial haulers to establish a commercial food waste collection and composting program (pilot composting program at UCRRA Kingston Facility)
- Establish mandatory food scrap diversion in commercial waste
- Promote reusable transport packaging
- Develop a pesticide container recycling program
- Work with local businesses to promote green purchasing and business practices

5d. Food Waste Diversion Strategies

Table 5-11 Food Waste Diversion Strategies

- Increase availability of commercial food waste collection and composting (pilot composting program at UCRRA Kingston Facility)
- Implement a commercial food waste disposal ban
- Implement a residential food waste disposal ban
- Enhance residential curbside organics collection to include all food waste (City of Kingston)
- Implement multifamily collection of food waste
- Adopt a permit requirement that states restaurants must have food waste collection space
- Provide technical assistance to commercial kitchens
- Establish new mandatory food scrap diversion in commercial waste
- Establish a commercial composting program with low tip fee (pilot composting program at UCRRA Kingston Facility)
- Investigate/potentially implement an anaerobic digestion program for organics processing, possible biofuels production

5e. C&D Debris Diversion Strategies

Table 5-12 C&D Debris Diversion Strategies

- Incentivize development of mixed C&D debris recycling facility
- Require C&D waste pre-processing for commingled material
- Ban PVC plastic packaging
- Implement a disposal ban on all (or specific types of) C&D waste
- Work with New York State to increase illegal dumping fines
- Create a larger difference between disposal tip fee and fee to deliver source-separated C&D waste
- Promote salvage and reuse swap sites (New Paltz Reuse Center, Habitat for Humanities, Craigslist, FreeCycle, etc.)
- Encourage market development for C&D materials
- Research feasibility of a take-back program for carpet
- Building & demolition permit to include a C&D reuse and recycling fee deposit (County and Town)
- Take-back program for used building materials at home product centers
- Residential collection of C&D waste (at MRDCs)
- Divert C&D from Solid Waste Transfer Station to C&D local recycling facilities (no Landfill)
- Pilot deconstruction and salvage projects
- Mandatory waste diversion plan for projects over a specified size
- Mandatory C&D recycling of 75 percent (example) including development of notification education and

verification of compliance

- Recycle 75 percent of construction, remodeling and demolition (CR&D) waste at projects with a permit value over \$50,000 (numbers are provided as an example)

5f. Producer Responsibility, Disposal Bans and Disposal Fee Strategies

Table 5-13 **Extended Producer Responsibility, Disposal Bans, Retail, and Advance Disposal Fee Programs**

- Ban PVC plastic packaging
- Implement a commercial food waste disposal ban
- Implement a residential food waste disposal ban
- Establish a take-back program for product packaging by retail sellers
- Charge a fee on incandescent bulbs to fund fluorescent bulb recycling
- Enforce disposal ban for recyclables in commercial waste
- Establish a take-back program for used building materials at home product centers
- Establish a take-back program for carpet
- Establish a take-back program for electronic waste
- Enhance waste screening at landfill for exclusion of banned recyclables
- Encourage/mandate the use of reusable transport packaging
- Implement a compostable plastic bag mandate for yard waste and organics collection
- Establish a product ban for polystyrene to-go containers and single-serve foodservice
- Implement a take-back program for foam packaging – negotiate with the Association of Foam Packaging Recyclers
- Implement a packaging tax
- Establish/encourage an eco-labeling program in retail stores
- Encourage/mandate retailers to charge an advance disposal fee (ADF) on disposable shopping bags (or alternatively, provide a per-bag discount for shoppers who bring their own reusable bags)
- Implement a phased ban on plastics in food takeout containers and utensils/shift to compostable disposables
- Enforce landfill ban of recyclable materials

To achieve significant increases in diversion, the Agency would need to embark on systematic incremental planning that includes commitments from stakeholders to implement specified waste diversion strategies, as well as commitment on the part of local government to provide adequate enforcement.

6. Steps in Developing Diversion Projections

To determine the current and future waste diversion projections for Ulster County should conduct the following steps:

- Identify the current MSW and C&D composition by quantity and material types;
- Gather data on current diversion quantities by material type;
- Calculate current waste generation by summing the material quantities disposed with quantities diverted;
- Identify additional waste diversion programs by material type that are planned for implementation or could be implemented in the future;
- Divide the future planning period into five-year increments for further analysis;
- Calculate waste diversion for MSW, C&D and combined sectors for each of the five-year increments to develop waste diversion projections by material type;
- Apply a waste generation growth rate to the existing generation rate based on existing per-capita waste generation rates and agreed-upon population growth rates; and
- Project waste generation, disposal, and diversion quantities for the planning period.

7. Education Tactics

Educating stakeholders (in this case, government officials; MSW, C&D, and recyclable materials haulers, processors, and end-users; businesses; multifamily building owners/managers; the general public; etc.) about a zero waste approach to waste management is critical in order to obtain key stakeholder feedback and support. Developing a zero waste policy and getting it adopted, would most likely take at least a year. Once adopted, multiple education tactics should be implemented in order to educate the stakeholders in Ulster County. Education and outreach tools should be developed to focus on particular types of waste (such as food waste and C&D debris) as well as particular sectors (single-family, multi-family, commercial). Disseminating education might be done through:

- Website/Intranet/Internet (which can be used to convey various types of information as well as provide access to some of the other tools listed below);
- List serve or social marketing strategies like FaceBook, YouTube and Twitter;
- Email bulletin;
- Conferences/seminars/workshops to inform various sector representatives or specific waste collectors and processors of the zero waste plan;
- Fact sheets (e.g., detailing requirements of the policy, alternatives to disposal, commodity-specific fact sheets, etc.); and
- Technical assistance to businesses (e.g., waste audits).

It is suggested that, to the extent possible, all education and outreach materials be offered electronically in order to minimize waste and expenses. Also, it will be critical for the Agency to educate all stakeholders about the zero waste plan and provide periodic updates regarding the progress made with regard to the policy, so that the County's dedication to reducing waste and minimizing health and environmental impacts is conveyed.

8. Capital and Operating Expenses

The capital and operating expenses to implement a zero waste plan would be dependent on the breadth of the program, but would most likely be sizable, because a policy change such as this would be far-reaching and affect most sectors within the County. A zero waste plan would require dedicated staff time for policy development, increased education efforts (including designing and distributing education pieces, website development, site visits and audits, additional data tracking, etc.), and policy enforcement. The extent of the capital expenditures would depend on the level of involvement from the Agency and other stakeholders. Zero waste programs not only require policy, regulatory, and contractual changes be made, but also programmatic changes. If the Agency took a hands-on approach to making changes to its waste diversion programs (e.g., expanded its C&D program, expanded its yard waste composting program to include food waste, or subsidized the purchase of containers for volume-based collection for the City of Kingston, etc.), the capital expenses could be great.

However, if most program changes were implemented by the private sector, the Agency would have less capital expenditures. Regardless of the approach, a large capital expenditure for a zero waste campaign would be the ongoing promotional and education pieces. A successful zero waste program would inevitably reduce the amount of waste requiring disposal, thus reducing the operating expenses for long-haul transportation and tipping fees to the landfill.

While developing and implementing policies are most likely activities that are part of existing staff time, a zero waste policy would most likely require additional time and labor because of its scope and ongoing need for monitoring and enforcement. Many municipalities will also have to provide dedicated staff to specifically implement and maintain a zero waste program.

9. Implementation Requirements

If the Agency were to move forward with researching the zero waste concept, it may consider forming a task force or a “team” of stakeholders to consider the practicability and implications of such a plan. The steps required to implement a zero waste plan might include, but not limited to:

- Research other communities that have implemented a zero waste plan to ensure all stages of the process are included;
- Determine Ulster County’s current diversion rate;
- Develop a diversion plan including a list of sectors and materials to target for diversion;
- Develop diversion projections for the near future and for the long-term (e.g., twenty years);
- Set goals and target dates for future waste diversion;
- Inform stakeholders of intent to develop a zero waste policy;
- Solicit stakeholder input;
- Identify goals of the policy;
- Develop the policy;
- Inform stakeholders of the policy;
- Present/adopt the policy;

- Develop policy tools;
- Educate stakeholders about policy tools;
- Evaluate the effectiveness of the policy and supporting programs (ongoing basis); and
- Enforce the policy (ongoing basis).

Based upon the Agency’s review of waste diversion rates in several communities with successful recycling programs, we note that reaching diversion targets greater than 50 percent requires a strong commitment by the local government, participating municipalities, waste haulers, processors, and end-users, manufacturers, producers and retailers, and by the residents and businesses which generate waste.

One barrier to increasing diversion can be the lack of uniformity in program services and requirements throughout the County. The variety of recycling services offered can make it more difficult to assess the impact of program enhancements or to provide consistent technical assistance to businesses and residents. The adoption of certain minimum standards for recycling services could serve to standardize expectations in both urban and rural areas. Standardizing service levels could reduce costs to the Agency because technical assistance, education, promotional materials and programs could be provided to all users of the system. It should be noted that recycling alone will not increase diversion significantly. Nationwide, waste generation per person continues to increase each year. As a result, the proportion of waste being diverted has remained stagnant in many communities, while the volume of waste requiring disposal continues to grow.

10. Addressing Stakeholder Concerns

The implementation of a zero waste plan would most likely impact every sector of Ulster County. Stakeholders would include, but not be limited to, government officials; MSW, C&D, and recyclable materials haulers, processors and end-users; residents; business owners and managers; multifamily building owners and managers; product manufacturers, producers and retailers.

As mentioned in Section 6 – Implementation Requirements, the Agency may want to consider establishing a task force to discuss the concept of zero waste, determine diversion strategies, and consider the policy language and implications. One role of the task force would be to address concerns which may include, but not be limited to:

- Resistance from residential, commercial, C&D and food waste stakeholders to mandatory bans of specific materials;
- Concerns from City of Kingston, towns and villages regarding potential increase in duties to monitor recycling ordinances and/or disposal bans;
- Concerns from contractors, developers, and business owners regarding perceived cost increases to comply with disposal bans (i.e., the need to provide multiple containers or dumpsters to divert multiple materials);
- Concerns from product manufacturers and retailers regarding take-back programs; and

Concerns from haulers required to collect and haul an increased number of source-separated materials.

11. Benefits and Drawbacks

Implementing a zero waste plan has benefits as well as drawbacks, as outlined below.

11a. Benefits

The benefits of a zero waste plan to the County may include, but not be limited to, the following:

- A reduction in MSW quantities transported and landfilled resulting in GHG emissions reduction.
- Disposal bans and recycling ordinances increase the quantities of materials recycled and diverted from disposal.
- Packaging bans and incentives to buy in bulk can lead to increased waste diversion.
- Products and services that use fewer resources (such as water and energy) save natural resources.
- Expanded materials processing and markets create new business opportunities.
- EPP programs increase the demand for recycled materials to be used as feedstock for recycled-content products.
- When held accountable for the materials they produce, manufacturers have an incentive to create less waste. Promotes designs that consider the entire product life cycle.
- An overall increase in awareness of recycling and environmental-related issues and a potential move towards increased sustainability.
- A reduction in hazardous waste, toxic emissions, and energy waste.

11b. Drawbacks

The drawbacks to implementing a zero waste plan would most likely be financial. Increased staff time and resources would be needed to develop a zero waste plan and policies; track the County's diversion rate; increase outreach, education and technical assistance efforts; and enforce the policies, bans and ordinances. In addition, it may be difficult to obtain support from community leaders and stakeholders regarding the zero waste concept.

As stated in previous sections, when considering the "cost" of recycling and waste diversion programs there are both "economic" considerations and "non-economic" considerations. Under economic considerations, the County must take into account the reduction in revenue from tipping fees received at the Ulster and New Paltz Transfer Stations as a result of a successful zero waste program. Also, the cost of a zero waste program should be compared with the cost of landfill disposal, including transportation costs and long-term disposal obligations. For "non-economic" considerations there are factors such as environmental sustainability, carbon footprint, public desire for and participation in recycling and waste diversion, and New York State Rules and Regulations. These factors should all be considered as the Agency formulates its integrated solid waste management planning efforts.

12. Resources

Provided below is a list of program information which will assist the Agency in its waste reduction program efforts.

City of Austin, Texas – Zero Waste Plan

<http://www.ci.austin.tx.us/sws/0waste.htm>

GrassRoots Recycling Network

<http://www.grn.org/zerowaste/>

Metro Portland study “Impact of Mandatory Recycling Ordinances and Disposal Bans on Commercial Fiber Recycling,” by Moore & Associates.

<http://www.oregonmetro.gov/index.cfm/go/by.web/id=19318>

City of Oakland, California – Zero Waste Resolution and Strategic Plan

<http://www.zerowasteoakland.com/Page749.aspx>

Product Stewardship Institute

<http://www.productstewardship.us/index.cfm>

RecycleBank

<https://www.recyclebank.com/>

San Francisco, California – Zero Waste Legislation and Initiatives

<http://sfgov.org/site/frame.asp?u=http://www.sfenvironment.org>

Zero Waste Alliance

<http://www.zerowaste.org/>

Zero Waste International Alliance

<http://www.zwia.org/index.html>

12a. Green Building Resources

BREEAM

<http://www.breeam.org/>

Green Globes

<http://www.greenglobes.com/>

U.S. Green Building Council

<http://www.usgbc.org/Default.aspx>

World Green Building Council

<http://www.worldgbc.org/home>

12b. Examples of Recycling Ordinances and Disposal Bans

City of Cambridge, Massachusetts

<http://www.cambridgema.gov/TheWorks/departments/recycle/ordinance.html>

Central Vermont Solid Waste Management District

<http://www.cvswwmd.org/wp/cvswwmd-to-amend-surcharge-ordinance/>

City of Durham, North Carolina

<http://www.ci.durham.nc.us/departments/solid/pdf/ordinance.pdf>

City of Gainesville, Florida

<http://www.cityofgainesville.org/GOVERNMENT/CityDepartmentsNZ/Recycling/MandatoryCommercialRecycling/tabid/488/Default.aspx>

Lee County, Florida

http://www3.leegov.com/solidwaste/uploads/Final_Scanned_Ordinance.pdf

Linn County, Iowa – Corrugated Cardboard Recycling Ordinance, Chapter 35

http://www.linncounty.org/content.asp?Page_Id=836&Dept_Id=6

□ Nova Scotia, Canada

<http://www.gov.ns.ca/nse/waste/regulations.asp>

□ City of Portland, Oregon

<http://www.portlandonline.com/osd/index.cfm?c=47899&>

□ San Francisco, California

http://www.sfenvironment.org/downloads/library/mandatory_pdf.pdf

□ Solid Waste Association of North America (SWANA) Technical Policy on Solid Waste Disposal Bans

5.2.2 PUBLIC EDUCATION AND PROGRAM ENHANCEMENT

5.2.2.1 Environmentally Preferable Purchasing and Recycled-Content Procurement Policies

1. Definition and Purpose of EPP

Environmentally preferable purchasing (EPP) is a practice that encourages communities to purchase materials and services that, in some way, are preferable to the environment and/or to human health, relative to “traditional” materials and services that serve the same purpose. EPP policies are implemented at the state, local, and federal level, as well as by individual businesses. Policies often focus on encouraging the purchase of recycled-content materials, but can also encourage the purchase of products that:

- Result in lower toxicity;
- Reduce greenhouse gas emissions;
- Are made with renewable energy;
- Contain the highest possible percentage of post-consumer recycled-content;
- Reduce air and water pollution;
- Reduce waste (e.g., by being reusable, lasting longer, or serving several functions);
- Are manufactured by suppliers who have adopted EPP and can document their supply chain and impacts of their efforts; and
- Are recyclable or compostable.

EPP policies can be implemented in part or in whole through state or local ordinances, executive orders, resolutions or policies (such as company or institutional policies). Ordinances have more “teeth” than resolutions. Policies are also often seen as less mandatory than ordinances. In some cases environmentally preferable purchasing is just one activity that supports a more broad sustainability policy. National, state and local governments as well as businesses and institutions can facilitate EPP through the use of various tools that assist local governments, residents, and businesses in identifying opportunities to “buy green.”

Per Executive Order 13101¹, "environmentally preferable" means products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service. Many states and local governments have based their definition of EPP on the federal definition. The federal government sees the benefits of an EPP program to include:

- Improved ability to meet entity's environmental goals and/or ethics;
- Improved worker safety and health;
- Reduced liabilities;
- Reduced health and disposal costs; and
- Increased availability of environmentally preferable products in the marketplace.

Other potential benefits of an EPP program are:

- Reduced energy use;
- Strengthened markets for recycled materials;
- Reduced costs due to decreased use of water, energy, or due to the use of more durable items and reduced disposal costs;
- The potential to increase local reuse/recycling markets and the use of locally manufactured or remanufactured products, thus improving the local economy; and
- The opportunity to enhance an entity's image through the implementation of environmentally beneficial activities and programs.

¹ Source: Office of the Federal Environmental Executive, Executive Order 13101, September 1998. <http://www.ofee.gov/eo/13101.asp>

2. Implementation Requirements

Implementation of EPP would require the adoption of an EPP policy – either through resolution, ordinance, executive order or a combination thereof. When considering stakeholders to include in the policy development and implementation process, it is important to remember that not all purchasing entities have knowledge about the environment, health, and the potential impacts certain materials can have on human health and the environment. Similarly, the stakeholders that have knowledge about potential environmental and health impacts of products may not know of the availability of products and performance requirements. Therefore, it would be beneficial to form a “team” of stakeholders to consider the policy language and implications. Many state and local governments form “green teams” when developing their EPP policies, to ensure that environmental, purchasing, and product expertise are all incorporated in the process. The steps typically required to implement an EPP program include:

- Inform stakeholders of intent to develop the policy;
- Solicit stakeholder input;
- Identify goals of the policy;
- Develop the policy;

- Inform stakeholders of the policy;
- Present/adopt the policy;
- Develop policy tools;
- Educate stakeholders about policy tools; and
- Evaluate the effectiveness of the policy and supporting programs (ongoing basis).

Stakeholders that the Agency might consider involving in the process include:

- Individuals responsible for making purchasing decisions;
- End users of products that would be considered for inclusion in the EPP program;
- Manufacturers of qualifying products;
- Individuals that are knowledgeable about the environmental and health benefits of environmentally preferable products and services;
- Local economic development specialists; and
- Individuals who are knowledgeable about the existence and suitability of environmentally preferable products and services.

3. Policy Considerations

There are several options the Agency should consider when deciding on the details of an EPP policy. They include:

3a. Include Source Reduction Strategies

Many EPP policies stipulate that agencies should include waste minimization efforts when possible. Generally these policies are geared toward avoiding the consumption of natural resources, as well as cost savings. Examples include:

- Using email instead of printed correspondence when possible;
- Printing on both sides of paper;
- Streamlining forms;
- Purchasing rechargeable batteries;
- Printing reports as requested instead of anticipating demand;
- Choosing durable, long-life products (in lieu of disposable – including dishes, utensils, glasses, etc.);
- Leasing or sharing equipment that is not used frequently;
- Buying in bulk, when storage is available;
- Reducing the weight of products (e.g., using lighter weight paper when appropriate or buying cleaning products as concentrates and diluting on-site, etc.); and
- Reusing items as much as possible (such as file folders, office furniture, etc.).

There are many opportunities for agencies, offices and departments to purchase refurbished items or have items they currently own refurbished instead of purchasing new items. It is often suggested that departments consider refurbished items as long as the practice is compatible with safety, quality, and cost goals. Examples include:

- Carpet tiles – replace the soiled or worn tiles only, instead of the entire area;

- Remanufactured toner cartridges – many communities not only decrease the amount of plastic disposed, but also save money by refurbishing toner cartridges;
- Re-treaded tires instead of new tires;
- Refurbished furniture;
- Re-refined antifreeze and oil; and
- Refurbished office equipment.

It is important that equipment purchased by departments and agencies is compatible with waste minimization efforts – for example, that copy machines and printers are capable of easily printing on both sides of paper.

3b. Consider Ownership Costs Instead of Initial Purchase Costs

In some cases, products and services that offer environmental benefits may appear to be more costly, however the initially higher purchase cost is offset by lower maintenance and upkeep costs and/or a longer product lifespan. One example is artificial turf, which is costly to install but can be more cost-effective when lower maintenance costs are considered. Similarly, hand dryers may be more costly to purchase than paper towel dispensers, however they eliminate the need to purchase and dispose of paper towels, as well as eliminate the labor required to re-stock the dispensers and clean-up and dispose of used paper towels. When considering ownership costs, one should consider all costs incurred during the useful life of the item, including:

- Initial acquisition costs;
- Warranty costs;
- Operation costs;
- Maintenance costs; and
- Disposal costs.

Costs for options should be compared for the same time period. The term “lifecycle costs” refers to a more complex calculation, including costs from resource extraction, production, material use, and disposal. It is not common practice to consider lifecycle costs in EPP programs.

3c. Recycled-Content Products

Most EPP policies include some type of recycled-content procurement policy. The U.S. EPA guidelines provide suggested recycled-content levels for various types of products. For example, the EPA suggests that many types of printing and writing papers (reprographic paper, offset paper, tablet paper, forms bond, envelope paper, cotton fiber paper, text and cover papers) contain 30 percent post-consumer fiber. Some types of paper (white and colored, machine finish, groundwood, and check safety paper) should contain 10 to 20 percent post-consumer fiber.

The guidelines can be found at the following website:

<http://www.epa.gov/epawaste/consERVE/tools/cpg/products/index.htm>.

The U.S. EPA indicates that the following items are commonly purchased products that contain recycled-content:

- Carpet
- Concrete
- Engine coolants
- Office products
- Paper
- Parking stops
- Plastic lumber
- Re-refined motor oil
- Retread tires
- Toner cartridges
- Traffic cones
- Trash bags

3d. Consider Attributes Beyond Recycled-Content

Several state and local governments have EPP policy directives that specifically focus on material attributes other than recycled-content (although also include recycled-content directives). Examples (some of which may overlap with each other) include:

- Pollutant releases;
- Waste generation;
- Energy consumption/efficiency;
- Depletion of natural resources;
- Potential impact on human health and environment;
- Greenhouse gas emissions;
- Recyclability;
- Durability;
- Toxic material content (for example, low-VOC, dioxin-free, chlorine-free, etc.);
- Reduced packaging;
- Reduced transportation (e.g., sourced locally);
- Made of renewable resources (including energy);
- Bio-based;
- Biodegradable;
- Carcinogen-free;
- Persistent Bioaccumulative and Toxic (PBT)-free;
- Heavy metal-free (i.e., no lead, mercury, cadmium); and
- Reduced pollutant releases.

Many state and local governments direct purchasing entities to consider some of these product characteristics when making purchasing decisions and developing request for bids (RFBs) for products and services.

2 U.S. EPA, "State and Local Government Pioneers: How State and Local Governments are Implementing Environmentally Preferable Purchasing Practices," November 2000.

3e. Consider Other Departments' Specification Requirements

Specific departments often have very specific product needs. For example, in most counties and states the Department of Transportation (DOT) is required to specify products, such as aggregate, etc., to be used for a project. DOTs have expertise in the area of road and highway construction, and contractors must use what the DOT specifies in order to fulfill the requirements of the project. If a city or county wanted to incorporate the use of more recycled materials (such as recovered aggregate, asphalt containing recycled glass cullet, rubber-derived asphalt, recycled-content parking stops, etc.) they should work with the specifying agency in order to identify opportunities for rewriting specifications. Local DOTs sometimes adopt specifications from other local entities if projects have a positive history and assuming weather and soil conditions in the neighboring jurisdiction are similar. Similarly, some local jurisdictions may adopt specifications developed by the state DOT. Often state DOTs have more resources available for alternative material testing. When developing EPP specifications it is important that the needs of specific purchasing entities are incorporated into the specifications.

3f. Price Preference

Many communities include a price preference into their EPP policies – e.g., such that environmentally preferable products can still be considered to be cost-effective if their price is within a certain range (usually 5 to 15 percent) of the “traditional” goods or service. According to a U.S. EPA document², some officials believe that price preferences can actually limit the market penetration of green products by encouraging prices for green products to remain higher than those of traditional products. The intent, however, is to provide leeway (or directive) for an agency or department to select a “green” product over a traditional product, even if the pricing is somewhat higher than a traditional product, due to the fact that some environmental and/or health benefit is derived from the product’s use. Others cited in the EPA document indicated that they were not mandated to purchase the environmentally preferred product, so they simply made decisions based on price. In other words, only those making purchasing decisions that are committed to promoting EPP took advantage of the price preferential. Other communities indicate that they simply specify the type of product the department seeks to purchase (e.g., describing its environmentally preferable characteristics, such as low-toxicity cleaning products) and the price factor becomes irrelevant, as the lower-cost products that do not meet the other specifications can simply be disregarded.

3g. Provide Clarity Regarding Potential Concerns about EPP Policy

There are concerns and fears about EPP policies from the perspective of purchasing agencies, which are discussed in more detail below. The County should consider including limitations to the EPP policy, or verbiage to counteract such concerns, in the EPP Policy. For example, California’s definition of EPP is very similar to the federal government’s definition; however California’s statute provides clarity on potential concerns about EPP. It states explicitly that EPP cannot supersede recycled-content laws, require purchase of poorly performing goods, exclude adequate competition, or require unreasonable prices or lead times. Similarly, in order to alleviate fears of “greenwashing” (the dissemination of false information pertaining to EPP

issues), some states use environmental specifications developed by a third-party certifier. Pennsylvania, for example, reportedly uses Green Seal's standards when purchasing paint, degreasers, and cleaning products.

3h. Incentive Programs

Some local and state governments participate in or establish their own incentive or award programs to encourage the environmentally preferable purchasing decisions. Such reward programs are critical to promoting the program, stressing the benefits of the EPP policy, recognizing the hard work and successes that have stemmed from the program, and generating enthusiasm and encouragement for others to consider and implement EPP options. One existing program that the County might consider participating in is the National Association of Counties (NACo) Environmental Achievement Awards Program. Examples of incentive programs that other communities have implemented include:

- Providing staff bonuses and an “employee of the month” program for EPP involvement (Lee County, Florida’s vehicle fleet management);
- Including environmental performance as part of the annual review process for city department directors and management staff (Phoenix, AZ, pilot program);
- “On-the-Spot” award program, for employees that recommend ways to improve environmental performance (Phoenix, AZ);
- “Lead by Example” program that provides grant funding for agencies to try new, environmentally preferable products (MA DEP and Hennepin County, MN); and
- Requiring communities to establish EPP program in order to be eligible for recycling implementation grant funds (MA DEP).

4. Capital and Operating Expenses

Implementing an EPP policy is not expected to require capital expenditures, however will likely require some staff time. Simply developing and implementing a policy are activities that may be part of existing staff time, requiring no additional expenditures. However, it is possible that involving stakeholders, developing tools, and possibly evaluating the policy on an ongoing basis may require additional resources, such as additional staff time, possible use of consultants, and costs associated with holding stakeholder meetings, if desired.

5. Education Tactics

Educating stakeholders (primarily purchasing entities) about a County-wide EPP program before the policy is implemented is critical, in order to obtain key stakeholder feedback and support. Once the policy has been adopted, multiple education tactics should be implemented in order to educate County agencies, departments, and offices regarding:

- Requirements of the policy;
- Expected benefits of the policy;
- Resources available (including state purchasing contracts that local governments may be able to participate in);
- State and County purchasing contracts;

- Product specifications;
- Technical assistance; and
- Model EPP policies for companies to adopt.

Education and outreach tools can be developed to focus on particular types of products (such as cleaning products) or particular types of settings (such as an office, where multiple types of products might be discussed, such as copy and print paper, ink and toner cartridges, computers and janitorial paper, and cleaning products). Disseminating education might be done through:

- Website/Intranet/Internet (which can be used to convey various types of information as well as provide access to some of the other tools listed below);
- List serve;
- Email bulletin;
- Conferences/seminars/workshops (e.g., to inform purchasers of the policy, provide a forum for manufacturers and distributors of environmentally preferable products to interface with purchasers and perhaps demonstrate their products);
- Fact sheets (e.g., detailing requirements of the policy, alternatives to specific toxic or wasteful commodities, or industry-specific fact sheets);
- EPP product and services directory (to let purchasers of particular items know what vendors are available);
- Technical assistance (e.g., potential users/purchasers of a product may need assistance in identifying environmentally preferable options, and determining whether the product(s) will be suitable for their needs. Often state or county agencies assist in providing technical assistance to demonstrate the suitability of a product through demonstration sites, case studies or product testing, for example.); and
- Information about County or state contracts (so that individual agencies can “join in” on the state or County contracts to obtain favorable pricing).

It is suggested that, to the extent possible, all education and outreach materials be offered electronically in order to minimize waste and expenses. The primary audiences for the education and outreach would be those who make purchasing and specification decisions in County departments, offices and agencies. A secondary audience would be private businesses that wish to obtain EPP products and services. Some education tactics might be relevant to the general public – citizens who desire to minimize their environmental impact through their individual purchasing decisions. Also, it is beneficial for the County to educate businesses, institutions and individuals about the County’s EPP policy and progress made with regard to the policy, so that the County’s dedication to minimizing health and environmental impacts is conveyed.

6. Diversion Potential

There are many potential benefits to an EPP policy, as described above. While the potential to divert waste is not expected to be the primary benefit of an EPP policy, it can indeed be one of the benefits of such a policy. Waste can be diverted, for example, through the purchase of more durable or upgradeable products, purchasing goods with reduced packaging or in bulk, using locally generated materials (such as yard waste for mulch rather than disposing of it and

purchasing mulch elsewhere). It can also result in the disposal of less toxic waste, which can reduce disposal costs and reduce environmental and health risks at the landfill. Some EPP policies also include waste reduction measures. For example, one of the goals of Rutgers University's "Green Purchasing Policy and Guidelines" is to "reuse packing materials and plastic bags." Another goal is to "turn used paper into scratch pads for distribution to departments on campus." Their Green purchasing policy also includes several goals to recycle specific types of items (ink and toner cartridges, fluorescent bulbs, mercury- type bulbs, wood pallets, lead acid batteries) which increases the amount of waste the University diverts from disposal.

7. Case Studies

Provided below are two county EPP case studies (King County, WA and Alameda County, CA) and one state (New York) case study.

7.1 King County, Washington

7.1.1 Introduction

King County, Washington, first implemented its EPP policy in 1989, in hopes of strengthening markets for newly collected recycled materials. In 1995 the program was expanded, in order to target other environmentally preferable products. The county expanded the policy to consider multiple product attributes, including:

- Toxicity;
- Durability;
- Emissions;
- Energy efficiency;
- Recycled-content; and
- Conservation of natural resources.

In addition, the policy considers:

- Price;
- Performance; and
- Availability of the product.

King County's EPP Program is mandatory for all county agencies, offices and departments, as well as contractors. Through the program, county personnel are provided with information and technical assistance to help them identify, evaluate, and purchase economical and effective environmentally preferable products and services. In 2007, the county estimates that their agencies purchased \$41 million worth of environmentally preferable products and services. The largest purchases of EPP products (in terms of total expenditures) included:

- Ultra-low sulfur diesel (\$22.8 million);
- Biodiesel (\$8.2 million);
- Recycled-content paper and paper products (\$3.7 million); and
- Computers (\$3.4 million).

It is estimated that EPP purchases resulted in cost savings of \$875,000 over the purchase of conventional products. Estimated cost savings include:

- Aggregates (avoided purchase costs for reuse of asphalt and concrete that are stockpiled, then used as fill material in road projects) – \$300,000;
- Toner cartridges – \$275,000;
- Tire re-treading – \$275,000;
- Antifreeze – \$17,000; and
- Plastic lumber – \$10,000.

7.1.2 Policy Highlights

The King County's EPP Policy highlights include requirements that all departments, offices, and agencies:

- Use, and require their contractors and consultants to use, products manufactured with the maximum practicable amount of recovered material, especially post-consumer material.
- Use, and require their contractors and consultants to use, environmentally preferable products whenever cost effective and to the extent practicable.
- Establish a price-preference of up to fifteen percent (15%) for recycled paper products and up to ten percent (10%) for re-refined lubricating oil.
- Ensure that they and their contractors use recycled paper in printed material, and that it bears an imprint identifying the recycled-content of the paper, whenever practicable.
- Ensure that they and their contractors use both sides of paper sheets whenever practicable.
- May specify recycled-content at levels higher than the minimum content standards.

Under the Policy, the Purchasing Agency and Solid Waste Division are responsible for providing departments with information to facilitate their evaluation and purchase of designated products, and to inform them of their responsibilities under the policy. They are also responsible for revising minimum standards as necessary, to ensure consistency with the other government entities, ensure that EPP are designated whenever practicable, transmit minimum content standards to departments, and provide an annual report to the county council. The county departments, offices and agencies must assign staff to:

- Ensure that contracting procedures do not discriminate against recycled products without justification;
- Evaluate each designated product to determine the extent to which it may practicably be used by the agency and its contractors;
- Revise contracting procedures to maximize the specification of designated products whenever practicable;
- Compile data on the purchase of designated products by the agency and its contractors; and
- Provide evaluation results and procurement data to the Purchasing Agency by July 30 each year for inclusion in the annual report to the county council on the status of policy implementation.

7.1.3 Tools Utilized

In order to inform county agencies, suburban cities, and the community-at-large about opportunities to purchase environmentally preferable products, the county focuses on the dissemination of information and technical assistance. Specific tools include:

- Educational Seminars – The Agency provides seminars on specific opportunities for EPP.
- Environmental Purchasing Bulletin – The Agency produces electronic “Environmental Purchasing Bulletins” to share information about EPP products, events, contracts, etc. There are over 1,000 direct email recipients of the Bulletin. Past Bulletin topics included:
 - Greenwashing;
 - Porous Concrete;
 - Green Procurement Case Studies;
 - Natural Vegetation Management (use of goats); and
 - Hybrid Bus Purchase.

An index of past bulletins is available at the following Website:

<http://your.kingcounty.gov/procure/green/bulindex.htm>.

- Waste Prevention Forum – An online discussion group managed by the King County Solid Waste Division, and part of the National Waste Prevention Coalition.
- Website – Through the county’s website, the Purchasing Agency shares information with county departments, offices and agencies. The Agency keeps in contact with many communities throughout the nation, and stays abreast of EPP issues through several Internet discussion groups. The website includes information about green building, EPP products, contact information for local vendors, some case study information regarding EPP products, and links to other resources for additional information. King County EPP staff also serve on the steering committee for the Responsible Purchasing Network, which has a mission to promote environmentally preferable purchasing policies.
- Annual Report – Agencies, Offices and Departments are required to report EPP activities, (environmentally preferable materials purchased, quantities purchased, dollar amount spent, and any cost savings realized over traditional materials) to the Purchasing Agency by July 30. The Purchasing Agency compiles a report for the county council on the status of policy implementation. The 2007 Report is available online at <http://your.kingcounty.gov/procure/green/2007annrep.pdf>.
- Technical Assistance – The EPP Program staff provides policy development and implementation strategies to other jurisdictions, businesses, and non-profit agencies. The program staff also assists buyers and user agencies in the development of specifications and contracts, and provide technical assistance to facilitate evaluation and adoption of environmentally preferable products and applications by county agencies. In addition, the staff researches and communicates information about price, performance, availability and potential benefits of environmentally preferable products.

- Supply Contracts – The county negotiates contracts for EPP products and services. Local governments within the county and non-profit entities are eligible to use the contracts.

7.1.4 Materials Targeted

Materials that are highlighted as EPP materials include:

- Recycled-content paper;
- Remanufactured toner cartridges;
- Refined antifreeze and motor oil;
- Ultra-low sulfur diesel;
- Biodiesel fuel;
- Hybrid Vehicles;
- Bio-based oils;
- Plastic lumber;
- Compost;
- Shredded wood waste; and
- Tire re-treading services.

7.2 Alameda County, California (Partnering with StopWaste.Org)

7.2.1 Introduction

The Alameda County Waste Management Authority and Recycling Board (also known as StopWaste.Org) is a joint powers authority that is controlled by two boards. The county itself has not passed an EPP policy specifically, but has passed several ordinances and policies which relate to and encourage EPP activities. StopWaste.Org has passed their own EPP policy which governs them as a public agency, and has developed a model policy which seven of their 14 member agencies have adopted.

StopWaste.Org had been focusing on buying recycled-content products, but in 2003 made a push to further their involvement in EPP. The Agency works with their members, including the county and municipalities within the county, to help implement EPP programs, as described below.

7.2.2 Policy Highlights

Alameda County has adopted a vision which has five areas (one being environment and sustainability) and goals and strategies pertinent to each area. For example, one goal for county operations and services is to “Ensure that the county’s operations and services are consistent and comprehensive in prioritizing environmental protection.” Another goal is to “Demonstrate a commitment to environmental stewardship in county policies.” The county’s General Services Agency (GSA)’s comprehensive sustainability efforts include actions to:

- Fight global climate change;
- Produce clean energy and conserve energy;
- Reduce waste, reuse, recycle and compost;
- Build and operate green buildings;
- Reduce toxics; and

- Purchase alternative-fuel vehicles and environmentally preferable products.

The County's GSA has undertaken several efforts regarding EPP which have resulted in the annual purchases of over \$20 million in goods annually with environmental specifications. The county sees incorporating EPP criteria in purchasing decisions (at both the county and private-sector levels) as vital to helping the county achieve their goal of 75 percent waste diversion. (The current rate of waste diversion is 50 percent.) The county indicates that they have included environmental specifications when purchasing paper, furniture, computers, janitorial supplies, and vending machines.

The county has passed several policies/legislation regarding EPP including:

- Resolution No. 2008-213 – Resolution Establishing a Goal of 75 percent Reduction in Waste Going to Landfills by 2010 for Unincorporated Areas and Civic Operations of the County of Alameda. This is the mission of StopWaste.Org, which has been successful in getting all member agencies to pass resolutions establishing a goal of 75 percent waste reduction.
- Green Building Ordinance – Adopted in 2003, this ordinance states that all county projects must be built to a minimum U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Silver standard and divert construction debris from the landfill. StopWaste.Org has been successful in encouraging many member agencies to pass similar ordinances for civic projects. Some grant funding is dependent upon their passing this ordinance.
- Persistent Bioaccumulative Toxins Resolution – Adopted in 2002, this resolution requires elimination or reduction of PBTs, such as mercury, lead, and dioxins, through purchasing and disposal standards.
- Bay-Friendly Landscaping Resolution and Integrated Pest Management Resolution – Adopted in 2008 and 2001 respectively, these resolutions require a whole systems approach to pest management, where chemicals are a last resort for pest prevention, both indoors and out.

