Columbia County

DRAFT

Local Solid Waste Management Plan

Prepared For

Columbia County

401 State Street

Hudson, New York 12534

February 2022

Barton&Loguidice

Columbia County, New York

Draft Local Solid Waste Management Plan

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Prepared For:

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Hudson, New York 12534

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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 Connecticut[1].

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, on the south by Dutchess County, and on the east by the State of Massachusetts.

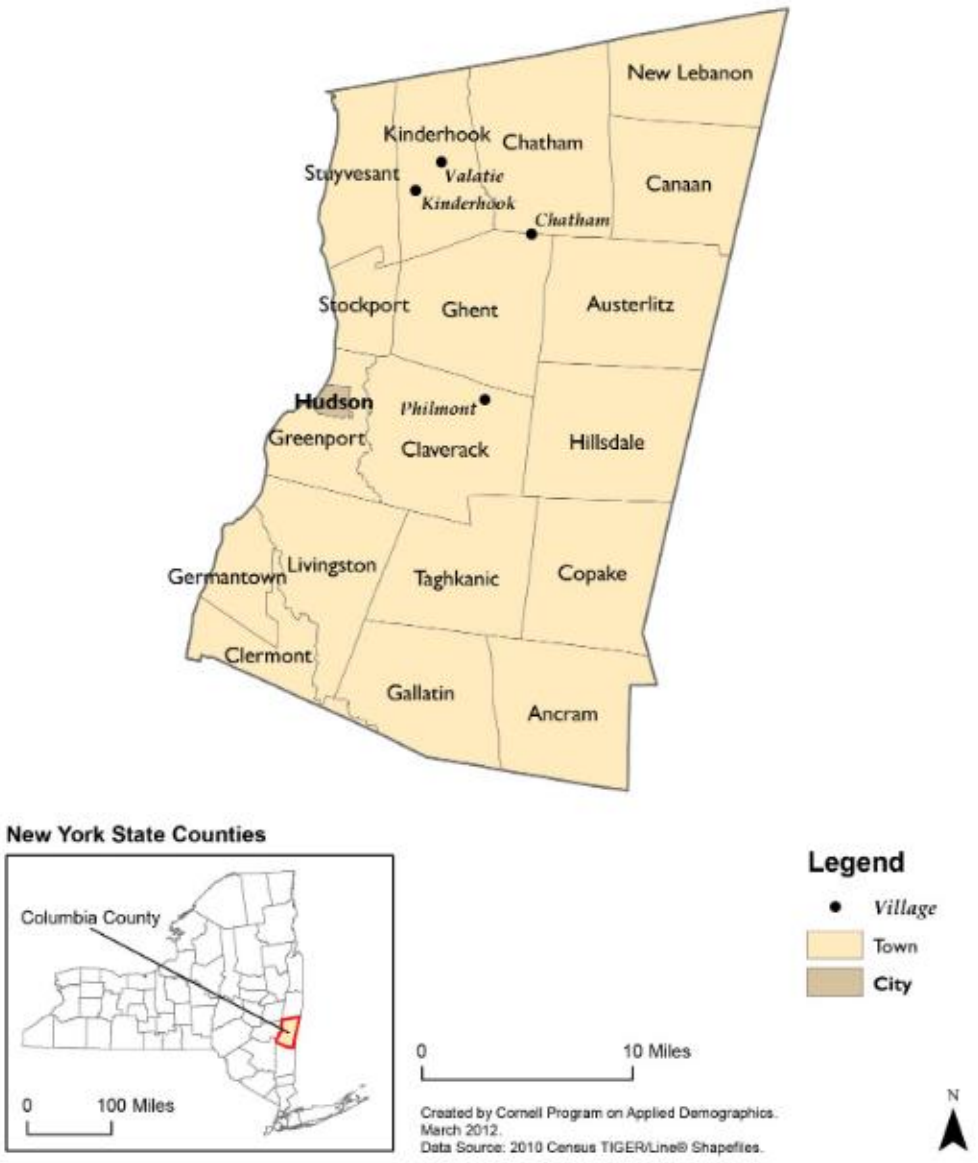
1.3. County Formation

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 61,570with 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 Demographics[4], 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, 2020[2]

