
Columbia County

Local Solid Waste Management Plan

Prepared For

Columbia County

401 State Street

Hudson, New York 12534

December 2022

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EXECUTIVE SUMMARY

The purpose of the Columbia County Local Solid Waste Management Plan (LSWMP) is to identify the path to be pursued for managing solid waste generated in Columbia County during a ten-year planning period in an economical and environmentally sound manner that is consistent with the State's solid waste management policy. The initial year of this ten-year planning period will commence following approval of this Plan by the New York State Department of Environmental Conservation (NYSDEC), which is expected to be 2022. The ten-year planning period will be 2022-2031.

The residents, businesses, industries, and institutions in Columbia County currently produce approximately 140 tons of solid waste every day. This creates a need to develop a plan about how to increase recovery, to decrease disposal or incineration, and to reduce waste generation, now and in the future.

This LSWMP will: 1) serve as a countywide framework for the coordination of solid waste management; 2) establish countywide solid waste goals and objectives -- including goals for waste reduction and recycling -- and a plan to monitor progress toward the goals; and 3) satisfy NYSDEC requirements for solid waste planning and comprehensive recycling analyses.

Columbia County serves as the solid waste planning unit for all municipalities within the County. This LSWMP recognizes, however, that local municipalities, the NYSDEC, private waste haulers, neighboring solid waste planning units, and private facility owners all play important roles in Columbia County's current and future management of solid waste and recyclable materials.

The Solid Waste Management Act of 1988 established a State Solid Waste Management Policy. The policy defines the following solid waste management priorities in New York State:

- first, to reduce the amount of solid waste generated;
- second, to reuse material for the purpose for which it was originally intended or to 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; and
- fourth, to dispose of solid waste that is not being reused, recycled or from which energy is not being recovered, by land burial or other methods approved by the Department (from New York State Environmental Conservation Law (ECL) 27-0106.1).

NYSDEC (December 2010) issued a statewide SWMP, *Beyond Waste: A Sustainable Materials Management Strategy for New York*. It defines broad statewide objectives for waste reduction, reuse and recycling, waste-to-energy, landfilling, and special issues consistent with the State Solid Waste Management Policy. The quantitative goal of *Beyond Waste* is to reduce the amount of waste New Yorkers dispose by preventing waste generation and increasing reuse, recycling, composting and other organic material recycling methods. Based on the data gathered and compiled for this LSWMP, the

County has identified program strategies to work toward during a ten-year LSWMP planning period that is consistent with the State Solid Waste Management Policy. The strategies set forth below were identified with the goal of further enhancing the reuse and recycling of materials generated in Columbia County and providing for the means to recover energy in an environmentally sound manner from solid waste that has not been reused or recycled. Each strategy and corresponding goal will be evaluated for feasibility and cost-effectiveness on an individual basis according to the implementation schedule included in Chapter 6.0.

Program Strategy #1 – Promote Waste Reduction Programs

Goal: Establish a waste reduction policy to increase waste reduction at County facilities and events.

Program Strategy #2 – Promote Reuse Programs

Goal: Promote reuse programs through education and outreach.

Program Strategy #3 – Expand Accepted Materials

Goal: Increase the types of materials accepted for recycling at the County's transfer and convenience stations and educate residents of proper recycling programs.

Program Strategy #4 – Increase Recycling at County Facilities & Events

Goal: Increase recyclables recovery at County owned and/or operated facilities.

Program Strategy #5 – Adopt Product Stewardship Framework

Goal: Shift government funded waste diversion program to one that relies on product stewardship, adopt product stewardship framework.

Program Strategy #6 – Support Organics Diversion Efforts and Promote Backyard Composting

Goal: Encourage diversion of organics from the solid waste disposal stream through education and training. Promote backyard composting to divert more food waste from the solid waste disposal stream.

Program Strategy #7 – Evaluate Pay-As-You Throw Program

Goal: Continue the PAYT program at transfer and convenience stations to potentially enhance the waste diversion effectiveness. Consider expanding PAYT program to include residents who contract with a private hauler.

Program Strategy #8 – Improve Public Outreach and Education

Goal: Educate residents to increase recycling and waste diversion and reduce improper disposal of materials.

Program Strategy #9 – Improve Solid Waste and Recycling Data Collection

Goal: Obtain a more complete data set to assist with the implementation of the program strategies.

Program Strategy #10 – Implement C&D Debris Reduction and Diversion

Goal: Consider implementation of C&D reduction and diversion from landfilling on County projects.

Program Strategy #11 – Identify Private Sector Management and Coordination Opportunities

Goal: Assess the availability of funding opportunities or partnerships with private facilities or other organizations to assist the County in accomplishing the LSWMP program strategies.

Program Strategy #12 – Review Available Technologies

Goal: Evaluate alternative waste disposal technologies that are available to the County

Program Strategy #13 – Continue Existing Disposal Methods as Primary Disposal for Non-Recyclable/Non-Recoverable Waste

Goal: Continue to provide reliable, economical, and environmentally-sound outlets for County residents to dispose of all non-recyclable and non-recoverable waste.

Program Strategy #14 – Review County Local Solid Waste Management and Recycling Law

Goal: Conduct a review in order to ensure the local solid waste law is up to date.

Program Strategy #15 – Agricultural Recycling Initiatives

Goal: Support the potential development of an agricultural plastics recycling program through the Soil and Water Conservation District or through partnering with neighboring planning units.

ABBREVIATIONS

ACR	Average Commodity Revenue
BUD	Beneficial Use Determination
C&D	Construction and demolition debris
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CRSWMP	Capital Region Solid Waste Management Partnership
CSC	Climate Smart Communities
EFW	Energy-From-Waste
EPA	United States Environmental Protection Agency
HDPE	High density polyethylene (plastic #2)
H ₂	Hydrogen
HHW	Household hazardous waste
LDPE	Low density polyethylene (plastic #4)
LSWMP	Local Solid Waste Management Plan
MBT	Mechanical-biological treatment
MRF	Materials Recovery Facility
MSW	Municipal solid waste
MWC	Municipal waste combustor
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSEG	New York State Electric & Gas
PAYT	Pay as you throw
PET	Polyethylene terephthalate (plastic #1)
RCA	Recoverable Container Act
RDF	Refuse derived fuel
SWMP	Solid Waste Management Plan
Sq Mi	Square miles
SSO	Source-separated organics
STP	Sewage treatment plant
UCRRA	Ulster County Resource Recovery Agency
WTE	Waste to energy
WWTF	Wastewater treatment facility
WWTP	Wastewater treatment plant

1.0 PLANNING UNIT DESCRIPTION

1.1. Physical Description

Columbia County has a land area of 648 square miles with a population density of 99 people per square mile (sq mi). The County is largely rural, consisting of mostly farmland, forested hills, and surface water bodies which comprise 14 square miles, or about 2% of the total land area. It is separated from Greene County on its west side by the Hudson River. The western third of Columbia County is relatively flat with excellent farm land, a use that continues today. The center third of the county has a range of hills and mountains, and to the east exists a wide valley. Along the Massachusetts border there is a sharp mountain range containing the highest peaks in Massachusetts and Connecticut¹.

1.2. Location

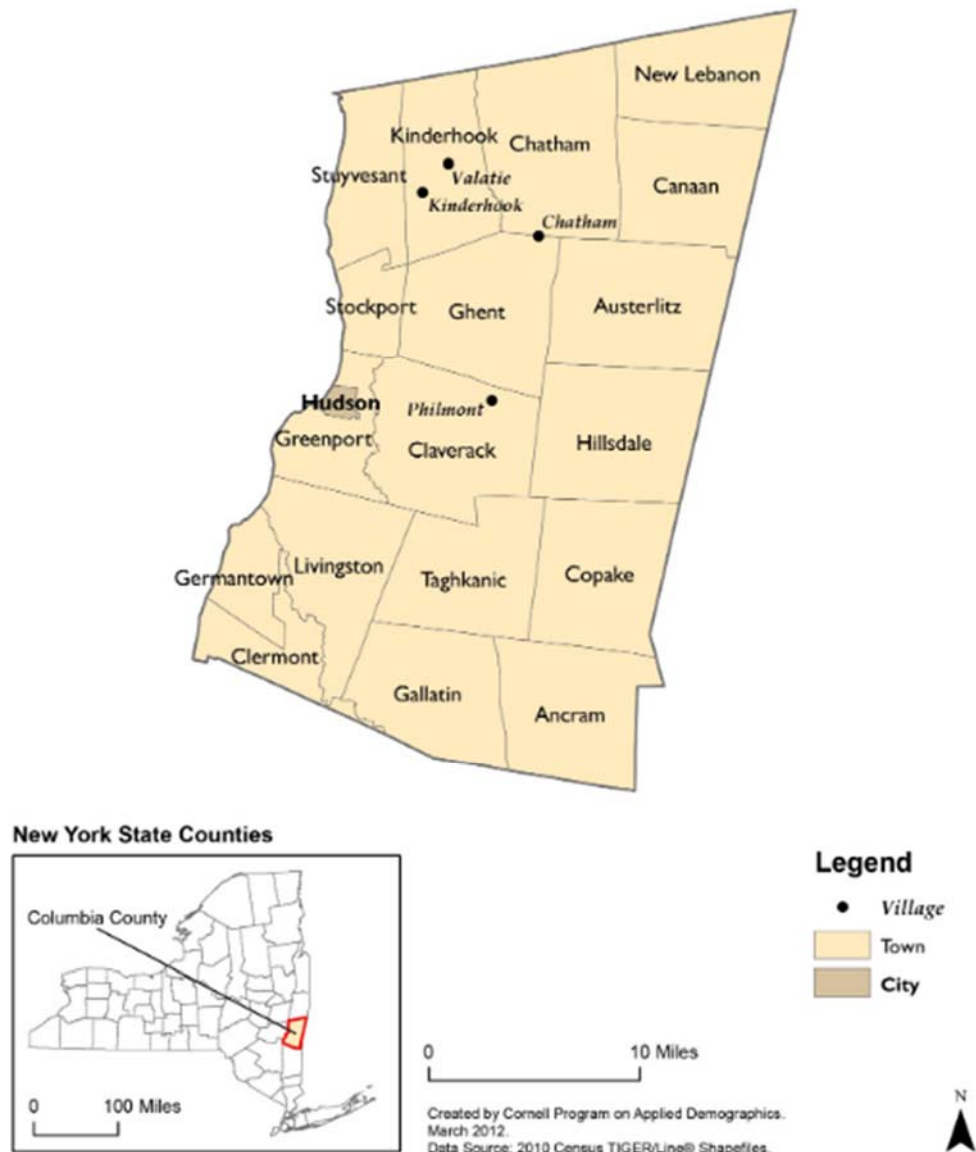
Columbia County is located in southeast central New York State, just east of the Hudson River and South of Albany. Columbia County is bounded on the north by Albany and Rensselaer Counties, on the west by Greene County and Ulster County, on the south by Dutchess County, and on the east by the State of Massachusetts.

1.3. County Formation

Columbia County was organized in 1786 and the seven original towns of Kinderhook, Canaan, Claverack, Hillsdale, Clermont, Germantown, and Livingston were established by an act passed in 1788. The additional towns (New Lebanon, Chatham, Stockport, Ghent, Austerlitz, Greenport, Copake, Taghkanic, Gallatin, Ancram, and Stuyvesant) were formed in proceeding years to yield the current number of eighteen. Within these eighteen towns, there are four villages: Chatham, Kinderhook, Philmont, and Valatie. In addition to the eighteen towns and four villages, there is one city in the County: the City of Hudson.

The original County Seat for Columbia was Claverack, but was moved to Hudson in 1805. A map displaying the County's municipal jurisdictions is presented in Figure 1-1.

¹ <http://columbia.nygenweb.net/history.html>

Figure 1-1 – Municipalities in Columbia County

Source: 2010 US Census Data & Cornell Program on Applied Demographics Data: Columbia County Profile 2017
 Link: <https://pad.human.cornell.edu/profiles/Columbia.pdf>

1.4. Road Network

Columbia County is accessible by several state roads, including U.S. Route 9 and NYS Route 22 (running north-south), NYS Route 23 and U.S. Route 20 (running east-west). In addition, the Taconic State Parkway, which is not accessible to trucks or commercial traffic, runs through the center of the county from south to north, ending at an interchange with Interstate 90.

Interstate I-90 passes through the towns of Canaan and Chatham and has two exits within the county; for the southbound Taconic State Parkway in Chatham, and for NYS Route 22 in Canaan. Columbia County is the last New York County located along eastbound I-90 (and the first county along westbound I-90).

Depending on precise location within the county and route taken, travel time is 2 hours to New York City, an hour and a half to Hartford, CT, two and a half hours to Boston, MA, and 35 minutes to Albany, NY.

1.5. Population

1.5.1. Population and Number of Households in the Local Planning Unit^{2,3}

Columbia County's population is distributed over 1 city, 18 towns and 4 villages. According to the U.S. Census data for 2020, the population was approximately 61,570 with an estimated 24,966 households. For comparison, the population has decreased by 2.4% from the 2010 U.S. Census Data number of 63,096.

Table 1-1 displays the formal 2010 and 2020 U.S. Bureau of Census data.

According to Cornell University's Program of Applied Demographics⁴, the population of Columbia County is estimated to be 56,460 in 2030, a decrease of 3,001 persons when compared to the U.S. Census data for 2020. The population is also projected to decrease by 6,062 persons to 50,398 persons by the year 2040.

Table 1-1 – Population By Municipality, 2020²

Municipality	Population (2020 estimate)	Population (2010 Census)	Change 2010 to 2020	% Change
Columbia County	61,570	63,096	-1,526	-2.4%
Town of Ancram	1,440	1,573	-133	-8.5%
Town of Austerlitz	1,625	1,654	-29	-1.8%
Town of Canaan ⁵	1,570	1,710	-140	-8.2%
Town of Chatham	4,104	4,128	-24	-0.6%
Village of Chatham (part)	572	710	-138	-19.4%
Village of Chatham	1,529	1,770	-241	-13.6%
Town of Claverack	6,058	6,021	37	0.6%

² U.S. Census Bureau Census 2020 P.L. 94-171

³ <https://www.census.gov/quickfacts/fact/dashboard/columbiacountynewyork>

⁴ <https://pad.human.cornell.edu/profiles/Columbia.pdf>

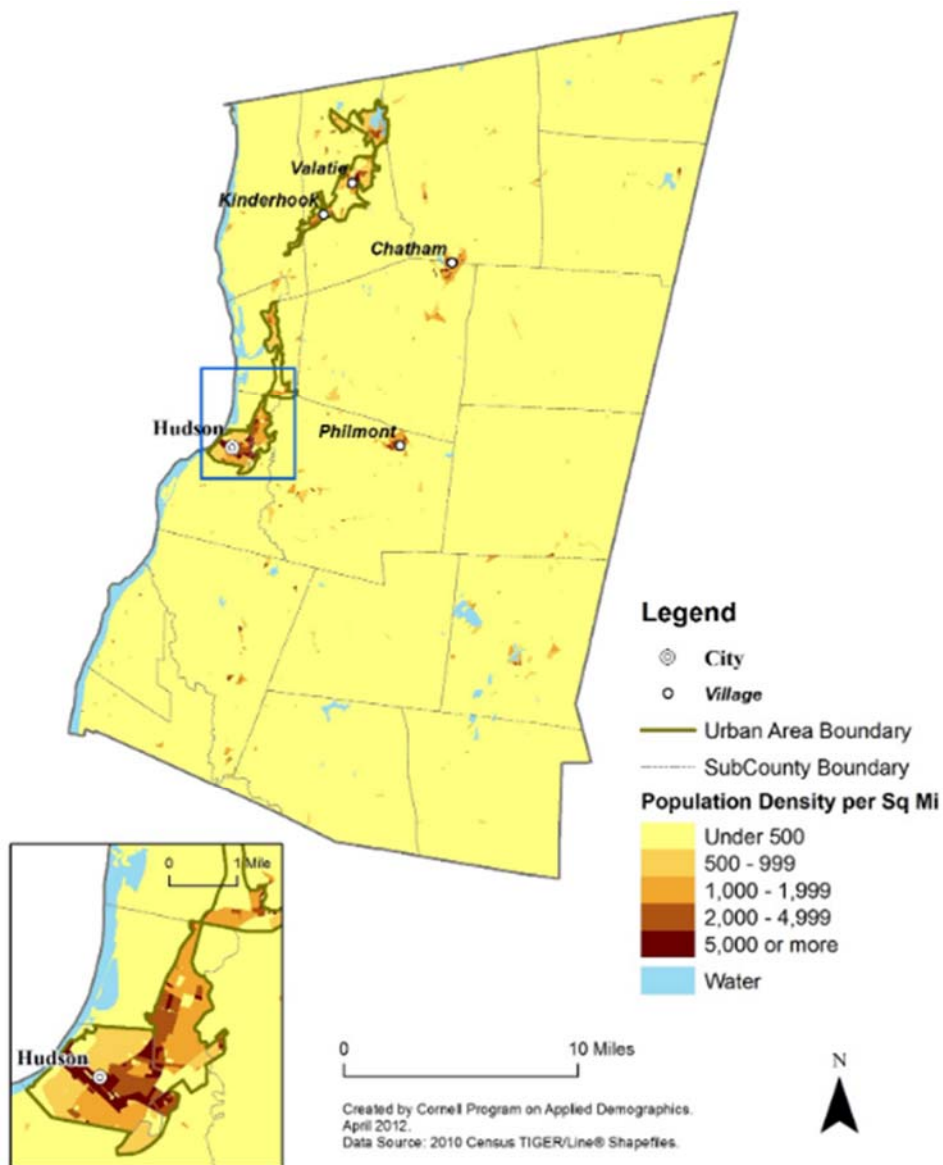
⁵ Historically the Town of Canaan has not been a participating member of the Planning Unit; however, they have requested to be included in the Planning Unit for the future planning period.

Municipality	Population (2020 estimate)	Population (2010 Census)	Change 2010 to 2020	% Change
Village of Philmont	1,377	1,379	-2	-0.1%
Town of Clermont	2,058	1,965	93	4.7%
Town of Copake	3,346	3,615	-269	-7.4%
Town of Gallatin	1,628	1,668	-40	-2.4%
Town of Germantown	1,936	1,954	-18	-0.9%
Town of Ghent	5,303	5,402	-99	-1.8%
Village of Chatham (part)	957	1,060	-103	-9.7%
Town of Greenport	4,473	4,165	308	7.4%
Town of Hillsdale	1,831	1,927	-96	-5.0%
City of Hudson	5,894	6,713	-819	-12.2%
Town of Kinderhook	8,330	8,498	-168	-2.0%
Village of Kinderhook	1,170	1,211	-41	-3.4%
Village of Valatie	1,785	1,819	-34	-1.9%
Town of Livingston	3,628	3,646	-18	-0.5%
Town of New Lebanon	2,514	2,305	209	9.1%
Town of Stockport	2,670	2,815	-145	-5.2%
Town of Stuyvesant	1,931	2,027	-96	-4.7%
Town of Taghkanic	1,231	1,310	-79	-6.0%

1.5.2. Population Density

While much of the southern and northeastern portions of the County are rural or agricultural in nature with population densities at less than 500 people per square mile, the northwest, particularly the City of Hudson and Villages of Chatham, Philmont, and Valatie, is quite suburban, dominated by single-family residential development, strip commercial, and a few apartment complexes. The two most densely populated areas of the County are the City of Hudson and Village of Valatie, which have population densities of 2,884 and 1,437 people per square mile respectively. See Figure 1-2: 2010 Population Density in Columbia County. The County's population is approximately 81% rural, and approximately 19% characterized as suburban, based on the population densities of each municipality.

Figure 1-2 – 2010 Population Density in Columbia County



Source: 2010 US Census Data & Cornell Program on Applied Demographics Data: Columbia County Profile 2017
Link: <https://pad.human.cornell.edu/profiles/Columbia.pdf>

Table 1-2 – Population Density

Municipal Member	Population Density – Character⁶
Towns & Cities	
Ancram	37/sq mi - Rural
Austerlitz	34/sq mi - Rural
Canaan	46/sq mi - Rural
Chatham	77/sq mi - Rural
Claverack	127/sq mi - Rural
Clermont	102/sq mi - Rural
Copake	86/sq mi - Rural
Gallatin	42/sq mi - Rural
Germantown	141/sq mi - Rural
Ghent	120/sq mi - Rural
Greenport	203/sq mi - Rural
Hillsdale	40/sq mi - Rural
Hudson	2,884/sq mi - Suburban
Kinderhook	267/sq mi - Rural
Livingston	94/sq mi - Rural
New Lebanon	64/sq mi - Rural
Stockport	214/sq mi - Rural
Stuyvesant	76/sq mi - Rural
Taghkanic	33/sq mi - Rural
Villages	
Chatham	1,427/sq mi - Suburban
Kinderhook	576/sq mi - Suburban
Philmont	1,121/sq mi - Suburban
Valatie	1,437/sq mi - Suburban

1.6. Planning Unit Members and Administrative Structure

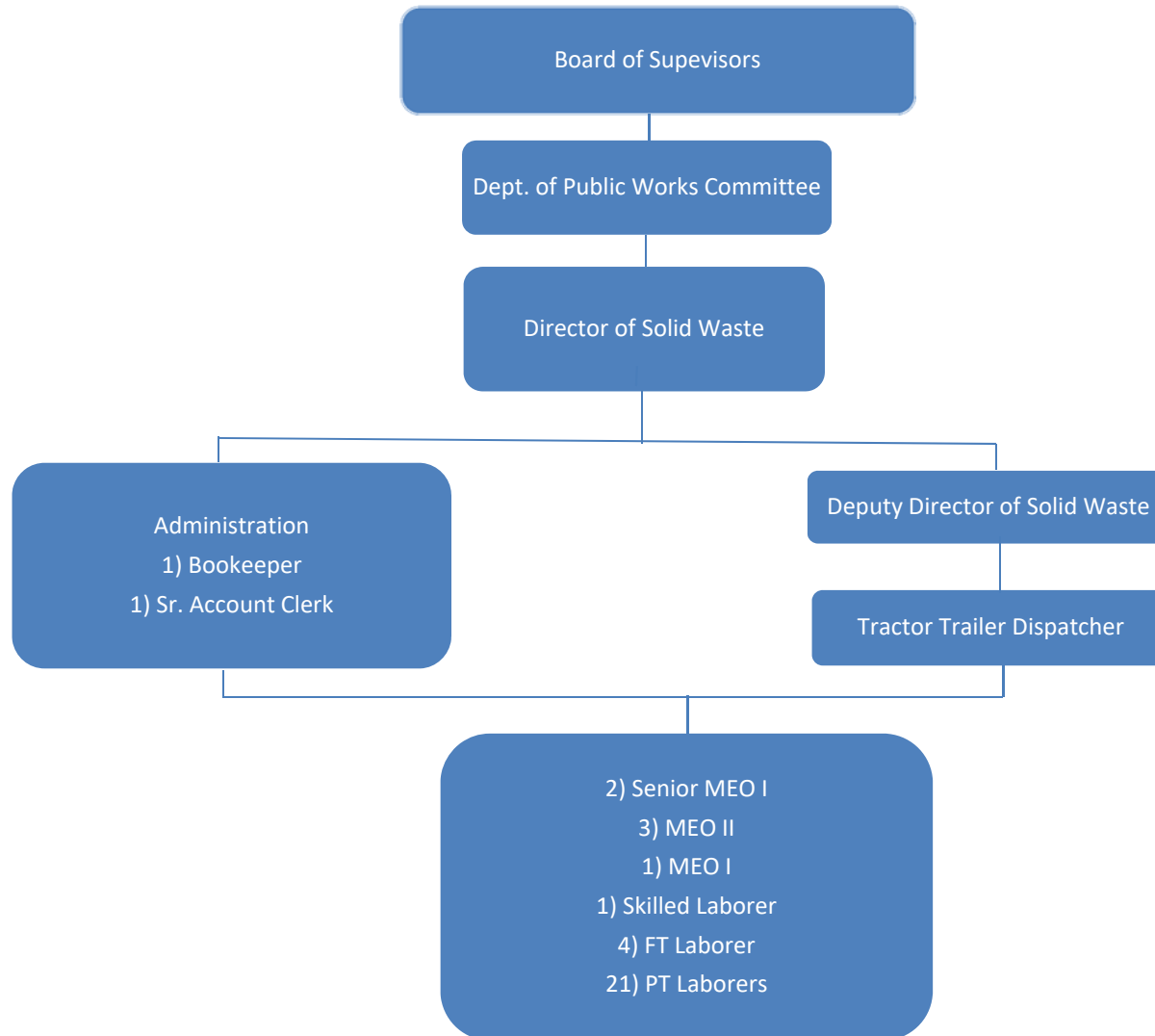
The Columbia County Government is the planning unit for Columbia County and is responsible for developing the LSWMP. Since the 1990s when the Town of Canaan accepted a proposal from Energy Answers Corporation to locate a facility, they have not been a participating member of the Planning Unit; thus, since the 1990s the Planning Unit members have consisted of the remaining 17 towns, 4 villages, and 1 city that make up the County. However, at the time of this LSWMP, the Town of Canaan will be re-joining the Planning Unit and are included in this LSWMP. Although the Town of Canaan will be re-joining the Planning Unit, the privately owned transfer station will remain privately run. It is not anticipated that there will be any further changes of municipalities within the Planning Unit.

⁶ Census 2010 Summary File 1 (SF 1), U.S. Census Bureau

The Administrative Structure consists of a Board of Supervisors, which is comprised of 18 Town Supervisors and 5 Hudson City Supervisors⁷. The Board of Supervisors oversees the Department of Public Works Committee, and in turn, the Solid Waste Division. Columbia County will draw upon its existing administrative structure to implement the programs and objectives outlined within this Plan. Columbia County government is capable of, and empowered to, implement the elements of this Solid Waste Management Plan. New York State law enables county governments to develop and operate solid waste management facilities. The County is empowered to mandate source separation and recycling. The Director of Solid Waste is charged with the operation of the County's solid waste and recycling facilities and with the implementation of this LSWMP; however, the County may delegate tasks to other partners as appropriate based on the nature of the contract, relationship, or partnership. Any such delegated task may be assigned with County oversight. Figure 1-3 depicts the administrative structure to be utilized for implementing the programs and objectives outlined in this Plan. The Board of Supervisors, Department of Public Works Committee and the Solid Waste Division all have a role in the success of the solid waste management system including operations, administration, finance, outreach and education, enforcement, data collection and evaluation, and LSWMP updates and report. This is discussed in more detail in Section 4.0.

⁷ [Columbia County Board of Supervisors \(google.com\)](https://www.google.com)

Figure 1-3 – LSWMP Administrative Structure



1.6.1. Neighboring Planning Units

Table 1-3 lists the neighboring planning units along with possible opportunities for inter-jurisdictional programs or issues that may impact implementation of the County's LSWMP and achievement of its goals. Further evaluation of these opportunities or potential impacts will be discussed in Chapter 5, and tasks will be included in the Implementation Schedule.

Table 1-3 – Potential Impacts or Opportunities with Neighbors That Could Affect LSWMP Implementation

Neighboring Planning Unit	Existing or Potential Inter-Jurisdiction Considerations/Impacts	Effects of Opportunities or Impacts to Implement the LSWMP
Ulster County Resource Recovery Agency (UCRRA) ⁸	UCRRA's jurisdiction as a planning unit includes only Ulster County. UCRRA has two main transfer stations that it operates.	No known impacts on implementing the LSWMP.
Capital Region Solid Waste Management Partnership (CRSWMP) ⁹	The City of Albany, acting as lead agent for the CRSWMP Planning Unit, operates a solid waste management system located in the City of Albany, Albany County, New York. As part of the solid waste management system, the City of Albany operates a landfill facility on Rapp Road within the city. This landfill is approaching capacity and has undergone restrictions to its incoming waste to prolong the capacity. This landfill is anticipated to be able to provide disposal capacity for the Planning Unit until the end of 2023 according to the Facility's 2019 Annual Report. In addition to the landfill facility, the municipalities that make up the Planning Unit typically operate resident's drop-off stations for those residents who do not contract with private waste and recycling collection companies.	Closure of the Rapp Road Landfill could potentially impact Columbia County, but exact impacts are unknown at this time.
Eastern Rensselaer County Solid Waste Management Authority	The ERCSWMA provides a variety of services for residents and businesses of its eight (8) member communities. These services include long term waste disposal and transportation contracts, annual HHW collection event, waste reduction and recycling education programs, and other services.	No known impacts on implementing the LSWMP.

⁸ <https://ucrra.org/wp-content/uploads/2020/06/UCRRA-LSWMP-Final.pdf>

⁹ <http://www.capitalregionlandfill.com/>

Neighboring Planning Unit	Existing or Potential Inter-Jurisdiction Considerations/Impacts	Effects of Opportunities or Impacts to Implement the LSWMP
Greene County ¹⁰	Greene County currently has 4 transfer stations, Residents can pay a tipping fee to drop off MSW and/or recyclables at the county stations, or contract with a hauler for these services.	No known impacts on implementing the LSWMP.
Dutchess County Resource Recovery Authority ¹¹	Dutchess County owns a mass burn waste-to-energy facility located in Poughkeepsie, NY, approximately 50 miles from the City of Hudson. Approximately 85% of the recyclables generated within the County are processed at a privately owned and operated MRF. There are 18 transfer stations, three are privately run, six are run through a contract with a private company, and nine are municipally run.	No known impacts on implementing the LSWMP. In 2019 approximately 60,500 tons of material was landfilled, primarily at the Ontario Landfill. Due to limited disposal facilities in this region, this facility typically operates at or near capacity and therefore is not considered a viable alternative disposal option for Columbia County.
Northern Berkshire Solid Waste Management District (Berkshire County, MA)	The majority of solid waste and recycling in Berkshire County is managed by the Northern Berkshire Solid Waste Management District. There is a WTE facility located in Pittsfield, MA that has historically taken small amounts of Columbia County waste from private haulers. Worth noting is the fact that within the past 3 years, two major landfills in southern MA (Chicopee and Southbridge) have closed, displacing waste to landfills farther north and west.	Closure of the Chicopee and Southbridge landfills will alter the possible destinations for waste.

1.6.2. Planning Unit Membership and Impacts on Implementing LSWMP

Table 1-4 includes a list of the planning unit members as well as conditions that pose a significant impact to implementing the LSWMP and achievement of the LSWMP goals. Currently, the members are not directly involved in preparing or implementing the plan; however the members contribute to the plan through their representation on the Board of Supervisors and participation in the public review and comment period. Planning unit members could also play a significant role in the gathering of information and quantities of materials collected and recycled within the towns, at various businesses, schools, and other recycling facilities. The significant impacts are discussed further in Section 1.8 of

¹⁰ <https://www.greenegovernment.com/greene-government/waste-transfer-stations>

¹¹ [Annual Reports \(dutchessny.gov\)](#)

this chapter. Additionally, more details related to organic waste management are provided in Table 2-3 in Section 2.0.

Table 1-4 – Planning Unit Membership

Municipal Member	Facility Present	Unique Conditions or Issues¹²
Ancram		None noted.
Austerlitz		None noted.
Canaan	Privately Operated Transfer Station (County Waste)	In the 1990s, the Town of Canaan accepted a proposal from Energy Answers Corporation to locate a facility on New York State Route 22, near Thruway Exit B-3. This facility is approved to handle MSW and C&D debris. Town of Canaan will be included in the Planning Unit going forward.
Chatham	Convenience Center	None noted.
Claverack		None noted.
Clermont		None noted.
Copake	Convenience Center	None noted.
Gallatin	Convenience Center	None noted.
Germantown	Convenience Center	None noted.
Ghent		None noted.
Greenport	Greenport Transfer Station (primary county transfer station).	Town's waste is handled by the County through an inter-municipal agreement.
Hillsdale	Convenience Center; Privately Operated Transfer Station (Carmen Barbato & Sons, Inc.)	None noted.
Kinderhook	Convenience Center	None noted.
Livingston	Convenience Center	None noted.
New Lebanon	New Lebanon Recycling Center	None noted.
Stockport		None noted.
Stuyvesant		None noted.
Taghkanic		None noted.
Hudson (City)		County Seat. City provides curbside waste collection.
Chatham (Village)		Village provides curbside waste collection through contract with County Waste.
Kinderhook (Village)		Village provides curbside waste collection through contract with County Waste.
Philmont (Village)		Village provides curbside waste collection.
Valatie (Village)		None noted.

¹² Further evaluation will be completed as discussed in Chapter 5.

1.7. Seasonal Variations and Unique Circumstances

There are several seasonal variations which occur within Columbia County which could affect implementation of the LSWMP and achievement of its goals.

- Spring is a large cleanup time and influx of brush, downed trees, lawn debris, and scrap metal from residences. The impacts and effects of these wastes are discussed in Section 1.8.1.
- Summer brings the end of the school year for high schools, and brings with it cleanout wastes from lockers, equipment left behind, and wastes from any remodels or construction projects at schools, as well as agricultural clean ups. The impacts and effects of these wastes are discussed in Section 1.8.2.
- There are also many events held within the County during the year for which the County provides solid waste and/or recycling services as listed in Table 1-9. Additional events occur within the County that may generate significant quantities of waste. The impacts and effects of these events are discussed in Section 1.8.5.
- Summer also brings an increase of yard wastes, agricultural wastes and cleanups, as well as garden wastes which could all be composted. The impacts and effects of these wastes are discussed in Section 1.8.1.
- Fall brings the return of students to school. With this brings new electronics, books, etc. This also brings a larger amount of food wastes. All school wastes are managed by private haulers and no generation or recovery data is available. The impacts and effects of these wastes are discussed in Section 1.8.2.
- The Catamount Ski Resort is open during the winter and are a seasonal source of commercial waste.
- The Lebanon Valley Speedway operates through a racing season of April through November. During this season, significant waste is generated by both spectators and an RV park, which assembles on either side of U.S. Route 20 for the racing season. This waste is managed through existing solid waste management facilities.
- There are public libraries within the County. Potential recycling options for waste/recyclable materials generated at libraries are discussed in Section 1.8.3.
- There are some small manufacturers, businesses, nursing homes, a hospital, and other institutional facilities which manage their own waste and recyclables. Recycling activities and data for these facilities are unknown. Recycling programs and data collection will be discussed in the Alternative Technology Evaluation in Chapter 5. Tasks will be included in the Implementation Schedule to evaluate and implement new or improved recycling programs, including packaging and organics recovery, and to collect data.

1.8. Overview of Solid Waste Generation Sources within Columbia County

The majority of Columbia County's commercial, retail, institutional, governmental facilities and major employment centers within the County are concentrated in the greater City of Hudson area. There are no large or significant industrial facilities in Columbia County.

Columbia County's economic base is relatively diversified. The extent and mix of an area's commercial and industrial base may affect solid waste disposal requirements. Large education institutions, such as the Kinderhook Central School District, tend to produce large quantities of paper wastes. Shopping plazas and medical office buildings are other types of establishments that generate large volumes of wastes.

While a business' number of employees is not necessarily correlated with the volume of waste it generates, it is one metric by which to gauge a business' size. According to the NYS Department of Labor, the type of industry that employed the most individuals in Columbia County in 2019 was service providing 56.3% of employment followed by education and health (8.4%) and government (8.0%).¹³

There are many natural, cultural, and historical amenities in the County that have contributed to a growth of tourism. Some of these amenities are seasonal, while others draw visitors throughout the year. Among the attractions in the County are Catamount Mountain Resort, Clermont State Historic Site, Columbia County Fairgrounds, Columbia County Historical Society Museum & Library, Crandell Theatre, FASNY Museum of Firefighting, Hudson Athens Lighthouse, Hudson Cuisines, Hudson Movieplex 8, Hudson River Skywalk, Ichabod Crane Schoolhouse, James Vanderpoel House, Lake Taghkanic State Park, Lebanon Valley Dragway, Lebanon Valley Speedway, Lightforce sanctuary, Livingston History Barn, Luykas Van Allen House, Martin Van Buren National Historic Site, Olana State Historic Site, Old Chatham Tennis Club, Shaker Museum, Taconic State Park, The Abode of the Message, Time & Space Limited, Won Dharma Center, and the Hudson River.

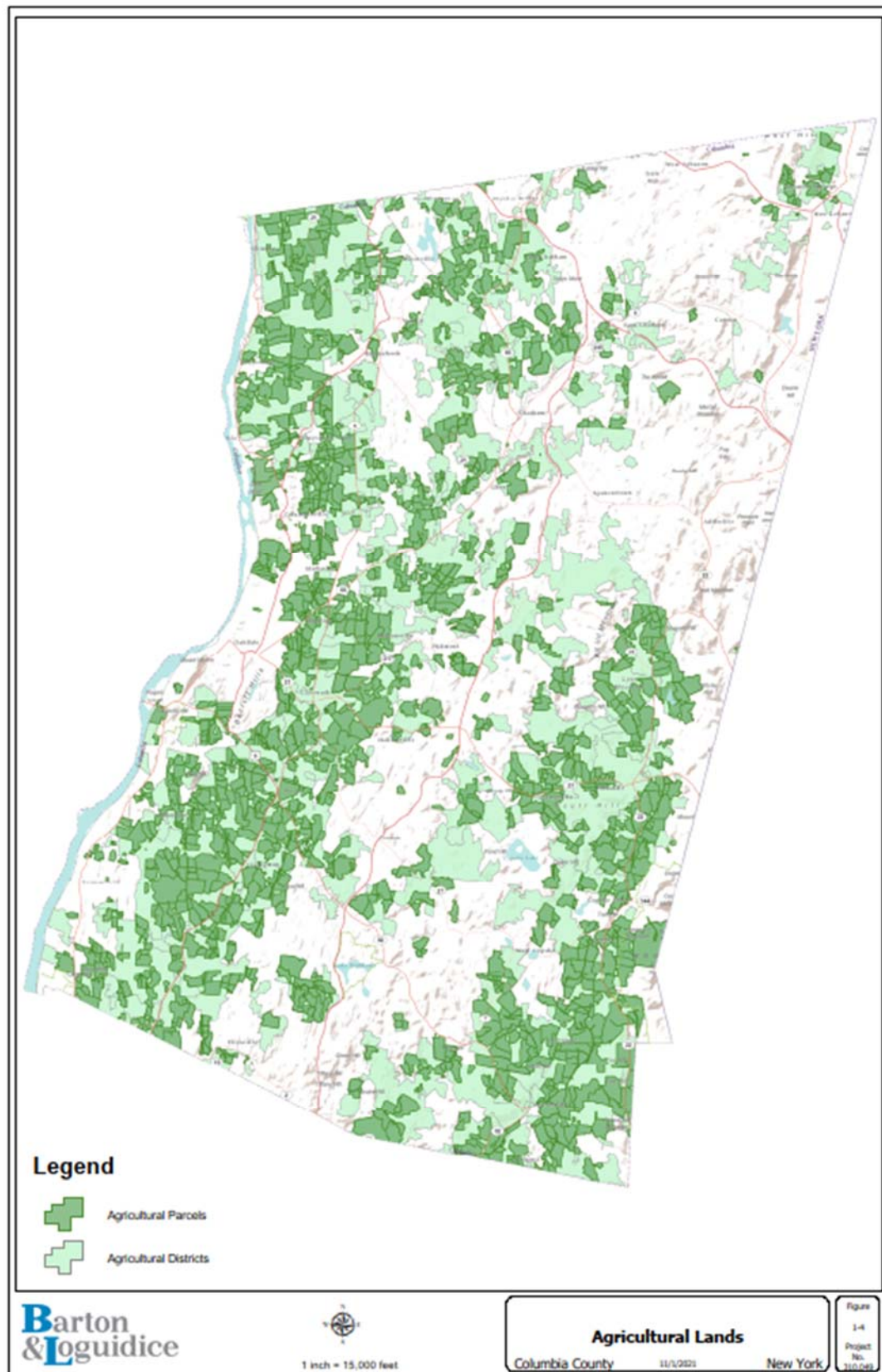
The unemployment rate peaked in 2009 and 2010 at 7.5% and steadily declined to a rate of 3.1% in 2019. In 2020 the unemployment rate rose to 6.2%, though this is attributed to COVID impacts. The number of employed jobs, which has stayed relatively constant for the past five years, was 30,309 in 2020.¹⁴

A total of 1,771 active farms existed in the County in 2020. These farms occupied approximately 163,884 acres of the County's total land area, and the average farm size was 93 acres. A figure depicting active farmland is shown in Figure 1-4.

¹³ <https://statistics.labor.ny.gov/cesminor.asp>

¹⁴ <https://www.bls.gov/lau/#cntyaa>

Figure 1-4 – Agricultural Lands in Columbia County



1.8.1. Spring and Summer Residential and Agricultural Wastes

Table 1-5 lists seasonal residential and agricultural variations in waste, along with conditions and impacts that affect implementation of the LSWMP and achievement of its goals.

Table 1-5 – Impacts of Residential and Agricultural Wastes in the Planning Unit¹⁵

Source of Wastes	Unique Circumstance or Situation	Quantity/Quality Impacts	Impacts on LSWMP
Spring Residential Cleanup	Spring Cleanup	Seasonal influx of brush, downed trees, lawn debris, and scrap metal	Possible composting of organics; will need more data on types of material, and amounts to be composted.
Summer Growing Season	Seasonal	Yard and garden wastes. Agricultural organics and agricultural plastic wastes s, which have cleanliness and bulk issues for recycling	Possible composting of organics; will need more data on types of material, and amounts to be composted.

The possibility of recycling organics, such as by composting or anaerobic digestion, will be discussed in the Alternative Technology Evaluation in Chapter 5, and tasks will be included in the Implementation Schedule as appropriate.

1.8.2. Schools

Columbia County is served by a large number of private institutions and community service facilities. The County's educational system consists of public, private, and parochial school systems, including elementary, middle, high schools, and a community college.

Table 1-6 lists the schools^{16,17} in the planning unit, along with conditions and impacts that affect implementation of the LSWMP and achievement of its goals. Information and data in the table will be revised throughout the Planning Period as more details become available.

¹⁵ Information and data in table to be revised throughout the Planning Period as more details become available.

¹⁶ <https://www.columbiacountyny.com/schools.html>

¹⁷ <http://www.newyorkschoos.com/private-schools/columbia-county.html>

Table 1-6 – Impacts of Schools Within the Planning Unit

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On LSWMP
Elementary and Secondary Schools			
Chatham Central School District	Summer cleanout/ construction. Seasonal food wastes from cafeterias. Private hauling of school wastes and recyclables.	Locker content left behind, C&D debris, and other wastes from end-of-school cleanouts. Influx of food wastes. Paper, books and electronics recycling.	May participate in education/outreach activities provided by Columbia County. Lack of data available on waste generation, further information is needed.
Germantown Central School District	Same as above	Same as above	Same as above
Hudson City School District	Same as above	Same as above	Same as above
Ichabod Crane Central School District	Same as above	Same as above	Same as above
New Lebanon Central School District	Same as above	Same as above	Same as above
Taconic Hills Central School District	Same as above	Same as above	Same as above
Private Schools			
SUNY Columbia-Greene Community College, Hudson, NY	Same as above	Same as above	Same as above
Columbia Christian Academy, Ghent, NY	Same as above	Same as above	Same as above
Darrow School, New Lebanon, NY	Same as above	Same as above	Same as above
Hawthorne Valley School, Ghent, NY	Same as above	Same as above	Same as above
Livingston S D A School, Livingston, NY	Same as above	Same as above	Same as above
Mountain Road School, New Lebanon, NY	Same as above	Same as above	Same as above

All of the schools within the planning unit generate various amounts and types of waste and recyclable materials, but specific details are unknown. Typically these schools contract with private haulers to manage the wastes and recyclables. Given that private haulers manage these materials, the types and quantities are not reported individually. Steps to improve the reporting of data to the planning unit will be discussed in the Alternative Technology Evaluation in Chapter 5. Tasks will be included in the

Implementation Schedule to evaluate and implement new or improved recycling programs, including organics recovery, and to collect data.

1.8.3. Libraries

Table 1-7 lists the libraries in the planning unit, along with conditions and impacts that affect implementation of the LSWMP and achievement of its goals. Information in this table will be updated throughout the Planning Period as more detail becomes available.

Table 1-7 – Impacts of Libraries Within the Planning Unit

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts on LSWMP
Canaan Public Library	Periodic cleanouts. Private hauling of all library wastes.	Large amounts of books and magazines. Data unavailable.	Opportunity for libraries to coordinate a recycling management program among libraries or as a venue for education and outreach. Further evaluation needed.
Chatham Public Library	Same as above.	Same as above.	Same as above.
Claverack Public Library	Same as above.	Same as above.	Same as above.
Germantown Public Library	Same as above.	Same as above.	Same as above.
Hudson Area Library	Same as above.	Same as above.	Same as above.
Kinderhook Memorial Library	Same as above.	Same as above.	Same as above.
Livingston Free Library	Same as above.	Same as above.	Same as above.
New Lebanon Library	Same as above.	Same as above.	Same as above.
North Chatham Free Library	Same as above.	Same as above.	Same as above.
Philmont Public Library	Same as above.	Same as above.	Same as above.
Roeliff Jansen Community Library	Same as above.	Same as above.	Same as above.
Valatie Free Library	Same as above.	Same as above.	Same as above.

It is not known what these libraries are now doing with their wastes that they are generating. Possible recycling programs and data collection will be discussed in the Alternative Technology Evaluation in Chapter 5. This could include recycling programs for cardboard, outdated books and periodicals, and for materials generated from any events held at the library facilities. Tasks will be included in the Implementation Schedule to evaluate and implement new or improved recycling programs, and to collect data, as appropriate.

1.8.4. Jails, Nursing Homes, Other Institutions

Table 1-8 lists the jails¹⁸, nursing homes¹⁹, and other major institutions in the planning unit, along with conditions and impacts that affect implementation of the LSWMP and achievement of its goals. Information in this table will be updated throughout the Planning Period as more detail becomes available.

Table 1-8 – Impacts of Jails, Institutions, Nursing Homes Within the County

Source of Wastes	Facility Type/Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On LSWMP
Jails/Juvenile Detention Centers			
Burnham Youth Safe Center, Canaan, NY	Needs further evaluation.	Needs further evaluation.	Needs further evaluation related to existing disposal and recycling activities.
Columbia County Jail, Hudson, NY	Same as above.	Same as above.	Same as above.
Columbia Girls Secure Center, Claverack, NY	Same as above.	Same as above.	Same as above.
Hudson Correctional Facility, Hudson, NY	Same as above.	Same as above.	Same as above.
Nursing Homes			
Barnwell Nursing & Rehabilitation Center, Valatie, NY	Same as above.	Same as above.	Same as above.
Camphill Ghent, Inc., Chatham, NY	Same as above.	Same as above.	Same as above.
Fansy Firemen's Home, Hudson, NY	Same as above.	Same as above.	Same as above.
Livingston Hills Nursing & Rehabilitation Center, Hudson, NY	Same as above.	Same as above.	Same as above.
Pine Haven Home, Philmont, NY	Same as above.	Same as above.	Same as above.
Whittier Place, Ghent, NY	Same as above.	Same as above.	Same as above.
Whittier Rehabilitation & Skilled Nursing Center, Ghent, NY	Same as above.	Same as above.	Same as above.

¹⁸ <https://www.countyoffice.org/ny-columbia-county-jails-prisons/>

¹⁹ <https://www.countyoffice.org/ny-columbia-county-assisted-living-nursing-home/>

Source of Wastes	Facility Type/Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On LSWMP
Hospitals			
Columbia Memorial Hospital, Hudson, NY	Same as above.	Same as above.	Same as above.
Ski Resorts			
Catamount Mountain Resort, Hillsdale, NY	Same as above.	Same as above.	Same as above.

It is not known what these institutions are doing with their wastes currently. Data needs to be collected as to what types of waste/recyclable materials they generate and where they are disposing/recycling of said materials. It also needs to be determined if they are able to compost any of their wastes such as food wastes. Possible recycling programs and data collection will be discussed further in Chapter 5.

1.8.5. Special Events within the Planning Unit

Table 1-9 lists the special events in the planning unit, along with conditions and impacts that affect implementation of the LSWMP and achievement of its goals. This data will be updated throughout the planning period as more information becomes available.

Table 1-9 – Impacts of Special Events within the Planning Unit

Sources of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On LSWMP
Columbia County Fair	Many vendors and activities with packaging, food waste, and/or recyclable drink bottles. Attendees may or may not care about recycling or waste diversion.	The County collects all solid waste generated by this event. The County has worked with the owner of the Fairgrounds to include recycling collection.	There are many waste/recyclable materials that could be captured from these events. Possibility of composting organics and recycling of packaging. Data needed. Opportunity for education outreach to the community related to recycling and waste diversion.
Autumn in Austerlitz	Same as above.	Private hauler collects any waste generated	This event is a potential target for increasing waste diversion by providing recycling in addition to solid waste collection.
Basilica Farm + Flea: Spring Market & Holiday Market	Same as above.	Same as above.	Same as above.
Basilica Soundscape	Same as above.	Same as above.	Same as above.
Blueberry Festival	Same as above.	Same as above.	Same as above.
Chatham Summerfest	Same as above.	Same as above.	Same as above.

Sources of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On LSWMP
Chatham Winterfest	Same as above.	Same as above.	Same as above.
Falcon Ridge Folk Festival	Same as above.	Same as above.	Same as above.
Grillsdale	Same as above.	Same as above.	Same as above.
Hawthorne Valley Fall Festival	Same as above.	Same as above.	Same as above.
Hillsdale Pumpkin Festival	Same as above.	Same as above.	Same as above.
Hudson Berkshire Wine & Food Festival	Same as above.	Same as above.	Same as above.
Hudson Children's Book Festival	Same as above.	Same as above.	Same as above.
Oldtone Roots Music Festival	Same as above.	Same as above.	Same as above.
Winterwalk & Winter Parade	Same as above.	Same as above.	Same as above.
Household Hazardous Waste Day	Event held to collect HHW annually.	Approximately 63 tons of HHW were collected in 2020	Other recycling events could be co-located during these events. Opportunity for education outreach to the community related to recycling and waste diversion.