These policies are in compliance with and support the county's Climate Change Leadership Strategy and the county's Strategic Vision. Highlights of the Waste Reduction Resolution include:

- The Community Development Agency is to provide practicable assistance to local waste and recycling service providers to help them reach the 75 percent goal in unincorporated areas;
- The Board of Supervisors directs the General Services Agency to develop strategies to achieve the 75 percent goal for county operations in cooperation with all employees and agencies, which will be measured through internal inventories;

- All agencies will report annually on their efforts to minimize waste generation and promote recycling within their agencies and for services provided to them by outside contractors;
- County employees are expected to recycle and reuse all materials for which recycling programs are available, and consider the full lifecycle of products when using materials; and
- The county will partner with StopWaste.Org, recycling companies, local businesses, and sustainability advocates to strengthen the county’s economy by stimulating sustainable local enterprises that use discarded products and to develop strategies to advance “upstream” waste prevention strategies such as product redesign, process re-engineering, and low-impact lifestyles.

The ultimate goal of the resolution is for the county to review adopting a Zero Waste goal once the 75 percent goal is achieved.

7.2.3 Tools Implemented

StopWaste.Org’s website, www.stopwaste.org, provides many resources that are well-suited for member agencies as well as private businesses. They may also benefit other local governments that are not agency members and provide additional assistance. The resources provided by StopWaste.Org include:

- Product Guides – The county has developed specific product guides and vendor contact information for specific types of EPP products, including:
 - Compostable food service and kitchen products; and
 - Recycled paper.
- Fact Sheets – The County has published fact sheets regarding different types of materials that can be considered in an EPP Program, and provides information regarding what to look for in the product (e.g., toxicity level, percent post-consumer content, etc.) and specifications. Several fact sheets appear to be county-specific (e.g., “How to Purchase Recycled Paper in Alameda County”), however even those fact sheets contain information of value to those located outside the county.
- Model Policy – The County has developed a model policy that is available online. The policy is intended to be used by local governments and businesses. This Model Policy is provided as Appendix B to this report.
- Guide to Green Maintenance and Operation – This publication describes how and why to implement green maintenance and operation practices. Specific topics discussed include

lighting, paint, flooring, furniture, appliances, water-efficient products, mechanicals (HVAC maintenance), janitorial cleaning and supply products, and landscaping.

- **Technical Assistance** – StopWaste.org provides technical assistance to businesses and agencies as well as municipal governments to help them identify and implement strategies to implement EPP policies and minimize waste.
- **Information about State and Other Programs** – StopWaste.Org provides information about upcoming state and regional conferences and events relating to EPP and often pays registration fees for member agencies. One example is a green building conference, West Coast Green. Another example is partnering with the Association of Bay Area Governments, a nine-county organization that will host an EPP workshop in the spring. StopWaste.Org will help sponsor the event and will pay the registration fee for member city purchasers.
- **Workshops** – From time to time, StopWaste.Org will host workshops for member agencies and private businesses where EPP vendors can discuss the benefits of their products to potential products. Past products highlighted have been rubber sidewalks and green building products.

In addition to the StopWaste.Org activities, the county develops county contracts that support EPP. In many cases member cities can be included in the contract.

7.3 The State of New York

7.3.1 Introduction

New York’s governor signed Executive Order No. 4, “Establishing a State Green Procurement and Agency Sustainability Program,” in April 2008. The Order directs state agencies, public authorities and public benefit corporations to “green” their procurements and to implement sustainability initiatives. The Order established an Interagency Committee on Sustainability and Green Procurement that is co-chaired by the Commissioner of General Services and the Commissioner of the Department of Environmental Conservation. The Interagency Committee is charged with identifying an annual list of product categories and specific products and services for which specifications will be developed and issued for greener procurements. The Committee is also charged with establishing goals for reductions in the amount of paper used and solid waste generated, and with the development of coordination, reporting and training programs to support agency sustainability efforts. The final list of product and service categories, issued in September 2008, includes:

Electronics/Appliances:

Desktop computers	Washers (domestic and commercial)
Laptop computers	Vacuum cleaners
Copiers	Dishwashers (domestic and commercial)

Room air conditioning	Printers (network and multifunction)
Refrigerators	

Transportation:

Traffic safety equipment	Asphalt mixes
Traffic Paint	Concrete
Glass Beads	Engine block heaters
Treated road salt	Re-refined motor oil
Passenger vehicles	Re-refined hydraulic oil
Aggregate for road construction	Traffic message boards

Office and Building Operations:

Toner cartridges	Drinking water fountains
Printing services	Pest management
Carpet	Cleaning products
Fluorescent lamps (compact and traditional)	Recyclables collection and disposal service
Interior paint	Turf management

In addition, there have been additional policies passed that relate to EPP. They include:

- Executive Order Number 142, “Establishing New Waste Reduction and Recycling Initiatives for State Agencies,” which was passed in 1991; and
- Executive Order Number 134, “Directing State Agencies to Reduce the Impact of Cleaning of State Facilities,” which was passed in 2005.

The New York State Department of Transportation (NYSDOT) also has a Solid and Hazardous Waste Reduction Policy in place, which was implemented in 1999. The policy expresses DOT’s commitment to reducing waste and pollution by:

- Source reduction (eliminating or reducing the volume and toxicity of waste through good operating practices, product substitution, and procedure substitution);
- Reuse and Recycling (reusing material for its original purpose, or recycling when reuse is not possible);
- Using recycled-content products in all DOT projects “where reasonable and feasible;” and

- Implementing a preferred management hierarchy for waste management. The hierarchy is:
 - Source reduction;
 - Recycling;
 - Energy recovery;
 - Treatment; and
 - Disposal.

The types of programs implemented by NYSDOT that support the DOT’s EPP Policy include the use of:

- Environmentally friendly solvents for cleaning pavement-marking painting equipment;
- Eliminating the use of chlorinated solvents (e.g., for degreasing);
- Using reduced VOC traffic marking and bridge paints;
- Reducing the use of herbicides;
- Reducing the use of salt;
- Purchasing recycled products such as:
 - Paper;
 - Lead-acid batteries;
 - Re-tread tires;
 - Antifreeze;
 - Lubricating oil; and
 - Plastic cones.

7.3.2 Policy Highlights

Highlights of Executive Order Number 4 include:

- Establishes an interagency committee on sustainability and green procurement.
- Charges the Committee with selecting a minimum of three “priority categories” and products and services within those priority categories for which the Committee will develop “green procurement lists.” The Committee is directed to focus on goods and services that will:
 - Reduce or eliminate the health and environmental risks from the use or release of toxic substances;
 - Minimize risks of discharge of pollutants into the environment;
 - Minimize the volume and toxicity of packing;
 - Maximize the use of recycled-content and sustainably-managed renewable resources; and
 - Prove other environmental and health benefits.
- Charges the Committee with developing procurement specifications and new solicitations for priority commodities, services and technology. The Committee is to consider the

specific product attributes, including reduction of greenhouse gases, waste reduction, recyclability, durability, and others.

- Charges the Committee with establishing specific waste reduction goals and strategies.
- Stipulates that each state agency and authority shall develop and implement a sustainability and environmental stewardship plan.
- Stipulates that all copy paper, janitorial paper and other paper supplies purchased by each State agency or authority shall be composed of 100 percent post-consumer recycled-content to the maximum extent practicable, and shall be chlorine-free to the extent practicable.
- Stipulates that all public agencies and authorities shall use 100% post-consumer recycled paper for publications, to the extent practicable, or non-recycled-content should be from sustainably-grown trees.
- Directs state agencies and authorities to rely on and use the procurement lists and specifications issued by the Committee when developing new solicitations and contracts for the procurement of commodities, services and technology, unless there are cost or function issues or a compelling emergency.
- Directs state agencies and authorities to implement effective programs to source separate recyclable materials, to the extent practicable, as well as waste reduction programs, and to use locally available compost, mulch and soil amendments from recovered materials and recovered materials in construction.
- Stipulates that State agencies and authorities must assign an employee to serve as a sustainability and green procurement coordinator.
- Directs that the Committee shall design and implement training and outreach programs for coordinators.
- States that the Committee must develop a format for a progress report to be used by State agencies and authorities.
- States that each state agency and authority shall annually submit a progress report to the Committee describing the agency/authority's efforts and progress regarding green procurement, waste reduction, etc.
- Stipulates that the Committee must submit a report to the Governor each year compiling the information submitted by state agencies pursuant to Executive Order 4.
- Calls for the formation of a Sustainability and Green Procurement Advisory Council, consisting of 11 members appointed by the Governor who have experience in the fields of green procurement, public health, waste prevention and recycling, energy efficiency,

workplace safety, labor relations, environmental protection, environmental justice, or chemical manufacturing.

7.3.3 Tools Utilized

New York State has utilized the following tools in order to implement their Green Procurement Policy:

- Development of Product Specifications – The Committee has developed specifications for purchasing many priority materials. Three specifications have been finalized (computers, engine block heaters, and passenger vehicles). Several others are in draft form.
- DEC Green Schools Program – Provides resources (including grants) and information that allows schools to implement actions to be more “green.” Assistance is available for pest management, toxics reduction, solid waste reduction and recycling, and stormwater management.
- Recognition and Awards Programs – NY DEC has a Green Schools Awards Program which rewards schools for implementing exceptional environmental programs. In addition, the DEC sponsors a NYS Environmental Excellence Awards Program which recognizes businesses, schools, organizations, individuals and others for “improving and protecting New York State's environment.
- Roundtable Discussions – NY DEC hosted a series of roundtable discussions in 2008 about chemicals. Key topics included but were not limited to: moving away from chemical-by-chemical approaches, prioritizing chemicals for evaluation, maximizing information sharing, promoting green chemistry and considering substitutions and restrictions for hazardous chemicals.
- NYSDOT GreenLITES Program – This NYSDOT program recognizes transportation project designs that incorporate a high level of environmental sustainability. GreenLITES (Leadership in Transportation and Environmental Sustainability) is a project rating system, similar to the USGBC’s LEED system. Projects are rated based on the extent to which they incorporate sustainable design choices. This is primarily an internal management program for NYSDOT to measure performance, recognize good practices, and identify and improve where needed. The program also serves to provide the department with a way to demonstrate to the public how NYSDOT is advancing sustainable practices. The NYSDOT also has a carcass composting program located in New Paltz

There have been no annual reports submitted to the governor to date regarding Executive Order Number 4.

8. Addressing Stakeholder Concerns

Stakeholder concerns regarding EPP policies may include:

- Lack of familiarity with the use of many environmentally preferable products, and how to specify them effectively, or apply them as substitutes for more traditional materials;
- Fear that the costs associated with EPP purchases will be higher than the costs associated with traditional materials;
- Fear that quality of recycled-content products may be inferior or lack standards and specifications;
- Greenwashing – the dissemination of false information pertaining to EPP issues; and
- The fear of overly onerous data collection.

Means of addressing these issues are discussed below.

8a. Lack of Familiarity

The marketplace is continuously changing. There are new products and new versions of products constantly being developed. The Ulster County staff can facilitate the conveyance of knowledge about such products via the Internet, list serves, email lists, etc. There are many organizations and list serves in existence that share information on such topics, and could serve as a valuable resource to Ulster County. In addition, many government entities, as described in the case studies, have implemented programs that encourage and assist agencies with learning about and purchasing EPP products. They include:

- Workshops/vendor conferences;
- Roundtable discussions;
- Technical assistance to demonstrate or test the suitability of a product or product type;
- Development of case studies; and
- “Before You Buy” programs and other grant programs to pay for or partially pay for the product.

8b. Costs

Some environmentally preferred products and services may be more costly than “traditional” products and services, however some actually result in a cost savings. For example, King County, Washington, actually saved money over purchasing “traditional” materials through its use of:

- Reused aggregates;
- Refurbished toner cartridges;
- Tire re-treading (versus purchasing new tires);
- Antifreeze (re-refined versus new); and
- Plastic lumber.

In some cases, lifetime cost analyses are more accurate means of assessing costs than simply considering purchasing costs. For example, synthetic turf fields may cost more to install, initially, however they are less costly to maintain over time, so the lifecycle cost analysis may be

favorable. Similarly, plastic lumber may be more costly initially, but due to its durability and lack of maintenance, can be more cost-effective in the long run.

It is also important that EPP policies be implemented with cost-effectiveness in mind. While some communities' EPP policies provide a cost preferential for specific material types (for example, King County provides a cost preferential of 15 percent for recycled-content paper, and 10 percent for re-refined motor oil), other communities provide a cost preferential for all types of commodities. In some emerging markets product manufacturers are not always adept at identifying the needs of potential customers, marketing, and distributing products. The Purchasing Agency or Department, in some cases, can help facilitate these activities through conferences and workshops that bring product manufacturers and purchasers (as well as potential purchasers) together to share information and experiences.

In California, the California Integrated Waste Management Board (CIWMB) states that $EPP = Environment + Price + Performance$. As the "Price" component of this equation, the CIWMB acknowledges that "EPP is best value. When a product creates too much pollution this impact is a cost to those who have to clean it up or get sick from it. The lowest price isn't necessarily the lowest cost. That is what EPP tries to sort out." In other words, the economic externalities associated with "traditional materials" are not always considered in the purchase price.

8c. Product Quality

Ulster County once again can look to other communities for information regarding types of products and their quality. Some purchasers may be familiar with a prior "generation" of a product, and may be unaware of changes in manufacturing environmentally preferable products that have taken place. Further, Ulster County may be able to borrow language regarding product specifications from other communities to help ensure that the products meet their needs.

Some manufacturers of environmentally preferable products have begun to see the value of third-party standards and testing, and are engaging in developing standards and having independent laboratories conduct testing on their products. The County could also help educate departments about the successful use of certain products by researching what has been used with success in other counties and states, and by developing those into case studies. Similarly, as described above, the County might also develop a pilot test for a product or product type.

8d. Greenwashing

Greenwashing is a deceptive use of green public relations or green marketing. As the demand for "environmentally preferable" products has grown, so has the need to use caution when evaluating manufacturers' claims regarding the environmental benefits of their products or services. Some specific types of greenwashing to be aware of include:

- Fluffy yet meaningless language – language that sounds "green" but has no real meaning (for example, "eco-friendly," "green" and "environmentally sound");
- Overly scientific language, that is not understandable;

- Pictures that provide an “environmentally friendly” feeling with no real connection to the product or service;
- Statements that give the appearance of a third-party endorsement when one does not actually exist;
- Focusing on a small benefit when larger, more significant negative environmental impacts exist; and
- Making claims without providing evidence.

Products, companies and claims should be researched using resources and organizations that aim to safeguard against false claims regarding environmental benefits. Some resources include:

The Green Washing Index (EnviroMedia and the University of Oregon)

<http://www.greenwashingindex.com/index.php>

StopGreenwashing.org

<http://www.stopgreenwashing.org/>

Greenpeace

<http://stopgreenwash.org/>

The U.S. Green Building Council (USGBC)

<http://www.usgbc.org/>

Also, sharing information on list serves and through email and reading industry trade journals are other means of becoming aware of false “green” claims. Also, before entering into a contract with a manufacturer, it is important to conduct research. Read the company’s annual report, interview other purchasers, and tour a manufacturing facility, if possible.

8e. Overly Onerous Reporting Requirements

While it can seem time consuming and costly to track data on EPP programs, it is important to track certain information to garner support and understand the progress that is being made. Also, analyzing information can point out specific strengths and weaknesses within the EPP program. To the extent possible, it is best to incorporate tracking within the existing system – for example, in some communities a certain two-digit number preceding the entry indicates that the item is an EPP purchase. In Minnesota, for example, the Department of Administration provides specific codes where EPP purchases can be tracked on an ongoing basis. This made it unnecessary for Authority of Local Purchase (ALP) buyers to submit quarterly reports. At the end of the year, it is relatively simple to track EPP purchases and tally corresponding cost savings and expenditures. Up-front planning with the entity’s accounting system will help ensure that reporting is as automatic as possible.

9. Benefits and Drawbacks

The implementation of an EPP policy has benefits as well as drawbacks (real or perceived), as outlined below.

9a. Benefits

- Adopting a procurement policy that gives preference to recycled-content products, reducing toxicity, and reducing consumption represents an opportunity for the County to lead by example in their recycling effort, thus conveying to the community and agencies the County's dedication to recycling and reducing environmental and health impacts.
- Purchasing post-consumer recycled-content materials encourages markets for recycled products.
- Adopting a procurement policy that gives preference to products with other environmental attributes (such as lower toxicity) can:
 - Reduce liabilities;
 - Increase employee health; and
 - Increase environmental health.
- Including provisions for more durable goods, reduced packaging (or buying in bulk) can lead to increased waste diversion, thus reducing disposal costs.
- Including provisions for recycling or reducing the use of certain goods can lead to increased waste diversion, thus reducing disposal costs.
- Including provisions for products and services that use fewer resources (such as water and energy) saves natural resources and expenditures on those resources.
- It is expected that no capital expenditures would be required to develop such a policy.

9b. Drawbacks

- In meeting the goals and requirements of an EPP, the County may be required to change vendors and products in some cases.
- The County will likely spend resources initially, in the form of staff time, developing an EPP policy.
- The County may spend resources on an ongoing basis, in the form of staff time, conferences, etc., in developing tools to facilitate the implementation of an EPP policy.
- The County may spend resources on an ongoing basis, in the form of staff time and potentially software upgrades, to develop tools to track progress in EPP programs.
- Some departments may see tracking and reporting the amount and type of EPP products purchased as burdensome.

10. Resources

There are many resources available on EPP and recycled-content products. Provided below are links to websites for accessing some of these resources.

Alameda County, California, Waste Diversion Resolution.

http://www.acgov.org/gsa/75_Waste_Diversion_Resolution_06-2008.pdf.

Alameda County, California, Strategic Vision.

<http://www.acgov.org/pdf/strategicvision.pdf>.

The California Integrated Waste Management Board, EPP Best Practices.

<http://www.green.ca.gov/EPP/Introduction/default.htm>.

The Center for a New American Dream (website/organization that “helps Americans consume responsibly to protect the environment, enhance quality of life, and promote social justice.” – includes the “Responsible Purchasing Network” listed below, and other campaigns and programs).

<http://www.newdream.org/>

Electronic Product Environmental Assessment Tool (EPEAT) (a tool for evaluating the environmental performance of electronics throughout their life cycles).

<http://epeat.net/>.

The Green Meetings Industry Council (GMIC) (a non-profit organization that aims to transform the meeting industry through sustainability).

<http://www.greenmeetings.info/>.

Inform, (a non-profit agency that disseminates information about environmental issues, including EPP-related topics). <http://www.informinc.org/>.

King County, WA, Environmental Purchasing Program.

<http://your.kingcounty.gov/procure/green/index.htm>.

King County, WA, EPP Annual Report, 2007.

<http://your.kingcounty.gov/procure/green/2007annrep.pdf>.

King County, WA, EPP Bulletins. <http://your.kingcounty.gov/procure/green/bulindex.htm>.

Massachusetts DEP, Environmentally Preferable Purchasing Guide.

http://www.mass.gov/Aosd/docs/EPP/VOL_26_SEC_2_OCT_2007.doc.

Massachusetts DEP, EPP Product Fact Sheets (in development, please check back) and Buyer Update Newsletters.

[http://www.mass.gov/?pageID=osdsubtopic&L=4&L0=Home&L1=Buy+from+a+Contract&L2=Environmentally+Preferable+Products+\(EPP\)+Procurement+Program&L3=Download+Publications%2c+Reports+and+Tools&sid=Aosd](http://www.mass.gov/?pageID=osdsubtopic&L=4&L0=Home&L1=Buy+from+a+Contract&L2=Environmentally+Preferable+Products+(EPP)+Procurement+Program&L3=Download+Publications%2c+Reports+and+Tools&sid=Aosd).

Minnesota Pollution Control Agency, 2006 Biennial Report to the Legislature.

<http://www.pca.state.mn.us/publications/reports/lrp-gen-3sy-07.pdf>.

Minnesota Pollution Control Agency, “Buying Green,” (quarterly newsletter about EPP).

<http://www.pca.state.mn.us/oea/epp/newsletter.cfm>.

Minnesota Pollution Control Agency, EPP Guide.

<http://www.rethinkrecycling.com/government/eppg/tools>.

Minnesota Pollution Control Agency, Recycled Products Directory (provides information about products made from recycled materials). <http://www.pca.state.mn.us/oea/rpdir/index.cfm>.

National Association of Counties (NACo) (award programs, case studies and peer advice).
<http://www.naco.org/>

National Institute of Government Procurement (has a “Green Knowledge Community” available to members, which can provide additional resources regarding EPP policies).
<http://www.nigp.org/communities/about.htm>.

Natural Resources Defense Council, (information regarding company-wide EPP policies).
http://www.nrdc.org/enterprise/greeningadvisor/gpp-purch_policy.asp

New York State Department of Transportation, GreenLITES Program.
<https://www.nysdot.gov/programs/greenlites>.

New York State Department of Transportation, Solid and Hazardous Waste Reduction Policy.
<https://www.nysdot.gov/divisions/engineering/environmental-analysis/repository/wastered.pdf>.

New York State Department of Transportation, Specifications.
<https://www.nysdot.gov/main/business-center/engineering/specifications/2008-standard-specs-us>.

New York State Office of General Services, Green Procurement Information.
<http://www.ogs.state.ny.us/ExecutiveOrder4.html>.

New York State, Executive Order Number 4, “Establishing a State Green Procurement and Agency Sustainability Program.”
<http://www.ogs.state.ny.us/EO4/pdf/FinalGreenProcurementEO.pdf>.

Responsible Purchasing Network (an international network of buyers dedicated to socially responsible and environmentally sustainable purchasing).
<http://www.responsiblepurchasing.org/>.

Rutgers University, Green Purchasing Policy and Guidelines.
<http://purchasing.rutgers.edu/green/images/Rutgers%20Green%20Purchasing%20Policy.pdf>.

Solid Waste Management Coordinating Board’s (SWMCB) Environmentally Preferable Purchasing Guide (developed by the SWMCB which serves six metropolitan counties in the Minneapolis-St. Paul, Minnesota region). <http://www.rethinkrecycling.com/government/eppg>.

Solid Waste Management Coordinating Board’s Sample EPP Resolution.
<http://www.rethinkrecycling.com/government/eppg/tools/sample-epp-resolution>.

StopWaste.Org, Compostable Food Service Product List.
http://www.stopwaste.org/docs/bioplastics_products-distrib.pdf.

StopWaste.Org, EPP fact sheets (topics include: Environmentally Preferable Cleaning Products, Recycled Paper, Toner Cartridges, Janitorial Paper Supplies, Park and Recreation Products,

Environmentally Preferable Traffic Control Products, Using Rechargeable Batteries, and Biodiesel Fuel Use in Heavy Duty Vehicles).

<http://www.stopwaste.org/home/index.asp?page=372>.

StopWaste.Org, Environmental Purchasing Links (provides links to information regarding specific products and product types geared for purchasers as well as consumers from the general public).

<http://www.stopwaste.org/home/index.asp?page=532>.

StopWaste.Org, EPP Implementation Guide.

<http://www.stopwaste.org/home/index.asp?page=468>.

StopWaste.Org, Guide to Green Maintenance and Operations.

<http://www.stopwaste.org/docs/gbm-g-dec-20-07ltr.pdf>.

U.S. EPA, Comprehensive Procurement Guidelines.

<http://www.epa.gov/epawaste/consERVE/tools/cpg/index.htm>

U.S. EPA, Environmentally Preferable Purchasing. <http://www.epa.gov/epp/index.htm>

U.S. EPA, “State and Local Government Pioneers: How State and Local Governments are Implementing Environmentally Preferable Purchasing Practices,” November 2000.

<http://www.epa.gov/epp/pubs/case/statenlocal.pdf>

U.S. EPA, “Federal Pioneers: Environmentally Preferable Purchasing Success Stories From the Federal Government,” September 2000. <http://www.epa.gov/epp/pubs/case/FedPioneers.pdf>

U.S. EPA, Green Meetings Information.

<http://www.epa.gov/oppt/greenmeetings/>.

5.2.2 PUBLIC EDUCATION AND PROGRAM ENHANCEMENT STRATEGIES

5.2.2.2 Commercial, Institutional, Industrial and Multi-family Building Recycling (CIIM)

Some recycling challenges are universal while others differ between the multifamily and CII sectors. ¹ For that reason, some of the discussions are listed separately below.

¹ In most municipalities, larger multifamily buildings (usually 5 units or more) are considered commercial accounts and their garbage and recyclable materials are collected separately from residential routes consisting of single-family homes. For this section, large multifamily dwelling units are the focus.

1. Site Issues

Oftentimes businesses and multifamily buildings have limited storage space for recycling containers. Any extra outdoor space is usually reserved for employee, customer, or tenant parking. Some cities and counties have passed ordinances that require adequate outside space be

designated for the placement of recycling collection containers when a new CII establishment or multifamily housing developer applies for a building permit. (This is often required in building plans for garbage dumpsters; however space for recycling containers is frequently overlooked.). The benefit to these types of ordinances isn't immediate, but in the long-run the local government would eliminate or at least reduce this barrier to recycling. Many municipalities adopt minimum requirements for space for recycling containers at all new developments.

1a. Commercial/Industrial/Institutional Locations

In addition to dumpsters, which are usually used for the collection of old corrugated cardboard (OCC) at CII sites, most haulers offer wheeled carts to be used for the collection of other recyclable materials such as paper, plastic, metal cans and glass. The carts take up less space and can be placed outside next to the garbage dumpsters. Depending on the size and layout of the business, it may be possible to store the recycling carts inside the facility and then wheel them outside on collection day. For large office buildings, recycling collection bins should be located on each floor or in a common area inside the building and then brought down to a centralized area for consolidation. In some situations it might make sense for businesses to share recycling containers/service.

1b. Multi-family Buildings

For multifamily buildings with several outdoor garbage collection points, recycling containers should be located next to every garbage dumpster so residents have the option to recycle when disposing of their trash. Some larger apartment buildings have recycling collection bins inside the building and then maintenance staff transport the materials outside for collection. Also, many residents lack adequate space inside their apartment to store recyclable materials. The Agency may want to consider facilitating proper recycling by providing small recycling containers to each dwelling unit to transport recyclable materials to a central collection location. Examples include small 5- to 10-gallon bins or reusable cloth tote bags. A list of companies that provide recycling bins and tote bags well-suited for apartment recycling is provided in Appendix B. Another option to address storage issues would be for apartment buildings to have recycling collection bins on each floor or in a common area inside the building.

However that would require the building staff (or a dedicated resident) be responsible for transferring the materials from the inside bins to the larger collection containers located outside. It is also important to ensure that, if possible, central recycling containers are located in high-traffic areas or areas that are frequented by residents – near the trash bin is ideal. The recycling/trash area should also be clean and well-lit.

2. High Turnover Rates

2a. Commercial Property Owner/Lease Company Turnover

Commercial property is bought and sold periodically resulting in changes to a building's owner or leasing company. As a result of these changes, the recycling program can sometimes suffer. Some owners and leasing companies may view recycling as a high priority, while others may

not. If a property owner or leasing company does not consider recycling a high priority, collection programs put in place by the previous owner may fall by the wayside, resulting in an increase in the quantity of garbage collected. This is especially true if recycling laws are not enforced and/or education is weak.

Considerations for improvement include creating recycling information packets specifically designed for commercial property owners and leasing companies. The information could include detailed waste reduction, reuse, and recycling tips to be forwarded to building tenants, as well as a copy of the County's recycling ordinances. The packets could even be tailored for specific business types such as offices, retail businesses, restaurants, etc. The Ulster County Chamber of Commerce could be enlisted to distribute the information packets to new businesses as they open in the County, as well as distribute information to current businesses.

Another approach is to ask building managers to provide the Agency with names and addresses of new commercial tenants on a monthly or quarterly basis so that the Agency can send out information packets as needed.

2b. Business Manager Turnover

Just as commercial property is bought and sold periodically, managers of commercial property, retail businesses, and multifamily properties turn over periodically. Knowledge and enthusiasm about recycling programs and responsibilities can wane when such turnover occurs.

If not already created, a database of businesses in Ulster County could be generated and letters sent annually asking for updated contact information. The Agency could inquire about any recycling issues, or the need for more information packets, signage, etc. The Agency might consider hosting an event periodically where a working session could be conducted in order to gain an understanding of specific barriers business managers face, and allow the sharing of information and suggestions among managers. Functions like these often motivate managers to reinvigorate their recycling program, and also show that the Agency is interested in helping, not just enforcing. Providing this information by email to businesses could save the Agency money on publishing and mailing information, as well as reduce the consumption of paper.

2c. Resident Turnover

Because the nature of apartment building living isn't always a long-term living arrangement for a majority of tenants, there tends to be a constant flow of incoming and outgoing residents.

To combat this, a "new resident" information packet could be created that is specifically designed for multifamily residents and provides recycling and waste reduction information. Packets could be provided to apartment managers and ask that they be delivered to each new resident. Agency staff should work with building owners, managers, and condo associations to ensure this is carried out in order to be successful. Apartment managers could also be asked to provide the Agency with names and addresses of new residents on a monthly or quarterly basis so that the Agency can send out information packets. For examples of multifamily recycling

information created by other municipalities, as well as a list of multifamily recycling resources, see Appendix C.

3. Minimal Incentive to Recycle at Multifamily Buildings

In most cases, residents in multifamily dwelling units do not receive a separate bill for garbage and recycling services, as fees for these services are usually prorated and each unit's portion is included in their monthly rent. Consequently, there is not a financial incentive for the tenants to recycle or reduce the amount of garbage they generate. Furthermore, there is little accountability for residents, as it is not known who is recycling and who is not. The Agency could consider conducting a survey of residents from multifamily buildings with low participation rates in an attempt to understand residents' particular needs and obstacles to recycling. A sample survey is provided in Appendix D. Another angle is to promote environmental stewardship by asking residents to recycle, conserve natural resources and to take responsibility for protecting the County's environment. The building manager, Agency staff, and/or volunteers (for example, environmental club high school students) could set up a recycling education "booth" on-site (perhaps as people are returning from work) to distribute information about the environmental benefits of recycling. This, in conjunction with the distribution of apartment-sized recycling bins or tote bags, would demonstrate to the residents the commitment to recycling by the Agency and the building manager/owner. It would also provide effective one-on-one recycling education and provide residents with the opportunity to have their recycling questions answered.

4. Recycling and Waste Reduction Education

Providing recycling information to commercial establishments and residences in large multifamily buildings can be difficult due to the potentially high turnover rate of multifamily residents and property owners and/or managers. Suggested improvements to increase recycling are outlined in the sections below.

4a. Recycling Education

General recycling reminders should be provided at least once per year to all residents and businesses. As mentioned earlier, information packets for commercial businesses, or at least new establishments, is one way to get the message out. Listed below are other recommendations for improving recycling public education to the CII sector and multifamily residents.

Website – Many people look for recycling information on their municipalities' website. The Internet is a relatively low-cost means of providing information. In addition to the current recycling guide, it is recommended that the Agency add more detailed commercial and multifamily recycling information and tips/suggestions to its website, so businesses and residents have a source to turn to for easily accessible information. See Appendix C for examples of other municipalities' websites specifically designed to provide information regarding commercial and multifamily recycling.

Clear Signage – Recycling areas should have clear signage, both on containers and above containers, if possible, explaining which recyclable items should be placed in each container. Text should be large and bold and signage with pictures is generally preferable.

Promotional Items – Promotional items such as pens, magnets, calendars, etc. (specifically made with recycled-content materials) are an inexpensive way to convey the County’s recycling message to businesses and multifamily residents in a way that has the potential to be seen over and over again.

Brochure or Flyer Developed Exclusively for Multifamily Residents – A recycling brochure or a flyer should explain the basics of the County’s recycling program, including what materials are accepted in the program and how to prepare the items for collection. Ideally, additional information addressing apartment building recycling issues would be most beneficial.

In addition, residents should be reminded that garbage and recycling collection services are not free, but are included in their rent and if the amount of garbage increases, it may result in the need for increased collection service (i.e., larger garbage containers or more frequent collections per week), which could result in an increase in rental fees. Public education pieces that are sent through the mail and addressed to the resident by name are more likely to be read than items addressed to “Resident.” However, if the cost of postage is prohibitive, the Agency could hand-deliver brochures to each multifamily building or property manager and ask that they distribute the information to their tenants. In general, brochures are most effective when they are printed in more than one color and have pictures or drawings to emphasize the message. Also, in communities with large populations of non-English speaking residents, brochures printed in additional languages and/or brochures that feature pictures, not words, help to educate more of the population.

Door Hangers for Multifamily Buildings – Because multifamily residents are often “on the go,” delivering door hangers to their apartments may be a convenient and effective means of providing a friendly reminder about the recycling program.

Letter to Multifamily Building Managers and Landlords – By sending a separate letter directed toward multifamily building managers and landlords (especially if addressed to the individual by name), the County may achieve better recycling participation from multifamily dwelling units. The letter should not only reference Ulster County’s Mandatory Source Separation and Recycling Law, but also offer assistance in the form of a site visit or site audit, especially for buildings that are struggling with participation or contamination issues. If at all possible, Agency staff should periodically deliver printed materials to building managers and landlords, and while on-site, visit the recycling area(s). If warranted, suggestions for improving the site should be provided to the manager or landlord.

Provided below are broader recommendations for developing effective public education materials. Some of these options may not be financially feasible for the Agency, but they are included here for future consideration.

When designing public education brochures and information pieces, consider using a consistent “look” in all pieces (i.e., use the same font, colors, logo, mascot, etc.). Residents will eventually recognize these as recycling information pieces and will hopefully save them and reference them when needed.

Increase the public education budget to expand the visibility of the County’s recycling program. It is recommended that at least \$1.50 per household, per year, be budgeted for public education.

Consider partnering with Ulster County’s Environmental Management Council (EMC) for public education and outreach assistance. The EMC is the County’s citizen advisory board for local environmental matters.

Consider hiring a college intern or part-time staff person to help with CII and multifamily recycling-related tasks.

4b. Waste Reduction Education for Businesses

The advantages of waste reduction are numerous. Waste reduction impacts the economic health of all types of businesses, from corner stores to international corporations. For industrial entities (e.g., those manufacturing goods), there is a built-in economic incentive to minimize waste, as inputs are generally purchased, and no business wishes to waste a commodity. The Agency could consider providing businesses with waste reduction education and tools to assist with:

Estimating Disposal Costs – Many businesses are unaware of the cost savings that can be attributed to waste reduction and recycling. Worksheet A in Appendix E provides the steps and equations to estimate disposal costs.

Conducting a Waste Analysis – Businesses can gain valuable knowledge by conducting a waste analysis or composition study of their waste stream. Worksheet B in Appendix E provides options for estimating the types and quantities of materials in a company’s waste stream. With this information, a business can increase its recycling efforts to capture recyclable materials that are currently being thrown in the garbage. A waste analysis also provides insight to where waste reduction efforts could be focused. For example, large quantities of paper towels from restrooms could be reduced by installing hand dryers or cloth towels; and large quantities of paper cups in the waste stream could be eliminated by using ceramic mugs or glassware. There is potential to realize cost savings due to decreased number of pulls for disposal or decreased size of disposal containers. Currently, the Agency Recycling Coordinator/Compliance Officer provides waste analysis assistance to businesses.

Tracking Progress – As with the United Way Campaign and other similar charities, a “thermometer-like” poster that shows progress to date can help motivate employees to recycle.

Marketing – Many cities and counties provide free marketing to businesses that implement and maintain successful recycling programs. Examples include mention in the municipal newsletter, on a web page, or a sticker placed on the front door of the business, which will appeal to environmentally-conscious customers. This method of “social marketing” is increasing in popularity as individuals are more frequently weighing how “green” a business is when deciding which businesses to support. Utilizing other “social marketing” outlets such as YouTube, FaceBook and Twitter could also be helpful in providing recycling information and praise to area businesses.

Incentives and Award Programs – Businesses should recognize individual employees and departments that are particularly successful in reducing waste. To encourage businesses to institute waste reduction strategies, the following messages should be conveyed:

Economic gain – Controlling raw material waste and reducing waste disposed are increasingly important business goals, which can often result in reduced costs. Worksheets C and D in Appendix E can assist with evaluating the costs of a waste reduction or recycling program as well as calculating avoided collection and disposal costs.

Enhanced product and business image – The benefits of waste reduction extend beyond the short-term economic advantages. U.S. consumers are increasingly changing purchasing habits based on the environmental records of products and companies with sustainable goals.

Improved employee morale – Waste reduction programs have also served as an effective tool for improving employee morale. Many programs provide ideal opportunities to involve employees in organizational decision making and team work. The County and its cities, towns, and villages have the opportunity to set an example for reducing waste by implementing source reduction policies and directives in-house. Similar to waste assessments for businesses, Agency staff should conduct site visits at all government offices and buildings to not only improve recycling efforts, but also look for opportunities to increase source reduction.

5. Enforcement of Recycling Regulations

Ulster County mandates that all businesses and residents separate their recyclable materials from the waste stream for collection under the Ulster County Mandatory Source Separation and Recycling Law. Materials that must be source-separated include paper, glass, metals, plastics, leaves, yard wastes, tires, batteries and household hazardous waste (HHW), per Local Law No. 8. While this law is difficult to enforce, the Agency should consider tracking CII and multifamily recycling program data by conducting an inventory of each business and multifamily building to determine what recycling services are currently being offered. This could be a daunting task if done manually, however the Agency could survey the sites via a form letter or provide the option

of submitting data electronically by implementing a web-based data collection program, so that businesses and multifamily buildings can conveniently report what type of recycling program they have in place. Eventually the program could be expanded to track tonnage data and become a tool for the Agency to monitor its waste diversion programs and concentrate its efforts on areas identified as needing improvement.

For example, a company called Emerge³ offers a web-based program called Re-TRACTM. Their program is designed to assist communities in managing their data and reporting activities by allowing users to:

- Collect MSW and recycling data over the Internet;
- Keep data organized in a searchable, secure database;
- Conduct program performance analyses; and
- Automatically generate annual reports.