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%

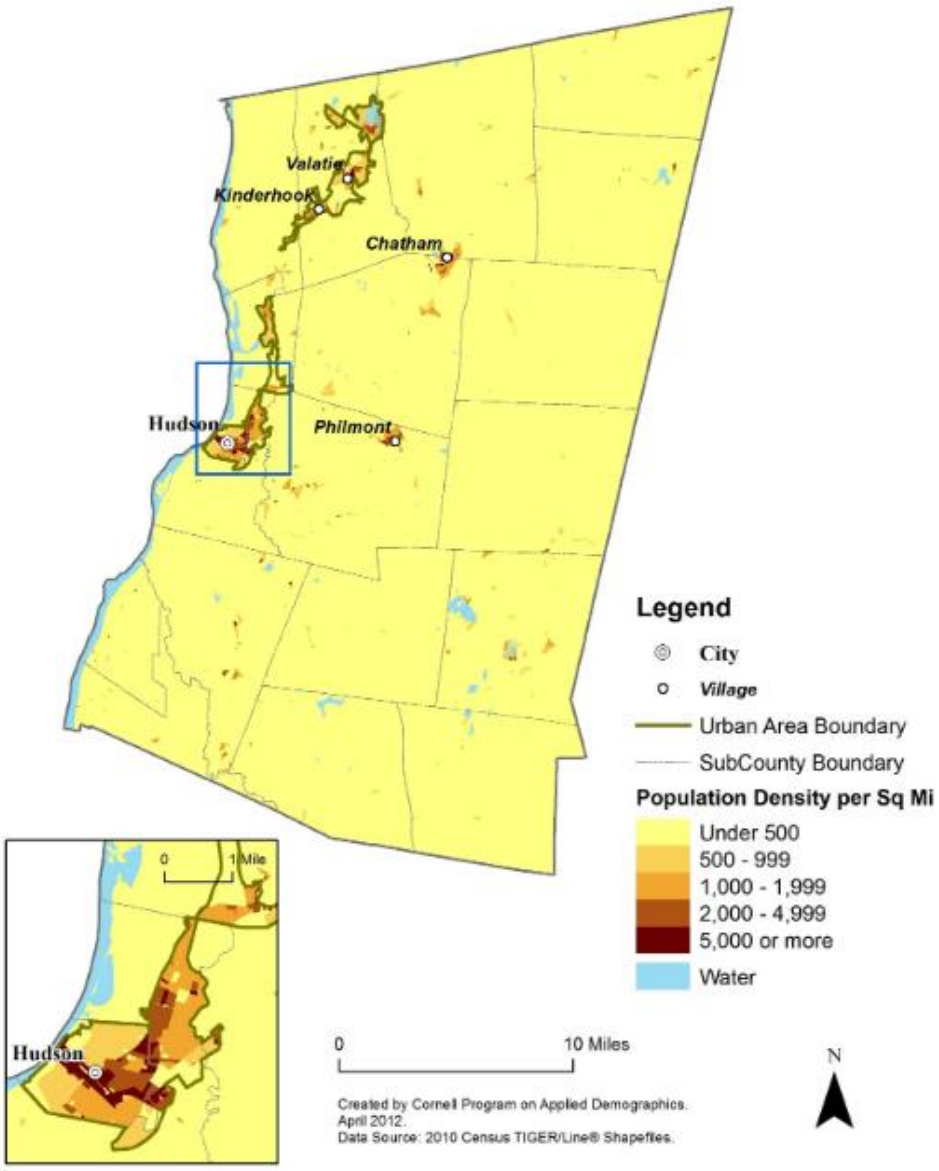
[2] U.S. Census Bureau Census 2020 P.L. 94-171
[3] https://www.census.gov/quickfacts/fact/dashboard/columbiacountynewyork
[4] https://pad.human.cornell.edu/profiles/Columbia.pdf
[5] Historically the Town of Canaan has not been a participating member of the Planning Unit; however, they have requested 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 – Character[6]
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