The potential of capturing recycling and wastes from special events could be increased dramatically. Currently, the County only provides solid waste collection services for the Town of Greenport, as per their contract dated December 4, 2019; this contract expires December 31, 2021, but it is anticipated that this agreement will be extended. The types of waste/recyclable materials are being generated, and how they are currently being managed at events needs to be investigated. Possible recycling programs and data collection will be discussed in the Alternative Technology Evaluation in Chapter 5. Tasks will be included in the Implementation Schedule to evaluate and implement new or improved recycling programs, including packaging and organics recovery, and to collect data.

1.9. Summary of Implementation of Previous LSWMP

1.9.1. History of LSWMP

The Columbia County Solid Waste Department adopted its first Solid Waste Management Plan (Final Plan) in April of 1991. The plan laid out an approach for solid waste and recycling management in compliance with applicable local, State and Federal laws, rules and regulations. Since 1991, the SWMP has served as the foundation for decision-making by the County, for its growing solid waste management and recycling efforts.

In 2008, the County submitted a Plan Update which was approved by NYSDEC in 2010 (2010 Plan Update). Most recently, the County submitted Final Supplemental Generic Environmental Impact Statements for the Columbia County Comprehensive Solid Waste Management Plan covering the reporting periods of CY2017 – CY2018 and CY2019 – CY2020 that included LSWMP implementation status, accomplishments, remaining milestones, and new issues that have arisen.

1.9.2. Goals & Objectives

Throughout the planning period, several modifications have been made in response to planning and development in Columbia County and the County has devoted much of the past few years developing new and creative ways to expand current programs to meet the needs of the residents and pursuing additional issues mentioned in the Final Plan. The following presents the major goals and objectives of the Columbia County Solid Waste Management Plan as defined in the 2010 Plan Update:

- To continue to minimize, through waste reduction and recycling, the amount of solid waste sent to land disposal facilities;
- To implement a long-term, comprehensive solid waste management plan that is environmentally sound, reliable, cost-effective, and feasible;
- To establish a minimum recycling goal, based upon an assessment of realistically attainable achievements expected to result from the implementation of the recycling programs;
- To capably manage the solid waste generated in Columbia County, including municipal solid waste, construction and demolition debris, non-hazardous industrial and commercial waste (excluding sludge), and non-infectious, unregulated medical waste;
- To provide for disposal of the solid waste generated in Columbia County at facilities located outside of the County on a long-term basis;
- To develop an implementation schedule that is achievable and timely for addressing the needs of Columbia County;

- To minimize adverse impacts on community and environment resulting from solid waste management activities;
- To comply with all applicable Federal, State, and local laws and regulations; and
- To define the County's jurisdiction over private and/or commercial solid waste management facilities located in Columbia County.
- Expand the list of materials accepted at existing sites, including office paper, other plastic containers (PET, LDPE, PVC), clean wood and brush, and yard waste.
- Designate additional waste stream components for mandatory recycling.
- Encourage composting and landspreading by sludge and septage generators, and provide certain technical assistance.
- Enforcement of mandatory recycling requirement.
- Continued public education.
- Development and expansion of waste reduction and recycling programs will receive increased attention and will have the opportunity to fully develop in a manner which will pose less risk with respect to facility sizing, if regional or available commercial facilities are utilized.
- The County may lose some control over costs because third parties (haulers, disposal facilities and their governmental regulators) have direct control over such costs. This may be balanced by contractual efforts to define reasons and degrees of future cost education. Any in-County solid waste facility would, itself, add to the cost increases associated with changes in law and government standards.

1.9.3. Major Accomplishments

The Department has met a number of their milestones set forth in the Final Plan and the 2010 Plan Update. The following list identifies the major accomplishments that have been implemented since the 2010 Plan Update:

- Continued with the assistance in developing markets for recyclable material in conjunction with Casella;
- Entered into a secure five year contract to transport and haul recyclable material
- Annual Household Hazardous Waste Collection events;
- Secured a new market for the electronics waste with a local vendor;
- Working on phase 2 of the upgraded improvements to the Greenport Transfer Station.

- Continued to replace the aging fleet of the department with a 5 year plan;
- Received a NYSDEC grant for phase 1 of the upgrades to the Greenport Transfer Station;
- Will submit a new grant through NYSDEC for phase 2 of the Greenport Transfer Station; and
- Continued pursuing the North Bay / Hudson Landfill Project for completion of the NYS Office of Parks & Recreation grant.

1.9.4. Status Updates

Solid Waste Collection: Solid waste collection is performed by one of three means: 1) municipally sponsored collection performed by private carter; 2) arrangements between waste generator and private carter; or 3) transport directly by waste generator to a county owned waste facility.

Public In-County Facilities: Columbia County owns and operates 7 convenience stations and one transfer station. The facilities are strategically located in the County to best serve the population and there are no plans to construct or acquire additional facilities in the next 10 year period. Columbia County also operates one drop-off facility for recyclable material only, located at the County Highway Outpost in the town of New Lebanon.

Private In-County Facilities: There are two (2) privately owned and operated transfer stations within Columbia County: 1) the B3 Transfer Station located in Canaan, NY, and 2) Barbato Disposal Transfer Station located in Hillsdale, NY. The FCR, Inc. recycling facility located in the Gerald S. Simons Commerce Park in Claverack, New York, which used to take the County's recyclable materials, closed in 2012.

Out-of-County Disposal Facilities: Since closure of the Claverack Landfill, most municipal solid waste generated in the County is transported for disposal at facilities located outside of the County. Non-recyclable waste delivered to the County's transfer and convenience stations is currently delivered to the Ontario Landfill. Private haulers are reportedly using either the B3 Transfer Station in Canaan, NY or other out-of-County disposal facilities.

Solid Waste Transportation & Disposal: Columbia County is still under contract with Casella Waste Systems, Inc. to transport and dispose of the municipal solid waste and construction and demolition debris currently collected at the county owned solid waste facilities. The material is taken to the Ontario Landfill.

Recycling Transportation & Disposal: Recyclable material is still being handled by Casella Recycling, Inc. and material is being taken to Rutland, Vermont under a new contract which started August 1, 2018. A County Waste Facility located in Albany County is also identified in the contract and serves as a backup facility if required due to permitting issues or market restrictions.

Inter-municipal Agreements: The County continues to honor the inter-municipal agreement between the Town of Greenport and the County to collect their garbage and recyclables in the towns refuse district.

Hauler Licensing: Columbia County does not currently, and never has, required hauler licensing. This program would be difficult to enforce with limited staffing and funding.

1.9.5. Challenges

Due to the economic crash of the recyclable market and the ban exercised by China, the cost associated with the processing, handling and transportation increased from \$60,000 a year to over \$250,000.00. The County after several meetings with the NYSDEC and Casella decided to impose a recycling fee for those residents utilizing the County owned waste stations for their recyclable material. As it would not be fair to increase the tax levy or include this additional costs on to all the residents of the County (as many utilize private waste haulers), a permit structure was implemented and adopted at the November 2018 Full Board of Supervisors meeting. The fees imposes a yearly charge of \$50.00 for county residents, \$35.00 for county residents 65 or older and \$100.00 for non-county residents. Commercial accounts that were bringing the material into the Greenport Transfer Station would be charged at the rate of \$100/ton for larger loads of material. The program to date has been well received and the County is hopeful it will be successful in cover the costs associated with this 30 year program.

Most recently, the COVID-19 pandemic has impacted operating budgets and staff availability. One such program affected is the annual HHW collection event. The County has held their annual household hazardous waste collection event at the County Highway garage in the spring. With the assistance of a 50% grant reimbursement from NYSDEC, the County has been able to maintain this program for our residents since 1992. However, due to budget constraints, the HHW collection event for 2021 was cancelled.

1.10. Summary of Changes to the Planning Unit

The membership of the Planning Unit has not changed since the implementation of the previous LSWMP. The same towns and villages still remain a part of this Unit. It is not anticipated that there will be any changes of municipalities within the Planning Unit.

All original members of the planning unit are participating in the Solid Waste Management plan. In the 1990s, the Town of Canaan accepted a proposal from Energy Answers Corporation to locate a facility on New York State Route 22, near Thruway Exit B-3. This facility (now owned and operated by County Waste) was originally approved to handle 350 TPD of MSW and C&D debris and has received approval to increase their capacity. As a result, the Town of Canaan has not been a participating member of the Planning Unit since the 1990s, however, the Town of Canaan will be included as a participating member of this Solid Waste Management Plan.

There have been no changes in schools being introduced to the planning unit. There has been approximately a 5% increase in the number of operating farms within the unit since 2010.²⁰ There has been some commercial growth, as well as some commercial businesses have left the planning unit, resulting in a difference in the types of waste received.

The retail businesses have increased within the planning unit. There are now many larger retail businesses located in the Hudson area, where there were only small retail shops in the 2010 LSWMP Update. This increases the amount of packaging wastes generated as well as organics, or food waste, in the case of grocery stores. It is presently assumed that the large majority of these retail businesses recycle their own cardboard which is received in shipment of their products. This will need to be evaluated further to obtain current data.

At the time of the 2010 LSWMP Update, there were not any significant manufacturing businesses established. No significant manufacturing businesses have started up in the planning unit since 2010.

²⁰

https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp36021.pdf

2.0 SOLID WASTE AND RECYCLABLES QUANTITIES AND TYPES

This chapter provides information on the waste streams generated in Columbia County based on self-reported data, data from county facilities made available through NYSDEC reporting, and estimates from the NYSDEC MSW composition projections.

2.1. Waste Types

Columbia County's solid waste stream has five primary components: municipal solid waste (MSW), non-hazardous industrial waste, construction and demolition debris, municipal sewage treatment plant sludge/biosolids, and processed scrap metal (e.g., scrap vehicles) waste.

For the purposes of this LSWMP, MSW consists of waste generated in homes, businesses, institutions, and the commercial portion of waste discarded by industries. The residential component includes, but is not limited to, newspapers and magazines, corrugated cardboard, glass, metal, plastic containers, food waste, household goods including bulky items like furniture and appliances, textiles, and yard trimmings. The commercial waste stream tends to contain higher percentages of office paper, corrugated cardboard, and scrap metals. Commercial waste is the non-hazardous waste generated by businesses such as restaurants, retail stores, schools and hospitals, professional offices, and manufacturing facilities.

As a regulatory requirement, each solid waste management facility is required to submit annual reports to the NYSDEC. These annual reports provide information with regard to the quantities of materials managed and often identify the geographic locations where the waste materials were generated. The data from the NYSDEC annual reports is readily available and generally reliable. It can also be assumed that the materials collected and processed at recycling facilities in the County are being separated from the household, business, institutional and commercial wastes classified as MSW, and are considered to be another component of that waste stream. Due to the fact that these types of recyclables handling facilities must also compile annual reports to the NYSDEC, this data is also relatively easy to gather. Yard waste is a component of the waste stream that is difficult to quantify. Implementation of a plan to collect data and estimate MSW by material type, including estimating residential yard waste generation and recovery is further discussed in Chapter 5.

Non-hazardous industrial waste is typically generated by manufacturing facilities as a result of an industrial process and is made up of materials such as sludge, ash, drill cuttings and dust. The homogeneous nature and relatively large quantity of non-hazardous industrial wastes typically available can also make them useful as feedstocks for other processes or result in unique management methods. Therefore, only partial data for the generation of these materials within the county is currently available. Implementation of a plan to collect data and estimate MSW by material type, including estimating industrial waste generation and recovery, considering these circumstances is further discussed in Chapter 5.

Construction and demolition (C&D) debris is generated by the residential, commercial, industrial, and institutional sectors and typically consists of wood, masonry, soil, land clearing debris, plumbing fixtures and other construction related items. For this specific analysis, asbestos debris and petroleum contaminated soil are also included in the C&D debris category. Many of the upstate New York landfills report C&D debris as a separate disposal stream, and therefore, the quantity disposed of from Columbia County residents can be identified from those landfill annual reports. However, many of these materials can be recycled and reused (e.g., clean fill material, mulch, or recycled aggregate). Data from these types of operations and uses has been difficult to obtain. Implementation of a plan to collect data and estimate C&D debris generation and recovery, considering these circumstances is further discussed in Chapter 5.

As defined in the Part 360 regulations, biosolids are the accumulated semisolids or solids resulting from treatment of wastewaters from publicly or privately owned or operated sewage treatment plants. Biosolids do not include grit or screenings, or ash generated from the incineration of biosolids. Municipal treatment plants generate sludge/biosolids that require special handling and management.

Processed scrap metals are typically generated by commercial or industrial sectors, but in potentially large quantities which makes it worth monitoring. Data from these types of operations and uses is difficult to obtain. Implementation of a plan to collect data and estimate scrap metals generation in the County and recovery, considering these circumstances is further discussed in Chapter 5.

2.2. Availability of Generation and Recovery Estimates

2.2.1. Data Sources and Methodology

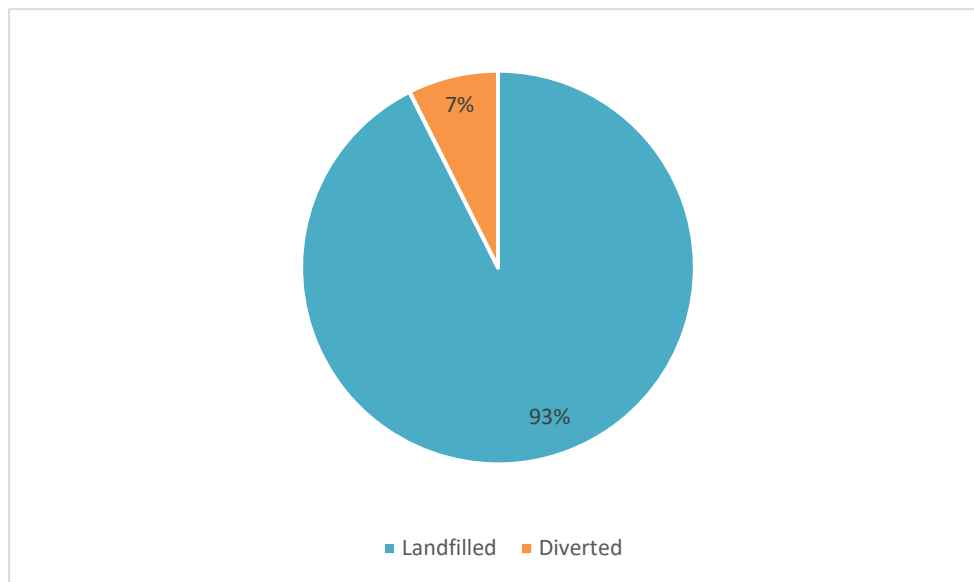
As discussed above, much of the following waste generation estimates were derived from available reports provided to the NYSDEC by transfer stations. Limitations associated with the data are as follows and will be considered when evaluating and implementing new or improved data collection efforts.

- **Incomplete data:** Data on the public sector solid waste management is often incomplete.
- **Inconsistent data:** Where data exists, different methods have been used from year to year and facility to facility to collect and categorize it.
- **Unavailable data:** Data on privately managed waste is generally unavailable.

2.2.2. Estimation of Total Waste Generation in Columbia County

Based on annual reports submitted to the NYSDEC for 2020, Columbia County residents and businesses generated approximately 51,163.36 tons of waste (including potentially recyclable materials) based on available data. Figure 2-1 shows the overall method of management for the waste. The fraction for each waste management sector was determined by analyzing annual tonnage reports for those facilities that reported accepting waste from Columbia County. Based on the information available to interpret, the majority of the waste is landfilled (47,366.58 tons or 93 percent) while the remainder is Diverted (3,796.78 tons or 7 percent).

Figure 2-1 - Estimated Waste Management Methods in Columbia County in 2020



Source: NYSDEC, Facility Annual Reports, 2020; Self-Reporting

Columbia County has eight wastewater treatment facilities (WWTFs). Table 2-1 shows the method of sludge management utilized.

Table 2-1 - Municipal Sewage Sludge Generation and Management Summary²¹

Treatment Plant	Treatment Method	Dewatering Device	Tons/Year	Use/Disposal Method
Chatham (V) STP	Aerobic Digestion	Drying Beds	Unknown	Composting On-site
Columbia Co. Commerce Ctr. ²²	Aerobic (Not Specified)	Unknown	Unknown	Unknown
Germantown (T) WWTP	Aerobic Digestion	Unknown	Unknown	Scavenger
Greenport (V) SD#1 & SD	Aerobic Digestion	Belt Filter Press	Unknown	Composting On-site & Landfill
Hudson (C) WWTP	Unknown	Air Flotation	Unknown	Landfill
Philmont (V) Sewage Treat	Aerobic Digestion	Unknown	Unknown	To another treatment plant
Kings Acres STP	Unknown	Unknown	Unknown	Unknown
Valatie (V) WWTF	Aerobic Digestion	Belt Filter Press	Unknown	Composting On-site & Landfill
Total Sewage Sludge Used/Disposed On-site			Unknown	
Total Sewage Sludge Landfilled			<u>1,543.91 Tons</u>	
Total Municipal Sewage Sludge Generated			Unknown	

The majority of the biosolids generated in Columbia County are landfilled, and the data is available from the NYSDEC solid waste facility annual reports. The Ontario County Landfill reported 1,543.91 tons of biosolids from Columbia County landfilled in 2020. Unfortunately this report does not provide the specific treatment plant from which these biosolids originate from. Though information on municipal sewage sludge generation and management is difficult to collect, the County plans to investigate the unknowns and complete Table 2-1 during the LSWMP 10-year period.

²¹ Source: Descriptive Data of Municipal Wastewater Treatment Plants in NYS, Division of water, 2004

²² This treatment plant is planned to be decommissioned during the first quarter of 2022.

The data in Table 2-1 was generated from data gathered from the Division of Water's Descriptive Data of Municipal Treatment Plants in NYS (2004). While individual sewage sludge tonnage generated by each treatment plant are unknown, the total sewage sludge generated in Columbia County and landfilled (1,543.91 tons) was derived from 2020 landfill annual reports submitted to the NYSDEC.

A complete breakdown of waste generated as a whole for Columbia County is not available due to the lack of comprehensive data available at this time. Tasks are included in the Implementation Schedule to investigate the implementation of a survey and reporting program as well as any other programs that might be useful and necessary to collect generation and recovery data in general accordance with this format. Table 2-2 provides a waste generation baseline, which will be expanded as data becomes more readily available and can be incorporated into future waste generation analysis.

Table 2-2 - Estimation of Total 2020 Waste Tonnage by Management Method

	Amount (Tons)	% of Management Method	% of Total Generation
Landfilled²³			
MSW ²⁴	29,691.45	63%	58%
Construction and Demolition Debris	6,865.71	15%	13%
Sewage Sludge	1,543.91	3%	3%
Industrial	52.51	0%	0%
Beneficial Use Determination Material	9,213.00	19%	18%
Total	47,366.58	100%	93%
Diverted			0%
Composted Sewage Sludge	0.00	0%	0%
Land Applied Sewage Sludge	0.00	0%	0%
Composted Yard Waste	544.89	14%	1%
Recovered/Composted Food Scraps	0.00	0%	0%
Recycled	3,251.89	86%	6%
Vehicle Scrap Metal	0	0%	0%
Total	3,796.78	100%	7%
Total Waste Generation	51,163.36	100%	100%

²³ NYSDEC 2020 Facility Annual Reports

²⁴ Shaded categories are considered to be part of the MSW category, and will be utilized in the MSW composition analysis.

2.2.3. Estimation of Potential MSW Recovery

As previously discussed, an incomplete set of disposal and recovery data is available for the County to compile and review; therefore, with the assistance of the NYSDEC's waste composition and recovery projection tool, the following section provides Columbia County with an estimated MSW waste composition for future planning purposes. The complete tables are provided in Appendix A. MSW composition includes residential, commercial and institutional waste generators; consequently, for the purposes of this analysis, the following are excluded from the MSW composition estimates: separately managed C&D debris, several organics streams (biosolids, septage, agricultural materials, etc.), and scrap metal managed outside of the MSW management structures.

Table 2-3 provides a detailed estimate of materials that could be recovered or diverted from a waste disposal location if the appropriate programs were in place based on the waste generation quantities estimated by the County. These numbers are based on the actual total tons of MSW generated within the County, as reported in Table 2-2. Based on annual reports, Columbia County diverted approximately 3,796.78 tons of material (11 percent) from the 33,488.23 tons of MSW generated from residential, commercial, and institutional generators in 2020²⁵.

However, not all of the categories tracked by the NYSDEC are populated for the 2020 recovery quantities due to the fact that not all categories are able to be accounted for individually. Several materials identified below are collected and recovered at the recycling centers or other similar facilities in Columbia County; however, there are no mechanisms for gathering data for the individual materials at this time. Therefore, the NYSDEC MSW composition tool was applied to the actual waste generation totals to estimate quantities for more specific materials that are not tracked individually within waste streams.

²⁵ Excludes processed C&D, asbestos, industrial waste, sewage sludge, contaminated soil, beneficial use determination materials previously reported in Table 2-2.

Table 2-3 – Estimated MSW Recoverable Materials in Columbia County

Material	Estimated MSW Tons Generated (2020) ²⁶	Estimated % of Total Tons Generated (2020)	Actual MSW Tons Diverted (2020) ²⁷	Actual % of Each Material Diverted (2020)
Newspaper	1,492	4.5%	572.29	38.4%
Corrugated Cardboard	2,740	8.2%	633.17	23.1%
Other Recyclable Paper (Total)	3,707	11.1%	742.76	20.0%
Other Compostable Paper	2,238	6.7%	0.00	0.0%
<i>Total Paper</i>	10,177	30.4%	1,948.23	19.1%
Ferrous/Aluminum Containers (Total)	725	2.2%	118.46	16.3%
Other Ferrous Metals	1,766	5.3%	23.35	1.3%
Other Non-Ferrous Metals (Total)	459	1.4%	2.34	0.5%
<i>Total Metals</i>	2,949	8.8%	144.15	4.9%
PET Containers	337	1%	127.24	37.8%
HDPE Containers	327	1%	122.85	37.5%
Other Plastic (3-7) Containers	65	0.2%	21.94	34.0%
Film Plastic	1,909	5.7%	0.00	0.0%
Other Plastic (Total)	2,038	6.1%	0.00	0.0%
<i>Total Plastics</i>	4,675	14%	272.02	5.8%
Glass Containers	1,341	4%	438.75	32.7%
Other Glass	150	0.4%	0.00	0.0%
<i>Total Glass</i>	1,492	4.5%	438.75	29.4%
Food Scraps	4,414	13.2%	0.00	0.0%
Yard Trimmings	1,685	5.0%	544.89	32.3%
<i>Total Organics</i>	6,098	18.2%	544.89	8.9%
Clothing Footwear, Towels, Sheets	1,424	4.3%	0.00	0.0%
Carpet	481	1.4%	0.00	0.0%
<i>Total Textiles</i>	1,905	5.7%	0.00	0.0%

²⁶ NYSDEC MSW Combined Composition Analysis and Projections²⁷ 2019 NYSDEC Facility Annual Reports

Material	Estimated MSW Tons Generated (2020) ²⁶	Estimated % of Total Tons Generated (2020)	Actual MSW Tons Diverted (2020) ²⁷	Actual % of Each Material Diverted (2020)
<i>Total Wood</i>	1,431	4.3%	0.00	0.0%
C&D Materials	2,205	6.6%	0.00	0.0%
Other Durables	597	1.8%	334.13	55.9%
Diapers	593	1.8%	0.00	0.0%
Electronics	472	1.4%	51.31	10.9%
Tires	578	1.7%	0.00	0.0%
HHW	157	0.5%	63.30	40.2%
Fines	157	0.5%	0.00	0.00%
<i>Total Miscellaneous</i>	4,760	14.5%	448.74	9.4%
Total	33,488	100.00%	3,796.78	11.3%

2.2.4. Estimation of Potential C&D Waste Recovery

C&D debris can be assessed separately from MSW or industrial wastes. Using the NYSDEC's C&D debris composition and recovery projection tool, the following section provides Columbia County with an estimated C&D debris composition for future planning purposes. The complete tables are included in Appendix A. According to NYSDEC, their analysis and the waste composition and recovery projection tool considers the variations in the C&D debris waste stream resulting from the construction, remodeling, repair and demolition of utilities, structures and roads and includes land clearing debris from both the building and infrastructure generating sectors. Variations within the building sector from new construction, renovation and demolition activities are considered from both the residential and non-residential generating sectors.

Based on the data reported in the NYSDEC 2020 Facility Annual Reports, Table 2-4, below, provides an overview of the tons of C&D debris that could be recovered or diverted from a waste disposal location if the appropriate programs were in place.

Table 2-4 – Estimated C&D Debris Recoverable in Columbia County

Material	Estimated Components of C&D Debris Tons Generated per NYSDEC Model (2020)	% of Total C&D Debris Generated (2020)	Tons of C&D Debris Diverted per 2020 Data Obtained	
			Tons Diverted	% Diverted
Concrete/Asphalt/Rock/ Brick	4,827.8	31.9%	0	0%
Wood	2,733.0	18.0%	0	0%
Roofing	716.9	4.7%	0	0%
Drywall	575.1	3.8%	0	0%
Soil/Gravel	3,531.0	23.3%	0	0%
Metal	1,006.7	6.6%	0	0%
Plastic	69.1	0.5%	0	0%
Corrugated/Paper	487.0	3.2%	0	0%
Other	1,196.3	7.9%	0	0%
Total	15,142.7	100.0%	0	0%

Based on the quantities of potential divertible materials that were reported to the NYSDEC or estimated, Columbia County diverted approximately 0 tons of material (0 percent) from the C&D disposal stream in 2020. Table 2-4 indicates that 15,142.7 tons of C&D materials were generated within the County in 2020. A task has been added to the Implementation Schedule to evaluate and implement data collection efforts. Chapters 3 and 5 describe the existing systems for recovering these materials as well as possible future programs during this planning period to increase the County's diversion rate.

3.0 EXISTING PROGRAM DESCRIPTION

The County owns and operates 1 transfer station in the Town of Greenport and 7 convenience stations in the Towns of Chatham, Copake, Gallatin, Germantown, Kinderhook, Livingston, and Hillsdale. These convenience stations deliver their collected waste to the Greenport Transfer Station for processing and consolidating. From the Greenport Transfer Station, C&D and MSW is hauled to the Ontario County Landfill. Single-stream recyclables are hauled by Casella Recycling from the Greenport Transfer Station to County Waste in Albany County, NY and to Casella in Rutland County, VT. The generators and haulers are not required to deliver waste to the County facilities and businesses may self-market their wastes. Recyclables, similarly, are not required to pass through the County facilities; however, recyclables delivered to County facilities must be source separated from other wastes and conform to Local Law No. 7 of 1989 and its revisions in Local Law No. 2 of 1994 and Local Law No. 1 of 1999.

Given the rural nature of Columbia County, a limited variety of collection services are used in the County to collect and transport solid wastes recycling centers/transfer stations. Methods include residential drop-off stations or private contracts. Columbia County does not collect or transport materials from the source. In some cases, private haulers contract on an individual basis to collect and transport the waste and recyclables to a transfer station or disposal location of their choice. A summary of waste disposal activities by waste type follows.

3.1. Solid Waste Management Facilities

3.1.1. Landfill Facilities

Columbia County currently does not own any active landfills.

There are twenty closed municipal landfills in Columbia County: New Lebanon Landfill (Closed 1988), Samascott Landfill (Closed 1977), Stockport Landfill (Closed 1965), Ghent Landfill (Closed 1987), Ghent (Talarico) Landfill (Closed in 1950s to 1960s), Austerlitz Landfill (Closed 1977), Hudson Landfill (Closed 1984), Philmont Landfill (Closed 1988), Greenport Landfill (Closed 1985), Claverack Landfill (Closed 1990), Hillsdale Landfill (Closed 1985), Germantown Landfill (Closed 1983), Livingston Landfill (Closed 1984), Taghkanic Landfill (Closed in 1980s), Copake Landfill (Closed 1986), Clermont Landfill (Closed 1975), Camp Scatico Landfill (Closed in 1960s), Gallatin Landfill (Closed 1986), Ancram Landfill (Crawford Bryant) (Closed 1972), and Ancram Landfill (Closed 1986). There are an additional four closed institutional landfills in Columbia County: East Hudson Parkway Authority (Closed 1982), Lake Taghkanic State Park (Closed 1983), Taconic State Park Landfill, and Olana Landfill (Closed 1986). There are three C&D landfills in Columbia County: Rothvoss Landfill (Closed 1988), Lamunyan Landfill (Closed 1988), and Moran Landfill (Closed 1988). There are an additional two closed industrial landfills in Columbia County: Kimberly-Clark Industrial Landfill (Closed 1988) and Columbia Corporation Industrial Landfill (Closed 1984). There are landfills located outside of Columbia County which are available for the disposal of MSW and C&D. Each of these out-of-county landfills accepted waste that was generated in Columbia County

in 2020. Other landfills also exist throughout New York State; however, they may have disposal restrictions or are located outside a reasonable service area to accept waste generated in Columbia County. The out-of-county landfills accepting Columbia County waste are summarized in Table 3-1.

Table 3-1 – Out-of-County Solid Waste Landfills Servicing Columbia County Waste²⁸

Solid Waste Facility	Facility Address	Permitted Capacity (cubic yards)	Expected Site Life (years)	Waste Types Accepted ²⁹	Operating Status
Seneca Meadows Landfill	1786 Salcman Road, Waterloo, NY 13165	10,024,038	3.9	Ash MSW Energy Recovery Fly; Construction & Demolition Debris; Non-petroleum Contaminated Soil; Sewage Treatment Plant Sludge; Industrial; MSW (Residential/Institutional & Commercial); Waste Tires; Treated RMW; Grit & Screenings; Asbestos (Friable & Non-Friable)	Privately owned and operated by Seneca Meadows, Inc.
Albany City Rapp Road Landfill	525 Rapp Road, Albany, NY 12205	607,249	4.0	Asbestos (Friable); Non-petroleum Contaminated Soil; Ash (WWTP Sludge); Construction & Demolition Debris; MSW (Residential/Institutional & Commercial)	Publicly owned and operated by the City of Albany Dept. of General Services
Town of Colonie Landfill	1319 Loudon Road, Cohoes, NY 12047	9,314,522	18.3	Yard Waste; Construction & Demolition Debris; Petroleum Contaminated Soil; Industrial; Animal Carcasses; MSW (Residential/Institutional & Commercial)	Publicly owned by the Town of Colonie and privately operated by Capital Region Landfills (aka Waste Connections)
Greenridge Landfill	424 Peters Rd, Gansevoort, NY 12831	3,108,089	10.3	Asbestos; Construction & Demolition Debris; Industrial; Contaminated Soil; Sewage Treatment Plant Sludge; MSW (Residential/Institutional & Commercial)	Privately owned and operated by Waste Management of New York, LLC
Ontario County Landfill	1879 State Route 5 & 20, Stanley, NY 14561	6,419,439	8.0	Asbestos; Construction & Demolition Debris; Industrial Waste; Sewage Treatment Plant Sludge; MSW (Residential/Institutional & Commercial)	Publically owned by Ontario County and privately operated by Casella Waste Systems

²⁸ NYSDEC Annual Facility Reports, 2019²⁹ <https://data.ny.gov/Energy-Environment/Landfill-Solid-Waste-Management-Facilities-Map/afg5-7i6u>

3.1.2. Transfer Station or Convenience Stations

Most residents that are either not served by or elect not to contract with a private hauler, deliver their waste to a transfer station or convenience station owned by Columbia County. Residents or commercial/institutional entities located within the County can drop off solid waste and recyclables to any County transfer or convenience station, regardless of which municipality they are located in; commercial/institutional entities that do not contract directly with a hauler must dispose of waste by weight at any County owned transfer station.

Recyclables are collected at the transfer and convenience stations and sold to market. Recyclable materials accepted include: Tin and aluminum food and beverage cans, plastic bottles, jugs, tubs or jars #1, 2 & 5, Glass bottles (green, clear, brown), and aseptic containers (plastic coated milk and juice containers). Recyclable paper products are collected separately and include: boxboard, newspaper, corrugated cardboard, magazines, junk mail, office paper, brown craft bags and phone books.

The annual permit fee structure for recyclables drop-off at the convenience stations and the Greenport Transfer Station is as follows:

Residents of Columbia County with proof of residency	\$50 / household
Residents over the age of 65 years with proof	\$35 / household
Out of County Residents	\$100 / household

For solid waste disposal at the convenience stations and the Greenport Transfer Station, Columbia County residents must pay per bag or item. On March 13, 2002, the County passed amending resolution No. 54-2002 increasing the fee collected for the disposal of solid waste.

On September 8, 2021, the County passed Resolution No. 326-2021 which resulted in a restructuring of the solid waste disposal fee system. Specifically, a sticker system was implemented and the fees where changed from:

7 gallon bags @ \$0.50 each, 15 gallon bags @ \$2.00 each, 30 gallon bags @ \$3.00, 40 gallon bags @ \$4.00, 50 gallon bags @ \$5.00 to:

Up to 10 gallon bags @ \$1.00 each, 15 to 30 gallon bags @ \$3.00, and 40 to 50 gallon bags @ \$5.00.

The transfer station's current individual pay per bag prices are included in Table 3.2.

Table 3-2 – Transfer Station Disposal Fees

Quantity	Cost
0-10 gallon bags	\$1
13-33 gallon bags	\$3
55 gallon maximum bags	\$5
Sectional couch	\$15
Couch, recliner, mattress, box spring	\$10
Refrigerator 19" – 34" Height	\$5 (No Freon) - \$15 (Freon)
Refrigerator 58" – 65" Height	\$10 (No Freon) - \$20 (Freon)
Refrigerator 66" – 69" Height	\$15 (No Freon) - \$25 (Freon)
Freezer (1-10 CF)	\$10 (No Freon) - \$20 (Freon)
Freezer (11+ CF)	\$15 (No Freon) - \$25 (Freon)
Hot water heater, washing machine, dryer	\$7.50
Stuffed chair, futon frame	\$5
Dehumidifier	\$15
Air Conditioner (110 – 120 V)	\$10 (No Freon) - \$20 (Freon)
Air Conditioner (208 – 230 V)	\$15 (No Freon) - \$25 (Freon)
Tires (up to 12")	\$2 (+\$1 for rims)
Tires (13" – 16.5")	\$4 (+\$1 for rims)
Tires (17" – 19")	\$5 (+\$1 for rims)
Tires (20" – 24")	\$11 (+\$1 for rims)
Empty Paint Cans	\$0.50
Hand tool, bicycle, small rug, kiddy pool, snack table, stroller, vertical blinds/shades, small appliance, weed eater	\$1
Ottoman, non-riding mowers, small stereo, water bed, pool liner, propane tank (20 gal)	\$2
Large rug (8'x10' and up), large pools, tables (4-8'), 4 drawer file cabinet	\$5
Gas grill, pool filter, microwave, toilet, sink	\$5
Dishwasher, tin shed, bathtub, oven, love seat	\$7.50
55 Gallon garbage drum	\$8

A listing of the transfer station facilities in Columbia County is presented in the following Table 3-3.

Table 3-3 – Active Transfer Stations and Convenience Centers in Columbia County³⁰

Transfer Station/Convenience Center Name	Owner/Operator	Facility Address	Disposal Destination	Infrastructure Components
Greenport Transfer Station	Columbia County	51 Newman Road Hudson, NY 12534	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR) GroMax, Claverack, NY (Brush, Branches, Trees & Stumps) MIJO Metal, Albany, NY (ENAMELED Appliances/White Goods) ERI Holliaron, MA (Electronics)	Accepts MSW, C&D, brush, branches, trees, stumps, enameled appliances/white goods, scrap metal and electronics. Debris and recyclables. Has truck scale.
Chatham Convenience Center	Columbia County	452 Route 295 Chatham, NY 12037	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables.
Copake Convenience Center	Columbia County	768 County Route 7A Copake, NY 12516	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables
Gallatin Convenience Center	Columbia County	2180 Route 82 Gallatin, NY 12502	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables.

³⁰ <https://sites.google.com/a/columbiacountyny.com/columbia-county-solid-waste/stations>

Transfer Station/Convenience Center Name	Owner/Operator	Facility Address	Disposal Destination	Infrastructure Components
Germantown Convenience Center	Columbia County	65 Palatine Road Germantown, NY 12526	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables.
Kinderhook Convenience Center	Columbia County	2468 Route 9H Kinderhook, NY 12106	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables.
Livingston Convenience Center	Columbia County	366 County Route 19 Livingston, NY 12541	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables.
Hillsdale Convenience Center	Columbia County	65 Holm Road Hillsdale, NY 12529	Ontario Landfill (MSW) Casella Facility, Rutland, VT (SSR) County Waste Facility, Albany County, NY (SSR)	Accepts MSW and recyclables.
Canaan Transfer Station	County Waste	27 Flint's Crossing Rd Canaan, NY 12029	Seneca Meadows (C&D, MSW) Sierra Processing, Albany, NY (SSR)	Accepts MSW, C&D, and recyclables.
Carmen Barbato Inc	Carmen Barbato	2778 State Route 23 Hillsdale, NY 12529	Casella Facility, Ontario, NY (MSW, C&D, SSR) Cascade, Albany, NY (SSR)	Accepts MSW, C&D, and recyclables.
New Lebanon Recycling Center	Columbia County	22 Rt. 5A (West Street), New Lebanon	Same as above.	Accepts MSW and recyclables.

3.2. Out-of-County Waste

While it is not prohibited, none of the County facilities bring in significant quantities of out-of-County waste that are disposed of within Columbia County.

3.3. Reduction, Reuse Recycle Programs

3.3.1. Residential Sector Recycling Facilities and Efforts

Table 3-3 provides a summary of the convenience centers and transfer stations that accept recyclables. All materials accepted at the convenience centers are consolidated at the Greenport transfer station and transported by Casella to a Casella recycling facility in Rutland, VT, or a County Waste owned facility located in Albany County, if necessary.

Casella and County Waste, who provide hauling services in the County, offer recycling. This service offered to residents allows for the collection of single-stream recyclables. Residents, however, must contract with a hauler for curbside pick-up to use these services.

Residents who elect not to hire a private hauler typically drop off recyclables at convenience stations across the County or the Greenport Transfer Station. Recycling flyers available to residents are provided in Appendix C for further information.

The County is also working through Climate Smart Task Force to set up space for individual towns to have “free stores” that would be coordinated and staffed by volunteers. There are drop off boxes for used clothing at all the stations. Through the Columbia County Climate Smart Task Force, all repair cafes, free store and other opportunities are shared on the County’s website.

Electronics are collected at the Greenport Transfer Station for no charge.

The County is unable to track all the materials broken down by the NYSDEC composition spreadsheets; therefore, Chapter 5 includes solid waste management program strategies to address data collection, education, outreach and enforcement needs, etc., for each facility or program that manages residential recyclables generated in Columbia County. The evaluations are to assess the effectiveness and/or needs of these facilities and programs and Columbia County’s activities related to them, to determine what improvements, partnerships, or other alternatives should be evaluated for implementation and what the resulting future recovery goals could be.

3.3.2. Commercial Sector Recycling Facilities and Efforts

On the commercial front, stores, hospitals, and medical office buildings are establishments that generate large volumes of waste and recyclable materials. These establishments may contract directly with a recycling operation to collect and manage their recyclables or they may utilize drop off stations or transfer stations.

Since there is no reporting requirement for these commercial entities, the quantities and types of waste/recyclable materials disposed or recovered in Columbia County are difficult for the County track. Chapter 5 is intended to address the issue of the lack of data being reported by the various commercial entities. Additionally, Public Outreach and Education will include the commercial recycling sector. The evaluations are to assess the effectiveness and/or needs of these facilities and programs and Columbia County's activities related to them, to determine what improvements, partnerships, or other alternatives should be evaluated for implementation and what the resulting future recovery goals could be.

3.3.3. Agricultural Sector Recycling Efforts

Agricultural operations across New York State have incorporated the management of food waste and other organic components of MSW into their organics management technologies. The most common practice is anaerobic digestion. Due to the rural nature of Columbia County, there are many farms that may be using this technology or have the ability to expand their collections. According to the Pollution Prevention Institute's (P2I) Organic Resource Locator, there are three existing organics recycling resource within Columbia County: GroMax, LLC (SSO compost site in Town of Hudson), Almstead Nursery (SSO and yard waste compost site in Town of Claverack), and Kinderhook Mine YW Composting (yard waste compost site in Town of Kinderhook). Columbia County will continue to monitor P2I's site and identify possible agricultural operations that are managing organic components of MSW.

3.3.4. C&D Debris Sector Processing Facilities and Efforts

Collection of C&D debris for processing is not provided by the County and collection must be contracted for independently with private haulers or contractors.

3.3.5. Institutional Recycling Efforts

Large institutions, such as local school districts, prisons, nursing homes, hospitals, and senior living complexes, tend to produce large quantities of paper wastes and food wastes. Section 1.4 in Chapter 1 provided an overview of several of these institutions. These institutions manage their own waste and recyclables. Columbia County does not monitor or enforce recycling efforts at these facilities; however, most of these facilities would likely benefit from waste reduction and recovery efforts. There is no reporting requirement for these institutional entities, however, the quantities and types of waste

disposed or recovered in Columbia County is likely included in waste quantities reported from disposal and recycling facilities, just not available per individual institution. Section 5.9 is intended to address the issue of the lack of data from these various entities. Additionally, Public Outreach and Education will include the institutional recycling sector and how best to increase recycling efforts. The evaluations are to assess the effectiveness and/or needs of these facilities and programs and Columbia County's activities related to them, to determine what improvements, partnerships, or other alternatives should be evaluated for implementation and what the resulting future recovery goals could be.

3.3.6. Public Sector Recycling Efforts

Municipal recycling efforts in the Planning Unit revolve almost entirely around the County's program as discussed in Section 3.1.2. The County provides numerous recycling services to residents at the transfer and convenience stations. On December 8th, 2021, the County passed Resolution No. 471-2021 which supports the reintroduction of mandatory recycling initiatives in municipal buildings. Specifically, this Resolution required new recycling receptacles to be placed in municipal buildings with corresponding signage.

3.3.7. Industrial Facility Recycling Efforts

There are no large industrial facilities located within Columbia County.

3.3.8. Public Space / Events Recycling Efforts

Public space and special event recycling efforts are currently handled individually by each event sponsor. The impacts of special events within the Planning Unit are provided in Table 1-9.

3.3.9. Processed Scrap Metal Recycling

According to research conducted by the US Environmental Protection Agency (EPA), recycling scrap metals can be quite beneficial to the environment. Using recycled scrap metal in place of virgin iron ore can yield³¹:

- 75% savings in energy
- 90% savings in raw materials used
- 86% reduction in air pollution
- 40% reduction in water use
- 76% reduction in water pollution
- 97% reduction in mining wastes

³¹ <http://www.norstar.com.au/Recycling/Processing/Benefits.aspx>

Any scrap metal generated that is not collected or processed by a County division is not monitored, however, it is likely that this material is being recycled due to the fact that the material has a monetary value.

3.3.10. Public Education Efforts to Promote Recycling

Columbia County recognizes the importance of educating the community on waste reduction, recycling and material recovery opportunities. To effectively manage these evolving programs, the County provides for public education through regularly updating solid waste and recycling information on the Columbia County website.

3.3.11. Organic Wastes Diversion

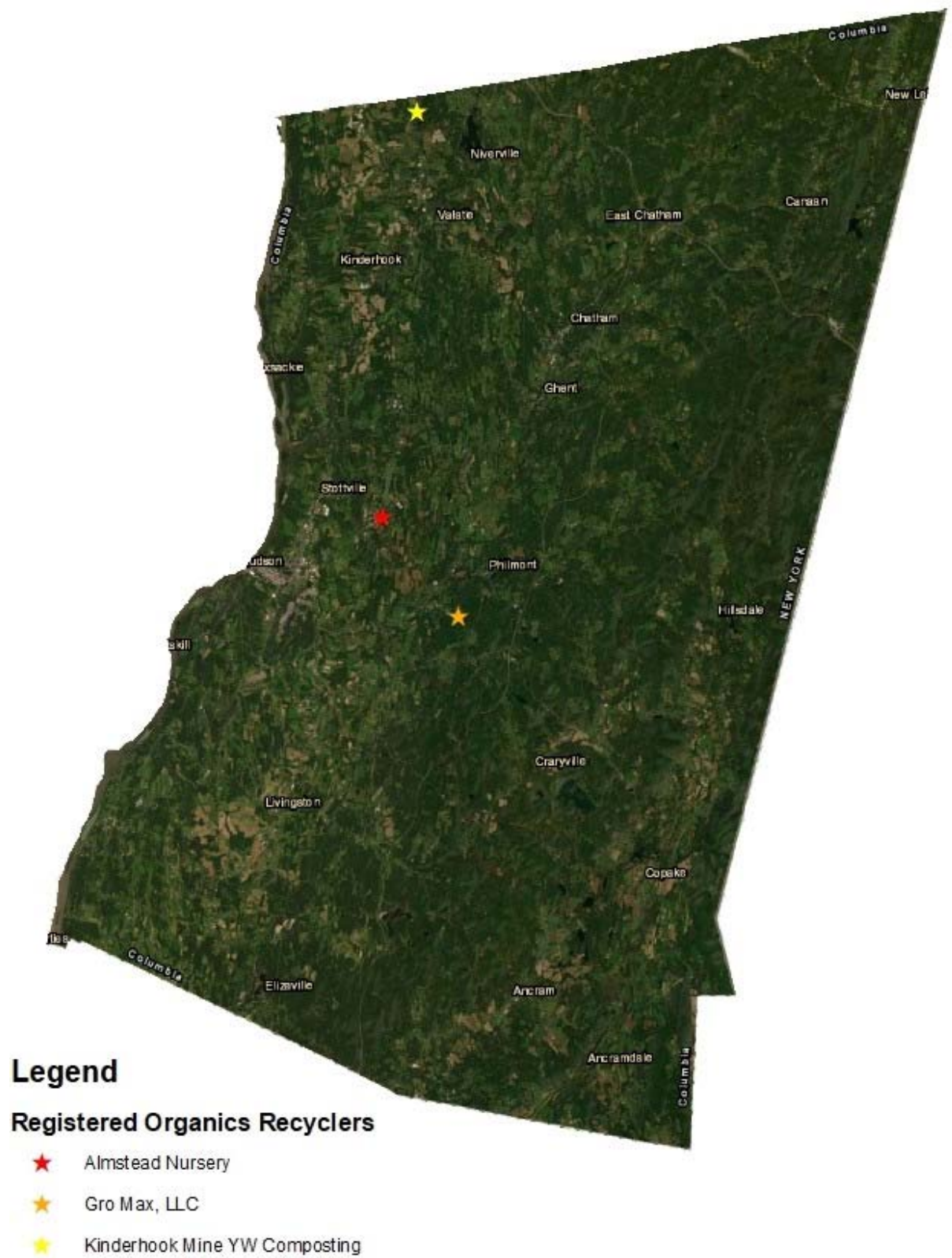
Interest in organic waste diversion has increased over the last few years, particularly because it has the potential to divert a significant portion of the waste stream away from landfills. The composting process can be applied to yard waste, food waste, MSW, sewage sludge, non-hazardous industrial sludge, or some combination of these materials. According to the P2I Organics Resource Locator, there are currently three registered organics composting facilities located within Columbia County: GroMax, LLC composts SSO in Hudson, Almstead Nursery composts SSO and yard waste in Claverack, and Kinderhook Mine YW Composting composts yard waste in Kinderhook.

Figure **3-1** shows the locations of the three registered organics recyclers in Columbia County.

Due to the rural nature of the County, organic diversion is typically organized and performed by each household or a small community of people. To aid in organic waste diversion efforts, the County relies on educating and informing communities on how to properly compost organics.

In the fall of 2021, the County implemented a pilot food scrap program at the Chatham and Copake convenience stations. The County started collecting specific food waste in coordination with a local composting vendor who offered to assist the Solid Waste Department in measuring the quantity and quality of the product to evaluate feasibility of the program. This program will continue to grow in 2022, expanding collection containers at eventually all 8 stations operated by the County. It is the goal of the Solid Waste Department to incorporate the assistance of the County and individual towns/villages Climate Smart Task Forces and Zero Waste communities to assist in education. The Solid Waste Department will also be surveying the surrounding areas where the food scraps will be collected to see if the County could partner with community gardens to process the material. Should the County collect a measurable amount of food scrap waste, the options of working with local organizations or bidding out the processing of the material will be considered.

Figure 3-1 – Registered Organics Recyclers in Columbia County



The Food Donation and Food Scraps Recycling Law³² will go into effect January 1, 2022, and will require businesses and institutions that generate an annual average of two (2) tons of food waste per week or more to:

- 1) Donate excess edible food; and
- 2) Recycle all remaining food scraps if they are within 25 miles of an organics recycler (composting facility, anaerobic digester, etc.).

There are six (6) designated food scraps generators identified by the NYSDEC in Columbia County; of these six (6) designated generators, all six (6) will be required to donate edible food waste and one (1) will be required to divert all food scraps to a nearby organics recyclers, as capacity allows. Table 3-4 lists information about the designated food scraps generators in Columbia County as released on June 1st, 2021.

Table 3-4 – Designated Food Scraps Generators

Name	Required to Donate	Required to Recycle	City	Tonnage per Week
Price Chopper Chatham	x	x	Chatham	1.4
Ginsberg's Institutional Foods	x		Hudson	48.3
Harney & Sons Tea Corp	x		Hudson	3.2
Tierra Farm, Inc.	x		Valatie	6.4
Towne & Country Wholesale Food	x		Hudson	4.3
Yonder Farms Fruit Distributor, LLC	x		Hudson	7.5

3.3.12. Yard Trimmings

Yard waste composting is a feasible means of waste reduction that requires little technological sophistication and could ultimately reduce the quantity of solid waste disposal in the County. Much of the Planning Unit's service area is rural and, like other rural areas around the state and the country, residents tend to manage yard trimmings on their own property. Therefore, materials collected for centralized composting are lower than in suburban areas where yard trimmings tend to be handled centrally.

Brush, tree limbs, grass clippings, and leaves are accepted at the Greenport Transfer Station.

³² <https://www.dec.ny.gov/chemical/114499.html>

3.3.13. Food Scraps/Food Processing Waste/Food Banks

There are currently fifteen food pantries located in Columbia County identified by the Cornell Cooperative Extension, where the public can obtain quality food that would otherwise be landfilled.