Some municipalities use Re-TRAC to efficiently obtain and track MSW and recycling tonnage data. Lancaster County (PA) Solid Waste Management Authority implemented Re-TRAC as a way to reduce its staff's time that had been spent collecting, organizing and reporting MSW and recycling data and is so far pleased with the results.⁴

Once the Agency has established an inventory of CII and multifamily recycling programs and service levels, it can work to achieve the following:

- Determine sites with low recycling participation rates;
- Target individual multifamily buildings or businesses;
- Determine why residents or employees within those buildings do not recycle; and
- Develop specific strategies for increasing recycling within these businesses or buildings.

³ Website: <http://www.emergeknowledge.com/>

⁴ Source: Re-TRAC Client Profile, "Re-TRAC Performance Exceeds Expectations in Lancaster County."
http://www.emergeknowledge.com/pdfs/Lancaster_Profile.pdf

6. Implementation Requirements

Implementing an advanced CII and multifamily recycling program would likely require additional staff time (or assistance from the EMC or a college intern) because one of the main components to a successful program is increased education. In addition, coordination with the recycling haulers is key to making the program a success. In Ulster County, the majority of CII sites and multifamily buildings are serviced by private haulers. In the City of Kingston, municipal crews service businesses and apartment buildings. Depending on the hauler, the recyclable materials are collected either commingled in one container (single-stream) or the fiber is kept separate from the glass, metal and plastic containers (dual-stream). The collection method

is determined by the hauler and/or processor. This could require that some of the education materials be tailored to a particular collection method.

7. Capital and Operating Expenses

The capital and operating expenses to implement an advanced CII and multifamily recycling program would be dependent on what ideas or recommendations the Agency chooses to implement. As stated in Section 6, Implementation Requirements, an advanced recycling program would likely require additional staff time for increased education efforts (including designing and distributing education pieces, website development, etc.), additional site visits and audits, additional data tracking, etc. Capital expenditures could include, but not be limited to, the purchase of promotional and education pieces, the purchase of software for a data collection program, and the purchase of bins or tote bags for multifamily units.

8. Diversion Potential

By implementing an advanced CII and multifamily recycling program, the Agency could see significant increases in waste diversion. The extent of the diversion is difficult to measure, as it would be dependent on how much staff time and financial resources the Agency plans to dedicate to these programs. It is likely that with each additional recycling program improvement, expansion, policy, or service level, the County would most likely see an increase in diversion.

This section provides numerous suggestions for improving or enhancing CII and multifamily recycling programs, including:

- Passing an ordinance that requires adequate outside space be designated for the placement of recycling collection containers at new CII or multifamily sites;

- Providing small recycling containers or bags to each multifamily dwelling unit to transport recyclable materials to a central collection location;

- Creating recycling information packets specifically designed for commercial property owners and leasing companies;

- Hosting a working session with business managers to discuss barriers to recycling and offer information and suggestions for improving recycling in the workplace;

- Creating a “new resident” recycling and waste reduction information packet specifically designed for multifamily residents;

- Designing and distributing multifamily recycling educational tools such as flyers, brochures, door hangers, promotional items (calendars, pens, magnets), etc.;

- Conducting a survey of residents from multifamily buildings with low participation rates;

- Expanding the commercial and multifamily recycling information on the Agency’s website;

Providing CII sites and multifamily buildings with standard, consistent signage for recycling areas including posters and labels for collection containers;

Hiring a college intern or part-time staff person to help with CII and multifamily recycling-related tasks;

Conducting more waste analyses or composition studies for businesses;

Enforcing mandatory recycling regulations by instituting fines for lack of recycling; and

Tracking CII and multifamily recycling program data either manually or via a web-based data collection system.

Obviously, the more time and effort the Agency can put towards CII and multifamily recycling issues, the greater the potential of increasing recycling participation and waste diversion.

9. Addressing Stakeholder Concerns

The stakeholders most impacted by changes to the County's CII and multifamily recycling programs include business and multifamily building owners/managers and recycling haulers.

To address stakeholder concerns, it is recommended the Agency work with the EMC, the Recycling Oversight Committee or form an advisory or ad-hoc committee to promote dialogue between the major players. The Recycling Oversight Committee already consists of County staff, Agency staff, recycling collection haulers, landlords/building owners/managers, business owners and managers, and condominium or homeowner association representatives. Discussions should include what is working, what obstacles to collecting recyclable materials are the haulers encountering, what do business owners perceive to be barriers to recycling, what are the obstacles to increasing participation, etc. The group should be encouraged to share ideas and examples of successful programs, and work together to solve CII and multifamily recycling issues. A pilot study could be coordinated among willing haulers and businesses or multifamily buildings as a way to test a new collection approach, or education tactic. The committee approach allows haulers and business and multifamily managers to see each others' perspectives, which can be invaluable.

10. Benefits and Drawbacks

Implementing an advanced CII and multifamily recycling program has benefits as well as drawbacks, as outlined below.

10a. Benefits

The benefits to the Agency may include, but not be limited to the following:

A potential increase in recycling participation from businesses and multifamily buildings;

A potential increase in the quantities of recyclable materials collected thereby creating and increase in recycling revenue at the Materials Recovery Facility;

A potential decrease in the amount of waste disposed by long-haul trucking to distant landfills;

A potential increase in cost-savings for business and multifamily building owners as a result of downsizing solid waste collection container sizes and/or service frequency levels; and

An overall increase in awareness of recycling and environmental-related issues.

10b. Drawbacks

The drawbacks to implementing an advanced CII and multifamily recycling program are strictly financial. Most program additions or enhancements would require the Agency to increase funding for additional staff and expenses.

When considering the “cost” of recycling programs there are both “economic” considerations and “non-economic” considerations. Under economic considerations, the Agency must compare the cost of recycling programs with the cost of landfill disposal, including transportation costs and long term disposal obligations. For “non-economic” considerations there are factors such as environmental sustainability, carbon footprint, public desire for and participation in recycling, and New York State Rules and Regulations. These factors should all be considered as the Agency formulates its integrated solid waste management planning efforts.

5.2.2 PUBLIC EDUCATION AND RECYCLING PROGRAM ENHANCEMENT STRATEGIES

5.2.2.3 Recycling Enforcement Efforts

Overview

The new Agency recycling enforcement program will be quite comprehensive. The Agency will send letters to large waste generators, residents, municipalities, school districts and private carters reminding them of the requirements of the Ulster County Mandatory Source Separation and Recycling Law and inform them that recycling enforcement will be increased countywide. The Agency will conduct seminars for municipal officials, school districts, sanitation workers and private haulers during which they will be reminded of their responsibilities under the Mandatory Source Separation and Recycling Law. The Agency will conduct follow-up seminars for private haulers to review proper recycling practices and to update the haulers on amendments to the Mandatory Source Separation and Recycling Law. A follow-up seminar will also be provided for municipal officials.

Throughout the year, the Agency Recycling Coordinator/Compliance Officer will conduct recycling presentations for various groups and organizations within Ulster County, including the County Legislature; town and municipal officials including Town Supervisors; municipal public

works officials and employees; real estate management companies, apartment building superintendents, co-op boards; health facilities; schools; and an environmental symposium available for the public.

Currently, all haulers operating in Ulster County have a Recycling Plan on file with the Agency detailing their collection methods and recycling promotion/educational efforts with their customers. The services vary from standard pick-up of mandated recyclables to tailored services. Generally, recyclables are separated utilizing a dual-stream system; commingled materials and fiber materials or a single-stream system; both commingled and fiber materials collected mixed together.

Additionally, the Agency will update and redesign its recycling website. The website will be updated to include recycling self-audit forms for businesses, schools and municipal facilities, and an educational video on conducting a waste audit.

1. Monitoring the Recycling Practices of Ulster County Agencies

In April and May of 2009, The Agency and the Ulster County Department of the Environment personnel conducted recycling audits at facilities owned and leased by the County to ensure that (i) the facilities were equipped with an adequate number of accessible and identifiable recycling containers; (ii) recyclables and garbage were being properly consolidated, collected and hauled away; and (iii) County employees were following proper recycling practices. The Ulster County Office Building has now become an Ulster County Partner in Recycling and is listed on the Agency website with such recognition. The Ulster County Office Building has also submitted an approved Ulster County Business and Commercial Property Waste Reduction and Recycling Plan to the Agency. The Agency plans to submit comprehensive audit reports to other appropriate facility personnel relating to their facilities by directing them to review the recommendations of the Agency and remedy any deficiencies.

2. Oops! Stickers

The Agency plans to issue two types of “OOPS” stickers to municipal (City of Kingston) and private haulers to be used when their sanitation employees find recyclables improperly commingled with garbage. During the beginning part of the year, yellow OOPS stickers will be used as warnings for waste generators; a hauler will collect the improperly mixed load of garbage and recyclables but will leave a yellow OOPS sticker behind, warning a waste generator that beginning on a designated date, such materials will no longer be collected.

After the warning period, the Agency will expect municipal and private haulers to refuse to collect garbage improperly commingled with recyclables; in such cases, a hauler could leave a red OOPS sticker on the materials, explaining that the hauler did not collect the materials because they were not properly separated.

To start, the Agency plans to provide over 80,000 red OOPS stickers to municipalities and private haulers throughout Ulster County.

3. Ride Along Program

The Agency plans to institute an annual “Ride-Along” program in cooperation with selected private haulers servicing Ulster County residents. The Recycling Coordinator/Compliance Officer will join private haulers picking up solid waste and recycling in every town, city and village, to see firsthand the problems they encounter, including contamination of recyclables when picking up materials. The Recycling Coordinator/Compliance Officer will inform and remind private haulers of the recycling guidelines, and provides red OOPS stickers to place on garbage that contains recyclables. When improperly prepared recyclables are left at the curb by the private hauler, the Recycling Coordinator/Compliance Officer provide the resident with an informational sticker and adhere it to the container explaining why recyclables were not picked up. The Recycling Coordinator will also provide a copy of the updated Ulster County Recycling Instructions Brochure to the resident. This program opens up communication between the Agency and private collection companies, so that each understand the others’ job, and how to work toward educating the public about correct recycling procedures.

4. Inspections

4a. Warning Phase

The Agency also plans to conduct inspections at both the Ulster and New Paltz transfer stations to look for recyclables improperly mixed with garbage. Throughout the beginning of the year, the inspector (Recycling Coordinator/Compliance Officer) will issue Warning Notices (in both English and Spanish) to municipal and private haulers who dumped such materials, notifying them that beginning on a designated date, the Agency would be issuing violations to municipalities and private haulers that collected recyclables improperly mixed with garbage, and that fines could be assessed for such violations.

4b. Inspections Conducted at Transfer Stations

Throughout the year, the Recycling Coordinator/Compliance Officer along with other Agency personnel (‘inspectors’), will inspect loads dumped at both the Agency Ulster and New Paltz transfer stations located within Ulster County, looking for improperly mixed loads of garbage and recyclables in violation of the Ulster County Mandatory Source Separation and Recycling Law.

During the year, the Agency anticipates inspecting thousands of loads of garbage and recyclables dumped at transfer stations in Ulster County by both municipal haulers and licensed private haulers.

4c. Waste Generator Inspections

When an inspector discovers recyclables improperly mixed with garbage in a load dumped at a transfer station, the inspector will attempt to trace the load back to the location of origin through visible observation and from information provided by the employees who dumped the load. In cases where an inspector is able to trace such a load back to the waste generator, the inspector

will visit the waste generator and inspect its external garbage and recycling containers to determine whether the waste generator is complying with the requirements of the Ulster County Mandatory Source Separation and Recycling Law.

The Recycling Coordinator/Compliance Officer will also perform waste generator inspections targeted at commercial zones throughout Ulster County as part of the Ulster County Business and Commercial Property Recycling and Waste Reduction Program. The Ulster County Resource Recovery Agency is encouraging all businesses with existing recycling or waste reduction programs to submit a completed Business and Commercial Property Solid Waste Reduction and Recycling Plan to qualify as a candidate for the Ulster County *Partner in Recycling* Program. Businesses, institutions and commercial properties with 10 or more employees (including multiple locations) and Residential Premises (including apartments and condominiums with 5 or more units) are required by the Ulster County Mandatory Source Separation and Recycling Law per Section 10 to complete and submit the plan to the Agency. For convenience, the plan is designed as a fillable pdf format located electronically on the Agency website at www.ucrra.org/recycling/PDF/BusinessRecyclingPlan.pdf

Upon receipt and review of the Commercial Solid Waste and Recycling Plan, the commercial entity will receive the Ulster County *We Recycle* decal (including a permit #0000) for window display at the place of business advocating their recycling efforts to the public. The commercial entity will be recognized as a recycling leader in the community and will be listed on the Agency website, www.ucrra.org/recycling/ucbusinessandproperty.html as an Ulster County *Partner in Recycling*. The website also contains information for commercial entities including a Business and Commercial Property Recycling Guide (a comprehensive guide for creating successful recycling and waste reduction programs) and a means to review the Ulster County Mandatory Source Separation and Recycling Law as it pertains to the commercial sector. Currently, there are over 150 commercial entities that have approved Recycling and Waste Reduction Plans on file with the Agency and have also become Ulster County *Partners in Recycling*.

The Recycling Coordinator/Compliance Officer will check external garbage and recycling containers during these inspections to ascertain whether businesses are complying with the requirements of the Ulster County Mandatory Source Separation and Recycling Law. When circumstances allow, the Recycling Coordinator/Compliance Officer will enter a business and explain to a manager or supervisor that the Agency is conducting recycling inspections in the area; if a recycling program is not in place, the Recycling Coordinator will offer assistance in determining what is needed for the business to come into compliance with the requirements of the Ulster County Mandatory Source Separation and Recycling Law. During 2010, the Recycling Coordinator/Compliance Officer performed 79 waste generator inspections as part of the Ulster County Business and Commercial Property Recycling and Waste Reduction Program.

5. Complaints

The Recycling Coordinator/Compliance Officer investigates complaints concerning alleged

violations of the Ulster County Mandatory Source Separation and Recycling Law, including complaints submitted by municipal and private haulers, businesses, and residents. Many complaints are received via the Recycling Hotline (845) 336-3336 and through email UCRRA@ucrra.org on the Agency website. Another way for the public to report non-compliance with recycling is available on the Agency website at www.ucrra.org/recycling/non-compliance.htm. The fillable form is a convenient way for residents to report *Apartment Complexes, Office Buildings, Restaurants, Non-profit Agencies, Government & Town Agencies, Commercial Properties* and *Schools* that are not recycling the mandated materials.

6. Violations

Prospective recycling violations identified by the Agency ‘inspectors’ or Recycling Coordinator/Compliance Officer are reviewed by the Agency Executive Director. Once the Executive Director approves a violation, a hearing is scheduled before the Hearing Officer and a Notice of Hearing is issued to the appropriate respondent. The Notice of Hearing informs the respondent of the nature of the alleged violation and of the date, time and place of the scheduled hearing. Respondents are afforded the opportunity to plead guilty by written acknowledgement and pay the recommended fine or appear at the scheduled hearing to present mitigating evidence or a defense to the alleged violation. At the hearing, an Agency representative is present. After the hearing is concluded, the Hearing Officer issues a written report and recommendation.

7. Ongoing Agency Enforcement Initiatives

The Agency continues to conduct the following enforcement procedures:

- Monitor the recycling practices of the County’s various agencies to ensure compliance with the provisions of the Ulster County Mandatory Source Separation and Recycling Law.

- Offer recycling presentations to interested businesses, schools, hospitals, multi-family dwellings, condominium associations, municipal officials, etc., to educate different sectors of the County on their responsibilities under the Ulster County Mandatory Source Separation and Recycling Law.

- Offer recycling audits to interested businesses, schools, hospitals, multi-family dwellings, condominium associations, municipal officials, etc., to assist these entities in developing comprehensive recycling plans.

- Investigate complaints concerning violations of the Ulster County Mandatory Source Separation and Recycling Law, including complaints submitted by municipal and private haulers, businesses, and residents.

- Continue performing waste generator inspections targeting commercial zones throughout Ulster County.

8. New Agency Enforcement Initiatives

The Agency plans to implement the following enforcement initiatives:

Inspect loads of garbage and recyclables dumped at the Agency transfer stations located in Ulster and New Paltz in order to look for violations of the Ulster County Mandatory Source Separation and Recycling Law.

Attempt to trace recycling violations uncovered at transfer stations back to the waste generator responsible for the violation.

Issue and prosecute violations of the Ulster County Mandatory Source Separation and Recycling Law against both municipal and private haulers, and waste generators.

Expand the scope of waste generator inspections. This will be accomplished by invoking a provision of the Mandatory Source Separation and Recycling Law, which allows either an 'inspector' or the Recycling Coordinator/Compliance Officer to accompany licensed private haulers on their collection routes. Riding along with, or following, haulers on their commercial collection routes will allow the Agency to review the recycling practices of a large number of non-residential waste generators in a relatively short period of time. This initiative will also ensure that waste generators are being inspected on their designated pick-up days, thereby making it easier for an inspector to determine whether the non-residential waste generator is properly recycling.

Observe municipal haulers in the City of Kingston as they operate on residential routes to ensure that haulers are providing separate collection of residential waste and garbage, and that residential waste generators are complying with the requirements of the Ulster County Mandatory Source Separation and Recycling Law.

Offer recycling seminars for residential and commercial property management companies to review their obligations under the Ulster County Mandatory Source Separation and Recycling Law. Recycling at multi-family dwellings and multi-tenant commercial building and shopping centers raises unique issues and concerns, and recycling performance at such locations has often been found to be sub-standard.

Request the assistance of Weights and Measures officials from the Department of Consumer Protection in identifying gas stations within Ulster County that fail to properly recycle.

Request the assistance of inspectors employed by the Department of Health in identifying food establishments within Ulster County that fail to properly recycle.

5.2.3 MATERIALS RECOVERY FACILITY

Dual-stream vs. Single-stream Recycling

There are two basic methods for collecting and processing recyclable materials at a Materials Recovery Center (MRF): Dual-stream and single-stream.

Under the dual-stream recycling scheme, the citizen separates paper and cardboard from the cans, plastics and glass, either by using two recycling bins, by placing the papers in a paper bag on the top of the other recyclables in the recycling bin, or by simply placing the papers loose on top of the other recyclables in the recycling bin. The two categories of recyclables are kept separate as they are placed in two separate compartments in the truck picking them up, and the two categories of recyclables are dumped separately at the MRF.

Under the single-stream recycling scheme, all of the recyclables (paper and cardboard, plastic, metal and glass) are mixed in one bin by the citizen, the bin is dumped into a truck with one compartment when they are picked up, then dumped into one pile at the MRF. The MRF then sorts these materials into paper, metals, plastics and glass.

While it is true that single-stream recycling decreases the cost of collection of recyclables and makes the collection more convenient for the hauler, advocates of single-stream recycling also claim that the convenience of this method increases the recycling rate, i.e. that citizens recycle more and throw less recyclable material in the trash. However, there is clear evidence that single-stream recycling results in contamination of paper and cardboard by residual liquids from bottles and cans, as well as by broken glass which becomes embedded in the cardboard and paper. The net result is that the paper and cardboard is less useful to paper and cardboard recyclers at the mills and therefore less valuable financially.

While single-stream recycling may increase the tonnage of materials going into a MRF, or the percentage of the solid waste stream going into a MRF, that is not the same as the tonnage of sorted material coming out of the other end of the MRF. Potentially recyclable material is lost because of contamination created when paper and cardboard is mixed with the other materials.

These claims of contamination of paper and cardboard have been substantiated by paper and cardboard recyclers, as well as by a study conducted by CM Consulting on behalf of the Container Recycling Institute (CRI). CRI selected Clarissa Morawski, principal of CM Consulting, to research this issue. Ms. Morawski is a leading expert on Extended Producer Responsibility (EPR), and has authored numerous reports on beverage container recovery systems. For this study, Ms. Morawski reviewed 60 previously-published studies, reports and articles in trade magazines. Ms. Morawski was interested to find that, as a result of the struggling economy and plunging market prices for recyclables, she is seeing increased market sensitivity to quality issues. "End markets are really starting to quantify their economic losses from poor quality of material, and from a qualitative perspective, they feel this problem is very serious

indeed and could have an impact on any future investments of capital to increase capacity of secondary feedstock.”

The report finds that there are many negative downstream impacts of contaminated feedstock due to the mixing of materials through single-stream curbside collection. “Basically, the report confirms that you can’t unscramble an egg,” explains CRI Executive Director Susan Collins. “Once the materials are mixed together in a single-stream recycling system, there will be cross-contamination of materials and significant glass breakage. Those cross-contamination and breakage issues then result in increased costs for the secondary processors.” The CRI report attempts to quantify those costs, but the study acknowledges that there is a need for more comprehensive data. “Nor are costs calculated on an apples-to-apples basis, because the tons that are handled through various recycling systems are not necessarily the same as the tons recycled” Collins observed. “If you take the contaminants out of the equation, the cost per ton recycled increases. With such high contaminant levels, some of these recycling systems are merely shifting costs to the paper mills, aluminum manufacturers, glass beneficiation facilities and glass manufacturers, and plastics recyclers.”

“To date, the impacts on various collection methods—source-separated curbside, commingled curbside, deposit/return—on the quality of materials destined for recycling have not been formally researched and documented. In fact, rarely is “material quality” or the “end-destination” of the material considered by government decision-makers when choosing an appropriate recycling system.” The report (“Understanding economic and environmental impacts of single-stream collection systems”) is also available for viewing on the Container Recycling Institute’s website: <http://www.container-recycling.org/>¹ So, the question is, “Are the Citizens being best-served by dual-stream or single-stream recycling?” While more research needs to be done, it appears that single-stream recycling does not have all the advantages claimed by proponents.

¹ Source: “Understanding economic and environmental impacts of single-stream collection systems”, Container Recycling Institute’s website: <http://www.container-recycling.org/>

Dual Stream Recyclables Collection and MRF

Most haulers in Ulster County that collect recyclables from the curbside allow residents to commingle all recyclable paper in one container, and all recyclable glass, metal, and plastic bottles and cans in another container. This is referred to as dual-stream recyclables collection. These collected recyclables are then delivered to one or more material recovery facilities (MRFs) where the dual stream recyclables are sorted into their constituent marketable commodities.

Currently, the Ulster County MRF is the only operating MRF in Ulster County that accepts dual stream recyclables from the County communities. These dual stream recycling systems evolved out of earlier efforts where materials were source separated into their constituent commodities such as newspaper, office paper, glass, etc. Dual stream systems proved to be more efficient from a collection standpoint and more convenient for program participants. Over time these

systems have become the norm for the collection and processing of residential recyclables, although as noted below, a new single stream approach is becoming increasingly more popular.

Single Stream Recyclables Collection and MRF

Single stream recycling refers to a system in which all paper fibers and containers are mixed together in a collection truck, instead of being sorted into separate categories or commodities by the resident and handled separately throughout the collection process. 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;
- reduced collection costs 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 which allows single compartment vehicles to be used for refuse or recycling, providing greater fleet flexibility and reducing the number of reserve vehicles needed. (To avoid confusing customers, a large sign/banner can be used to distinguish when a refuse truck is being used for recycling);
- participation and 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 to add new materials to the list of recyclables accepted; and
- more paper grades may be collected, including junk mail, telephone books and mixed residential paper.

Potential disadvantages of single stream recycling 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 “down-cycling” 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 (due chiefly to increased breakage of glass);
- potential for diminished public confidence if more recyclables are destined for landfill disposal due to contamination or inability to market materials.

Many of the nation’s largest waste companies are developing single stream collection and recycling capabilities. One of North America's top recycling companies, Waste Management nearly tripled the volume of material processed in its single-stream recycling facilities, from about 722,000 tons in 2002 to more than 2 million tons in 2006. (Waste Management, 2008) Allied Waste Industries is reported to be spending \$ 2 million to upgrade its recycling facility in Buffalo New York to a single stream system. (Waste News, 2008) Casella Waste Systems, Inc. operates a single stream MRF facility in Ontario County, NY and in the Chittenden Solid Waste District in the Burlington Vermont area. Casella also submitted a response to the RFI which included a single-stream MRF with a capacity of 65,000 tons per year. Waste Management, Inc. recently invested \$11 million to build a single stream recycling facility in the Syracuse suburb of in Liverpool NY. The 94,000 square feet facility is able to process up to 20 tons of recyclables per hour, and is among the largest single-stream recycling facilities in the country. This facility is contractually utilized by OCRRA. In addition to material delivered on OCRRA account, other single stream recyclables are also accepted. According to the facility representative, this single stream MRF can process 400 tons per day of single stream recyclables, and recover multiple grades of paper, glass, metal and plastic. As of June 2009, such a facility would be expected to cost approximately \$12 million to construct and equip, including the building.

In January 2010 County Waste announced its intention to develop a single stream MRF at its existing dual stream MRF on South Pearl Street in Albany (Sierra Fibers) and that it is currently providing single stream recyclables collection to all of its residential customers in the Capital District and other areas, including Ulster County. The single stream facility is now in full operation.

5.2.4 HOUSEHOLD HAZARDOUS WASTE (HHW) AND ELECTRONICS RECYCLING PROGRAM

5.2.4.1 Household Hazardous Waste Program Expansion Considerations

Program parameters to consider when evaluating the County’s HHW program include:

- Program Convenience;
- Participation Rates;
- Quantity and Types of Materials Collected/Managed; and

Each of these program parameters, and its application to Ulster County, is discussed below.

5.2.4.1(a) Program Convenience

Currently, the Agency provides Ulster County residents the opportunity to safely dispose of household hazardous waste materials at collection events held three times a year; spring, summer and fall. One way to improve the program would be to host more collection events for the public. Another way to improve the program would be to open a permanent HHW Facility at the Agency's Kingston location. Opening a permanent HHW Facility will provide a more convenient opportunity for residents to participate in this program. The facility would have more accessible hours and would be open several days per week. It is suggested that the Agency evaluate the existing storage lockers on site at the facility to determine if they can be used for storing the HHW materials. By having a permanent facility and by extending the hours/days of operation, the Agency would most likely collect increased quantities of HHW materials. Depending on the details of the agreement with the contracted vendor, it is possible the Agency could benefit from increased economies of scale by collecting more materials. Another collection option that the Agency may want to consider, in an effort to increase convenience to residents is by creating a satellite collection system.

Satellite Collection System

Satellite HHW collection facilities are designed to support a permanent processing site. These sites could be located at some of the MRDCs. Satellite facilities serve as permanent drop-off locations for program participants that typically would not travel the distance to deliver HHW materials to the central or main facility. To provide a full service program, the same HHW materials that are accepted at the permanent site should be collected at the satellite facilities. HHW materials are regularly collected from the satellites and transported to the "hub" permanent facility where materials are sorted, bulked and lab packed for recycling or disposal, or the site may be serviced directly by a hazardous materials vendor. Depending on the needs and the budget of the town, a satellite facility could be as basic as a seasonal, open-air collection site with a hazardous materials storage locker or it could include a fully enclosed building designed to be open year-round.

A year-round satellite facility design might include:

- A preengineered metal building to house a small office, a product exchange or reuse room, a mechanical room, and one unisex bathroom;
- A metal canopy attached to the building to cover two drivethrough lanes of traffic and provide shelter for staff while they unload HHW materials from the vehicles;
- Adequate parking for up to four vehicles at one time for staff persons working at the facility; and

A preengineered hazardous materials storage locker, enclosed with a chain-link fence and gate. The entire satellite facility property should also be surrounded by a chain-link fence that can be locked.

The Agency may also consider using an existing County-owned facility as an HHW (and electronics) collection facility. The size of the facility would determine if it would strictly be used as a collection and storage site or if any preliminary processing could be done on-site (such as bulking oil-based paints into 55-gallon drums). At least one hazardous materials storage locker would be required to store the waste. The storage locker would require electricity and most likely require a concrete slab be poured for its placement. The storage locker should be enclosed with a chain-link fence for safety reasons, as should the entire facility if possible. This may deter, but probably not eliminate, illegal dumping of HHW and electronics at the site.

Limited hours of operation would be preferable when operating a satellite program, keeping staffing costs to a minimum. Staff operating the facility would need to be trained under the Occupational Safety and Health Administration's (OSHA) guidelines, including 40 hours of Hazardous Waste Operations and Emergency Response (HAZWOPER) training, and/or other requirements as determined by the State of New York. The Agency could either transport the HHW materials to its permanent Facility (should one be constructed) or the Agency's contracted vendor could be scheduled for quarterly, semi-annual, or on-call collections to package, transport, and dispose and/or recycle the HHW.

The Agency would need to review local zoning ordinances to ensure this type of use would be allowable in a building/location chosen by the County, if a County building is utilized. Depending on the facility, the County may also be required to apply for a solid waste management facility permit. The Agency may consider working with one or more municipalities to provide satellite HHW collection sites. However, the Agency would need to provide guidance to the municipality(ies) wishing to establish a satellite collection site and assist in coordinating collection activities.

Other Alternative Options

Listed below are other alternative program management approaches for the Agency to consider that could result in a more cost-effective collection program, and may enable the Agency to implement another collection option within the current budget. The potential savings realized from these alternative options could be allocated for additional advertising and/or additional collection events.

Establish collection events or facilities for recyclable HHW such as antifreeze, batteries, oil, and paint (also referred to as ABOPs). These four materials typically compose about 25 percent of the Agency's total HHW disposal costs. ABOP collection sites have been used successfully in other portions of the United States. Many communities have ABOP collection sites located at municipal buildings such as maintenance facilities, public works buildings, fire stations, etc.

These collection sites are staffed and are usually opened a limited number of hours per month. ABOP collection events could also be scheduled annually in which just those four material types are collected.

Continue to instruct residents to take certain items to various retailers. Many retailers already accept certain HHW items at their place of business. For example, most automotive battery retailers take old batteries from customers in exchange for new auto battery purchases. Certain automotive repair businesses and retailers in New York are required to accept waste oil free of charge and all New York wireless telephone service providers that offer phones for sale must accept cell phones for reuse or recycling.¹ In addition, retailers including Lowe's Home Improvement Warehouse, Ace Hardware and Home Depot collect batteries and compact fluorescent bulbs for recycling. Best Buy, Staples and Office Depot collect electronics. Over thirty retailers in Ulster County are listed as accepting rechargeable batteries through the Rechargeable Battery Recycling Corporation's "Call 2 Recycle" program.² Other materials that may currently be accepted by retailers or in which drop-sites could be established include: latex paint, antifreeze, explosives, fire extinguishers, propane tanks, and electronics. Diverting these materials through other outlets may save the Agency money in disposal and recycling costs.

1 Source: NYSDEC website. <http://www.dec.ny.gov/chemical/8786.html>

2 Source: RBRC website. <http://www.call2recycle.org/>

5.2.4.1 (b) Participation Rates, Quantities and Types of HHW Materials Collected and Managed

The number of Ulster County residents that reportedly participated the County's HHW Collection Events from 2008 through 2010 is shown in Table 3-2. While the numbers seem to fluctuate from year to year, it appears the average number of participants is about 800 per year.

Most permanent HHW collection facility participation rates are in the 5 to 10 percent range. The When the number of Ulster County participants is divided by the number of occupied housing units in the County, the participation rate is calculated to be between 0.004 percent and 0.005 percent. The participation rate is very low due to the inadequate number of collection events a year (the Agency budget allows for only 3 events) and convenience factor for residents. If the Agency invested in a permanent HHW collection facility, the participation rates would greatly increase. See *Appendix* for Table 3-2.

5.2.4.2 Electronics Collection Program Expansion Considerations

Program parameters to consider when evaluating the electronics recycling program include:

- Program Convenience;
- Participation Rates;
- Quantity of Materials Collected/Managed; and
- Scope of Services Offered.

Each of these program parameters, and its application to Ulster County, is discussed below

5.2.4.2 (a) Convenience

The County currently provides two options for the collection of used electronics, free of charge to residents: the HHW collection events held several times throughout the year and at select MRDCs. The NYS Electronic Equipment Recycling and Reuse Act (Article 27, Title 26 of the Environmental Conservation Law) was signed into law by the Governor on May 28, 2010. The law will ensure that every New Yorker will have the opportunity to recycle their electronic waste in an environmentally responsible manner. The law requires manufacturers to establish a convenient system for the collection, handling, and recycling or reuse of electronic waste. Manufacturers of covered electronic equipment will be responsible for implementing and maintaining an acceptance program for the discarded electronic waste, with oversight by the NYS Department of Environmental Conservation. The Agency now provides a permanent and continuous opportunity for residents, small businesses and non-profit agencies to recycle electronics for free at the facility located in Kingston. In addition, Agency staff routinely recommends to residents a list of alternate recyclers or retail locations that service the area. As the quantities of discarded e-waste increases, the Agency may want to research other options for the disposal and recycling of used electronics, as described below.

5.2.4.2 (b) Provide Information to Residents and Businesses on E-Waste Take Back Programs

Nationally, as the quantity of used electronics in the waste stream continues to grow, there is more and more pressure being placed on the producers of electronic equipment to play some role in the proper disposal of the items they manufacture. Product stewardship has grown in recent years and some of the larger computer and electronics manufacturers as well as large retailers have implemented “take-back programs.” (It should be noted that product stewardship not only considers the end of a product’s life, but also takes into consideration the entire life-cycle impacts of a product and its packaging to reduce the amount of energy, toxins, air and water emissions, etc. that go into making a product and its packaging.)

The EPA has partnered with many electronics manufacturers and retailers to develop the “Plug-In To eCycling” program in an effort to make it easier to reuse and recycle used electronics. Some of the participating partners include Best Buy, Dell, Hewlett- Packard, Sony, Sprint, Staples, and Verizon, just to name a few. It is recommended that the Agency keep up-to-date on take-back programs and make this information available to residents and businesses via the Agency’s website, periodic mailings and other correspondence. Residents and businesses should be encouraged to use manufacture take-back programs first, before bringing used electronics to the Agency’s HHW Collection Events or Agency’s Permanent E-Waste Collection Program.

5.2.4.2 (c) E-Waste Participation Rates

The number of residents that participated in the Agency’s electronics collection program from 2008 through 2010 is shown in Table 3-2. There has been an increase in the number of participants and overall, the numbers show an upward trend. There should also be a steady

increase in material recovered due to the New York State Legislation that allows the public to recycle their used electronic equipment for free.

5.2.4.2 (d) Quantities of E-Waste Collected/Managed

The total quantities of used electronics collected in Ulster County by use of the local MRDCs, Agency sponsored collection events, retail locations and other vendors is steadily increasing each year. The overall amount of used electronics in the waste stream is difficult to estimate. EPA commissioned two reports that took different approaches to analyzing the amount of electronics in the waste stream – one relied on market research data on sales of electronics and one relied on government statistics on sales of electronics.³ By looking at waste characterization studies conducted between 1998 and 2004, the EPA estimated that the average pounds of consumer electronic discards (e.g., computer-related electronics and CRTs) per person, per year was 9.4.⁴ (That number is likely to be higher now due to more people purchasing electronic equipment and more equipment becoming obsolete faster than in past years. Also, the EPA estimate does not include cell phones.)

Applying the EPA estimate of 9.4 pounds per capita per year to the U.S. Census Bureau's estimated 2009 population of 181,440 the result is approximately 853 tons of e-waste discarded per year. In 2010, 178 tons of e-waste was collected in Ulster County or approximately 21 percent of the e-waste stream. When the tons of e-waste collected from the public were converted to pounds, the average number of pounds collected per participant ranged from 60 to 120 pounds. This appears to be in the range of other programs researched by the Agency including:

- Buck County, Pennsylvania – 108 pounds per participant (2008)
- Iowa– 81 pounds per participant (2006)
- Kansas – 92 pounds per participant (2007)
- Wisconsin– 65 pounds per participant (2008)

³ Source: EPA website, Statistics on the Management of Used and End-of-Life Electronics.

<http://www.epa.gov/epawaste/conserves/materials/ecycling/manage.htm>

⁴ Source: "Electronics Waste Management in the United States - Approach 1," EPA, July 2008.

<http://www.epa.gov/epawaste/conserves/materials/ecycling/docs/app-1.pdf>

5.2.4.2 (e) Scope of Services Offered

Ulster County's collection program for used electronics is fairly comprehensive. However, as the quantities of e-waste continues to grow, it may become more critical that the Agency offer more collection events or increase days/hours for accepting e-waste at the Agency Facility. When the state of New York ban on disposing e-waste at landfills takes effect, the Agency will need to expand the collection program. It is likely that more producer take-back programs will emerge, so it is recommended the Agency monitor this issue in order to provide its residents with the most current information.

5.2.4.3 Capital and Operating Expenses

Expanding the County's current HHW and/or electronics recycling program may require additional staff or contracted labor to collect, manage, and process additional volumes of materials in preparation for their ultimate disposal or transportation to a processing or disposal site should the Agency construct a permanent HHW Collection Facility. (The Agency currently has no such facility and no employees designated as a Solid and Hazardous Waste Facility Technician.) Also, any type of expansion would require increased staff time to develop, coordinate and implement expanded public information, outreach, and marketing programs, as well as additional data tracking, program management, etc. (The Agency currently has one full-time Recycling Coordinator dedicated to the HHW Program.) Any additional staff or staff time would result in an increase in operating expenses.

5.2.4.4 Evaluation of Public/Private Ownership and Operation Options

Public-private partnerships provide an option for municipalities to consider when expanding their HHW and/or electronics recycling program. Typically, such partnerships would utilize the financing advantages of the public sector entity (i.e., lower cost of capital) and the operational expertise of the private sector. The public/private approach might be considered for an electronics collection and recycling program or if the Agency ever chose to not be involved in the operations side of the HHW collection program.

An approach to a public/private partnership is to distribute a Request for Interest (RFI) to hazardous waste management companies with capabilities and interest in providing collection, processing, packaging and/or transportation services for HHW and/or used electronics. If the Agency considered this option, staff time would be needed to develop and distribute an RFI to companies with capabilities and interest in providing the services of an expanded HHW and/or electronics recycling program. The approach could include an incentive in which the Agency provides the land for use at a minimal cost and then contracts with a private firm to operate the collection/processing facility.