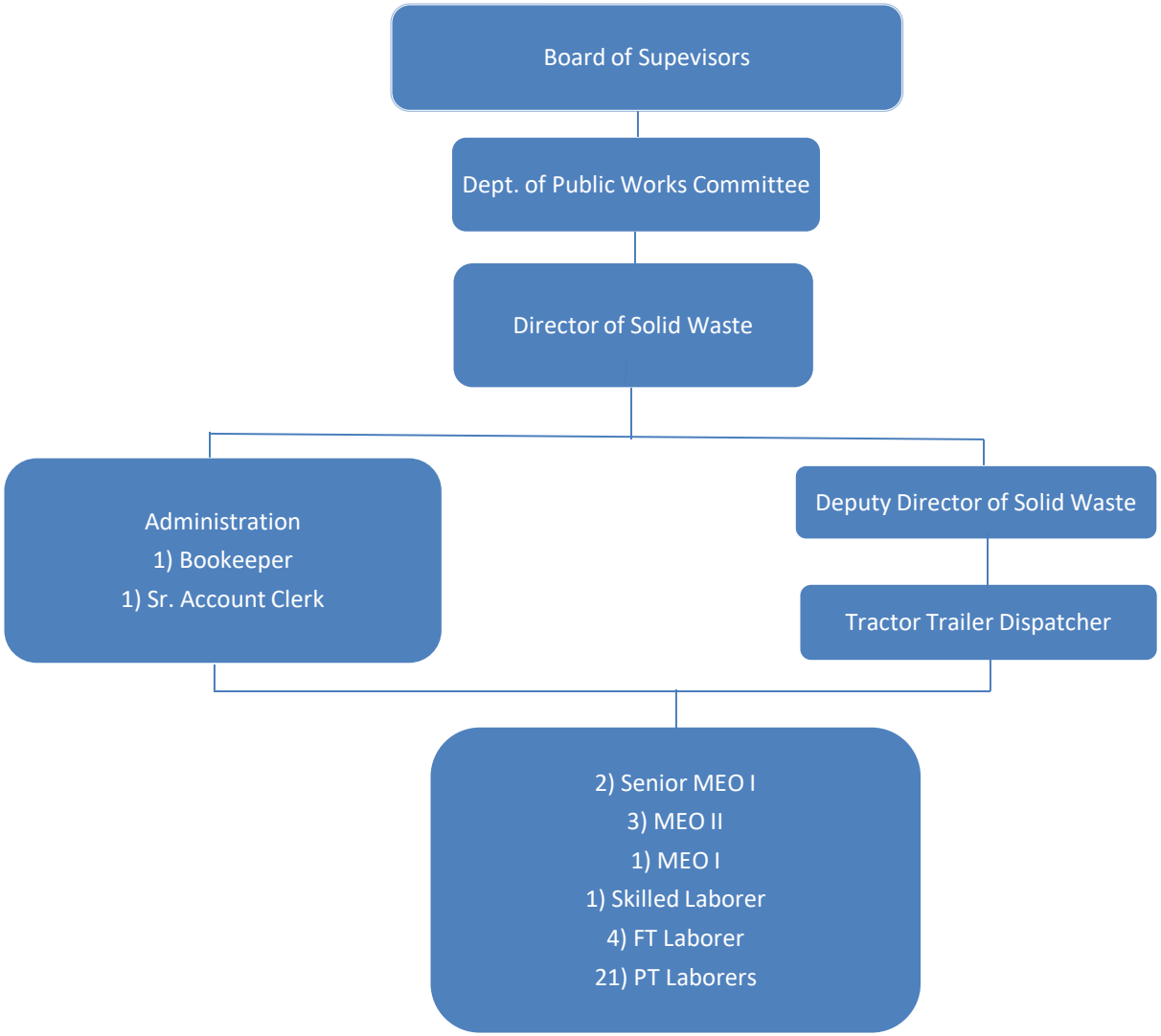
The Columbia County Government is the planning unit for Columbia County and is responsible for developing the LSWMP. Since the 1990s when the Town of Canaan accepted a proposal from Energy Answers Corporation to locate a facility, they have not been a participating member of the Planning Unit; thus, 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. 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 Supervisors[7]. 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)

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.	No known impacts on implementing the LSWMP.

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 Issues[12]
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.
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		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 Section1.8.1.
- 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.
- 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 industrial, commercial, retail, institutional, governmental facilities and major employment centers within the County are concentrated in the greater City of Hudson area.