3.3.14. Electronics Recycling

Columbia County collects residential electronics year-round at the Greenport Transfer Station. The transfer station collects residents' TVs, monitors, computers and computer equipment, small electronics, VCRs/DVRs/DVD players, game consoles, and small-scale servers.

3.3.15. Sharps Collection

Sharps collection is managed by the County Health Department.

3.3.16. Tire Handling

Tires are accepted at all of the County's transfer and convenience stations for a fee based on the tire size and the presence of rims, as detailed in Table 3-2.

3.4. Biosolids/Sewage Sludge Handling

According to surveys of local WWTFs, biosolids/sewage sludge generated in Columbia County were managed as identified Table 2-1 in Chapter 2.

3.5. Management of Household Hazardous Waste

The County's HHW program includes both educational and collection components. Columbia County voluntarily offers a public HHW collection event for County residents. In recent years this event has been very successful.

Table 3-5 summarizes the quantities of HHW that was collected in 2020 during the annual household hazardous waste collection.

Table 3-5 – 2020 HHW Collected in Columbia County

Material	Container/Size	No. Units	Estimated Tons
LP Aerosols	Y3 Box	3	*
Bulk Flammable Liquids	55 Gal	12	2.8
LP Paint Related Material	Y3 Box	11	9.3
LP Paint Related Material	Y3 Box	30	25.2
LP Flammable Liquids	Y3 Box	18	15.1
LP Flammable Solid	5 Gal	1	0.0
LP Oxidizing Liquid	55 Gal	1	0.2
LP Oxidizing Solid	55 Gal	1	0.2
LP Organic Peroxide	5 Gal	1	0.0
LP Pesticide Liquid	55 Gal	14	3.2
LP Pesticide Solid	55 Gal	8	1.8
LP Corrosive Acidic	55 Gal	2	0.5
LP Corrosive Basic	55 Gal	12	2.8
LP Mercury	5 Gal	2	0.0
Bulk Antifreeze	55 Gal	4	0.9
LP Bulbs	LNFT	238	*
Bulk Motor Oil	55 Gal	4	0.9
Dangerous When Wet	55 Gal	1	0.2

* Tonnage could not be estimated, but is expected to be negligible

3.6. Efforts to Enforce Local Disposal and Recycling Laws

The County's preferred method of encouraging residents and local businesses to adhere to local disposal and recycling laws is through education and outreach rather than enforcement. Since enforcement is difficult with the County's current resources, the County will continue to rely on education efforts directed towards recycling and proper disposal rather than implementing a punitive approach.

3.7. Volume-based Pricing Incentives

The transfer and convenience stations located throughout the County use a volume-based pricing mechanism. Residents using the pay per bag system are charged a flat fee per size of bag. The trash bag sizes range from 0-10 gallon, 13-33 gallon, and up to 55 gallon barrel. Most recyclables are accepted at these facilities based on an annual permit fee structure.

3.8. Recycling Market Agreements

All recyclables collected at the transfer and convenience stations are under contract with Casella Recycling and transported to either Casella's recycling facility in Rutland, VT or to a County Waste facility in Albany County, NY. Therefore, the county is not responsible for the sale of recyclable commodities and is not party to any recycling market agreements.

3.9. Local Hauler Licensing

The County adopted flow control in 1990 in coordination with Local Law No. 1 of 1990, requiring all haulers, businesses, landlords, and property management companies to obtain a hauler's permit in order to collect solid waste within the county. Although Columbia County does not currently enforce flow control, they do enforce the hauler permit requirement, and impose penalties on haulers who do not comply with this requirement.

3.10. Recycling Data Collection Efforts

As demonstrated in the previous sections of this plan, Columbia County's residents and commercial, industrial and institutional waste generators have outlets to divert their waste from disposal to reduction, reuse and recycling. However, unlike solid waste data that is reported to the NYSDEC annually, a complete set of waste diversion data is not readily available since much of it is not required to be reported by private entities to any agency (except for those facilities that must submit recycling reports to NYSDEC). At this time, the majority of the residential and light commercial recyclables data has been reported by the recycling centers and is summarized in Table 2-2 in Section 2. Private businesses within the County are not currently required to report the destinations of their recyclables. As referenced in Table 2-2 in Section 2, based on 51,163.36 tons of waste (including recyclable materials) generated within Columbia County in 2020, 47,366.58 tons were disposed in landfills and 3,796.78 tons of materials were diverted either by composting or recycling. Consequently, Columbia County's current overall waste diversion rate is estimated at 7%. When examining just the MSW component of the overall waste stream, the County's MSW diversion rate is estimated at 11% -- this excludes contaminated soil, sewage sludge, construction and demolition debris, processed scrap metal, and industrial waste. Since there is no reporting requirement for these entities, quantities and types of waste disposed or recovered in Columbia County has not been made readily available to the County.

4.0 EXISTING ADMINISTRATIVE AND FINANCIAL STRUCTURE

4.1. Staff in Charge of Implementing New System

The County maintains control of its in-county convenience centers and transfer stations and is responsible for the implementation of the program strategies described in Chapter 5. Specifically, staff within the Solid Waste Division, the Department of Public Works Committee, and the Board of Supervisors will share these responsibilities. Although each of these entities have different financial or administrative responsibility for each item, they will collectively bear the responsibility of working with municipalities, institutions, and private sector waste managers to address the implementation of the program strategies.

On a biennial basis, the County will assess the status of the implementation of these strategies and update them as necessary to continue to fulfill the County's needs. Please refer to Section 1.6 and Figure 1-3 for more detail on the administrative structure and Organization Chart of the Planning Structure.

4.2. Financial Structure

To cover annual solid waste management expenses, the County depends on revenues produced from tipping fees and from the sale of recycling commodities in accordance with its contract with Casella. The revenue sharing agreement with Casella is based on the Average Commodity Revenue (ACR); thus, during times the recycling commodities market is weak the County may not receive any revenues from its recyclables.

During the implementation of the LSWMP, any associated capital investments If would be assessed during the County's budget review process. For example, the 2020 Adopted Budget included a \$400,000 line item for the construction of a top load building at the Greenport Transfer Station.

The solid waste budget contains funding for expenses associated with personnel, education and outreach, insurance, operation, maintenance, administration, etc., as well as, revenues from real property taxes, punch cards/bags, tipping fees, roll-off container fees, recycling fees, and MWRR grant funding. Overall the Solid Waste Fund averages between \$2.5 million and \$3.5 million annually with approximately 80% of the budget generated from revenues from solid waste disposal fees and recycling fees at the transfer station and convenience stations. Unfortunately the budget still requires to be supplemented by revenue from the real property taxes. Excerpts from the 2018 – 2021 Adopted Budgets are included in Appendix G. Given the County's financial responsibilities, implementing additional program strategies to promote waste diversion and recovery as described in Chapter 5 will be difficult.

The County will have both operational and legislative staff involved in the implementation of program goals, which is a great benefit for the Planning Unit. In addition, owning and operating the majority of the in-county transfer stations and convenience centers facilitates

implementation of certain initiatives. That being said, the development of eight transfer/convenience stations, a MRF, and the investment of equipment to operate the programs are dependent on the revenue that is generated by the County. Private waste haulers have not committed to delivering waste to County facilities and the County has been unable to reduce tipping fees to compete for larger volumes of waste. As a result, Columbia County has begun to pursue other ventures to offset the rising expenditures, including supplying roll off containers to residents and commercial businesses, collecting waste and recycling through an inter-municipal agreement with a township, and holding the line of spending.

4.3. Laws, Regulations or Ordinances

4.3.1. Local Law

Pertaining to the management of solid waste, in 1991, the County enacted Local Law #1 which directed the Board of Supervisors are to establish user fees and requirements for the disposal of solid waste in the County.

Pertaining to the management of source separated recyclables, in 1989, Columbia County passed Local Law #7 (Source Separation Law) which required the segregation of recyclables, for which economic markets exist, from the waste stream. In 1994, the County enacted Local Law #2, which amended the prior law. Similarly, in 1999, the County enacted Local Law #1, which amended the prior two laws. All three local laws are included as Appendix B. In general, these source separation laws:

- prohibit the mixing of recyclables with solid waste;
- detail prohibited disposal activities.

The County is not aware of other local laws, such as zoning laws that allow the management of solid waste within the planning unit. No new local laws, ordinances, regulations or amendments are expected to be needed to fully implement the LSWMP.

4.4. Other Pertinent Developments

4.4.1. New York Climate Smart Communities Program

On November 11, 2020, the County passed Resolution No. 38-2020 which resolved to join the New York Climate Smart Communities (CSC) program.

4.4.2. Climate Smart Communities Task Force

On October 13, 2021, the County passed Resolution No. 71-2021 which established the Columbia County Climate Smart Communities Task Force (CSCTF). The CSCTF was created to serve as the central body that promotes and supports climate mitigation, adaptation, and education in the community, and advises the County Government on

undertaking plans, programs, and activities that are part of the CSC programs. The CSCTF is comprised of 19 members. It has been amended a few times (Resolution No. 184-2021 and No. 369-2021).

4.4.3. Top Load Building at Greenport Transfer Station

On August 11, 2021, the County passed Resolution No. 297-2021 to award a bid for construction of a top load building at the Greenport Transfer Station to MAEDA Construction Inc. The approved funding amount was \$385,000 and 50% of the cost was eligible through the NYSDEC Municipal Waste Reduction and Recycling Program for reimbursement.

4.4.4. NYSERDA Clean Energy Communities Program

On July 14th, 2021 the County passed Resolution No. 243-2021 to participate in the NYSERDA Clean Energy Communities Program by undertaking program high-impact actions aimed at reducing greenhouse gas emissions. A list of high-impact actions was created by the NYSERDA Clean Energy Communities Program that local governments can take to save energy, reduce GHG emissions, cut costs, and earn designation and grants.

4.4.5. Waste Importation and Flow Control

Columbia County does not currently have any laws limiting the export of solid waste and recyclables to or from Columbia County.

Flow control has been an ongoing battle between private haulers and Counties for years. The Columbia County Board of Supervisors adopted flow control via Resolution #201-90 and Local Law #9. Due to legal and political issues in the months and years that followed this initial action, the Board elected to abandon the concept. This has resulted in a large portion of the waste generated in the County, being shipped to other privately owned and operating facilities within and out-of-County. The impact of abandoning flow control has resulted in a major hurdle for the Solid Waste Department. The County will continue to explore the feasibility of reinstating flow control if the conditions are favorable.

4.5. Solid Waste Management Policies

Columbia County passed Resolution No 471-2021 authorization to reintroduce recycling initiatives in municipal buildings on December 8, 2021. Although the County has been actively recycling in our municipal buildings since it became mandatory, in coordination with the Columbia County Climate Smart Task Force, the initiative was reintroduced with new recycling containers and educational literature in September 2021. The Board of Supervisors passed a resolution in December 2021 showing their support to this effort. There are no local

environmental justice policies. Columbia County relies on the New York State Office of Environmental Justice (OEJ) to address environmental justice issues and concerns that affect primarily low income and minority communities.

5.0 ALTERNATIVE TECHNOLOGY EVALUATION

The County evaluated various programs and technologies that could possibly enhance existing solid waste management program elements or add new program elements to the planning unit as alternative programs. While evaluation of the existing solid waste management system may be necessary during the planning period, no significant technology changes from existing solid waste management approaches are anticipated during the planning period. The County anticipates continuing the current integrated approach to solid waste services – providing diversion, recycling, and disposal opportunities for County residents. The alternatives listed within this section will be subject to a public comment period.

5.1. Waste Reduction Programs

Under the State Solid Waste Management Policy established in New York State’s Environmental Conservation Law, Waste Reduction Programs are first in the hierarchy of waste management. Waste Reduction focuses on the prevention of solid waste generation through modifications in behavior and changes in products, packaging, and purchasing. For individuals, waste reduction is a change to consciously thinking about not creating waste or minimizing their waste. For product manufacturers, it is the design, manufacture, purchase, or use of materials to reduce the volume or toxicity before products are produced and eventually enter the waste stream.

Programs to incite waste reduction at the County level are difficult, as they primarily rely on changes to human behavior or manufacturing, two things that the County has very little control over. However, two possible mechanisms that the County could employ to achieve waste reduction are the implementation of waste reduction practices within County facilities and public education, to encourage changes in purchasing and consumption habits of County residents.

A low-cost method to encourage waste reduction within the County and to set an example for County residents would be the adoption of a County-wide waste reduction policy. This policy could include:

- An electronic documents policy to allow for the use of electronic documents where paper copies are currently required.
- A double-sided printing policy to save paper where paper copies are required.
- Standard document formatting policies that reduce margin width and unused space.
- The use of high efficiency hand dryers in all bathrooms at County facilities to eliminate paper towel waste.
- Changes in purchasing policy to eliminate the County purchase/use of disposable tableware in office buildings or other County facilities.
- Increasing the availability of recycling receptacles in County buildings and at County events.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #1 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #1 can be found in Appendix E.

5.2. Reuse Programs

Reuse programs focus on everyday materials that have the potential to be reused for their original purpose or for a new purpose. Reuse programs allow products to be used to their full potential and also keeps these materials out of disposal facilities. Additionally, reusing products conserves natural resources and saves valuable landfill space. Antique shops, thrift stores, repair cafes and consignment shops all provide opportunities for reuse. The County plans to incorporate the promotion of existing reuse programs in their education and outreach programs.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #2 can be found in Appendix E.

5.3. Recyclables Recovery Program

The main objective of a Recyclables and Recovery Program is finding solutions for beneficial reuse or recycling waste into new raw materials protects and preserves our environment by limiting our dependence on landfills, conserving natural resources and decreasing our community's environmental footprint. Recyclable materials include metals, glass, plastic and textiles. According to 2015 data from the EPA, the average person generates 4.5 pounds of trash every day. Of the waste generated, over 75% of waste is recyclable, but only 34% of it is recycled.³³

5.3.1. Expansion of Accepted Materials

Sustainable diversion includes locating markets that, at the minimum, are long-term, consistent, safe (to human health and the environment), and economical. The County has always aggressively expanded its recycling/recovery program as emerging markets allow for sustainable diversion.

The County will continue to examine the County's waste stream annually to determine new items eligible for sustainable diversion through the County's recycling program. Examples include new materials or expansions of existing accepted materials, such as e-waste.

³³ <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #3 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #3 can be found in Appendix E.

5.3.2. Recycling at County Facilities and Events

Columbia County is interested in taking the initiative to promote recycling at county-owned facilities and in-county events. Columbia County will act as a model to other municipalities within the County to increase recycling at County facilities and by offering recycling services at additional in-county events where feasible. Columbia County realizes that in order to increase recycling county-wide, their staff must be engaged to achieve this goal. Columbia County staff will explore a plan or policy to increase recycling at county owned and/or operated facilities. Later in the planning period, the County will look into the feasibility of expanding this goal to public events, schools, institutions, etc. Given the lack of participation and information specified previously in Section 3, this task will be dependent upon the completion of data gathering program strategies. The implementation schedule in Section 6 provides an outline of the resources and subtasks necessary to increase recycling at county owned facilities.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #4 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #4 can be found in Appendix E.

5.3.3. Product Stewardship

Product Stewardship is based on the concept that producers selling a product should be responsible for designing, managing, and financing a stewardship program that addresses the lifecycle impacts of their products, including end-of-life management. It is a nationwide undertaking to encourage government, at the State level, to implement product stewardship legislation based on the same framework principles in order to maintain a consistent starting point for nationwide implementation of a product stewardship policy. The New York Product Stewardship Council is working to implement the principles of product stewardship in New York State. Columbia County intends to work together with the New York Product Stewardship Council to coordinate and participate in product stewardship initiatives locally. It is the intent of Columbia County to review these product stewardship framework principles, and, if in the best interest of Columbia County, adopt through a resolution.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #5 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #5 can be found in Appendix E.

5.4. Organic Recovery Program

Each American disposes of about 460 pounds of organic waste annually; 100% of that waste can be composted³⁴. Composting of organic materials from the solid waste stream not only provides a valuable benefit to nutrient deficient soils, but also reduces the amount of waste that ends up in landfills or incinerators. Other benefits of composting organic matter include the increase in beneficial soil organisms such as worms and centipedes, suppression of certain plant diseases, the reduced need for fertilizers and pesticides, prevention of soil erosion and nutrient run-off, and assistance in land reclamation projects.

In New York State, thousands of tons of organic waste materials are composted each year. These include treated sewage sludge, otherwise known as biosolids/sewage sludge from waste water treatment facilities (WWTFs); food waste residuals from industrial food processing facilities; food waste from recovery programs at hospitals, colleges, office buildings, and prisons; paper sludge; yard waste; and other organic waste materials.

According to NYSDEC records as of January 2021, there are 60 facilities permitted for composting in New York State. Of these, 30 compost biosolids/sewage sludge, 26 compost yard wastes, and 4 compost source-separated organics. An additional 124 active registered sites are operating within New York State to compost these materials. One registered yard waste composting facility, Halsted Processing, is located within Columbia County.

Material resulting from the composting of biosolids/sewage sludge and yard waste is used primarily as an organic soil conditioner and partial fertilizer. It is applied to agricultural lands, recreational areas such as parks and golf courses, mined lands, highway medians, cemeteries, home lawns and gardens.

5.4.1. Food Waste Management

While composting of all organic waste can be an effective method of low technology recycling that can significantly reduce the stream of waste destined for a disposal facility, collection of these materials on a household basis can prove both difficult and expensive. Another method for removal of these wastes from the disposal waste stream is to implement a backyard composting program, through which residents are provided information regarding the methods of backyard composting. It is anticipated that many residents are already participating in a backyard composting program of their own; however, this task would allow for the program to become more formalized and allow residents to share information amongst themselves. The County plans to explore potential partnerships with local organizations to provide or subsidize compost bins for residents with additional education efforts to increase backyard composting in the County.

³⁴ <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>

As an example of this, earlier in 2021, the Town of Canaan Climate Smart Communities (CSC) Task Force partnered with the Town of Bethlehem and Tendai Buddhist Institute to hold a Backyard Composter & Rain Barrel Sale³⁵.

Based on the estimates calculated for this plan, there is a potential to divert nearly ten thousand tons of organics from the MSW waste stream on an annual basis by increasing backyard composting efforts. With the implementation of this program during the planning period, it is anticipated that the diversion rates will increase. Additionally, with the gathering of data proposed as part of this Plan, the diversion percentages are expected to increase based on better reporting. The implementation schedule in Chapter 6 provides an outline of this program strategy.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #6 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #6 can be found in Appendix E.

5.4.2. Yard Waste Management

The Planning Unit's service area is primarily rural, with some more populous areas in the villages. Like other rural areas around the state and the country, residents tend to manage yard trimmings on their own property. Through educational outreach, Columbia County encourages, as the first step in the hierarchy of yard waste management, that residents and businesses implement grass-cycling (leaving their grass clippings on the lawn), and/or backyard composting for yard waste management. The implementation schedule in Chapter 6 provides a year by year breakdown of the different steps necessary to undertake this task.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #6 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #6 can be found in Appendix E.

5.5. Develop or Improve Local and Regional Markets for Recyclables Program

All recyclables collected at the transfer and convenience stations are under contract with Casella Recycling and transported to either Casella's recycling facility in Rutland, VT or to a County Waste facility in Albany County, NY. The County is not responsible for the sale of recyclable commodities, is not party to any recycling market agreements, and has limited influence over regional markets to improve recycling. However, the County is in regular communication with Casella to identify demand for markets and will continue to pursue opportunities as appropriate economically and feasible. If market opportunities become available, acceptance of these materials will be incorporated into the recycling program.

³⁵ <https://sites.google.com/a/columbiacountyny.com/columbia-county-solid-waste/events>

5.6. Enforcement Programs

The County has identified areas in which the existing Solid Waste and Recycling Law could be improved to adequately ensure that waste is disposed of or recycled in accordance with state and local regulations. However, in the County's extensive solid waste management history and expertise, training and education of residents is far more effective than enforcement actions. Due to the County's limited resources to provide enforcement at every County facility, the County has opted to enhance existing training and education programs to improve recycling and promote proper waste disposal during this planning period. For more information, see Section 5.8 – Education and Outreach Programs.

5.7. Incentive Programs

Incentive programs within a solid waste management system are programs used to promote or encourage specific actions by the community to increase the success of programs the landfill is trying to integrate. Currently, the County transfer stations have a Pay-As-You-Throw (PAYT) fee for customers bringing their own residential waste directly to the transfer station.

In areas where PAYT is an option for waste collection, residents are charged a fee for municipal solid waste collection based on the amount of waste they dispose of. According to the EPA, this concept creates a direct economic incentive to recycle more and to generate less waste. PAYT programs allow residents to treat waste collection as a utility and pay only for the service they actually use. Most communities that use a PAYT program operate municipal hauling and charge their residents a fee per bag or per can of waste. In a small number of communities, residents are billed based on the weight of their trash. All of these variations on the PAYT programs allow residents to pay less for waste disposal if they recycle more and throw away less waste.

Another type of PAYT program allows customers to select the appropriate number or size of containers for their standard weekly disposal amount. The bag program allows customers to purchase bags, or some other indicator such as a sticker or tag, and dispose of waste in these specially marked bags. The price of each bag or sticker incorporates the cost disposal of the waste; the cost of collection and transportation would be the responsibility of the generator, whether the bags are picked up by a private hauler or self-hauled to a County transfer station. The more bags customers use the more they are paying for waste collection and vice versa.

Hybrid PAYT programs vary greatly from community to community. An example of a hybrid program would be offering residents a limited collection (e.g., a limit of five bags per week) with any additional bags being bought at a per bag fee from the municipality, hauler, etc. In this type of program, the initial cost of service is often billed to the residents in the form of taxes or quarterly bills through the municipality or hauler. Weight based programs are another option and use a modified scale located on the waste collection trucks and charge customers based on the actual pounds of garbage set out for disposal. On board computers record weights by household and customers are billed on this basis. Based on the County's existing infrastructure, a weight based program would not be easily implemented.

As with any program, there are advantages and disadvantages. Some of the advantages and disadvantages of the PAYT programs are listed below:

Advantages:

- PAYT programs are a fair way to charge customers. Customers who dispose of more waste pay a higher cost than those who recycle more and dispose of less waste.
- PAYT programs do not place restrictions on customer choices. Customers are not prohibited from putting out additional garbage, but those who want to dispose of more garbage will pay a higher fee.
- PAYT programs are generally inexpensive to implement. They may also help prevent overuse of solid waste services.
- PAYT programs encourage waste reduction in the form of recycling, composting, and source reduction.
- PAYT programs can be implemented in a variety of sizes and types of communities, with a broad range of collection methods.
- PAYT programs offer environmental benefits by reducing the amount of waste sent to a landfill and recycling more of the products used by residents.

Disadvantages:

- PAYT programs may raise concerns regarding illegal dumping or contamination of recycling streams.
- PAYT programs can be a concern for large poor families who cannot afford to pay for the amount of waste they dispose.
- Implementing PAYT programs (e.g., purchasing of stickers, cans, bags, etc., retrofitting waste trucks, employee reassignment, etc.) can prove challenging.
- Budgeting expected revenues can be difficult during the initial years of implementing a PAYT program (e.g. estimated bag or sticker purchases).

As discussed previously, Columbia County has a mechanism for PAYT disposal for residents at the transfer stations and will continue to offer this option. The County plans to optimize their PAYT program. Chapter 6 – Implementation Schedule provides the milestones through the planning period that are anticipated to evaluate this task.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #7 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #7 can be found in Appendix E.

5.8. Education and Outreach

Public outreach and education regarding waste diversion programs and responsible disposal of special wastes has been identified as a key component of solid waste management programs in New York State. Raising the awareness of reduce, reuse and recycle has been a goal of the NYSDEC since the first Earth Day in 1970. To reach audiences, numerous programs and events have been organized. The NYSDEC's Recycling Outreach and Education program is available to other communities to help them spread the word. Without education none of the recovery programs or technologies will be successful.

Columbia County is dedicated to education and believes that this is best accomplished, and provides the greatest benefit, when practiced in partnership with the community, since impacts and benefits of management decisions reach across property boundaries. Waste streams that could experience higher diversion rates through further public education efforts have been identified. Specifically, the areas that should receive the most focus initially are:

- Reuse Programs
- Recycling at County Facilities and Events
- Backyard Composting
- Yard Waste Composting
- Food Scrap Composting at Institutions and/or Large Commercial Generators (also the Food Donation and Food Scraps Recycling Law, which goes into effect January 1, 2022)
- HHW Collection Events
- C&D Debris Diversion Opportunities
- Mercury Containing Materials Disposal Options
- E-waste Management Options
- Pharmaceuticals Management (NYS Drug Take-Back Law)
- Paint Stewardship
- Foam packaging ban

The County continues to establish and implement a recycling educational outreach program. The program is aimed at educating residents and commercial haulers regarding what commodities can be recycled through the County facilities and the process by which these materials see new life. Additionally, Recycle Right New York intends on developing educational materials, and the County will share those materials with the public to further inform residents of available programs and initiatives.

During this planning period, the County will evaluate its current and potential education methods for promoting the Columbia County Solid Waste and Recycling Law. The County will evaluate the feasibility of adding recycling education at public events, specifically in the areas where they can team with local companies and not for profit agencies to encourage the recycling of specific waste streams.

Providing information to generators regarding options for implementing recycling programs, as well as providing resources for in-house training programs, may also offer a valuable method for increasing diversion rates in these types of facilities. The Implementation Schedule in Section 6.0 provides the milestones through the planning period that are anticipated to evaluate this task.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #8 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #8 can be found in Appendix E.

5.9. Data Collection and Evaluation Efforts

The County has a recycling program, with many materials being mandatory to recycle. While the County offers recycling options, the Facility Annual Reports produced by the County consistently report recycling percentages below what would be expected. It is the County's belief that this is due to the fact that reported recycling numbers are based solely on the materials that are handled through the County's solid waste management system. Large recyclables producers such as vehicle dismantling facilities, and even private recyclables collection companies, may ship recyclable products directly to the end user for a profit, bypassing the intermediate recycling facilities. As a result, these materials are not being accounted for in the County's recycling reports.

The County will consider pursuing a partnership with either Zero Waste or Climate Smart Communities to undertake several recycling data surveys over the course of the planning period, which would be distributed to various generators in the County in order to compile a more complete set of recycling data. These surveys would be used to help assess what materials could be available for use in new programs such as organics composting and C&D material recycling. The survey would most likely be conducted in stages, with the largest waste producers being contacted first. The groups of generators could include: (1) retail businesses (groceries, restaurants, stores); (2) industries; (3) schools and institutions; (4) libraries, jails and nursing homes; (5) the public sector and special events. Survey recipients would be asked for data such as: recyclable material (metals, plastic, and paper) produced per year, organic material produced per year, C&D material produced per year, and current disposal/recycling methods. Intermediate facilities such as confidential paper shredding services may also be contacted to determine how much material they receive from Columbia County. This information would then be compiled to help the County more accurately determine the actual recycling rate within the County, which recycling efforts are most effective, and which new recycling methods would be most prudent for the County to pursue. If response rates are low, the County will consider enforcement of the hauler licensing and reporting component of the law to obtain better data.

In addition to generator data, solid waste management facility data could be collected as well. For every facility/program that manages MSW, biosolids/sewage sludge, C&D debris, processed scrap metal, and/or industrial waste generated in Columbia County, requested information would include information regarding:

- capacity/expected life,
- service areas, and
- operating status.

For Planning Unit owned facilities/programs information would include:

- infrastructure/components,
- age,
- operating dates,
- size,
- regulatory status,
- partnerships/ opportunities,
- contracts,
- improvements or changes, and
- resources/needs/costs.

Undertaking this data collection program would require significant County resources, including staff time that is already limited. The County would need a partner to take the lead on data collection and analysis.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #9 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #9 can be found in Appendix E.

5.10. C&D Debris Reduction

There are currently no upstream or downstream separation requirements/regulations for C&D waste in Columbia County. While there are many materials in the C&D waste stream that have potential reuse/recycling options, low tipping fees at landfills can make the sorting of these materials into desirable components cost-prohibitive. Reducing and recycling C&D materials conserves landfill space, reduces the environmental impact of producing new materials, creates jobs, and can reduce overall building project expenses through avoided purchase/disposal costs. Options for C&D debris diversion from traditional disposal consist of upstream and downstream diversion.

Diverting C&D debris from the waste stream either as upstream or downstream diversion has benefits as well as drawbacks. Some benefits are:

- Potential revenue to developers and contractors from the sale of recoverable and recyclables
- Potential revenue to processors from the sale of processed C&D
- Decrease in the amount of waste for disposal

Upstream diversion of C&D is the act of separating recoverable materials for recycling or reuse at a construction, demolition or remodeling job site. These materials are then processed and transported to an end market which keeps them from being disposed of in landfills. Separating C&D provides an opportunity for the contractor to save money on disposal costs and sometimes the materials can be reused by the contractor on future or current projects. Some of the common materials that are recycled or reused from new construction projects are wood, metal, drywall and cardboard. Contractors are faced with decisions when determining if it is economically efficient to recycle C&D debris. Separating the debris will require additional staging areas for separate containers and additional labor, increasing costs, and in turn extending the duration of construction. Lastly, the contractor's ultimate decision is to decide if the material has any economic value. Some cities and counties have passed ordinances mandating source separation of recoverable C&D materials at the job site to ensure that there is a decrease in the amount of waste disposed of in landfills. The County could potentially enact such an ordinance or law, or add provisions to demolition projects on a case-by-case basis.

Some potential drawbacks to the enactment of such an ordinance, were the County to entertain this action, are an increase in the County staff time and costs to develop diversion program and to monitor and enforce C&D debris separation. It is estimated that, due to the financial benefits of diverting materials where recycling outlets and project constraints allow, a majority of contractors are already implementing this practice where feasible and the County simply does not have the data for reporting. Enforcement by the County would only result in forcing contractors to divert more cost intensive materials for which local recycling outlets likely do not exist, increasing construction costs and/or making it impossible for contractors to comply. For this reason, this does not represent a feasible use of County resources at this time, but may provide an opportunity in the future.

Downstream diversion of C&D is the act of separating materials at a central collection point, such as a landfill, transfer station, or processing facility and identifying the recoverable materials. In order to determine the feasibility of implementing downstream diversion, one must initially determine what comprises the largest portion of the C&D waste brought to the landfill, then determine if there are available markets in the region for recycling or reuse of the material.

According to the NYSDEC's database of active registered or permitted facilities, there is one registered C&D processing facility located in Columbia County: Bonded Concrete Hudson Plant 7. An additional three out-of-county C&D processors accept C&D generated from Columbia County: Evergreen Disposal Corp in Greene County, Columbia-Del Sanitation & Recycling Inc. in Delaware County, and County Waste Transfer Corp. in Rensselaer County.

According to the NYSDEC's "Construction and Demolition Debris Combined Composition Analysis and Projections" found in Appendix A, the top three components of the C&D waste stream are determined to be concrete/asphalt/rock/brick, wood, and soil/gravel. Any material stream that is lucrative to recover or easy to separate is likely already captured in upstream diversion of C&D. The remainder of the materials listed in Appendix A are very minor percentages and are likely not economically feasible to separate into their multiple recyclable components.

When considering the downstream diversion program, the County must evaluate the overall economic impact of incorporating this program into their municipal bids. There would be capital and operational expenses associated with this additional practice on County projects. In addition, viable recycling outlets for the minor components of the C&D waste stream may not be available, therefore making the implementation of this program not practical. As such, the County will monitor potential partnering opportunities with existing C&D processing facilities to facilitate C&D reduction and/or diversion programs. The County will contemplate incorporating C&D debris recovery requirements into municipal bids if and when such a policy becomes feasible.

Following completion of the upgrades to the Greenport Transfer Station, including an additional top load building, the County will consider options for C&D debris diversion.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #10 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #10 can be found in Appendix E.

5.11. Private Sector Management and Coordination Opportunities

Opportunities for teaming up with private sector entities will be monitored by Columbia County to provide additional services that may not be possible otherwise. Due to required participation by third parties, these opportunities may be difficult for the County to come by, however, the County will continue to pursue and assess potential collaborations throughout the planning. These collaborations could include potential waste reduction, diversion, or funding opportunities that arise in the County through private industry or other organizations.

The results of data gathered as part of Program Strategy No. 9 could aid the County in identifying potential partners and/or opportunities for additional programs.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #11 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #11 can be found in Appendix E.

5.12. Review of Available Technologies

Currently, all waste generated within the County that is not diverted to a recycling or organics management facility is disposed of at landfill facilities. The County will stay up to date on alternative waste disposal technologies and if a technology presents itself that is promising the County will further evaluate it. Alternative waste disposal technologies that are available to the solid waste disposal markets are described in detail below.

5.12.1. Traditional Waste-to-Energy Combustion/Incineration

A traditional waste-to-energy (WTE) facility is a solid waste management facility that processes waste through a combustion process. These facilities are sometimes referred to as resource recovery facilities, Municipal Waste Combustors (MWC), or Energy-From-Waste (EFW) facilities. There are approximately 80 of these facilities in operation in North America.

This technology is extremely effective in reducing the ultimate disposal volume, often times by 80-90 percent. The byproduct of the process is residual “bottom ash” (the portion of ash that is expelled from the furnace) and “fly ash” (the portion of ash that is removed from the flue gas stream). Often times these streams are combined and sent to landfills under a Beneficial Use Determination (BUD) for use as alternative daily cover. Other alternative uses of for WTE ash are being researched and additional options may become available in the future if the state is willing to issue BUDs for alternative uses, which could include using portions of the ash stream as aggregate for road base and/or concrete block/cement production.

These facilities are typically net exporters of power, as the steam produced from the combustion process is typically superheated and run through a turbine-generator to produce electrical power. A small number of these facilities sell steam directly to a local end user. Newer technology allows higher efficiency heat recovery from the combustors, increasing energy production potential.

If Columbia County initiated the permitting, construction and operation of their own WTE facility within the County, high construction and operations and maintenance costs as well as uncertainty in energy sales revenues, would result in higher disposal costs per ton than landfilling. As an example, the most recent mass burn WTE facility constructed in the United States was the West Palm Renewable Energy Facility in West Palm Beach, FL. It cost \$672 million (\$2015) to construct and processes 3,000 TPD of MSW. Another example is the Durham York Energy Centre located in Ontario, Canada. That facility is designed to process up to 480 TPD and cost approximately \$290 million.

There are approximately 70 active WTE facilities in the State. It should be noted that there are no active WTE facilities in Columbia County; however there are WTE facilities in operation in the adjacent counties: 1) the Dutchess County Resource Recovery Facility located in Poughkeepsie, NY (Dutchess County), and 2) the Community Eco Power WTE Facility in Agawam, MA (Berkshire County, MA). Farther north there exists the Onondaga County Resource Recovery Facility in Syracuse, NY. These facilities are able to demand higher tip fees as a result of flow control legislation and/or limited local disposal options. Without the desire to construct such a facility and implement flow control measures to ensure waste will be sent to the facility despite the higher tipping fees, a WTE facility is not a viable option for solid waste management in Columbia County.

5.12.2. Pyrolysis

Pyrolysis systems use a vessel which is heated to temperatures of 750°F to 1,650°F, in the absence or near absence of free oxygen. The temperature, pressure, reaction rates, and internal heat transfer rates are used to control pyrolytic reactions in order to produce specific synthetic gas (syngas) products. These syngas products are composed primarily of hydrogen (H₂), carbon monoxide (CO), carbon dioxide (CO₂), and methane (CH₄). The syngas can be used in boilers, gas turbines, or internal combustion engines to generate electricity, or alternatively can be used in the production of chemicals. Some of the volatile components of MSW form tar and oil, and can be removed for reuse as a fuel. The balance of the organic materials that are not volatile, or liquid that is left as a char material, can be further processed or used for its adsorption properties (activated carbon). Inorganic materials form a bottom ash that requires disposal, although it is reported that some pyrolysis ash can be used for manufacturing brick materials. Under typical operations, the ash is landfilled.

Pyrolysis of MSW have not been demonstrated to be commercially viable at the time of this report's publication. There are no commercially operating MSW pyrolysis facilities in North America. There are 12 commercial facilities in Japan and Germany that process Japanese municipal and industrial waste and are in the size range of 100 to 400 tons per day. One consulting firm has recently concluded that MSW pyrolysis facilities can be characterized as having "previous failures at scale, uncertain commercial potential; no operating experience with large scale operations." Tipping fees for MSW pyrolysis facilities in North America can also be expected to be in the range of \$100 to \$300 per ton³⁶.

³⁶ <https://www.mswmanagement.com/collection/article/13014762/six-waste-conversion-technologies-you-should-know>

5.12.3. Gasification

Gasification is a similar process to pyrolysis, but which requires the partial oxidation of a feedstock to generate syngas. Oxygen must be provided for the reaction, but at a quantity less than is required for complete combustion. The primary syngas products are H₂ and CO with smaller quantities of CH₄ produced at lower temperatures. Similar to pyrolysis, the syngas product may be used for heating, electricity generation, fuel, fertilizers or chemical products, or in fuel cells. Byproduct residues such as slag and ash are produced and require disposal in a landfill.

Gasification of MSW have not been demonstrated to be commercially viable in the United States at the time of this report's publication; however, the use of this technology is widespread in Japan. Although the predominant disposal technology used in Japan is traditional mass burn waste-to-energy, there are over one hundred thermal treatment plants utilizing a variety of gasification technologies³⁷ (direct smelting, thermoselect, plasma arc) with facilities in the size range of 100 to 400 tons per day processing Japanese municipal and industrial wastes. Tipping fees for MSW pyrolysis facilities in North America can be expected to be in the range of \$150 to \$300 per ton.

5.12.4. Mixed Municipal Solid Waste Composting

Mixed MSW composting is typically an aerobic composting process that breaks down all organic portions of the waste into compost material. Waste is typically collected at the facility as a mixed stream. The process requires intense pre- and post-processing, treatment and sorting to remove inert materials such as plastic or glass, which diminish the quality of compost products. Some MSW composting facilities also accept biosolids/sewage sludge. Wastes are typically loaded into a rotating bioreactor drum for two to four days. Screening processes are used to separate unacceptable wastes, which are landfilled as process residue, from the raw compost which is stored in a maturation area for approximately one month to allow biological decomposition to occur.

Facilities such as this do not have a well-established track record in the United States. There are a small number (10-20) of mixed MSW composting facilities in operation in the United States, including one in Delaware County, New York. Typical issues associated with the reliable and cost effective operation of such facilities include quality of compost, retail/wholesale outlet for compost generated, disposal location for bypass material, and odors.

As mentioned above, Delaware County operates a mixed MSW composting facility, which has been successful as it relates to their needs. Their facility met the need of extending the life of their current landfill facility due to declining capacity and difficulty

³⁷ <https://www.nswai.org/docs/MUNICIPAL%20SOLID%20WASTE%20MANAGEMENT%20AND%20WASTETO-ENERGY%20IN%20THE%20UNITED%20STATES,%20CHINA%20AND%20JAPAN.PDF>

in siting a new landfill. This facility allowed the landfill to be operational for another 50 years. The cost of this facility was approximately \$20 million, which includes a rather complex odor control component. The facility became operational in 2007, which serves a rural population of about 47,000 people. This facility handles approximately 100 tons per day of waste materials, consisting of a blend of MSW and biosolids. The mixed MSW composting facility is one part of Delaware County's integrated solid waste management system.

5.12.5. Mechanical/Biological Treatment

Mechanical-biological treatment (MBT) systems are similar to mixed MSW composting systems in that intense sorting is required as the first step in the waste treatment process. This is considered the mechanical phase of the treatment, where recyclable and non-organic materials are removed from the waste stream prior to the biological treatment. The biological treatment phase involves the processing of the remaining organic materials using a variety of different methods to produce a variety of different end products. Typically the organic materials are dried and used to produce refuse derived fuel (RDF). RDF can be used in place of fossil fuel products, such as a replacement for coal in electricity production. Other conversion processes for the organic fraction of the MSW stream are described in more detail in the following sections. To date, this technology has not been proven to be economically feasible within the United States for MSW management.

5.12.6. Anaerobic Digestion

Anaerobic digestion is a biological process by which microorganisms digest organic material in the absence of oxygen, producing a solid byproduct (digestate) and a gas (biogas). In the past, anaerobic digestion has been used extensively to stabilize sewage sludge, but is more recently under consideration as a method to process the organic fraction of MSW. In anaerobic digestion, biodegradable material is converted by a series of bacterial groups into methane and CO₂. In a primary step called hydrolysis, a first bacterial group breaks down large organic molecules into small units like sugars. In the acidification process, another group of bacteria converts the resulting smaller molecules into volatile fatty acids, mainly acetate, but also H₂ and CO₂. A third group of bacteria, the methane producers, or methanogens, produce a medium-Btu biogas consisting of 50-70% methane, as well as CO₂. This biogas can be collected and used for a variety of purposes including electricity production or converted to high BTU natural gas. Anaerobic digestion facilities are used extensively for the treatment of agricultural, wastewater sludge and organic wastes such as food wastes. Mixed MSW anaerobic digestion facilities are more common in foreign countries.

Specific to the United States, few mixed MSW anaerobic digestion facilities exist, as the technology has not proven economically feasible. In New York State, there are many anaerobic digesters in operation in the wastewater and agricultural markets, with some

anaerobic facilities being converted into mixed organic waste facilities. Two anaerobic digesters developed by Quasar Energy Group are located in Wheatfield, NY and West Seneca, NY. These systems manage regional biomass residuals (organic waste) to produce electricity that is sold to NYSEG. Under the regional biomass residual model, there is still the need to manage other portions of the waste stream that cannot be recycled. In addition, digestate and liquids from the anaerobic digester process must also be managed, which may be recycled, landfilled or processed at a wastewater treatment plant depending on their constituents.

5.12.7. Fermentation

Fermentation is an anaerobic biological process through which microorganisms metabolize sugars and produce alcohols as a byproduct. In addition to producing such alcohols as beer and wine for consumption, fermentation can be used to produce such fuel liquids as ethanol and other chemicals. Cellulosic feedstocks, including the majority of the organic fraction of MSW, must first undergo hydrolysis to break down cellulose and hemicelluloses to simple sugars that can be metabolized by the yeast and bacteria for the fermentation process. MSW must first be processed through a MRF to separate, shred, and dry the cellulosic fraction³⁸.

5.12.8. Ethanol Production

Ethanol production from a mixed MSW waste stream requires an intensive sorting process as the first processing step. All recyclable and inert materials must be removed to produce an organic waste stream for ethanol production. This material is then chopped, fluffed, and fed into a hydrolysis reactor. The effluent of this reactor is mostly a sugar solution, which is prepared for fermentation. This solution is detoxified and introduced to a fermenter, in which microorganisms convert the sugar to ethanol and CO₂. Next, the solution is introduced into an energy-intensive process that combines distillation and dehydration to bring the ethanol concentration up to fuel grade (99%) ethanol. A solid residue of unfermented solids and microbial biomass is recovered through the anaerobic digestion process, and its marketability as a compost material depends on the purity of feedstock as well as its visual quality. Solid residues can be burned or gasified if alternative methods of reuse are not feasible. Various pilot scale facilities are operating in the United States and Europe, but many have reverted to more homogeneous feedstocks such as wastewater treatment sludge and food processing wastes, because obtaining the homogeneous input stream from mixed MSW has proven difficult.

³⁸ <https://www.mswmanagement.com/collection/article/13014762/six-waste-conversion-technologies-you-should-know>

5.12.9. Alternative Chosen

Based on the technologies discussed above, the continued landfilling of waste appears to be the only economical disposal option for any wastes that cannot be reduced, reused, or diverted. The in-county disposal facilities should be operated as integrated material management facilities, providing means for the reduction of prohibited items from within the waste stream disposed of within the facility to ensure ongoing protection of the environment. Should any of the other technologies discussed above be pursued in the future, further analysis and a separate environmental review process would be required to analyze the benefits and impacts of these technologies. In addition, should any of the other technologies discussed above be implemented, it is imperative that long term waste commitments be in place to undertake a full scale program within Columbia County. Columbia County does not propose evaluating the feasibility of these other alternative waste disposal options any further during the 10 year planning period; however, Columbia County does acknowledge that they are available and will keep abreast of their further development. If advances in the above technologies occur, the County will reassess these opportunities during the next planning period.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #12 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #12 can be found in Appendix E.

5.13. Continue Existing Disposal Methods as Primary Disposal for Non-Recyclable/Non-Recoverable Waste

Since closure of the landfills in Columbia County, the County-owned transfer stations transport waste to the Ontario Landfill for disposal. While the prominent focus of this Plan is overall waste reduction and local recycling/reuse and composting programs, the region will still require a local, dependable facility for the disposal of all non-recyclable and non-hazardous waste. The County will continue to study and assess improvements to existing disposal methods and new disposal methods through emerging technologies over the course of the planning period as an alternative to waste exportation or reliance on a privately-owned disposal facility.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #13 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #13 can be found in Appendix E.

5.14. Review County Local Solid Waste Management and Recycling Law

The following legislative acts by the Columbia County Board of Supervisors may be required to fully implement the facilities and programs set forth in this Solid Waste Management Plan:

- Amendment to mandatory source separation and recycling law to designate additional materials;
- Authorization to purchase property, award contracts, and issue bonds to finance the development of facilities;

Other legislative acts such as budget approvals, personnel appointments, and resolutions regarding policy issues are expected to be required routinely.

Columbia County does not intend to revisit or evaluate local hauler licensing or flow control during the planning period because the Greenport Transfer Station is limited in their capacity and would not be able to handle the full volume of waste generated in the County.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #14 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #14 can be found in Appendix E.

5.15. Implement Agricultural Recycling Initiatives

The County will investigate the development of an agricultural plastics recycling program through the Soil and Water Conservation District or through partnering with neighboring planning units. Determining the quantity of agricultural plastics within the community, then exploring whether a program is needed will be imperative to the success of this initiative. However, the County has worked with Cornell Cooperative Extension and the Soil and Water Conservation District in the past to address agricultural plastic recycling. No feasible market currently exists for agricultural plastic material but the County will continue to work with the Cornell Cooperative Extension on this initiative.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #15 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #15 can be found in Appendix E.

6.0 IMPLEMENTATION SCHEDULE

While some of the program enhancements outlined above are already in the planning stages, some will require a higher level of feasibility analysis, funding, and planning before implementation. The preliminary implementation schedule for the plan is outlined in Appendix E. As pursuit of implementing these proposed enhancements continues, and further information is gathered regarding the feasibility of implementing these programs, this schedule will be updated as needed via the biennial LSWMP Compliance Reports, which are planned to be issued by the County every two (2) years per NYSDEC requirements. An example outline of an LSWMP biennial compliance report is included in Appendix F.

7.0 WASTE STREAM PROJECTIONS

Previous sections of this Plan discussed the quantities of waste generated, disposed and diverted from the waste stream. This section will present the projected MSW diversion rates as well as the projected C&D debris diversion rates for the duration of the planning period. Recycling rate projections were increased over the course of the planning period. These future waste generation projections are depicted in the tables provided in Appendix A.

As previously indicated, the data reported in this Plan was based on the best available data at the time this report was prepared. Future tasks to be considered in the Implementation Schedule include improving data gathering methods and reporting to improve upon the County's known data. With the help of improved data, the County will have a clearer picture of the programs that should be evaluated and implemented.

7.1. Anticipated Changes to the Local Planning Unit

Columbia County has experienced a relatively consistent population increase over the past five decades. U.S. Census data reveals that Columbia County's population steadily increased from 52,050 in 1970 to 63,096 in 2010. In 2020, the population was estimated to be 60,777 persons. The largest estimated municipal population change between 2000 and 2010 occurred in the Town of Taghkanic, which experienced an estimated population growth of 17.2% during that period, due to its low initial population. The Towns of Austerlitz and Clermont also experienced a large population growth at an estimated 13.8% gain. By contrast, the City of Hudson and the Towns of Stuyvesant and New Lebanon experienced estimated population losses of 10.8%, 7.4%, and 6.1%, respectively, between 2000 and 2010. However, overall the County has been experiencing a consistent population and experiencing only a slight decrease between 2010 and 2020.

Baseline population projections reflecting these historical trends have been developed and analyzed by Cornell University's Program of Applied Demographics, an affiliate of the U.S. Census Research Data Center network. Columbia County's population projections indicate a continued decrease in the County's total population from its present level to 56,460 in 2030. After 2030, Columbia County's population projections indicate a decrease in the County's total population to 50,398 in 2040³⁹. The baseline population projections noted are not forecasts of future population size; they simply project population levels that would be expected if current life expectancy, birth, and net migration rates continue unchanged in future years. It is important to note that the COVID-19 pandemic may affect population migration patterns in the years to come.

³⁹ <https://pad.human.cornell.edu/profiles/Columbia.pdf>

7.2. Anticipated Changes to the Waste Stream

Over the course of the previous planning period, changes to the waste stream have occurred nationally, which includes local trends in Columbia County as well. Consumers have moved towards a throw-away society where one-time use products are preferred for convenience sake as opposed to environmental concerns. Consumer products are quickly replaced with newer models or better versions. Household items, such as thermostats, electronics, batteries, contain harmful chemicals such as mercury, Freon, and heavy metals. Both proper disposal and diversion are keys aspects of solid waste management today. Education is an integral component to changing the solid waste management practices nationally, as well as locally.

Based on the declining population projection trends referenced in Section 7.1, it is the opinion of the County that the amount of waste produced within its borders will parallel the population's projected downward trend.

It is anticipated that with the implementation of this Plan, more data will be collected on the financial and partnership opportunities in the County for additional waste diversion programs to be made available to residents. This, in addition to better data capture for private facilities, should in turn increase the County's waste diversion percentage. Chapter 5 describes the various programs that will be made available to County residents and how these tasks and goals will be implemented.

8.0 PUBLIC PARTICIPATION

A draft of this Local Solid Waste Management Plan was issued for public comment on February 17th, 2022. The Board of Supervisors published a notice for the public meeting in the Register Star (the official County newspaper), posted it on the County website and sent notifications to the Climate Smart Communities & Environmental Management Council. A public meeting and overview presentation were held on March 9th, 2022. Less than ten (10) residents attended the public meeting and no one verbally provided comments during the meeting. Public comments were received through April 23rd, 2022. The eleven (11) public comments received and a public comment inventory with responses are included as Appendix H.