5.2.4.5 HHW and E-Waste Recycling Education

The Agency provides information on HHW and electronics disposal and recycling options on its website, www.ucrra.org, has developed a *How-To Guide for Proper Disposal of Hazardous Products* and a *Safe Alternatives to Common Household Products Guide* (available in print and also on the website) and publishes print ads announcing HHW and electronics collection events. In addition, the Agency Recycling Hotline provides information throughout the year regarding proper disposal options for HHW and used electronics. Recommendations to expand on education efforts include:

- Expansion of the collection program to include CESQGs

Send an annual letter to small businesses in the County that explains the basics of the Agency's CESQG program, including what materials are accepted in the program, what the costs are for disposal, and how to prepare the items for delivery to the Agency Facility. Work with the local Chamber of Commerce to obtain contact information for small businesses. Because this could be a large mailing, the Agency could consider sending letters to one-fourth or one-third of the businesses one year and send the remaining letters in subsequent years and continue with the rotation.

Expand/rearrange the HHW and e-waste information section of the Agency's website.

Update website to include the following pages:

Transport of HHW;

Alternative Products;

FAQ for residents; and

Provide a description of environmental and health hazards of improper use and disposal of HHW products.

Continue to partner with the MRDCs and Ulster County Department of the Environment, public libraries and County's Environmental Management Council (EMC) for dissemination of public education and outreach information. The EMC is the County's citizen advisory board for local environmental matters.

Continue to partner with Cornell Cooperative Extension (CCE) for direct educational outreach. Currently, CCE includes hazardous waste information in its recycling outreach for the County. Keep CCE informed of the new e-waste legislation or take-back programs that might develop in the future.

Consider distributing promotional items such as pens, magnets, calendars, etc. to promote the Agency's HHW and electronics recycling programs. These inexpensive marketing tools have the potential for the Agency's message to be seen over and over again.

5.2.4.6 Revenue Options

HHW and residential e-waste recycling programs are typically not revenue-generating programs for cities and counties. More often, they are justified expenses to ensure these hazardous materials are managed properly and kept from harming the environment. CESQG programs however, should be structured to generate enough revenue to cover the capital and operating costs of managing the hazardous waste from the small business sector. It is recommended the Agency allow CESQGs to utilize this program and charge for the management of hazardous materials and charge small businesses for the collection. It is recommended the Agency make a

concerted effort to increase the awareness of the HHW collection program to CESQGs in an attempt to include CESQGs in using the collection program.

5.2.4.7 Addressing Stakeholder Concerns

If the Agency chose to expand its HHW collection program to include a satellite facility, the residents of certain cities, towns and villages within the County should benefit greatly from this service. If the satellite facility was a joint venture between a municipality and the Agency, any concerns related to financing, staffing and operations would need to be resolved before such a project could move forward.

5.2.4.8 Implementation Requirements

In order to expand the current HHW and/or electronics recycling program, Agency staff would need to evaluate each expansion option as it relates to:

- Federal and State rules and regulations;
- Local permitting;
- Storage issues;
- Handling of materials;
- Staffing requirements;
- Health and Safety issues;
- Capital expenditures and operating costs; and
- Other program-specific considerations.

5.2.4.9 Benefits and Drawbacks

Implementing an expanded HHW and/or electronics recycling program has benefits as well as drawbacks, as outlined below.

5.2.4.9 (a) Benefits

The benefits to Ulster County may include, but not be limited to, the following:

- A potential increase in HHW and e-waste collection participation from both residents and businesses;
- A potential increase in the quantities of materials collected;
- A potential decrease in the amount of HHW and e-waste disposed of as garbage;

- Avoided disposal costs of electronics by providing a convenient opportunity for residents and small businesses to recycle e-waste through the Agency's permanent on-site collection program;
- Environmental benefits from diverting materials from being improperly disposed, by offering more convenient disposal and recycling options for HHW and e-waste; and
- Overall increased health & safety of the communities located within Ulster County.

5.2.4.9 (b) Drawbacks

The drawbacks to implementing an expanded HHW and/or electronics recycling program would most likely be financial. Most program additions or enhancements would require the Agency to increase funding for additional staff and expenses. By increasing the quantities of HHW and electronics collected, the Agency would incur increased collection, processing, transportation, disposal and recycling fees.

However, any fees incurred are likely to be less expensive collectively when compared to the cost of landfill disposal on a per ton basis or per cubic yard of air space, or when compared to remediation costs due to a hazardous waste spill or incident.

When considering the "cost" of recycling or diversion programs there are both "economic" considerations and "non-economic" considerations. Under economic considerations, the Agency must compare the cost of recycling programs with the cost of landfill disposal, including transportation costs. For "non-economic" considerations there are factors such as environmental sustainability, carbon footprint, public desire for and participation in recycling, and New York State Rules and Regulations. These factors should all be considered as the Agency formulates its integrated solid waste management planning efforts, regarding hazardous waste and e-waste.

5.2.5 COMPOSTING DIVERSION OPTIONS

1. Large-Scale Composting

Currently the Agency actively composts yard waste at the Ulster Transfer Station Facility. In an effort to increase diversion, the Agency could consider composting additional materials such as biosolids (the nutrient-rich organic materials resulting from the treatment of sewage sludge) and/or food waste.

2. Biosolids Composting

Currently the Agency transports biosolids that are delivered to a processing facility in Buffalo, New York. The disposal of biosolids is a County-wide issue and diversion options for biosolids will be discussed in more detail in the Evaluation of Alternative Technologies - Section 4.7.

3. Food Waste Composting

Commercial/industrial/institutional (CII) food waste (typically generated from grocery stores, hotels, restaurants, and institutions such as universities, hospitals and prisons) is an ideal feedstock for composting. The material usually consists of pre-consumer food waste such as raw fruit and vegetable peelings and meat waste,¹ as well as postconsumer waste such as leftovers. In addition, certain types of paper (including nonrecyclable waxed corrugated cardboard, paper towels, paper plates, etc.), can also be diverted from the garbage and composted. Residential food waste is also an ideal feedstock for composting, however, it is logistically more difficult to collect than CII food waste. The downstream diversion of food waste will be discussed as part of the municipal solid waste (MSW) composting options in the Alternative Technologies Evaluation – Section 4.7.

¹ Source: Typically fats, meats, and bones are acceptable in large-scale, properly managed composting systems. Cornell Waste Management Institute <http://cwmi.css.cornell.edu/smallscalecomposting.htm>

4. Backyard Composting

Currently the County encourages backyard composting and contracts with Cornell Cooperative Extension (CCE) for direct educational outreach. CCE distributes a quarterly composting newsletter and has a Home Composting Demonstration Site for members of the community to visit that features commercial and homemade compost bins. Also, the Agency sells backyard compost bins (at cost) year round at the Ulster facility. In an effort to increase backyard composting, the County and CCE could consider offering more workshops throughout the year and increase the advertising for compost bin sales. In addition, the Agency could consider expanding the Backyard Composting information on the Agency website to include more information such as troubleshooting, health and safety, preventing animal nuisances, pH and temperature control, etc. Links to other organization's backyard composting websites are provided in Section 5.2.5.8 - Resources.

5. Small-Scale Vermicomposting

Vermicomposting (composting with worms) is an easy way to divert food waste from the garbage by turning food scraps into a rich soil amendment. It can be done indoors, requires little space, and is odorless, if maintained correctly. Vermicomposting typically utilizes redworms, also called “red wigglers,” because the species thrive in small, confined spaces and they tolerate a wide range of conditions. CCE usually offers a worm composting workshop for Ulster County residents every year. Attendees receive a worm container, bedding and starter worms. In addition, CCE also holds an annual vermicomposting workshop specifically designed for school teachers. One option the County may consider to increase worm composting, is to add a vermicomposting webpage to the Agency's website. The information could include how to start a worm composting bin, troubleshooting, and where to purchase redworms. In addition, the County could consider having a “worm sale” once a year. Vermicomposting can be an educational project for school children and is incorporated into waste reduction and recycling outreach efforts. The Agency has a working worm composter for staff generated food waste.

This is used as a teaching demonstration project for school/public tours promoting composting of organic waste.

6. Food Waste Collection/Diversion

Nationwide, food waste accounts for an estimated 12.5 percent of MSW.² At a time when many recycling programs have hit a plateau, food waste is commonly the next segment of MSW to be tapped for diversion. Collecting food waste is often more challenging than collecting typical recyclable materials. Some of the hurdles to collecting food waste from both residential and CII generators include space considerations, the costs of collection containers and vehicles, and the distance to the composting/processing facility.

Currently, there are no large-scale facilities in Ulster County that actively compost postconsumer food waste or co-compost food and yard waste. The State University of New York (SUNY) New Paltz campus composts some yard waste in a static pile and transports food waste to McEnroe Farms where it is co-composted with yard waste and manure. Delaware County, east of Ulster County, owns and operates an MSW co-composting facility near Walton, New York. Large-scale food waste or organics composting facilities are typically more economically viable in locations that have high tipping fees for MSW disposal (>\$50/ton), whose construction and/or operations are subsidized in some way, or where there are specific long-term economic considerations that lower the present worth cost over a 20-year planning period. Nevertheless the following information on food waste collection and diversion is provided for the Agency's reference, as food waste diversion opportunities may arise in the future.

² Source: "MSW Generation, Recycling, and Disposal in the United States: Facts and Figures for 2007," U.S. EPA. <http://www.epa.gov/epawaste/nonhaz/municipal/pubs/msw07-fs.pdf>

6a. Residential Collection

Several communities in the United States have implemented curbside collection of residential food waste and food-soiled paper (e.g., paper towels, napkins, paper plates, tissues, etc.) in the same container as yard waste. Links to some of these programs (including Seattle, WA; San Francisco, CA; Alameda County, CA; Cedar Rapids, IA; and Hutchinson, MN) are provided in Section 5.2.6.8 - Resources. The co-collection of food waste with yard waste is possible in places where processing facilities receiving the materials are permitted to accept both food and yard waste. While some of the program examples are located in communities much larger than

Ulster County, it should be noted that two residential organics collection programs are operating on a smaller scale: Hutchinson, Minnesota, with a 2007 population estimate of 13,929 and Cedar Rapids, Iowa with a 2007 population estimate of 126,396. Most residential food waste collection programs utilize lidded, wheeled carts and automated collection vehicles for the curbside collection of food and yard waste. Because the Agency does not operate or manage the collection of MSW, recyclable materials or yard waste in the County, the issue of purchasing or using carts for organics collection would have to be researched and discussed with the municipalities and private haulers who operate collection programs within the County. The issues include, but are not limited to:

- Cost of carts;
- Compatibility with haulers' current collection vehicles;
- Cart maintenance; and
- Residents' lack of space to store carts.

In addition to the types of carts, many organics collection programs are using aerated carts such as SSI Schaefer's "Compostainer"³ or IPL's "Bio Cart."⁴ While the quantities of organic materials may increase with the use of wheeled carts, there is also the potential for an increase in contamination of "non-targeted" materials (items that are defined by the County as not acceptable) to be placed in the carts. Some residents may place garbage or recyclable materials in their organics cart if they are confused about the program, their trash container is full, or as a way to avoid purchasing specially-marked bags, such as those required for garbage collection at some of the Municipal Recycling Drop-off Centers (MRDCs).

3 Source: SSI Schaefer website. <http://www.ssi-schaefer.ca/WR/WRproAP.html#wr2>

4 Source: IPL website. <http://www.ipl-plastics.com/Afficher.aspx?page=197&langue=en>

6b. Commercial/Industrial/Institutional Collection

Implementing a food waste collection program with the CII sector can be easier than implementing a residential food waste collection program, because there are fewer generators so education tends to be more site-specific or one-on-one. Also, because of the larger quantities generated, a commercial business can often use a dumpster, a roll-off container, or a compactor for food waste which many haulers are capable of servicing using their current fleet of collection vehicles. Pre-consumer commercial food waste, such as trimmings produced by restaurants and grocery stores, is ideal for composting because it tends to be produced in higher volumes and is less likely to be contaminated with packaging. Grocery stores have a financial incentive to reduce their waste stream because not only is trash service expensive, but trash takes up valuable space. In some communities, stores have contracted for organics collection or they backhaul compostable materials to a distribution center where it is directed to a composting facility.

Some grocery store food discards may be packaged in plastic wrap, which does not decompose and can pose handling issues in a compost system and contamination issues if not screened out at the end of the process. To reduce the impact of plastic packaging, grocery stores should be educated to remove packaging prior to setting out material for collection, and the finished product should be screened to make sure no stray plastic bits remain. Fats, meats, and bones are acceptable in a large-scale composting system.

The Windham Solid Waste Management District (WSWMD) in southern Vermont accepts old corrugated cardboard (OCC) and non-recyclable paper in its commercial composting program for economic reasons. While they had preferred to recycle OCC back into paper products, it was not economical to dispatch a separate truck for OCC collection and a truck for organics collection in their rural service area.⁵

In Seattle, post-consumer commercial food, such as cafeteria waste contaminated with takeout containers, paper plates, cups, etc. is diverted and processed by co-composting it with yard waste. A key to success with post-consumer food waste is that the containers and cutlery must be compostable. Many products advertise that they are “biodegradable,” although whether a material that claims to be biodegradable can *actually* be composted is dependent on the receiving facility and its processes. Therefore a material testing and approval program, such as the one managed by Cedar Grove Composting⁶, the private company that processes Seattle’s post-consumer cafeteria waste, is suggested before biodegradable items are accepted in the food waste program.

The St. Paul, Minnesota Independent School District recently implemented a largescale, post-consumer food waste composting program. This district has more than 42,000 students and 80 different schools. In the 2007/08 school year, 52 schools within the district implemented a food-for-livestock program. Each of these sites has trained its students and staff to source-separate their food waste in the cafeterias. The food waste is then cooked per Minnesota Animal Health Standards and fed to pigs. The program is estimated to reduce the volume of commercial waste requiring disposal by nearly 30 percent. This has resulted in cost savings to the district because of reduced MSW collection costs realized through a resource management program. As collection and processing capacities develop over time, it is expected that more communities will consider mandatory diversion and/or disposal bans for food waste.

⁵ Source: “Public/Private Partnering Facilitates Organics Diversion,” by Robert Spencer, BioCycle June 2008.

<http://www.jgpress.com/archives/free/001662.html>

⁶ Source: Cedar Grove Composting website. <http://www.cedar-grove.com/services/compost.asp>

7. Rules and Regulations

The management of organics composting, including siting and permitting, is regulated at the state level with the exception of biosolids and animal manures. In New York, composting biosolids is regulated by both State and Federal regulations. New York state requirements for facilities involved in composting of sewage sludge, food, yard and other solid wastes are subject to regulation under the Comprehensive Revisions and Enhancements to Title (6 NYCRR) Subpart 360-5: Composting Facilities.⁷ The regulations apply to the construction and operation of composting and other organic waste processing facilities for mixed solid waste, source separated organic waste, biosolids, septage, yard waste and other solid waste. These requirements include general requirements, pollutant limits, operational standards, monitoring, record keeping and reporting. Permitted facilities in New York must submit an annual report pertaining to the above requirements. Local regulations related to the collection of organics typically include hauler licenses/permit requirements and published ordinances.

⁷ Source: NYSDEC website. <http://www.dec.ny.gov/regs/4411.html>

8. Implementation Requirements

Currently Ulster County actively composts yard waste (including leaves, brush, grass clippings and tree limbs) at the 18 Municipal Recycling Drop-off Centers (MRDCs). In an attempt to increase organics diversion from the landfill, the Agency would need to research and evaluate its

diversion options. Composting food waste (with MSW) and biosolids is discussed in the Alternative Technologies Evaluation Section 4.7. Expanding backyard composting and small-scale vermicomposting could be done with increased staff effort. However, to implement a large-scale food waste diversion program (separate from an MSW composting program) would require the development of the infrastructure needed to collect and process the material. As stated previously, there are no facilities in the County that actively compost food waste or co-compost food and yard waste at this time. Whether a public or private facility is developed, the Agency would need to consider:

- Facility permitting;
- Acquisition of feedstock;
- Management/monitoring of composting operation;
- Health and Safety;
- Cost; and
- Other sitespecific considerations.

In addition, the collection of the organic material would need to be evaluated for both the residential and commercial sectors and would include, but not be limited to:

- Collection container options and compatibility with haulers' current collection vehicles;
- Public Education; and
- Cost.

The Agency wants to consider implementing a pilot study to gather more data on the logistics and effects of an organics collection program. Public/private ownership and operation of a food waste/organics composting facility may be an option for the Agency to consider. Typically, such partnerships would utilize the financing advantages of the public sector entity (i.e., lower cost of capital) and the operational expertise of the private sector. If the Agency considered this option, staff time would be needed to develop and distribute a Request for Information (RFI) to firms with capabilities and interest in providing the services of composting organic materials. The approach could include an incentive in which the Agency provides the land for use at a minimal cost and then contracts with a private firm to operate the processing facility. Another option the Agency may consider researching is a food waste-to-livestock program. Such a program has not been implemented in New York State and would require approval from the state's Department of Agriculture and/or Department of Health. The Agency may consider establishing an organics diversion working group or committee. The group could be charged with researching the various diversion options, identifying barriers to each option, and be asked to make specific recommendations to the Agency's solid waste management staff.

9. Education Tactics

The education requirements of implementing an expanded organics diversion program will depend on the diversion options that are ultimately chosen: backyard composting, vermicomposting, residential and/or commercial food waste collection, etc. The Agency will continue to work with CCE to promote backyard composting, grasscycling, vermicomposting (for residents and schools), composting workshops, and compost bin sales. The option that would require an increased level of public education would be a food waste collection and composting program. In order to receive feedstock that is appropriate for composting and free of contaminants, Agency staff would need to educate the generators of the food waste (i.e., residents, restaurants, institutions, grocery stores, etc.) as well as the collectors (haulers) of the food waste. Educating residents would require a coordinated plan to disseminate public information before the program is to be implemented (direct mailings, coverage in community newspapers, local cable access programs, neighborhood advisory groups, etc.) as well as during implementation and throughout the life of the program (cart tags/notices). The City of San Francisco's contracted hauler uses photographs to educate customers what materials should be placed in what cart (garbage, recycling, compostables).⁸

The Agency currently provides technical recycling and composting assistance to businesses. This service may be in higher demand if the Agency implemented a food waste collection and composting program. Certain businesses may need a waste audit to determine if they generate enough food waste to participate in the program. As with any program change, the Agency's website will be kept up-to-date with diversion program information. Many people have come to rely on their municipalities' website for solid waste-related instructions and it is a relatively low cost means of providing information.

⁸ Source: "Food Waste Diversion Promoted on the Street," by Rhodes Yepsen, BioCycle March 2009.
http://www.jgpress.com/archives/_free/001833.html

10. Capital and Operating Expenses

Implementing an expanded organics diversion program may incur considerable costs to the Agency. The extent of the capital and operating expenses depends on the option(s) considered by the Agency. Dedicated staff time would be required to analyze each diversion option. If the Agency was to be involved in the development and operation of a food waste composting facility, the capital expenses would be great. Costs could include, but not be limited to: land acquisition, costs associated with designing and constructing the composting facility, equipment required to handle and process the organic feedstocks, labor required to operate the program, etc. However, if a food waste composting facility were to be developed by a private entity, the Agency could have less capital expenditures. Regardless of the approach, a large capital expenditure for a food waste collection and diversion campaign would be the ongoing promotional and education pieces. Additional staff time would be required to monitor the program and work with the private haulers on collection issues. A successful organics diversion

program would inevitably reduce the amount of waste requiring disposal, thus reducing tipping fees and transportation expenses from exporting to an out-of-county landfill.

11. Diversion Potential

To determine the current and future organic waste quantities available to the County, the Agency will survey large private industrial and commercial solid waste generators in an attempt to gather data including the tonnages generated and the tonnages recycled, composted or diverted for each organic material. It is assumed that certain paper grades such as newspaper, corrugated cardboard, magazines, high grade office paper and mixed recyclable paper (box board, junk mail, etc.) would be recycled through typical residential and commercial recycling programs, rather than composted.

12. Addressing Stakeholder Concerns

Stakeholder concerns regarding an expanded organics diversion program will depend on the option(s) considered by the Agency. Concerns may include, but not be limited to:

- Resistance from residential and CII stakeholders to an organics collection program;
- Concerns from business owners regarding perceived increases in time and labor to divert multiple materials;
- Concerns from haulers and municipalities that currently operate their own collection programs being required to collect and haul an increased number of source-separated materials;
- Concern that the costs associated with implementing a residential curbside cart based collection program for organics may be high; and
- Concerns related to siting and permitting issues for a food waste composting facility.

13. Benefits and Drawbacks

Implementing an expanded organics diversion program has benefits as well as drawbacks, as outlined below.

13a. Benefits

Potential benefits of increased organics diversion include:

- A decrease in the amount of waste disposed via export to an out-of-county landfill;
- Benefits related to the increased use of finished compost, a by-product of organics diversion, (by residents, landscapers, the County, etc.) include a reduction in need for fertilizers, providing nutrients to deficient soils, prevention of soil erosion and nutrient run-off, and feedstock for land reclamation projects. The benefits to implementing a residential curbside cart-based collection program for organics may include, but not be limited to, the following:

- Increased convenience to residents by switching to lidded, wheeled carts;
- Increased quantities of organic materials collected due to adding food waste to the diversion program in addition to yard waste;
- Improved residential neighborhood aesthetics by reducing the amount of yard waste litter caused by windy conditions as well as having uniform containers for every household;
- Protection of organic materials from excess moisture on rainy days, which can make materials and containers heavier when manually collected;
- An increase in productivity by the haulers because the collection crews would be able to service more households in one day than they are able to service using the current, manual collection method; and
- The potential to lower haulers' workers compensation claims because workers would be doing less lifting compared to the current manual collection of yard waste.

13b. Drawbacks

Potential drawbacks of increased organics diversion include:

- An increase in capital and operating expenses;
- An increase in Agency staff time to research diversion options, determine available feedstocks, design a facility, proceed through a facility permitting process, work with haulers regarding collection issues, etc.; and
- Addressing concerns and potential resistance from haulers and residential and CII stakeholders to an organics collection program. The drawbacks related to implementing a residential curbside cart-based collection program for organics may include, but not be limited to, the following:
 - A potential for increased quantities of contaminants or non-targeted materials to be collected, however education and enforcement efforts can mitigate this risk;
 - Implementing a cart-based collection system for organics may impose a financial burden on some haulers to purchase new, fully-automated collection vehicles or retrofit current vehicles with semi-automated cart tippers. These costs are not likely to be included in the hauler's current equipment budget;
 - Implementing a cart-based system may impose a financial burden on the Agency if the Agency subsidizes the program in any way (e.g., by purchasing the carts);
 - Some businesses may not have space for an organics collection container; and
 - Some residents may resist the use of carts, citing lack of space to store the cart.

14. Resources

Provided below is a list of resources which may be beneficial to the Agency when researching organics diversion options.

14a. Backyard Composting

- Cornell Waste Management Institute <http://cwmi.css.cornell.edu/smallscalecomposting.htm>
- Maryland Cooperative Extension Home and Garden Information Center
http://www.hgic.umd.edu/_media/documents/BackyardCompostinghg35pfv.pdf
- U.S. EPA– Backyard or Onsite Composting website.
<http://www.epa.gov/waste/conserve/rrr/composting/backyard.htm>
- University of Wisconsin Extension
<http://www4.uwm.edu/shwec/publications/cabinet/composting/CommonBackyardCompostingQA.pdf>

14b. Small-Scale Vermicomposting

- Maryland Cooperative Extension Home and Garden Information Center
Indoor Redworm Composting
http://www.hgic.umd.edu/_media/documents/IndoorRedwormCompostingHG40pfv.pdf
- New York Worms <http://www.nyworms.com/vermicomposting.htm>

14c. Curbside Collection of Food Waste

- Alameda County, California <http://www.stopwaste.org/home/index.asp?page=528>
- BioCycle, “Diverting Food Residuals in Minnesota,” by Roberta Wirth, September 2005. http://www.jgpress.com/archives/_free/000525.html#more
- BioCycle, “Organics Cart and Container Trends,” by Nora Goldstein, October 2007. http://www.jgpress.com/archives/_free/001469.html
- City of Cedar Rapids, Iowa <http://www.cedar-rapids.org/solidwaste/prepare.asp>
- City of Hutchinson, Minnesota– Curbside Organics Collection
<http://www.ci.hutchinson.mn.us/composting.html#curbside>
<http://www.ci.hutchinson.mn.us/pdf/organiccompostprog.pdf>
- King County, Washington <http://your.kingcounty.gov/solidwaste/garbage-recycling/food-collection.asp>
- City of Olympia, Washington <http://www.ci.olympia.wa.us/city-utilities/garbage-and-recycling/organics-andyard-waste/organics-and-yard-waste-the-basics.aspx>
- Resource Recycling, “Getting Organics to the Curb,” by John Jaimez, May 2005.
- City of San Francisco, California <http://www.sfrecycling.com/residential/composting.php?t=r>
- City of Seattle, Washington– Food & Yard Waste Collection
http://www.seattle.gov/util/Services/Yard/Yard_Waste_Collection/index.asp
- SWANA, “Curbside Collection of Residential Food Waste,” December 2008 (available free of charge to SWANA members). <http://swanastore.stores.yahoo.net/cucoofrefowa.html>

14d. Food Waste-to-Livestock

- Hennepin County, Minnesota
<http://www.co.hennepin.mn.us/portal/site/HCInternet/menuitem.3f94db53874f9b6f68ce1e10b1466498/?vgnnextoid=f866b70a699fc010VgnVCM1000000f094689RCRD>

□ North Carolina Division of Pollution Prevention and Environmental Assistance
http://www.p2pays.org/ref/20/19926/P2_Opportunity_Handbook/7_II_A_5.html

□ University of Minnesota
<http://www.mntap.umn.edu/food/67-FeedingFood.htm>

5.2.6 CONSTRUCTION AND DEMOLITION DEBRIS RECYCLING

The Agency will not develop a C&D processing program. The high capital investment, impact on the likely site (the Ulster property), minimal return and existence of three area private sector facilities serving this purpose mitigate against such development. However, the Agency will continue to receive C&D waste at its transfer stations, and to provide roll-off containers to customers who require this C&D service, and to separate components of C&D in its processing of mixed MSW at its transfer stations.

5.2.7 MUNICIPAL RECYCLING DROP-OFF CENTERS (MRDCs)

The Municipal Recycling Drop-Off Centers are a key to the success of the Agency's system. They provide the citizens of the participating jurisdictions the alternative to self – haul MSW and regulated recyclable materials to convenient and accessible drop off facilities. Citizens can drop off regulated recyclables for free and pay reasonable charges for disposing of MSW. The MRDCs are a cost-effective alternative to private sector collection contracts. The Agency will seek to extend the Solid Waste Management contracts with the municipalities, which provide, among other things for the MRDC operating obligations of the municipalities and the Agency, for the duration of the Plan extension period. In order to accomplish this, the Agency will review the current system with each municipality, and will work to reduce the costs of operating the MRDC through scheduling, combining MRDCs (if that does not impact customer convenience) or through changes to the MRDCs or the equipment serving them. Most pertinent here would be the conversion of roll-offs to compactor units at appropriate sites, thus reducing the number of trips and costs to the municipality and the Agency. Such conversion has already occurred at the town of Saugerties MRDC (which also services the towns of Woodstock and Shandaken) and the town of Wawarsing MRDC.

5.2.8 TRANSFER STATIONS

The Agency will continue to maintain its Transfer Stations at Ulster and New Paltz as regional facilities. Under the 10 year operating permits, improvements will be made to the facilities as authorized by the NYSDEC. Certain improvements are currently being implemented after public bid. At the New Paltz transfer station the Agency is installing a new scale and safety improvements. At the Ulster Transfer Station, construction of a spill prevention system is underway. Another improvement being discussed is a potential leachate collection system for transfer trailers. This will allow outside storage of trailers loaded with processed MSW. This will in turn permit the queuing of trailers which increases the operating efficiency and lowers operating costs at the Transfer Stations.

Most important, though, is the Agency's current pursuit of a modification of the Part 360 operating permit for the Ulster Transfer station. The current throughput limits at Ulster are inadequate to address an increase in MSW when the Agency began receiving approximately 40,000 tons of MSW per year from Waste Management. Furthermore, the current limits are inadequate to address daily fluctuations in MSW throughput caused by various factors, including increased amounts of MSW received after holidays, or after disruption of the system by weather or temporary unavailability of the landfills. Finally, the County Legislature is currently considering an amendment to Local Law No. 9 of 1991 (the "flow control law"). Enforcement of flow control could result in an increase in MSW because generators or haulers in Ulster County would be prevented from disposing of it in other counties. The Agency estimates an additional 10% to 20% of MSW may be received if flow control is implemented. The Agency applied for the permit modification in January of 2010, and expects a favorable response from NYSDEC in the near future.

5.2.9 SOLID WASTE HAULING

The Agency will continue to use contractors to haul processed MSW to its contracted landfills, Seneca Meadows and High Acres. The hauling contractors Santaro Development LLC, D&N and Michael Spada have contracts which currently expire on December 31, 2012. It is the Agency's intent to negotiate multi-year extensions of those agreements with the existing haulers, based on their continued acceptable service. If these negotiations are unavailing, then the Agency will publically bid those services as it did in 2010. The Agency expects that bidding for the MSW hauling contracts will continue to be competitive.

5.2.10 PRIVATE LANDFILL DISPOSAL

Disposal at out of county landfills is the most practical disposal alternative for the study period. The agency's transfer station and hauling system is mature and functions smoothly. The landfills used by the Agency have sufficient capacity for the Agency's solid waste stream over the next ten years. It is likely that the landfills will negotiate acceptable pricing with the Agency extending the existing contracts through the planning period. The costs of this system are reasonable and substantially less than the costs that would be incurred if the Agency sought to plan, design, site and construct a solid waste facility in Ulster County. Other alternatives to the current system are not financially competitive, nor do they have adequate capacity to handle the Agency's requirements. For instance, the Dutchess County Resource Recovery facility in Poughkeepsie, while only 20 miles from the New Paltz Transfer Station and 35 miles from the Ulster Transfer Station, charges approximately 3 times the fee charged by the landfills and does not have sufficient capacity to handle but a small portion of the County's solid waste. The Hudson Falls facility also charges much more than the landfills, is approximately 100 miles from the transfer stations and has limited available capacity. The Taylor biomass project would located within 50 miles of the New Paltz Transfer station and 35 miles within the Ulster station, but it is not yet constructed; has a projected user fee much higher than the landfill costs but this option will be evaluated as the facility becomes operational. Alternative technology can be used

with regard to sewage sludge. The Agency will work to negotiate a contract with a local municipality, company or Rockland County to receive sewage sludge, thus avoiding the inordinate cost and expense of hauling the sludge to Buffalo, New York. The Agency will take steps to reduce the cost of long-distance hauling/landfilling solid waste, as well. Increasing recycling will reduce the amount of solid waste to be hauled – resulting in lower costs. Furthermore, the composting of organic waste received at the transfer stations will dramatically reduce the weight of solid waste hauled and disposed of at the landfills.

5.3 SYSTEM OPERATING COSTS AND FINANCING

5.3.1 System Operating Costs

The costs of the Ulster County Solid Waste and Recycling System throughout the planning period should continue to be reasonable when compared with other regional systems. No major increases in operating costs (without a concomitant increase in revenues) are envisioned. If flow control is implemented, and a projected 10% to 20% increase in MSW is received by the Agency, the net cost of operating the system will not increase dramatically, but the allocation of the costs of the system will be changed. The main impact of successful enforcement of flow control is that a uniform fee for disposal of MSW will be charged to all users of the system. The discounted fees now charged to implement contractual flow control with the major MSW collection companies would no longer be charged. MSW would be brought into the system by force of law, not negotiated contracts containing necessary discounts. The Agency would establish a uniform rate applicable to all MSW being received by it. This will result in a reallocation of the costs of the system. If flow control is successfully enforced, the users of the system would pay 100% of the costs. There would be no Net Service Fee charged to the County under the Service Agreement between the Agency and the County, and, therefore, County taxpayers would no longer pay a percentage of the system cost. It should be noted that the system's costs were supposed to be paid 100% by the users under the original SWMP, and, in fact were paid 100% by the users until 1998, when the first Net Service Fee was collected by the Agency from the County government. In the ensuing years of the post-*Carbone* era, the County taxpayers shared in paying the costs of the system. During this period though, the users continued to pay by far the greatest percentage of the cost. It should be noted that if flow control is not implemented, the Agency will continue the current system, which is based upon economic flow control and cost-sharing by the users of the system and the Ulster County taxpayers. The Agency projects that the current system, which has been the operating paradigm since 1998, will continue to provide efficient and cost-effective MSW services as it has over the past 13 years.

The projected increase in receipt of MSW because of flow control will not overburden the Agency's operating system, as long as NYSDEC grants the modification to the NYCRR Part 360 permit at the Ulster Transfer Station permitting an increase in MSW throughput. Both transfer stations have the capacity to deal with the projected increase in MSW and the Agency's staffing

is adequate for such purposes. Operating costs will naturally increase because of the increased tonnage, but the cost increase will be offset by the Agency's charges for such increased amounts.

Finally, MSW amounts processed through the transfer station/long-haul/landfill disposal system will be reduced by the recycling initiatives described elsewhere in this document. Most notably, a successful organic composting program would dramatically reduce the amount of MSW currently processed, saving capacity and costs.

5.3.2 System Financing

The Agency has authority to issue public debt to finance the capital requirements of the system. The Agency's agreement with the Ulster County government provides that the Agency does not have to obtain any prior approval from the County before it issues debt, unless the total outstanding debt will exceed \$40 million. The current debt level is \$23 million. It is likely that equipment replacement over the planning period will necessitate the issuance of public debt. Equipment replacement borrowing would not in and of itself involve long-term debt as the term of bonds issued must relate to the useful life of the equipment purchased. However, should the Agency proceed with new major repairs or improvements, such as the construction of an organic composting facility, long term public financing would probably be needed. While the current volatility of the economic system will no doubt have an impact on the costs of borrowing, the favorable bond rating of the County of Ulster and the Agency's borrowing capacity are positive factors if long term borrowing must be considered.

5.4 COMPREHENSIVE RECYCLING ANALYSIS

The Agency prepared a Comprehensive Recycling Analysis pursuant to State law (the "CRA") at the same time it prepared the original Solid Waste Management Plan. The reduction, reuse and recycling information contained in this document updates and amends not only the original Solid Waste Plan, but the CRA as well.

5.5 COORDINATION WITH LOCAL GOVERNMENTS AND THE PRIVATE SECTOR

In order to have a successful System, the Agency must maintain a cooperative relationship with the County government, the governments of the municipalities of the County and private sector users of the System, providers of service and markets. While the Agency is an independent public benefit corporation, it cannot provide service in a vacuum or act by unilateral fiat. Its powers within the geographical area of the County and the subject matter area of solid waste are broad, but by no means controlling. Coordinating its provision of service and informing the County, local governments, private sector companies and the general public of the status of its work and pricing are major goals of the Agency.

The Agency's relationship to the County government is discussed in detail elsewhere in this plan update. See Section 6.1. The Solid Waste Service Agreement defines the cooperative relationship between the County and the Agency.

The Agency has Municipal Solid Waste Agreements (SWMAs) with the towns of Saugerties, Woodstock, Shandaken, Ulster, Esopus, Lloyd, Marlboro, Shawangunk, Wawarsing, Denning, Hardenbergh, New Paltz, Gardiner, Plattekill, Rochester, Hurley, Kingston, Olive, Rosendale and Marbletown, and the city of Kingston. These agreements, which provide the specifics of the relationship of the Agency to the municipalities of the County, are more fully described in Section 6.4 of this Plan Update. In addition to the contractual requirements, the Agency tries to foster a cooperative relationship with the municipalities by meeting with town supervisors and the mayor, providing information on current issues such as flow control, single stream recycling and budgetary matters. It tries to coordinate services wherever possible, especially in the area of recycling. HHW days have been scheduled in various municipalities. Educational programs are coordinated with municipalities and school districts. When extensive flooding occurred in the town of Ulster in 2005, the Agency stepped in as contractor under FEMA, and assisted the town with the clean up and disposal of debris. When Wawarsing was left with a huge waste tire problem, the Agency handled disposal arrangements for those tires. Many towns schedule clean up days. The Agency has assisted in those efforts by making its facilities available to the municipalities. The Agency is currently working with the City of Kingston with regard to its effort to implement single stream recycling. The Agency and the town of Ulster have shared snowplowing and mowing responsibilities. The Agency provides its grinder to municipalities for grinding wood, and it collects leachate from the town of Hurley.

The Agency has participated with other governments and agencies in regional efforts to coordinate and cooperate on solid waste and recycling problems and issues. The Agency intends to continue these efforts during the term of the Plan Update.

The Agency is a member of solid waste and recycling committee of the Hudson Valley Regional Council. This committee's mission is to provide a forum for discussion of regional issues and explore regional solutions to problems. Most recently, the implementation of single stream recycling and the impact of the New York State Solid Waste Management Plan update were topics of discussion.

The Agency has participated in regional solutions to operational problems. The Agency's Materials Recovery Facility is currently receiving commingled recyclables from Westchester County while that government reconstructs its Materials Recovery Facility. The Agency has received solid waste from Orange and Dutchess Counties when their facilities were not available to them. Pharmaceuticals received at the Agency's HHW collection events are sent to the Dutchess County Resource Recovery Facility in Poughkeepsie. Legislative leaders from Ulster and Dutchess counties have met recently to discuss the possibility of regional initiatives, and the Agency has a long history of discussions with representatives of the Dutchess County Resource

Recovery Agency about cooperating on recycling matters. The Rockland County Resource Recovery Authority, the Columbia County government and the Agency have cooperated on certain tax matters, and the Agency is currently discussing the possibility of hauling municipal sewage sludge to the Rockland County Resource Recovery Authority for processing at their Co-Composting Facility.