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]

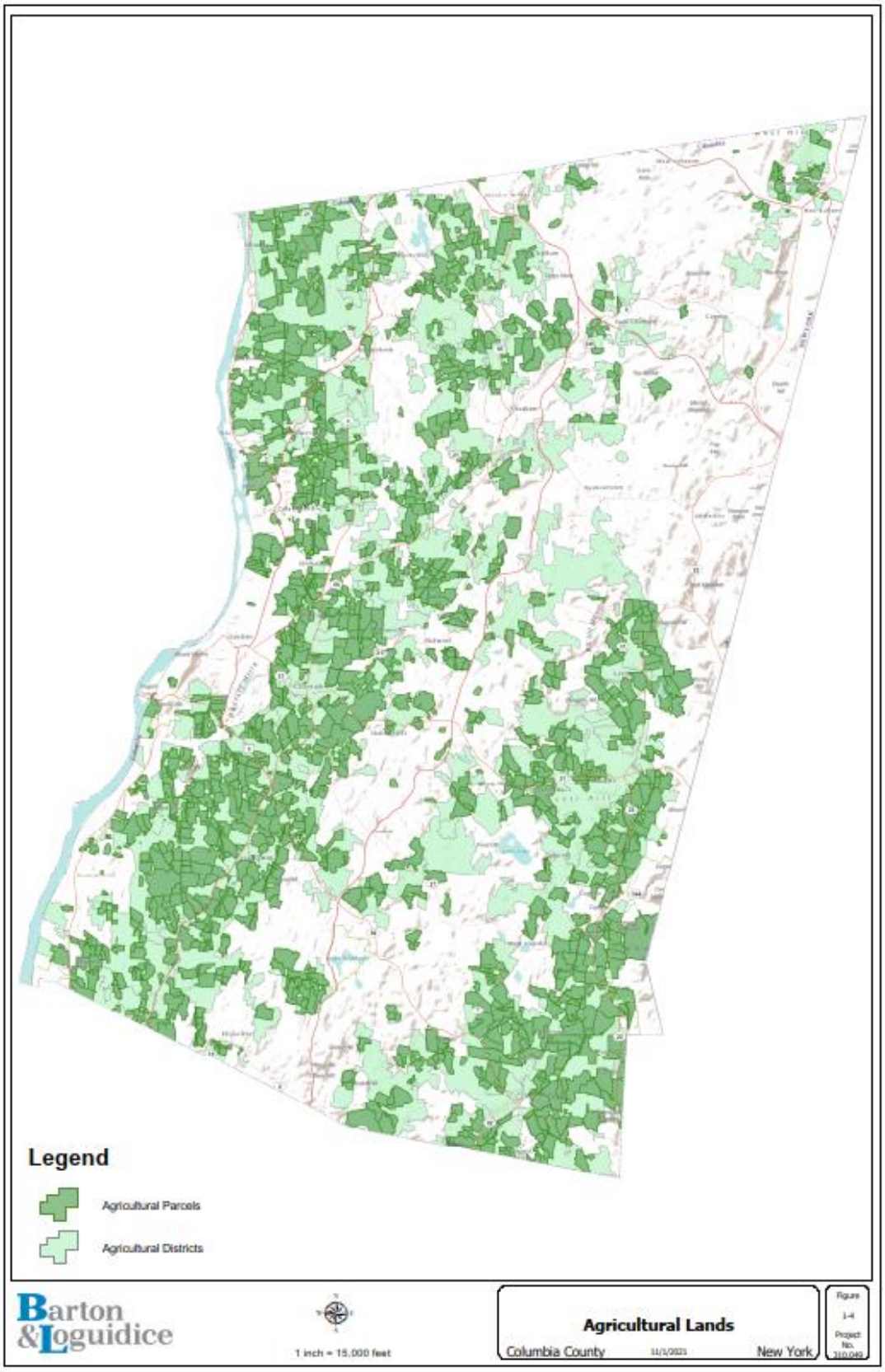
There are many natural, cultural, and historical amenities in the County that have contributed to a growth of tourism. Some of these amenities are seasonal, while others draw visitors throughout the year. Among the attractions in the County are Catamount Mountain Resort, Clermont State Historic Site, Columbia County Fairgrounds, Columbia County Historical Society Museum & Library, Crandell Theatre, FASNY Museum of Firefighting, Hudson Athens Lighthouse, Hudson Cuises, 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 Unit[15]

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.newyorkschools.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 jails[18], nursing homes[19], 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 to 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 6.