Appendix A

Detailed Waste Composition Spreadsheets

Appendix A.1

Municipal Solid Waste Combined Composition Analysis and Projections

Population and Municipal Solid Waste Composition Calculator

Purpose and Background

Developing a Local Solid Waste Management Plan (LSWMP) consist of several steps:

- Assessment of current planning unit conditions,
- Forecasting the future,
- Establishing objectives with clear statements of what is need to be achieved and when,
- Identifying and evaluating various alternatives and courses of action,
- Making decisions and selecting the best alternative for accomplishing objectives,
- Formulating tasks, subtasks, milestones, responsible parties, and certainly ensuring its effective implementation, as well as
- Evaluating achievements and taking corrective actions when necessary.

The purpose of the Population and Municipal Solid Waste Composition Calculator is to support planning units during the planning process, through a graphic and numerical representation of the current and future characteristics of the waste stream. The calculator has been designed to aid the development of a LSWMP from its early stage of assessment to its implementation and even evaluation of the plan over time.

The calculator intends to approximate the solid waste stream composition of the planning unit based on specific demographics and the goals set up for a specific planning period.

This projection tool is not intended to substitute for the valuable information gained by performing a municipal specific waste composition analysis. There is no substitute for accurately gathered and analyzed municipal specific waste composition data. This tool is merely intended to help refine the waste composition differences between planning units as a result of the wide array of demographics in New York State.

For this tool, DEC developed estimates of material's composition present in the MSW stream using data inputs that include field-based waste composition studies, performed within New York State and in other major US cities and States that have similar demographic characteristics to some of New York's regions.

After a careful review of dozens of composition analyses, the data from the following sources were used:

- Municipalities within New York State: New York City and Onondaga County Resource Recovery Authority (OCRRA).
- Municipalities in other states: Seattle, WA and San Francisco, CA.
- Other States: Vermont, Wisconsin, Missouri, Georgia, Oregon, Ohio, Delaware, Pennsylvania, and California.

Step 1. Planning Unit and Plan Period Selection

Please, select from the drop-down list the name of your **planning unit** and the **planning period** of your **LSWMP**. Be aware that a LSWMP must be developed for a **10-year period**, and that your selection will be replicated on each one of the following tabs.

Planning Unit	Columbia County
Planning Period	2022-2031

Step 2. Waste Generation Rate

In order to project how the amount of waste generated in the planning unit will change over time, data regarding the current amount of waste generated by the planning unit is needed. This can be the total tons of waste generated by the planning unit in the current year (**Tons/yr**), or this can be the estimated daily quantity of waste generated per person in the planning unit (**lb/person/day**). If both the total annual generation and the estimated generation rate per person are unknown, the state average for MSW generation rate can be used along with the planning unit's population to estimate the total amount of waste generated in the planning unit.

For this step, select **one** of the options that describes the known information about the planning unit. Enter the waste generated in Tons (MSW disposed & Recycled Materials) or the waste generation rate in lb/person/day) in the **purple cell**. If no data on the waste generated in the planning unit is available, choose the corresponding option from the list. The calculator will estimate the total amount of waste generated based on the state's average generation rate and the planning unit's population.

Columbia County

The amount of waste generated (by all residents, institutions, etc.) in the planning unit will be based on what is known. If the MSW generation amount and the generation rate are unknown, the state average for MSW generation rate will be used.

☒ I know the amount of MSW generated (Tons/year):

Enter tons disposed here:

29,691.45

☐ The planning unit Average MSW Generation Rate (lb/person/day) is:

☐ The amount of MSW Generated and the planning unit Average MSW Generation Rate are unknown.

Enter tons diverted here:

3,796.78

Step 3. Planning Unit Population - Projections & Municipal Solid Waste (MSW) - Projections

This tab will provide you with population projections and MSW generation projections for the planning period you had previously selected. It is recognized that Municipal Solid Waste (MSW) generation is reliant on population changes, hence, it is necessary to project both and identify their correlation.

In the first purple cell enter the total tons of MSW that was disposed in the year immediately before your plan period starts. For example: If the plan period is 2016-2026, the MSW disposed data should be from 2015.

Population Projection:

Calculations are determined by a linear regression based on the latest census population data and an annual growth rate percentage specific to the planning unit. If it is anticipated that the population is going to decrease overtime, the minus sign (-) will be used.

MSW Generation Projection:

The MSW generation rate (Lb/person/day) calculated on the previous tab from the Waste Generation Rate will serve as a start point for the planning period. On the calculator, three options are considered to anticipate the MSW generation over time, and one must be selected according to the goals of the planning unit:

First Option:

MSW generation rate does not change. Consequently, MSW generation fluctuates with the population of the planning unit. If the population increases, waste generation will rise as well, and vice versa. By selecting this option, the planning unit is in “status quo”, meaning that is not making any improvements, and consequently is getting far from reaching the State’s goal by 2030.

Second Option:

MSW generation amount remains the same, regardless of whether or not the planning unit’s population changes.

Third Option:

As a result of successfully implementing the Local Solid Waste Management Plan, MSW generation will be reduced by an annual factor of ...

An Annual Factor of Reduction (%) should be calculated, defined, and selected by the planning unit. This factor will be the numerical representation of one of the planning unit’s goals for the planning period. Once calculated, the Annual Factor of Reduction can be chosen from the drop down list provided.

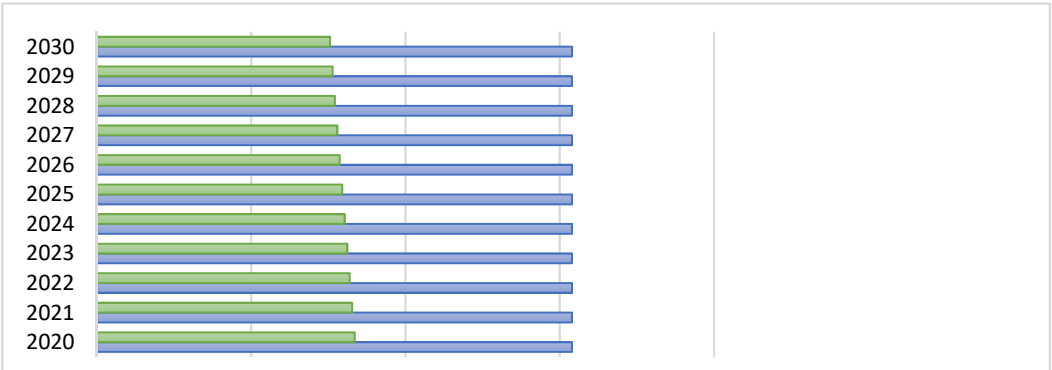
Note:

- The graphic will display the Population and MSW Generation projections over the selected planning period. It has been designed to visualize the contrast of the final outcomes, based on the selections of each planning unit

Columbia County

2022-2031

Current Data	
2010 Population Census	63,096
2020 Population	61,598
2020 MSW Generated (Tons/yr)	33,488
2020 MSW generation rate (Lb/person/day)	2.64
2020 MSW Disposed (Tons/yr)	29,691
2020 MSW Diverted (Tons/yr)	3,797



Annual rate of population growth (%)	0.00%
--------------------------------------	-------

MSW generation rate (Lb/person/day)	2.97
-------------------------------------	------



Population Projection											
2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
61,598	61,598	61,598	61,598	61,598	61,598	61,598	61,598	61,598	61,598	61,598	61,598

Forecasting future conditions... What do you expect to happen to the MSW generation rate over the next 10 year period plan?

☐ MSW generation rate does not change. Consequently, MSW generation fluctuates with the population of the planning unit, if the population increases, waste generation will rise as well, and vice versa.

☐ MSW generation amount remains the same, regardless of whether or not the planning unit's population fluctuates.

☒ As a result of successfully implementing the Local Solid Waste Management Plan, MSW generation will be reduced by an annual factor of ...

Reduction Factor (per year)

1.0%

MSW Generation Projection												
2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
2.97	2.94	2.91	2.89	2.86	2.83	2.80	2.77	2.74	2.72	2.69	2.66	(Lb/person/day)
33,430	33,096	32,765	32,438	32,113	31,792	31,474	31,159	30,848	30,539	30,234	29,932	Tons/yr

Step 4. Municipal Solid Waste (MSW) Detailed Composition Analysis

The next step is to Identify the Materials Composition of the Waste Stream based on population density, and demographic characteristics of the Planning Unit.

This tab will provide the PU with a more detailed estimate of the materials present in the waste stream, which could be crucial when prioritizing the initiatives and programs of the LSWMP.

The population density distribution has been calculated based on the 2010 Census data and will be auto populated when a planning unit is selected. The following parameters were used:

- Rural: <325 persons/mi²
- Suburban: >325 and $<5,000$ persons/mi²
- Urban: $>5,000$ persons/mi²

Under **Density Population Distribution**, the user has the option to modify the percentage values for the **Sector** (*Residential and Commercial/Institutional*) based on land use and specific characteristics of each planning unit. For example: A rural population in Westchester County could be 64% Residential and 36% Commercial / Institutional, while in Wyoming County might be 50% Residential and 50% Commercial / Institutional.

The results are presented on the last right column under **MSW Materials Composition**. Be aware of color changes on the cells, whenever a category represents over 15% of the total waste generation, the cell will turn **red** to easily identify key categories of the waste stream. It will also facilitate the selection of initiatives, programs, and infrastructure for the solid waste management system.

Note: If no data exists, use the pre-populated information in the worksheet.

Columbia County										2022-2031		
Density Population Distribution	Rural			Suburban			Urban			MSW Materials Composition (%)		
	81.00%			19.00%			0.00%					
	Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined			
	90.00%	10.00%	100.00%	50.00%	50.00%	100.00%	0.00%	0.00%	0.00%			
Material	Newspaper	5.20%	1.90%	4.87%	5.00%	1.90%	3.45%	6.60%	2.00%	0.00%	4.60%	
	Corrugated Cardboard	6.60%	13.90%	7.33%	6.60%	13.90%	10.25%	6.90%	13.70%	0.00%	7.88%	
	Other Recyclable Paper	Paperboard	3.20%	1.10%	2.99%	3.30%	1.00%	2.15%	3.60%	0.90%	0.00%	2.83%
		Office Paper	0.80%	3.80%	1.10%	0.90%	4.20%	2.55%	1.10%	5.80%	0.00%	1.38%
		Junk Mail	3.00%	0.70%	2.77%	3.20%	0.70%	1.95%	3.50%	0.70%	0.00%	2.61%
		Other Commercial Printing	1.70%	2.30%	1.76%	1.70%	2.40%	2.05%	2.30%	2.60%	0.00%	1.82%
		Magazines	1.10%	0.90%	1.08%	1.00%	0.80%	0.90%	1.10%	1.00%	0.00%	1.05%
		Books	0.50%	0.30%	0.48%	0.50%	0.30%	0.40%	0.60%	0.40%	0.00%	0.46%
		Paper Bags	0.50%	0.20%	0.47%	0.50%	0.20%	0.35%	0.60%	0.20%	0.00%	0.45%
		Phone Books	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.20%	0.00%	0.30%
	Poly-Coated	0.20%	0.30%	0.21%	0.20%	0.20%	0.20%	0.30%	0.20%	0.00%	0.21%	
	Other Recyclable Paper (Total)	11.30%	9.90%	11.16%	11.60%	10.10%	10.85%	13.40%	12.00%	0.00%	11.10%	
	Other Compostable Paper	6.80%	6.80%	6.80%	6.40%	6.40%	6.40%	6.80%	6.80%	0.00%	6.72%	
	Total Paper	29.90%	32.50%	30.16%	29.60%	32.30%	30.95%	33.70%	34.50%	0.00%	30.31%	
	Ferrous/Aluminum Containers	Ferrous Containers	1.90%	1.00%	1.81%	1.20%	0.70%	0.95%	1.40%	0.70%	0.00%	1.65%
		Aluminum Containers	0.70%	0.40%	0.67%	0.60%	0.30%	0.45%	0.50%	0.40%	0.00%	0.63%
	Ferrous/Aluminum Containers (Total)	2.60%	1.40%	2.48%	1.80%	1.00%	1.40%	1.90%	1.10%	0.00%	2.27%	
	Other Ferrous Metals	5.20%	5.40%	5.22%	5.00%	5.80%	5.40%	3.30%	3.70%	0.00%	5.25%	
	Other Non-Ferrous Metals	Other aluminum	0.20%	0.30%	0.21%	0.20%	0.30%	0.25%	0.20%	0.30%	0.00%	0.22%
		Automotive batteries	0.80%	0.50%	0.77%	0.70%	0.40%	0.55%	0.20%	0.20%	0.00%	0.73%
		Other non-aluminum	0.50%	0.30%	0.48%	0.30%	0.40%	0.35%	0.40%	0.20%	0.00%	0.46%
	Other Non-Ferrous Metals (Total)	1.50%	1.10%	1.46%	1.20%	1.10%	1.15%	0.80%	0.70%	0.00%	1.40%	
	Total Metals	9.30%	7.90%	9.16%	8.00%	7.90%	7.95%	6.00%	5.50%	0.00%	8.93%	
	PET Containers	1.10%	0.80%	1.07%	0.90%	0.80%	0.85%	1.20%	1.00%	0.00%	1.03%	
	HDPE Containers	1.10%	0.60%	1.05%	0.90%	0.70%	0.80%	1.00%	0.70%	0.00%	1.00%	
	Other Plastic (3-7) Containers	0.20%	0.10%	0.19%	0.20%	0.20%	0.20%	0.20%	0.20%	0.00%	0.19%	
	Film Plastic	5.70%	5.90%	5.72%	5.50%	5.80%	5.65%	5.80%	5.80%	0.00%	5.71%	
	Other Plastic	Durables	3.10%	3.20%	3.11%	3.00%	3.20%	3.10%	3.20%	3.30%	0.00%	3.11%
		Non-Durables	1.60%	1.80%	1.62%	1.60%	1.80%	1.70%	1.80%	1.90%	0.00%	1.64%
		Packaging	1.40%	1.10%	1.37%	1.40%	1.10%	1.25%	1.50%	1.10%	0.00%	1.35%
	Other Plastic (Total)	6.10%	6.10%	6.10%	6.00%	6.10%	6.05%	6.50%	6.30%	0.00%	6.09%	
	Total Plastics	14.20%	13.50%	14.13%	13.50%	13.60%	13.55%	14.70%	14.00%	0.00%	14.02%	
	Glass Bottles, Jars and Containers	4.10%	3.80%	4.07%	3.90%	3.80%	3.85%	4.30%	3.80%	0.00%	4.03%	
	Other Glass (Flat glass, dishware, light bulbs, etc.)	0.50%	0.40%	0.49%	0.30%	0.40%	0.35%	0.40%	0.40%	0.00%	0.46%	
	Total Glass	4.60%	4.20%	4.56%	4.20%	4.20%	4.20%	4.70%	4.20%	0.00%	4.49%	
	Food Scraps	12.70%	13.30%	12.76%	12.90%	15.50%	14.20%	17.20%	25.20%	0.00%	13.03%	
	Leaves and Grass / Pruning and Trimmings	3.10%	1.10%	2.90%	11.30%	9.10%	10.20%	4.20%	1.50%	0.00%	4.29%	
	Total Organics	15.80%	14.40%	15.66%	24.20%	24.60%	24.40%	21.40%	26.70%	0.00%	17.32%	
	Clothing Footwear, Towels, Sheets	4.60%	3.00%	4.44%	4.40%	3.20%	3.80%	4.80%	2.50%	0.00%	4.32%	
	Carpet	1.40%	1.30%	1.39%	1.70%	1.40%	1.55%	1.70%	0.90%	0.00%	1.42%	
Total Textiles	6.00%	4.30%	5.83%	6.10%	4.60%	5.35%	6.50%	3.40%	0.00%	5.74%		
Total Wood (Pallets, crates, adulterated and non-adulterated wood)	4.10%	9.00%	4.59%	2.90%	4.10%	3.50%	2.00%	3.50%	0.00%	4.38%		
DIY - Construction & Renovation Materials	8.00%	7.60%	7.96%	3.80%	2.70%	3.25%	4.40%	3.80%	0.00%	7.07%		
Diapers	1.90%	1.10%	1.82%	2.10%	1.20%	1.65%	2.30%	1.10%	0.00%	1.79%		
Electronics	1.30%	1.40%	1.31%	1.60%	1.70%	1.65%	1.30%	1.30%	0.00%	1.37%		
Tires	1.80%	1.80%	1.80%	1.70%	1.40%	1.55%	0.50%	0.40%	0.00%	1.75%		
HHW	0.60%	0.00%	0.54%	0.60%	0.00%	0.30%	0.50%	0.00%	0.00%	0.49%		
Soils and Fines	0.60%	0.60%	0.60%	0.10%	0.20%	0.15%	0.10%	0.10%	0.00%	0.51%		
Other Composite Materials - Durable and/or Inert	1.90%	1.70%	1.88%	1.60%	1.50%	1.55%	1.90%	1.50%	0.00%	1.82%		
Total Miscellaneous	16.10%	14.20%	15.91%	11.50%	8.70%	10.10%	11.00%	8.20%	0.00%	14.81%		
Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%		

Step 5. Municipal Solid Waste (MSW) Detailed Composition Analysis

On this tab, the composition of the municipal waste stream will be estimated based on the amount of material generated in the planning unit and the state average of the different waste materials. A pie chart will be generated to clearly show the composition of the waste stream and to identify key categories of the waste stream for the planning unit.

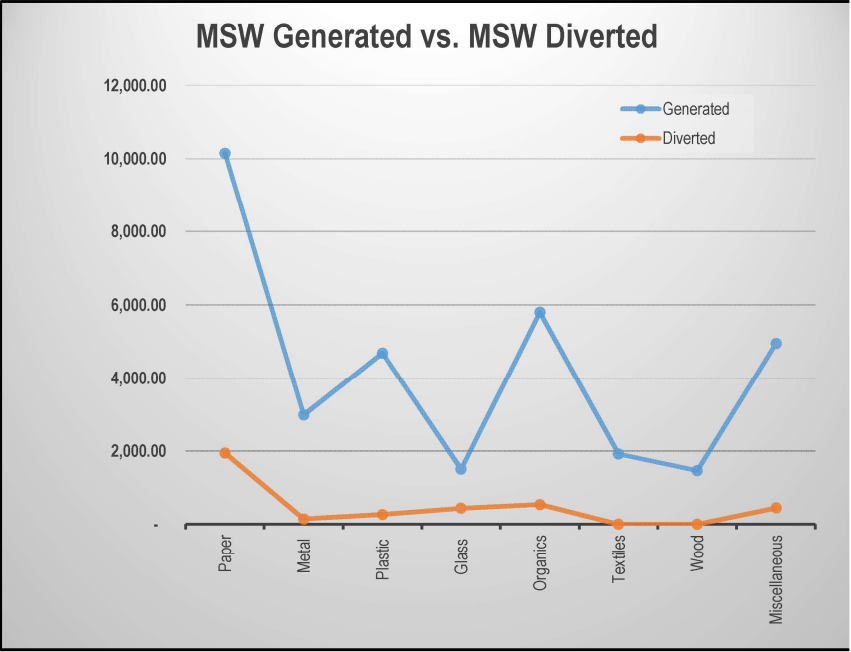
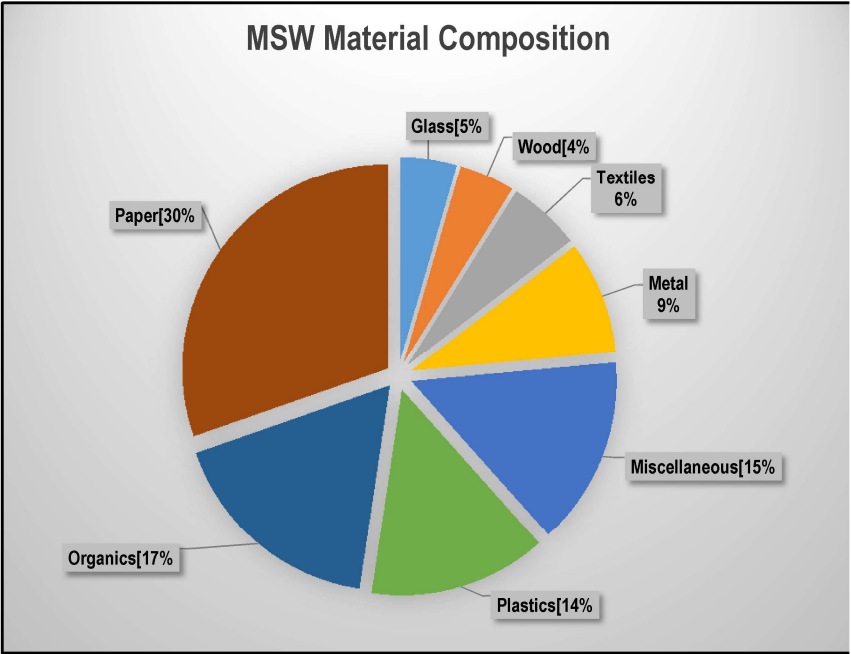
The total tons of MSW diverted per year will be auto populated based on previous data inputs, while the amount tons diverted for each material by category should be populated by the user. Purple cells should be used for amounts of diverted waste by type of material, and a totaled number by category (e.g. paper, metal) should be put in the green cells. After inputting the data, a graphic will be generated to show the MSW generation and diversion streams in Tons.

Make sure that the total amounts at the bottom of the page are consistent with the data you already put into the calculator. If the cell is highlighted in red, you should revise the amounts of diverted waste by category.

Columbia County

2022-2031

		2020		
		MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)
Material		100.0%	33,488	3,796.78
Paper	Newspaper	4.6%	1,541	572.29
	Corrugated Cardboard	7.9%	2,640	633.17
	Other Recyclable Paper (Total)	11.1%	3,718	742.76
	Other Compostable Paper	6.7%	2,252	0.00
	Total Paper	30.3%	10,150	1,948.23
Metal	Ferrous/Aluminum Containers (Total)	2.3%	762	118.46
	Other Ferrous Metals	5.3%	1,760	23.35
	Other Non-Ferrous Metals (Total)	1.4%	469	2.34
	Total Metals	8.9%	2,991	144.15
Plastic	PET Containers	1.0%	344	127.24
	HDPE Containers	1.0%	336	122.85
	Other Plastic (3-7) Containers	0.2%	64	21.94
	Film Plastic	5.7%	1,911	0.00
	Other Plastic (Total)	6.1%	2,040	0.00
	Total Plastics	14.0%	4,695	272.02
Glass	Glass Bottles, Jars and Containers	4.0%	1,349	438.75
	Other Glass (Flat glass, dishware, light bulbs, etc.)	0.5%	155	0.00
	Total Glass	4.5%	1,504	438.75
Organics	Food Scraps	13.0%	4,365	0.00
	Leaves and Grass / Pruning and Trimmings	4.3%	1,436	544.89
	Total Organics	17.3%	5,800	544.89
Textiles	Clothing Footwear, Towels, Sheets	4.3%	1,446	0.00
	Carpet	1.4%	476	0.00
	Total Textiles	5.7%	1,922	0.00
Wood	Total Wood (Pallets, crates, adulterated and non-adulterated wood)	4.4%	1,468	0.00
Miscellaneous	DIY Construction & Renovation Materials	7.1%	2,366	0.00
	Diapers	1.8%	599	0.00
	Electronics	1.4%	460	51.31
	Tires	1.8%	587	0.00
	HHW	0.5%	166	63.30
	Soils and Fines	0.5%	172	0.00
	Other Composite Materials - Durable and/or inert	1.8%	609	334.13
	Total Miscellaneous	14.8%	4,958	448.74
Total		100.0%	33,488	3,796.78



Step 6. Municipal Solid Waste (MSW) Diversion Projections

This tab will be used to create goals for the amount of material the planning unit will divert for each year of the planning period. These goals will be entered as percentages, based on how much of the material generated will be diverted for recycling or beneficial use.

The diversion goal percentages will be entered in the purple cells for each material and each year of the planning period.

Columbia County

2022-2031

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Projected MSW Generation (Tons/yr)	33,096	32,765	32,438	32,113	31,792	31,474	31,159	30,848	30,539	30,234	29,932
MSW Diverted (Tons/yr)	4,063	4,312	4,375	5,293	5,740	6,421	6,671	6,876	7,076	7,272	7,387

		2020				2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted
Material		100.0%	33,488	3,797	11.3%	12.3%	13.2%	13.5%	16.5%	18.1%	20.4%	21.4%	22.3%	23.2%	24.1%	24.7%
Paper	Newspaper	4.6%	1,541	572	37.1%	38.1%	39.1%	40.1%	41.1%	42.1%	48.1%	50.1%	51.1%	52.1%	53.1%	54.1%
	Corrugated Cardboard	7.9%	2,640	633	24.0%	25.0%	26.0%	27.0%	28.0%	29.0%	39.0%	41.0%	42.0%	43.0%	44.0%	45.0%
	Other Recyclable Paper (Total)	11.1%	3,718	743	20.0%	21.0%	22.0%	23.0%	24.0%	25.0%	30.0%	31.0%	32.0%	33.0%	34.0%	35.0%
	Other Compostable Paper	6.7%	2,252	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Total Paper	30.3%	10,150	1,948	19.2%	20.2%	21.2%	21.2%	23.2%	24.2%	29.8%	31.2%	32.2%	33.2%	34.2%	35.2%
Metal	Ferrous/Aluminum Containers (Total)	2.3%	762	118	15.6%	16.6%	17.6%	18.6%	19.6%	20.6%	21.6%	22.6%	23.6%	24.6%	25.6%	26.6%
	Other Ferrous Metals	5.3%	1,760	23	1.3%	2.3%	3.3%	4.3%	5.3%	6.3%	7.3%	8.3%	9.3%	10.3%	11.3%	12.3%
	Other Non-Ferrous Metals (Total)	1.4%	469	2	0.5%	1.5%	2.5%	3.5%	4.5%	5.5%	6.5%	7.5%	8.5%	9.5%	10.5%	11.5%
	Total Metals	8.9%	2,991	144	4.8%	5.8%	6.8%	6.8%	8.8%	9.8%	10.8%	11.8%	12.8%	13.8%	14.8%	15.8%
Plastic	PET Containers	1.0%	344	127	37.0%	38.0%	39.0%	40.0%	41.0%	42.0%	47.0%	48.0%	49.0%	50.0%	51.0%	52.0%
	HDPE Containers	1.0%	336	123	36.6%	37.6%	38.6%	39.6%	40.6%	41.6%	46.6%	47.6%	48.6%	49.6%	50.6%	51.6%
	Other Plastic (3-7) Containers	0.2%	64	22	34.1%	34.6%	35.1%	35.6%	36.1%	36.6%	37.1%	37.6%	38.1%	38.6%	39.1%	39.6%
	Film Plastic	5.7%	1,911	0	0.0%	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%	5.5%
	Other Plastic (Total)	6.1%	2,040	0	0.0%	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%	5.5%
	Total Plastics	14.0%	4,695	272	5.8%	6.4%	6.5%	6.5%	6.7%	6.7%	7.4%	7.5%	7.6%	7.6%	7.7%	7.8%
Glass	Glass Bottles, Jars and Containers	4.0%	1,349	439	32.5%	33.5%	34.5%	35.5%	36.5%	37.5%	38.5%	39.5%	40.5%	41.5%	42.5%	43.5%
	Other Glass (Flat glass, dishware, light bulbs, etc.)	0.5%	155	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Total Glass	4.5%	1,504	439	29.2%	30.2%	31.2%	31.2%	33.2%	34.2%	35.2%	36.2%	37.2%	38.2%	39.2%	40.2%
Organics	Food Scraps	13.0%	4,365	0	0.0%	1.0%	2.0%	3.0%	13.0%	18.0%	19.0%	20.0%	21.0%	22.0%	23.0%	24.0%
	Leaves and Grass / Pruning and Trimmings	4.3%	1,436	545	38.0%	39.0%	40.0%	41.0%	51.0%	56.0%	57.0%	58.0%	59.0%	60.0%	61.0%	62.0%
	Total Organics	17.3%	5,800	545	9.4%	10.4%	11.4%	12.4%	22.4%	27.4%	28.4%	29.4%	30.4%	31.4%	32.4%	33.4%
Textiles	Clothing Footwear, Towels, Sheets	4.3%	1,446	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Carpet	1.4%	476	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Total Textiles	5.7%	1,922	0	0.0%	1.0%	2.0%	2.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
Wood	Total Wood (Pallets, crates, adulterated and non-adulterated wood)	4.4%	1,468	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
Miscellaneous	DIY Construction & Renovation Materials	7.1%	2,366	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Diapers	1.8%	599	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Electronics	1.4%	460	51	11.1%	12.1%	13.1%	14.1%	15.1%	16.1%	17.1%	18.1%	19.1%	20.1%	21.1%	22.1%
	Tires	1.8%	587	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	HHW	0.5%	166	63	38.2%	39.2%	40.2%	41.2%	42.2%	43.2%	44.2%	45.2%	46.2%	47.2%	48.2%	49.2%
	Soils and Fines	0.5%	172	0	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
	Other Composite Materials - Durable and/or inert	1.8%	609	334	54.9%	55.9%	56.9%	57.9%	58.9%	59.9%	60.9%	61.9%	62.9%	63.9%	64.9%	65.9%
	Total Miscellaneous	14.8%	4,958	449	9.1%	10.1%	11.1%	11.2%	13.1%	14.1%	15.1%	16.1%	17.1%	18.1%	19.1%	20.1%

Step 7. Municipal Solid Waste (MSW) Generation and Diversion - Detailed Projections

The final result of the Population and Municipal Composition Calculator is presented on the last tab. This tab contains data for the current year regarding waste generated and waste diverted from disposal. This tab also shows the projected waste diversion percentages, and the amount of waste in tons these percentages will divert for recycling. Total amounts of waste diverted will be calculated for each material and each year of the planning period.

Columbia County

2022-2031

			2020			2021			2022			2023			2024			2025			2026			2027			2028			2029			2030			2031			
			MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted						
Material			100.00%	33,488	3,797	11.3%	33,096	4,063	12.3%	32,765	4,331	13%	32,438	4,592	13.5%	32,113	5,349	16.5%	31,792	5,807	18.1%	31,474	6,513	20.4%	31,159	6,780	21.4%	30,848	7,002	22.3%	30,539	7,219	23.2%	30,234	7,431	24.1%	29,932	7,716	24.7%
Paper	Newspaper		4.60%	1,541	572	37.1%	1,522	581	38.1%	1,507	590	39%	1,492	599	40.1%	1,477	608	41.1%	1,462	616	42.1%	1,448	697	48.1%	1,433	719	50.1%	1,419	726	51.1%	1,405	733	52.1%	1,391	739	53.1%	1,391	753	54.1%
	Corrugated Cardboard		7.88%	2,640	633	24.0%	2,610	652	25.0%	2,583	671	26%	2,558	690	27.0%	2,532	708	28.0%	2,507	726	29.0%	2,482	967	39.0%	2,457	1,007	41.0%	2,432	1,021	42.0%	2,408	1,035	43.0%	2,384	1,048	44.0%	2,384	1,072	45.0%
	Other Recyclable Paper	Paperboard	2.83%	948	0	0.0%	937	9	1.0%	927	19	2%	918	28	3.0%	909	36	4.0%	900	45	5.0%	891	53	6.0%	882	62	7.0%	873	70	8.0%	864	78	9.0%	856	86	10.0%	856	94	11.0%
		Office Paper	1.38%	461	0	0.0%	455	5	1.0%	451	9	2%	446	13	3.0%	442	18	4.0%	437	22	5.0%	433	26	6.0%	429	30	7.0%	424	34	8.0%	420	38	9.0%	416	42	10.0%	416	46	11.0%
		Junk Mail	2.61%	875	0	0.0%	865	9	1.0%	857	17	2%	848	25	3.0%	840	34	4.0%	831	42	5.0%	823	49	6.0%	815	57	7.0%	806	65	8.0%	798	72	9.0%	790	79	10.0%	790	87	11.0%
		Other Commercial Printing	1.82%	608	0	0.0%	601	6	1.0%	595	12	2%	589	18	3.0%	583	23	4.0%	577	29	5.0%	571	34	6.0%	566	40	7.0%	560	45	8.0%	554	50	9.0%	549	55	10.0%	549	60	11.0%
		Magazines	1.05%	350	0	0.0%	346	3	1.0%	343	7	2%	339	10	3.0%	336	13	4.0%	332	17	5.0%	329	20	6.0%	326	23	7.0%	323	26	8.0%	319	29	9.0%	316	32	10.0%	316	35	11.0%
		Books	0.46%	156	0	0.0%	154	2	1.0%	152	3	2%	151	5	3.0%	149	6	4.0%	148	7	5.0%	146	9	6.0%	145	10	7.0%	143	11	8.0%	142	13	9.0%	141	14	10.0%	141	15	11.0%
		Paper Bags	0.45%	150	0	0.0%	148	1	1.0%	147	3	2%	145	4	3.0%	144	6	4.0%	142	7	5.0%	141	8	6.0%	139	10	7.0%	138	11	8.0%	137	12	9.0%	135	14	10.0%	135	15	11.0%
		Phone Books	0.30%	100	0	0.0%	99	1	1.0%	98	2	2%	97	3	3.0%	96	4	4.0%	95	5	5.0%	94	6	6.0%	93	7	7.0%	93	7	8.0%	92	8	9.0%	91	9	10.0%	91	10	11.0%
	Poly-Coated	0.21%	70	0	0.0%	69	1	1.0%	68	1	2%	68	2	3.0%	67	3	4.0%	66	3	5.0%	65	4	6.0%	65	5	7.0%	64	5	8.0%	64	6	9.0%	63	6	10.0%	63	7	11.0%	
	Other Recyclable Paper (Total)		11.10%	3,718	743	20.0%	3,674	771	21.0%	3,637	799	22%	3,601	827	23.0%	3,565	855	24.0%	3,529	882	25.0%	3,494	1,047	30.0%	3,459	1,072	31.0%	3,424	1,095	32.0%	3,390	1,118	33.0%	3,356	1,140	34.0%	3,356	1,174	35.0%
	Other Compostable Paper		6.72%	2,252	0	0.0%	2,225	22	1.0%	2,203	44	2%	2,181	65	3.0%	2,159	86	4.0%	2,138	107	5.0%	2,116	127	6.0%	2,095	147	7.0%	2,074	166	8.0%	2,053	185	9.0%	2,033	203	10.0%	2,033	224	11.0%
	Total Paper		30.31%	10,150	1,948	19.2%	10,031	2,026	20.2%	9,931	2,105	21%	9,832	2,182	22.2%	9,734	2,258	23.2%	9,636	2,331	24.2%	9,540	2,839	29.8%	9,444	2,944	31.2%	9,350	3,008	32.2%	9,256	3,070	33.2%	9,164	3,131	34.2%	9,164	3,223	35.2%
Metal	Ferrous/Aluminum Containers	Ferrous Containers	1.65%	551	86	15.6%	545	90	16.6%	540	95	18%	534	99	18.6%	529	103	19.6%	523	108	20.6%	518	112	21.6%	513	116	22.6%	508	120	23.6%	503	123	24.6%	498	127	25.6%	498	132	26.6%
		Aluminum Containers	0.63%	210	33	15.6%	208	34	16.6%	206	36	18%	204	38	18.6%	202	39	19.6%	200	41	20.6%	198	43	21.6%	196	44	22.6%	194	46	23.6%	192	47	24.6%	190	49	25.6%	190	50	26.6%
	Ferrous/Aluminum Containers (Total)		2.27%	762	118	15.6%	753	125	16.6%	745	131	18%	738	137	18.6%	731	143	19.6%	723	149	20.6%	716	154	21.6%	709	160	22.6%	702	165	23.6%	695	171	24.6%	688	176	25.6%	688	183	26.6%
	Other Ferrous Metals		5.25%	1,760	23	1.3%	1,739	40	2.3%	1,722	57	3%	1,704	74	4.3%	1,687	90	5.3%	1,670	106	6.3%	1,654	121	7.3%	1,637	136	8.3%	1,621	151	9.3%	1,605	166	10.3%	1,589	180	11.3%	1,589	196	12.3%
	Other Non-Ferrous Metals	Other aluminum	0.22%	73	0	0.0%	72	1	1.0%	71	1	2%	71	2	3.0%	70	3	4.0%	69	3	5.0%	68	4	6.0%	68	5	7.0%	67	5	8.0%	66	6	9.0%	66	7	10.0%	66	7	11.0%
		Automotive batteries	0.73%	244	0	0.0%	241	2	1.0%	239	5	2%	236	7	3.0%	234	9	4.0%	232	12	5.0%	229	14	6.0%	227	16	7.0%	225	18	8.0%	222	20	9.0%	220	22	10.0%	220	24	11.0%
		Other non-aluminum	0.46%	152	0	0.0%	151	2	1.0%	149	3	2%	148	4	3.0%	146	6	4.0%	145	7	5.0%	143	9	6.0%	142	10	7.0%	140	11	8.0%	139	13	9.0%	138	14	10.0%	138	15	11.0%
	Other Non-Ferrous Metals (Total)		1.40%	469	2	0.5%	464	7	1.5%	459	11	2%	454	16	3.5%	450	20	4.5%	445	24	5.5%	441	29	6.5%	437	33	7.5%	432	37	8.5%	428	41	9.5%	424	44	10.5%	424	49	11.5%
	Total Metals		8.93%	2,991	144	4.8%	2,956	172	5.8%	2,926	200	7%	2,897	227	7.8%	2,868	253	8.8%	2,839	279	9.8%	2,811	304	10.8%	2,783	329	11.8%	2,755	353	12.8%	2,727	377	13.8%	2,700	400	14.8%	2,700	427	15.8%
Plastic	PET Containers		1.03%	344	127	37.0%	340	129	38.0%	337	131	39%	334	133	40.0%	330	135	41.0%	327	137	42.0%	324	152	47.0%	320	154	48.0%	317	155	49.0%	314	157	50.0%	311	158	51.0%	311	162	52.0%
	HDPPE Containers		1.00%	336	123	36.6%	332	125	37.6%	328	127	39%	325	129	39.6%	322	131	40.6%	319	65	20.6%	316	147	46.6%	312	149	47.6%	309	150	48.6%	306	152	49.6%	303	153	50.6%	303	156	51.6%
	Other Plastic (3-7) Containers		0.19%	64	22	34.1%	64	22	34.6%	63	22	35%	62	22	35.6%	62	22	36.1%	61	13	20.6%	60	22	37.1%	60	23	37.6%	59	23	38.1%	59	23	38.6%	58	23	39.1%	58	23	39.6%
	Film Plastic		5.71%	1,911	0	0.0%	1,889	9	0.5%	1,870	19	1%	1,851	28	1.5%	1,833	37	2.0%	1,814	115	6.3%	1,796	54	3.0%	1,778	62	3.5%	1,760	70	4.0%	1,743	78	4.5%	1,725	86	5.0%	1,725	95	5.5%
		Durables	3.11%	1,041	0	0.0%	1,029	10	1.0%	1,018	20	2%	1,008	30	3.0%	998	40	4.0%	988	49	5.0%	978	59	6.0%	968	68	7.0%	959	77	8.0%	949	85	9.0%	940	94	10.0%	940	103	11.0%
		Non-Durables	1.64%	548	0	0.0%	541	5	1.0%	536	11	2%	530	16	3.0%	525	21	4.0%	520	26	5.0%	515	31	6.0%	510	36	7.0%	504	40	8.0%	499	45	9.0%	494	49	10.0%	494	54	11.0%
	Other Plastic (Total)	Packaging	1.35%	451	0	0.0%	446	4	1.0%	441	9	2%	437	13	3.0%	433	17	4.0%	428	21	5.0%	424	25																

Appendix A.2

Construction and Demolition Debris Combined Composition Analysis and Projections

C&D Debris Waste Composition and Projection tool

Purpose and Background

Construction and Demolition (C&D) debris is the second largest waste stream in the state and is estimated to account for 25 to 30% of the total solid waste generation. Basic understanding of the materials composition of the C&D debris stream, would facilitate the management strategy and planning process at a local level of this important but usually overlooked waste stream.

The purpose of the *C&D Debris Waste Composition and Projection tool* is to estimate the generation and materials composition of the C&D debris stream for each planning unit. Calculations are based on specific characteristics such as activity, and sector of generation of C&D debris, which consist of new construction, renovation, and demolition of residential and non-residential properties, or municipal infrastructures such as roads and bridges.

A comprehensive knowledge of the C&D debris stream, will assist the selection of initiatives and management programs that minimize environmental impacts. The implementation of reduction, recycling and reuse management practices extend the lifecycle of materials and conserve the use of raw materials, water, and energy, reduce the overall building project expenses through avoiding unnecessary purchases and disposal costs, and conserve landfill space among many other benefits.

This projection tool is not intended to substitute for the valuable information gained by performing municipal waste characterization studies. There is no substitute for accurately gathered and analyzed municipal specific waste composition data. This tool is merely intended to help refine the waste composition differences between planning units as a result of the wide array of demographics in New York State.

For this tool, DEC developed estimates of materials composition in the C&D debris waste stream using data inputs that include field-based waste composition studies and research-based evaluations performed within New York State and in other major US cities and States that have similar characteristics to some of New York's regions.

After a careful review of dozens of composition analyses, the material composition of the (C&D) debris waste stream was found to be on average of RUCARB (recognizable uncontaminated concrete, asphalt, rock, and brick), wood, roofing, drywall, soil and gravel, metal, plastic, corrugated cardboard and paper, and other miscellaneous materials. The data from the following sources were used:

- Municipalities within New York State: New York City and Town of Babylon.
- Municipalities in other states: Seattle, WA and Des Moines, IA.
- Other States: Vermont, Wisconsin, Oregon, Delaware, Minnesota, Florida, and California.
- EPA

Step 1. Planning Unit and Planning Period Selection

Please, select from the drop-down-list the name of your **planning unit** and the **planning period** of your **LSWMP**. Be aware that a LSWMP must be developed for a **10-year period**, and that your selection will be replicated on each one of the following tabs.

Planning Unit	Columbia County ↓
Planning Period	2022-2031

Step 2. Construction & Demolition (C&D) Debris Material Composition Analysis

In order to Identify the Materials Composition of the C&D Debris waste stream, it is necessary to define the sources of the waste first.

Construction and demolition (C&D) Debris consists of waste that is generated during renovation, demolition or new construction of residential and non residential properties. It also includes the new construction and/or renovation of municipal infrastructure, such as roadways, park facilities, bike trails, bridges, etc. The user should estimate these values and enter them in the purple cells.

The results are presented on the last right column under C&D Debris Waste Stream Composition. Be aware of color changes on the cells, whenever a category represents over 15% of the total generation, the cell will turn red to easy identify key categories on the waste stream. It will also aid with the selection of isolated initiatives, programs, and infrastructure for the solid waste management system.

Note:

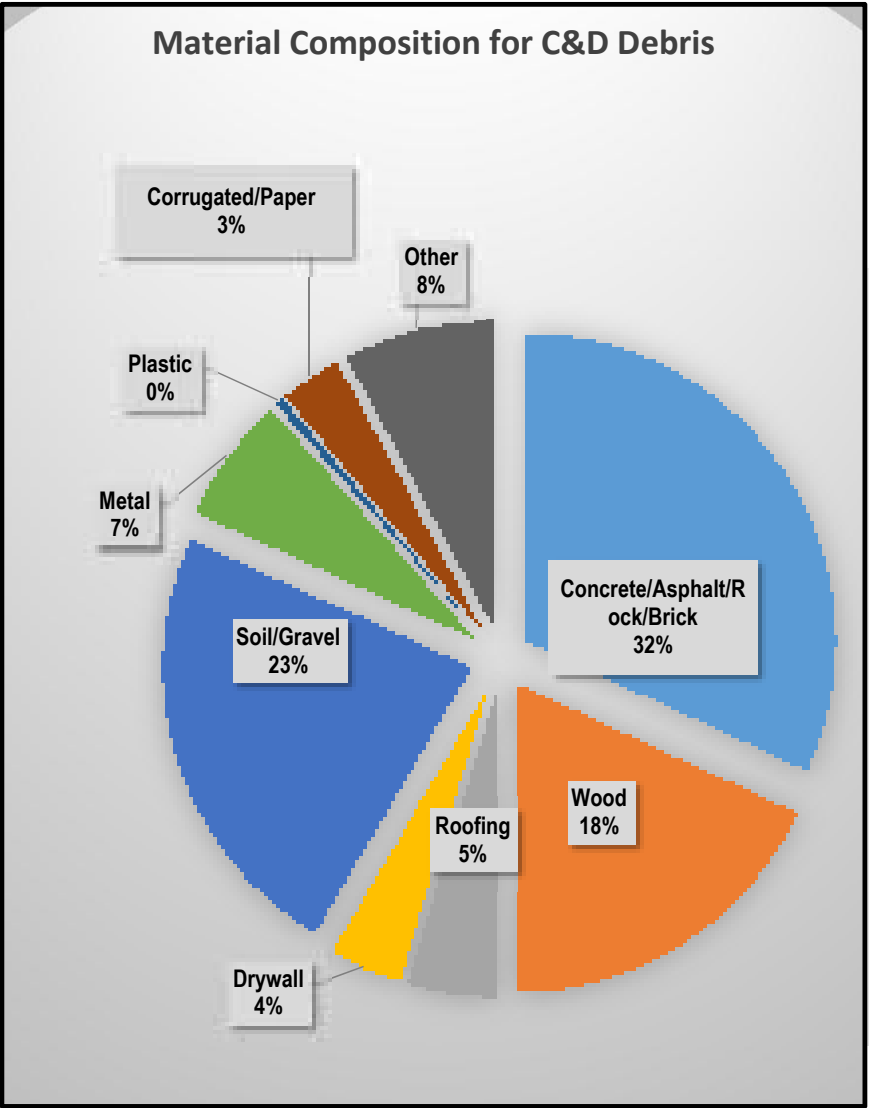
- The graphic displays the planning unit's C&D Debris generation data by material categories. It has been designed to help visualize the more representative categories of the waste stream.

Columbia County

2022-2031

		Generation source								
		Residential				Non- Residential (commercial-institutional)				Other Municipal Infras- tructure
		30.00%				30.00%				40.00%
		New Construction	Renovation	Demolition	Combined Residential	New Construction	Renovation	Demolition	Combined Non- Residential	Renovation
		20.00%	20.00%	60.00%	100.00%	60.00%	20.00%	20.00%	100.00%	100.00%
Materials	Concrete/ Asphalt /Rock/Brick	9.80%	16.10%	21.50%	18.08%	30.70%	19.10%	23.10%	26.86%	46.00%
	Wood	29.90%	19.10%	25.70%	25.22%	22.70%	12.40%	24.20%	20.94%	10.50%
	Roofing	6.00%	22.00%	6.10%	9.26%	2.10%	21.20%	5.10%	6.52%	0.00%
	Drywall	15.60%	7.90%	5.10%	7.76%	4.60%	6.40%	4.30%	4.90%	0.00%
	Soil/Gravel	11.30%	7.10%	18.50%	14.78%	13.10%	6.50%	15.60%	12.28%	38.00%
	Metal	5.30%	11.30%	5.20%	6.44%	12.00%	15.50%	11.10%	12.52%	2.40%
	Plastic	1.50%	0.70%	0.30%	0.62%	0.50%	0.70%	0.30%	0.50%	0.30%
	Corrugated cardboard/ Paper	9.30%	2.90%	3.10%	4.30%	7.10%	4.60%	4.20%	6.02%	0.30%
	Other	11.30%	12.90%	14.50%	13.54%	7.20%	13.60%	12.10%	9.46%	2.50%
Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

C&D Debris Materials Composition (%)
100.00%
31.88%
18.05%
4.73%
3.80%
23.32%
6.65%
0.46%
3.22%
7.90%
100.00%



Step 3. Construction & Demolition (C&D) Debris Generation Projections

This step will estimate the amount of waste generated for each material based on the total amount of waste generated in that year. In the purple cells enter the amount of waste generated in the Planning Unit. It will be a known amount for the first year, 2020 and an estimate of what will be generated for each year of the planning period, 2022-2031

Columbia County

2022-2031

			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
			C&D Debris Materials Composition (%)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)	C&D Debris Generated (Tons)
Materials	Concrete/Asphalt /Rock/Brick	31.9%	4,827.8	4,779.5	4,731.7	4,684.4	4,637.6	4,591.2	4,545.3	4,499.8	4,454.8	4,410.3	4,366.2	4,322.5
	Wood	18.0%	2,733.0	2,705.6	2,678.6	2,651.8	2,625.3	2,599.0	2,573.0	2,547.3	2,521.8	2,496.6	2,471.6	2,446.9
	Roofing	4.7%	716.9	709.7	702.6	695.6	688.6	681.7	674.9	668.2	661.5	654.9	648.3	641.8
	Drywall	3.8%	575.1	569.4	563.7	558.0	552.5	546.9	541.5	536.0	530.7	525.4	520.1	514.9
	Soil/Gravel	23.3%	3,531.0	3,495.7	3,460.7	3,426.1	3,391.8	3,357.9	3,324.3	3,291.1	3,258.2	3,225.6	3,193.4	3,161.4
	Metal	6.6%	1,006.7	996.6	986.7	976.8	967.0	957.3	947.8	938.3	928.9	919.6	910.4	901.3
	Plastic	0.5%	69.1	68.4	67.7	67.0	66.3	65.7	65.0	64.4	63.7	63.1	62.4	61.8
	Corrugated cardboard/Paper	3.2%	487.0	482.1	477.3	472.5	467.8	463.1	458.5	453.9	449.4	444.9	440.4	436.0
	Other	7.9%	1,196.3	1,184.3	1,172.5	1,160.7	1,149.1	1,137.6	1,126.3	1,115.0	1,103.9	1,092.8	1,081.9	1,071.1
Total			100.0%	15,142.7	14,991.3	14,841.4	14,693.0	14,546.0	14,400.6	14,256.6	14,114.0	13,972.9	13,833.1	13,694.8

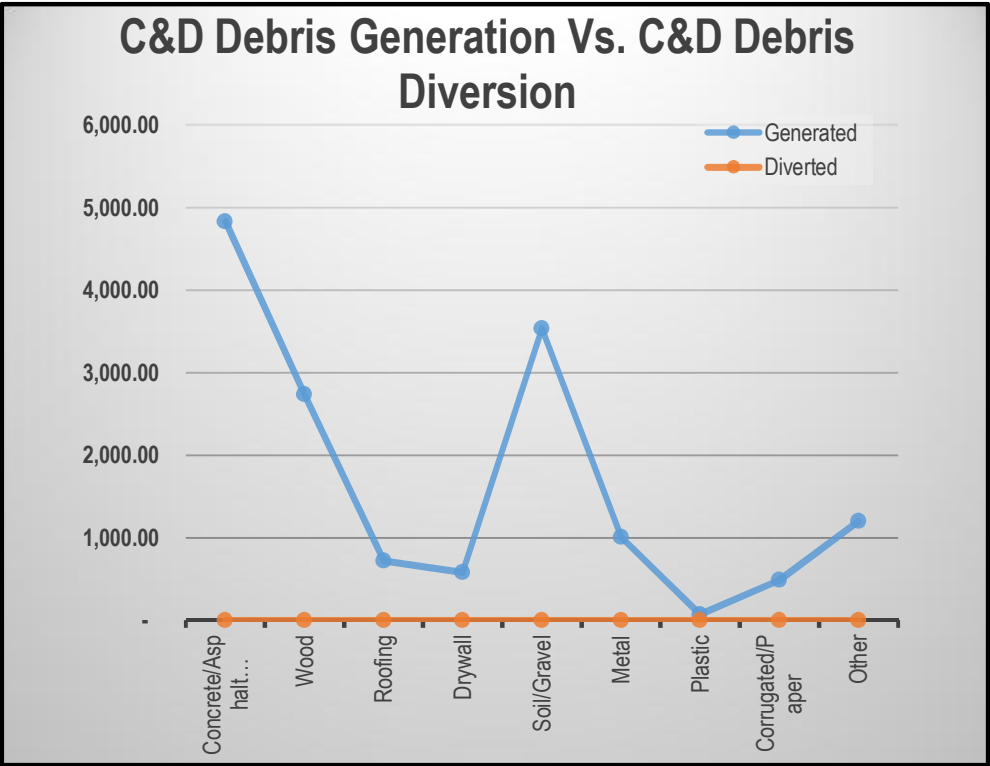
Step 4. Construction & Demolition (C&D) Debris Diversion Projections

Based on the total amount of C&D debris generated in the Planning Unit, which was entered in Step 3, this step will be used to calculate the % of this material that is diverted from the C&D debris waste stream. For this step, enter the amount of waste diverted for each material in the purple cells.