6. ADMINISTRATION OF THE SYSTEM

6.1 AGENCY AS PLANNING UNIT AND SYSTEM PROVIDER

The Ulster County Resource Recovery Agency is the solid waste management planning unit for Ulster County so designated by the County Legislature under New York State Law. The Agency is also the provider of the Ulster County Solid Waste Management System as defined in the Plan. The Agency's role as the System provider is defined in the Solid Waste Service Agreement with the County of Ulster, and further defined in the Solid Waste Management Agreements with 16 of the municipalities of the County. The Agency also has been given certain authority under Ulster County Local Law No. 8 of 1991, as amended (source separation and recycling) and Local Law No. 9 of 1991 (solid waste management). Among the main duties under the dual designations are the drafting, adoption, approval, and amendment of the Solid Waste Management Plan, and the implementation and enforcement of the Solid Waste Management System.

6.2 ADMINISTRATIVE STRUCTURE

The Ulster County Resource Recovery Agency is a public benefit corporation formed by the New York State Legislature at the request of the Ulster County Legislature. The State legislation establishing the Agency is codified in Article 13-G of the New York State Public Authorities Law. Article 13-G is the "enabling act" of the Agency, and, among other things, it sets forth the powers and duties of the Agency, describes the governing body (a five member board appointed by the County Legislature to 3 year terms), provides for staffing the Agency, delineates the Agency's relationship to the County and its municipalities (most pertinently the ability of the parties to contract among themselves to carry out the purposes of the enabling act), and authorizes the County Legislature to adopt local laws for flow control of the County's solid waste stream and for mandatory recycling.

For financial purposes, the Agency is considered as a subsidiary agency of the County, and the Agency is part of the County's financial reporting. However, the Agency is legally an independent entity. It is not a County department; it is not directly supervised by the County government, nor does the County guarantee the debt and obligations of the Agency.

The functional relationship between the Agency and the County is set forth in the Solid Waste Service Agreement by and between the parties (the "Service Agreement"). The Service

Agreement was entered into in 1993. It has been amended on four occasions, and expires on December 31, 2026. Under the Services Agreement, the Agency is obligated to plan, design, finance, construct and operate a solid waste management system for the County. The Agency has the authority to charge fees to pay for the costs of the system, and has the obligation prepare annual budgets setting forth the cost and revenues projected for the ensuing year. It must provide a preliminary budget to the County government for review and comment, and action as limited by the terms of the Service Agreement. The Agency is authorized to issue debt, but is limited by the Service Agreement which requires County approval if the outstanding debt will exceed \$40 million dollars. The County government is obligated under the Service Agreement to pay to the Agency "Net Service Fees" if the Agency is unable to raise sufficient revenues to meet its expenses. The amount of the Net Service Fee is calculated every year and equals the Agency's shortfall as calculated pursuant to a formula set forth in the Service Agreement. The County's obligation to pay Net Service Fees is absolute, as long as the Agency's system is available for service. The legal remedies of the parties are limited to enforcement of their respective obligations.

The County performs roles other than those specifically delineated in the Service Agreement. The Environmental and Governmental Services Committee of the County Legislature oversees the ongoing operations of the Agency through monthly meetings, generally at the Agency's headquarters in the town of Ulster, and through ongoing communication between the Committee Chairman and Agency officials. The Recycling Oversight Committee, established under Local Law No. 8 of 1991, meets regularly with Agency representatives to consult on recycling matters, including the listing or delisting of regulated recyclable materials. The Agency's administrative enforcement procedure for the mandatory recycling requirements set forth in Local No. 8 of 1991 ends with the presentation of the enforcement case to an independent hearing officer appointed by the County. The County Legislature has also appointed a special committee of County Legislators and Agency Board Members to review the Agency, and to recommend possible changes to the current structure and scope of the Agency. Information is exchanged routinely by and between the County Executive's office and the Agency. The County Comptroller has undertaken studies of the Agency's fiscal status and the County Legislature's oversight of the Agency. The County's Department of the Environment also confers with the Agency from time to time. The County Department of Weights and Measures inspects the scales at the Agency's facilities, and the County Sheriff's Department assists in the destruction of recycled medical materials collected at the Agency's Household Hazardous Waste events. Finally, the Ulster County Health Department cooperates with the Agency by licensing solid waste collectors in the County and inspecting their vehicles. Perhaps the most significant oversight of the Agency exercised by the County is the method prescribed in the enabling act for appointing Agency Board members. The five Board members are appointed by the Chairman of the Legislature (one member is specifically recommended to the Chairman by the Legislature's minority party), subject to approval by the County Legislature. Agency Board members serve three year terms.

6.3 SOLID WASTE SERVICE AGREEMENT

The essential document of the System is the Solid Waste Service Agreement between the Agency and the County, described in detail in Section 6.2, above. This agreement defines the obligations and rights of the Agency and the County and provides for the administration of the system. The agreement terminates in 2026. The Agency and the County must live up to their respective obligations as defined under the agreement if the System is going to succeed over the next ten years. This involves open communications and cooperation between the County and the Agency, and effective oversight by appropriate County legislative committees. The County and the Agency each have responsibilities under Local Law No. 8 of 1991(as amended) and Local Law No. 9 of 1991. The System cannot function successfully without cooperation in implementing those local laws.

6.4 MUNICIPAL AGREEMENTS

The Solid Waste Management Agreements (SWMAs) between the towns of Ulster County and the City of Kingston (the “Municipalities) and the Agency are also essential to an effective System. The SWMAs provide for the MRDCs, which are an essential service to the citizens of Ulster County, and the Agency’s services to the Municipalities. The SWMAs terminate at various times beginning in the fall of 2012. The Agency intends to negotiate an extension of the SWMAs with each of the Municipalities.

Under the SWMAs, the Agency provides the system of recycling and solid waste management to the Municipalities. In turn, the Municipalities agree to use the system for recycling and disposal of solid waste. The system consists of MRDCs, which the Agency designed, equipped, registered and financed to the extent of \$40,000 per municipality. Residents of the municipality may use their municipality’s MRDC to self-haul and dispose of MSW in designated roll-off containers (at a cost generally charged on a per bag basis – a pay-as-you-throw program) and to deposit regulated recyclables, as defined in Local Law No. 8 of 1991, as amended, into separated roll-off containers at no charge. The Agency services the MRDCs, collecting full roll-off containers and replacing them with empty ones. The regulated recyclables are then brought to and processed at the Agency’s Materials Recovery Facility and are marketed for sale. The Agency keeps whatever revenues it earns from the regulated recyclables, and bears the risk that revenues will be sufficient to cover the cost of recycling operations. The Agency sets an annual fee for the collection and disposal of MSW collected at the MRDCs, which is based upon the Agency’s budgetary requirements. The Municipalities are advised of the proposed annual fee and are given the opportunity to be heard with regard to the fee prior to the adoption of the Agency’s annual budget. The Municipalities agree to operate and maintain the MRDCs, pay the fees duly established by the Agency, and provide free recycling to the residents. Commercial haulers and larger businesses cannot use the MRDCs, but must go to the Agency’s Transfer Stations.

The Municipalities which had non-complying landfills in the early 1990's also received from the Agency under the SWMAs the payment of \$500,000 to defray the cost of lawfully closing their landfill. The purpose of the payment was to expedite closure of the landfills, providing for a safer environment.

Prior to negotiating extensions of the SWMAs, the Agency intends to analyze the MRDC operations and to discuss current needs and criticisms the Municipalities. It will fashion its proposals for extended SMMAs accordingly. Potential changes to be offered include compactor roll-offs, which will lessen the frequency of trips to the MRDCs, suggestions on ways to improve the efficiency of operations and thus lower costs, and the possibility of combining MRDCs, something that has already been done in Saugerties, where the town's MRDC also serves the towns of Woodstock and Shandaken.

Finally, the Agency has agreements with the towns of New Paltz and Ulster for the Agency's regional Transfer Stations. The Transfer Stations were planned, designed, financed, and constructed by the Agency, and are owned and operated by the Agency. The New Paltz Transfer station is on land rented from the town. The Agreement provides for the times of operation of the Transfer Station, and other matters, including the payment of a graduated host community benefit fee to the town and the local fire district. The Ulster Transfer Station is on land owned by the Agency, which also pays the town and fire district a host community benefit fee.

6.5 PRIVATE SECTOR CONTRACTS

The Agency has enjoyed successful contractual relationships with private sector companies, as well. The most significant agreements are those providing for the delivery of solid waste and recyclables, the long-distance hauling and landfilling of solid waste, the marketing of recycled materials. The Agency will negotiate favorable contracts with private sector companies, with the goal of maintaining financially advantageous relationships and obtaining and providing consistent, efficient services.

However, the implementation of the flow control powers set forth in Local Law No. 9 of 1991 will no doubt cause issues with solid waste collectors operating in Ulster County. Fees for disposal of solid waste currently established under contract will no doubt be increased to bring the fee for service more in line with the cost for service. The Agency will coordinate this change from "contractual" flow control to "regulatory" flow control in a way that will maintain the successful relationships maintained with solid waste collectors over the years. It will strive to do this by ensuring that all solid waste collectors bring solid waste collected in Ulster County to the Agency's transfer stations and that all solid waste collectors will pay the same fee for service. This will ensure a "level playing field", which should provide for an increase in competition, including the licensing of small collectors who will be able to use the Agency's facilities at the same cost as larger companies.

6.6 LEGAL

The Agency undertakes its responsibilities subject to the legal framework described above. Apart from the legal authority provided to the Agency in the Enabling Act, perhaps the most important parts of the legal framework are Local Law No. 8 and Local Law No.9 of 1991. These local laws provide significant authority for the Agency to implement the solid waste management system. Under Local Law No. 8, source separation of regulated recyclables by the County's residents, commercial and not for profit entities, governments and solid waste collectors is mandatory. Plans for achieving source separation and recycling must be drawn up and submitted to the Agency. Failure to comply with the law's requirements could result in administrative enforcement of the law's provisions by the Agency. The Agency makes every effort to impel performance of the law through education, information and consultation. The extensive program is outlined earlier in the Plan Update. But, if these means and methods are not successful, the law will be enforced. The enforcement provisions are discussed in detail in Section 5.2.2.3 of the Plan Update.

Local Law No. 9 of 1991 is the Solid Waste Management Law. This law provides that all solid waste, as the term is defined in the Agency's Enabling Act originating or generated in Ulster County, must be disposed of at facilities designated by the Agency. It also provides for the licensing of solid waste collectors to use the facilities of the Agency. Those licenses are issued after an application form has been completed by the collector and received and reviewed by the Agency staff. Any financial, compliance, equipment or other related issues must be resolved before the license is granted. Guarantees from potential licensees may be required before licenses are granted. Some companies guarantee that they will dispose of a certain amount of MSW at the Agency's facilities through "put or pay" contracts. The Agency has adopted rules and regulations for the enforcement of Local Law No. 9 of 1991. An administrative enforcement process is provided for, with the final administrative decision being made by an independent hearing officer appointed by the County.

An amendment to clarify and strengthen Local Law No. 9 is being considered by the County Legislature. This amendment will enhance the Agency's ability to enforce the Local Law. See also Section 5.3.1 of this Plan document.

6.7 PUBLIC

The approval process of this Plan Update includes review by the Ulster County Government, Ulster municipalities, adjoining Solid Waste Management Planning entities and members of the public. Final approval by the New York State Department of Environmental Conservation is required.

The Agency will commence a proceeding under the State Environmental Review Act (SEQRA) as the mechanism to accomplish this review. An announcement of the specifics of the Plan

Update review process will be made after initial action by the Board of Directors of the Agency. The announcement will detail the action being undertaken and the locations where persons can access the proposed Plan Update. Essentially, the proposed Plan Update will be placed on the Agency’s website at the following address www.ucrra.org. Copies of the proposed Plan will be made available for review at the Ulster County Clerk’s Office, the clerk’s offices of Ulster County municipalities, the Agency’s offices and the New York State Department of Environmental Conservation Region 3 offices, and, finally at each local library in Ulster County.

The Public Comment Period shall extend from [redacted] to [redacted], 2011. A public hearing is scheduled for [redacted] at [redacted]. Comments received at the public hearing will be recorded. Written comments may be provided to the Agency at its website or to its offices at the following address:

Ulster County Resource Recovery Agency Plan Update
P.O. Box 6219
Kingston, NY 12402

7. IMPLEMENTATION SCHEDULE

Many of the Agency’s initiatives under the amended Plan are ongoing, and, thus, already being implemented. The essential services of operating the MRDC’s, the MRF and the Transfer Stations will continue. Certain improvements to the system have already been scheduled.

SUMMARY OF SOLID WASTE PROGRAM ENHANCEMENTS KEY MEASURABLES AND MILESTONES

UPSTREAM DIVERSION GOALS	MEASURABLES	MILESTONES	TIME-FRAME
CII&M recycling	Quantify number of CII&M building	Establish a communication system with the County Building Code Officer	By Year 1
		Work with tax information to building a database of existing CII&M buildings in the County	By Year 2
	Establish a baseline participation rate	Develop & distribute survey to all building units	By Year 2
		Determine estimates of participation rates based on survey results	By Year 2
	Education & outreach to the public	Develop & distribute educational material to participants	By Year 3
		Revise Agency website & offer more information	By Year 3 &

		& outside links; utilize free social marketing tools like FaceBook, YouTube & Twitter	annually thereafter
	Track participation rates & trends	Conduct a survey of occupants in a statistically representative sample of buildings regarding recycling participation	By Year 3 & annually thereafter
	Track tonnages of recyclables collected in Ulster County with private haulers	Continue to conduct this research through annual reporting procedures	By Year 3 & annually thereafter
HHW & electronics (E-Waste) recycling	Quantify number of HHW & E-waste collectors	Work with tax information to building a database of existing electronic stores that accept E-waste	By Year 2
		Conduct research to find businesses that accept HHW or E-waste	By Year 3
	Calculate existing County participants who self deliver	Develop & distribute educational material to public forums, collection centers, & all County residents	By Year 3
	Measure increases in tonnage received & number of participants	Increase collection event hours & days for HHW & E-waste	By Year 1
		Increase storage at E-waste collection centers at Town transfer stations & the Agency facility to double current capacity	By Year 2
	UPSTREAM DIVERSION GOALS	MEASURABLES	MILESTONES
HHW & electronics (E-waste) recycling (continued)	Determine results of program expansion efforts	Track tonnages of HHW & E-waste collected in Ulster County using Agency collection events & private collectors	By Year 3 & annually thereafter
		Determine estimates of participation rates based on tracking results	By Year 3 & annually thereafter
C&D debris recycling	Quantify C&D composition through a waste characterization process	Establish a communication system with the County Building Code Officer, Economical Development, Planning Board & County	By Year 2
		Conduct research to create database of local businesses who reuse building material	By Year 3
		Update educational materials with reuse list, LEED & construction regulations	By Year 4 & annually thereafter

	Implement tip fee incentives & record participation	Develop & distribute educational material to public forums, collection centers, & all County residents	By Year 4 & annually thereafter
Organics diversion	Identify number of compost bins sold to date	Determine local organizations who promote & work with residents on composting	By Year 2
		Establish a communication system with the identified organizations	By Year 2
	Track purchase of Agency & Vendor compost bins	Update educational materials with available compost assistance & resources	By Year 3 & annually thereafter
	Track businesses and institutions who develop organic diversion programs	Develop & distribute educational material to public forums, collection centers, & all County residents	By Year 3 & annually thereafter
UPSTREAM DIVERSION GOALS	MEASURABLES	MILESTONES	TIME-FRAME
C&D debris recycling	Track tonnage of C&D debris passing scalehouse & entering transfer station	Designate an area at the Agency's Ulster Transfer Station for temporary storage & processing of C&D material	By Year 1
	Based on the database of C&D debris recyclers, track tonnage of C&D diverted from landfill	Work with haulers to separate C&D debris from MSW upon delivery	By Year 2
		Determine estimates of diversion rates based on tracking results	Conduct pilot C&D debris processing program
	Conduct market research to determine potential value of reusable materials		By Year 4
	Determine appropriate management strategy- publicly or privately owned		By Year 5
Organics diversion	Estimate feedstock & tonnages of organics available in County	Track tonnage of yard waste entering transfer station at scalehouse & at Town transfer stations	By Year 1 & daily thereafter

		Conduct survey of commercial, industrial, & institutional centers who process food for types & amounts	By Year 2
		Determine amount of biosolids produced in County by contacting WWTPs	By Year 2
	Determine amount of organics that could be composted at existing facilities	Conduct survey to Commercial entities in County to determine interest in composting at the Agency	By Year 2
		Calculate feasibility of composting organics identified in survey at Agency facility: land & bulking agents available	By Year 3
		Research permitting requirements for a biosolids and/or food composting facility at the Agency	By Year 3
	Measure volume of organics composting	Construct a demonstration food waste composting facility	By Year 4
		Determine feasibility of full-scale operation	By Year 5
DIVERSION ACTIVITIES	MEASURABLES	MILESTONES	TIME-FRAME
Recycling Enforcement	Monitor the recycling practices of businesses, schools, hospitals, multi-family dwellings, condominium associations, municipal buildings and residences to ensure compliance with the provisions of the Ulster County Mandatory Source Separation and Recycling Law	Offer recycling audits to interested businesses, schools, hospitals, multi-family dwellings, condominium associations, municipal officials, etc., to assist these entities in developing comprehensive recycling plans	By Year 1 & thereafter
		Investigate complaints concerning violations of the Ulster County Mandatory Source Separation and Recycling Law, including complaints submitted by municipal and private haulers, businesses and residents	Ongoing
		Offer recycling presentations to interested businesses, schools, hospitals, multi-family dwellings, condominium associations, municipal officials, etc., to educate different sectors of the County on their responsibilities under the Ulster	By Year 2

		County Mandatory Source Separation and Recycling Law.	
		Perform waste generator inspections targeting commercial zones throughout Ulster County	By Year 3
		Expand the scope of waste generator inspections. This will be accomplished by invoking a provision of the Mandatory Source Separation and Recycling Law, which allows either an 'inspector' or the Recycling Coordinator/Compliance Officer to accompany licensed private haulers on their collection routes. Riding along with, or following, haulers on their commercial collection routes will allow the Agency to review the recycling practices of a large number of non-residential waste generators in a relatively short period of time.	By Year 3 & annually thereafter
		Inspect loads of garbage and recyclables dumped at the Agency transfer stations located in Ulster and New Paltz in order to look for violations of the Ulster County Mandatory Source Separation and Recycling Law.	By Year 2 & annually thereafter
		Request the assistance of Weights and Measures officials from the Department of Consumer Protection in identifying gas stations within Ulster County that fail to properly recycle.	By Year 3
		Request the assistance of inspectors employed by the Department of Health in identifying food establishments within Ulster County that fail to properly recycle.	By Year 3
Recycling Public Outreach & Education	Increase recycling education and outreach opportunities throughout the County by various activities outlined below		
	HHW and electronics recycling	Advertisement in newspaper to promote recycling/provide tips, posted on County & Agency websites, press releases, & printed guides. Distribute event flyers to schools, libraries, pharmacies, MRDCs, Town Halls and Community Buildings	By Year 1 & annually thereafter
	Recycling, waste reduction Backyard composting	Sell compost bins at discounted rate, press releases, posted on County & Agency websites, distribute posters & brochures on composting, promote at farmers markets & special events.	By Year 1 & annually thereafter
	Earth Fest, Outdoor Public Events,	Community event-display table & disbursement of	

	Farmer Markets	informational guides. Provide ClearStream or Clear Canables recycling public event containers to events for public use. Participate in a few events & promote composting, recycling, HHW & electronics recycling.	By Year 2 & annually thereafter
	Grass recycling	Radio advertisements (one week in May, one week in July), press release, post on the Agency website (composting page), printed brochure.	By Year 3
	Waste reduction/holiday tips, buy recycled, recycling	Place advertisements and information in newspaper, press release, posted on Agency website.	By Year 2
	Recycling programs, MRF tours	Conduct year round specific school & community group programs regarding recycling, HHW, electronics, composting. Promote through direct contact with teachers, the Agency website and email correspondence. Utilize free social marketing tools including FaceBook, Twitter & YouTube	By Year 1
ACTIVITIES	MEASURABLES	MILESTONES	TIME-FRAME
Closed Landfill Leachate Mitigation	Determine what volume of leachate is groundwater	Shut down sections of leachate collection system that collect strictly groundwater	By Year 2
Transfer Station Upgrades	Completion of construction	In compliance with NYSDEC regulations	By Year 1
Ulster Transfer Station Permit Modification	Application to NYSDEC	Increase maximum daily rate from 440 tons/day to 650 tons/day	By Year 1
Materials Recovery Facility Modifications	Determine what modifications if any will be proposed	Complete modifications	By Year 3
Ulster and New Paltz Transfer Station Permit Renewals	Apply to NYSDEC for permit renewal	Obtain permit renewal	By Year 7

Alternative - Flow Control Amendment and Implementation	Legislation passed by the Ulster County Legislature	Implementation of Flow Control program	By Year 2
Alternative – Renegotiation of Put or Pay Contracts	Advertise bidding	Secure highest bidder(s)	By Years 1 and 3
Bidding MSW Hauling Contracts	Advertise bidding	Secure highest bidder(s)	By Year 1
Bidding MSW Disposal Contracts	Advertise bidding	Secure highest bidder(s)	By Year 1 and 3
Extending and Amending Municipal Solid Waste Agreements	Negotiate contracts with towns	Secure contracts with towns	By Year 1 & 2

ULSTER COUNTY SOLID WASTE MANAGEMENT PLAN UPDATE

APPENDICES

5.2.1 REDUCTION AND REUSE

Recycling Instructions Brochure

Recycling Poster – Recycle at School

Recycling Poster – Recycle at Work

Recycling Bin Labels – Paper Recycling Only, Commingled Recycling Only, Trash Only

Ulster County Sharps Program Calendar

Ulster County Business and Commercial Properties Recycling Guide

Ulster County Business and Commercial Property Solid Waste Reduction & Recycling Plan

Safe Alternatives to Common Household Products

**Household Hazardous Waste, Pharmaceutical Waste and Electronics Collection Event Program
Flyer**

**Table 3-2: Quantities of HHW Collected Per Year Through Ulster County HHW Collection
Program**

GARDEN GOURMET COMPOST BIN

Why Should I Compost?

There are several reasons to compost in your backyard. Composting creates a free, nutrient-rich soil amendment that helps conserve water, controls weeds and reduces or eliminates the need for chemical fertilizers. Also, it can save you money on trash disposal. Food waste, yard waste and compostable paper make up 31 percent of an average household's waste.

Environmental Benefits of Composting

- Conserves Resources
- Saves Landfill Space
- Helps Create a Sustainable Future

Rated #1 in North America!

As seen on the Oprah Winfrey Show

Contact UCRRA for information on composting or to reserve a compost bin. Just call the Recycling Hotline at (845) 336-3336 or visit our website at www.ucrra.org

Monday through Friday

8am - 3pm by appointment only

Location: UCRRA Main Office

999 Flatbush Road, Kingston, NY

24"



ONLY \$50.00
36"

**Reserve a
Compost Bin
Today!**

RECYCLING INSTRUCTIONS



RECYCLING MADE EASY



Keep Ulster County Beautiful



ULSTER COUNTY RESOURCE RECOVERY AGENCY

999 Flatbush Road
Kingston, NY 12401
Phone: (845) 336-0600
Email: ucrra@ucrra.org

printed on recycled paper

ULSTER COUNTY RESOURCE RECOVERY AGENCY

999 Flatbush Road
Kingston, NY 12401

Ulster County Resident

**PRSR STD
U.S. Postage Paid
Kingston, NY
Permit No. 6219**

RECYCLING MADE EASY

ACCEPTABLE ITEMS

NOT ACCEPTED

PAPER PRODUCTS

- Newspapers**
- Magazines & Catalogs**
- Computer / Copy / Fax Paper**
- Writing / Ledger Paper**
- Phonebooks**
- Junk Mail**
(including envelopes, coupons, ads & inserts)
- Wrapping Paper**
- Greeting Cards**
- All Thin Cardboard**
(including cereal, pasta, cracker and other food boxes, shoe boxes, tissue boxes, paper egg cartons, soda & beer packaging)
- Corrugated Cardboard & Brown Paper Bags**

NOTE: Flatten cardboard. Do not tie together, keep loose. No wax or plastic coated paper products



COMMINGLED PRODUCTS

- Aluminum Cans**
- Tin Cans / Containers**
- Glass Bottles**
- Glass Jars**
- Plastic Bottles** (shampoo, water, soda)
- Plastic Tub** (yogurt, cottage cheese)
- Plastic Jugs** (milk, juice)

TIP: Look for the code on the bottom of the container. If it is an item listed above AND is:



- PET #1**
- HDPE #2,**
- LDPE #4,**
- PP #5, or**
- Other #7**

then it is recyclable!

NOTE: Do not put recyclables in plastic bags. Please rinse all containers.

No bottle caps - Plastic and metal lids are acceptable.

No plastic bags - Bring them back to a participating store for recycling.



- Paper Towels, Facial Tissues, Napkins**
- Waxed or Plastic Coated Paper or Boxes**
- Food-contaminated Material**
- Pizza Boxes**
- Foil Wrapping Paper**

Plastic Bags

Prescription Bottles

Plastic Food Wrap

Potato Chip or Sandwich Bags

Black Microwavable Plastic Containers

Styrofoam

Automotive Fluid Bottles

Petroleum

Herbicide or Pesticide Containers

Light Bulbs

Flower Vases

Drinking Glasses

Window / Broken Glass

Scrap Metal

Foil or Pie Plates

Clamshell Plastic

(including salad & berry packaging)



For information on items not shown, please contact the Recycling Hotline at (845) 336-3336 or visit our website at www.ucrra.org

RECYCLE AT SCHOOL!



For Recycling Information
Call the Recycling Hotline
(845) 336-3336
or visit www.ucrra.org



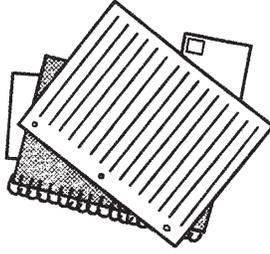
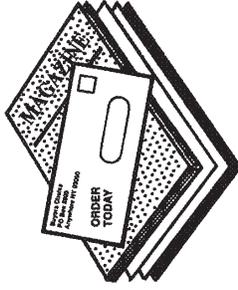
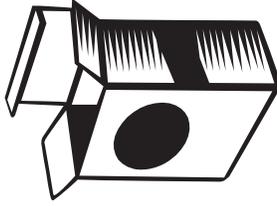
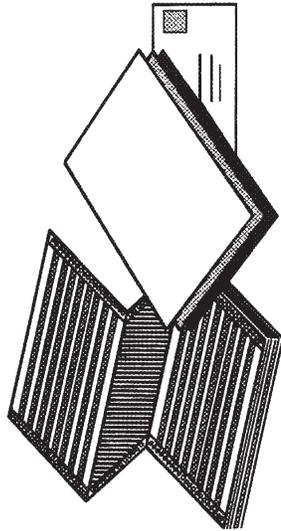
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RECYCLE AT WORK!

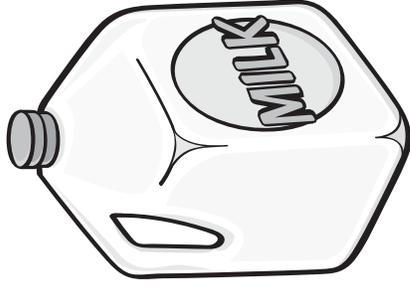
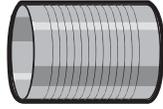
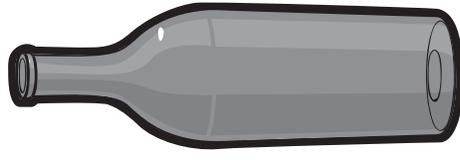


For Recycling Information
Call the Recycling Hotline
(845) 336-3336
or visit www.ucrra.org

PAPER RECYCLING ONLY



PLASTIC, METAL & GLASS RECYCLING ONLY



ULSTER COUNTY SHARPS PROGRAM 2011

WHY COLLECT RESIDENTIAL SHARPS?

Home generated medical waste is only a small fraction of Ulster County's waste stream but represents a large potential danger to residents and small children. Sharps – needles, syringes, lancets, and other sharp materials that come in contact with human blood or other body fluid – should be disposed of properly. Hospitals and other health care facilities, which generate medical waste, are strictly regulated, however, residents are not.

To assure there are safe places for residents to bring "SHARPS" all Article 28 Health Care Facilities in New York are required by law to accept medical waste from residents in appropriate, puncture-proof containers. In Ulster County, the health facilities have coordinated a pre-scheduled collection program. In addition, all of these facilities have agreed to distribute free SHARPS containers, which have been donated by Becton-Dickinson, a medical supply manufacturer.

WHO CAN PARTICIPATE IN ULSTER COUNTY'S SHARPS PROGRAM?

ANYONE who uses needles, syringes, lancets or other sharps in their homes is eligible to participate. This includes residents having diabetes or other medical conditions such as AIDS and cancer, or allergies requiring medication by injection.

HOW TO PARTICIPATE IN THE SHARPS PROGRAM

1. Sharps should be stored in an approved, puncture-proof container, which can be purchase from local pharmacies or retail stores in Ulster County. You can also pick one up on a pre-scheduled collection day at area hospitals and nursing homes while supplies are available.
2. Place needles and syringes into SHARPS containers. You **do not** need to recap or break needles.
3. When containers are full, close the lid securely and bring to a designated SHARPS drop-off facility on a pre-scheduled collection day (see back for a drop-off schedule). Please be sure the outside of the container is clean.
4. After dropping off a filled container, you may receive a new one if supplies are available.

This program is available through generous donations by Becton Dickinson and coordinated by the Ulster County Resource Recovery Agency.

Partially funded by the NYSDEC

CALL the Recycling Hotline at (845) 336-3336 for more information



SHARPS DROP-OFF SITES (See back for 2011 calendar)

Please use only approved SHARPS containers and drop-off only FULL containers, if possible.

Benedictine Hospital: Outpatient lab entrance on west side; housekeeping: 105 Mary's Ave., Kingston, NY 338-2500 ext 4243

Ellenville Regional Hospital: Reception desk, Ask for Infection Control, Route 209, Ellenville, NY 647-6400

Golden Hill Health Care Facility: Main entrance: ask for housekeeping; Golden Hill Drive, Kingston, NY 340-3390

The Mountain View Nursing and Rehabilitation Centre: Reception desk; 1 Jansen Road, New Paltz, NY 255-0830

Hudson Valley Rehabilitation and Care Center: Reception desk in lobby; 260 Vineyard Ave, Highland, NY 691-7201

Kingston Ambulatory Surgical Center (Hurley Ave. Surgical): Reception area located in the basement; 40 Hurley Ave, Kingston, NY 338-4777

Kingston Hospital: Broadway entrance to Emergency Room; 396 Broadway, Kingston, NY 331-3131 x 2287

Northeast Center for Special Care: Reception area, ask for Infection Control; 300 Grant Ave, Lake Katrine, NY 336-3500

Ten Broeck Commons: Employees backdoor entrance: 1 Commons Dr., Lake Katrine, NY 336-6666

Wingate at Ulster: Reception desk in lobby; 1 Wingate Way off Route 9W, Highland, NY 691-6800



2011 Calendar

JANUARY 2011

Mon. 3	10am-12noon	Wingate at Ulster
Mon. 3	7am-12noon	Kingston Ambulatory
Wed. 5	10am-1pm	The Mt. View
Wed. 5	8am-1pm	Kingston Hospital
Wed. 12	8am-1pm	Kingston Hospital
Wed. 19	3pm-6pm	HV Rehab&Care
Wed. 19	8am-1pm	Kingston Hospital
Wed. 26	8am-1pm	Kingston Hospital
Wed. 26	9am-3:30pm	Golden Hill Health
Thur. 27	7am-10am	Ten Broeck Commons

FEBRUARY 2011

Wed. 2	10am-1pm	The Mt. View
Wed. 2	8am-1pm	Kingston Hospital
Mon. 7	10am-12noon	Wingate at Ulster
Wed. 9	8am-3pm	Benedictine Hospital
Wed. 9	8am-1pm	Kingston Hospital
Wed. 16	3pm-6pm	HV Rehab&Care
Wed. 16	8am-1pm	Kingston Hospital
Wed. 23	8am-1pm	Kingston Hospital
Wed. 23	9am-3:30pm	Golden Hill Health

MARCH 2011

<u>Tues. 1</u>	<u>1pm-3pm</u>	<u>NE Center for Special</u>
<u>Wed. 2</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 2</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Mon. 7</u>	<u>10am-12pm</u>	<u>Wingate at Ulster</u>
<u>Wed. 9</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 16</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 16</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Tues. 22</u>	<u>8am-10am</u>	<u>Ellenville Hospital</u>
<u>Wed. 23</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 23</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health Care</u>
<u>Wed. 30</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>

APRIL 2011

<u>Mon. 4</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Mon. 4</u>	<u>7am-3pm</u>	<u>Kingston Ambulatory</u>
<u>Wed. 6</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Wed. 6</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 13</u>	<u>8am-3pm</u>	<u>Benedictine Hospital</u>
<u>Wed. 13</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 20</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 20</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 27</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health Care</u>
<u>Wed. 27</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Thur. 28</u>	<u>7am-10am</u>	<u>Ten Broeck Commons</u>

MAY 2011

<u>Mon. 2</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Wed. 4</u>	<u>10am-1pm</u>	<u>The Mt View</u>
<u>Wed. 4</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 11</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 18</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 18</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 25</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 25</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health Care</u>

JUNE 2011

<u>Wed. 1</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Wed. 1</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Mon. 6</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Tues. 7</u>	<u>10am-12noon</u>	<u>NE Center for Special</u>
<u>Wed. 8</u>	<u>8am-3pm</u>	<u>Benedictine Hospital</u>
<u>Wed. 8</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 15</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 15</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Tues. 21</u>	<u>8am-10am</u>	<u>Ellenville Hospital</u>
<u>Wed. 22</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health Care</u>
<u>Wed. 22</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 29</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>

JULY 2011

<u>Mon. 4</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Tues. 5</u>	<u>7am-3pm</u>	<u>Kingston Ambulatory</u>
<u>Wed. 6</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 6</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Wed. 13</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 20</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 20</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 20</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health Care</u>
<u>Wed. 27</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Thur. 28</u>	<u>7am-10am</u>	<u>Ten Broeck Commons</u>

AUGUST 2011

<u>Mon. 1</u>	<u>10am-12pm</u>	<u>Wingate at Ulster</u>
<u>Wed. 3</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Wed. 3</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 10</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 10</u>	<u>8am-3pm</u>	<u>Benedictine Hospital</u>
<u>Wed. 17</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 17</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 24</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 24</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health</u>

SEPTEMBER 2011

<u>Mon. 5</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Tues. 6</u>	<u>1pm-3pm</u>	<u>NE Ctr Special Care</u>
<u>Wed. 7</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Wed. 7</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 14</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 14</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 14</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health</u>
<u>Tues. 20</u>	<u>8am-10am</u>	<u>Ellenville Hospital</u>
<u>Wed. 21</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 28</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>

OCTOBER 2011

<u>Mon. 3</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Mon. 3</u>	<u>7am-12pm</u>	<u>Kingston Ambulatory</u>
<u>Wed. 5</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Wed. 5</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 12</u>	<u>8am-3pm</u>	<u>Benedictine Hospital</u>
<u>Wed. 12</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 19</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 19</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 19</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health</u>
<u>Wed. 26</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Thur. 27</u>	<u>7am-10am</u>	<u>Ten Broeck Commons</u>

NOVEMBER 2011

<u>Wed. 2</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 2</u>	<u>10am-1pm</u>	<u>The Mt. View</u>
<u>Mon. 7</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Wed. 9</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 16</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 16</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 23</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 23</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health</u>

DECEMBER 2011

<u>Mon. 5</u>	<u>10am-12noon</u>	<u>Wingate at Ulster</u>
<u>Tues. 6</u>	<u>1pm-3pm</u>	<u>NE Ctr Special Care</u>
<u>Wed. 7</u>	<u>10am-1pm</u>	<u>The Mt View</u>
<u>Wed. 7</u>	<u>8am-3pm</u>	<u>Benedictine Hospital</u>
<u>Wed. 7</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 14</u>	<u>3pm-6pm</u>	<u>HV Rehab & Care</u>
<u>Wed. 14</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 14</u>	<u>9am-3:30pm</u>	<u>Golden Hill Health</u>
<u>Tues. 20</u>	<u>8am-10am</u>	<u>Ellenville Hospital</u>
<u>Wed. 21</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>
<u>Wed. 28</u>	<u>8am-1pm</u>	<u>Kingston Hospital</u>

For more information, call the Ulster County SHARPS program at (845) 336-3336 or visit website at www.ucrra.org

WHAT'S INSIDE:

- A message from Ulster County
- Why Recycle
- Mandatory Recycling Requirements
- What to Recycle
- Evaluate Current Recycling Program
- Set up a New Recycling Program
- Step 1—Enlist Support for Recycling
- Step 2—Design Recycling Program
- Step 3—Contract for Service
- Step 4—Educate Employees and Tenants
- Step 5—Monitor for Continued Success
- Other Recycling Programs
- How to Reduce Business Waste
- Recycling at Drop-off Centers
- Appendices

RECYCLING IN ULSTER COUNTY

BUSINESS AND COMMERCIAL PROPERTIES GUIDE



Recycling for Business and Commercial Properties

What's Inside:

- A message from Ulster County
- Why Recycle
- Mandatory Recycling Requirements
- What to Recycle
- Evaluate Current Recycling Program
- Set up a New Recycling Program
- Step 1—Enlist Support for Recycling
- Step 2—Design Recycling Program
- Step 3—Contract for Service
- Step 4—Educate Employees and Tenants
- Step 5—Monitor for Continued Success
- Other Recycling Programs
- How to Reduce Business Waste
- Recycling at Drop-off Centers

A message from Ulster County

Serving you and protecting our resources!

Recycling Requirements for Commercial and Business Properties

Every Ulster commercial property and business must recycle – *it's the law.*

Our goals are to:

- * Make it easy in Ulster County for employees, customers, residents and visitors to recycle.
- * Reduce waste and greenhouse gas emissions.
- * Exceed New York's mandatory recycling rate.

We are excited to provide this guide to assist you with each step in setting



up and operating a successful recycling program. This guide also explains how recycling may reduce costs and add value to your property.