Columbia County

2022-2031

Materials	2020				
	C&D Debris Materials Composition (%)	C&D Debris Generated (Tons)	C&D Debris Diverted (Tons)	% C&D Diverted	
	Concrete/Asphalt/Rock/Brick	31.9%	4,827.8	0.0	0.0%
	Wood	18.0%	2,733.0	0.0	0.0%
	Roofing	4.7%	716.9	0.0	0.0%
	Drywall	3.8%	575.1	0.0	0.0%
	Soil/Gravel	23.3%	3,531.0	0.0	0.0%
	Metal	6.6%	1,006.7	0.0	0.0%
	Plastic	0.5%	69.1	0.0	0.0%
	Corrugated cardboard/Paper	3.2%	487.0	0.0	0.0%
	Other	7.9%	1,196.3	0.0	0.0%
Total		100.0%	15,142.7	0.0	0.0%



Step 5. Construction and Demolition (C&D) Debris Generation and Diversion Projections

This tab will be used to create goals for the amount of C&D debris the planning unit will divert for each year of the planning period. These goals will be entered as percentages, based on how much of the material generated that will be diverted for recycling or beneficial use. The diversion goal percentages will be entered in the purple cells for each material and each year of the planning period.

2022-2031																				
			2020			2021			2022			2023			2024			2025		
		C&D Debris Materials Composition (%)	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted
Materials	Concrete/Asphalt /Rock/Brick	31.9%	4,827.8	0.0	0.0%	4,779.5	47.8	1.0%	4,731.7	94.6	2.0%	4,684.4	140.5	3.0%	4,637.6	185.5	4.0%	4591.2	229.6	5.0%
	Wood	18.0%	2,733.0	0.0	0.0%	2,705.6	27.1	1.0%	2,678.6	53.6	2.0%	2,651.8	79.6	3.0%	2,625.3	105.0	4.0%	2599.0	130.0	5.0%
	Roofing	4.7%	716.9	0.0	0.0%	709.7	7.1	1.0%	702.6	14.1	2.0%	695.6	20.9	3.0%	688.6	27.5	4.0%	681.7	34.1	5.0%
	Drywall	3.8%	575.1	0.0	0.0%	569.4	5.7	1.0%	563.7	11.3	2.0%	558.0	16.7	3.0%	552.5	22.1	4.0%	546.9	27.3	5.0%
	Soil/Gravel	23.3%	3,531.0	0.0	0.0%	3,495.7	35.0	1.0%	3,460.7	69.2	2.0%	3,426.1	102.8	3.0%	3,391.8	135.7	4.0%	3357.9	167.9	5.0%
	Metal	6.6%	1,006.7	0.0	0.0%	996.6	10.0	1.0%	986.7	19.7	2.0%	976.8	29.3	3.0%	967.0	38.7	4.0%	957.3	47.9	5.0%
	Plastic	0.5%	69.1	0.0	0.0%	68.4	0.7	1.0%	67.7	1.4	2.0%	67.0	2.0	3.0%	66.3	2.7	4.0%	65.7	3.3	5.0%
	Corrugated /Paper	3.2%	487.0	0.0	0.0%	482.1	4.8	1.0%	477.3	9.5	2.0%	472.5	14.2	3.0%	467.8	18.7	4.0%	463.1	23.2	5.0%
	Other	7.9%	1,196.3	0.0	0.0%	1,184.3	11.8	1.0%	1,172.5	23.4	2.0%	1,160.7	34.8	3.0%	1,149.1	46.0	4.0%	1137.6	56.9	5.0%
Total		100.0%	15,142.7	0.0	0.0%	14,991.3	149.9	1.0%	14,841.4	296.8	2.0%	14,693.0	440.8	3.0%	14,546.0	581.8	4.0%	14,400.6	720.0	5.0%

Step 5. Construction and Demolition (C&D) Debris Generation and Diversion Projections

This tab will be used to create goals for the amount of C&D debris the planning unit will divert for each year of the planning period. These goals will be entered as percentages, based on how much of the material generated that will be diverted for recycling or beneficial use. The diversion goal percentages will be entered in the purple cells for each material and each year of the planning period.

2022-2031																				
			2026			2027			2028			2029			2030			2031		
		C&D Debris Materials Composition (%)	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted
Materials	Concrete/Asphalt /Rock/Brick	31.9%	4,545.3	272.7	6.0%	4,499.8	315.0	7.0%	4,454.8	356.4	8.0%	4,410.3	485.1	11.0%	4,366.2	480.3	11.0%	4,366.2	611.3	14.0%
	Wood	18.0%	2,573.0	154.4	6.0%	2,547.3	178.3	7.0%	2,521.8	201.7	8.0%	2,496.6	274.6	11.0%	2,471.6	271.9	11.0%	2,471.6	346.0	14.0%
	Roofing	4.7%	674.9	40.5	6.0%	668.2	46.8	7.0%	661.5	52.9	8.0%	654.9	72.0	11.0%	648.3	71.3	11.0%	648.3	90.8	14.0%
	Drywall	3.8%	541.5	32.5	6.0%	536.0	37.5	7.0%	530.7	42.5	8.0%	525.4	57.8	11.0%	520.1	57.2	11.0%	520.1	72.8	14.0%
	Soil/Gravel	23.3%	3,324.3	199.5	6.0%	3,291.1	230.4	7.0%	3,258.2	260.7	8.0%	3,225.6	354.8	11.0%	3,193.4	351.3	11.0%	3,193.4	447.1	14.0%
	Metal	6.6%	947.8	56.9	6.0%	938.3	65.7	7.0%	928.9	74.3	8.0%	919.6	101.2	11.0%	910.4	100.1	11.0%	910.4	127.5	14.0%
	Plastic	0.5%	65.0	3.9	6.0%	64.4	4.5	7.0%	63.7	5.1	8.0%	63.1	6.9	11.0%	62.4	6.9	11.0%	62.4	8.7	14.0%
	Corrugated /Paper	3.2%	458.5	27.5	6.0%	453.9	31.8	7.0%	449.4	35.9	8.0%	444.9	48.9	11.0%	440.4	48.4	11.0%	440.4	61.7	14.0%
	Other	7.9%	1,126.3	67.6	6.0%	1,115.0	78.1	7.0%	1,103.9	88.3	8.0%	1,092.8	120.2	11.0%	1,081.9	119.0	11.0%	1,081.9	151.5	14.0%
Total		100.0%	14,256.6	855.4	6.0%	14,114.0	988.0	7.0%	13,972.9	1,117.8	8.0%	13,833.1	1,521.6	11.0%	13,694.8	1,506.4	11.0%	13,557.8	1,917.3	14.1%

Appendix B

Copy of the Local Solid Waste and Recycling Law

Text Law should be given as amended. Do not include matter being eliminated and do not use italics or underlining to indicate new matter.

County

City

Town ofColumbia.....

Village-

Local Law No. .1..... of the year 1990.....

A local law...for the licensing of commercial solid waste transporters.....
(Insert title)

Be it enacted by the ...Board of Supervisors..... of the
(Name of Legislative Body)

County

City

Town-

Village-

of ...Columbia..... as follows:

Section 1. Legislative Declaration.

It is declared that regulation of commercial solid waste transporters is of importance to the health and safety of the inhabitants and residents of the County of Columbia.

Section 2. Definitions.

When used in this Local Law:

(a) "Commercial Solid Waste Collector" means a person, partnership, corporation or other business organization of any type or description which owns, drives, operates, hires, directs, controls, is lessee of, or is lessor of, a vehicle used for the collection and transportation of solid waste generated within Columbia County for a fee or compensation or the expectation of a fee or compensation.

(b) "Director of Solid Waste" means the Director of the Department of Solid Waste of the County of Columbia.

(c) "Disposal Facility" means a solid waste landfill site, a solid waste convenience station, or a solid waste transfer station owned or operated by the County of Columbia.

(d) "Disposal Facility Manager" means (1) a person designated by the Director of Solid Waste to manage and control the operation of a Disposal Facility and the activities thereat, (2) an employee of the County of Columbia who is employed at a Disposal Facility, and (3) the Columbia County Sheriff or one of his Deputy Sheriffs.

(e) "Person" means an individual, business corporation, not-for-profit corporation, industry, partnership, association, firm, trust, estate, or joint stock company.

(f) "Solid Waste" means ashes, bulk items, construction debris, garbage, and refuse.

(g) "Solid Waste Driver" means any person who, as a commercial solid waste collector or as an agent, employee, hiree, or independent contractor of a commercial solid waste collector, drives a vehicle which carries solid waste within the County of Columbia.

(If additional space is needed, please attach sheets of the same size as this and number each)

(h) "Recyclables" shall mean those materials which must be source separated as recyclable materials as defined under Local Law No. 7 of 1989, as may be amended from time to time.

(i) "Vehicle" means every device in, upon or by which any person or property is or may be transported or drawn upon a highway.

Section 3. License Required.

No commercial solid waste collector shall collect or transport any solid waste generated within the County of Columbia unless it has obtained a license from the Director of Solid Waste.

Section 4. License Requirements.

(a) An applicant for a license, or renewal thereof, as a commercial solid waste collector shall provide: (1) the name and address of the applicant if an individual, or, if other than an individual, the names and addresses of all owners of the applicant, except that the names of any person or entity owning less than 5% of the shares of a corporate-applicant need not be provided, (2) if a corporation, proof of authorization to conduct business in the State, (3) copies of certificates of registration for all vehicles to be used for the transportation of solid waste, and (4) evidence of security, from a reliable insurer or surety authorized to do business in New York State, in the form of policies of insurance or surety bonds providing liability coverage for bodily injury or property damage, including liability for environmental restoration resulting from negligence in the operation, maintenance or use of any motor vehicle involved in the transportation of solid waste, with a minimum limit of \$300,000.00.

(b) No license shall be issued to any applicant convicted of a misdemeanor or felony violation of any federal, state or local law pertaining to the collection or disposal of solid waste, or pertaining to antitrust, fair trade practices or consumer rights, unless the Director of Solid Waste finds that the denial of such license would not be in the interest of citizens of Columbia County needing waste disposal services.

(c) Any license issued hereunder shall be valid for a one (1) year period. The fee for initial issuance, and each renewal, of a license shall be twenty five dollars (\$25.00).

Section 5. Collection Requirements.

(a) Unless exempted by the Director of Solid Waste, any commercial solid waste collector offering to collect solid waste must also offer to collect recyclables. Commercial solid waste collectors may charge separate fees for the collection of solid waste and for collection of recyclables. Exemptions may be granted pursuant to rules and regulations issued by the Director of Solid Waste where the commercial solid waste collector collects only ashes, bulk items, or construction debris rather than mixed residential or mixed commercial refuse.

(b) Where a commercial solid waste collector establishes a regular schedule for the collection of mixed residential or mixed commercial refuse, the collector shall also establish a schedule to collect recyclables from such generators of mixed residential or mixed commercial refuse at least once every fourteen (14) days.

Section 6. Disposal of collected recyclables.

(a) Commercial solid waste collectors engaged in collecting recyclables generated within the County by the residential, commercial, industrial or institutional sectors shall keep recyclables separate from other solid wastes, shall handle recyclables in such a manner that they are not contaminated or destroyed, and shall deliver recyclables only to a solid waste management facility duly designated pursuant to this local law.

(b) The Director of Solid Waste may by rule establish schedules for the receipt of recyclables from commercial solid waste collectors so as to ensure a relatively uniform flow of recyclable materials to the County's processing facilities.

(c) Commercial solid waste collectors need not deliver collected recyclables to a duly designated solid waste management facility in the following circumstances:

- (i) they have access to markets for recyclables which provide a material economic benefit compared to disposal at the designated solid waste management facility, actually deliver or cause to be delivered recyclables to such markets on a regular basis, and can document access, material economic benefit, and actual delivery with contracts, receipts, bills of lading, affidavits, letters of intention, or other suitable records indicating the facts justifying exemption;
- (ii) they file on an annual basis an application for exemption with the Director, which application shall set forth on a prescribed form all information or facts justifying exemption from the operation of subdivision (a) hereinabove. They shall include copies of all pertinent documentation with such application; and
- (iii) they obtain written approval of the exemption from the Director, which approval shall not be unreasonably withheld or delayed.

(d) It shall be a violation of this local law for any commercial solid waste collector or solid waste driver to collect, handle or dispose of recyclables otherwise than as provided by this subsection 6.

Section 7. Maintenance and filing of solid waste manifests.

(a) Every solid waste driver shall maintain and have in his possession during the transportation of solid waste a written manifest which sets forth in chronological order all locations where, and the time when, solid waste was loaded into or upon the vehicle driven by said solid waste driver. The destination of the solid waste shall also be set forth in the manifest.

(b) As to locations of the loading of residential solid waste situate along a customary collection route, the loading locations may be set forth in the manifest by reference to the code number assigned by the Director of Solid Waste to a customary collection route master specification filed with him by the commercial solid waste transporter. As to residential locations situate along a customary collection route for which a customary collection route master specification has been filed, the manifest need not set forth the time of loading. A customary collection route master specification may be filed by a commercial solid waste transporter with the Director of Solid Waste in such format and containing such information as said Director in his discretion may require.

(c) As to locations other than residential solid waste locations along a customary collection route where solid waste was loaded into or upon the vehicle:

- (1) no entries relative to a location may be made in advance of actual loading, and
- (2) all entries must be made contemporaneously with the loading of solid waste into or upon the vehicle.

(d) The manifest shall be in such format, and shall contain such information in addition to the following minimum manifest requirements, as the Director of Solid Waste may deem sufficient to effectuate the provisions of this local law and said manifest may contain such other information as the Director of Solid Waste may in the exercise of his discretion require.

Minimum manifest requirements:

- (1) Entries shall be made by the driver only, in his own handwriting, except that the name and principal place of business of the commercial solid waste transporter may be printed.

- (2) The month, day and year for each calendar day the vehicle was loaded with solid waste shall be entered.
- (3) The vehicle's odometer reading at the first loading point of the day and the last loading point of the day prior to arriving at the disposal facility.
- (4) The vehicle's vehicle identification number or the vehicle's license number and the state of registration.
- (5) The name, residence address (including street name and number, City or Town, and State), date of birth, Social Security Number, and motorist identification number of the solid waste driver.
- (6) The destination of the solid waste in or on the vehicle.
- (7) The manifest shall contain a statement that the statements and information contained in the manifest are affirmed by the undersigned to be true, under the penalty of perjury.
- (8) The manifest shall contain a statement that "I, the undersigned, know that this written instrument will be filed with and will become part of the records of the Director of Solid Waste of the County of Columbia."
- (9) The manifest shall contain a warning that "THE MAKING OF A FALSE STATEMENT HEREIN IS PUNISHABLE BY LAW AS A CLASS A MISDEMEANOR (PENAL LAW SECTION 210.45)".

(e) Every commercial solid waste transporter shall file an updated and revised customary collection route master specification every four months, and said updated master specification shall set forth the date on which each new residential location became a customer of the commercial solid waste transporter.

(f) Every solid waste driver shall upon request of the Columbia County Sheriff or one of his Deputy Sheriffs, exhibit a manifest with fully completed entries for the vehicle driven by him and for all the solid waste carried therein and for all the sources of solid waste carried therein. Failure to produce such manifest upon request shall be presumptive evidence of a violation of subsections (a), (b), (c) and (d) of this subsection 7 of this local law.

(g) Every solid waste driver shall, prior to discharging his load of solid waste at a disposal facility within Columbia County, file with the Disposal Facility Manager a written manifest or manifests as described in subsections (a), (b), (c) and (d) of subsection 5 of this local law with all entries completed and signed at the end under the penalties of perjury by the solid waste driver who was driving the vehicle at the time the load of solid waste was placed in or upon said vehicle, or, if the vehicle was driven at different loading times by different drivers, then a separate manifest shall be completed and signed by each driver relative to the loads that were placed in or upon said vehicle while said driver was driving.

(h) Every solid waste driver discharging his load of solid waste at a disposal facility not within Columbia County shall determine the weight of the load of solid waste by scales of weights and measures and shall note on the manifest the weight of the solid waste disposed of. Within seven days thereafter, the solid waste driver shall file with the Director of Solid Waste for Columbia County the written manifests as described in subsections (a), (b), (c) and (d) of this local law with all entries completed and signed at the end under the penalties of perjury by the solid waste driver who was driving the vehicle at the time the load of solid waste was placed in or upon said vehicle, or, if the vehicle was driven at different loading times by different drivers, then a separate manifest shall be completed and signed by each driver relative to the loads that were placed in or upon said vehicle while said driver was driving.

(i) Failure to prepare a manifest, failure to make required entries therein, or falsification of entries by a solid waste driver shall make both (i) the vehicle's solid waste driver and (ii) the vehicle's commercial solid waste transporter liable to prosecution under this local law, and shall be justification for a Disposal Facility Manager to deny to the solid waste driver and/or the commercial transporter of solid waste permission to discharge the load of solid waste for which the manifest is either not presented for filing, incomplete or falsified.

(j) The requirements of this subsection 7 shall not apply to any solid waste driver operating an automobile or pick up truck having less than a level pick up load of solid waste.

Section 8. Penalties and Offenses.

(a) A violation of any subsection of any section of this local law shall be a violation and shall be punishable by imprisonment in the Columbia County Jail for not more than fifteen days, or by a fine of not more than two hundred fifty dollars (\$250.00) or by both such fine and imprisonment.

(b) Each commission of a single act shall constitute a separate violation of this local law, and each day of such violation shall constitute a separate offense, which may be punished and prosecuted as such.

Section 9. Suspension and payment upon completion of suspension in order to resume use of the disposal facility.

(a) The license of any commercial solid waste collector who is convicted of violating any subsection of any section of this local law after having been convicted of a violation of any subsection of any section of this local law twice within the preceding two years may be immediately suspended for thirty days by the Director of Solid Waste upon such conviction.

(b) In addition to the penalties herein set forth, any person who is convicted of violating any portion of this local law after having been convicted of a violation of any portion of this local law twice within the preceding two years shall be liable for payment to the County of Columbia of a civil penalty:

- (1) in the amount of \$1,000.00 a second conviction within the preceding two years; and
- (2) in the amount of \$5,000.00 after a third or subsequent conviction within the preceding two years.

(c) For the purpose of Subsections (a) and (b) of this Section 9, a prior conviction of a violation of any subsection of any section of this local law within the preceding two years (1) of any person's business partner, partner who is a partner in the partnership, employee, employer, shareholder, principal or agent, or (2) of the partnership of which the convicted person is a member or of the corporation in which the convicted person owns a share or shares of stock, shall be deemed a conviction of the person within the preceding two years.

Section 10. Regulations to be in addition to Federal & State Law.

The rules, regulations, prohibited acts and procedures established herein are in addition to any prohibited acts, rules or regulations prescribed by statutes of the United States and the State of New York to the extent that the same are more severe in their application than this chapter.

Section 11. Validity and Severability.

If any section or part of this local law is declared invalid or unconstitutional, it shall not be held to invalidate or impair the validity, force or effect of any other section of this local law.

Section 12. Effective Date.

This local law shall take effect upon filing with the Secretary of State.

(Complete the certification in the paragraph which applies to the filing of this local law and strike out the matter therein which is not applicable.)

1. (Final adoption by local legislative body only.)

I hereby certify that the local law annexed hereto, designated as local law No. 1 of 19 20....
County
City
of the Town of Columbia was duly passed by the .. Board of Supervisors
Village (Name of Legislative Body)
on ...January 10..... 19 20.... in accordance with the applicable provisions of law.

2. (Passage by local legislative body with approval or no disapproval by Elective Chief Executive Officer,* or repassage after disapproval.)

I hereby certify that the local law annexed hereto, designated as local law No. of 19.....
County
City
of the Town of was duly passed by the
Village (Name of Legislative Body)
on 19 not disapproved
and was approved by the
repassed after disapproval Elective Chief Executive Officer*
and was deemed duly adopted on 19, in accordance with the applicable provisions of law.

3. (Final adoption by referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. of 19.....
County
City
of the Town of was duly passed by the
Village (Name of Legislative Body)
on 19 not disapproved
and was approved by the
repassed after disapproval Elective Chief Executive Officer*
on 19 Such local law was submitted to the people by reason of a
mandatory referendum, and received the affirmative vote of a majority of the qualified electors voting
permissive referendum, and received the affirmative vote of a majority of the qualified electors voting
general
thereon at the special election held on 19, in accordance with the applicable
annual
provisions of law.

4. (Subject to permissive referendum, and final adoption because no valid petition filed requesting referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. of 19.....
County
City
of the Town of was duly passed by the
Village (Name of Legislative Body)
on 19 not disapproved
and was approved by the
repassed after disapproval Elective Chief Executive Officer*
on 19 Such local law being subject to a permissive referendum and no
valid petition requesting such referendum having been filed, said local law was deemed duly adopted
on 19, in accordance with the applicable provisions of law.

*Elective Chief Executive Officer means or includes the chief executive officer of a county elected on a county-wide basis or, if there be none, the chairman of the county legislative body, the mayor of a city or village or the supervisor of a town where such officer is vested with power to approve or veto local laws or ordinances.

~~5. (City local law concerning Charter revision proposed by petition.)~~

I hereby certify that the local law annexed hereto, designated as local law No. of 19
of the City of having been submitted to referendum pursuant to the
provisions of ~~§36~~^{§37} of the Municipal Home Rule Law, and having received the affirmative vote of a
majority of the qualified electors of such city voting thereon at the ^{special}~~general~~ election held on
..... 19..... became operative:

6. (County local law concerning adoption of Charter.)

~~I hereby certify that the local law annexed hereto, designated as local law No. of 19.....
of the County of, State of New York, having been submitted to the Electors at the
General Election of November, 19....., pursuant to subdivisions 5 and 7 of section 33 of the
Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors
of the cities of said county as a unit and of a majority of the qualified electors of the towns of said county
considered as a unit voting at said general election, became operative.~~

~~(If any other authorized form of final adoption has been followed, please provide an appropriate certifica-
tion.)~~

I further certify that I have compared the preceding local law with the original on file in this office
and that the same is a correct transcript therefrom and of the whole of such original local law, and was
finally adopted in the manner indicated in paragraph1..... above.

Betty L. Laurange
Clerk of the County legislative body, City, Town or Village Clerk or
officer designated by local legislative body

Betty Laurange

Date: January 11, 1990

(Seal)

(Certification to be executed by County Attorney, Corporation Counsel, Town Attorney, Village Attorney or
other authorized Attorney of locality.)

STATE OF NEW YORK

COUNTY OF COLUMBIA.....

I, the undersigned, hereby certify that the foregoing local law contains the correct text and that all
proper proceedings have been had or taken for the enactment of the local law annexed hereto.

William J. Spampinato
.....
William J. Spampinato
Signature

..... Columbia County Attorney
Title

Date: January 11, 1990

County
City of ... Columbia
Town
Village

5. (City local law concerning Charter revision proposed by petition.)

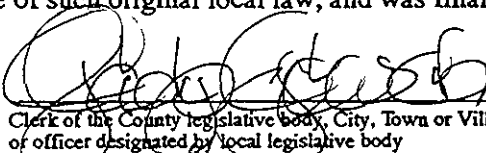
I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the City of _____ having been submitted to referendum pursuant to the provisions of section (36)(37) of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of such city voting thereon at the (special)(general) election held on _____ 20____, became operative.

6. (County local law concerning adoption of Charter.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the County of _____ State of New York, having been submitted to the electors at the General Election of November _____ 20____, pursuant to subdivisions 5 and 7 of section 33 of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of the cities of said county as a unit and a majority of the qualified electors of the towns of said county considered as a unit voting at said general election, became operative.

(If any other authorized form of final adoption has been followed, please provide an appropriate certification.)

I further certify that I have compared the preceding local law with the original on file in this office and that the same is a correct transcript therefrom and of the whole of such original local law, and was finally adopted in the manner indicated in paragraph _____, above.


Clerk of the County legislative body, City, Town or Village Clerk
or officer designated by local legislative body

(Seal)

Date: Nov. 15, 2001

(Certification to be executed by County Attorney, Corporation Counsel, Town Attorney, Village Attorney or other authorized attorney of locality.)

STATE OF NEW YORK
COUNTY OF COLUMBIA

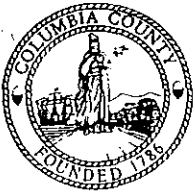
I, the undersigned, hereby certify that the foregoing local law contains the correct text and that all proper proceedings have been had or taken for the enactment of the local law annexed hereto.


Signature

COLUMBIA COUNTY ATTORNEY
Title

County
~~City~~
~~Town~~ of COLUMBIA
~~Village~~

Date: 11.14.01



Columbia County Board of Supervisors

401 State Street Office Building
Hudson, New York 12534

GERALD SIMONS DONALD KLINE
CHAIRMAN DEPUTY CHAIRMAN

GLADYS GOESCH
Clerk

COMMITTEE CHAIRMEN:

Telephone (518) 828-1527
Fax (518) 822-0684

MELISSA PULLEN
Deputy Clerk

PETER GABEL - Finance
DONALD KLINE - Public Works/County Wide Services
JOHN FUNK - County Government/Operations
GEORGE SHARPE - Legal
ELIZABETH YOUNG - Agriculture/Human Services
TOD GRENCI - Tourism/Solid Waste
LEE KONKLE - Health/Mental Health
DAVID DWY - Pine Haven
WILLIAM ANGLUM - Property/Facilities
LEONARD DOOREN - Education
GAIL GRANDINETTI - Salary Review/Computer
BENJAMIN MURELL - 560 Warren
ALBERT WHEELER - Insurance/Personnel
JAMES KEEGAN - Court House

DONALD R. KLINE
Majority Leader

JAMES DOLAN, SR.
Minority Leader

April 15, 1999

State Records and Law Bureau
Department of State
41 State Street
Albany, New York 12231

Gentlemen:

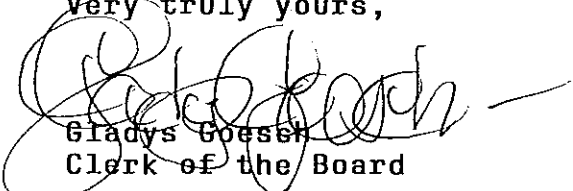
Enclosed please find an original copy of Columbia County's
Local Law #1 of 1999.

Local Law #1-99 entitled:

AMENDING LOCAL LAW #2-1994, SECTION 1 DEFINITION OF
"RECYCLABLE" TO EXCLUDE PVC (#3) AND PP (#5) PLASTIC
CONTAINERS.

I would appreciate this law being filed.

Very truly yours,


Gladys Goesch
Clerk of the Board

Encl:

cc: County Treasurer
County Attorney
County Clerk
✓ Local Law Book

(Use this form to file a local law with the Secretary of State.)

Text of law should be given as amended. Do not include matter being eliminated and do not use italics or underlining to indicate new matter.

County

~~City~~ of Columbia
~~Town~~
~~Village~~

Local Law No. 1 of the year 1999

A local law AMENDING LOCAL LAW #2-1994, SECTION 1 - DEFINITION OF "RECYCLABLE"
(Insert Title)

TO EXCLUDE PVC (#3) AND PP (#5) PLASTIC CONTAINERS.

Be it enacted by the Board of Supervisors of the
(Name of Legislative Body)

County

~~City~~ of Columbia as follows:
~~Town~~
~~Village~~

Section 1

Subsection (g) of Section 2 of Columbia County Local Law No. 2 of 1994 is hereby repealed and is hereby superseded by the following subsection (g) which is hereby enacted:

(g) "Recyclable" shall mean the following materials: newsprint, glossies, magazines, brown kraft bags, computer printout (COP and non-laser) white and colored ledger paper; unbroken clear (flint), green and brown glass containers, tin and aluminum cans; aluminum, copper, brass and stainless steel; corrugated cardboard; aluminum foil, HDPE (SPI No.2), PET (SPI, No.1) plastic containers (excluding motor oil containers); plastic coated paper milk and juice cartons; motor vehicle batteries; motor vehicle tires; and scrap metal including miscellaneous iron, steel and white goods (appliances).

Section 2

This Local Law shall take effect immediately upon filing with the Secretary of the State of New York.

(If additional space is needed, attach pages the same size as this sheet, and number each.)

(Complete the certification in the paragraph that applies to the filing of this local law and strike out that which is not applicable.)

1. (Final adoption by local legislative body only.)

I hereby certify that the local law annexed hereto, designated as local law No.1..... of 19..99.. of the (County)(City)(Town)(Village) ofCOLUMBIA..... was duly passed by theBOARD OF SUPERVISORS..... on APRIL 14..... 19..99, in accordance with the applicable provisions of law.
(Name of Legislative Body)

~~2. (Passage by local legislative body with approval, no disapproval or repassage after disapproval by the Elective Chief Executive Officer*.)~~

~~I hereby certify that the local law annexed hereto, designated as local law No. of 19..... of the (County)(City)(Town)(Village) of was duly passed by the on 19...., and was (approved)(not approved)(repassed after disapproval) by the and was deemed duly adopted on 19...., in accordance with the applicable provisions of law.~~
(Name of Legislative Body)
(Elective Chief Executive Officer*)

~~3. (Final adoption by referendum.)~~

~~I hereby certify that the local law annexed hereto, designated as local law No. of 19..... of the (County)(City)(Town)(Village) of was duly passed by the on 19...., and was (approved)(not approved)(repassed after disapproval) by the on 19.... . Such local law was submitted to the people by reason of a (mandatory)(permissive) referendum, and received the affirmative vote of a majority of the qualified electors voting thereon at the (general)(special)(annual) election held on 19...., in accordance with the applicable provisions of law.~~
(Name of Legislative Body)
(Elective Chief Executive Officer*)

~~4. (Subject to permissive referendum and final adoption because no valid petition was filed requesting referendum.)~~

~~I hereby certify that the local law annexed hereto, designated as local law No. of 19..... of the (County)(City)(Town)(Village) of was duly passed by the on 19...., and was (approved)(not approved)(repassed after disapproval) by the on 19.... . Such local law was subject to permissive referendum and no valid petition requesting such referendum was filed as of 19...., in accordance with the applicable provisions of law.~~
(Name of Legislative Body)
(Elective Chief Executive Officer*)

* Elective Chief Executive Officer means or includes the chief executive officer of a county elected on a county-wide basis or, if there be none, the chairperson of the county legislative body, the mayor of a city or village, or the supervisor of a town where such officer is vested with the power to approve or veto local laws or ordinances.

5. (City local law concerning Charter revision proposed by petition.)

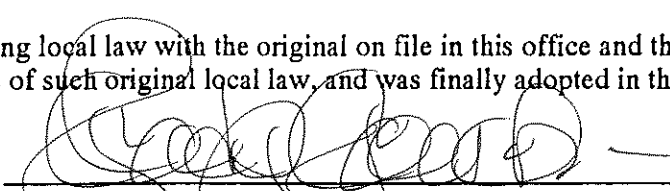
I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the City of _____ having been submitted to referendum pursuant to the provisions of section (36)(37) of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of such city voting thereon at the (special)(general) election held on _____ 19____, became operative.

6. (County local law concerning adoption of Charter.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the County of _____ State of New York, having been submitted to the electors at the General Election of November _____ 19____, pursuant to subdivisions 5 and 7 of section 33 of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of the cities of said county as a unit and a majority of the qualified electors of the towns of said county considered as a unit voting at said general election, became operative.

(If any other authorized form of final adoption has been followed, please provide an appropriate certification.)

I further certify that I have compared the preceding local law with the original on file in this office and that the same is a correct transcript therefrom and of the whole of such original local law, and was finally adopted in the manner indicated in paragraph _____, above.



Clerk of the County legislative body, City, Town or Village Clerk
or officer designated by local legislative body

Date: April 15, 1999

(Seal)

(Certification to be executed by County Attorney, Corporation Counsel, Town Attorney, Village Attorney or other authorized attorney of locality.)

STATE OF NEW YORK
COUNTY OF COLUMBIA

I, the undersigned, hereby certify that the foregoing local law contains the correct text and that all proper proceedings have been had or taken for the enactment of the local law annexed hereto.



Signature

COLUMBIA COUNTY ATTORNEY

Title

County

~~XXW~~ of COLUMBIA

~~XXX~~

~~XXXXX~~

Date: APRIL 14, 1999

Local Law Filing

NEW YORK STATE DEPARTMENT OF STATE
162 WASHINGTON AVENUE, ALBANY, NY 12231

(Use this form to file a local law with the Secretary of State.)

Text of law should be given as amended. Do not include matter being eliminated and do not use italics or underlining to indicate new matter.

County

~~City~~

Columbia

~~Town~~

~~Village~~

Local Law No. 2 of the year 19 94

A local law AMENDING LOCAL LAW NO. 7 OF 1989 "A LOCAL LAW PROVIDING FOR
(Insert Title)
MANDATORY SOURCE SEPARATION OF RECYCLABLE MATERIAL.

Be it enacted by the Board of Supervisors of the
(Name of Legislative Body)

County

~~City~~

Columbia

~~Town~~

~~Village~~

as follows:

SECTION 1.

Subsection (g) of Section 2 of Columbia County Local Law No. 7 of 1989 is hereby repealed and is hereby superseded by the following subsection (g) which is hereby enacted:

(g) "Recyclable" shall mean the following materials: newsprint, glossies, magazines, brown kraft bags, computer printout (COP and non-laser) white and colored ledger paper; unbroken clear (flint), green, and brown glass containers; tin and aluminum cans; aluminum, copper, brass and stainless steel; corrugated cardboard; aluminum foil HDPE (SPI No. 2), PET (SPI No.1) PVC (SPI No 3); and PP (SPI No.5) plastic containers, (excluding motor oil containers); plastic coated paper milk and juice cartons; motor vehicle batteries; motor vehicle tires; and scrap metal including miscellaneous iron, steel, and white goods (appliances).

SECTION 2.

Subsection (a) of Section 3 of Columbia County Local law No. 7 of 1989 is hereby repealed and is hereby superseded by the following subsection (a) which is hereby enacted:

(a) The Director may from time to time determine that certain materials contained in solid waste generated or brought within the County are "recyclable" or that certain materials included or

(If additional space is needed, attach pages the same size as this sheet, and number each.)

hereafter included in the local law's definition of "recyclable" are no longer recyclable. Upon any such determination, the Director shall submit a written report to the Board of Supervisors recommending that such materials be added to, or deleted from, the definition of "recyclable" and providing the reasons and data supporting such inclusion or deletion. The Board of Supervisors is hereby authorized to amend, by one or more resolutions of the Columbia County Board of Supervisors the definition of "recyclable". The Columbia County Board of Supervisors determination in all cases shall be based on an evaluation on whether economic markets exist for alternate uses of such materials. The term "economic markets" refers to instances in which the full avoided costs to the County of Columbia of proper collection, transportation and disposal of source separated materials are equal to or greater than the cost to the County of Columbia of collection, transportation and sale of said material less the amount received from the sale of said material by the County of Columbia.

SECTION 3:

Subsection (d) of Section 3 of Columbia County Local Law No. 7 of the year 1989 is hereby repealed and is hereby superseded by the following subsection (d) of Section 3 which is hereby enacted:

- (i) Washing of glass and/or metal containers;
- (ii) Removal of caps, lids, and removal of labels from glass, cans and plastic;
- (iii) Placement in designated or properly labeled containers, where practical;
- (iv) Sorting into different categories of recyclable;

SECTION 4:

Subsection (e) of Section 3 of Columbia County Local Law No. 7 of the year 1989 is hereby added;

It shall be a violation of this local law for any person without authority of the County to collect, pick up, remove, or cause to be collected, picked up, or removed, any recyclable placed for collection at a drop-off area. Each such unauthorized collection, pick up, or removal from a drop-off area shall constitute a separate and distinct violation of this local law.

SECTION 5.

Subsection 2(b) of Section 3 of Columbia County Local Law No. 7 of the year 1989 is hereby superseded by the following subsection (b) of Section 3 which is hereby enacted;

Wherever household collection of recyclable is not available, or where persons choose not to use such collection service, persons wishing to dispose of recyclable must deliver or make arrangements to have them delivered, properly separated and prepared, to a solid waste management facility or to any drop-off area which the Columbia County Board of Supervisors may from time to time designate.

SECTION 6. Prior Laws

All other Local Laws and/or parts of Local Laws inconsistent herewith are hereby repealed to the extent of such inconsistency.

SECTION 7. Validity and Severability.

If any section or part of this Local Law is declared invalid or unconstitutional, it shall not be held to invalidate or impair the validity, force or effect of any other section of this Local Law.

SECTION 8. Effective Date.

This Local Law shall be effective upon its filing with the New York State Secretary of State.

(Complete the certification in the paragraph that applies to the filing of this local law and strike out that which is not applicable.)

1. (Final adoption by local legislative body only.)

I hereby certify that the local law annexed hereto, designated as local law No. 2 of 1994 of the (County)(~~City~~)(~~Town~~)(~~Village~~) of COLUMBIA was duly passed by the BOARD OF SUPERVISORS on JULY 13, 1994, in accordance with the applicable provisions of law.
(Name of Legislative Body)

2. (Passage by local legislative body with approval, no disapproval or repassage after disapproval by the Elective Chief Executive Officer*.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 19____, and was (approved)(not approved)(repassed after disapproval) by the _____ and was deemed duly adopted on _____ 19____, in accordance with the applicable provisions of law.
(Name of Legislative Body)
(Elective Chief Executive Officer*)

3. (Final adoption by referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 19____, and was (approved)(not approved)(repassed after disapproval) by the _____ on _____ 19____. Such local law was submitted to the people by reason of a (mandatory)(permissive) referendum, and received the affirmative vote of a majority of the qualified electors voting thereon at the (general)(special)(annual) election held on _____ 19____, in accordance with the applicable provisions of law.
(Name of Legislative Body)
(Elective Chief Executive Officer*)

4. (Subject to permissive referendum and final adoption because no valid petition was filed requesting referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 19____, and was (approved)(not approved)(repassed after disapproval) by the _____ on _____ 19____. Such local law was subject to permissive referendum and no valid petition requesting such referendum was filed as of _____ 19____, in accordance with the applicable provisions of law.
(Name of Legislative Body)
(Elective Chief Executive Officer*)

* Elective Chief Executive Officer means or includes the chief executive officer of a county elected on a county-wide basis or, if there be none, the chairperson of the county legislative body, the mayor of a city or village, or the supervisor of a town where such officer is vested with the power to approve or veto local laws or ordinances.

5. (City local law concerning Charter revision proposed by petition.)

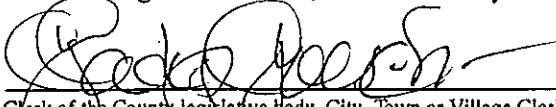
I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the City of _____ having been submitted to referendum pursuant to the provisions of section (36)(37) of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of such city voting thereon at the (special)(general) election held on _____ 19____, became operative.

6. (County local law concerning adoption of Charter.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 19____ of the County of _____ State of New York, having been submitted to the electors at the General Election of November _____ 19____, pursuant to subdivisions 5 and 7 of section 33 of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of the cities of said county as a unit and a majority of the qualified electors of the towns of said county considered as a unit voting at said general election, became operative.

(If any other authorized form of final adoption has been followed, please provide an appropriate certification.)

I further certify that I have compared the preceding local law with the original on file in this office and that the same is a correct transcript therefrom and of the whole of such original local law, and was finally adopted in the manner indicated in paragraph 1, above.



Clerk of the County legislative body, City, Town or Village Clerk
or officer designated by local legislative body

GLADYS GOESCH

(Seal)

Date: JULY 13, 1994

(Certification to be executed by County Attorney, Corporation Counsel, Town Attorney, Village Attorney or other authorized attorney of locality.)

STATE OF NEW YORK
COUNTY OF COLUMBIA

I, the undersigned, hereby certify that the foregoing local law contains the correct text and that all proper proceedings have been had or taken for the enactment of the local law annexed hereto.



Signature

COLUMBIA COUNTY ATTORNEY

Title

County
~~XXX~~ of COLUMBIA
~~XXXX~~
~~XXXXXX~~

Date: JULY 13, 1994

Text of law should be given as amended. Do not include matter being eliminated and do not use italics or underlining to indicate new matter

County

~~City~~

of ..Columbia.....

~~Town~~

Village

Local Law No. ...7..... of the year 1989.....

A local law ..providing for mandatory source separation of recyclable.....
materials. (Insert title)

Be it enacted by theBoard of Supervisors..... of the
(Name of Legislative Body)

County

~~City~~

of ..Columbia..... as follows:

~~Town~~

Village

Section 1. Legislative Declaration.

It is declared that a reduction of solid waste through separation and removal of recyclable materials from the waste stream is of importance to the economic welfare of the residents of the County of Columbia and will help to promote the health and general welfare of its citizens.

Section 2. Definitions.

When used in this Local Law:

a) "Commercial Sector" shall mean those persons generating solid waste at businesses, including retail stores, banks and financial institutions, business and professional offices, personal service establishments, mortuaries and funeral homes, restaurants, taverns, hotels, motels, theatres, recreational establishments, pet shops and veterinary establishments, automobile sales establishments, gasoline stations, car washes, and agricultural endeavors and such other business endeavors although not specifically defined herein.

b) "Household collection" shall mean the practice whereby solid waste, including separated recyclables, generated by the residential sector is placed at or near the roadside, or other appropriate location at residential property, to be picked up by a hauler for transportation to a solid waste management facility.

c) "Director" shall mean the Director of Solid Waste for Columbia County.

d) "Drop-off area" shall mean any area designated from time to time by the Director of Solid Waste where persons can bring recyclables for aggregation and further transport to a solid waste management facility.

e) "Industrial sector" shall mean those persons generating solid waste at establishments primarily concerned with manufacturing or other substantial physical/chemical processing of materials, which operations result in strong or offensive odors; vibrations; excessive noise, smoke, dirt; or heavy truck traffic, including: manufacturing establishments; warehouses and wholesale distributors; freight and trucking terminals; and heavy machinery sales, service, and repairs.

(If additional space is needed, please attach sheets of the same size as this and number each)

f) "Institutional sector" shall mean those persons generating solid waste at public, eleemosynary, and similar establishments, including schools, churches, hospitals, psychiatric centers, government offices and garages, and nursing homes.

g) "Recyclables" shall mean the following materials: newsprint; unbroken clear (flint), green and brown glass containers; tin cans; aluminum, copper, brass and stainless steel; corrugated cardboard; high density polyethylene (HDPE) containers; motor vehicle batteries; motor vehicle tires up to and including size 9.00/16.5 (metric 235/85R16); and scrap metal, including miscellaneous iron, steel and white metals (appliances).

i) "Residential sector" shall mean those persons generating solid waste at single and multiple residences, boardinghouses, dormitories, mobile home parks, temporary residences and camps.

Section 3. Source Separation of Recyclables.

1. Generally

a. The Director may from time to time determine that certain materials contained in solid waste generated or brought within the County are "recyclables" or that certain materials included or hereafter included in this local law's definition of "recyclables" are no longer recyclable. Upon any such determination, the Director shall submit a written report to the Board of Supervisors recommending that such materials be added to, or deleted from, the definition of "recyclables" and providing the reasons and data supporting such inclusion or deletion. The Director's determination shall in all cases be based on an evaluation whether economic markets exist for alternate uses of such materials. The term "economic markets" refers to instances in which the full avoided costs to the County of Columbia of proper collection, transportation and disposal of source separated materials are equal to or greater than the cost to the County of Columbia of collection, transportation and sale of said material less the amount received from the sale of said material by the County of Columbia.

b. In making recommendations pursuant to this subdivision, the Director may recommend that a material be recyclable only for the residential sector, commercial sector, industrial sector, or institutional sector, or any combination thereof.

c. All persons shall separate recyclables from other solid waste when preparing the same for transportation, collection, pickup or removal by placing recyclables in one or more separate containers. It shall be a violation of this local law for any person to place for collection any container which contains recyclables mixed with other solid wastes. It shall be a violation of this local law for any person to deliver to a drop-off area or a solid waste management facility any load which contains recyclables mixed with other solid wastes.

d. Recyclables delivered to a solid waste management facility shall be prepared in accordance with all rules or regulations promulgated by the Director, which rules and regulations shall be filed with the Clerk of the Board of Supervisors. Such rules and regulations for preparation may include, but shall not be limited to:

- i) removal of glossy inserts or wet or damp materials from newsprint;
- ii) washing of glass and/or metal containers;
- iii) flattening of cans and plastic containers;
- iv) removal of caps, lids, and metal or plastic neck bands from glass containers;
- v) removal of broken glass;
- vi) placement in designated or properly labeled containers, where practical;
- vii) sorting into different categories of recyclables.

2. Procedures for Residential Sector

The following procedures shall apply to the residential sector:

a. Wherever household collection of recyclables is available from a commercial or municipal hauler, persons choosing to use such collection services shall place their recyclables for collection properly separated, prepared, and containerized, and in accordance with any rules established by said commercial or municipal hauler.

b. Wherever household collection of recyclables is not available, or where persons choose not to use such collection service, persons wishing to dispose of recyclables must deliver or make arrangements to have them delivered, properly separated and prepared, to a solid waste management facility or to any drop-off area which the Director may from time to time designate. It shall be a violation of this local law for any person without authority of the County to collect, pick up, remove, or cause to be collected, picked up, or removed, any recyclables placed for collection at a drop-off area. Each such unauthorized collection, pick up, or removal from a drop-off area shall constitute a separate and distinct violation of this local law.

c. It shall be a violation of this local law for any person in the residential sector to dispose of recyclables within the County of Columbia otherwise than as provided by this subsection (2).

3. Procedures for the Commercial, Industrial and Institutional Sectors.

The following procedures shall apply to the commercial, industrial and institutional sectors:

a. Persons wishing to dispose of recyclables shall deliver or make arrangements with a commercial or municipal hauler to deliver recyclables, properly separated and prepared, to a solid waste management facility duly designated pursuant to this local law.

b. Although all persons from the commercial, industrial, or institutional sectors must separate recyclables from other solid waste in accordance with the general provisions of this local law, they need not deliver or make arrangements with a hauler to deliver said recyclables to a duly designated solid waste management facility in the following circumstances:

- i) they have access to markets for recyclables which provide a material economic benefit compared to disposal at the designated solid waste management facility, actually deliver or cause to be delivered recyclables to such markets on a regular basis, and can document access, material economic benefit, and actual delivery with contracts, receipts, bills of lading, affidavits, letters of intention, or other suitable records indicating the facts justifying exemption;
- ii) they file on an annual basis an application for exemption with the Director, which application shall set forth on a prescribed form all information or facts justifying exemption from the operation of subdivisions (a) and (b) hereinabove. They shall include copies of all pertinent documentation with such application; and
- iii) they obtain written approval of the exemption from the Director, which approval shall not be unreasonably withheld or delayed.

c. It shall be a violation of this local law for any person in the commercial, industrial or institutional sectors to dispose of recyclables otherwise than as provided by this subsection (3).

4. Disposal of Collected Recyclables by Haulers

a. Municipal or commercial haulers engaged in collecting recyclables generated within the County by the residential, commercial, industrial, or institutional sectors shall keep recyclables separate from other solid wastes, shall handle recyclables in such a manner that they are not contaminated or destroyed, and shall deliver recyclables only to a solid waste management facility duly designated pursuant to this local law.

b. Haulers need not deliver collected recyclables to a duly designated solid waste management facility in the following circumstances:

- i) they have access to markets for recyclables which provide a material economic benefit compared to disposal at the designated solid waste management facility, actually deliver or cause to be delivered recyclables to such markets on a regular basis, and can document access, material economic benefit, and actual delivery with contracts, receipts, bills of lading, affidavits, letters of intention, or other suitable records indicating the facts justifying exemption;
- ii) they file on an annual basis an application for exemption with the Director, which application shall set forth on a prescribed form all information or facts justifying exemption from the operation of subdivision (a) hereinabove. They shall include copies of all pertinent documentation with such application; and
- iii) they obtain written approval of the exemption from the Director, which approval shall not be unreasonably withheld or delayed.

c. It shall be a violation of this local law for any municipal or commercial hauler to collect, handle or dispose of recyclables otherwise than as provided by this subsection (4).