Our staff is ready to answer questions and provide onsite, technical assistance and encourage employees and tenants to make recycling a daily habit. Please call our Ulster County Recycling Hotline at 845.336.3336.

Your recycling efforts make a difference to our environment and your bottom line!

\$\$\$ RECYCLING MAKES GOOD BUSINESS SENSE \$\$\$

A successful recycling program:

Saves Trash Disposal Costs

The economic benefits of a recycling program are most often understood through cost avoidance; these savings can be realized if the recycling program results in:

- less garbage requiring disposal, resulting in fewer pick-ups by the waste hauler;
- less garbage, requiring a smaller dumpster for trash, resulting in reduced collection and container rental costs.

Adds Value to Your Property

“Greening” your business with a convenient, well-managed recycling program can attract loyal customers and increase employee satisfaction.

Meets County Requirements

It's the **law** in Ulster County that all commercial properties must recycle their most common waste materials such as: *Cardboard *Mixed or office paper *Bottles and cans

Demonstrates Environmental Leadership

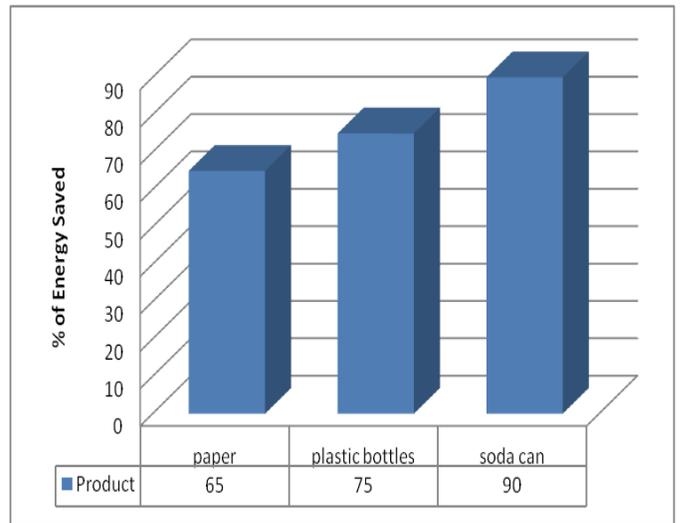
Publicly show your commitment to the environment by raising the recycling bar – if you're currently only collecting cardboard, add mixed paper, bottles and cans, electronics and yard waste recycling to your program. Your company's reputation will increase along with increasing recycling participation.

How Does Recycling Really Help the Environment?

Recycling Saves Energy

Manufacturing goods from recycled materials requires 65 to 95 percent less energy than producing goods from virgin materials. For example, the same amount of energy needed to manufacture one aluminum soda can from bauxite ore makes 20 cans from recycled aluminum.

** Graph shows energy saved by manufacturing with Recycled vs. Virgin Materials*



FACT:

For every ton of paper recycled, we save 17 trees.

Recycling Reduces Pollution and Conserves Natural Resources

Using less energy reduces emissions of greenhouse gases linked to global warming.

For example, production of recycled-content paper uses 65% less energy, 80% less water, and produces 95% less air pollution than paper manufactured from wood pulp.

By providing recycled materials for manufacturing new products, recycling saves:

- Millions of barrels of petroleum used to make plastic bottles
- Millions of trees used to make paper products

- Expense of mining and transporting 4 pounds of bauxite ore for every pound of recycled aluminum



Where does your recycling go?

Recyclables being sorted at the Ulster County Resource Recovery Agency



After collection, your recycling is taken to the Materials Recovery Facility (MRF) which is a complex of sorting mechanisms that separate the recyclables by material. Too

much time spent hand-picking contaminants out of the material stream or unclogging machinery increases our expenses and decreases our ability to effectively separate valuable materials and increase operating performance.

Next, large bales of sorted recycling are sold to manufacturers to make new products. Again, it is important to remember that your recycled materials will be used to make new products. Quality matters and the better you do following the guidelines, the more efficient the sorting process will be.

Products Made From What You Recycle



Aluminum Can - 100% made into new cans and back on the shelf in only 60 days.

Mixed Paper - Made into newspapers, food and product boxes, office paper and tissue.



Plastic Bottles - Made into new plastic bottles, carpet, clothing, decks, benches, containers.

FACT:
Recycling five 2-liter PET bottles (soda bottles), produces enough fiberfill to make a ski jacket.

But it's plastic—Why can't I recycle it?

Only some types of plastics can be easily and cost effectively recycled to make new products.

Always recycle all plastic bottles and jugs with necks smaller than the base. In addition, you can now recycle tubs and lids (yogurt, sour cream, margarine containers).

*** Visit our website at www.ucrra.org for an updated copy of the Ulster County Recycling Instructions brochure

*** ONLY IF THE PLASTIC CONTAINER IS A BOTTLE, JUG, JAR OR TUB AND HAS A RESIN NUMBER OF: (number on bottom)



REMINDER:
NO CAPS! LIDS ARE ACCEPTABLE.
PLEASE RINSE ALL CONTAINERS.
NO POLYSTYRENE FOAM, PLASTIC BAGS, TOYS.
NO PLASTIC BOTTLES THAT ONCE CONTAINED CHEMICALS.
NO MICROWAVABLE FOOD TRAYS. NO BLACK PLASTIC.

Mandatory Recycling Requirements

Ulster County requires ALL businesses and mixed-use properties to recycle. Most commercial properties can recycle cardboard, mixed paper (including office paper and newspapers), bottles, cans, electronics, yard waste and scrap metal. Recycling these items can significantly reduce

your property's trash disposal costs. As the owner or property manager, it is your responsibility to:

- Set up and maintain an effective, onsite recycling program for your employees, tenants and customers.
- Submit an initial recycling plan to the Ulster County Resource Recovery Agency.

- Educate employees, tenants and customers about your property's recycling program.



Requirements for Multi-Use Properties and Tenants

In multi-tenant commercial properties that combine office and/or retail with apartments and condos; it is your responsibility to:

- **Meet the above business requirements.**
- **Set up a recycling program for multi-family residents to recycle bottles and cans plus newspapers and mixed paper. Recycling cardboard during peak move-in times and holidays can also significantly reduce trash disposal costs.**
- **Educate employees, tenants and customers about your property's recycling program.**

Timeline for Recycling Compliance and Reporting:

30 days File initial Recycling Plan after first tenant's date of occupancy.

90 days Onsite recycling program up and working.

Agency representatives may visit property to:

- investigate a complaint
- monitor compliance as part of quarterly random sample.

For questions and technical assistance call 845.336.3336.

ACCEPTABLE ITEMS

PAPER PRODUCTS

- Newspapers
- Magazines & Catalogs
- Computer / Copy / Fax Paper
- Writing / Ledger Paper
- Phonebooks
- Junk Mail
(including envelopes, coupons, ads & inserts)
- Wrapping Paper
- Greeting Cards
- All Thin Cardboard
(including cereal, pasta, cracker and other food boxes, shoe boxes, tissue boxes, paper egg cartons, soda & beer packaging)
- Corrugated Cardboard & Brown Paper Bags

NOTE: Flatten cardboard. Do not tie together, keep loose. No wax or plastic coated paper products

COMMINGLED PRODUCTS

- Aluminum Cans
- Tin Cans / Containers
- Glass Bottles
- Glass Jars
- Plastic Bottles (shampoo, water, soda)
- Plastic Tubs (yogurt, cottage cheese)
- Plastic Jugs (milk, juice)

TIP: Look for the code on the bottom of the container. If it is:

- PET #1
- HDPE #2,
- LDPE #4
- PP #5, or
- Other #7



then it is recyclable!

NOTE: Remove caps. Rinse all containers. No caps! Lids are acceptable.

NOT ACCEPTED

- Paper Towels, Facial Tissues, Napkins
- Waxed or Plastic Coated Paper or Boxes
- Food-contaminated Material
- Pizza Boxes
- Foil Wrapping Paper
- Plastic Bags
- Prescription Bottles
- Plastic Food Wrap
- Potato Chip or Sandwich Bags
- Black Microwavable Plastic Containers
- Styrofoam
- Automotive Fluid Bottles
- Petroleum
- Herbicide or Pesticide Containers
- Light Bulbs
- Flower Vases
- Drinking Glasses
- Window / Broken Glass
- Scrap Metal
- Foil or Pie Plates



Set up a new recycling program

Remember the Keys to a Successful Recycling Program:

- **Convenience**
- **Well-Trained, Committed Staff**
- **Employee and Tenant Education**
- **Clear and Visible Labels and Signs**
- **Program Monitoring and Expanded Services**

Successful Recycling Program Checklist

A successful recycling program is efficient and cost-effective. Often making some easy program upgrades, can deliver great paybacks. Use this checklist to evaluate your current recycling program. Also review your trash and recycling contract(s). Based on your findings, go to the suggested section of this guide and take action!

- √Most employees, tenants and/or customers recycle weekly.
- √Recycling containers are conveniently placed near trash containers for employees, tenants and/or

customers and in common areas.

- √Signs and labels are clear, visible and include pictures and/or multiple languages to identify items to be recycled.
- √Recycling and trash containers are regularly monitored for contaminants and, if found, corrective action is taken.
- √Custodial staff follows procedures for collecting and promoting recycling.
- √How to recycle is well advertised.

- √Recycling containers/dumpsters are properly sized for recycling generation.
- √Current recycling service is your best value in today's marketplace.
- √Recycling program has management support.



Keys to Success

Convenience
Place recycling containers next to trash containers to make recycling as convenient as throwing out the trash.

Well Trained, Committed Staff
Active involvement from an onsite manager is crucial to your program's success. Train maintenance staff on collection procedures and sales staff to answer questions and promote recycling.

Employee and Tenant Education
Educating employees and tenants increases participation and reduces contamination. It's also a mandatory requirement. Promotional materials should emphasize benefits of recycling, what and what not to recycle, where to recycle and who to contact with questions.



Trash Less.
Recycle More.
Save Money AND
our Earth!



Sample Recycling Coordinator Responsibilities:

- Keep containers properly labeled
- Check for contamination and identify solutions
- Encourage recycling and answer questions
- Help design flyers, signs and labels.

***The Ulster County Resource Recovery Agency can also provide your business or property with recycling bin labels, posters and recycling instructions.

Keys to Success cont'd

Clear and Visible Labels and Signs

Post informative signs in common areas (in multiple languages). Replace worn container labels.

Program Monitoring and Expanded Services

Monitor inside and outside collection areas regularly for contamination. Increase recycling service to address overflow and reduce trash service to save money. Keep collection areas clean and neat.



Set Up a New Recycling Program

After you receive your Certificate of Occupancy, your property should have an onsite recycling program set up and working. Usually the property manager or owner designs the program and contracts for trash and recycling services.

As the person responsible, your support and active involvement is crucial to the recycling program's success.

5 Easy Steps to a New Recycling Program

Step 1 Enlist Support for Recycling

Step 2 Design Recycling Program

Step 3 Contract for Service

Step 4 Educate Employees and Tenants

Step 5 Monitor for Continued Success

Step 1—Support for Recycling

Top Management Support

Explain the value of a convenient, well-managed recycling program to owner(s), top-level property management, and tenants. See "A Successful Recycling Program, p.1" for details. If top management makes recycling a priority,

employees, tenants and customers should follow their lead.



Recruit a Recycling Coordinator

Identify an onsite employee to help set up, promote and monitor your recycling program. If you choose an onsite manager, employee or maintenance manager, then make these duties part of their performance evaluation.

Step 2—Design Recycling Program



To design a successful recycling program, a business should:

- Determine what recyclable materials your business generates

- Estimate the volume of recycled materials
- Identify locations for recycling containers
- Implement new policies to prevent waste

Determine What Materials to Recycle

The most common recyclable materials found in most business and office settings are:

1. Office or *mixed paper
2. Corrugated cardboard
3. Plastic bottles and jugs
4. Metal drink/food cans
5. Glass bottles
6. Electronics

* Mixed Paper includes: magazines, newspaper, office and colored paper, junk mail, and thin cardboard (cereal and other food boxes)

Reminder:

Please refer to “What to Recycle” on pg. 4 for more information on these items.

***Depending on your business, you may also recycle wastes such as grease, motor oil, scrap metal, etc.

Estimate Volume of Recycle Materials

To find out which recyclable waste materials your business generates, you can:

- Conduct a waste audit
- Review business records
- Perform a waste sort

Reviewing business records gives you data on the types and amounts of waste generated. Conducting a waste audit identifies which specific business activity

generates which types of wastes. Depending on the size of your business and the variety of wastes generated, you may find an audit or a records review sufficient.

Perform a waste sort where a sample of generated waste is physically collected, sorted by material, and weighed. A waste sort identifies each

waste component and calculates its percentage of the waste your business generates.

FACT: Used corrugated cardboard boxes are the largest single source of waste paper for recycling, making up about 40 percent of all waste paper recycled in the United States.

Conduct a Waste Audit

Start by taking a close look at the waste your property generates from:

- Offices
- Shipping and receiving
- Common and public areas
- Tenants
- Retail counters and kitchens
- Manufacturing or service areas

- Grounds maintenance Record the location, waste type and estimated volume.

Review Business Records

Review the following types of records to identify your business’ waste generation and disposal practices. Record the

location, waste type and estimated volume from these business records:

- *Purchasing and inventory
- *Supply, equipment and raw materials invoices
- *Maintenance and operating logs
- *Equipment service contracts and repair invoices
- *Waste hauling, disposal and any recycling records and contracts

FACT: Every year, Americans throw out enough office/writing paper to build a wall, 12 ft. high, stretching from Los Angeles to New York City.

Once identified, you can use the specific waste types and generation levels to:

- Negotiate trash and recycling contracts
- Request a share of revenues from sale of recycled materials (ex. scrap metal)
- Implement new policies to prevent waste

Identify Locations for Recycling Containers

Make recycling convenient for employees and tenants by placing recycling containers next to all trash containers. Consider purchasing different colored containers for trash and recycling.

* See Appendix D on how to conduct a waste assessment



Label recycling containers pictures and/or a list of acceptable items. Also consider a “No Trash” label on recycling containers. Label trash containers as “Trash Only”.

Appropriate-sized recycling containers should be placed at:

- Employee desks and workstations
- Copiers, fax machines and mailboxes
- Conference rooms
- Shipping and receiving
- Kitchen and vending areas
- Public areas including outside



Step 3—Contract for Service

Recycling can benefit your bottom line and the environment. Information in this section will help you:

- Negotiate a competitive price for service
- Maximize value of recycled material
-

Types of Service

All recycling haulers in Ulster County offer **dual-stream service** where bottles and cans made of glass, metal and plastic can be put into one recycling container. The other recycling bin/dumpster is for mixed paper materials. Corrugated cardboard is collected separately, making single stream collection possible.

Trash vs. Recycling Service

When you contract for trash service, you are paying for:

- Frequency of collection (2-3 times per week)
- Size of dumpster and/or number of containers
- Trash transfer at the Ulster County Resource Recovery Agency, long-haul trucking and disposal costs at distant landfills

When you contract for recycling service, you **avoid expensive trash disposal costs** and are paying for only:

- Frequency of collection (2-3 times per week)
- Size of dumpster and/or number of containers

Request Proposals from Several Haulers

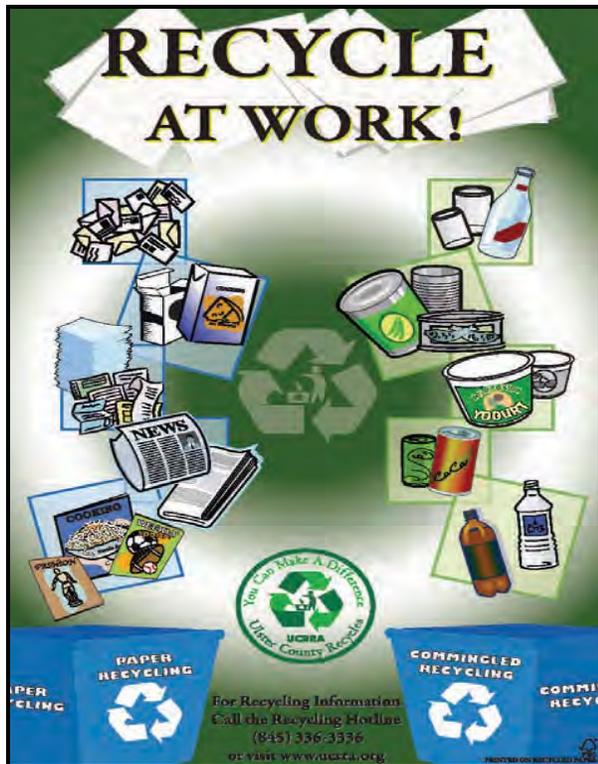
Ask for bids for service to recycle bottles, cans, mixed paper, office paper and corrugated cardboard. Contact several haulers to obtain competitive bids and compare costs for the same service options. For a current list of trash and recycling companies, use the phonebook and look under “garbage removal”.

What Haulers Typically Provide

- Large wheeled recycling containers or dumpsters; sometimes indoor containers
- Recommendations on size, locations and number of recycling containers

What Haulers Typically Provide cont'd

- Container labels - some offer labels with pictures and multiple languages
- List of acceptable and unacceptable materials for recycling OR you may visit, <http://www.ucrra.org/recycling/recycling.htm>
To download your own copy of the Ulster County Recycling Instructions Brochure
- An invoice detailing service:
 - Size and number of containers
 - Frequency of collection
 - Tonnage if available



Checklist for Hauler Meeting

- ✓ Materials to be recycled (ex. cardboard, white office paper, mixed paper, bottles and cans.)
- ✓ What materials cannot be recycled (contaminants), what amount will be tolerated and any penalties charged
- ✓ Minimum amounts required for pick-up
- ✓ Locations for indoor (including public areas) and outdoor recycling containers
- ✓ Size, type and number of recycling containers. Supply desk-side and common area inside recycling containers
- ✓ Samples of clear, descriptive container labels for recycling including labels for "Trash Only"
- ✓ Cost for increasing recycling collections versus adding larger/more containers
- ✓ Provisions in contract for reducing trash service and cost as recycling increases and recycling additional materials
- ✓ Invoice information needed: number of collections, size and number of containers, and tonnage



Sample outdoor recycling bin system for collecting cans, bottles and paper

Step 4—Educate Employees and Tenants

Recommended Recycling Topics:

Materials to recycle and not recycle

Recycling locations

Report recycling program results

Who to contact to report problems

Interesting facts about recycling

Seasonal suggestions and reuse tips

FACT: Scientists refer to it as the “Eastern Garbage Patch,” the largest dump in the world is in a desolate area extending from 500 miles off the coast of California, past Hawaii and extending almost to Japan-in the Pacific Ocean. Held together by a slowly rotating system of currents northeast of Hawaii, the Eastern Garbage Patch is more than just

a few floating plastic bottles washed out to sea; the Patch is a giant mass of trash-laden water exceeding the size of the continental United States!

Plastic Ocean

Promotion and Education

To have a successful recycling program, you must promote it and educate employees, tenants and custodial staff. Education can help you increase program participation and the volume of recycled materials, and reduce contamination from trash placed in recycling bins and recyclables thrown into trash.

How to Promote and Educate

- Create colorful, informative posters and signs showing what items can and cannot be recycled

- Promote your recycling program in property brochures and new employee training
- Place clear and descriptive labels on trash and recycling containers. Consider labels with pictures and in multiple languages
- Train employees, new hires and custodial staff. Show property management staff how to help tenants set up a recycling program
- Repeat the recycling message often using e-mail, internet and newsletters



Paper recycling bin clearly labeled and being put to use by an employee

Train Key Staff and Custodians

For your recycling program to be successful, you will need well-trained, committed staff.

Involve custodial staff in the design and make them accountable for recycling collection and reporting problems.

* Walk through new collection and monitoring procedures with onsite property management and custodial staff.

* Educate new employees to make sure recycling is not placed in the trash.

* Create a Recycling Program Notebook with what can and cannot be recycled, a map of recycling locations, frequently asked questions and answers and staff procedures.

* Train property management staff to help tenants set up a recycling program.

Events and Ongoing Education



Plan a fun kick-off event for your new recycling program. Ask managers to talk about the recycling program in staff meetings. Think of easy and fun things to do such as:

- Send out an online quiz, game or survey
- Play an office sort game at an upcoming meeting where teams compete to recycle materials
- Display fun recycling facts in the lobby or cafeteria
- Present small prizes to staff 'caught' recycling
- Offer recycling demonstrations and training
- Sponsor a recycling contest or event

FACT: Americans discard 2.5 million plastic bottles every hour. If recycled, plastic bottles can be made into carpet, clothing and materials for decks, benches and other construction projects.

Step 5—Monitor for Continued Success

Another important key to a successful recycling program is to monitor performance and adjust services as needed. Often easy upgrades deliver greater efficiency and lower costs. Use the tips below along with the checklist on page 5 to evaluate how well your recycling program is

working. For 2-3 weeks, check recycling and trash containers before each scheduled hauler collection for:

- Damaged signs and container labels
- Fullness of containers
- Contamination, such as:

1. Amount and type of trash in recycling bins

2. Amount and type of recycling thrown in trash

3. Additional items to reuse, recycle, or accepted in take-back programs to reduce disposal costs

- How clean and neat collection areas are kept

Tracking Progress

Make sure to record and report findings to employees and tenants to encourage proper recycling behavior and more participation.

*** Plan to repeat monitoring at least quarterly for one week and track findings to identify cost saving service changes and peak times for certain types of materials.

*** Even recycling CAN be made into a work of art!
Photo: Recycled Can Artwork



Recommended Actions Based on Findings

Overflowing recycling:
Add additional recycling containers or upgrade to a dumpster.

High contamination:
Add “No Trash” or “No Bottles and Cans” labels on appropriate containers. Consider purchasing different colored containers for trash and recycling. Use posters and flyers with photos describing what can and cannot be recycled. Also evaluate container placement.

Low participation:
Put up signs and maps in common areas to identify the location of recycling containers. Use posters and flyers with photos describing what can and cannot be recycled. Explain why recycling is important using the benefits on pages 1-3

Trash container not full:
Your property’s recycling program is a success! Reduce your trash disposal by reducing the number of trash collections or size/number of containers.

Trash overflowing with cardboard:

Add corrugated cardboard recycling service and avoid paying trash disposal costs. If only a seasonal problem, ask maintenance staff to collect and haul cardboard from move-ins to a Municipal Recycling Drop-off Center See page 13 for locations.



CT
Every day
American
businesses
generate
enough
paper to
circle the
Earth 2
times.

How to Reduce Business Waste

Review the waste audit information you collected to identify ways to reduce waste such as new “green” purchasing policies, reusing materials, supplier take-back programs and composting.

Green Purchasing

New purchasing policies can drastically reduce waste by limiting materials coming into your business

and shifting disposal and recycling back to the supplier. Buying products with recycled content increases demand for sustainable products. Consider new purchasing policies such as:

1. Buy paper, office supplies and other products made with recycled content.
2. Print newsletters, posters, and reports on recycled paper.

3. Buy items in bulk.
4. Purchase reusable products instead of single use disposable products. Buy coffee mugs instead of paper or styrofoam cups, hand dryers instead of paper towels, rechargeable batteries, etc.
5. Negotiate with suppliers to reduce packaging and offer take back programs for wood pallets, obsolete electronics, ink cartridges, etc.

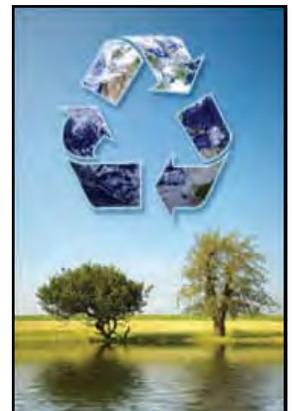
Reduce and Reuse—Then Recycle

Emphasize and reward new programs that reduce consumption and waste saving money spent on supplies and trash disposal. Then recycle what’s left. Try some of these tips to reduce waste and reuse materials:

- Implement a company-wide double-sided

- copying policy.
- Distribute company bulletins on voice or e-mail and post on a central bulletin board.
- Use technology to share, distribute and review business records and files.
- Reuse corrugated cardboard boxes,

- packaging peanuts, and bubble wrap to ship packages.
- Donate reusable furniture, computers, and office equipment to schools and charitable organizations.
- Reuse back of paper to print draft reports and documents or notepads



- Set up an area for employees to exchange desk and file organizers and other used items.
- Compost yard trimmings or ask your landscape contractor to compost them. To purchase a backyard composter at a discounted rate or to obtain more information on constructing your own, visit the UCRRA website at <http://www.ucrra.org/recycling/compost.htm>
- Use a mulching lawnmower and leave grass clippings on the lawn.
- Reduce advertising mail by requesting your business be removed from mail lists.
Send to: Direct Marketing Association Mail Preference Service, P.O. Box 9008, Farmingdale, NY 11735-9008



Municipal Recycling Drop-off Centers

The following materials are regulated in Ulster County: GLASS BOTTLES & JARS; METAL CANS (tin & aluminum); PLASTIC BOTTLES, JARS & JUGS (with caps removed), TUBS & LIDS; CARDBOARD (including brown paper bags ONLY); and a mixture of paper that includes NEWSPAPER, OFFICE PAPER, WASTE MAIL, MAGAZINES & THIN CARDBOARD FOOD BOXES (paperboard/grayboard). It is MANDATORY that these materials be recycled at town drop-off centers and at curbside. At the Municipal Recycling Drop-off Center, less than 2 cubic yards of recyclable material can be brought by residents or smaller businesses. Businesses, institutions and waste haulers with more than two cubic yards, may bring their recyclables to the UCRRA Materials Recovery Facility (MRF) located in the town of Ulster on Route 32 near the intersection of Route 199/209.

Town of Denning Town Barn, Denning Road, Claryville Transfer Station: 985-2543	Town of Lloyd Lily Lake Road, Highland Transfer Station: 691-8274	Town of Rosendale Whiteport Road, Rosendale Transfer Station: 338-0113
Town of Esopus Floyd Ackert Rd, West Park, NY Transfer Station: 384-6835	Town of Marbletown Canal Rd, High Falls Town Clerk: 687-7601	Town of Saugerties Route 212, Saugerties Transfer Station: 679-0514
Town of Gardiner Steve's Lane, Gardiner Transfer Station: 255-9775	Town of Marlborough Bailey Gap Rd, Milton Transfer Station: 795-2314	Town of Shandaken Town Hall, Rt 28, Shandaken Town Clerk: 688-5004
Town of Hardenburgh Turnwood, Hardenburgh Town Hall: 586-4108	Town of New Paltz Clearwater Rd, New Paltz Transfer Station: 255-8456	Town of Shawangunk River Rd, Wallkill Transfer Station: 895-2894
Town of Hurley 1043 Dug Hill Rd, West Hurley Transfer Station: 338-5412	Town of Olive Beaverkill Rd, Olive Transfer Station: 657-8177	Town of Ulster Miron Lane, Kingston Transfer Station: 336-0311
City of Kingston Municipal Curbside Collection	Town of Plattekill Freetown Rd, Plattekill Town Hall: 883-7331	Town of Wawarsing Landfill Rd, Wawarsing Transfer Station: 647-3410
Town of Kingston Town Hall, Sawkill Rd, Kingston Town Clerk: 336-8853	Town of Rochester Airport Road, Accord Transfer Station: 626-5273	Town of Woodstock Woodstock uses Saugerties Town Clerk: 679-2113

Recycling Bin Vendors

The following sample list of vendors is provided for your convenience only and does not constitute or imply an endorsement, recommendation, or favoring by the Agency.



Rubbermaid Commercial Products
www.rubbermaidcommercial.com
 800.347.9800

Grainger, Inc.
www.grainger.com
 800.237.3174 ext. 360

Recycling Products, Inc.
www.recyclingproducts.com
 800.875.1735

Jedstock, Inc.
www.jedstock.com
 908.754.0404

SCL AI Plastics
www.sclai.com
 800.777.0979

The Fibrex Group
www.fibrexgroup.com
 800.346.4458

Rehrig Pacific
www.rehrigpacific.com
 800.421.6244

Busch Systems International
www.buschsystems.com
 800.565.9931

One Earth Corporation
www.oneearthcorporation.com
 800.779.3062

Wausau Tile Pavers
www.wausautile.com/metalandconcrete/wastecontainers.cfm
 800.388.8278

Clear Stream
www.clearstreamrecycler.com
 800.872.8241

Midpoint International, Inc.
www.midpoint-int.com
 888.646.4246

Toter, Inc.
www.toter.com
 800.424.0422

Norseman Plastics
www.norsemanplastics.com
 888.675.2878

Link-A-Bag Systems
www.linkabag.com
 800.321.8154

Windsor Barrel Works
www.windsorbarrel.com
 800.527.7848

Waste Warrior Products
www.wastewarrior.com
 616.432.4365

Recy-CAL
<http://recy-cal.stores.yahoo.net/index.html>
 800.927.3873

APPENDIX B

Ulster County Mandatory Source Separation and Recycling Law Local Law Number 8 of 1991, revised 2007

Section 7. Program Established

A program is hereby established within Ulster County for the mandatory source separation of regulated recyclable materials from the solid waste stream. Regulated recyclable materials initially established under this local law shall, as defined in Section 4, include the following: newspaper, color-separated glass bottles and jars, metal cans, plastics bottles and jugs, corrugated cardboard, office paper, and computer paper. All persons shall separate regulated recyclable materials from solid waste before either setting out solid waste for collection pursuant to lawful procedure or disposing of it in an authorized solid waste management facility.

Section 8. Preparation and Separation of Regulated Recyclable Materials

- (a) Upon the effective date of this local law, all persons in the County shall separate regulated recyclable materials from solid waste for the purposed of collection and recycling.
- (b) The Agency, from time to time, may promulgate rules and regulations pursuant to Section 6 specifying requirements for preparation and separation of regulated recyclable materials.
- (c) All persons shall prepare and separate regulated recyclable materials in accordance with the rules and regulations.

Section 9. Preparation and Separation by Multi-Family Dwellings of Regulated Recyclable Materials

- (a) All residents of multi-family dwellings must source separate regulated recyclable materials from solid waste according to Section 8. and the rules and regulations promulgated thereunder, and deposit the regulated recyclable materials in the receptacles and/or collection area(s) provided therefore by the lessor, owner, or manager.
- (b) Lessors, owners, or managers of multi-family dwellings must establish a program which facilitates the multi-family resident to source separate regulated recyclable materials, and must include, providing in a neat and sanitary condition, receptacles and/or collection area(s) to receive all regulated recyclable materials generated by residents of the multi-family dwelling. In cases where a condominium association exists, the condominium association shall be responsible for provision and maintenance of the receptacles and/or collection area(s).
- (c) By March 1, 1992 and every year thereafter, lessors, owners, or managers of all multifamily dwellings of five (5) units or more, shall submit to the Agency for approval a Multi-Family Dwelling Recycling Plan implementing Section (b). Such a plan shall include:

APPENDIX B cont'd

- (1) Location of multi-family dwelling and number of units;
- (2) Collection system for regulated recyclable materials once the residents have deposited such materials in the receptacles and/or collection area(s);
- (3) Provisions for publicizing recycling program; and
- (4) Implementation date of September 1, 1992.

(d) The Agency, from time to time, may promulgate rules and regulations pursuant to Section 6 for additional information and implementation of the Multi-Family Dwelling Recycling Plan.

(e) All multi-family residents, lessors, owners, or managers shall report as required pursuant to Section 16.

Section 10. Commercial and Institutional Sector Recycling

(a) All commercial and institutional sector generators shall prepare and separate regulated recyclable materials according to Section 8 and the rules and regulations promulgated thereunder.

(b) All commercial and institutional sector generators of 10 employees or more shall submit a Commercial/Institution Solid Waste Reduction and Recycling Plan to the Executive Director. The plan will remain on file with the Agency. All commercial and institutional sector generators shall submit revisions as applicable. Such a plan shall include:

- (1) Organization Identification including a general description of the business, its location and type of operation and the number of employees;
- (2) Waste Composition analysis including an identification of the amounts of recyclable and non-recyclable materials in their solid waste stream;
- (3) Waste Reduction and Recycling Practices including an identification of waste reduction efforts, present recycling, potential recycling, and waste exchanges, and
- (4) Waste Disposal for residual waste including an identification of materials in the organization's waste stream that will not be reduced or recycled and disposal methods.

(c) The Agency, from time to time, may promulgate rules and regulations pursuant to Section 6 for additional information and implementation of the Commercial/Institutional Solid Waste Reduction and Recycling Plan.

(d) All commercial and institutional sector generators shall report as required in Section 16.

Section 16. Reporting Requirements

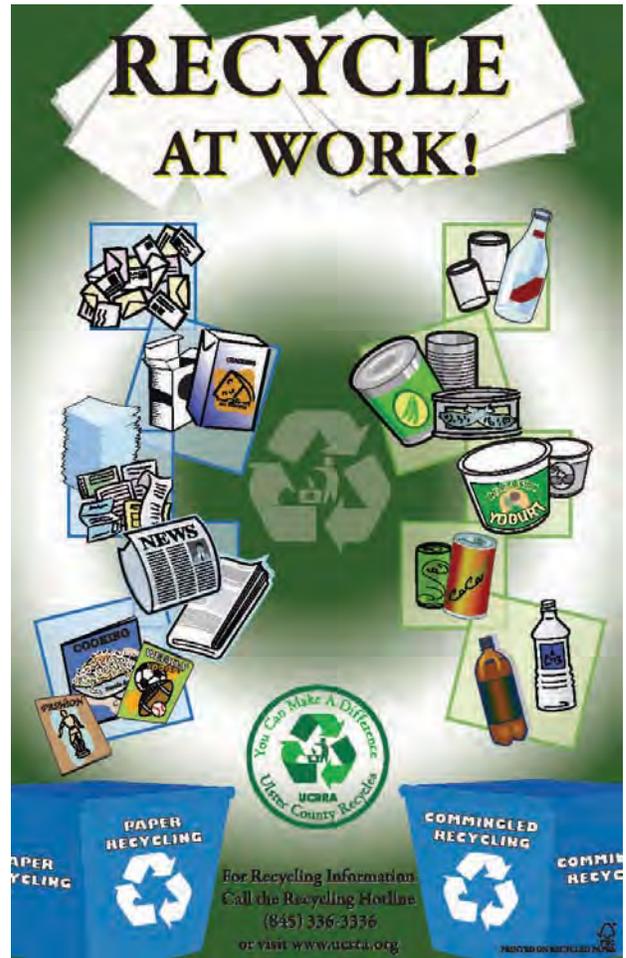
(a) All persons shall report information as designated by the rules and regulations promulgated by the Agency pursuant to Section 6.

(b) The Agency may, from time to time, pursuant to Section 6 promulgated rules and regulations requiring the reporting on regulated recyclable materials, recyclable materials being studied as possible regulated recyclable materials, regulated recyclable materials directly sold or donated pursuant to Section 11, categories of solid waste as designated by the Agency or any other information needed to further the purposes of this law, including information needed to study possible economic markets, track flow of regulated recyclable materials, or monitor progress in meeting the State and County recycling goals.

Sample Recycling Bin Labels and Posters

(available at Ulster County Resource Recovery Agency)

Recycling Posters



Recycling Bin Labels



Waste Assessment Form

Instructions

- Divide workplace into sections such as offices, production, food prep, hallways, etc.
- Collect materials from each section in one large container. NOTE: If material is already separated, it is not necessary to combine materials.
- Establish the size of the large container used to collect materials and determine the percentage of the total volume occupied by all waste (%full).
- Separate materials in the large container by type and determine the percentage of each type of waste—percentages must equal 100%.
- Enter all information onto audit form.

***Information/data on this form can be converted into tonnage using the *Volume– to –Weight Conversion Table* (Appendix E)

Sample Waste Assessment:

Location	# of Bins	Bin Size	% Full	Materials	Notes on Material
	1	55 gal	75	Mixed paper	Office paper, magazines, food boxes
First Floor—Office	1	32 gal	75	Containers	Cans and bottles
	1	32 gal	50	Trash	Food wrap

Location	# of Bins	Bin Size	% Full	Materials	Notes on Material

A banner image with a blue background. On the left, there are dark silhouettes of leaves and a glass bottle. The text "Standard Volume-to-Weight Conversion Factors" is written in white, bold, sans-serif font across the middle. On the right, a black rectangular box contains the text "APPENDIX E" in white, bold, sans-serif font.

Standard Volume-to-Weight Conversion Factors

APPENDIX E

Please visit the following EPA website

<http://www.epa.gov/waste/partnerships/wastewise/pubs/conversions.pdf>

for a complete list of all materials and conversions

ULSTER COUNTY BUSINESS & COMMERCIAL PROPERTY SOLID WASTE REDUCTION & RECYCLING PLAN

A major portion of the Ulster County solid waste stream is produced by business and industry. To meet the goals of the mandated Ulster County Source Separation and Recycling Law, and the Ulster County Solid Waste Management Plan, recycling programs must be implemented in commercial buildings and institutions as well as in residential neighborhoods.



ATTENTION BUSINESS LEADERS

Environmental preservation is an issue of paramount importance to Ulster County residents. Citizens want to know that the businesses they patronize recycle.

The Ulster County Resource Recovery Agency is encouraging all businesses with existing recycling or waste reduction programs to submit a completed **Business and Commercial Property Solid Waste Reduction and Recycling Plan** found below to qualify as a candidate for the Ulster County *Partner in Recycling* Program. **Businesses with 10 or more employees and Residential Premises (including apartments and condominiums with 5 or more units) are required by the Ulster County Mandatory Source Separation and Recycling Law per Section 10 to submit the following plan.** Upon receipt and review of the Commercial Solid Waste and Recycling Plan, you will receive the Ulster County **We Recycle** decal (including your permit #0000) for window display at your place of business advocating your recycling efforts to the public. You will be recognized as a recycling leader in the community and will be listed on our website www.ucrra.org as an Ulster County *Partner In Recycling*. Please advise that an Agency representative may contact you for a site visit. For review of the Ulster County Mandatory Source Separation and Recycling Law as it pertains to the commercial sector, please see the Recycling for Business and Commercial Properties Guide, Appendix B located on our website.

Even if your business has less than 10 employees you may become an Ulster County *Partner In Recycling*. If you have an existing recycling/waste reduction program please complete the following form and submit it to the Agency office for review.