Section 4. Rules and Regulations.

The Director of Solid Waste shall have the power to adopt and promulgate, amend and repeal such rules and regulations as in his discretion are necessary or desirable to carry out, interpret, and enforce the intent and purposes of this local law. Notwithstanding this power, any failure to adopt and promulgate such rules and regulations shall not impair the enforceability of this local law in a Court of competent jurisdiction.

Section 5. Penalties for Offenses.

(a) Any violation of this local law shall be punishable by imprisonment in the Columbia County Jail for not more than fifteen days, or by a fine of not more than two hundred fifty dollars (\$250.00) or by both such fine and imprisonment.

(b) Each commission of a single act shall constitute a separate violation of this local law, and each day of such violation shall constitute a separate offense, which may be punished and prosecuted as such.

(c) In addition to the penalties herein set forth, any person or entity who is convicted of violating any portion of this Local Law after having been convicted of a violation of any portion of this Local Law within the preceeding five years shall be liable for payment to the County of Columbia of a civil penalty:

- (i) in the amount of \$1,000.00 upon a third conviction within the preceeding five years; and
- (ii) in the amount of \$2,000.00 upon a fourth or subsequent conviction within the preceeding five years.

Section 6. Prior Laws.

All other local laws and/or parts of local laws inconsistent herewith are hereby repealed to the extent of such inconsistency.

Section 7. Validity and Severability.

If any section or part of this local law is declared invalid or unconstitutional, it shall not be held to invalidate or impair the validity, force or effect of any other section of this local law.

Section 8. Effective Date.

This Local Law shall be effective November 1, 1989.

(Complete the certification in the paragraph which applies to the filing of this local law and strike out the matter therein which is not applicable.)

1. (Final adoption by local legislative body only.)

I hereby certify that the local law annexed hereto, designated as local law No. ..7..... of 1989.....
County
City
of the Town of ..Columbia... was duly passed by the Board of Supervisors.....
Village- (Name of Legislative Body)
onJune..14..... 19 .89... in accordance with the applicable provisions of law.

~~2. (Passage by local legislative body with approval or no disapproval by Elective Chief Executive Officer* or repassage after disapproval.)~~

~~I hereby certify that the local law annexed hereto, designated as local law No. of 19.....
County
City
of the Town of was duly passed by the
Village- (Name of Legislative Body)
on 19 not disapproved
and was approved by the
repassed after disapproval Elective Chief Executive Officer*
and was deemed duly adopted on 19, in accordance with the applicable
provisions of law.~~

3. (Final adoption by referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. of 19
County
City
of the Town of was duly passed by the
Village- (Name of Legislative Body)
on 19 not disapproved
and was approved by the
repassed after disapproval Elective Chief Executive Officer*
on 19 Such local law was submitted to the people by reason of a
mandatory referendum, and received the affirmative vote of a majority of the qualified electors voting
permissive
thereon at the special election held on 19, in accordance with the applicable
annual provisions of law.

~~4. (Subject to permissive referendum, and final adoption because no valid petition filed requesting referendum.)~~

~~I hereby certify that the local law annexed hereto, designated as local law No. of 19
County
City
of the Town of was duly passed by the
Village- (Name of Legislative Body)
on 19 not disapproved
and was approved by the
repassed after disapproval Elective Chief Executive Officer*
on 19 Such local law being subject to a permissive referendum and no
valid petition requesting such referendum having been filed, said local law was deemed duly adopted
on 19, in accordance with the applicable provisions of law.~~

*Elective Chief Executive Officer means or includes the chief executive officer of a county elected on a county-wide basis or, if there be none, the chairman of the county legislative body, the mayor of a city or village or the supervisor of a town where such officer is vested with power to approve or veto local laws or ordinances.

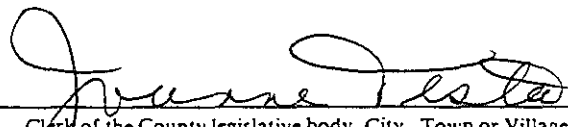
5. (City local law concerning Charter revision proposed by petition.)

I hereby certify that the local law annexed hereto, designated as local law No. of 19 of the City of having been submitted to referendum pursuant to the provisions of ~~§36~~ ^{§37} of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of such city voting thereon at the ^{special} ~~general~~ election held on 19 became operative.

6. (County local law concerning adoption of Charter.)

I hereby certify that the local law annexed hereto, designated as local law No. of 19 of the County of, State of New York, having been submitted to the Electors at the General Election of November, 19, pursuant to subdivisions 5 and 7 of section 33 of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of the cities of said county as a unit and of a majority of the qualified electors of the towns of said county considered as a unit voting at said general election, became operative.
(If any other authorized form of final adoption has been followed, please provide an appropriate certification.)

I further certify that I have compared the preceding local law with the original on file in this office and that the same is a correct transcript therefrom and of the whole of such original local law, and was finally adopted in the manner indicated in paragraph1..... above.


Clerk of the County legislative body, City, Town or Village Clerk or
officer designated by local legislative body

Joanne Testa

Date: June 19, 1989

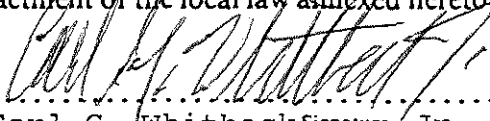
(Seal)

(Certification to be executed by County Attorney, Corporation Counsel, Town Attorney, Village Attorney or other authorized Attorney of locality.)

STATE OF NEW YORK

COUNTY OF COLUMBIA.....

I, the undersigned, hereby certify that the foregoing local law contains the correct text and that all proper proceedings have been had or taken for the enactment of the local law annexed hereto.


.....
Carl G. Whitbeck Signature Jr.

.....Columbia County Attorney.....
Title

Date: June 19, 1989

County
City ofColumbia.....
Town
Village

Appendix C

Existing Educational Flyer

In response to public feedback, the Columbia County Solid Waste Department will be working with a local vendor to start a pilot food scrap program at the County waste stations. The program will start at the Chatham and Copake Convenience Stations and expand to the other stations once we find out the quality and volume of material we are accepting.

It is the long range goal of the Solid Waste Department to expand this program to include local community gardens and programs already operating in the County in an attempt to make this a closed loop system.

As this is a pilot program, there is no charge at this time. Bins are available at the Chatham & Copake stations and below are the food scraps that will be accepted. We will update as we expand the program.



Appendix D

Alternative Technology Evaluation

Implementation Item: 1

Title: Promote Waste Reduction Programs

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

The Waste Reduction Program is expected to reduce select MSW waste volumes by <5%.

Types and Sizing of Facilities or Program:

This program would not affect sizing of current facilities and there would be no infrastructure required by the County. Waste reduction allows the facilities within the planning unit to stay the same size; additional space for waste processing is not anticipated to be necessary.

Summary of Cost Data for Evaluation:

Waste reductions efforts are not expected to have a measurable cost to the County or residents. Efforts put forth by County staff to implement waste reduction measures are anticipated to be offset by a savings on disposal cost and material purchasing.

Impact on Natural Resource Conservation, Energy Production and, Employment:

MSW reduction is expected to conserve natural resources. Energy production and job creation is not anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Albany (NY), Greene (NY), Rensselaer (NY), Dutchess (NY), Ulster (NY), and Berkshire (MA) Counties could potentially participate with Columbia County in the Waste Reduction Program. A consistent message between planning units could be useful in education efforts in communities near the county borders.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

According to the NYSDEC Environmental Justice Area Mapper, there are eleven potential environmental justice areas located in Columbia County, in the Towns of Greensport, Claverack, and Chatham, and the Villages of Hudson and Philmont. There is no known or expected environmental justice impact in Columbia County associated with waste reduction.

Selected Alternatives Identification:

Reasons for Being Chosen:

This alternative is a low-cost method for promoting waste reduction in accordance with the hierarchy of waste management identified in the State SWMP and the Solid Waste Management Act of 1988.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to reduce MSW volumes by <5%.

Reuse:

Expected to enhance reuse by <5%.

Materials Recovery:

Expected to enhance materials recovery by 3% to 5%.

Participation in Recovery Opportunities:

Expected to enhance participation by <5%.

Product Stewardship:

No anticipated impact on product stewardship.

Economic, Administrative, or Partnership Benefits:

Expected to reduce expenses <5%.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

The existing administrative, contractual, and financial structure is sufficient to support ongoing and proposed waste reduction activities.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

None at this time.

Implementation Item: 2

Title: Promote Reuse Programs

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

The Promotion of Reuse Programs is expected to reduce select MSW waste volumes by <5%.

Types and Sizing of Facilities or Program:

This program would not affect sizing of current facilities and there would be no infrastructure required by the County. Reuse programs allow the facilities within the planning unit to stay the same size; additional space for waste processing is not anticipated to be necessary.

Summary of Cost Data for Evaluation:

Anticipated costs associated with this program are for additional educational efforts.

Impact on Natural Resource Conservation, Energy Production and, Employment:

Reuse of materials is expected to conserve natural resources. Energy production and job creation is not anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Albany (NY), Greene (NY), Rensselaer (NY), Dutchess (NY), Ulster (NY), and Berkshire (MA) Counties could potentially participate with Columbia County in the promotion of the Reuse Program. A consistent message between planning units could be useful in education efforts in communities near the county borders.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

Promoting reuse programs could increase the volume of donated items, which are less expensive and possibly more accessible to environmental justice areas.

Selected Alternatives Identification:

Reasons for Being Chosen:

This alternative is a low-cost method for promoting waste reduction in accordance with the hierarchy of waste management identified in the State SWMP and the Solid Waste Management Act of 1988.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to reduce MSW volumes by <5%.

Reuse:

Expected to enhance reuse by >5%.

Materials Recovery:

Expected to enhance materials recovery by 3% to 5%.

Participation in Recovery Opportunities:

Expected to enhance participation by <5%.

Product Stewardship:

No anticipated impact on product stewardship.

Economic, Administrative, or Partnership Benefits:

Expected to reduce expenses <5%.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

The existing administrative, contractual, and financial structure is sufficient to support ongoing and proposed reuse promotion activities.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

None at this time.

Implementation Item: 3

Title: Expand Accepted Materials

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

If new markets are developed for material streams that are currently disposed of as MSW, the County may be able to incorporate these additional materials into the County's recycling program thus diverting them from disposal at a landfill. This program may result in the diversion of toxic/hazardous components from the waste stream.

Types and Sizing of Facilities or Program:

Additional facility space for additional materials is the only sizing criteria associated with this program. Educational programs may be implemented to educate the public on the additional recyclable materials.

Summary of Cost Data for Evaluation:

Anticipated costs associated with this program may include the need for additional facility space (receiving and storage areas), additional storage containers, and additional labor for processing materials. These costs will vary based on the type and quantity of additional materials, and could be significant.

Impact on Natural Resource Conservation, Energy Production and, Employment:

An increase of materials accepted at the transfer stations is expected to enhance natural resource conservation. No energy production or job creation are anticipated as a result of this proposed program.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Albany (NY), Greene (NY), Rensselaer (NY), Dutchess (NY), Ulster (NY), and Berkshire (MA) Counties could potentially participate with Columbia County in the proposed program, but is unlikely due to separate recycling programs operated by each planning unit.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with the proposed expansion of accepted materials at the transfer and convenience stations.

Selected Alternatives Identification:

Reasons for Being Chosen:

This selection of this alternative is based on economics. Additional materials can be integrated into the County's existing recycling program only if markets exist for the sale of collected materials.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to increase recycling volumes by 5%.

Reuse:

Expected to enhance reuse by <5%.

Materials Recovery:

Expected to enhance materials recovery by <5%.

Participation in Recovery Opportunities:

Expected to enhance participation by <5%.

Product Stewardship:

No anticipated impact on product stewardship; however, depending on state legislation associated with materials covered under product stewardship legislation additional materials could be added to the existing program.TBD

Economic, Administrative, or Partnership Benefits:

Expected increase in operating costs for processing additional material streams. Additional revenues, or a decrease in T&D costs may be realized, depending on structure and details of contract with T&D vendor.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

The existing administrative, contractual, and financial structure is sufficient to support the proposed expanded recycling program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

Depending on whether the expanded recyclables are expected to be accepted long-term and sustainable, the list of mandatory recycables could be incorporated into the recycling law.

Implementation Item: 4

Title: Increase Recycling at County Facilities & Events

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Increased recycling at County facilities and events program is expected to increase recycling efforts by up to 5% over the 10 year planning period. In addition the program could have ancillary benefits by providing education in the form of setting an example for proper waste reduction and diversion.

Types and Sizing of Facilities or Program:

There is no foreseen additional infrastructure needed to support this program. Items such as collection bins or educational materials could be required.

Summary of Cost Data for Evaluation:

Increased recycling at County facilities and events is expected to have no measurable cost to the County. Operation and maintenance costs for the County are expected to rise modestly in line with inflation.

Impact on Natural Resource Conservation, Energy Production and, Employment:

Increasing recycling efforts at County facilities and events is expected to enhance natural resource conservation. No energy production or job creation is anticipated as a result of this program.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

No participation by neighboring planning units is anticipated.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

No known or expected environmental justice impact within Columbia County associated with increased recycling efforts is expected.

Selected Alternatives Identification:

Reasons for Being Chosen:

This program strategy was chosen as a relatively low-cost way for the County to lead by example in reducing waste generated and promoting recycling. This strategy can also act as a public education tool, to encourage County employees and residents to change purchasing and consumption behaviors.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to increase recycling volumes by <5%.

Reuse:

Expected to enhance reuse activities by <5%.

Materials Recovery:

Expected to improve recovery of select materials by 5-10%.

Participation in Recovery Opportunities:

Expected to increase participation by <5%.

Product Stewardship:

No measurable impact on product stewardship is anticipated.

Economic, Administrative, or Partnership Benefits:

This commitment by the administration to expand internal recycling, would be a benefit to the overall program.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing administrative, financial, and contractual structure is sufficient to support the proposed program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 5

Title: Adopt Product Stewardship Framework

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Adoption of the product stewardship framework displays support for the implementation of State-wide product stewardship initiatives.

Types and Sizing of Facilities or Program:

There is no additional infrastructure needed to support this program.

Summary of Cost Data for Evaluation:

Product stewardship has the potential to decrease the costs of waste management and diversion efforts in the County by shifting a portion of the disposal and/or diversion costs to the producers.

Impact on Natural Resource Conservation, Energy Production and, Employment:

Natural resource conservation, energy production, and job creation in the County is not anticipated as a result of this program.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

No participation by neighboring planning units is anticipated.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

No known or expected environmental justice impact within Columbia County associated with product stewardship initiatives is expected.

Selected Alternatives Identification:

Reasons for Being Chosen:

Columbia County has little to no influence over manufacturing, but could join other counties who have adopted this framework to pressure state lawmakers to take further action at the state level. Additionally, significant cost savings could be realized if producers were responsible for the disposal costs of items for which municipalities were historically responsible.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

None anticipated.

Reuse:

None anticipated.

Materials Recovery:

No direct impacts to material recovery is anticipated, however, the end goal of supporting product stewardship measures could have significant impacts on material recovery.

Participation in Recovery Opportunities:

None anticipated.

Product Stewardship:

An increase in product stewardship initiatives could occur as a result of this program strategy.

Economic, Administrative, or Partnership Benefits:

As municipalities throughout the State adopt product stewardship framework, it is anticipated that this show of support could lead to legislative action at the State level.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing administrative, financial, and contractual structure is sufficient to support the proposed program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

A county resolution would be required to adopt product stewardship legislation framework.

Implementation Item: 6

Title: Support Organics Diversion Efforts and Promote Backyard Composting

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Supporting organics diversion efforts could increase diversion from the County's solid waste management system by up to 500 tons per year. Promoting backyard composting through education and training programs and/or subsidizing compost bins for residents could increase organics diversion by several thousand tons per year.

Types and Sizing of Facilities or Program:

If the County decides to lead organics diversion programs directly, there would be anticipated infrastructure needs and costs associated with developing a County run facility.

Summary of Cost Data for Evaluation:

Costs associated with the program include public educational and training programs, and some or all of the cost for a bulk purchase of compost bins for residents to purchase.

Impact on Natural Resource Conservation, Energy Production and, Employment:

The proposed program is expected to provide for natural resource conservation. Energy production and job creation is not anticipated to be affected by the proposed program.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Albany (NY), Greene (NY), Rensselaer (NY), Dutchess (NY), Ulster (NY), and Berkshire (MA) Counties could potentially participate with Columbia County in the proposed program by sharing educational materials and/or bulk purchase of backyard composting bins for sale to residents at cost.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

Ulster County's successful compost program could be used as a model for Columbia County.

Assessment of Environmental Justice Impacts:

No known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

Columbia County has the potential to partner with other organizations to improve educational programs and promote residential composting to reduce organic waste disposal at minimal cost to the County.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to reduce waste volumes by <5%.

Reuse:

Expected to enhance reuse <5%.

Materials Recovery:

Expected to improve recovery of select waste materials by >5%.

Participation in Recovery Opportunities:

Expected to enhance participation <5%.

Product Stewardship:

No measurable impact on product stewardship is anticipated.

Economic, Administrative, or Partnership Benefits:

These programs are not expected to result in economic or administrative benefits, although partnership with local organizations could potentially reduce program costs.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing contractual structure is sufficient to support the proposed program. Partnerships will be sought out for the minor financial and administrative requirements that would be needed to support education and training programs.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 7

Title: Continue Pay-As-You-Throw Program

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Positive impacts due to financial incentives for waste reduction efforts are expected to increase material recovery. Negative impacts in the form of illegal dumping and potential contamination of recycling streams could occur with a PAYT program.

Types and Sizing of Facilities or Program:

PAYT Program existing.

Summary of Cost Data for Evaluation:

PAYT fees are reviewed by the County each year and re-assessed should an increase in fees be needed.

Impact on Natural Resource Conservation, Energy Production and, Employment:

This program has the potential to conserve natural resources due to incentivized waste reduction and diversion.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

No participation by neighboring planning units is anticipated.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

PAYT programs have the potential to impact poor communities who cannot afford to pay for the amount of waste they dispose of. This will be factored into the analysis for switchover to an expanded PAYT program (one that includes residents who contract with a private hauler).

Selected Alternatives Identification:

Reasons for Being Chosen:

Expanding the PAYT program to include residents who contract with a private hauler could further incentivize waste reduction.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to increase waste reduction by >5%.

Reuse:

Expected to increase product reuse by >5%.

Materials Recovery:

Expected to increase material recovery by up to 15% but could increase recyclables contamination by <15%.

Participation in Recovery Opportunities:

No measurable impact on participation is expected.

Product Stewardship:

No measurable impact on product stewardship is expected.

Economic, Administrative, or Partnership Benefits:

Minor economic benefits may result from increased recyclables recovery.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Additional administrative, contractual, and/or financial structure may be required to expand the County's existing PAYT system. It will also be more difficult to predict revenues for budgeting.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 8

Title: Improve Public Education and Outreach

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Continuation and improvement of current education and outreach efforts are anticipated to help maintain and enhance diversion efforts.

Types and Sizing of Facilities or Program:

No additional infrastructure is needed to support this program.

Summary of Cost Data for Evaluation:

An increase in administrative costs are anticipated with increased education and outreach.

Impact on Natural Resource Conservation, Energy Production and, Employment:

A staff member may be added to ensure the success of this program. No impacts to natural resource conservation or energy production are anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Albany (NY), Greene (NY), Rensselaer (NY), Dutchess (NY), Ulster (NY), and Berkshire (MA) Counties could potentially participate with Columbia County in the proposed program.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

In the County's solid waste management experience, education and outreach efforts are more effective in adjusting behaviors and compliance with the local solid waste and recycling law than enforcement actions.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to increase waste reduction by 5%.

Reuse:

Expected to increase product reuse by <5%.

Materials Recovery:

Expected to improve materials recovery of select waste materials by >5%.

Participation in Recovery Opportunities:

Participation is expected to improve.

Product Stewardship:

No measurable impact on product stewardship is expected; however, if product stewardship legislation is passed at the state level the product stewardship organizations may be able to provide assistance with education and outreach to the County.

Economic, Administrative, or Partnership Benefits:

Minor economic benefits may result from increased recyclables recovery, but increased costs may result from expenses related to education efforts. Partnerships with other agencies, private companies, and/or citizen groups may be levied to assist with education and outreach.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Additional administrative, contractual, and/or financial structure may be required to support additional education and outreach programs.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 9

Title: Improve Solid Waste and Recycling Data Collection

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Improved data collection will aid the County in determining where to enhance recycling or diversion efforts that could ultimately help the County achieve diversion goals by providing accurate information on current waste generation and diversion.

Types and Sizing of Facilities or Program:

No additional infrastructure is required. However, administrative staff may experience increased work load due to the efforts required to obtain, compile, and review additional data.

Summary of Cost Data for Evaluation:

Costs associated with the program include administrative labor for data gathering and analysis.

Impact on Natural Resource Conservation, Energy Production and, Employment:

No impacts to natural resource conservation, energy production, or employment are anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Data sharing within neighboring planning units could improve understanding of the current management of solid waste in the region and potentially be useful for program development within neighboring counties.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

The County does not currently have available all of the data on waste generated in the Planning Unit, only data from County-run facilities. Collection of additional data will better inform the County on actual diversion rates and the potential for additional program implementation.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

This program is not expected to reduce waste volumes.

Reuse:

No impact.

Materials Recovery:

No impact.

Participation in Recovery Opportunities:

This program is expected to increase the County's knowledge of current participation in recovery options provided in the County.

Product Stewardship:

No measurable impact on product stewardship is expected.

Economic, Administrative, or Partnership Benefits:

Additional administrative efforts will be required for data gathering and analysis. Partnerships with other agencies, private companies, and/or citizen groups may be levied to assist with data collection needs.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Additional administrative resources will be required to implement the program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

Review of the current recycling law should include a component to require reporting by either private haulers or generators of waste and recyclables to the County.

Implementation Item: 10

Title: Implement C&D Debris Reduction and Diversion

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

This program could result in the diversion of C&D debris from disposal facilities.

Types and Sizing of Facilities or Program:

Due to the prohibitive cost, a County-run C&D processing facility is unlikely to be pursued. The contemplation of including C&D recovery requirements in municipal bids would require additional County-run facilities.

Summary of Cost Data for Evaluation:

The cost to implement a C&D recycling facility would be upwards of \$1 million. Operational costs have the potential to be very high due to the need for manual labor. Markets for materials are currently unknown. Costs on municipal bids may increase with the inclusion of a C&D debris recovery goal.

Impact on Natural Resource Conservation, Energy Production and, Employment:

Conservation of natural resources would be realized through reuse of natural materials.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Participation by neighboring planning units would likely be required to make such a facility economically feasible; however, due to the large geographical size of the counties, interest by neighboring planning units is unlikely, making a centrally located facility infeasible.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

The County will contemplate the inclusion of a C&D waste reduction policy into its municipal bids, provided that the program is not cost-prohibitive.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

This program is anticipated to reduce C&D disposal by <5%. Deconstruction is not proposed due to space constraints.

Reuse:

This program is expected to enhance C&D reuse by <5%.

Materials Recovery:

Expected to enhance C&D recovery by <5%.

Participation in Recovery Opportunities:

Not expected to impact participation.

Product Stewardship:

No measurable impact on product stewardship is expected.

Economic, Administrative, or Partnership Benefits:

Actions are expected to increase the costs of municipal bids by an unknown amount.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Additional administrative and financial resources will be required for implementation of this program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 11

Title: Identify Private Sector Management and Coordination Opportunities

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

This program could result in the diversion of additional material streams (specifics still to be determined) not currently included in the County's recycling program.

Types and Sizing of Facilities or Program:

No additional infrastructure is required for this program.

Summary of Cost Data for Evaluation:

Partnering with other organizations will relieve some cost burden from the County for implementing LSWMP program strategies. More in-depth analysis of additional partners and funding sources will be explored during the planning period.

Impact on Natural Resource Conservation, Energy Production and, Employment:

MSW reduction and recycling is expected to conserve natural resources. Energy production and job creation is not anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

No participation by neighboring planning units is anticipated.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

The County will need financial and administrative support in order to expand its current recycling programs and implement LSWMP program strategies and looking to the private sector will be a benefit to the overall program.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to reduce waste by <5%.

Reuse:

Expected to enhance reuse by <5%.

Materials Recovery:

Expected to enhance material recovery by <5%.

Participation in Recovery Opportunities:

Expected to increase participation by <5%.

Product Stewardship:

If the County identifies partners in industry or manufacturing, improvements to product stewardship are possible with this program.

Economic, Administrative, or Partnership Benefits:

Actions are expected to increase operational costs, but may be offset by partnering with the private sector to provide full or partial funding for additional programs.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Additional administrative and financial resources will be required for implementation of this program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 12

Title: Review Available Technologies

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

No impacts are expected.

Types and Sizing of Facilities or Program:

No additional infrastructure is required for this review. However, new infrastructure may be needed as a result of this review, if the County decides to go ahead with an available technology. A separate analysis for each proposed technology would be required.

Summary of Cost Data for Evaluation:

Costs associated with the review include administrative labor and consulting services for review of available

Impact on Natural Resource Conservation, Energy Production and, Employment:

Natural resource conservation, energy production, and job creation could be anticipated, depending on the results of the review.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Participation by neighboring planning units would likely be required to make a new available technology economically feasible; however, due to the large geographical size of the counties, interest by neighboring planning units is unlikely, making a centrally located facility infeasible.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program unless a new facility is proposed within an environmental justice area. However, any siting of a new facility would be fully vetted through the SEQR process which would consider environmental justice.

Selected Alternatives Identification:

Reasons for Being Chosen:

Technologies are continuously being improved and tested, therefore, Columbia County plans to periodically review technologies available to the County.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

No quantifiable impacts are anticipated.

Reuse:

No quantifiable impacts are anticipated.

Materials Recovery:

No quantifiable impacts are anticipated.

Participation in Recovery Opportunities:

No quantifiable impacts are anticipated.

Product Stewardship:

No quantifiable impacts are anticipated.

Economic, Administrative, or Partnership Benefits:

Additional administrative efforts will be required for this review. Partnerships with other agencies, private companies, and/or citizen groups may be levied to assist with these needs.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing administrative, financial, and contractual structure is sufficient to support the proposed review.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 13

Title: Continue Existing Disposal Methods as Primary Disposal for Non-Recyclable/Non-Recoverable Waste

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

No impacts are expected.

Types and Sizing of Facilities or Program:

There is no additional infrastructure needed to support this program.

Summary of Cost Data for Evaluation:

The County will continue to collect fees from users of the County-owned transfer and convenience stations for the disposal of solid waste and recyclables to offset the cost of transportation and disposal of waste at out-of-county facilities.

Impact on Natural Resource Conservation, Energy Production and, Employment:

Natural resource conservation, energy production, and job creation are not anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

The waste generated in Columbia County may require disposal through contracts with disposal facilities in neighboring planning units and/or in-county privately-owned disposal facilities.

Alternatives Available with Participation by Neighboring Planning Units:

Contracts with out-of-County disposal facilities will facilitate continued disposal of Columbia County waste.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

With the small amount of waste generated in Columbia County, there is no economically viable option for an in-county landfill or alternative technology. As such, disposal at privately-owned or out-of-County facilities is the most economical and reliable waste disposal option.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

No quantifiable impacts are anticipated.

Reuse:

No quantifiable impacts are anticipated.

Materials Recovery:

No quantifiable impacts are anticipated.

Participation in Recovery Opportunities:

No quantifiable impacts are anticipated.

Product Stewardship:

No measurable impact on product stewardship is expected.

Economic, Administrative, or Partnership Benefits:

Expenses could increase under this scenario, as the cost for waste disposal will be impacted by markets rather than controlled by operational costs.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing administrative, financial, and contractual structure is sufficient to support the proposed program.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Implementation Item: 14

Title: Review County Local Solid Waste Management and Recycling Law

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

This review could result in changes to the quality and quantity of materials collected at the County transfer and convenience stations.

Types and Sizing of Facilities or Program:

There is no additional infrastructure needed to support this review.

Summary of Cost Data for Evaluation:

Costs associated with the review include administrative labor for review of local solid waste management and recycling law.

Impact on Natural Resource Conservation, Energy Production and, Employment:

Natural resource conservation, energy production, and job creation are not anticipated.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

No participation by neighboring planning units is anticipated.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this review are not dependent on the participation of neighboring planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

There is no known or expected environmental justice impact in Columbia County associated with this program.

Selected Alternatives Identification:

Reasons for Being Chosen:

The current local solid waste management and recycling law was approved in 1991 and has not been modified since then. There have been changes to the planning unit, waste generation characteristics, and technology.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

This review is not expected to reduce waste volumes; however, depending on the changes there may be an increase in waste reduction.

Reuse:

Expected to enhance reuse <5%.

Materials Recovery:

Expected to improve recovery of select waste materials by <5%.

Participation in Recovery Opportunities:

No measurable impact on participation is expected.

Product Stewardship:

An increase in product stewardship initiatives could occur as a result of this review.

Economic, Administrative, or Partnership Benefits:

This review is not expected to result in economic or administrative benefits.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing administrative, financial, and contractual structure is sufficient to support the proposed review.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

The local solid waste management and recycling law may be modified after this review.

Implementation Item: 15

Title: Participate in Agricultural Plastics Recycling

Administrative/Technical Impacts:

Quantitative/Qualitative Impacts on Waste Stream:

Expected to increase recycling efforts by <5% and reduce burial of agricultural waste in-place.

Types and Sizing of Facilities or Program:

Additional facility space is the only anticipated sizing criteria associated with this program. Educational efforts may also be pursued to increase participation in the program.

Summary of Cost Data for Evaluation:

Anticipated costs associated with this program are for additional facility space and educational efforts.

Impact on Natural Resource Conservation, Energy Production and, Employment:

The addition of agricultural plastics to the County's recycling program is expected to enhance natural resource conservation and potentially create new jobs, although minimal. No energy production is anticipated as a result of this program; however, it cannot be ruled out given the various technologies available for management of this material.

Jurisdictional Impacts:

Interest in Participation by Neighboring Planning Units:

Albany (NY), Greene (NY), Rensselaer (NY), Dutchess (NY), Ulster (NY), and Berkshire (MA) Counties could potentially participate with Columbia County in the proposed program.

Alternatives Available with Participation by Neighboring Planning Units:

Activities associated with this program are not dependent on the participation of neighboring planning units, but may become more economically feasible with increase participation from other planning units.

Recommendations from Neighboring Planning Units:

N/A

Assessment of Environmental Justice Impacts:

No known or expected environmental justice impact within Columbia County associated with the agricultural plastics program is expected.

Selected Alternatives Identification:

Reasons for Being Chosen:

The County is largely rural with a significant agricultural community for participation in this program, if funding mechanisms and markets become available.

Expected Quantitative and Qualitative Impacts On:

Waste Reduction:

Expected to increase recycling volumes by <5%.

Reuse:

Expected to enhance reuse activities by <5%.

Materials Recovery:

Expected to improve recovery of select materials by <5%.

Participation in Recovery Opportunities:

Expected to increase participation by <5%.

Product Stewardship:

No measurable impact on product stewardship is anticipated.

Economic, Administrative, or Partnership Benefits:

Administrative and partnership benefits are likely for this proposed program. Partnerships with neighboring planning units and other organizations would improve the development of this program. There are not any quantifiable economic benefits associated with this program.

Identification of Administrative, Contractual, and Financial Requirements for Implementation:

Existing administrative, financial, and contractual structure is sufficient to support the proposed program, if partnerships can be developed to share the administrative and financial burdens.

Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation:

No new local laws, ordinances, or regulations are identified as necessary at this time.

Appendix E

Implementation Schedule

Implementation Schedule

Program Strategy	Year									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	1	2	3	4	5	6	7	8	9	10
1) Promote Waste Reduction Programs	Evaluate current resource use and purchasing policies at County facilities and events. Identify available grant funding to support implementation initiatives.	Identify and assess targets for a waste reduction policy at County facilities and events (increased use of electronic documents, reduction in hardcopy filing, double siding printing policies-	Draft a preliminary waste reduction policy based on data collected in Years 1 and 2 and available funding (if necessary) to support initiatives.	Receive feedback on waste reduction policy from County staff and institute final waste reduction policy.	Monitor program success against County diversion goals and identify/implement improvements, if any.					
2) Promote Reuse Programs		Identify existing reuse programs within the County.	Promote existing reuse programs in County's education and outreach programs.							
3) Expansion of Accepted Materials	On an annual basis, continue to evaluate potential alternative use or disposal options for materials under the County's control to increase diversion from landfilling.									
4) Increase Recycling at County Facilities and Events	Evaluate current recycling procedures at County-owned facilities and events. If deemed appropriate, prepare, approve, and introduce a plan to increase recycling rates at County-owned facilities (i.e. source separated food waste collection program). Query County departments and/or event coordinators to identify target events where expanded recycling initiatives can be employed.		Update and modify the Plan to reflect successes and challenges.	Evaluate the feasibility of expanding recycling efforts to public events, schools, institutions, etc.						Update tasks for new 10 year planning period depending on progress.
				Share successes with municipalities within the County to encourage a similar program for increasing recycling efforts and waste reduction on the local level.						
	Evaluate data obtained as part of Implementation Task #9 to determine types and quantities of waste and recycling materials managed at public operated facilities, schools, libraries, public events.									
5) Support Product Stewardship Framework	Reach out to the New York Product Stewardship Council to learn more about Product Stewardship and Extended Producer Responsibility (EPR) and how the County can implement these programs.	Review other NY communities that have passed a Product Stewardship resolution showing their support. Determine if passing a similar resolution in the County would be beneficial. Work with the NY Product Stewardship Council to draft a resolution that would fit the needs of the County.	Educate County staff and the County Legislature on the benefits of supporting the product stewardship initiative. If supported by the Legislature, pass a Product Stewardship resolution.	Support the NY Product Stewardship Council and remain educated on product stewardship initiatives.		Update tasks for new 10 year planning period depending on progress.				

Implementation Schedule

Program Strategy	Year											
	2022 1	2023 2	2024 3	2025 4	2026 5	2027 6	2028 7	2029 8	2030 9	2031 10		
6) Support Organics Diversion Efforts and Promote Backyard Composting	Collect data on the residential food scraps drop off pilot program. Consider ways to expand program if successful.	Provide a summary of findings collected and post to the County website for residents to use.	Continue to support educational and training partners and monitor existing educational and collection programs.					Enhance yard waste composting education efforts by developing new potential partnerships (Task 13).		Update tasks for new 10 year planning period depending on progress.		
			Update and modify the Plan to reflect successes and challenges.									
			Promote food donation to local food banks on the County's website.									
			Promote the proper management of residential yard waste, such as backyard composting or "grass-cycling" initiatives, on the County's website.									
			Identify training materials available on the NYSDEC and Cornell Cooperative Extension websites for assistance in developing training courses or locating backyard composting demonstration sites. Place links on the County's website for these training course materials.							Update and modify the Plan to reflect successes and challenges.		Update tasks for new 10 year planning period depending on progress.
7) Pay-As-You Throw Program	Re-evaluate the PAYT program and its fees to encourage incentive based diversion and waste reduction. Consider different types of Unit Based Pricing systems employed in other similar counties.		Implement any changes to the PAYT program and work with local haulers to promote the modified PAYT program to customers.	Monitor waste disposal numbers, customer behaviors, and other metrics to evaluate the effectiveness of the PAYT program.						Update tasks for new 10 year planning period depending on progress.		
	Continue implementation of PAYT program at Transfer Stations.											
8) Education and Outreach	Evaluate current and potential education methods for promoting the County's recycling and diversion programs.	Work with partners to establish and implement a recycling educational outreach program. The plan should expect the initial audience to be primarily residents.	Evaluate the feasibility of adding recycling education at public events.	Team with local companies and not for profit agencies to encourage recycling at public events.	Assess the effectiveness of the education plan and make necessary alterations.	Expand the educational plan to attendees at public events.	Expand the education plan to include other groups, such as, municipalities, libraries, jails, institutions, and nursing homes. Add details related to product reuse and organics management to the education plan that would be most beneficial for these additional audience members			Update tasks for new 10 year planning period depending on progress.		

Implementation Schedule

Program Strategy	Year									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	1	2	3	4	5	6	7	8	9	10
9) Improve Solid Waste & Recycling Data Collection	Consider a program to increase data collection of schools, institutions, and other facilities, as well as with respect to privately handled solid waste and recycling. Assess what types of data and facilities will be targeted to best support the County's Implementation Tasks. Examine potential partnerships with interested citizen groups to assist with data collection.	If deemed necessary, prepare a survey template for distribution to waste generators.	Prepare and distribute surveys to private haulers, schools and institutions .	Report survey results and recommendations. Utilize to implement other tasks or modify tasks. Follow up with interested generators to improve their waste diversion programs.	Prepare and distribute surveys to libraries, jails, nursing homes, and the public sector (municipalities) .	Report survey results and recommendations. Utilize to implement other tasks or modify tasks. Follow up with interested generators to improve their waste diversion programs.	Prepare and distribute surveys to retail businesses (groceries, restaurants, stores).	Report survey results and recommendations. Utilize to implement other tasks or modify tasks. Follow up with interested generators to improve their waste diversion programs.	Prepare and distribute surveys to industries and agricultural facilities .	Report survey results and recommendations. Utilize to implement other tasks or modify tasks. Follow up with interested generators to improve their waste diversion programs.
	Investigate unknown information related to municipal sewage sludge generation and management. Update Table 2-1 of the LSWMP with discoveries.									
	Reach out to the compost facilities identified in the County, to gather information on the quantity of material they divert.	If deemed necessary, prepare a survey template for distribution to facilities or haulers that manage MSW, biosolids, C&D, processed scrap metal, and industrial waste.	Prepare and distribute surveys.	Report survey results and recommendations. Utilize to implement other tasks or modify tasks.	Prepare and distribute surveys.	Report survey results and recommendations. Utilize to implement other tasks or modify tasks.	Prepare and distribute surveys.	Report survey results and recommendations. Utilize to implement other tasks or modify tasks.	Prepare and distribute surveys.	Evaluated effectiveness of survey and update tasks for new 10 year planning period depending on progress.
10) Improve C&D Debris Reduction	Monitor C&D generation and processing quantities available through facility reporting and on County projects.					Assess the potential for inclusion of a C&D Debris Reduction requirement as part of County bids.	If deemed appropriate, attempt a "pilot program," and test out such a requirement on one or more County bids.	Assess the results of the pilot program and determine if it is feasible to implement on other County projects.	If appropriate, develop a County-wide policy for C&D Debris reduction on County projects.	Update tasks for new 10 year planning period depending on progress.

Implementation Schedule

[illegible]

Appendix F

Example Biennial Compliance Report Outline

**Columbia County
Local Solid Waste Management Plan**

Compliance Report

**Reporting Period:
January 1, 20XX - December 31, 20XX**

April 20XX

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Appendices

Appendix A – 20XX Columbia County Solid Waste and Recyclables Inventory

Appendix B – 20XX Columbia County Solid Waste and Recyclables Inventory

Appendix G

Columbia County Budget Excerpts

COLUMBIA COUNTY 2021 SOLID WASTE (EL) BUDGET

COLUMBIA COUNTY 2021 SOLID WASTE (EL) BUDGET			ADOPTED	COVID Modified	2020		INCRS/(DCRS)			
FULL ACCT	ACCT DESCRIPTION	2019 ACTUAL YTD	2020 BUDGET	2020 BUDGET	20 %%% REDUCTION	AVAILABLE BUDGET @ 6/30	2020 % USED	2021 BUDGET	OVER 2020 BUDGET	%% INCRS/DRCS
EL-8E -8160-1000-E1000 -	PERSONNEL SERVICES	1,046,447	1,141,038	1,141,038	-	580,355	49.14	1,080,981	(60,057)	-5.3%
EL-8E -8160-2050-E2000 -	MISC EQUIPMENT	4,203	200,000	-	(200,000)	(193,833)	0	200,000	200,000	100.0%
EL-8E -8160-4010-E4000 -	ADVERTISING	325	1,000	1,000	-	857	14.32	500	(500)	-50.0%
EL-8E -8160-4021-E4000 -	PERMIT/EMAIL/LICENSE FEES	14,092	14,000	14,000	-	2,976	78.74	15,400	1,400	10.0%
EL-8E -8160-4025-E4000 -	SERVICE/REPAIR	81,150	80,000	80,000	-	40,926	48.84	80,000	-	0.0%
EL-8E -8160-4026-E4000 -	MAINTENANCE AGREEMENTS	8,557	9,500	9,500	-	3,963	58.29	10,500	1,000	10.5%
EL-8E -8160-4027-E4000 -	RENTAL/LEASE	-	3,000	3,000	-	3,000	0	3,000	-	0.0%
EL-8E -8160-4080-E4000 -	PRINTING/COPIER SERVICES	3,371	3,500	3,500	-	1,915	45.28	3,500	-	0.0%
EL-8E -8160-4095-E4000 -	POSTAGE EXPENSE	1,310	1,200	1,200	-	663	44.78	1,200	-	0.0%
EL-8E -8160-4150-E4000 -	EDUCATION EXPENSES	533	600	600	-	525	12.5	600	-	0.0%
EL-8E -8160-4200-E4000 -	INSURANCE	20,886	20,513	20,513	-	20,513	0	22,019	1,506	7.3%
EL-8E -8160-4240-E4000 -	BUILDING STRUCTURL REPAIR	6,010	10,000	10,000	-	9,443	5.57	10,000	-	0.0%
EL-8E -8160-4261-E4000 -	SUPPLIES JANITORIAL	1,548	2,500	2,500	-	1,083	56.68	2,500	-	0.0%
EL-8E -8160-4264-E4000 -	SUPPLIES OFFICE/PAPER	2,364	2,500	2,500	-	916	63.35	2,500	-	0.0%
EL-8E -8160-4270-E4000 -	SUPPLIES-SPARE PARTS	8,920	10,000	10,000	-	3,687	63.13	10,000	-	0.0%
EL-8E -8160-4273-E4000 -	MAINTENANCE TOOLS	491	500	500	-	262	47.58	500	-	0.0%
EL-8E -8160-4280-E4000 -	TRANSPORTATION SERVICES	153,690	150,000	150,000	-	94,432	37.05	140,000	(10,000)	-6.7%
EL-8E -8160-4283-E4000 -	MILEAGE/TOLLS/PARKING	-	100	100	-	100	0	100	-	0.0%
EL-8E -8160-4290-E4000 -	UNIFORM EXPENSES	3,757	4,500	4,500	-	2,428	46.04	4,500	-	0.0%
EL-8E -8160-4300-E4000 -	UTILITY - ELECTRICITY	15,155	16,000	16,000	-	8,799	45	16,000	-	0.0%
EL-8E -8160-4305-E4000 -	UTILITY - TELEPHONE	5,245	5,800	5,800	-	3,074	47	5,800	-	0.0%
EL-8E -8160-4429-E4000 -	PROFESSIONAL SRV OTHER	12,500	30,000	30,000	-	13,000	56.67	-	(30,000)	-100.0%
EL-8E -8160-4969-E4000 -	COUNTY GARBAGE BAGS	68,443	60,000	60,000	-	12,292	79.51	60,000	-	0.0%
EL-8E -8160-4960-E4000 -	FREON REMOVAL-ELEC RECY	1,663	2,000	2,000	-	1,658	17.1	2,000	-	0.0%
EL-8E -8160-4961-E4000 -	HAZARDOUS WASTE CLEANUP	34,024	42,000	42,000	-	42,000	0	-	(42,000)	-100.0%
EL-8E -8160-4962-E4000 -	GRINDING BRUSH	6,629	5,000	5,000	-	3,983	20.33	5,000	-	0.0%
EL-8E -8160-4963-E4000 -	MAINT-CLAVERRACK	24,223	24,000	24,000	-	12,245	48.98	24,000	-	0.0%
EL-8E -8160-4964-E4000 -	MAINT-ANCRAM	9,782	8,500	8,500	-	7,508	11.67	8,500	-	0.0%
EL-8E -8160-4965-E4000 -	MAINT-HILLSDALE	7,230	6,500	6,500	-	3,047	53.13	6,500	-	0.0%
EL-8E -8160-4966-E4000 -	MAINT-COPAKE	8,813	6,800	6,800	-	6,449	5.17	6,800	-	0.0%
EL-8E -8160-4967-E4000 -	MAINT-HUDSON	23,267	6,500	6,500	-	5,853	9.95	6,500	-	0.0%
EL-8E -8160-4968-E4000 -	MAINT-GALLATIN	6,167	5,500	5,500	-	5,126	6.79	5,500	-	0.0%
EL-8E -8160-4970-E4000 -	RECYCLING BAGS	2,992	500	500	-	500	0	500	-	0.0%
EL-8E -8160-4971-E4000 -	TIPPING FEES	784,821	750,000	750,000	-	376,300	49.83	1,073,250	323,250	43.1%
EL-8E -8160-4972-E4000 -	WEIGHT MASTER LICENSE	90	150	150	-	150	0	150	-	0.0%
EL-8E -8160-4973-E4000 -	TIPPING FEES MRF	230,184	240,000	240,000	-	147,396	38.58	250,000	10,000	4.2%
EL-8E -8160-4999-E4000 -	MISCELLANEOUS EXPENSES	5,634	7,500	7,500	-	4,220	43.73	7,500	-	0.0%
EL-8E -9600-4000-E4000 -	BAD DEBT EXPENSE	-	0	-	-	-	0	-	-	0.0%
		2,604,514	2,871,201	2,671,201	(200,000)	1,227,811		3,065,800	394,599	14.8%

EMPLOYEE BENEFITS

EL-9E -9010-8000-E8000 -	STATE RETIREMENT	152,000	119,787	119,787	-	119,787	0	152,423	32,636	27.2%
EL-9E -9030-8000-E8000 -	SOCIAL SECURITY	78,424	87,289	87,289	-	45,590	47.77	82,695	(4,594)	-5.3%

COLUMBIA COUNTY 2021 SOLID WASTE (EL) BUDGET

FULL ACCT	ACCT DESCRIPTION	2019 ACTUAL YTD	ADOPTED 2020 BUDGET	COVID Modified 2020 BUDGET	20 %%% REDUCTION	2020 AVAILABLE BUDGET @ 6/30	2020 % USED	2021 BUDGET	INCRS/(DCRS) OVER 2020 BUDGET	%% INCRS/DRCS
EL-9E -9040-8000-E8000 -	WORKERS COMPENSATION	50,000	51,728	51,728	-	51,728	0	42,697	(9,031)	-17.5%
EL-9E -9050-8000-E8000 -	UNEMPLOYMENT INSURANCE	-	-	-	-	-	0	7,500	7,500	0.0%
EL-9E -9060-8000-E8000 -	HEALTH INSURANCE	259,391	229,572	229,572	-	90,081	60.76	300,000	70,428	30.7%
EL-9E -9090-8000-E8000 -	DENTAL INSURANCE	14,570	13,000	13,000	-	5,100	60.77	15,000	2,000	15.4%
EL-9E -9092-8000-E8000 -	VACANCY FACTOR				-			(44,195)		
		554,385	501,376	501,376	-	312,285		556,120	98,939	19.7%
DEBT										
EL-9E -9710-7000-E7000 -	INTEREST ON INDEBTEDNESS	52,753	18,253	18,253	-	9,758	46.54	26,396	8,143	44.6%
EL-9E -9710-6000-E6000 -	PRINCIPAL ON INDEBTEDNESS B	-	-	-	-	(33,145)	0	-	-	0.0%
EL-9E -9710-7002-E7000 -	EFC LANDFILL CLSR 7/99 BOND I	-	57,975	57,975	-	57,975	0	55,617	(2,358)	-4.1%
		52,753	76,228	76,228		34,588		82,013	5,785	7.6%
TOTAL BUDGET		2,657,267	2,947,429	2,747,429	(200,000)	1,262,399		3,703,933	400,384	14.6%

REVENUES

EL-OR -1001-0000-OR1001-	REAL PROPERTY TAX	(570,599)	(570,599)	(570,599)	-	-	100	(488,583)	82,016	-14.4%
EL-1R -2130-0000-1R2130-	PUNCH CARD/BAGS	(593,420)	(600,000)	(600,000)	-	(259,337)	56.78	(650,000)	(50,000)	8.3%
EL-1R -2131-0000-1R2131-	TIPPING FEES GREENPORT	(1,301,238)	(1,250,000)	(1,250,000)	-	(522,303)	58.22	(1,700,000)	(450,000)	36.0%
EL-1R -2133-0000-1R2133-	FEES RETURN CHECKS ETC	(1,050)	-	-	-	195	0	(1,000)	(1,000)	100.0%
EL-1R -2134-0000-1R2134-	ROLL OFF CONTAINERS	(154,883)	(315,000)	(315,000)	-	(272,623)	13.45	(315,000)	-	0.0%
EL-1R -2135-0000-1R2135-	CARTAGE FEES	(87,523)	(84,500)	(84,500)	-	(42,213)	50.04	(84,500)	-	0.0%
EL-1R -2136-0000-1R2136-	LEAF & BRUSH FEES	(8,136)	(14,000)	(14,000)	-	(9,287)	33.66	(14,000)	-	0.0%
EL-1R -2137-0000-1R2137-	RECYLING FEES	(320,476)	(325,000)	(325,000)	-	(53,787)	83.45	(325,000)	-	0.0%
EL-1R -2138-0000-1R2138-	RECYLING REBATES	(79)	-	-	-	-	0	(100)	(100)	0.0%
EL-2R -2401-0000-2R2401-	INTEREST AND EARNINGS	(749)	(500)	(500)	-	(262)	47.51	(750)	(250)	50.0%
EL-5R -2665-0000-5R2665-	SALE OF EQUIPMENT	(1,825)	(17,706)	(17,706)	-	(12,506)	29.37	(5,000)	12,706	-71.8%
EL-6R -2770-0000-6R2770-	MISCELLANEOUS	(29,397)	(50,000)	(50,000)	-	(28,495)	43.01	(50,000)	-	0.0%
EL-8R -3002-0000-8R3002-	MUNICIPAL RECYCL GRNT PGM	-	(200,000)	(200,000)	-	(200,000)	0		200,000	-100.0%
EL-8R -3920-0000-8R3920-	STATE AID -NYS ERDA HAZ WAS	-	(22,000)	(22,000)	-	(22,000)	0	(70,000)	(48,000)	218.2%
		(3,069,376)	(3,449,305)	(3,449,305)	-	(1,422,618)		(3,703,933)	(254,628)	7.4%

COLUMBIA COUNTY 2021 CAPITAL FUND BUDGET

FULL ACCT	ACCT DESCRIPTION	2019 ACTUAL YTD	2020 BUDGET	2020 AVAILABLE BUDGET @ 6/30	2020 % USED	2021 BUDGET	INCRS/(DCRS) OVER 2020 BUDGET	%%% INCRS/DRCS
H1-1E -1490-2000-E2000 -	SMART WATT	282,216	3,000,000	987,994	67.07	-	(3,000,000)	-100%
	NEW VOTING MACHINES					1,000,000	1,000,000	100%
	COURTHOUSE ROOF REPAIR					417,000	417,000	100%
H1-5E -5111-4000-E4000 -	BRIDGE CONST FORCED ACCT	574,216	2,635,000	1,298,136	50.73	2,680,000	45,000	2%
H1-5E -5113-4000-E4000 -	ROAD/BRIDGE PROJECTS	349,900	1,935,000	1,420,733	26.58	2,600,000	665,000	34%
H1-5E -5113-4000-E4000 -	CR 21					100,000	100,000	100%
H1-5E -5610-4000-E4000 -	AIRPORT	2,044,420	1,345,000	1,195,755	11.1	2,850,000	1,505,000	112%
H1-5E -5610-4000-E4000 -	HANGER ROOF REPLACEMENT					220,000	220,000	100%
H1-5E -5610-4000-E4000 -	RW 21 END EASEMENT					225,000	225,000	100%
H1-5E -5110-4000-E4000 -	ROADS	460,646	500,000	498,410	0.32	500,000	-	0%
H1-5E -5110-4999-E4000 -	FUEL TANK & PUMP REPLACEMENT					228,350	228,350	0%
H1-8E -8160-4000-E4000 -	SOLID WASTE	-	400,000	400,000	0	-	(400,000)	-100%
		5,794,068	9,815,000	3,189,358		10,820,350	1,005,350	10%
INTERFUND TRANSFER								
H1-9E -9901-9000-E9000 -	INTERFUND TRANSFER	-	-	-	0	-	-	0%
TOTAL BUDGET								
		5,794,068	9,815,000	3,189,358		10,820,350	1,005,350	10%
REVENUES								
H1-10R-5710-0000-10R571-	SERIAL BONDS	(15,198,050)	(6,535,000)	(6,535,000)	0	(5,370,350)	1,164,650	-18%
H1-2R -2401-0000-2R2401-	INTEREST AND EARNINGS	(15,205)	-	5,803	0	-	-	0%
H1-6R -2710-0000-6R2710-	INTEREST ON BORROWINGS	(948,209)	-	-	0	-	-	0%
H1-6R -2770-0000-6R2770-	OTHER UNCLASSIFIED REVENUE	(5)	-	-	0	-	-	0%
H1-8R -3500-0000-8R3500-	BRIDGE CONSTRUCTION	(60,562)	(1,838,250)	(1,839,782)	-0.08	(30,000)	1,808,250	-98%
H1-8R -3502-0000-8R3502-	STATE AID AIRPORT	(247,260)	(1,277,750)	(1,270,092)	0.6	(614,500)	663,250	-52%
H1-8R -3591-0000-8R3591-	HIGHWAY CAPITAL PROJECTS	(2,274)	-	28,830	0	(337,500)	(337,500)	0%
H1-9R -4500-0000-9R4500-	FED AID AIRPORT	(1,620,491)	-	133,853	0	(1,881,000)	-	0%
H1-9R -4593-0000-9R4593-	FED AID ROAD	-	-	-	-	(1,800,000)	-	0%
H1-9R -4597-0000-9R4597-	TRANSPORTATION- CAPITAL PROJ'	(82,448)	-	48,536	0	(302,500)	-	0%
H1-9R -5031-0000-9R5031-	INTERFUND TRANSFERS	(108,736)	(164,000)	(146,621)	10.6	(484,500)	-	0%
		(18,283,241)	(9,815,000)	(9,574,473)		(10,820,350)	3,298,650	-34%

COLUMBIA COUNTY 2020 SOLID WASTE (EL) BUDGET

<u>ACCOUNT ##</u>	<u>ACCOUNT DESCRIPTION</u>	<u>2018 ACTUAL YTD</u>	<u>2019 BUDGET</u>	<u>2019 YTD As of 6/30</u>	<u>2019 % USED</u>	<u>2020 BUDGET</u>	<u>INCRS/(DCRS) OVER 2019 BUDGET</u>	<u>%% INCRS/DRCS</u>
EL-8E -8160-1000-E1000 -	PERSONNEL SERVICES	988,643	1,090,642	515,098	47.2	1,141,038	50,396	4.6%
EL-8E -8160-2999-E2000 -	MISC EQUIPMENT	4,573	200,000	15,103	81.5	200,000	-	0.0%
EL-8E -8160-4010-E4000 -	ADVERTISING	289	1,200	203	16.9	1,000	(200)	-16.7%
EL-8E -8160-4021-E4000 -	PERMIT/EMAIL/LICENSE FEES	11,712	12,000	8,292	69.1	14,000	2,000	16.7%
EL-8E -8160-4025-E4000 -	SERVICE/REPAIR	70,695	90,000	31,026	37.1	80,000	(10,000)	-11.1%
EL-8E -8160-4026-E4000 -	MAINTENANCE AGREEMENTS	8,600	9,000	5,031	66.9	9,500	500	5.6%
EL-8E -8160-4027-E4000 -	RENTAL/LEASE	-	3,000	-	-	3,000	-	0.0%
EL-8E -8160-4080-E4000 -	PRINTING/COPIER SERVICES	2,562	3,500	2,394	68.4	3,500	-	0.0%
EL-8E -8160-4095-E4000 -	POSTAGE EXPENSE	-	-	-	-	1,200	1,200	#DIV/0!
EL-8E -8160-4150-E4000 -	EDUCATION EXPENSES	268	500	265	53.0	600	100	20.0%
EL-8E -8160-4200-E4000 -	INSURANCE	19,428	20,708	-	-	20,513	(195)	-0.9%
EL-8E -8160-4240-E4000 -	BUILDING STRUCTURL REPAIR	10,098	10,000	3,700	37.5	10,000	-	0.0%
EL-8E -8160-4261-E4000 -	SUPPLIES JANITORIAL	2,399	2,500	316	12.6	2,500	-	0.0%
EL-8E -8160-4264-E4000 -	SUPPLIES OFFICE/PAPER	2,206	2,500	1,294	52.5	2,500	-	0.0%
EL-8E -8160-4270-E4000 -	SUPPLIES-SPARE PARTS	9,434	10,000	6,600	66.2	10,000	-	0.0%
EL-8E -8160-4273-E4000 -	MAINTENANCE TOOLS	185	500	176	35.2	500	-	0.0%
EL-8E -8160-4280-E4000 -	TRANSPORTATION SERVICES	164,546	150,000	65,204	43.5	150,000	-	0.0%
EL-8E -8160-4283-E4000 -	MILEAGE/TOLLS/PARKING	40	100	-	-	100	-	0.0%
EL-8E -8160-4290-E4000 -	UNIFORM EXPENSES	3,236	4,000	1,762	44.1	4,500	500	12.5%
EL-8E -8160-4300-E4000 -	UTILITY - ELECTRICITY	13,504	16,000	7,392	46.2	16,000	-	0.0%
EL-8E -8160-4305-E4000 -	UTILITY - TELEPHONE	5,302	6,000	2,685	44.8	5,800	(200)	-3.3%
EL-8E -8160-4429-E4000 -	PROFESSIONAL SRV OTHER	-	30,000	-	-	30,000	-	0.0%
EL-8E -8160-4969-E4000 -	COUNTY GARBAGE BAGS	29,341	60,000	20,717	83.9	60,000	-	0.0%
EL-8E -8160-4960-E4000 -	FREON REMOVAL-ELEC RECY	1,057	2,000	1,066	53.3	2,000	-	0.0%
EL-8E -8160-4961-E4000 -	HAZARDOUS WASTE CLEANUP	28,666	35,000	34,024	97.2	42,000	7,000	20.0%
EL-8E -8160-4962-E4000 -	GRINDING BRUSH	9,752	5,000	3,912	78.2	5,000	-	0.0%
EL-8E -8160-4963-E4000 -	MAINT-CLAVERRACK	27,095	24,000	9,366	39.0	24,000	-	0.0%
EL-8E -8160-4964-E4000 -	MAINT-ANCRAM	4,156	8,500	2,032	23.9	8,500	-	0.0%
EL-8E -8160-4965-E4000 -	MAINT-HILLSDALE	1,588	6,500	1,984	30.5	6,500	-	0.0%
EL-8E -8160-4966-E4000 -	MAINT-COPAKE	720	6,800	467	6.9	6,800	-	0.0%
EL-8E -8160-4967-E4000 -	MAINT-HUDSON	3,475	6,500	1,058	16.3	6,500	-	0.0%
EL-8E -8160-4968-E4000 -	MAINT-GALLATIN	688	5,500	464	8.4	5,500	-	0.0%
EL-8E -8160-4970-E4000 -	RECYCLING BAGS	2,493	3,000	2,992	99.7	500	(2,500)	-83.3%
EL-8E -8160-4971-E4000 -	TIPPING FEES	730,113	730,000	321,242	44.0	750,000	20,000	2.7%
EL-8E -8160-4972-E4000 -	WEIGHT MASTER LICENSE	75	150	-	-	150	-	0.0%
EL-8E -8160-4973-E4000 -	TIPPING FEES MRF	182,774	240,000	89,696	37.4	240,000	-	0.0%
EL-8E -8160-4999-E4000 -	MISCELLANEOUS EXPENSES	4,766	7,500	3,992	53.8	7,500	-	0.0%
	TOTAL 8160 SOLID WASTE	2,344,479	2,802,600	1,159,554	52.3%	2,871,201	68,601	2.4%

EMPLOYEE BENEFITS

EL-9E -9010-8000-E8000 -	STATE RETIREMENT	84,515	119,787	-	-	119,787	-	0.0%
EL-9E -9030-8000-E8000 -	SOCIAL SECURITY	73,416	83,434	38,466	46.1	87,289	3,855	4.6%
EL-9E -9040-8000-E8000 -	WORKERS COMPENSATION	50,173	50,000	-	-	51,728	1,728	3.5%
EL-9E -9050-8000-E8000 -	UNEMPLOYMENT INSURANCE	(78)	-	-	-	-	-	#DIV/0!

COLUMBIA COUNTY 2020 SOLID WASTE (EL) BUDGET

ACCOUNT ##	ACCOUNT DESCRIPTION	2018 ACTUAL YTD	2019 BUDGET	2019 YTD As of 6/30	2019 % USED	2020 BUDGET	INCRS/(DCRS) OVER 2019 BUDGET	%% INCRS/DCRS
EL-9E -9060-8000-E8000 -	HEALTH INSURANCE	1,199,292	107,965	131,111	121.4	229,572	121,607	112.6%
EL-9E -9090-8000-E8000 -	DENTAL INSURANCE	14,508	13,000	7,252	55.8	13,000	-	0.0%
EL-9E -9091-8000-E8000 -	VISION INSURANCE	146	500	75	15.0	500	-	0.0%
		1,421,973	374,686	176,903	52.8%	501,876	127,190	33.9%
DEBT								
EL-9E -9710-7000-E7000 -	INTEREST ON INDEBTEDNESS	7,000	26,569	-	-	18,253	(8,316)	-31.3%
EL-9E -9710-6000-E6000 -	PRINCIPAL ON INDEBTEDNESS B	-	-	10,479	-	-	-	#DIV/0!
EL-9E -9710-7002-E7000 -	EFC LANDFILL CLSR 7/99 BOND IN	14,402	53,244	-	-	57,975	4,731	8.9%
		21,402	79,813	10,479	-	76,228	(3,585)	-4.5%
TRANSFER TO D0 FUND								
EL-9E -9950-9000-E9000 -	TRANSFER TO D0 FUND	-	-	-	-	-	-	100.0%
Total EL SOLID WASTE		3,787,855	3,257,099	1,346,936	53.2%	3,449,305	192,206	5.9%

REVENUE

EL-0R -1001-0000-0R1001-	REAL PROPERTY TAX	(327,878)	(570,599)	(570,599)	100	(570,599)	(0)	0.0%
EL-1R -2130-0000-1R2130-	PUNCH CARD/BAGS	(575,355)	(700,000)	(300,481)	43	(600,000)	100,000	-14.3%
EL-1R -2131-0000-1R2131-	TIPPING FEES GREENPORT	(1,165,938)	(1,100,000)	(596,496)	54	(1,250,000)	(150,000)	13.6%
EL-1R -2133-0000-1R2133-	FEES RETURN CHECKS ETC	(615)	-	(15)	-	-	-	#DIV/0!
EL-1R -2134-0000-1R2134-	ROLL OFF CONTAINERS	(148,899)	(315,000)	(71,311)	23	(315,000)	-	0.0%
EL-1R -2135-0000-1R2135-	CARTAGE FEES	(79,729)	(84,500)	(44,653)	53	(84,500)	-	0.0%
EL-1R -2136-0000-1R2136-	LEAF & BRUSH FEES	(10,247)	(14,000)	(3,677)	26	(14,000)	-	0.0%
EL-1R -2137-0000-1R2137-	RECYLING FEES	(15,120)	(300,000)	(258,385)	86	(325,000)	(25,000)	8.3%
EL-1R -2138-0000-1R2138-	RECYLING REBATES	-	-	(41)	-	-	-	#DIV/0!
EL-2R -2401-0000-2R2401-	INTEREST AND EARNINGS	(484)	-	(525)	-	(500)	(500)	#DIV/0!
EL-5R -2665-0000-5R2665-	SALE OF EQUIPMENT	-	(5,500)	-	-	(17,706)	(12,206)	221.9%
EL-6R -2701-0000-6R2701-	REFUND PRIOR YR EXPEND	(1,080)	-	-	-	-	-	#DIV/0!
EL-6R -2770-0000-6R2770-	MISCELLANEOUS	(40,336)	(50,000)	(14,247)	28	(50,000)	-	0.0%
EL-8R -3002-0000-8R3002-	MUNICIPAL RECYCL GRNT PGM	(180,169)	(100,000)	-	-	(200,000)	(100,000)	100.0%
EL-8R -3920-0000-8R3920-	STATE AID -NYS ERDA HAZ WASTE	(1)	(17,500)	-	-	(22,000)	(4,500)	25.7%
	TOTAL SOLID WASTE REVENUE	(2,545,851)	(3,257,099)	(1,860,430)	42.9%	(3,449,305)	(192,206)	5.9%

COLUMBIA COUNTY 2020 CAPITAL (H1) BUDGET

<u>ACCOUNT ##</u>	<u>ACCOUNT DESCRIPTION</u>	<u>2018 ACTUAL YTD</u>	<u>2019 BUDGET</u>	<u>2019 YTD As of 6/30</u>	<u>2019 % USED</u>	<u>2020 BUDGET</u>	<u>INCRS/(DCRS) OVER 2019 BUDGET</u>	<u>%%% INCRS/DRCS</u>
H1-2E -2490-2000-E2000 -	EQUIPMENT	224,932	2,000,000	721,023	36%	-	(2,000,000)	-100.0%
	SMART WATT	-	-	-	#DIV/0!	3,000,000	3,000,000	100.0%
H1-3E -3022-2000-E2000 -	EQUIPMENT H FUND	315,779	4,493,264	344,313	8%	-	(4,493,264)	-100.0%
H1-3E -3410-2077-E2000 -	EQUIPMENT	4,751	-	823	#DIV/0!	-	-	#DIV/0!
H1-5E -5110-4000-E4000 -	ROADS	488,737	500,000	157,626	32%	500,000	-	0.0%
H1-5E -5111-4000-E4000 -	BRIDGE CONST FORCED ACCT	549,190	1,000,000	48,806	5%	2,635,000	1,635,000	163.5%
H1-5E -5113-4000-E4000 -	ROAD/BRIDGE PROJECTS	1,070,729	1,555,000	297,019	19%	1,935,000	380,000	24.4%
H1-5E -5610-4000-E4000 -	AIRPORT	800,538	2,560,000	604,602	24%	1,345,000	(1,215,000)	-47.5%
H1-8E -8160-4000-E4000 -	SOLID WASTE	-	-	-	#DIV/0!	400,000	400,000	#DIV/0!
		3,454,656	12,108,264	2,174,211	18%	9,815,000	(2,293,264)	-18.9%
H1-9E -9901-9000-E9000 -	INTERFUND TRANSFER	844,100	-	-	#DIV/0!	-	-	#DIV/0!
TOTAL H1 CAPITAL		4,298,757	12,108,264	2,174,211	18%	9,815,000	(2,293,264)	#DIV/0!

REVENUE

H1-2R -2401-0000-2R2401-	INTEREST AND EARNINGS	(13,109)	-	(4,579)	#DIV/0!	-	-	#DIV/0!
H1-6R -2710-0000-6R2710-	INTEREST ON BORROWINGS	(74,508)	-	(480,597)	#DIV/0!	-	-	#DIV/0!
H1-8R -3392-0000-8R3392-	STATE DCJS COMPUTERS	-	(4,493,264)	-	0%	-	4,493,264	-100.0%
H1-8R -3500-0000-8R3500-	BRIDGE CONSTRUCTION	(186,228)	(950,000)	(535)	0%	(1,838,250)	(888,250)	93.5%
H1-8R -3502-0000-8R3502-	STATE AID AIRPORT	(426,464)	(2,432,000)	(52,120)	2%	(1,277,750)	1,154,250	-47.5%
H1-8R -3591-0000-8R3591-	HIGHWAY CAPITAL PROJECTS	(5,105)	-	-	#DIV/0!	-	-	#DIV/0!
H1-9R -4500-0000-9R4500-	FED AID AIRPORT	(88,982)	-	(464,213)	#DIV/0!	-	-	#DIV/0!
H1-9R -4597-0000-9R4597-	TRANSPORTATION, CAPITAL PROJ'S	(527,832)	-	(0)	#DIV/0!	-	-	#DIV/0!
H1-9R -5031-0000-9R5031-	INTERFUND TRANSFERS	(144,647)	(178,000)	(29,188)	16%	(164,000)	14,000	-7.9%
H1-10R-5710-0000-10R571-	SERIAL BONDS	-	(4,055,000)	(2,128,447)	52%	(6,535,000)	(2,480,000)	61.2%
	TOTAL H1 REVENUE	(1,466,875)	(12,108,264)	(3,159,679)	26%	(9,815,000)	2,293,264	-18.9%

COLUMBIA COUNTY 2019 SOLID WASTE BUDGET

ACCOUNT ##	ACCOUNT DESCRIPTION	2017	2018	2018 YTD	2018	2019	INCRS/(DCRS) OVER	%%%
		ACTUAL YTD	BUDGET	As of 6/30	% USED	BUDGET	2018 BUDGET	INCRS/DRCS
EL-8E -8160-1000-E1000 -	PERSONNEL SERVICES	928,978.42	985,240	459,374	47%	1,090,641	105,402	11%
EL-8E -8160-2999-E2000 -	MISC EQUIPMENT	36,603.00	250,000	75,187	30%	200,000	-50,000	-20%
EL-8E -8160-4010-E4000 -	ADVERTISING	250.60	1,200	146	12%	1,200	0	0%
EL-8E -8160-4021-E4000 -	PERMIT/EMAIL/LICENSE FEE:	10,800.00	9,600	8,112	85%	12,000	2,400	25%
EL-8E -8160-4025-E4000 -	SERVICE/REPAIR	104,270.60	90,000	39,213	44%	90,000	0	0%
EL-8E -8160-4026-E4000 -	MAINTENANCE AGREEMENTS	7,714.91	9,000	2,930	33%	9,000	0	0%
EL-8E -8160-4027-E4000 -	RENTAL/LEASE	0.00	3,000	-	0%	3,000	0	0%
EL-8E -8160-4080-E4000 -	PRINTING/COPIER SERVICES	1,745.78	3,000	1,614	54%	3,500	500	17%
EL-8E -8160-4150-E4000 -	EDUCATION EXPENSES	407.00	500	-	0%	500	0	0%
EL-8E -8160-4200-E4000 -	INSURANCE	24,387.84	19,559	463	2%	20,708	1,149	6%
EL-8E -8160-4240-E4000 -	BUILDING STRUCTURL REPAIR	4,976.57	10,000	3,369	34%	10,000	0	0%
EL-8E -8160-4261-E4000 -	SUPPLIES JANITORIAL	1,130.51	2,500	669	27%	2,500	0	0%
EL-8E -8160-4264-E4000 -	SUPPLIES OFFICE/PAPER	1,983.96	2,200	1,192	54%	2,500	300	14%
EL-8E -8160-4270-E4000 -	SUPPLIES-SPARE PARTS	8,618.42	10,000	6,177	62%	10,000	0	0%
EL-8E -8160-4273-E4000 -	MAINTENANCE TOOLS	469.24	500	135	27%	500	0	0%
EL-8E -8160-4280-E4000 -	TRANSPORTATION SERVICES	150,860.95	150,000	70,461	47%	150,000	0	0%
EL-8E -8160-4283-E4000 -	MILEAGE/TOLLS/PARKING	0.00	100	-	0%	100	0	0%
EL-8E -8160-4290-E4000 -	UNIFORM EXPENSES	2,282.65	3,500	1,462	42%	4,000	500	14%
EL-8E -8160-4300-E4000 -	UTILITY - ELECTRICITY	11,847.41	22,500	6,342	28%	16,000	-6,500	-29%
EL-8E -8160-4305-E4000 -	UTILITY - TELEPHONE	5,242.76	6,000	2,549	42%	6,000	0	0%
EL-8E -8160-4429-E4000 -	PROFESSIONAL SRV OTHER	0.00	30,000	-	0%	30,000	0	0%
EL-8E -8160-4969-E4000 -	COUNTY GARBAGE BAGS	36,104.12	60,000	26,292	44%	60,000	0	0%
EL-8E -8160-4960-E4000 -	FREON REMOVAL-ELEC RECY	1,476.10	2,000	491	25%	2,000	0	0%
EL-8E -8160-4961-E4000 -	HAZARDOUS WASTE CLEANUP	21,183.20	35,000	28,666	82%	35,000	0	0%
EL-8E -8160-4962-E4000 -	GRINDING BRUSH	3,955.05	7,500	431	6%	5,000	-2,500	-33%
EL-8E -8160-4963-E4000 -	MAINT-CLAVERACK	26,435.57	24,000	13,520	56%	24,000	0	0%
EL-8E -8160-4964-E4000 -	MAINT-ANCRAM	6,301.35	8,500	1,141	13%	8,500	0	0%
EL-8E -8160-4965-E4000 -	MAINT-HILLSDALE	4,540.19	6,500	485	7%	6,500	0	0%
EL-8E -8160-4966-E4000 -	MAINT-COPAKE	6,184.69	6,800	-	0%	6,800	0	0%
EL-8E -8160-4967-E4000 -	MAINT-HUDSON	6,231.41	6,500	312	5%	6,500	0	0%
EL-8E -8160-4968-E4000 -	MAINT-GALLATIN	3,421.10	5,500	-	0%	5,500	0	0%
EL-8E -8160-4970-E4000 -	RECYCLING BAGS	2,451.00	2,500	2,493	100%	3,000	500	20%
EL-8E -8160-4971-E4000 -	TIPPING FEES	686,291.83	720,000	236,241	33%	730,000	10,000	1%
EL-8E -8160-4972-E4000 -	WEIGHT MASTER LICENSE	75.00	150	-	0%	150	0	0%
EL-8E -8160-4973-E4000 -	TIPPING FEES MRF	63,826.84	70,500	47,284	67%	240,000	169,500	240%
EL-8E -8160-4999-E4000 -	MISCELLANEOUS EXPENSES	6,772.45	7,500	80	1%	7,500	0	0%
Total 8160 SOLID WASTE		2,177,820.52	2,571,349	1,036,829	40%	2,802,599	231,250	9%

COLUMBIA COUNTY 2019 SOLID WASTE BUDGET

ACCOUNT ##	ACCOUNT DESCRIPTION	2017 ACTUAL YTD	2018 BUDGET	2018 YTD As of 6/30	2018 % USED	2019 BUDGET	INCRS/(DCRS) OVER 2018 BUDGET	%% INCRS/DRCS
EMPLOYEE BENEFITS								
EL-9E -9010-8000-E8000 -	STATE RETIREMENT	144,787.01	90,648	-	0%	119,787	29,139	32%
EL-9E -9030-8000-E8000 -	SOCIAL SECURITY	68,968.41	75,371	34,263	45%	83,434	8,063	11%
EL-9E -9040-8000-E8000 -	WORKERS COMPENSATION	50,173.00	50,173	-	0%	50,000	-173	0%
EL-9E -9050-8000-E8000 -	UNEMPLOYMENT INSURANCE	0.00	0	930	#DIV/0!	-	0	#DIV/0!
EL-9E -9060-8000-E8000 -	HEALTH INSURANCE	218,647.30	109,009	113,157	104%	107,965	-1,044	-1%
EL-9E -9070-8000-E8000 -	UNION INSURANCE	0.00	200	-	0%	-	-200	-100%
EL-9E -9090-8000-E8000 -	DENTAL INSURANCE	13,118.93	12,000	6,871	57%	13,000	1,000	8%
EL-9E -9091-8000-E8000 -	VISION INSURANCE	140.05	500	70	14%	500	0	0%
		495,834.70	337,901.41	155,291	46%	374,686	36,785	11%
BAD DEBT EXPENSE								
EL-8E -9600-4000-E4000 -	BAD DEBT EXPENSE	11,040.00	0	-	#DIV/0!	-	-	#DIV/0!
	Total 9600 BAD DEBT EXPENS	11,040.00	0	-	#DIV/0!	-	-	#DIV/0!
DEBT								
EL-9E -9710-7000-E7000 -	INTEREST ON INDEBTEDNESS	0.00	37,772	-	0%	26,569	(11,203)	-30%
EL-9E -9710-7002-E7000 -	EFC LANDFILL CLSR 7/99 BONI	0.00	17,457	14,402	83%	53,244	35,788	205%
	Total 9710 DEBT SERVICE SERI	0.00	55,228	14,402	26%	79,813	24,585	45%
TRANSFER TO H1 FUND								
EL-9E -9950-9000-E9000 -	TRANSFER TO H1 FUND	-27,186.77	0	-	0%	-	-	#DIV/0!
	Total 9950 TRANS CAPITAL PR	-27,186.77	0	-	0%	-	-	#DIV/0!
Total EL SOLID WASTE	Total EL SOLID WASTE	2,786,696.44	2,964,478	1,206,522	41%	3,257,099	292,620	10%

REVENUE

EL-OR -1001-0000-OR1001-	REAL PROPERTY TAX	(1,065,843)	(327,878)	(327,878)	100.0%	(570,599)	(242,721)	74%
EL-1R -2130-0000-1R2130-	PUNCH CARD/BAGS	(561,706)	(700,000)	(291,231)	41.6%	(700,000)	-	0%
EL-1R -2131-0000-1R2131-	TIPPING FEES GREENPORT	(1,085,388)	(1,000,000)	(546,703)	54.7%	(1,100,000)	(100,000)	10%
EL-1R -2133-0000-1R2133-	FEES RETURN CHECKS ETC	(765)	-	(330)	#DIV/0!	-	-	#DIV/0!
EL-1R -2134-0000-1R2134-	ROLL OFF CONTAINERS	(196,501)	(300,000)	(75,585)	25.2%	(315,000)	(15,000)	5%
EL-1R -2135-0000-1R2135-	CARTAGE FEES	(84,500)	(80,000)	(37,479)	46.8%	(84,500)	(4,500)	6%
EL-1R -2136-0000-1R2136-	LEAF & BRUSH FEES	(7,573)	(14,000)	(6,517)	46.5%	(14,000)	-	0%
EL-1R -2137-0000-1R2137-	RECYLING FEES	-	-	-	#DIV/0!	(300,000)	-	#DIV/0!
EL-1R -2138-0000-1R2138-	RECYLING REBATES	(6,372)	-	-	#DIV/0!	-	-	#DIV/0!
EL-2R -2401-0000-2R2401-	INTEREST AND EARNINGS	(1,017)	(1,000)	(330)	33.0%	-	-	0%
EL-5R -2665-0000-5R2665-	SALE OF EQUIPMENT	-	(8,600)	-	0.0%	(5,500)	3,100	-36%

COLUMBIA COUNTY 2019 SOLID WASTE BUDGET

ACCOUNT ##	ACCOUNT DESCRIPTION	2017 ACTUAL YTD	2018 BUDGET	2018 YTD As of 6/30	2018 % USED	2019 BUDGET	INCRS/(DCRS) OVER 2018 BUDGET	%% INCRS/DCRS
EL-5R -2680-0000-5R2680-	INSURANCE RECOVERIES	-	-	-	#DIV/0!	-	-	#DIV/0!
EL-6R -2701-0000-6R2701-	REFUND PRIOR YR EXPEND	-	-	(1,080)	#DIV/0!	-	-	#DIV/0!
EL-6R -2770-0000-6R2770-	MISCELLANEOUS	(33,226)	(50,000)	(19,364)	38.7%	(50,000)	-	0%
EL-8R -3002-0000-8R3002-	MUNICIPAL RECYCL GRNT PGM	(149,132)	(170,000)	-	0.0%	(100,000)	-	0%
EL-8R -3920-0000-8R3920-	STATE AID -NYS ERDA HAZ W/	(24,246)	(313,000)	(180,170)	57.6%	(17,500)	295,500	-94%
		(3,216,269)	(2,964,478)	(1,486,666)	50.1%	(3,257,099)	(63,621)	2%

COLUMBIA COUNTY 2018 SOLID WASTE BUDGET

COLUMBIA COUNTY 2018 SOLID WASTE BUDGET					2017		INCRS/(DCRS)		
ACCOUNT ##	ACCOUNT DESCRIPTION	2016 YTD ACTUAL	2017 BUDGET	2017 YTD AS of 6/30	AVAILABLE BUDGET @ 6/30	% USED	2018 BUDGET	OVER 2017 BUDGET	%% INCRS/DCRS
EL-8E -8160-1000-E1000 -	PERSONNEL SERVICES	888,508	948,626	428,199	520,426	0.0%	985,240	36,614	3.9%
EL-8E -8160-2999-E2000 -	MISC EQUIPMENT	396	200,000	-	200,000	7.2%	250,000	50,000	25.0%
EL-8E -8160-4010-E4000 -	ADVERTISING	6,000	1,500	107	1,393	73.3%	1,200	(300)	-20.0%
EL-8E -8160-4021-E4000 -	PERMITT/EMAIL/LICENSE FEES	281,662	6,000	4,400	1,600	60.6%	9,600	3,600	60.0%
EL-8E -8160-4025-E4000 -	SERVICE/REPAIR	7,869	90,000	54,571	35,429	36.9%	90,000	-	0.0%
EL-8E -8160-4026-E4000 -	MAINTENANCE AGREEMENTS	1,024	8,500	3,135	5,365	0.0%	9,000	500	5.9%
EL-8E -8160-4027-E4000 -	RENTAL/LEASE	1,717	3,000	-	3,000	35.2%	3,000	-	0.0%
EL-8E -8160-4080-E4000 -	PRINTING/COPIER SERVICES	332	2,500	880	1,620	15.0%	3,000	500	20.0%
EL-8E -8160-4150-E4000 -	EDUCATION EXPENSES	17,540	500	75	425	87.7%	500	-	0.0%
EL-8E -8160-4200-E4000 -	INSURANCE	10,020	18,857	16,531	2,326	12.5%	19,559	702	3.7%
EL-8E -8160-4240-E4000 -	BUILDING STRUCTURL REPAIR	1,926	10,000	1,246	8,141	20.3%	10,000	-	0.0%
EL-8E -8160-4261-E4000 -	SUPPLIES JANITORIAL	813	2,500	508	1,992	30.4%	2,500	-	0.0%
EL-8E -8160-4264-E4000 -	SUPPLIES OFFICE/PAPER	9,298	2,200	668	1,524	26.2%	2,200	-	0.0%
EL-8E -8160-4270-E4000 -	SUPPLIES-SPARE PARTS	232	10,000	2,616	6,004	19.2%	10,000	-	0.0%
EL-8E -8160-4273-E4000 -	MAINTENANCE TOOLS	111,105	500	96	404	24.3%	500	-	0.0%
EL-8E -8160-4280-E4000 -	TRANSPORTATION SERVICES	43	260,000	63,165	196,835	0.0%	150,000	(110,000)	-42.3%
EL-8E -8160-4283-E4000 -	MILEAGE/TOLLS/PARKING	2,194	100	-	100	32.4%	100	-	0.0%
EL-8E -8160-4290-E4000 -	UNIFORM EXPENSES	14,373	3,500	1,134	2,366	25.7%	3,500	-	0.0%
EL-8E -8160-4300-E4000 -	UTILITY - ELECTRICITY	5,506	22,500	5,788	16,712	33.1%	22,500	-	0.0%
EL-8E -8160-4305-E4000 -	UTILITY - TELEPHONE	-	8,000	2,651	5,349	100.0%	6,000	(2,000)	-25.0%
EL-8E -8160-4429-E4000 -	PROFESSIONAL SRV OTHER	1,068	250,000	250,000	0	20.5%	30,000	(220,000)	-88.0%
EL-8E -8160-4960-E4000 -	FREON REMOVAL-ELEC RECY	28,525	2,000	410	1,590	0.0%	2,000	-	0.0%
EL-8E -8160-4961-E4000 -	HAZARDOUS WASTE CLEANUP	8,659	35,000	-	35,000	23.7%	35,000	-	0.0%
EL-8E -8160-4962-E4000 -	GRINDING BRUSH	7,722	10,000	2,373	7,627	26.2%	7,500	(2,500)	-25.0%
EL-8E -8160-4963-E4000 -	MAINT-CLAVERACK	10,002	24,000	6,288	17,712	11.1%	24,000	-	0.0%
EL-8E -8160-4964-E4000 -	MAINT-ANCRAM	1,430	8,500	945	7,555	8.9%	8,500	-	0.0%
EL-8E -8160-4965-E4000 -	MAINT-HILLSDALE	823	6,500	576	5,924	0.0%	6,500	-	0.0%
EL-8E -8160-4966-E4000 -	MAINT-COPAKE	2,060	6,800	-	6,800	7.0%	6,800	-	0.0%
EL-8E -8160-4967-E4000 -	MAINT-HUDSON	1,304	6,500	454	6,046	0.0%	6,500	-	0.0%
EL-8E -8160-4968-E4000 -	MAINT-GALLATIN	57,228	5,500	-	5,500	23.0%	5,500	-	0.0%
EL-8E -8160-4969-E4000 -	COUNTY GARBAGE BAGS	-	60,000	13,821	42,252	98.0%	60,000	-	0.0%
EL-8E -8160-4970-E4000 -	RECYCLING BAGS	595,049	2,500	2,451	49	37.6%	2,500	-	0.0%
EL-8E -8160-4971-E4000 -	TIPPING FEES	60	756,000	283,936	472,064	0.0%	720,000	(36,000)	-4.8%
EL-8E -8160-4972-E4000 -	WEIGHT MASTER LICENSE	61,117	150	-	150	13.9%	150	-	0.0%
EL-8E -8160-4973-E4000 -	TIPPING FEES MRF	2,742	70,500	9,803	60,697	45.2%	70,500	-	0.0%
EL-8E -8160-4999-E4000 -	MISCELLANEOUS EXPENSES	-	7,500	3,389	4,111	40.7%	7,500	-	0.0%
		2,138,347	2,850,232	1,160,217	1,684,088	40.7%	2,571,349	(278,884)	-9.8%

COLUMBIA COUNTY 2018 SOLID WASTE BUDGET

COLUMBIA COUNTY 2018 SOLID WASTE BUDGET							2017		INCRS/(DCRS)	
ACCOUNT ##	ACCOUNT DESCRIPTION	2016 YTD ACTUAL	2017 BUDGET	2017 YTD AS of 6/30	2017 AVAILABLE BUDGET @ 6/30	% USED	2018 BUDGET	OVER 2017 BUDGET	%%%	
INCRS/DCRS										
EMPLOYEE BENEFITS										
EL-9E -9010-8000-E8000 -	STATE RETIREMENT	91,091	90,648	-	90,648	0.0%	90,648	0	0.0%	
EL-9E -9030-8000-E8000 -	SOCIAL SECURITY	66,426	72,570	31,966	40,604	44.0%	75,371	2,801	3.9%	
EL-9E -9040-8000-E8000 -	WORKERS COMPENSATION	50,173	50,173	-	50,173	0.0%	50,173	-	0.0%	
EL-9E -9050-8000-E8000 -	UNEMPLOYMENT INSURANCE	(2,648)					-			
EL-9E -9060-8000-E8000 -	HEALTH INSURANCE	211,609	100,119	100,115	4	100.0%	109,009	8,890	8.9%	
EL-9E -9070-8000-E8000 -	UNION INSURANCE	-	200	-	200	0.0%	200	-	0.0%	
EL-9E -9090-8000-E8000 -	DENTAL INSURANCE	12,970	12,000	6,142	5,858	51.2%	12,000	-	0.0%	
EL-9E -9091-8000-E8000 -	VISION INSURANCE	143	500	66	434	13.2%	500	-	0.0%	
		429,764	326,210	138,289	187,921	42.4%	337,901	11,691	3.6%	
9710 DEBT SERVICE SERIAL BONDS										
EL-9E -9710-7000-E7000 -	INTEREST ON INDEBTEDNESS	56				0.0%	37,772	37,772	0.0%	
EL-9E -9710-7002-E7000 -	EFC LANDFILL CLSR 7/99 BOND IN	1,364				0.0%	17,457	17,457	0.0%	
		1,420	-	-	-	0.0%	55,228	55,228	0.0%	
GRAND TOTAL		2,569,531	3,176,442	1,298,506	1,872,009	40.9%	2,964,478	(211,964)	-6.7%	
REVENUE										
EL-OR -1001-0000-OR1001-	REAL PROPERTY TAX	(1,024,094)	(1,065,843)	(1,065,843)	-	100.0%		1,065,843	-100.0%	
EL-1R -2130-0000-1R2130-	PUNCH CARD/BAGS	(558,368)	(600,000)	(277,559)	(322,441)	46.3%	(700,000)	(100,000)	16.7%	
EL-1R -2131-0000-1R2131-	TIPPING FEES GREENPORT	(941,767)	(875,000)	(508,972)	(366,028)	58.2%	(1,000,000)	(125,000)	14.3%	
EL-1R -2132-0000-1R2132-	TIPPING FEES C & D	(540)				0.0%	-	-	0.0%	
EL-1R -2133-0000-1R2133-	FEES RETURN CHECKS ETC	(945)	-	(285)	285	0.0%	-	-	0.0%	
EL-1R -2134-0000-1R2134-	ROLL OFF CONTAINERS	(215,197)	(300,000)	(78,265)	(221,735)	26.1%	(300,000)	-	0.0%	
EL-1R -2135-0000-1R2135-	CARTAGE FEES	(81,770)	(80,000)	(42,250)	(37,750)	52.8%	(80,000)	-	0.0%	
EL-1R -2136-0000-1R2136-	LEAF & BRUSH FEES	(9,102)	(14,000)	(3,687)	(10,313)	26.3%	(14,000)	-	0.0%	
EL-1R -2138-0000-1R2138-	RECYLING REBATES	-	-	(4,808)	4,808	0.0%	-	-	0.0%	
EL-2R -2401-0000-2R2401-	INTEREST AND EARNINGS	(730)	0	(421)	421	0.0%	(1,000)	(1,000)	0.0%	
EL-5R -2665-0000-5R2665-	SALE OF EQUIPMENT	(13,925)	(8,600)	-	(8,600)	0.0%	(8,600)	-	0.0%	
EL-5R -2680-0000-5R2680-	INSURANCE RECOVERIES	(701)	-	-	-	0.0%	-	-	0.0%	
EL-6R -2701-0000-6R2701-	REFUND PRIOR YR EXPEND	(1,277)	-	-	-	0.0%	-	-	0.0%	
EL-6R -2770-0000-6R2770-	MISCELLANEOUS	(30,241)	(50,000)	(19,077)	(30,923)	38.2%	(50,000)	-	0.0%	
EL-8R -3002-0000-8R3002-	MUNICIPAL RECYCL GRNT PGM	-	(170,000)	-	(170,000)	0.0%	(170,000)	-	0.0%	
EL-8R -3920-0000-8R3920-	STATE AID -NYS ERDA HAZ WASTE	-	(13,000)	-	(13,000)	0.0%	(313,000)	(300,000)	2307.7%	
		(2,878,657)	(3,176,443)	(2,001,167)	(1,175,276)	63.0%	(2,636,600)	539,843	-17.0%	
TAX LEVY							327,878			

Appendix H

Public Comments and Inventory

LSWMP

Public Comments Inventory

Comment No.	Commenter	Location	Date	Topic	General Comments	Response
1	John Bradley	Claverack	2/11/2022	Program Strategies need more detail Lack of data	Missing analysis, goals and timeframe for program strategies. Points out lack of waste generation data.	<p>Appendices D and E of the draft LSWMP provide an analysis, goals, and timeframe for each of the 15 program strategies.</p> <p>The draft LSWMP includes data of both waste processed through County facilities and any relevant waste reported to the NYSDEC in annual reports (including landfill annual reports). The projections included in the LSWMP are based on real data gathered from the annual reports submitted to the NYSDEC. The County's plan to improve solid waste and recycling data collection is laid out as program strategy #9.</p>
2	Larry Waite	Kinderhook	2/22/2022	Program Strategies need more detail Lack of data Organization	Program strategies need goals and a way for progress to be measured. Projections should account for program strategies, not just population decline. Redundancy in plan is distracting.	<p>Appendices D and E of the draft LSWMP provide an analysis, goals, and timeframe for each of the 15 program strategies. The County is required to review the goals and timeframes every two years as part of their biennial compliance report to the NYSDEC.</p> <p>The projections included in Appendix A were generated with the program strategies in mind; they are based on more than a population decline.</p> <p>The draft LSWMP is organized to follow the requirements set forth in 6 NYCRR Part 366-2.</p>
3	Brenda Adams	-	3/8/2022	Green practices marketing plan	Thinks the County should consider a marketing plan to brand and frame education and outreach.	As part of program strategy #8, the County plans to put a focus on education and outreach during the planning period. This program strategy will compliment any progress made in the other program strategies identified.
4	Donna L. Sawchuk	Ancram	3/21/2022	Biosolids land application	Concerned about PFAs associated with land application of biosolids in the County	The draft LSWMP does not indicate any plans to resume land application of biosolids in Ancram.
5	Michael Chameides (Supervisor, Columbia County Board of Supervisors - Hudson)	Hudson	3/29/2022	Composting	Supports program strategy #6 (organics diversion and composting)	The County launched a pilot food scraps composting program in Fall of 2021. In the coming years the County plans to gather data from this pilot program and determine ways to effectively expand this program.
6	Anthony V. Winig	Lebanon Springs	4/9/2022	Composting Lack of data	Wants details of food scraps composting program. Why are certain DFSGs required to recycle and others aren't? Points out lack of waste generation data. Concerned that the County's waste generation is not going to trend downward.	<p>As the County's pilot food scraps composting program is still in its infancy, the details of the program have not been solidified at this time.</p> <p>The identification and requirements of DFSGs is the responsibility and jurisdiction of the NYSDEC, not the County. However, it is the County's understanding that while all DFSGs are required to donate edible food scraps, only DFSGs within 25 miles of a food scraps recycling facility with capacity are required to divert inedible food scraps for recycling.</p> <p>The County's plan to improve solid waste and recycling data collection is laid out as program strategy #9.</p>
7	Dan Bauman Tsia Carson Courtney Hodell Douglas Lloyd Sandra Meier Nathan Rostron Anne Schaefer Barbara Shannon Kate Traecy Patrick V Brown	Valatie, Malden Bridge, Kinderhook, and Hudson	4/22/2022	Composting	Want a food waste composting program (no need to evaluate feasibility as surrounding counties have successful programs). Ideas: focus pilot program on suburban areas, create food scraps pick up option, work with FoodScraps360 (in Albany) or other similar business, partner with a school district or DFSG. Commenters provided a list of "research"	The County launched a pilot food scraps composting program in Fall of 2021. In the coming years the County plans to gather data from this pilot program and determine ways to effectively expand this program.
8	Members of the Chatham Climate Smart Committee	Chatham	4/22/2022	Lack of data Program Strategies need more detail	Lack of concrete data: waste flows, comparative data with other regions, historical levels, municipal best practices. No suggestions to remedy lack of data. The 15 tasks' next steps and goals are not detailed enough.	Section 2.0 of the draft LSWMP provides a breakdown of waste and recyclables generated in the County. The waste generation and projection data in the draft LSWMP is sufficient to meet 6 NYCRR Part 366-2. The County's plan to improve solid waste and recycling data collection is laid out as program strategy #9.

LSWMP

Public Comments Inventory

Comment No.	Commenter	Location	Date	Topic	General Comments	Response
9	Larry Waite	Kinderhook	4/22/2022	Program Strategies need more detail Organization Lack of data	It's important to have a NYS approved LSWMP. Need more detail for program strategies and need to identify which program strategies should be prioritized over the 10 year planning period. Plan needs better organization. Need real data not just projections. The projection calculator shows a stagnant population, though the LSWMP indicates a decrease in population throughout planning period. Need detailed cost analysis for each program strategy. No mention of grants. The County should be engaging all potential interested groups with education and outreach sooner than the implementation schedule identifies.	<p>The County intends to make progress on all of the 15 program strategies listed over the 10 year planning period. There's no reason to identify program strategies to prioritize, as they were all included in the LSWMP because they're all important initiatives for the County.</p> <p>The draft LSWMP is organized to follow the requirements set forth in 6 NYCRR Part 366-2. Appendices D and E are organized per 6 NYCRR Part 366-2.5 and 2.6, respectively.</p> <p>The draft LSWMP includes data of both waste processed through County facilities and any relevant waste reported to the NYSDEC in annual reports (including landfill annual reports). The projections included in the LSWMP are based on real data gathered from the annual reports submitted to the NYSDEC. The County's plan to improve solid waste and recycling data collection is laid out as program strategy #9.</p> <p>The NYSDEC's Population and Municipal Solid Waste Composition Calculator has been programmed to show population projections based on the NYSDEC's data. The County does not control this calculator's population programming.</p> <p>Producing detailed annual cost estimates for each program strategy would be a huge undertaking for the County and is not feasible at this time. Prior to any large investments, the County will produce relevant cost estimates as necessary. The State's MWRR grant program is mentioned in the LSWMP. This grant, as well as others as applicable, will be investigated at an appropriate time.</p> <p>The County has limited resources and cannot engage all groups with educational outreach concurrently, while also making progress on the other identified program strategies. The draft LSWMP establishes a 10 year planning period, so the tasks associated with the program strategies will be spread out over those 10 years.</p>
10	Zero Waste Columbia John Bradley Jill Berman L. Parker Stephenson Larry Waite Stephanie Sussman Lisa M. Ross	Claverack, Ghent, Gallatin, Kinderhook, and Chatham	4/22/2022	Program Strategies need more detail Lack of data	Need more detail for program strategies and need to identify which program strategies should be prioritized over the 10 year planning period. Need better waste generation data. LSWMP lacking environmental impacts, best practices in MSW industry, and economic/financial aspects. Need discussion on climate and GHG impacts.	<p>The County intends to make progress on all of the 15 program strategies listed over the 10 year planning period. There's no reason to identify program strategies to prioritize, as they were all included in the LSWMP because they're all important initiatives for the County.</p> <p>The draft LSWMP includes data of both waste processed through County facilities and any relevant waste reported to the NYSDEC in annual reports (including landfill annual reports). The projections included in the LSWMP are based on real data gathered from the annual reports submitted to the NYSDEC. The County's plan to improve solid waste and recycling data collection is laid out as program strategy #9.</p> <p>The information and topics contained in the draft LSWMP is sufficient to meet 6 NYCRR Part 366-2. Section 5.12 of the draft LSWMP identifies and evaluates available technologies that are alternatives to landfilling. Additionally, Table 1-3 in the draft LSWMP identifies neighboring planning units, their activities, and potential impacts on the County. The projections included in Appendix A were generated with the program strategies in mind.</p>
11	David L. Farren, Town of New Lebenon CAC Chair	New Lebanon	4/22/2022	Lebanon Valley Speedway	During racing season (April-Nov), there is significant waste generated by both spectators and the RV park, which assembles nearby. Plan should have a sharper analysis of the Lebenon Valley Speedway, including: predicted levels/types of waste and how this waste should be handled.	Added language to Section 1.7 detailing the Lebanon Valley Speedway and associated wastes. Waste currently generated at the Speedway and associated RV park that is disposed of at solid waste management facilities is accounted for in the County's waste generation estimates and projections.

----- Forwarded message -----

From: **John Bradley** <johnbrad322@gmail.com>

Date: Fri, Feb 18, 2022 at 8:32 AM

Subject: Fwd: Discussion on Draft MSW Plan (confidential)

To: Jolene Race <Jolene.Race@columbiacountyny.com>, michael O'Hara <jmichaelohara@gmail.com>

Hi Jolene,

Thanks for getting back to me yesterday. Here is a revised copy of my email to Michael on the Draft plan he sent us. Several others in ZWC are looking at it and may send you comments.

In any case, we hope that the plan will get tightened up and some of the deficiencies will get addressed before it goes public. A Public Comment period can be very instructive if it is well organized and understandable to its readers. I would be glad to have follow up conversation on any of this if it would be helpful. I do realize that the draft I read is well over a month old and you all may have already addressed some or most of these issues in the interim. Thanks for sharing an early draft

John

----- Forwarded message -----

From: **John Bradley** <johnbrad322@gmail.com>

Date: Fri, Feb 11, 2022 at 12:34 AM

Subject: feedback on Draft MSW Plan (confidential)

To: michael O'Hara <jmichaelohara@gmail.com>

Michael,

Here are some quick reactions from reading most of the draft

There is a lot of good information in it. Parts are very helpful for me in understanding the existing framework, but the draft has serious shortcomings as a PLAN.