If you currently do not have a recycling/waste reduction program, and would like more information on how to get started, simply fill out the top portion of the plan and answer question number 10. This is your opportunity to receive recognition for protecting the environment.

Once completed, the plan must be copied and:

- A) Mailed to the "UCRRA - Recycling Enforcement Program, P.O. Box 6219, Kingston, NY 12402" or faxed to (845) 336-4129;
- B) Kept on file at the business or property location;
- C) Posted in public areas for all employees, tenants and other occupants of the business or property.

Business / Commercial Property Name:

Mailing Address:

City: State: Zip Code:

Telephone: Email:

I hereby certify that as a representative, I am responsible for ensuring compliance with the Ulster County Mandatory Source Separation and Recycling Law: Section 10, which requires recycling and reporting by my business, and confirm that a program will be implemented in accordance with the applicable schedule.

Print Name: Sign Name: _____

1. Does your firm currently recycle any waste materials? Yes No (If no, skip to Question No. 10)

If Yes, how long have you been recycling? Years

2. If your firm does recycle, please estimate quantities recycled of the following:

Mixed Paper= includes newspaper, junk mail, magazines, paperboard, office/computer paper mixed together*

Commingled= glass/metal/plastic containers mixed together*

	# of Containers	Size of Container	# Pick-ups Per Month
Office/Computer Paper	<input type="text"/>	<input type="text"/>	<input type="text"/>
Newspaper	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mixed Paper *	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cardboard	<input type="text"/>	<input type="text"/>	<input type="text"/>
Glass	<input type="text"/>	<input type="text"/>	<input type="text"/>
Ferrous (Iron/Steel)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Non-Ferrous	<input type="text"/>	<input type="text"/>	<input type="text"/>
Aluminum	<input type="text"/>	<input type="text"/>	<input type="text"/>
Plastics	<input type="text"/>	<input type="text"/>	<input type="text"/>
Commingled *	<input type="text"/>	<input type="text"/>	<input type="text"/>
Textiles	<input type="text"/>	<input type="text"/>	<input type="text"/>
Yard Waste	<input type="text"/>	<input type="text"/>	<input type="text"/>
Rubber	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3. Please estimate what percentage of your total waste consists of the following recyclable materials:

	Percent %
Office/Computer Paper	<input type="text"/>
Newspaper	<input type="text"/>
Mixed Paper *	<input type="text"/>
Cardboard	<input type="text"/>
Glass	<input type="text"/>
Ferrous (Iron/Steel)	<input type="text"/>
Non-Ferrous	<input type="text"/>
Aluminum	<input type="text"/>
Plastics	<input type="text"/>
Commingled *	<input type="text"/>
Textiles	<input type="text"/>
Yard Waste	<input type="text"/>
Rubber	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

4. Where do you send the materials recycled from your facility? (materials other than what is collected by your hauler) ex: electronic waste, scrap metal, tires, etc.

Name of facility: Material:

Location:

Name of facility: Material:

Location:

5. The total amount of waste generated by your firm at this address is:

(enter quantity and choose appropriate measure and frequency)

Measure: Frequency: (Example: 35 cubic yards per week)

6. How does your firm currently handle waste disposal?

If Contract with Hauler, please specify Hauler name:

7. If you contract, what is payment based on?

If other, please specify:

8. What is the specific product or service your firm provides?

9. How many people are employed by your firm? (Employee means any person working 20 or more hours a week for more than 6 months in a calendar year.)

Employees:

10. Are you interested in learning more about how to start a sustainable recycling program? Yes No

If so, please visit the UCRRRA website at www.ucrra.org to obtain a copy of the Business and Commercial Property Recycling Guide and other helpful resources.

Are you aware of the Ulster County Mandatory Source Separation and Recycling Law that requires every business, every institution, every government agency, every commercial property and every household to recycle?

Yes No

BUSINESS TYPE (Check all that apply):

<input type="checkbox"/> Bar/Restaurant	<input type="checkbox"/> Office	<input type="checkbox"/> Wholesale
<input type="checkbox"/> Agricultural	<input type="checkbox"/> Retail, Non-Grocer	<input type="checkbox"/> Retail, Grocer
<input type="checkbox"/> Laboratory	<input type="checkbox"/> Manufacturing	<input type="checkbox"/> Social Services
<input type="checkbox"/> Hotel	<input type="checkbox"/> Hospital	<input type="checkbox"/> Education
<input type="checkbox"/> Home-Based Business	<input type="checkbox"/> Residential (# of units) <input type="text"/>	
<input type="checkbox"/> Other		

(Please specify)

MULTIPLE SITE BUSINESSES:

Check this box if this plan covers your business at more than one location within Ulster County. Please list the addresses of all in-County business locations below.

WASTE REDUCTION:

For the practices listed below, please indicate which applies to your Business or Commercial Property.

- Waste reduction methods are currently in use
- Plan to implement in the future
- Not Applicable

<input type="checkbox"/>	Duplex copying for all documents
<input type="checkbox"/>	Single-space documents, wherever possible; use narrow margins and small type, as appropriate
<input type="checkbox"/>	Reusable file folders
<input type="checkbox"/>	Reusable envelopes for interoffice mail
<input type="checkbox"/>	Sharing and circulating documents
<input type="checkbox"/>	Centralized bulletin boards
<input type="checkbox"/>	Electronic bulletin boards
<input type="checkbox"/>	Centralized filing; document library
<input type="checkbox"/>	Remove duplications from mailing list
<input type="checkbox"/>	Avoid unwanted 'junk mail'
<input type="checkbox"/>	Reuse blank side of single-sided paper: <input type="checkbox"/> notes or scrap paper <input type="checkbox"/> draft documents in printer/copier
<input type="checkbox"/>	Fax stamp or half-page cover sheets
<input type="checkbox"/>	Plain paper fax machine
<input type="checkbox"/>	Refillable office mugs
<input type="checkbox"/>	Reusable dishes and flatware

Wooden pallet exchange or reuse

Reuse styrene foam pack chips:

mailing, shipping

bring to local packing companies

Rechargeable batteries

Compact fluorescent light bulbs

Low-flow water fixtures

Donate used furniture and other reusable items

Compost

Waste reduction suggestion box

Other, specify:

Other, specify:

Other, specify:

RECYCLED CONTENT:

Does your firm buy or use any products that contain recycled content or materials (such as recycled toner cartridges, recycled hand towels or tissue paper, copier paper, etc.)? If so, please specify products below.

If your firm has any additional comments or information regarding your recycling and waste reduction practices that you'd like to share with the Agency, please describe below.

An office recycling effort is most effective when used with a comprehensive waste reduction program. Waste reduction means avoiding the generation of waste by using less material, using supplies and equipment more efficiently and buying products that are more durable, easily repairable or recyclable.

Reducing the office waste stream makes economic as well as environmental sense. It saves operating and disposal costs and helps conserve natural resources and energy. Knowing your current waste management practices is important before establishing a new office waste management system. This requires a waste audit, which should be conducted at least once a year.

Reset Form

Print Form

SAFE ALTERNATIVES TO COMMON HOUSEHOLD PRODUCTS

Household

Hazardous

Waste

Many everyday household products contain hazardous chemicals. When you dispose of these products in the storm drain, sink or garbage, the chemicals can end up in local water bodies or groundwater. This list of alternatives is provided to help you make responsible decisions about the safe use and disposal of household products. By trying some or all of the alternatives, you will help Ulster County move toward a goal of hazard-less waste.

These few supplies can replace many cleaners:

Baking Soda	Warm Water	Borax	Lemon Juice	Toothpaste
White Vinegar	Liquid Soap	Salt	Club Soda	Olive or Almond Oil
Flour	Baby Oil	Skim Milk	Margarine	Rubbing Alcohol

For this	Try this
All purpose cleaner	1 tsp liquid soap, 1 tsp borax, 1/4 cup vinegar, and 1 quart warm water. Or 1/4 cup white vinegar with 1 quart warm water.
Brass polish	Paste of equal parts vinegar, salt and flour. Be sure to rinse completely afterward to prevent corrosion.
Car battery corrosion removal	Baking soda and water
Chrome polish	Vinegar
Coffee cup stain removal	Rub with moist salt or baking soda.
Copper cleaner	Paste of equal parts vinegar, salt and flour. Be sure to rinse completely afterward to prevent corrosion.
Crayon mark remover	Rub mark with toothpaste and a damp cloth. Do not use on non-vinyl wallpaper.
Decal removal	Soak in hot water if practical; otherwise use white vinegar.
Dishwashing	Washing dishes by hand with a liquid soap or mild detergent is preferable to using strong electric dishwasher detergents. Look for detergents without phosphates or chlorine.
Disinfectants	Mix 1/2 cup borax with 1 gallon of boiling water. Or undiluted white vinegar.
Drain cleaner	Try plunger first. Then pour 1/2 cup baking soda down, then 1/2 cup vinegar; wait a few minutes, then follow with 2 quarts boiling water. Repeat if needed. If this fails, rent or buy a drain snake. Use solution weekly to prevent buildup.
Furniture polish	Olive oil or almond oil
Garbage disposal deodorizer	Used lemons or baking soda
Grout and stain cleaner	Paste made of baking soda and water, clean with toothbrush, spray with vinegar and water mix and after foaming is finished, rinse with water.
Handcleaner: paint/grease	Baby oil or margarine, then wash with soap and water.
Laundry detergent	1/2 cup white vinegar or baking soda or borax per load. Or laundry soap or a liquid detergent with low or no phosphate. A tablespoon of vinegar in the rinse increases the brightness.
Linoleum floor cleaner	1 cup white vinegar plus 2 gallons water
Linoleum floor polish	Polish with skim milk (it doesn't smell, milk evaporates!)
Mildew remover	A non-chlorinated scouring powder cleans mildew stains from grout. Scrub hard.
Moths (in clothes)	Thoroughly clean any used clothing or furniture before introducing into home. Wash woolens before storing; store in tight container with cedar chips, newspapers or lavender flowers (instead of mothballs). Vacuum rugs, behind and under furniture. Shake out woolens periodically.
Oven cleaner	As a preventive measure, cover the oven bottom with a sheet of aluminum foil. Clean up spills promptly. To clean, use baking soda, soap and water with a copper scrubber and lots of elbow grease. Or use a non-chlorinated scouring powder or non-caustic oven cleaner.
Paint (oil-based)	Latex paint, avoid aerosols.
Porcelain stain removal	Brush with baking soda
Refrigerator deodorizer	Open box of baking soda
Rug/carpet cleaner	Sprinkle baking soda, then vacuum. Or clean immediately with soda water or baking soda paste, then vacuum.
Scouring powder/abrasive cleaner	Baking soda or borax. Or rub area with 1/2 lemon dipped in borax, rinse and dry.
Silver cleaner	Rub gently with baking soda and damp sponge (large objects). For small objects place in pot of water on stove with small piece of aluminum foil; add 1 tsp baking soda and 1 tsp salt; boil 2-3 minutes. Or rub gently with toothpaste on a cottonball.
Stain removal	Depends on type of spill. Treat as quickly as possible and blot as much liquid as you can with paper towel or cloth (don't rub). For most stains, safest to try cold water first, then hot water with a little detergent.
Stainless steel cleaner	Baking soda
Toilet bowl cleaner	Baking soda or borax or soak with white vinegar
Tub and tile cleaner	Use vinegar (full-strength) on a sponge, then use baking soda as a scouring powder. Rinse well.
Vinyl floor cleaner	1 gallon warm water and 1/2 cup white vinegar or 1/4 cup borax
Wine stain removal	Water or rubbing alcohol
Window cleaner	Juice from one fresh lemon, 2 cups water or club soda, 1 teaspoon cornstarch. Mix well. Use a spray bottle.



Ulster County Resource Recovery Agency
 999 Flatbush Road, PO Box 6219, Kingston, NY 12402
 Phone: (845) 336-0600 Fax: (845) 336-4129

Ulster County Electronics Recycling Program

The NYS Electronic Equipment Recycling and Reuse Act went into effect on April 1, 2011. The law will ensure that every New Yorker will have the opportunity to recycle their electronic waste in an environmentally responsible manner. Got some old electronics? Regardless of where you bought it, what brand it is, or how old it is: bring it to the Ulster County Resource Recovery Agency. We'll make sure it's properly and safely recycled.

Don't want to wait until the next Household Hazardous Waste Collection Event? Just bring the e-waste to the Agency for FREE during business hours (7:30am – 3:30 pm) Monday thru Friday at **999 Flatbush Road in Kingston!** Call the Recycling Hotline for questions about this program or for more information at (845) 336-3336. Also, contact your local town transfer station, as many of the towns in Ulster County now offer a convenient method of recycling used electronic equipment for FREE.

***Businesses (less than 50 employees), non-profits (less than 75 employees) can also recycle their e-waste at the Agency for FREE. Please contact the Agency (336-0600) in advance if you have a large amount of material or a large item (ex. console TV). Your cooperation is greatly appreciated. Thanks!

Household Hazardous Waste

The How-to Guide for Proper Disposal of Hazardous Products is available on the Agency website at <http://www.ucrra.org/recycling/HazardousWaste.pdf>

The best way to get rid of hazardous products is to use them up or give them away to someone who can or even better yet, purchase environmentally-friendly products. Since this is not always possible, the Ulster County Resource Recovery Agency is working to increase the availability of recycling and disposal options for many hazardous materials. The Household Hazardous Waste Collection Event is conducted multiple times per year and provides households the opportunity to safely dispose of oil-based paint, solvents, pesticides, automotive products and other household hazardous waste for FREE. Residents with an immediate need for disposal can pay for the disposal through an environmental services company.

Pharmaceutical Waste

When pills or liquid medicines are poured down the sink or flushed down the toilet they remain diluted in the water supply after treatment and these trace amounts are suspected of causing a range of health problems, according to the Environmental Protection Agency (EPA).

If you can't make it to a pharmaceutical collection event, there is another option for safely disposing of your expired medications. CVS pharmacy recently announced that all 7,200 of its locations nationwide now offer the Sharps Compliance Inc. medication disposal system, which allows customers to dispose of unused or expired medication. The postage-paid envelopes cost \$3.99 each and allow customers to mail their unwanted prescription and over-the-counter medications to Sharp Compliance's Texas facility for disposal. Controlled substances are excluded from the program. In addition to CVS, Walgreens and Rite-Aid have teamed with the company.



****FREE** Household Hazardous Waste, Pharmaceutical Waste and Electronics Collection Event**

HOUSEHOLD HAZARDOUS WASTE



This collection provides a **FREE** and **safe** disposal alternative for hazardous pesticides, solvents, household chemicals, expired and unused medications.

This event is for **ULSTER COUNTY HOUSEHOLDS ONLY.**

NO hazardous waste or pharmaceutical waste from businesses, organizations, schools or farms is accepted at the event.

**When: Saturday, October 15, 2011
From 8am to 2pm**

**Where: 999 Flatbush Road, Kingston
(near the intersection of Route 32
& 209/199) at the Ulster County
Resource Recovery Agency**

PHARMACEUTICAL WASTE



ELECTRONIC WASTE



Electronics Recycling: complete data security and environmental compliance

You **MUST** call the Recycling Hotline at (845) 336-3336 or visit our website at www.ucrra.org to register for the collection event

Please Note

Electronic Waste ONLY from Ulster County households, businesses, organizations, schools and farms is accepted at the event.

HOUSEHOLD HAZARDOUS WASTE, PHARMACEUTICAL WASTE AND ELECTRONICS RECYCLING EVENT

sponsored by the
ULSTER COUNTY RESOURCE RECOVERY AGENCY

* To make an appointment to participate in this event, visit our website at www.ucrra.org

Household Hazardous Waste, Pharmaceutical Waste and Electronics Collection is FREE to all Ulster County Residents. You must sign a Declaration of Residency and Non-Commercial Waste form when you arrive.

CANCELLATION or RESCHEDULE: Please call the Agency to cancel or reschedule your appointment. Please call our 24 hour hotline at (845) 336-3336 and leave a message; or call (845) 336-0600 during business hours, Mon – Fri. Informing the Agency of a cancellation enables other residents to utilize the Collection Event. Thank you!

DIRECTIONS: to the UCRRRA HHW Collection site located at 999 Flatbush Road, Kingston (Town of Ulster):
From the Thruway Circle: Take Route 28W to the first exit after the light by Johnson Ford car dealership. Enter on Route 209 North/Rhinecliff Bridge (approx 4.5 miles). The last exit before the bridge toll is Route 32. At end of ramp make a left on Route 32S (also Flatbush Road). Sign on left: Ulster Solid Waste Transfer Station. Follow road to collection site.
From Route 9W: Take Route 9W North into Kingston. Make right at light at intersection of 9W and Route 32 (also Flatbush Road). Take Route 32N approximately 2 miles to UCRRRA sign for Ulster Solid Waste Transfer Station just before Rhinecliff Bridge exit and 209 overpass. Follow road to collection site.

**HOUSEHOLD HAZARDOUS WASTE &
PHARMACEUTICAL WASTE – ACCEPTABLE ITEMS**

ELECTRONICS – ACCEPTABLE ITEMS

Oil based paints, stains, varnishes- NO LATEX PAINT	Monitors
Paint thinner, solvents, and strippers	CRTs
Lighter fluid	TVs
Waste fuels: Kerosene, Gasoline	Telephones
Pesticides and insecticides	Copy machines
Poisons, weed killers, mothballs	Keyboards
Mercury, thermostats, thermometers	Terminals
Hobby supplies, artist supplies	Printers and scanners
Photo chemicals, chemistry sets	Modems
Oven, toilet and drain cleaners	CPUs
Rug and upholstery cleaners	VCRs
Automotive products	Fax Machines
- used oil filters	Typewriters
- antifreeze, engine degreaser	Cables
- carburetor cleaner, brake fluid	Cell Phones
- transmission fluid	Batteries
- automotive batteries	Video game players
Swimming pool chemicals	Answering machines
Rubber cement, airplane glue	Tape recorders
Furniture, floor, and metal polishes	Stereos and radios
Dry cleaning solvents and spot removers	DVD players
Fluorescent bulbs (CFLs, UV, tubes, spirals, etc.)	Microwaves

Pharmaceutical Waste includes: Expired/unused medications, pet medications, liquid medications, ointments, lotions, prescription medications, over-the-counter medications

NOTE: Electronics Collection does NOT include appliances such as: AIR CONDITIONERS, REFRIGERATORS, VACUUM CLEANERS
Electronics Recycling Collection ONLY: Ulster County Households, Businesses w/ less than 50 employees and Nonprofit Organizations w/ less than 75 employees can participate per New York State law

DO NOT BRING THE FOLLOWING:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Any empty containers, including empty paint cans which should be disposed of in the trash; 2. Waste in containers larger than 10 gallons 3. Non-Hazardous products like laundry detergent; 4. Smoke detectors and radioactive materials; | <ol style="list-style-type: none"> 5. Explosives, ammunition, or fireworks; 6. Etiological, pathological, or medical wastes (SHARPS); 7. Controlled Substances; Propane tanks or fire extinguishers (call your propane or fuel provider) |
|--|---|

HHW, PHARMACEUTICAL WASTE AND ELECTRONICS WILL BE ACCEPTED FROM ULSTER COUNTY RESIDENTS/HOUSEHOLDS ONLY.
MATERIALS FROM BUSINESSES, SCHOOLS, FARMS OR ORGANIZATIONS ARE NOT ACCEPTED. CALL NYSDEC FOR MORE INFORMATION
AT 1-877-SWEEPNY or VISIT www.cleansweepny.org/ or CALL THE RECYCLING HOTLINE AT (845) 336-3336 or
VISIT OUR WEBSITE AT www.ucrra.org

The Household Hazardous Waste Collection Program is partially funded by the NYS Department of Environmental Conservation

**TABLE 3-2 QUANTITIES OF HHW COLLECTED PER YEAR THROUGH ULSTER COUNTY'S
HHW COLLECTION PROGRAM**

Hazardous Waste Material	April 18, 2008 362 participants	October 11, 2008 387 participants	April 18, 2009 355 participants	October 10, 2009 404 participants	April 17, 2010 406 participants	June 26, 2010 165 participants	October 16, 2010 470 participants
Antifreeze	110 gallons	100 gallons	125 gallons	120 gallons	240 gallons	60 gallons	168 gallons
Asbestos	0	200 pounds	0	0	200 pounds	0	0
Automotive Batteries	33.5 pounds	26 pounds	30 pounds	45 pounds	40 pounds	36.5 pounds	33.5 pounds
Used Oil	110 gallons	113 gallons	125 gallons	125 gallons	100 gallons	62.5 gallons	125 gallons
Oil Based Paint	220 gallons	380 gallons	208 gallons	333 gallons	600 gallons	770 gallons	160 gallons
Pesticides (solids)	1,760 pounds	3,000 pounds	1,400 pounds	1,400 pounds	2,200 pounds	1,000 pounds	1,100 pounds
Pesticides (liquids)	385 gallons	240 gallons	175 gallons	336 gallons	216 gallons	96 gallons	216 gallons
Mercury/mercury containing devices	40 pounds	50 pounds	50 pounds	50 pounds	200 pounds	50 pounds	200 pounds
Household Batteries	500 pounds	500 pounds	500 pounds	500 pounds	1,000 pounds	500 pounds	500 pounds
Fluorescent bulbs	400 pounds	500 pounds	400 pounds	200 pounds	400 pounds	200 pounds	800 pounds
Other household hazardous waste (solids)	400 pounds	2,000 pounds	4,000 pounds	2,650 pounds	3,000 pounds	3,250 pounds	3,000 pounds
Other household hazardous waste (liquids)	3,500 gallons	1,710 gallons	1,990 gallons	1,612 gallons	2,220 gallons	400 gallons	1,585 gallons
Total # of drums collected	57 55-gallon drums	86 55-gallon drums	66 55-gallon drums	52 55-gallon drums	73 55-gallon drums	36 55-gallon drums	89 55-gallon drums

Electronics	32,501 pounds	22,050 pounds	35,284 pounds	43,580 pounds	42,900 pounds	21,450 pounds	36,211 pounds
Pharmaceutical	N/A	N/A	N/A	N/A	280 pounds	49 pounds	200 pounds

1 The following conversion factors were used to convert some of the original quantities from gallons to pounds:
 Motor Oil – 1 gallon = 8 lbs
 Oil-based Paint – 1 gallon = 12 lbs
 Antifreeze – 1 gallon = 8 lbs

Additional EPP Case Studies

A.1 State of Minnesota

A.1.1 Introduction

The Materials Management Division and Minnesota Pollution Control Agency (MPCA) are committed to helping state agencies purchase environmentally preferable products that:

- Contain fewer toxic materials;
- Minimize waste;
- Contain recycled content;
- Conserve energy and water; and
- Contain plant-based materials.

The MPCA is the lead agency in promoting EPP.

A.1.2 Policy Highlights

Through statute and executive order, the state of Minnesota has mandated that state agencies must purchase certain materials that contain recycled content, as well as reduce toxicity by purchasing specific “less toxic” products. For example:

Recycled Copier Paper – All copier paper purchased by state agencies must contain at least 10 percent post-consumer recycled material (per Chapter 16B.122, “Purchase and Use of Paper Stock; Printing”).

All Other Recycled Products – State agencies must buy products made with recycled material when the price does not exceed comparable non-recycled products by more than 10 percent (per Chapter 16B.121, “Purchase of Recycled, Repairable, and Durable Materials”).

Less Toxic and Reusable Products – State agencies shall put special emphasis on using products that are less toxic and generate less waste. State agencies are to promote the waste hierarchy by selecting products that reduce the quantity and toxicity of materials in waste. The commissioner, and state agencies when purchasing under delegated authority, in developing bid specifications, must also consider the extent to which a commodity or product is durable, reusable, or recyclable and marketable through the state resource recovery program and the extent to which the commodity or product contains post-consumer material (per Chapter 16B.121, “Purchase of Recycled, Repairable, and Durable Materials”).

Mercury Thermometers Prohibited – Effective January 1, 2002, thermometers that contain mercury can no longer be sold or distributed in the state. The law covers mercury-based fever thermometers, as well as those used for outdoor temperature readings and cooking (per Chapter 116.92, “Mercury Emissions Reduction”).

Mercury Emissions Reduction, Product Bans, and Disposal Bans – Minnesota has taken a number of steps to keep mercury out of the environment, such as banning the sales of games, toys, and clothing containing mercury; and prohibiting the disposal of mercury-containing fluorescent lamps, thermostats, thermometers, switches, appliances, and medical or scientific instruments (per Chapter 116.92, “Mercury Emissions Reduction”).

Printing Guidelines – Whenever practicable, public entities shall comply with the printing guidelines by choosing recyclable paper, reducing paper waste and selecting less toxic inks (per Chapter 16B.122, “Purchase and Use of Paper Stock; Printing”).

Implementation of Pollution Prevention and Resource Conservation by State Governments – This Executive Order called for the formation of an Interagency Pollution Prevention Advisory Team. One of their tasks – state agencies shall encourage pollution prevention through their purchasing policies and specifications. (Per Executive Order – 99-4).

A.1.3 Tools Utilized

The MPCA has developed several tools to assist local governments, state agencies and businesses to implement the state’s EPP policy. Some tools serve multiple purposes, taking a somewhat holistic approach and educate about and promote a wide audience about multiple environmental issues. The tools include:

EPP Guide – This guide provides information about environmentally preferable products, vendors of products, and product specifications.

Recycled Products Directory – An online recycling markets directory is available to inform purchasers of recycled-content products made in Minnesota.

Recycling Markets Directory – An online directory that helps Minnesota businesses and recyclers find companies that collect or accept recyclable materials. This directory also helps brokers, processors and manufacturers identify sources of recycled feedstocks that can be used to make new products containing recycled materials.

Living Green Expo – The Living Green Expo is a two-day event that showcases products, services, and activities that help people “live green.” During the event in 2006, there were over 19 major sponsors, 14,000 visitors, and 2,200 visitors made a commitment to take environmental action. The Expo is geared more toward individuals and families than governmental entities.

Healthy Sustainable Schools – The MN Pollution Control Agency helps schools incorporate sustainable practices through grant assistance. In 2006, three schools received this assistance enabling them to implement programs and practices that resulted in reducing waste, toxicity, pollution, and increasing energy efficiency.

Governor’s Awards for Pollution Prevention – Each year outstanding environmental projects and programs throughout the state are recognized through the Governor’s Awards for Excellence in Waste and Pollution Prevention. Awards are presented to businesses and non-profit organizations. Another award program, the MnGREAT Awards program, recognizes public organizations and agencies.

Buy Green Power Campaign – The MPCA works with the Department of Commerce and others to encourage consumers to support clean energy by purchasing renewable energy from their electrical utility provider. The MPCA is modeling environmental stewardship by making a

three-year commitment to purchase 450,000 kilowatt hours per year of green power at the St. Paul office, matching the new green power purchases of its employees.

The Eco Experience – A 12-day exhibit at the Minnesota State Fair (co-sponsored by the Fair and the MPCA) partners with more than 140 businesses to present environmental messages to the public at the 12-day Minnesota State Fair. Highlights include a wind turbine, an “eco-home,” a working hydrogen fuel cell, a waste reduction exhibit, wind and solar demonstrations, as well as water monitoring demonstrations.

MN Technical Assistance Program (MnTAP) – The Minnesota Technical Assistance Program, which has been in existence for more than 20 years, has focused on pollution prevention assistance to manufacturing and service industries. Industry specialists help identify efficiency gains and material/ chemical substitutions that result in less risk. Outcomes include reduced spending, waste, water consumption, waste disposed, and energy consumption. MnTAP also operates the Minnesota Materials Exchange program which is a free service that links organizations that have reusable goods they no longer need to those who can use them. By providing a business reuse network, the Materials Exchange program helps prevent usable materials from becoming waste. In the last five years, the Materials Exchange program has helped businesses save over \$7 million and exchange over 30 million pounds of material.

Involvement in EPEAT – The MPCA staff has been instrumental in the development and implementation of the national Electronic Product Evaluation and Assessment Tool (EPEAT). This tool enables purchasers to evaluate and select information technology products that meet their green standards – using less energy, incorporating recycled content, and incorporating other environmental attributes. Agency staff worked with the state Office of Enterprise Technology to incorporate EPEAT into procurement standards that are now available for public entity purchasing in Minnesota, including college and university system purchasing.

“Buying Green” Newsletter – The MPCA develops a quarterly newsletter that is distributed via email and through the MPCA website to interested parties. The newsletter aims to inform governmental and institutional purchasers about EPP opportunities, and provides a forum for communities, agencies and institutions to share their successes with regards to EPP activities. The newsletter also provides an opportunity for MPCA to share additional EPP resources.

Develop Specifications – The MPCA works with the MN Materials Management Department to develop specifications for environmentally preferable products.

Workshops – When the state budget allows, the MPCA coordinates workshops which are held in different counties to provide an opportunity for vendors and purchasers to come together and share information.

Cooperative Purchasing – The Department of Materials Management allows counties, cities, schools and certain non-profits to participate in state purchasing contracts.

A.2 The Commonwealth of Massachusetts

A.2.1 Introduction

The primary goal of Massachusetts’ Recycled Materials Procurement Plan is to use the Commonwealth’s purchasing power to reduce the environmental and public health impact of state government and foster markets for EPPs. The Program is a collaborative effort among the

Executive Office of Environmental Affairs, the Department of Environmental Protection (DEP) and the Operational Services Division. The Program was launched in May 1988 with the issuance of Executive Order #279, which directed the state's Purchasing Agent to develop a Recycled Materials Procurement Plan, implement a statewide buy recycled program, and establish regulations to guide the program. This effort to establish detailed direction for recycled product procurement was one of the first in the nation. Since that time, additional executive orders have been passed, and procurement reform took place in 1997, promulgating new purchasing regulations which included environmental guidelines. Executive Order 438 established a state sustainability program in 2002. The most recent EPP-related policy passed is Executive Order Number 484, which is described below.

A.2.2 Policy Highlights

Executive Order Number 484 – Established in April 2007. “Leading by Example – Clean Energy and Efficient Buildings.” The program encompasses all of Massachusetts’ executive agencies and public institutions. The Order establishes higher energy efficiency standards in the operation of state buildings, setting short and long-term targets and goals to advance clean energy and efficiency, and reduce greenhouse gas emissions that contribute to global warming. It promotes sustainability activities within state government including waste reduction, water conservation, green buildings, alternatives fuels, efficient transportation, and recycling.

A.2.3 Tools Utilized

- **EPP Products Guide and State Contracts** – Massachusetts has developed a guide to provide information about environmentally preferable products purchased by the state, and for which state contracts exist.
- **EPP Buyer Update** – The Buyer Update is an electronic newsletter that informs citizen consumers and purchasing agents about news in the EPP arena.
- **Fact Sheets** – The MA DEP is in the process of developing two-page fact sheets on specific products and product types.
- **MA Lead By Example Program Award Program** – Recognizes outstanding efforts among Commonwealth agencies, public higher education institutions, and municipalities.
- **MA Environmental Purchasing and Sustainability Awards Program** – Recognizes outstanding efforts in purchasing EPPs and implementing other sustainable practices among Commonwealth public sector entities and businesses (stems from Buy Recycled Awards program).
- **Annual EPP Vendor Fair and Conference** – The annual Vendor Fair (typically held in October) brings together vendors of EPP products and potential purchasers.
- **“Try Before You Buy” Program** – In previous years (FY 1997 through FY 2006) funding was made available to assist purchasing agencies and departments in “trying out” a new recycled product or innovative technology. The objective was to gather information concerning product performance and acceptability, and to promote the acceptance of environmentally preferable products that have widespread applications throughout the state.

Appendix B

Model Green Purchasing Ordinance StopWaste.Org

ENVIRONMENTALLY PREFERABLE PURCHASING MODEL POLICY - REVISED— 9/26/06 PREPARED BY STOPWASTE.ORG (ALAMEDA COUNTY WASTE MANAGEMENT AUTHORITY AND SOURCE REDUCTION & RECYCLING BOARD)

1.0 STATEMENT OF POLICY

It is the policy of [organization] to: institute practices that reduce waste by increasing product efficiency and effectiveness, purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable, and purchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, are lead-free and mercury-free, and use wood from sustainably harvested forests.

2.0 PURPOSE

This Policy is adopted in order to: conserve natural resources, minimize environmental impacts such as pollution and use of water and energy, eliminate or reduce toxics that create hazards to workers and our community, support strong recycling markets, reduce materials that are landfilled, increase the use and availability of environmentally preferable products that protect the environment, identify environmentally preferable products and distribution systems, reward manufacturers and vendors that reduce environmental impacts in their production and distribution systems or services, create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

3.0 SPECIFICATIONS

3.1 Source Reduction

3.1.1 [Organization] shall institute practices that reduce waste and result in the purchase of fewer products whenever practicable and cost-effective, but without reducing safety or workplace quality.

3.1.2 [Organization] shall purchase remanufactured products such as toner cartridges, tires, furniture, equipment and automotive parts whenever practicable, but without reducing safety, quality or effectiveness.

3.1.3 [Organization] shall require all equipment bought after the adoption of this policy to be compatible with source reduction goals as referred to in this section (3.1), when practicable.

3.1.4 All buyers shall consider short-term and long-term costs in comparing product alternatives, when feasible. This includes evaluation of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.

3.1.5 Products that are durable, long lasting, reusable or refillable are preferred whenever feasible.

3.1.6 [Organization] requests vendors to eliminate packaging or use the minimum amount necessary for product protection, to the greatest extent practicable.

3.1.7 Packaging that is reusable, recyclable or compostable is preferred, when suitable uses and programs exist.

3.1.8 Vendors shall be encouraged to take back and reuse pallets and other shipping and packaging materials.

3.1.9 Suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be required to take back equipment for reuse or environmentally safe recycling when [organization] discards or replaces such equipment, whenever possible.

3.1.10 [Organization] shall consider provisions in contracts with suppliers of non-electronic equipment that require suppliers to take back equipment for reuse or environmentally safe recycling when [organization] discards or replaces such equipment, whenever practicable.

3.1.11 All documents shall be printed and copied on both sides to reduce the use and purchase of paper, whenever practical.

3.2 Recycled Content Products

3.2.1 All products for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines in the Agency's Comprehensive Procurement Guidelines, such as those for printing paper, office paper, janitorial paper, construction, landscaping, parks and recreation, transportation, vehicles, miscellaneous, and non-paper office products, shall contain the highest postconsumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

3.2.2 Copiers and printers purchased shall be compatible with the use of recycled content and remanufactured products.

3.2.3 In accordance with California Public Contract Code, Sec. 10409, [organization] shall purchase re-refined lubricating and industrial oil for use in its vehicles and other equipment, as long as it is certified by the American Petroleum Institute (API) as appropriate for use in such equipment.

3.2.4 When specifying asphalt concrete, aggregate base or portland cement concrete for road construction projects, [organization] shall use recycled, reusable or reground materials when practicable.

3.2.5 [Organization] shall specify and purchase recycled content transportation products, including signs, cones, parking stops, delineators, channelizers and barricades, which shall contain the highest postconsumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Comprehensive Procurement Guidelines.

3.2.6 All pre-printed recycled content papers intended for distribution that are purchased or produced shall contain a statement that the paper is recycled content. Whenever feasible, the statement should indicate the percentage of postconsumer recycled content it contains.

3.3 Energy and Water Savings

3.3.1 Where applicable, energy-efficient equipment shall be purchased with the most up-to date energy efficiency functions. This includes, but is not limited to, high efficiency space heating systems and high efficiency space cooling equipment.

3.3.2 When practicable, [organization] shall replace inefficient interior lighting with energy efficient equipment.

3.3.3 When practicable, [organization] shall replace inefficient exterior lighting, street lighting and traffic signal lights with energy-efficient equipment. Exterior lighting shall be minimized where possible to avoid unnecessary lighting of architectural and landscape features while providing adequate illumination for safety and accessibility.

3.3.4 All products purchased by [organization] and for which the U. S. EPA Energy Star certification is available shall meet Energy Star certification, when practicable. When Energy Star labels are not available, [organization] shall choose energy-efficient products that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program.

3.3.5 [Organization] shall purchase water-saving products whenever practicable. This includes, but is not limited to, high-performance fixtures like toilets, low-flow faucets and aerators, and upgraded irrigation systems.

3.4 Green Building

3.4.1 All building and renovations undertaken by [organization] shall follow Green Building Practices for design, construction, and operation, where appropriate, as described in the LEED™ Rating System.

3.5 Landscaping

3.5.1 All landscape renovations, construction and maintenance performed by [organization], including workers and contractors providing landscaping services for [organization], shall employ Bay-Friendly Landscaping or sustainable landscape management techniques for design, construction and maintenance whenever possible, including, but not limited to, integrated pest management, grasscycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

3.5.2 Plants should be selected to minimize waste by choosing species for purchase that are appropriate to the microclimate, species that can grow to their natural size in the space allotted them, and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

3.5.3 Hardscapes and landscape structures constructed of recycled content materials are encouraged. [Organization] shall limit the amount of impervious surfaces in the landscape, wherever practicable. Permeable substitutes, such as permeable asphalt or pavers, are encouraged for walkways, patios and driveways.

3.6 Toxics and Pollution

3.6.1 To the extent practicable, [organization] shall purchase, or require janitorial contractors to supply, industrial and institutional cleaning products that meet Green Seal certification standards for environmental preferability and performance.

3.6.2 To the extent practicable, [organization] shall purchase, or require janitorial contractors to supply, vacuum cleaners that meet the requirements of the Carpet and Rug Institute “Green Label” Testing Program – Vacuum Cleaner Criteria, are capable of capturing 96% of particulates 0.3 microns in size, and operate with a sound level less than 70dBA. Where possible and as applicable, other janitorial cleaning equipment shall be capable of capturing fine particulates, removing sufficient moisture so as to dry within 24 hours, operate with a sound level less than 70dBA, and use high-efficiency, low-emissions engines.

3.6.3 The use of chlorofluorocarbon and halon-containing refrigerants, solvents and other products shall be phased out and new purchases of heating/ventilating/air conditioning, refrigeration, insulation and fire suppression systems shall not contain them.

3.6.4 All surfactants and detergents shall be readily biodegradable and, where practicable, shall not contain phosphates.