I also understand that compliance with NYS regs may be an underlying driver for the Plan,, but is not a valid excuse for much of what I read..

The 15 Tasks and corresponding Goals in the Exec Summary were confusing because I could not find follow-through in the body of the plan sections. I would expected the Exec Summary to provide the framework for the overall plan and the intended outcomes. The net effect is that there isn't much substance as a plan. The tasks and goals might be a starting point for analysis, objectives, action steps, timeframes, intermediate

goals and objectives. There is no coherent framework for how these tasks are to be implemented? As a 10 year plan, what are the sub-plans? What do they want to accomplish in 2 years, 5 years, etc. What are the building blocks? Some of the Tasks are closely interrelated with other tasks and this is not discussed.

The most disturbing aspect of the draft is that there is no framework of metrics for understanding performance. The explanation for why (p..52) could be a stepping stone for taking action to develop the framework. Is there really no requirement to report or collect waste flows data? What 'enforcement' are they referring to? What is good or best practice for having metrics like many governments have? What is the road map for getting there? A solution is not mentioned until the Education Chapter where it is suggested that the County could rely on volunteer groups to do surveys to collect performance data. This is an abdication of administrative responsibility. Task #9 'Improvedata collection' and its Goal should have a strong action plan. There may be very explainable reasons for why we don't have metrics and a framework. This should be all the more reason to develop an action plan. A section of the plan can explain the step needed to build it, even if it may take a few years. A plan without tools to measure performance is not a plan.

There is enough evidence/experience from many ZW communities and even neighboring governmental units to make me question some of the draft content. It is almost like providing reasons why we haven't acted on so many MSW issues and using that information as reasons to water down the plan. In contrast, two examples are the Ulster County UCRRA and NYC (**Sims Municipal Recycling Facility** <https://www.simsmunicipal.com/about/>) might help raise a different set of issues for planning. What would have to happen for us to achieve best practice? It might take 20-30 years, but let's ask and address the question.

Michael, I have focused on this issue of metrics because it is so foundational to a plan. This lack of performance metrics makes it a hollow plan. Perhaps Appendix E which we do not have yet would shed some light on this.

In general, I don't think the draft has to be so un-aspirational. No discussion of good or best practices and no 'comparative' information on where Col Cty stands compared to other counties or the state or other regions, or the USA or EU, etc. The lack of metrics can be the undoing of a plan. This issue could be addressed in a much more positive way.

Many of the implementation tasks play prominent roles in Zero Waste MSW plans, but the Draft's tasks for the most part are just there with no context, no best or model practice and no specific plan of action. Next steps or follow up planning should be addressed for each task or group of tasks.

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John Bradley
cell 412-720-1252

Jolene

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Jolene D. Race, Director

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Comments on Columbia County's 2022 Local Solid Waste Management Plan (LSWMP)

The overall purpose of the Local Solid Waste Management Plan (LSWMP) is to provide a framework indicating how Columbia County will address NYS solid waste priorities over the next ten years. The Plan should provide residents, businesses, institutions, and organizations information on the county's organizational process for implementing its solid waste management goals in the coming years, by evaluating existing practices, and by proposing new approaches to explore in addressing solid waste management.

Chapter 1.0 - Planning Unit Description: This component of the Plan is intended to provide a detailed description of the planning unit and its members, identification of generators and special circumstances that characterize the planning unit and its individuals.

- The plan provides a good description of the demographics and geographic location of the County. Of interest is the decrease in the population of the county and changes in the types of businesses in the county and the lack of data on waste concerning businesses, schools, and other entities. Given the twelve years between this plan and the 2010 plan, it is surprising how much data collection and analysis is still needed at this time, thus impacting the county's ability to immediately plan implementation strategies.
- The plan lists the planning unit members as the name of the municipalities versus the names of those individuals from each municipality. In Section 1.6.2, the Plan indicates that *"currently the members are not directly involved in preparing or implementing the plan; however, the members contribute to the plan through their representation on the Board of Supervisors and participate in the public review and comment period."* The Plan also notes that the planning unit members *"play a significant role in the gathering of information and quantities of materials collected and recycled within the towns at various businesses, schools, and other recycling facilities."* These statements should be clarified to establish the actual members of the unit and their specific role and responsibilities. Additionally, this section of the plan specifies various county events, institutions, schools, libraries, and other entities that have an impact on the LSWMP. Yet, the plan does not estimate the data needed to assess the impact of these entities, indicating that data is needed for each event or entity, leading the reader to believe that the planning unit members did not gather data on these entities.
- The NYS Department of Environmental Conservation indicates that public participation is necessary in the review of the SWM Plan before it is submitted to the DEC for review and approval. While public review and comment is indicated as an "end-of-the line" activity an up-front approach for public involvement could have positive benefits in the approval and ultimate implementation of the plan. A practical approach to community engagement would have been to establish a process for the *Planning Unit* to engage in public involvement prior to the mandatory public comment and hearing periods. Such active engagement of citizens, local governments, businesses, schools, libraries and other county organizations in the process could have provided greater access to data to inform the development of the LSWMP. It also could serve to motivate future participation and buy-in of actions that will benefit the economy and environment. This more inclusive approach could result in potentially fewer negative comments about the plan at public

hearing(s), necessitating County responses to be submitted to the NYSDEC prior to the state's approval. A missed opportunity.

- The Plan lists several neighboring units and indicates that they will generally not have a potential impact on its LSWMP. The Plan needs to clarify the statements made in table 1-3 versus the language in 1.6.1 which appears to indicate possible opportunities for interjurisdictional programs and issues. Collaborating with neighboring planning units could be very cost effective in exploring new alternatives to solid waste management.
- Section 1.9 lists the 2010 Plan's 16 goals and objectives, 9 major accomplishments and status updates. Most of the 2010 goals were not measurable and it is very difficult to determine which goals were fully, partially, or not completed, based on the list of accomplishments and status updates. To provide readers and state reviewers a clear understanding of this information, the plan should be reformatted by stating the 2010 goals, followed by information to documentation of its status or each goal, or a rationale why the goal was not addressed/attained.
- Section 1.10 indicates the summary of changes to the Planning unit. The first paragraph states no changes in the planning unit and then in paragraph two a statement is provided about Canaan rejoining the Planning Unit. This fact is included in several sections of the plan, yet there is not discussion on how the addition of this member of the Planning Unit will have on the LSWMP, if any.

Chapter 2.0 – Waste Generation and Materials Recovery Data: This section of the plan provides estimates of the current and future projections of quantities and composition of the overall waste stream.

- The Plan lays out a significant problem in developing and implementing a plan to decrease the use of landfills while increasing approaches to recycle, reuse, and recover solid waste. This problem is confounded by the entities who control or are involved in solid waste management and their responsibility to provide data on the types and amount of solid waste in Columbia County. Given the status of the County's jurisdiction over private and commercial solid waste management facilities, the data diverted by private haulers appears to be not included in the County's annual reports, thus under counting a significant percentage of waste transported to landfills and other facilities outside the county.
- Future solid waste planning in the County should be based on data which encompasses all residential, commercial, and institutional waste, thus requiring a different relationship between the County and private haulers of the county. Additionally, the new LSWMP should include total county waste projections for each year of the ensuing period based on estimated population changes and other factors impacting population variations, such as unemployment rates, higher costs of living, and colder climate, thus further emphasizing the need to establish data reporting requirements from private haulers. It will be difficult to analyze and measure the short- and long-term impact of the LSWMP goals and objectives without a full understanding of how the solid waste data changes from year to year as various new and extant waste management activities are implemented. It appears that the County has the authority to enforce the collection of data from private haulers and should do so.

- The Plan should call for establishing a comprehensive data management system to record the types and amount of solid waste that is produced and then recycled, reused, restored, and diverted. Tracking the success of this Plan over the next ten years cannot be ascertained without good clean data. Longitudinal data not only demonstrates the strengths and weaknesses of the County's Plan but what changes are needed to strengthen its solid waste programs or consider other new approaches.
- Incomplete, inconsistent, and unavailable data should not be an excuse to consider implementing programs to meet the Plan's goals. Language in the Plan such as "investigating the implementation of a survey and reporting program" should be reworded to "develop an efficient data and reporting system".
- Columbia County Government are responsible for the success of its solid waste management system, including its operation, finance, enforcement, data collection and evaluation. The Plan should call for strengthening its jurisdiction over private waste management vendors to improve data collection efforts and other goals related the county's future solid waste diversion to landfills and other facilities.
- Although the appendices are not available in this draft Plan, it appears that the County could have sufficient data to establish base-line benchmarks for assessing the progress of this Plan over the next ten years. Current data may also be available to identify successes the county may have made in diverting different types of solid waste and on recycling efforts of school districts and other entities over the past ten years.

Chapter 3.0 – Existing Solid Waste Management System: An LSWMP must include a description of the solid waste management facilities and programs which serve the planning unit (including those located within and outside the planning unit).

- Based on the information in this section, Columbia provides an array of facilities and programs to address its solid waste management needs. Many of these efforts call for diverting waste to out-of-county landfills (Columbia County has no active landfills.) and recyclable centers. The solid waste collected at the transfer station (including waste from each of the seven convenience centers) is hauled to Ontario County landfill and recyclables are hauled to Albany County and Rutland Vermont. In addition, private haulers are not required to deliver waste and recyclables to county facilities but rather dispose of it independently. Given the data provided in Section 2.0, it is not clear whether the data included in Tables 2.2, 2.3, and 2.4 are attributed to just county haulers or both county and private haulers. (It is the reader's understanding that private haulers dispose of a larger percentage of waste and recyclables than county haulers. This is important information to know)
- Tables 3.1, and 3.3 should add another column providing the annual tonnage of waste and recyclable materials disposed at each facility by county and private haulers.
- Disposing waste is costly, yet the Plan does not address the annual costs of disposing solid waste in out-of-county landfills. Without benchmark costs it will be difficult to determine the efficiency of the plan's activities over the next ten years. Are taxpayers spending less on diverting solid waste?

- This section of the Plan includes information on disposal fees. The Plan should also include information on the amount of revenue generated by these fees and how the revenue is used in support of solid waste diversion programs.
- The section also indicated that the County plans to evaluate various county activities and to determine what improvements or other actions are necessary. The Plan is not clear who will conduct these evaluations and the anticipated cost for them.
- Section 3.0 notes that institutions and businesses predominately rely on private haulers with little oversight by the county, including waste and recyclables collection data. The plan notes that the county will conduct evaluations to assess the effectiveness and/or needs of these entities. The Plan, as written, acutely identifies the need for greater county oversight of all solid waste and recyclable operations, whether public or private. The Plan should propose short- and long-term steps to achieving this goal, including education and enforcement of recycling and local disposal laws and regulations.
- Section 3.3.10 of the Plan notes the County's recognition of the importance of educating the community. The county appears to limit this education via its website. The plan should expand its educational and outreach programs to inform and engage county residents, businesses, and institutions through a variety of collaborative public and private organizations designed to help reduce the amount of waste that is disposed in landfills. Programs could be offered through various venues, including workshops in town halls and at the County Fair, libraries, informational presentations during town and county government meetings, social media, and website tutorials (such as creating a home compost), and dissemination of informational materials.
- This section should include a summary of the data gaps and information needs related to the County's facilities and programs. Section 3.10 of the Plan is difficult to understand and deserves edification.

Chapter 4.- Existing Administrative and Financial Structure: The LSWMP should include a description of the existing administrative and financial structures of the planning unit. Moreover, it should assess the strengths and weaknesses of the current structure with respect to attaining the planning unit goals.

- While the last LSWMP clarifies that the Department of Solid Waste has the overall responsibility for implementing the plan as directed by the Columbia County Board of Supervisors and the Solid Waste Committee, the plan does not fully address the NYSDEC criteria for this chapter. This section should clearly establish the administrative and fiduciary roles and responsibilities of each level of government.
- According to the NYSDEC's LSWMP requirements, the plan should include the strengths and weaknesses of these structures. This analysis is not addressed in the draft Plan.
- Section 4.2 should include information on the costs of solid waste management including its federal, state, and local revenue streams and costs or liabilities based on the county's management approach. This section should also include estimated savings based on the county's ability to divert increased solid waste from landfills over the next ten years.
- Section 4.0 could be strengthened by incorporating the financial information (including revenues and expenses) listed in the Columbia County Budget, into the appropriate descriptions of programs and activities described in the LSWMP. Funding mechanisms

(fees, grants, tax levy etc.) that support the operations, maintenance, programs, and events administered through the Department of Solid Waste Management should be indicated in the plan.

- Absent in this section is any discussion of securing federal, state, or private foundation grant funds to support activities in the Plan. Federal and state grant funds are available to support local municipalities, local public authorities, and non-profit organizations in their efforts to reduce waste and increase recycling, as well as educational efforts to prevent the generation and reuse of waste. Local funds leveraged with private, federal, and state resources would afford the County greater opportunities for innovation and up-scaling solid waste management approaches --- a critical and necessary step in achieving greater diversion of waste to landfills. What steps will the County take to secure these funds to support solid waste activities, including federal infrastructure funds?
- The plan should identify and amend all relevant laws, regulations, and policies that affect the work implemented under the LSWMP and clearly indicate how such rules should be enforced. This review should also include New York State's new environmental legislation taking effect this year.
- Statements are made in this section about lost revenue due to private haulers not using county facilities, the inability to competitively bid larger volumes of waste, and the impact of abandoning flow control. Improving these conditions should be established as a measurable goal for this Plan. The action "Exploring the feasibility of reinstating flow control if conditions are favorable" is too vague.
- Section 4.4 lists other pertinent developments, including community smart programs and taskforces and the NYSEDA Clean Energy Communities program. The Plan does not indicate how these resources are to be tied to the goals and implementation tasks listed in the Plan.
- The reference to the County's Environmental Management Council, which reports to the Board of Supervisors is absent from the Plan. The Plan should clarify the EMC's role and responsibilities given its potential to solicit community perspectives about the plan, solid waste alternatives and best practices, metrics for measuring the Plan's progress, and assistance in providing feedback and problem solving when necessary.
- Addressing this issue will improve the readers' comprehensive understanding of the administrative and financial operations of this important work of the County.

Chapter 5 – Evaluation of alternatives and selection of the system: After assessing the existing conditions, the next step is to evaluate the various technological and programmatic alternatives and enhancements available to the planning unit to decrease the amount of waste disposed and increase reduction, recycling, and recovery of recyclables.

- The Plan is required to show its evaluation of various alternative programs and technologies that could enhance the County's existing solid waste management program elements or add new program elements to the planning unit as alternative programs. Specifically, the Plan must address administrative/technical and jurisdictional impacts, including interest in participation with other neighboring units. As this draft did not include any such information in Appendix D, it was not possible to assess the county's compliance with the state's criteria required for this assessment. Yet, the Plan concluded

that “the continuation of diverting solid waste is the only economically disposal option for any waste that cannot be reduced, reused, or diverted.”

- The Plan also indicated that it was closing the door on evaluating alternative waste disposal options any further during the ten-year period, with the caveat that they will keep abreast of their further development.
- To improve reader comprehension and friendliness, the administrative/technical and jurisdictional impacts should be included in Section 5 under each alternative program rather than in a separate appendix.
- As noted in the Plan, composting is being implemented on a small scale in Columbia County, both by private individuals and businesses, and in collaboration with an experimental statewide program. In 2019, New York State’s *Food Donation and Food Scraps Recycling Law* was enacted to stimulate recovery and reuse of food waste, with an emphasis on composting in lieu of landfills. The Plan does not provide steps the County will explore in implementing this state law.
- Many statements made throughout this Plan are not substantiated with data. For example, in Section 5.6 the County has determined that training and education is more effective than enforcement actions. While education can play a significant role in solid waste management, the County appears to forgo enforcement of its policies. Section 5.7 of the Plan states that “based on the County’s infrastructure, a weight-based program would not be easily implemented.” No rationale was provided for this statement.
- The Plan notes that public outreach and education is a key component of solid waste management and that it is best accomplished when practiced in partnership with the community. The Plan also notes that it will evaluate its current educational methods for promoting county policies. It appears that the primary method for education is via its website. The Plan does not indicate the level of fiscal support for training and education activities and events and evaluation efforts, such as the surveys mentioned in Section 5.3.
- The County should take a leadership role in expanding its collaborative efforts with local and state organizations, including Zero Waste Columbia to educate consumers about programs and practices to reduce waste in Columbia County. Programs should be offered through various venues, including workshops in town halls and at the County Fair, libraries, informational presentations during town and county government meetings, social media, and website tutorials (such as creating a home compost), and dissemination of informational materials. State funding, under the NYS Food Donation and Food Scraps Recycling Law, may also be available to support these efforts.
- The Plan’s initiative to conduct a survey is a positive step to acquiring data for supporting future changes in approaches to solid waste management. However, the statement indicating that the data collection program will require “significant resources and would require a partner to take the lead” is disheartening. This is another example of “if we don’t have the money, we cannot do it.”
- Establishing a Climate Smart Communities program is a positive step. Each community defines its own best strategies for cutting energy use, reducing emissions, and adapting to climate change. The CSC program also supports local collaborations between towns and the county to engage in local planning and project implementation around climate change actions. The Plan should include information in the Plan about how town and county partnerships could leverage local, county and state funding to increase the effects of climate change actions throughout the county.

Chapter 6 – Implementation of the Plan: A LSWMP must include a detailed implementation schedule that outlines the dates of all major milestones and events that will occur to implement the alternatives and programs selected for the planning period.

- The Plan indicates that the “preliminary implementation schedule is included in Appendix E.” This Appendix is blank. The current statement in Section 6.0 refers to a preliminary implementation schedule which appears to conflict with the State’s expectation for a “detailed schedule that outlines all major milestones and events.”

Chapter 7 – Waste Stream Projections: A LSWMP must include projections for all solid waste generated (both quantity and composition) within the planning unit, based on actual or estimated solid waste generation data. The disposal, reduction, and recovery projections need to be integrally linked to the implementation schedule estimates of the progressive reduction of solid waste generated and destined for disposal, and the expected increases in recycling rates over the 10-year planning period.

- According to the Plan, Appendix A will include the required projections. Appendix A includes not data currently. Sections 7.1 and 7.2 appear to be misplaced and would be better included in Section 1.0 and 5.0 of the Plan

----- Forwarded message -----

From: **Supervisor Canaan** <supervisor@canaannewyork.org>

Date: Tue, Mar 8, 2022 at 11:23 AM

Subject: Draft SWMP

To: Jolene Race <jolene.race@columbiacountyny.com>

Cc: Ron Knott <Supervisor@stuyvesantny.us>

Good morning Jolene,

Thank you for getting the Draft Plan submitted and distributed. I have a couple of questions about process. Has this gone to Public Works and Finance or is it going to a Public Hearing before we have committee input? If it goes to a Public Hearing first, does it go to the committees after the 45 day comment period or before? Is there a deadline for passage?

Could you share with me any comparable plans you may have looked at from other municipalities with the preparation of this plan?

Two pieces of information that may be useful; the Canaan transfer station processed about 650 tons of MSW & C&D waster last year, the County Clerk's KISS program has recycled over 95,000 pounds of recycled paper over the last 5 to 6 years.

Resources that are not mentioned include the ReStore (they calculate annually the amount of repurposed goods resold to consumers), Free Cycle & swap websites, clothing & household bins managed by fire companies, churches, schools and charities.

Have we considered advocacy as a tool in our box? Requests for the state to provide incentives & infrastructure for community recycling, expansion of the bottle bill, etc?

Have we considered a marketing plan that would brand and frame our education and outreach? When Jiminy Peak went to wind power to power its facilities, they not only realized the cost savings associated with green energy, they became a green destination. Their data showed an 18% increase in business as consumers cited they chose Jiminy because it was committed to green practices.

These are my thoughts after a first read, looking forward to future discussions.

Brenda Adams

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jolene.race@columbiacountyny.com

----- Forwarded message -----

From: **DONNA SAWCHUK** <donna.sawchuk@verizon.net>

Date: Monday, March 21, 2022

Subject: Fwd: Songbird Organic Farm ME

To: jolene.race@columbiacountyny.com

My apologies. Incorrect spelling of your email address

Sent from my iPad

Begin forwarded message:

From: Donna Sawchuk <donna.sawchuk@verizon.net>

Date: March 21, 2022 at 3:42:07 PM EDT

To: jolene.race@columbiacounty.com, jamiepurinton@fairpoint.net, abassin@aol.com,
brian.maglienti@dec.ny.gov

Cc: hila.richardson@gmail.com, lindasawchuk@gmail.com, jamesmitarotonda@yahoo.com,
Deweybullock@gmail.com, dew26@aol.com

Subject: Fwd: Songbird Organic Farm ME

Dear Ms. Race,

I zoomed into your 03/09/2022 Columbia County Solid Waste Management Plan Public Hearing. I'm sending multiple emails to you to express my concerns about the historic and possible resurgence of land application of sludge biosolids (treated or untreated) or raw sewage. I am sending a couple of emails I received from Maine and hopefully this will enter into your 10 year plan for Columbia County.

For over forty years a small beautiful farm in Ancram, NY which is owned by a Dutchess County Septic Sanitation Service practiced land application of raw sewage to farm fields. This practice stopped approximately five years ago with the help of DEC in Troy. The farm is idle at the moment but the Septic business expressed interest last summer in moving the business from Dutchess County to Columbia County and applying for land application permit from DEC again. I am not certain this will happen, however based on articles popping up concerning PFA contamination of crops, organic produce and grains, wells, cattle, etc. this situation warrants a great deal of attention.

I am sending these emails to DEC Troy, CAC Ancram, NY, Ancram Town Supervisor, Art Bassin and others to illustrate what has been going on with Maine farm lands and PFA environmental and possible public health problems.

Others on Sawchuck Road are aware of this situation and along with me would oppose a resurgence in land application of sludge or sewage again regardless of who owns this farm.

It would behoove CC Solid Waste Management Plan to take this PFA contamination into serious consideration when dealing with WWT biosolids and sewage particularly when thinking about a 10 year plan.

If you have any questions, email me or Art Bassin, Ancram Town Supervisor. Art is aware of the history of this corner of Columbia County. The goal of Ancram is to keep rural areas rural and healthy.

Thank you for your consideration.

Donna L. Sawchuk
[150 Sawchuck Road](#)
Ancram, NY [12502](#)

-----Original Message-----

From: DONNA SAWCHUK <donna.sawchuk@verizon.net>

To: craig.nickerson@verizon.net

Sent: Wed, Mar 9, 2022 5:55 pm

Subject: Songbird Organic Farm ME

<https://amp.wbur.org/news/2022/02/08/pfas-forever-chemicals-crisis-maine-agriculture>

Shared via the [Google app](#)

Sent from my iPad

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MEMO

To: Jolene Race
From: Michael Chameides
Date: March 29, 2022
Re: Solid Waste Plan Public Comment

Dear Director Jolene Race,

At the March 9, 2022 Public Hearing for the Draft Local Solid Waste Management Plan, I offered comments on the Solid Waste Management Plan. I'm also submitting those comments in written form.

I support accelerating and expanding the county's implementation schedule for #6 Support Organics Diversion Efforts and Promote Backyard Composting. Composting offers benefits to our community:

1. Reduces landfill waste
2. Reduces greenhouse gas emissions
3. Creates a renewable product
4. It's a process that we can control and manage locally

My constituents have expressed support for a county composting program, and I'm proud that the county is piloting a program now. Given the importance, I would also like to explore accelerating and expanding the scope of the implementation timeline of #6.

Sincerely,
Michael Chameides
Supervisor, Columbia County Board of Supervisors (Hudson, NY - 3)

----- Forwarded message -----

From: **Tony Winig** <tony_winig@hotmail.com>

Date: Sat, Apr 9, 2022 at 4:23 PM

Subject: food scrap composting / 08APR2020 ATU article (attached) / questions about FEB 2022 Col. County draft MSW plan / Tony Winig / 09APR22

To: jolene.race@columbiacountyny.com <jolene.race@columbiacountyny.com>

<https://www.pressreader.com/usa/albany-times-union/20220408/281835762229864>



Cashing in on rotting food - PressReader

Catalog; For You; Albany Times Union. Cashing in on rotting food Bethlehem compost system cuts seven months off process 2022-04-08 - By Massarah Mikati Bethlehem . The town unveiled its new technology for food scrap composting Wednesday afternoon that is unique to municipalities in the Capital Region.

www.pressreader.com

Ms Jolene Race
Director - Solid Waste Division
Columbia County, NY
51 Newman Road
Hudson, NY 12534
(518) 828-2737
jolene.race@columbiacountyny.com

Dear Ms Race,

Howdy and hope all at Solid Waste Division are well.

The Friday 08APR22 Albany Times Union Section C had an article of personal interest to me - 'CASHING IN ON ROTTING FOOD'. Town of Bethlehem per the article made \$ 145,000 in 2021 from selling compost. I can't tell how much was yard waste, etc. and how much was organic waste, i.e. food scraps. But the Bethlehem ASP (AERATED STATIC PILE) composting system will apparently pay for it's \$ 238,000 Bethlehem outlay and NYSDEC matching grant in like 3 years at that compost sale rate. Per the article, Bethlehem has made \$ 45,000 year-To-Date from compost sales so far in 2022. Mention was made of a Capitol District service to pick up food scraps - FOODSCRAPS360. The Bethlehem composting facility is apparently partnering with FOODSCRAPS360.

With that article in mind, I took my recyclables to local drop off point. We compost our own wet garbage, recycle plastics and paper and only usually have one 45 gallon trashbag partially full each week taken away by Carmen Barbato pick-up.

I preparing for this email today, I found the Feb. 2022 Columbia County 'DRAFT LOCAL SOLID WASTE MANAGEMENT PLAN' and read it.

I am very glad there will be a pilot program to collect and compost organics (food scraps) in Columbia County. Although I think reduction / re-use - recycling of Construction & Demolition debris would result in biggest decrease in tonnage going to landfills at least most of that stuff is inert, e.g. not creating methane.

Generally, I favor NY State's movement toward plastics wastes reduction by EPR - Extended Producer Responsibility, expanded 10 cent bottle bill and reduction of single-use consumer packaging / plastics, etc. I particularly would like to see a ban on styrofoam packaging - particularly from China. And, all plastics should be recyclable or compostable. Enough on that.

In reading the Draft 2022 Plan, I have some questions specifically about Section 5.0 'ALTERNATE TECHNOLOGY EVALUATION'. (1) Who will pick up the food scraps from collection bins at Chatham and Copake - and from the other transfer stations once placed? (2) Where will these food scraps go - to GRO-MAX / Hudson, ALMSTEAD NURSERY / Claverack, KINDERHOOK MINE / Kinderhook - or a composter somewhere else? (3) Does Columbia County have to pay for this pick-up / disposal? (4) The six (6) designated food scraps generators, all are required to donate but only one is required to recycle. Why is the largest - GINSBURGS at 68% of total weekly tonnage of the six - NOT required to recycle? Beyond 25 miles to one of the three composting outfits? (The smallest tonnage source - Pricechopper Chatham - is the only one required to recycle. Why? (5) Does Columbia County in general and Hudson / Greenport specifically compost yard waste? Why not? (6) I'd be interested in a composter at reduced price from Columbia County - a la the early 2021 program sponsored by Town of Canaan / Tendai Buddhist Institute selling composters / rain barrels at reduced prices. (7) aren't there other grocery stores in Columbia County than Pricechopper - how about Walmart on Rte 9 in Greenport, Shop Right in Greenport where PriceChopper left and Hanniford in Bells Pond? (8) Columbia Memorial Hospital I think is the largest employer in Columbia County - don't they have any trash going into 'the system' - or is it hauled off out-county by private carriers?

Thanks in advance for your leadership in helping Columbia County to reduce / re-use / recycle as much as possible. I know the County is strapped for fund to characterize better the solid waste stream. The Barton & Loguidice 2022 draft LSWMP had a lot of missing numbers on quantities of waste streams, etc. Maybe the report contract didn't include B&L actually gathering specific Columbia County waste streams data. I am not sure I believe that waste streams are going to trend downward in Columbia County. I have heard that Chatham has recently handled 5 dumpsters when it used to handle 1-1/2 in the same timeframe. The NYC transplants - temporary and permanent appear to have a significant impact. If there is

not enough affordable housing, does that mean there are people unaccounted for by / in between census 10 years apart? But I am sure you keep track of total MSW tonnage - whether it is all broken out into various waste streams by measurement rather than NYSDEC "MSW Composition Tool". You and DSW will know the total tonnage because we pay for it.

So, thanks in advance for thinking about the questions I have asked. I know Columbia County is generally too rural for a food waste collection system and an ASP (AERATED STATIC PILE) composting system that Bethlehem has put in. I will continue to compost locally and minimize trash. I sincerely want ALL of us to help stop putting on average a garbage truck of plastic waste per minute into the world's oceans. I don't like my tuna fish tasting funny.....

Sincere best regards / keep up the good work / Tony Winig

Anthony V. Winig, P.E. 24 Main St. Lebanon Springs, NY 12125 (518) 766-6343 tony_winig@hotmail.com 4:19PM EDT Saturday 09APR2022

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Jolene D. Race, Director
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Hudson, New York 12534
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jolene.race@columbiacountyny.com

----- Forwarded message -----

From: **tsia carson** <tsia@ofthebirds.com>
Date: Fri, Apr 22, 2022 at 10:32 PM
Subject: Re: Public Commnet
To: Race, Jolene <jolene.race@columbiacountyny.com>

Thank you!

I have another undersignee: Patrick V Brown, Valatie

On Fri, Apr 22, 2022 at 8:59 PM Race, Jolene <jolene.race@columbiacountyny.com> wrote:
Good Evening,

Your comments have been received and will forward to the consulting firm that prepared the SWMP for Columbia County. Your comments will be reviewed.

Thank you

Jolene Race

On Fri, Apr 22, 2022 at 6:29 PM tsia carson <tsia@ofthebirds.com> wrote:
Dear Director Race,

Thank you for sharing your draft solid waste plan with the community. We, the undersigned Columbia County residents, are writing to advocate for food waste composting. We feel this is a great opportunity for the county to both reduce waste and produce revenue.

We feel the question of "evaluating feasibility" of a composting program, as stated in the draft plan, is moot - every surrounding county has working composting programs. The question is not one of feasibility, it is how do we make a plan that doesn't fail? We all want a composting plan that doesn't fail. How do we coordinate and support the local communities attempting to divert this waste? How can we entice local large waste

producers to become partners? And how can that waste, which currently is a burden on the system, become a benefit?

Understanding that resources are limited, the following suggestions seem logical.

The expansion of the residential organic composting pilot should be focused on the most densely occupied areas of the county since those will be the places where backyard composting proves challenging or impossible. Any area designated by population density character as suburban should be the focus of this effort as it will reap the most rewards - the transfer stations near and used by the town of Hudson and the villages of Kinderhook, Valatie, Philmont, Chatham should be the focus of the pilot program expansion rather than the whole county.

Create a pick up option or food scrap containers (with or without a subsidy). This may be enough to tip the scale for people composting in the more densely populated areas of Columbia. Convenience is king.

Work with an organization that has already ironed out all the kinks of food waste compost collection. This would be efficient for the county. Food Scraps 360 in Albany is a program that works with municipalities. They provide pest proof, residential bins at low cost and offer pick up services. It would make sense to approach Food Scraps 360 to get an idea of costs associated with pick up and a transfer station drop off since they are scaled to work with municipalities.

Set up a pilot composting program with an existing entity that produces a lot of waste to see if this is a viable revenue stream. A school district or significant food waste business as listed in the draft plan would be a perfect partner for this pilot. This would be a single centralized waste stream which could then be sent to a single transfer station for processing. Could this one entity be educated in waste separation to make this process efficient? Could this also have the added benefit of providing a revenue stream for the county? Would the county need a partner to help process this waste?

Following this letter is a short research list in case the county is unaware.

thanks for your time and attention

Dan Bauman, Valatie
Tsia Carson, Valatie
Courtney Hodell, Malden Bridge
Douglas Lloyd, Valatie
Sandra Meier, Kinderhook
Nathan Rostron, Malden Bridge
Anne Schaefer, Valatie
Barbara Shannon, Kinderhook
Kate Traey, Hudson

Case studies

- Dutchess county [Community Compost Co](#)
- Westchester and Putnam counties [curbside composting](#)

Area partners for food waste pilot expansion

- [Kite's Nest](#)
- [food scraps 360](#)
- [radix center](#)
- [natural upcycling](#)

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--

Best,

Tsia Carson
Language of the Birds
ofthebirds.com

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22 April 2022

Jolene D. Race, Director
Columbia County Solid Waste Department
401 State Street
Hudson, New York 12534

Re: Public Comment Period,
Draft Local Solid Waste Management Plan for Columbia County

Dear Director Race,

Thank you for soliciting comments on the Draft Local Solid Waste Management Plan for Columbia County, which was compiled by the Barton & Luguidice firm and made public in January.

The Management Plan provides a very helpful overview of all the components of, and the efforts involved, in managing the county's various solid waste streams. It is very helpful in detailing the opportunities for improvement and collaboration. We are concerned, however, that the draft suffers from a lack of concrete data, in terms of actual waste flows, and comparative data with other regions, historical levels, municipal best practices, etc. and suggestions/plans to remedy this lack. The 15 Tasks listed are only very generally outlined in terms of next steps or goals in the new appendices. Given that the county does not track, or require businesses to track, their waste production or disposal methods, it will be difficult to monitor any progress in waste diversion. The plan seems to rely fully on education, and on partnering with citizen-based efforts for improvements going forward.

We appreciate the need for collaboration and hope to work with you on various recycling efforts, including the possibility of having a battery recycling bin at the Chatham transfer station. We feel that residents are interested in improving recycling in the county and would be willing to see some of their tax money used to track the data needed, and new efforts like battery and broader organics recycling. We understand that it is not the department's responsibility to unilaterally propose/enact broad changes in waste disposal practices, and that you have budget constraints, but we are concerned that this report's lack of performance data, metrics, or discussion of municipal waste programs/best practices does not provide a sufficiently concrete or aspirational plan forward for the county.

Our comments are made with appreciation for the importance of your efforts, and a sincere desire to work with you to set and meet more concrete recycling and waste diversion goals for Chatham and Columbia County.

Sincerely,
Members of the Chatham Climate Smart Task Force
with the full support of the Chatham Climate Smart Task Force and the Chatham Town Board

April 22, 2022

Jolene D. Race, Director
Columbia County Solid Waste Department
401 State Street
Hudson, New York 12534

Dear Jolene:

As a member of Zero Waste Columbia, I write to express my comments on Columbia County's draft February 2022 Local Solid Waste Management Plan (LSWMP). I begin by recognizing the importance of Columbia County submitting an approvable Plan that fully complies with New York State's requirements.

The importance to obtain a NYS approved LSWMP cannot be understated. Recently, a staff member of the NYS DEC informed me that the failure to have an approved plan has consequences: (1) municipalities could be prohibited from diverting its solid waste to solid waste management facilities (i.e., landfills) and (2) municipalities could be denied state fiscal assistance without a State-approved LSWMP (6 NYCRR 369).

It is my understanding that the County's Solid Waste Department under your leadership has recently implemented a county-wide food scrap collection and composting program. These zero-waste programs are steps in the right direction. I would like to call your attention to the following areas of the draft LSWMP that need greater attention and thought.

- 1. Program Strategies and Goals should be Prioritized:** The Plan includes fifteen Program Strategies and related goals, which the County will address over the next ten years. The Plan, however, makes no effort to determine the priority of these strategies, (that is, what strategies will have the biggest impact on diverting waste and increasing recycling and reuse methods.) Please consider the following questions: What strategies are most important to accomplish over the next ten years and why? What are potential critical challenges and solutions? What are the key implementation steps? How will the strategies be financially supported? Additionally, the goals do not indicate how progress will be measured, making it difficult to assess how the successes of the program strategies will be determined. Well-written measurable goals and clear implementation benchmarks help to understand the building blocks or steps the County will take to achieve the Plan's goals.
- 2. The Plan needs better Organization:** Overall, the plan needs a logical process that links each program strategy to a clear rationale of its importance, its goals, and its implementation steps. This is essential so board members, other state and local governmental officials, and the public at large can understand the Plan's intent and how it will be successfully accomplished. The Executive Summary includes the program strategies and goals which primarily stand apart from the rest of Plan. The information in Chapter 5 appears to provide a description related to each of the program strategies. If that is the case, then the program strategies should be identified therein, and the content should support the rationale for its need and priority in tandem with their measurable goals. The information in Appendix D:

Alternative Technology Evaluation should be integrated into the information related to the appropriate program strategies in Chapter 5. The *Implementation Schedule* in Appendix E should include the measurable goal for each of the program strategies to show the relationship between the goal and the steps and activities to reach each goal.

3. **Improving the County's Solid Waste and Recycling Data Management System:** The Plan should emphasize its intent to design a comprehensive data management system that encompasses all solid waste data (recycled, reused, restored, and diverted) in the County, thus requiring a different relationship between the County and the institutions, businesses, and private haulers. Tracking the success of this Plan over the next ten years cannot be ascertained without this accurate data. Longitudinal data is essential. It helps to demonstrate the strengths and weaknesses of the County's Plan and to identify changes needed to strengthen its solid waste programs or to consider new approaches.

The Plan recognizes that County data only includes waste that is diverted or recycled through the county's facilities. Most of the solid waste, including recycling, construction and demolition materials, landfill waste is transported by private haulers. (It is the reader's understanding that private haulers dispose of a larger percentage of waste and recyclables than county haulers.) Since Columbia County Government is responsible for the success of its solid waste management system, including its operation, finance, enforcement, data collection and evaluation, the Plan should call for strengthening its jurisdiction over private waste management vendors to improve data collection efforts. According to NYDEC staff other municipalities have used their authority to assume greater county oversight and enforcement of the collection of data from private haulers. The Plan should propose short- and long-term steps to achieving this goal, including education and enforcement of recycling and local disposal laws and regulations.

4. **Data Projections should not be a Substitute for Actual Data:** The data included in the appendices are based on projections calculated by using the State's Population and Municipal Solid Waste Composition Calculator. As noted in the Plan, the projection tool is not a substitute for "accurately gathered and analyzed municipal specific waste composition data." Currently, the County submits real data reports to New York State. Regarding private haulers data, it is my understanding that this data may be currently available from the landfill facilities who are required to provide this information to the state. NYS DEC staff indicated that this data could be shared with the County. Real data is necessary to validate the proposed projections of the Plan over time. During the next ten years data collection and analysis will play a key factor in determining the overall impact of the County's Plan.

Further, the Plan notes that the population of Columbia County will decline during the new plan's period and that waste generated by fewer residents will decrease. Yet the detailed projections provided in Appendix A indicate that the population will remain at 61,386 for the duration of the Plan. Thus, the success of reducing waste would occur naturally, due to the County's declining population without any other activities undertaken by the County, including actions to divert materials from the waste stream through recycling, reuse, or composting and other factors and project savings for these efforts. It is my understanding that

the calculator can incorporate population reductions over the ten-year period thus providing more accurate projections of waste generations from year-to-year.

5. **Fiscal Support for Program Strategies: needs greater Clarity:** The Plan should estimate potential costs for the implementation of each program strategy. The excerpts from annual budgets in Appendix G provide little detail regarding this matter. To track the efficiency of the Plan, steps should include year-to-year costs analysis associated with disposing and diverting solid waste to out-of-county landfills. Without such analysis it will be difficult to determine the efficiency of the plan's activities over the next ten years. Do taxpayers benefit from the County's LSWMP?

Clarity is needed on the amount of revenue generated by disposal fees paid by residents of the County and how such revenue could be used in supporting the program strategies. In addition, Statements are made in the Plan about lost revenue due to private haulers not using county facilities, the inability to competitively bid larger volumes of waste, and the impact of abandoning flow control. Improving these conditions should be addressed in the Plan. The action "Exploring the feasibility of reinstating flow control if conditions are favorable" is too vague.

Absent in the Plan is any discussion of securing federal, state, or private foundation grant funds to support activities in the Plan. Federal and state grant funds are available to support local municipalities and non-profit organizations in their efforts to reduce waste and increase recycling, as well as educational efforts to prevent the generation of waste. Local funds leveraged with private, federal, and state resources would afford the County greater opportunities for innovation and up-scaling solid waste management approaches --- a critical and necessary step in achieving greater diversion of waste to landfills. The Plan should include the steps it will take to explore funding to support the program strategies

6. **Funding for Training and Educational Outreach needs Clarification:** The County's recognition of the importance of educating the community is noted in several sections of the Plan. Yet the budget excerpts indicate that the allocations for educational expenses have dropped from \$17,540 in 2017 to \$600 in 2021. The current budget appears to be woefully small given its recognized importance. Establishing this program strategy is a great first step. However, the implementation schedule does not support a timely implementation given that many groups who could benefit from the education outreach are not to be engaged until 2029 and 2030. The County's pace for expanding its efforts needs greater thought and adjustments.

Thank you do for the opportunity to comment on the draft Plan, and I hope you find these suggestions helpful as you finalize this important document, benefiting the environment and the quality of life of our residents.

Sincerely,

Lawrence T. Waite, PhD

Jolene D. Race, Director
Columbia County Solid Waste Department
401 State Street
Hudson, New York 12534

April 22, 2022

Re: Public Comment on Columbia County MSW Plan

Dear Director Race,

This letter is to provide comment on Columbia County's February 2022 draft Local Solid Waste Management Plan (LSWMP). We believe that an effective plan needs to serve several important roles: it sets direction with goals; it lays out a road map on how to get there; it provides a data framework for measurement; and it helps educate and inspire public support for the Plan. The County's plan provides considerable information on the state of waste in Columbia County and has the potential to lay the groundwork for these key roles. However, we find the Plan lacking in several critical areas, impacting the financial, environmental, and quality of life benefits of the Plan.

We support the Solid Waste Department's recent initiatives to implement several significant programs, including county wide food scrap collection, a composting program, and educational outreach. The County appears to be trending toward zero waste and should explicitly recognize this goal in the LSWMP

The following are three important areas where the plan falls short:

First, The Plan's goals for each "Program Strategy" are confusing and they do not indicate how progress will be measured in moving toward their desired outcomes. The content of each chapter should be clearly elaborated so Board members, other state and local officials and members of the public can follow the need for the strategy and its implementation process and progress. The basics of strategy development and implementation over the 10 years are missing or hard to follow. - What are the critical implementation steps? What processes are involved? What are the metrics and milestones along the way? What are the necessary capabilities needed, and what are target outcomes?

The Program Strategies should be prioritized to inform the public what is considered most important to accomplish over the next decade. The Executive Summary should clearly articulate the primary goals and key challenges the County may need to address. Potential solutions for problem areas should be outlined in the summary and further elaborated in the body of the plan.

The Table including the Implementation Plan and Schedule is difficult to follow and understand. Both Dutchess and Ulster Counties provide easy to read color coded tables. Ulster county also provides a specific outline and explanation for each of the plan years. Chapter 6 of the draft Plan offers an opportunity to provide a legible summary of key aspects of the implementation schedule and challenges that may need to be addressed.

Second, the essence of responsible materials management, including waste management, whether in a public or private setting, is measurement, accounting, accurate data... Performance evaluation and improvement has been foundational in private sector management at least since the Second World War. It has also been widely accepted in the public sector. To gloss over the importance of accounting and measurement of material waste flows and management processes seriously undermines the usefulness of any plan.

Third, the Plan is lacking a set of technical aspects: 1) the environmental impacts, (2) best practices in the MSW industry and 3) the economic/financial aspects. These themes are of paramount importance for solid waste management and the public interest.

1. **Environmental implications of Solid waste in the community and economy:** The Draft Plan fails to consider more recent environmental standards that the public has come to accept. The environmental impact of the MSW sector, including greenhouse gas emissions, is a driving reason, after public health and costs, for MSW planning. This discussion is basically missing from the plan document. Chapter 16 of the *NYS Climate Action Council Draft Scoping Plan* (released Dec 30, 2021) elaborates MSW environmental implications. Since a plan is about the future, one's sights should include likely future standards. This information should inform the County MSW Plan. This theme of environmental impact should be woven throughout the plan so all parties involved understand not just the direct and externalized costs of waste but also the missed opportunity to mitigate climate change.
2. **Evaluation of current practices, alternative technologies, and best practices:** A professional discussion of alternative technologies and best practices should be an important aspect of evaluating current practice and future directions for a plan. The recognition of critical trends and goals for worldwide MSW is part of the context for an MSW plan. The plan document fails to discuss best practices in almost any context and as a result fails to provide a helpful evaluation of current practice. For a 10 year plan, this is a serious deficiency.

Understanding best practices in the MSW industry is supremely helpful in guiding us to adopt an effective plan. There are many areas of the plan where discussion of best practice would be helpful. As an example, there is frequent reference to the inadequacy of

waste stream data in the County. Another example is the great work being done in the Town of Bethlehem through its composting program, positively impacting the environment and finances of the Town. Many communities across the USA have good data that drives improvement, including neighboring counties in the Hudson Valley. A discussion of good practices elsewhere would be appropriate in developing this capability for Columbia County.

3. **Financial/economic Impact:** The economic and financial aspects of the County's LSWMP should be addressed as a whole, and not just piecemeal. The 2021 budget tables are meaningless without an summary economic analysis of current and future waste management practices. There are economic dimensions for all County's waste flows, and the cumulative effects over a 10- year plan are large. The budget excerpts included in Appendix G should be summarized so that both the public and elected officials understand the implications, and so that changes in flows (diversion rates) can be given economic meaning, such as the impacts of reduced tonnage to landfill or increased recycling, etc. An important difficulty with the methodology of 'Projections' of future waste flows is that they are based on population driven algorithms so actions to improve diversions might not be reflected in the projections. The plan should provide tools for tracking the results of the implemented plan actions.

The information provided in this letter reflects the input of members of Zero Waste Columbia. We appreciate the opportunity to contribute to the LSWM Plan and urge you to consider our comments in finalizing this important document.

Sincerely,

John Bradley, Claverack
Jill Berman, Ghent
L. Parker Stephenson, Gallatin

Larry Waite, Kinderhook
Stephanie Sussman, Claverack
Lisa M. Ross, Chatham

References:

- Dutchess County MSW Plan for 2020-2030 - <https://www.dutchessny.gov/Departments/Solid-Waste-Management/Docs/Draft-LSMP-plan-2022.pdf>
- Ulster County MSW plan -for 2020-2029 - <https://ucrra.org/wp-content/uploads/2021/03/Final-Plan-w-Approval-Resolution-reduced-2.pdf>
- Climate Leadership and Community Protection Act (2019), Draft Scoping Plan, <https://climate.ny.gov/Our-Climate-Act/Draft-Scoping-Plan> p 233-52

To whom it may concern:

Comment No. 11

I chair the Town of New Lebanon Conservation Advisory Council. In response to the Draft LSWMP, I would first like to compliment the plan for its comprehensive approach. Nothing of significance seems to have been overlooked.

However, the Lebanon Valley Speedway is mentioned only once, and on that occasion Lebanon Valley Dragway is also cited (p. 13). Note that the Speedway is one facility with a single admission entrance. During the racing season (April -- November), a village of RVs of significant size assembles on either side of U.S. Route 20. Not only do spectators use waste management facilities, the RV village in and of itself creates waste management challenges.

We would like to see the plan fleshed out to include a sharper analysis of the Lebanon Valley Speedway and its predicted levels and types of waste, as well as recommendations on how these predicted levels of waste should best be handled.

Thank you for this opportunity to respond to the draft LSWMP.

Sincerely yours,

David L. Farren
Chair, Town of New Lebanon Conservation Advisory Council

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Resolution
Board of Supervisors
County of Columbia
New York

Resolution No. 62-2023

Sponsored by Supervisor

AUTHORIZATION TO ADOPT THE LOCAL SOLID WASTE MASTER PLAN

UPON, recommendation of the Public Works Committee, at a meeting held on the 18th day of January, 2023, and of the Finance Committee; at a meeting held on the 25th day of January, 2023;

WHEREAS, the County of Columbia is the planning unit responsible for developing a Local Solid Waste Management Plan (LSWMP) pursuant to Section 27-0107, paragraph 1(a) of the Environmental Conservation Law of the State of New York; and

WHEREAS, Section 366-4.1 (d)(2) of the New York State Department of Environmental Conservation's solid waste management regulations contains several provisions that must be included in a planning unit's resolution to adopt a Final LSWMP, and such clauses are included herein as required; and

WHEREAS, on December 9, 2022 the NYS Department of Environmental Conservation issued a letter stating that the current draft of the LSWMP constitutes an approvable plan;

NOW, THEREFORE BE IT

RESOLVED, that, as required by Sections 366-4.1 (d)(2)(i), 366-4.1 (d)(2)(n), and 366-4.1 (d)(2)(iii), of the New York State Department of Environmental Conservation's solid waste management regulations, the County of Columbia will adopt the LSWMP, effective upon department approval of the LSWMP, implement and maintain the solid waste management system described in the LSWMP, and submit annual planning unit reports and biennial updates; and be it further

RESOLVED, that the Clerk of the Board of Supervisors is hereby directed to send notices of the availability of the Final LSWMP to adjacent solid waste planning units and will ensure that an electronic copy of the Final LSWMP is made available for public review on the County's website; and be it further

RESOLVED, that the Clerk of the Board of Supervisors is hereby directed to furnish all items to the New York State Department of Environmental Conservation as indicated in the December 9, 2022 letter referenced above; and be it further

RESOLVED, that certified copies of this resolution be forwarded to the Columbia County Attorney, Columbia County Treasurer, and posted to the Board of Supervisors website.

Approved:

Robert J. Fitzsimmons, County Attorney

Resolution
Committee

Resolution No. 62-2023 (page 2)

STATE OF NEW YORK
COUNTY OF COLUMBIA} ss:

This is to certify that I, undersigned Clerk of the Board of Supervisors of the County of Columbia, have compared the foregoing resolution with the original resolution, now on file in the office of said clerk, and which was adopted by said Board of Supervisors on the 8th day of February, 2023, and that the same is true and correct transcript of such original resolution and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Board of Supervisors this 9th day of February, 2023.



Kelly S. Baccaro, Clerk of the Board