3.6.5 When maintaining buildings and landscapes, [organization] shall manage pest problems through prevention and physical, mechanical and biological controls. [Organization] may either adopt and implement an organic pest management policy and practices or adopt and implement an Integrated Pest Management (IPM) policy and practices using the least toxic pest control as a last resort.

3.6.6 When maintaining buildings, the [organization] shall use products with the lowest amount of volatile organic compounds (VOCs), highest recycled content, and low or no formaldehyde when practicable when purchasing materials such as paint, carpeting, adhesives, furniture and casework.

3.6.7 [Organization] shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. This includes, but is not limited to:

Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible.

Prohibiting purchase of products that use polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture, flooring, and medical supplies whenever practicable.

3.6.8 [Organization] shall purchase products and equipment with no lead or mercury whenever possible. For products that contain lead or mercury, [organization] shall give preference to those products with lower quantities of these metals and to vendors with established lead and mercury recovery programs.

3.6.9 [Organization] shall specify that desktop computers, notebooks and monitors purchased meet, at a minimum, all Electronic Product Environmental Assessment Tool (EPEAT) environmental criteria designated as “required” as contained in the IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products, whenever practicable.

3.6.10 When replacing vehicles, [organization] shall consider less-polluting alternatives to diesel such as compressed natural gas, bio-based fuels, hybrids, electric batteries, and fuel cells, as available.

3.7 Forest Conservation

3.7.1 To the greatest extent practicable, [organization] shall not procure wood products such as lumber and paper that originate from forests harvested in an environmentally unsustainable manner. When possible, [organization] shall give preference to wood products that are certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system shall include independent third-party audits, with standards equivalent to, or stricter than, those of the Forest Stewardship Council certification.

3.7.2 [Organization] encourages the purchase or use of previously used or salvaged wood and wood products whenever practicable.

3.8 Bio-Based Products

3.8.1 Vehicle fuels made from non-wood, plant-based contents such as vegetable oils are encouraged whenever practicable.

3.8.2 Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are encouraged whenever practicable.

3.8.3 Bio-based plastic products that are biodegradable and compostable, such as bags, film, food and beverage containers, and cutlery, are encouraged whenever practicable.

3.8.4 Compostable plastic products purchased shall meet American Society for Testing and Materials (ASTM) standards as found in ASTM D6400-04. Biodegradable plastics used as coatings on paper and other compostable substrates shall meet ASTM D6868-03 standards.

3.8.5 Proof of compliance with ASTM standards for compostable, biodegradable and degradable plastic products shall be provided by vendors of such products, upon request. One acceptable proof of compliance for compostable plastic products will be certification by the Biodegradable Products Institute (BPI).

4.0 PRIORITIES

4.1 The health and safety of workers and citizens is of utmost importance and takes precedence over all other policies.

4.2 [Organization] has made significant investments in developing a successful recycling system and recognizes that recycled content products are essential to the continuing viability of that recycling system and for the foundation of an environmentally sound production system.

Therefore, to the greatest extent practicable, recycled content shall be included in products that also meet other specifications, such as chlorine free or bio-based.

4.3 Nothing contained in this policy shall be construed as requiring a department, purchaser or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

4.4 Nothing contained in this policy shall be construed as requiring the [organization], department, purchaser or contractor to take any action that conflicts with local, state or federal requirements.

5.0 IMPLEMENTATION

5.1 The [Director of Purchasing, Director of Finance, other responsible director] shall implement this policy in coordination with other appropriate [organization] personnel.

5.2 As applicable, successful bidders shall certify in writing that the environmental attributes claimed in competitive bids are accurate. In compliance with State law, vendors shall be required to specify the minimum or actual percentage of recovered and postconsumer material in their products, even when such percentages are zero.

5.3 Upon request, buyers making the selection from competitive bids shall be able to provide justification for product choices that do not meet the environmentally preferable purchasing criteria in this policy.

5.4 Purchasers shall include businesses certified by the Bay Area Green Business Program in requests for products and services.

5.5 Vendors, contractors and grantees shall be encouraged to comply with applicable sections of this policy for products and services provided to the [organization], where practicable.

6.0 PROGRAM EVALUATION

6.1 The [Director of Finance, Director of Purchasing, other position responsible for implementing this policy] shall periodically evaluate the success of this policy's implementation.

7.0 DEFINITIONS

7.1 "American Society for Testing and Materials" means ASTM International, an open forum for the development of high quality, market relevant international standards use around the globe.

7.2 "Bay Area Green Business Program" is a partnership of governments and businesses that certifies the environmental performance of government agencies and businesses.

7.3 "Bay-Friendly Landscaping" means working with the natural ecosystems of the San Francisco Bay Area to foster soil health, to reduce runoff and pollution, prevent and reuse plant waste, conserve water and other natural resources. Bay-Friendly Landscaping practices are described in the Bay-Friendly Landscape Guidelines, by StopWaste.Org.

7.4 "Bio-Based Products" means commercial or industrial products (other than food or feed) that utilize agricultural crops or residues but does not include products made from forestry materials.

7.5 "Biodegradable plastic" means the degradation of the plastic must occur as a result of the action of naturally occurring microorganisms.

7.6 "Biodegradable Products Institute" (BPI) is a multi-stakeholder association of key individuals and groups from government, industry and academia, which promotes the use, and recycling of biodegradable polymeric materials (via composting). BPI does not create standards but certifies products that demonstrate they meet the requirements in ASTM D6400 or D6868, based on testing in an approved laboratory.

7.7 "Buyer" means anyone authorized to purchase or contract for purchases on behalf of [organization] or its subdivisions.

7.8 "The Carpet and Rug Institute" (CRI) is the national trade association representing the carpet and rug industry. CRI has developed and administered the "Green Label" indoor air quality testing and labeling program for carpet, adhesives, cushion materials and vacuum cleaners. The "Green Label Plus" testing program incorporates additional requirements to meet California's Collaborative for High Performance Schools low emitting materials criteria.

7.9 "Chlorine free" means products processed without chlorine or chlorine derivatives.

7.10 “Compostable plastic” means plastic that is biodegradable during composting to yield carbon dioxide, water and inorganic compounds and biomass, at a rate consistent with other known compostable materials and leaves no visually distinguishable or toxic residues.

7.11 “Contractor” means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with [organization] or serves in a subcontracting capacity with an entity having a contract with [organization] for the provision of goods or services.

7.12 “Degradable plastic” means plastic that undergoes significant changes in its chemical structure under specific environmental conditions.

7.13 “Dioxins and furans” are a group of chemical compounds that are classified as persistent, bio-accumulative, and toxic by the U.S. Environmental Protection Agency (EPA).

7.14 “Energy Star” means the U.S. EPA’s energy efficiency product labeling program.

7.15 “Energy Efficient Product” means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets Federal standards.

7.16 “Electronic Product Environmental Assessment Tool” (EPEAT) is a procurement tool to help institutional purchasers in the public and private sectors evaluate, compare and select desktop computers, notebooks and monitors based on their environmental attributes.

7.17 “Federal Energy Management Program” is a program of the Department of Energy that issues a series of Product Energy Efficiency Recommendations that identify recommended efficiency levels for energy-using products.

7.18 The “Forest Stewardship Council” is a global organization that certifies responsible, on-the-ground forest management according to rigorous standards developed by a broad variety of stakeholder groups.

7.19 “Green Building Practices” means a whole-systems approach to the design, construction, and operation of buildings and structures that helps mitigate the environmental, economic, and social impacts of construction, demolition, and renovation. Green Building Practices such as those described in the LEED™ Rating System, recognize the relationship between natural and built environments and seeks to minimize the use of energy, water, and other natural resources and provide a healthy productive environment.

7.20 “Green Seal” is an independent, non-profit environmental labeling organization. Green Seal standards for products and services meet the U.S. EPA’s criteria for third-party certifiers. The Green Seal is a registered certification mark that may appear only on certified products.

7.21 “Integrated Pest Management (IPM)” is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

7.22 “LEED™ Rating System” means the most recent version of the Leadership in Energy and Environmental Design (LEED™) Commercial Green Building Rating System, or other related LEED™ Rating System, approved by the U.S. Green Building Council and designed for rating new and existing commercial, institutional, and high-rise residential buildings.

7.23 “Organic Pest Management” prohibits the use and application of toxic chemical pesticides and strives to prevent pest problems through the application of natural, organic horticultural and maintenance practices. All pest control products shall be in keeping with, but not limited to, those products on the approved list of California Certified Organic Foods (CCOF).

7.24 "Postconsumer Material" means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

7.25 “Practical” and “Practicable” mean whenever possible and compatible with local, state and federal law, without reducing safety, quality, or effectiveness and where the product or service is available at a reasonable cost in a reasonable period of time.

7.26 “Preconsumer Material” means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.

7.27 “Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material but does not include excess resources of the manufacturing process.

7.28 “Recycled Content” means the percentage of recovered material, including preconsumer and postconsumer materials, in a product.

7.29 “Recycled Content Standard” means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as “recycled products.”

7.30 “Recycled Product” means a product that meets [organization’s] recycled content policy objectives for postconsumer and recovered material.

7.31 “Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

7.32 “Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

7.33 “Source Reduction” refers to products that result in a net reduction in the generation of waste compared to their previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

7.34 “U.S. EPA Guidelines” means the Comprehensive Procurement Guidelines established by the U.S. Environmental Protection Agency for federal agency purchases as of May 2002 and any subsequent versions adopted.

7.35 “Water-Saving Products” are those that are in the upper 25% of water conservation for all similar products, or at least 10% more water-conserving than the minimum level that meets the Federal standards.

8.0 EFFECTIVE DATES

8.1 This policy shall take effect on [date].

Examples of Space Requirements For Recycling Containers at Commercial and Multifamily Buildings

“Trash and Recycling Enclosures – Design Considerations,”

City of Fort Collins Guidance Document, August 2004

<http://www.ci.fort-collins.co.us/recycling/pdf/enclosure-guidelines0804.pdf>

Space Allocation

How much space is adequate for the collection and loading of recyclable materials?

This is a hard question to answer due to the variability in development types and collection methods. The amount of space provided for the collection and storage of recyclable materials shall be designed to accommodate collection and storage containers consistent with the recyclable materials generated. It is recommended the area be at least as large as the amount of space provided for the collection and storage of refuse materials.

Estimating area needed: (please note this is in addition to space needed for trash service)

Type of Occupancy	Amount of Space Required Over and Above Standard Refuse Bin Requirements
Multi-Family	100 square ft. for the first 10 units and 5 square ft. for each additional unit
Commercial	10,000 sq. ft. and above 100 sq. ft. for the first 10,000 sq. ft. (gross) and 5 sq. ft. for each additional 1,000 sq. ft. (gross)

Container Type	Dimensions	Square Feet (container only)
40 yard bin	8' x 20–24' / 8' deep	160–192
20 yard bin	8' x 20–24' / 4' deep	160–192
3 yard bin	4' x 3' / 3'–4' deep	12
2 yard bin	4' x 2' / 3'–3½' deep	8

Vehicle Type	Access Requirements/Concern
Front loader	25 ft. vertical clearance.
Roll-off	25–30 ft. vertical clearance, 60–70 ft. horizontal distance. The greater vertical clearance, the smaller horizontal distance required.
Stake bed	Access to containers only. Forklift access may be required.
Recycling vehicle/ Compartmentalized truck	Access to containers only

**“Recycling Guidelines for Multifamily Housing Design,”
StopWaste.org, Alameda County, California**

<http://www.stopwaste.org/docs/1720381662005mfu-designguidelines.pdf>

How much space is needed for the collection company’s containers?

Container Volume

The companies that collect garbage and recyclables will provide carts and/or bins to hold those materials prior to collection. The size and number of these containers will depend on the number of people or units in the project and possibly on the frequency of collection. For once-a-week collection (the norm), a reasonable rule of thumb is to provide ¼ cubic yard (cy) of container capacity for every three residents. This can be a mix of garbage bins and recycling carts (or bins), with about half of the volume for garbage and half for recycling. For example, a 60-unit complex with average occupancy of three people per unit would require 15 cubic yards of capacity (0.25 cy x 60). If the collection company uses 4-cubic-yard bins for garbage and 64-gallon carts for recyclables, this could be served by two bins and 22 carts. It is good practice to provide 20% to 35% excess capacity for seasonal variation, so in this example the design objective should be to accommodate three bins and 28 carts. Local demographics may change these assumptions; large or extended families will require more space; and senior citizens living alone may require less.

Storage Space Floor Area

Bin sizes can vary in all dimensions; check with the local collection companies for exact dimensions. The typical footprint of a bin is about 7 feet wide and 4 feet deep. A 4-cy bin with these dimensions would be between four and five feet tall. Most 64-gallon carts fit snugly in a footprint that is 32x30 in.; they are about 42-in. tall. Bins and carts typically have hinged lids that must be lifted; these can damage low ceilings. In addition to space for the containers themselves, space is needed to walk among them and shift them around. An area that is 150% of the sum of bin and cart footprints should suffice, unless the available area is unusually thin or oddly shaped; then more space may be needed.

Examples of Space Requirements

Continuing with the example above, if the 60 units are in three buildings, each with an outdoor enclosure for discards, then each enclosure should accommodate one bin plus nine carts, having a total footprint of: $(7 \times 4) + 9 \times (32 \times 30) / 144 = 88$ square feet. Each enclosure should provide 150% of 88 square feet, or 132 square feet (inside dimensions). A pair of 9-foot-wide parking spaces can provide this capacity.

Appendix D

Resource List of Recycling Bin and Tote Bag Vendors and Manufacturers

Provided below is a list of recycling bin and tote bag vendors and manufacturers that offer appropriate-sized containers for apartment recycling. The Agency does not endorse any particular vendor or manufacturer, nor does it claim that this list is complete.

<p>Adco Marketing 300 Tamal Plaza, Suite 220 Corte Madera, CA 94925 Phone: 415-927-2881 Toll Free: 888-332-ADCO (2326) http://www.adcomarketing.com/totebags.htm</p>	<p>Enviro-Tote 4 Cote Lane Bedford, NH 03110-5805 Phone: 603-647-7171 Toll Free: 800-TOTE BAG (868-3224) http://www.enviro-tote.com/index.html</p>
<p>Awareness Ideas Flexi Display Marketing, Inc. 801 Stephenson Hwy. Troy, MI 48083 Phone: 800-875-1725 http://www.awarenessideas.com/SearchResults.asp?Search=tote+bags</p>	<p>Recycled.CA 46 LePage Court Toronto, Ontario Canada M3J 1Z9 Phone: 416-638-9895 http://www.recycled.ca/Products/product_list.htm</p>
<p>The Bag Connection, Inc. 459 SW 9th Street Dundee, OR 97115 Phone: 800-622-2448 http://www.bagitsystem.com/MultiFamily.htm</p>	<p>Weisenbach Recycled Products 437 Holtzman Avenue Columbus, OH 43205 Phone: 800-778-5420 http://www.recycledproducts.com/?search_type=products&search_field=tote+bags&cid=12&s_type=ALL</p>
<p>Busch Systems International, Inc. 343 Saunders Road Barrie, Ontario Canada L4N 9A8 Phone: 705-722-0806 Toll Free: 800-565-9931 http://www.buschsystems.com/home-apartment-kitchen-recycling-bins.html</p>	

Appendix E

Commercial and Multifamily Recycling Public Education Programs, Examples, and Resources

Provided below is a list of various resources and public education examples related to commercial and multifamily recycling.

Stopwaste.org (Alameda County, California)

This organization's website contains comprehensive information for business & industry and a Best Practices page for apartment building managers.

<http://www.stopwaste.org/home/index.asp?page=4>

<http://www.stopwaste.org/home/index.asp?page=507>

City of Beaverton, Oregon

The City's "2008 Beaverton Recycling Guide" includes information for apartment building residents and recycling at work.

<http://www.beavertonoregon.gov/departments/recycling/apartments/docs/BOOKLET.pdf>

Eureka Recycling (St. Paul, Minnesota)

This private recycling hauler and processor created a multifamily recycling toolkit titled "Exploring Multifamily Recycling: Tools for the Voyage." In addition to the comprehensive information provided in this toolkit, it also contains templates for posters, door hangers, labels, signage, etc.

<http://www.eurekarecycling.org/Tools.cfm>

City of Philadelphia, PA

Commercial Solid Waste and Recycling Plan form, for multifamily, commercial, and institutional establishments:

<http://www.phila.gov/STREETS/RecComWaste.pdf>

Recycling Alliance of Philadelphia - Information on commercial recycling:

http://www.cleanair.org/recyclingalliance/rec_phila.html#12

Greater Philadelphia Commercial Recycling Council website - contains success stories, tips and tools:

<http://www.gpcrc.com/index.asp>

Pennsylvania Department of Environmental Protection (PA DEP)

Developing a Recycling Program for Commercial, Institutional & Municipal Establishments:

<http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/FACTS/Comrec2.htm>

City of Austin, Texas

The City of Austin mandates that certain businesses, depending on size, must provide on-site recycling service. The following must provide recycling service: 1) multifamily properties with 100 or more units; and 2) commercial businesses and building owners with 100 or more employees. Businesses and office buildings must provide recycling of at least two of the following materials: aluminum cans, tin/steel cans, glass containers, plastic bottles, newspaper, mixed office paper, and cardboard. Multifamily complexes must provide recycling of at least

four of the following materials: aluminum cans, tin/steel cans, glass containers, plastic bottles, newspaper, cardboard, kraft paper bags, and home office paper. New employees and tenants must be informed about the recycling program and all employees and tenants must be reeducated about the program at least annually. A recycling plan must be filed with the City's Solid Waste Services Department and a quarterly volume report must be submitted to the Department. (Recycling haulers may file volume reports for their clients.)

<http://www.ci.austin.tx.us/sws/recyclerules.htm>

RethinkWaste.org (San Mateo County, California)

The South Bayside Waste Management Authority provides specific recycling information on its website for businesses and multifamily dwellings.

<http://www.rethinkwaste.org/businesses>

<http://www.rethinkwaste.org/residents/multi-family-dwellings/recycling-services>

City of Portland, Oregon

The City's Bureau of Planning and Sustainability has comprehensive web pages dedicated to recycling at work and multifamily recycling, including a page for multifamily property owners and managers.

<http://www.portlandonline.com/osd/index.cfm?c=45520&>

<http://www.portlandonline.com/osd/index.cfm?c=41466>

Portland Metro

Portland Metro offers tools and resources for recycling at work in the Portland, OR metropolitan region and a property managers guide for multifamily recycling.

<http://www.metro-region.org/index.cfm/go/by.web/id/537>

<http://www.oregonmetro.gov/index.cfm/go/by.web/id=28771>

Seattle Public Utilities (SPU)

This comprehensive website provides outreach, education, and technical assistance to businesses in the Seattle area.

<http://www.resourceventure.org/>

SPU also provides detailed information for apartment recycling.

http://www.ci.seattle.wa.us/util/Services/Recycling/Recycle_at_Your_Apartment/index.asp

Minnesota Pollution Control Agency (MPCA)

The MPCA has website pages dedicated to recycling in the workplace:

<http://www.pca.state.mn.us/oea/p2/waste.cfm>

<http://www.reduce.org/workplace/>

LessisMore.org (Santa Barbara County, CA)

Santa Barbara County has webpages dedicated to business recycling and multifamily recycling:

http://www.lessismore.org/Programs/bsnss_recycling_complete.html

<http://www.lessismore.org/Programs/multifamilyrecy.htm>

Multifamily Dwelling Recycling Sample Residential Survey

We need your input!

Colonial Garden Management is looking for ways to improve its recycling program for its residents. Currently, two outside recycling bins, near the main complex entrance, are provided for residents to drop off their recycling. The following questions will help management better meet resident's recycling needs.

**Please return your completed survey to the Rental Office by
Friday, September 22. Thank you!**

Please check the box most appropriate.

Do you use Colonial Garden's current recycling containers?

Yes

No

If "yes", what do you recycle?

Food and beverage cans

Glass bottles and jars

Plastic bottles

Newspaper

Mixed paper and junk mail

If "no", which of the following come close to your reasons? (check all that apply)

I didn't know that there was a recycling program at Colonial Garden.

There is not an outside recycling bin close to my apartment.

It's too much trouble to carry out the recyclables.

I don't have enough space in my apartment to store recyclables.

I don't have enough recyclables to make it worthwhile.

I'm not sure how to recycle.

It's something I just forget to do.

I don't know what things I can recycle.

I don't know where the outside recycling bins are.

Other _____

Who primarily takes out your garbage or your recycling?

Yourself

Your child(ren)

Your spouse/partner

Other _____

How often is your garbage taken out to the dumpsters?

Daily

Once a Week

Twice a Week

Every Other Week

How often is your recycling taken out to the recycling bins?

Daily

Once a Week

Twice a Week

Every other Week

Never

How could we improve our recycling program for you? (You may check more than one).

Have outside recycling bins near every garbage dumpster.

Provide a recycling container to store and carry out recycling to the outside recycling bins.

Provide pamphlets describing what can be recycled.

Give out recycling reminders.

Post better signs at the recycling area.

Other _____

If additional recycling containers were provided near every dumpster, would you start recycling or would you recycle more?

Yes

No

Comments:

**Please return your completed survey to the Rental Office by
Friday, September 22.**

Thank you for your time. We appreciate your comments!

Commercial Recycling Worksheets

Worksheet A: Estimating Disposal Costs

Worksheet B: Conducting a Waste Analysis

Worksheet C: Evaluating the Costs of a Waste Reduction or Recycling Program

Worksheet D: Calculating Avoided Collection/Disposal Costs

Worksheet A: Estimating Disposal Costs

Off-Site Waste Removal:

Name of waste removal company _____

Telephone number _____ Date contract expires _____

B. Removal Schedule

Number of times _____ Per (day/week/month/other) _____

Days of week _____ Time(s) of day _____

Choose one of the following equations (C1, C2 or C3):

C1. Waste removal charge (If charged as flat fee or part of rent)

$$\frac{\text{Waste removal fee}}{\text{Number of Times per Year}} \times \text{Per (day/week/month/other)} = \text{TOTAL WASTE DISPOSAL}$$

C2. Waste removal charge (If charged by weight or volume)

$$\frac{\text{Waste removal charge per unit of weight or volume}}{\text{Number of units of waste removed of waste (from receipts or call haulers)}} \times \text{Annual waste removal charge} = \text{Annual waste removal charge}$$

If applicable, add:

$$\frac{\text{Hauling container(s) rental fee per time periods}}{\text{Number of time periods per year}} \times \text{Annual container cost} = \text{Annual container cost}$$

$$\text{Annual Waste Removal Cost} + \text{Annual Container Cost} = \text{Total Waste Disposal Cost}$$

C3. Waste removal charge (If charged per pull)

$$\frac{\text{Charge per pull}}{\text{Pulls per year}} \times = \text{Annual waste pulling charge}$$

If applicable, add:

$$\frac{\text{Hauling containers(s) rental fee per time period}}{\text{Number of time periods per year}} \times = \text{Annual Waste container rental cost}$$

$$\frac{\text{Annual waste pulling charge}}{\text{Annual waste container rental cost}} \times = \text{Total Waste Disposal Cost}$$

Worksheet B: Conducting a Waste Analysis

The following are two options for estimating the types and quantities of materials in a company's waste stream. This knowledge will aid you in targeting materials for recycling and reduction and in contacting recyclers.

Method I

This Method involves visually monitoring the dumpster each day and keeping track of the following:

What materials are visible in the dumpster?

What materials take up the largest volume in the dumpster?

How full is the dumpster?

If the majority of a company's waste is placed in garbage bags before disposal, have cleaning staff use different colored bags for each area. For example, put the waste from the offices in clear bags, the cafeteria waste in white bags, the restrooms' in blue bags, the production waste in black bags, etc. This will help to identify the areas which are generating the most material. Then, walk through those areas to see what is being thrown away. In the above example, we could assume that the clear bags contained primarily office paper.

Waste Analysis Estimation – Method 1

Date observed _____

How full _____

Materials Visible

Estimated Percentage of Waste Stream

Color of bag

in dumpster

Type of waste generated in the designated area

Method 2

This method provides a more accurate estimation of the quantity of material in the waste stream. Place a container near the dumpster or in a central location and designate it for your targeted material. Notify all employees that, for a specified period of time, all of the targeted material will

be placed in this container rather than the dumpster. With certain materials, such as OCC, it may be possible to have one employee or the cleaning staff segregate the material. For other materials, such as office paper, all employees will need to be involved. Note that the container must be under shelter. Continue the sort for at least two weeks. At the end of the specified time period, record the quantity of material accumulated. Contact a local recycling hauler to find one that will pick up curbside or contact your local town transfer station to drop-off the sorted material for recycling.

Waste Analysis Estimation – Method 2

Material sorted _____ Time period sorted _____

$$\frac{\text{_____ cubic yards}}{\text{Size of containers}} \times \frac{\text{_____}}{\text{Number of containers}} = \frac{\text{_____ cubic yards}}{\text{Amount sorted}}$$

$$\left(\frac{\text{_____ pounds}}{\text{Weight of full Container}} - \frac{\text{_____ pounds}}{\text{Weight of empty container}} \right) \times \frac{\text{_____}}{\text{Number of containers}} = \frac{\text{_____ pounds}}{\text{Amount sorted}}$$

Extrapolate this amount to a month or year. This information will be extremely useful when contacting recyclers and determining the cost-effectiveness of your recycling program.

$$\left(\frac{\text{_____ pounds}}{\text{Amount sorted}} \div \frac{\text{_____}}{\text{Number of weeks Of sort}} \right) \times 52 \text{ weeks/year} = \frac{\text{_____ pounds}}{\text{Targeted material discarded per year}}$$

Worksheet C: Evaluating the Costs of a Waste Reduction or Recycling Program

Monthly Program Costs

Additional labor (cleaning/maintenance staff) \$ _____

Additional energy requirements \$ _____

Transportation \$ _____

Additional space requirements \$ _____

Education/promotion \$ _____

Record keeping \$ _____

START-UP COSTS (AMORTIZED MONTHLY)

Containers \$ _____

Equipment (if any) \$ _____

Other: \$ _____

Total Program Costs \$ _____

Monthly Program Savings and Revenues

Avoided collection/disposal costs (See Worksheet D) \$ _____

Decrease in new material costs \$ _____

Revenues from sale of recyclables \$ _____

Avoided purchases \$ _____

Avoided labor (cleaning/maintenance staff) \$ _____

Total Program Savings/Revenues \$ _____

Total Program Savings/Revenues – Total Program Costs \$ _____

Worksheet D: Calculating Avoided Collection/Disposal Costs

Material targeted for recycling or waste reduction _____

Approximate percentage of waste stream _____

By Volume

Use this formula if you used a visual estimate of the waste stream or if you calculated volumes in the waste sort.

$$\frac{\text{_____}}{\% \text{ of material (by visual estimation or sort)}} \times \frac{\text{_____}}{\text{Total cubic yards disposed (ex.: 4 cubic yard dumpster emptied 3 times per week = 12 cubic yards or 48 cubic yards per month.)}} = \frac{\text{_____}}{\text{Targeted for diversion}}$$

$$\frac{\text{_____}}{\text{Targeted for diversion}} \text{ cubic yards} \times 70\%^{**} = \frac{\text{_____}}{\text{Expected diversion}} \text{ cubic yards}$$

$$\frac{\text{_____}}{\text{Expected diversion}} \text{ cubic yards} \div \frac{\text{_____}}{\text{Total volume of all waste disposed}} = \frac{\text{_____}}{\text{Percent of Waste Stream Diverted}} \text{ cubic yards}$$

By Weight

Use this formula if you calculated weight in the waste sort and if your hauler will provide weight slips for your dumpster.

$$\frac{\text{_____}}{\text{Pounds of material Discarded per year (Worksheet B)}} \text{ pounds} \times 70\%^{**} = \frac{\text{_____}}{\text{Expected diversion}} \text{ pounds}$$

$$\frac{\text{_____}}{\text{Expected diversion}} \text{ pounds} \div \frac{\text{_____}}{\text{Total volume of waste disposed (provided by hauler)}} = \frac{\text{_____}}{\text{Percent of Waste Stream to be Diverted}}$$

**To be conservative, assume that you will divert 70% of the target material.

Depending upon the amount of material diverted from the waste stream, a business may be able to save money by reducing the number of times per week the dumpster is hauled or by reducing the size of the dumpster. Businesses should be encouraged to ask their waste hauler how much disposal costs can be reduced if the waste stream is reduced by the percent estimated above.

5.2.2.3 ENFORCEMENT

UCRRA ENFORCEMENT FORMS

Notice of Violation – Hauler

Supporting Deposition – Hauler

Acceptance Letter – Hauler

Notice of Violation – Waste Generator

Supporting Deposition – Waste Generator

Acceptance Letter – Waste Generator

NOTICE OF VIOLATION - HAULER

ULSTER COUNTY
RESOURCE RECOVERY AGENCY
COUNTY OF ULSTER, STATE OF NEW YORK

-----X
Ulster County Resource Recovery Agency,

Complainant,

NOTICE OF HEARING
PURSUANT TO SECTION 20
OF THE MANDATORY
SOURCE SEPARATION AND
RECYCLING LAW OF
ULSTER COUNTY

-----against-----

Case No. _____

Respondent.

-----X

TO THE NAMED RESPONDENT:

YOU ARE HEREBY CHARGED WITH ONE (1) VIOLATION(S) OF SECTION 13 OF THE MANDATORY SOURCE SEPARATION AND RECYCLING LAW OF ULSTER COUNTY, which provides that haulers shall provide regular, reliable and separate collection of recyclables to any customer to whom they provide collection services.

See the enclosed Supporting Deposition for the facts related to the violation(s).

In accordance with Mandatory Source Separation and Recycling Law of Ulster County, Section 21, the Respondent shall be subject to a penalty of \$1,000 for a violation(s) of the Source Separation and Recycling Law.

YOU ARE HEREBY DIRECTED to appear at the Ulster County Office Building, located at 244 Fair Street, Kingston, NY 12401 on the ____ of _____ at _____ am/pm to answer the violations set forth herein. Interpreter services will be made available to non-English speaking or hearing-impaired persons as deemed necessary.

YOU HAVE THE RIGHT to be represented by counsel and the right to deny charges, in whole or in part, following which the matter will be rescheduled for a Formal Hearing to be conducted on a date certain. At the Formal Hearing, you may produce witnesses and evidence on your behalf. Witnesses may be examined and cross-examined and the documentary evidence may be submitted.

Respondents may issue papers and/or notices to the Hearing Officer, Hon. _____

UPON FAILURE TO APPEAR, a hearing may be had in your absence, a final determination may be made based solely upon the evidence submitted by the Ulster County Resource Recovery Agency and penalties may be imposed after a notice of default is served.

IF YOU ACCEPT THE DETERMINATION and wish to waive your right to a hearing, you may sign the enclosed "Acknowledgement of Acceptance" form on the following page and return it with payment in the amount indicated above. Upon receipt, the Ulster County Resource Recovery Agency shall file your acknowledgement with the hearing officer and cancel the scheduled hearing.

DATED: _____

ULSTER COUNTY

Timothy B. Rose, P.E.
Executive Director
Ulster County Resource Recovery Agency

SUPPORTING DEPOSITION - HAULER

THE ULSTER COUNTY RESOURCE RECOVERY AGENCY
-against-

Respondent

I, _____, *the Recycling Compliance Officer for the Ulster County Resource Recovery Agency, do by this supporting deposition make the following allegations of fact:*

On _____ at or about _____ hours, I observed the following in violation of Section 13 (c) of the Mandatory Source Separation and Recycling Law of Ulster County:

Vehicle Information: _____
Description/plate number and state

Company Information: _____
Name Address Phone

Driver Information (if provided): _____
Last Name, First Name

Vehicle was observed at: _____
Facility/Location

To wit: _____
Observation

Driver's statements, if any: _____

According to (check): Driver Manifest Other (describe) _____

Driver collected load at: _____
Address

The above vehicle did not have: Ulster County Resource Recovery Agency Permit on vehicle

The foregoing factual allegations are based upon personal knowledge of the deponent.

In a written statement, any person who knowingly makes a false statement which such person does not believe to be true has committed a crime under the laws of the State of New York punishable as a Class A misdemeanor. (Penal Law § 210.45)

Affirmed under the penalty of perjury this
_____ day of _____, 20 _____

*Recycling Compliance Officer
Ulster County Resource Recovery Agency*

ACCEPTANCE LETTER - HAULER

ULSTER COUNTY
RESOURCE RECOVERY AGENCY
COUNTY OF ULSTER, STATE OF NEW YORK
-----X

Ulster County Resource Recovery Agency,

Complainant,

-----against-----

Case No. _____

Respondent.

-----X

RESPONDENT'S ACKNOWLEDGEMENT AND ACCEPTANCE
OF INITIAL DETERMINATION OF THE ULSTER COUNTY RESOURCE RECOVERY AGENCY

I, _____, holding the title/position of _____ of the Respondent, _____, hereby acknowledge and agree that the Respondent named herein has committed ONE (1) administrative violation of Section 8 of the Mandatory Source Separation and Recycling Law of Ulster County and that, in lieu of proceeding to hearing on the referenced charge, the Respondent hereby admits to having committed violations outlined herein and submits herewith the penalty in the amount of \$_____.

PLEASE NOTE: All checks and/or money orders should be payable to Ulster County Resource Recovery Agency (UCRRA) and sent to:

Ulster County Resource Recovery Agency
PO Box 6219
Kingston, New York 12402
Attn: Executive Director

NOTICE OF VIOLATION – WASTE GENERATOR

ULSTER COUNTY
RESOURCE RECOVERY AGENCY
COUNTY OF ULSTER, STATE OF NEW YORK

-----X

Ulster County Resource Recovery Agency,

Complainant,

NOTICE OF HEARING
PURSUANT TO SECTION 20
OF THE MANDATORY
SOURCE SEPARATION AND
RECYCLING LAW OF
ULSTER COUNTY

-----against-----

Case No. _____

Respondent.

-----X

TO THE NAMED RESPONDENT:

YOU ARE HEREBY CHARGED WITH ONE (1) VIOLATION(S) OF SECTION 8 OF THE MANDATORY SOURCE SEPARATION AND RECYCLING LAW OF ULSTER COUNTY, which provides that every waste generator in Ulster County shall be responsible for the separation of solid waste and recyclables at the point of generation.

The Mandatory Source Separation and Recycling Law of Ulster County was enacted to promote the general health, welfare and safety of citizens of Ulster County, to protect the environment and to manage the solid waste stream in Ulster County. Under the provisions of Section 8, all persons must separate regulated recyclable materials from solid waste for the purpose of collection and recycling.

See the enclosed Supporting Deposition for the facts related to the violation(s).

In accordance with Mandatory Source Separation and Recycling Law of Ulster County, Section 21, the Respondent is subject to a penalty of \$1,000 for a violation(s) of the Source Separation and Recycling Law.

YOU ARE HEREBY DIRECTED to appear at the Ulster County Office Building, located at 244 Fair Street, Kingston, NY 12401 on the _____ of _____ at _____ am/pm to answer the violations set forth herein. Interpreter services will be made available to non-English speaking or hearing-impaired persons as deemed necessary.

YOU HAVE THE RIGHT to be represented by counsel and the right to deny charges, in whole or in part, following which the matter will be rescheduled for a Formal Hearing to be conducted on a date certain. At the Formal Hearing, you may produce witnesses and evidence on your

behalf. Witnesses may be examined and cross-examined and the documentary evidence may be submitted. Respondents may issue papers and/or notices to the Hearing Officer,
Hon. _____

UPON FAILURE TO APPEAR, a hearing may be had in your absence, a final determination may be made based solely upon the evidence submitted by the Ulster County Resource Recovery Agency and penalties may be imposed.

IF YOU ACCEPT THE DETERMINATION and wish to waive your right to a hearing, you may sign the enclosed "Acknowledgement of Acceptance" form on the following page and return it with payment in the amount indicated above. Upon receipt, the Ulster County Resource Recovery Agency shall file your acknowledgement with the hearing officer and cancel the scheduled hearing.

DATED: _____

ULSTER COUNTY

Timothy B. Rose, P.E.
Executive Director
Ulster County Resource Recovery Agency

SUPPORTING DEPOSITION - WASTE GENERATOR

THE ULSTER COUNTY RESOURCE RECOVERY AGENCY
-against-

Respondent

I, _____, *the Recycling Compliance Officer for the Ulster County Resource Recovery Agency, do by this supporting deposition make the following allegations of fact:*

On _____ at or about _____ hours, I observed the following in violation of Section 8 (a) of the Mandatory Source Separation and Recycling Law of Ulster County being Local Law No. 8 of 1991 as amended:

Location: _____
Name and Address

To wit: _____
Observation

Description of Solid Waste/Recycling Containers Observed: _____

Statements (if any): _____
Name and Title of Person Making Statement

Statement: _____

The foregoing factual allegations are based upon personal knowledge of the deponent.

In a written statement, any person who knowingly makes a false statement which such person does not believe to be true has committed a crime under the laws of the State of New York punishable as a Class A misdemeanor. (Penal Law § 210.45)

Affirmed under the penalty of perjury this
____ day of _____, 20 ____

*Recycling Compliance Officer
Ulster County Resource Recovery Agency*

ACCEPTANCE LETTER – WASTE GENERATOR

ULSTER COUNTY
RESOURCE RECOVERY AGENCY
COUNTY OF ULSTER, STATE OF NEW YORK
-----X

Ulster County Resource Recovery Agency,

Complainant,

-----against-----

Case No. _____

Respondent.

-----X

RESPONDENT’S ACKNOWLEDGEMENT AND ACCEPTANCE
OF INITIAL DETERMINATION OF THE ULSTER COUNTY RESOURCE RECOVERY AGENCY

I, _____, hereby acknowledge and agree that the Respondent named herein has committed ONE (1) administrative violation of Section 8 of the Mandatory Source Separation and Recycling Law of Ulster County and that, in lieu of proceeding to hearing on the referenced charge, the Respondent hereby admits to having committed violations outlined herein and submits herewith the penalty in the amount of \$_____.

PLEASE NOTE: All checks and/or money orders should be payable to Ulster County Resource Recovery Agency (UCRRA) and sent to:

Ulster County Resource Recovery Agency
PO Box 6219
Kingston, New York 12402
Attn: Executive Director