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

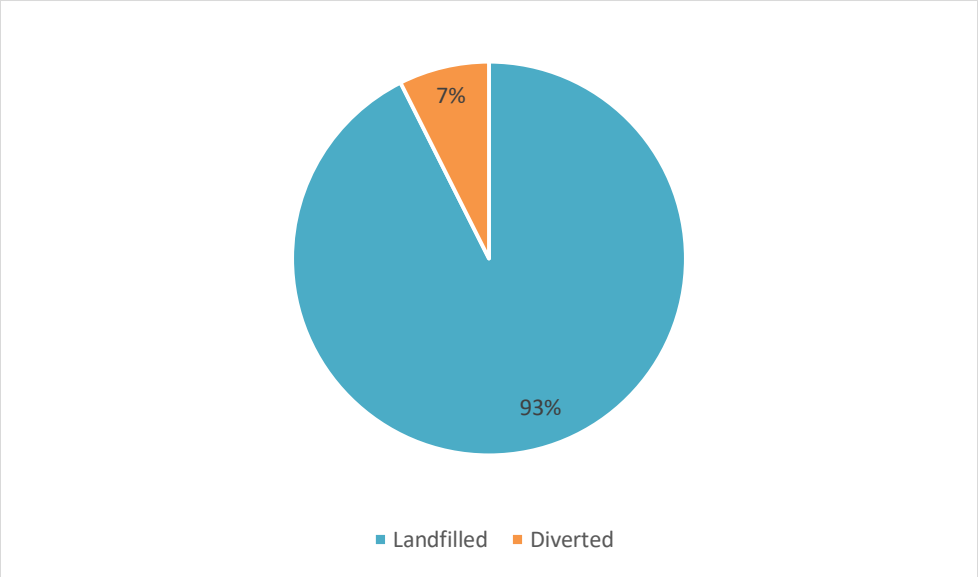
As discussed above, much of the following waste generation estimates were derived from available reports provided to the NYSDEC by transfer stations. Limitations associated with the data are as follows and will be considered when evaluating and implementing new or improved data collection efforts.

- **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 Summary[21]

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			**1,543.91 Tons**	
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
Landfilled[23]			
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. Please note that the tables indicate that the Town of Canaan is excluded from the Planning Unit. Historically the Town of Canaan was not a participating member and therefore the NYSDEC records show them as excluded. Upon completion and approval of this LSWMP, the Town of Canaan will be a participating member going forward. This should not impact the composition spreadsheets significantly at this time. 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. Additionally, the quantities of containers (i.e., aluminum, glass and PET) collected as part of the Recoverable Container Act (RCA) are typically not reported to databases that are available to individual counties. Using the NYSDEC MSW composition tool, Table 2-3 provides some assumptions as to the quantity of materials recovered as part of RCA in 2010.[25]

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. 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 2020[26].

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] According to 2010 RCA data from the NYSDEC, 59% of deposit containers are recovered. Of the containers, 80% of Aluminum containers are deposits, 50% of glass containers are deposits, and 45% of PET containers are deposits.

[26] 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)[27]	Estimated % of Total Tons Generated (2020)	Actual MSW Tons Diverted (2020)[28]	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%
Total Paper	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%
Total Metals	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%
Total Plastics	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%
Total Glass	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%
Total Organics	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%
Total Textiles	1,905	5.7%	0.00	0.0%

[27] NYSDEC MSW Combined Composition Analysis and Projections
[28] 2019 NYSDEC Facility Annual Reports

Material	Estimated MSW Tons Generated (2020)[27]	Estimated % of Total Tons Generated (2020)	Actual MSW Tons Diverted (2020)[28]	Actual % of Each Material Diverted (2020)
Total Wood	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%
Total Miscellaneous	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 is generated within the County from residential and non-residential construction, renovation or demolition projects. 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 Waste[29]

Solid Waste Facility	Facility Address	Permitted Capacity (cubic yards)	Expected Site Life (years)	Waste Types Accepted [30]	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 Louden 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

[29] NYSDEC Annual Facility Reports, 2019

[30] 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, brow 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 County[31]

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.

[31] https://sites.google.com/a/columbiacountyny.com/columbia-county-solid-waste/stations

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.

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.

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 yield[32]:

- 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

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

[32] http://www.norstar.com.au/Recycling/Processing/Benefits.aspx

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

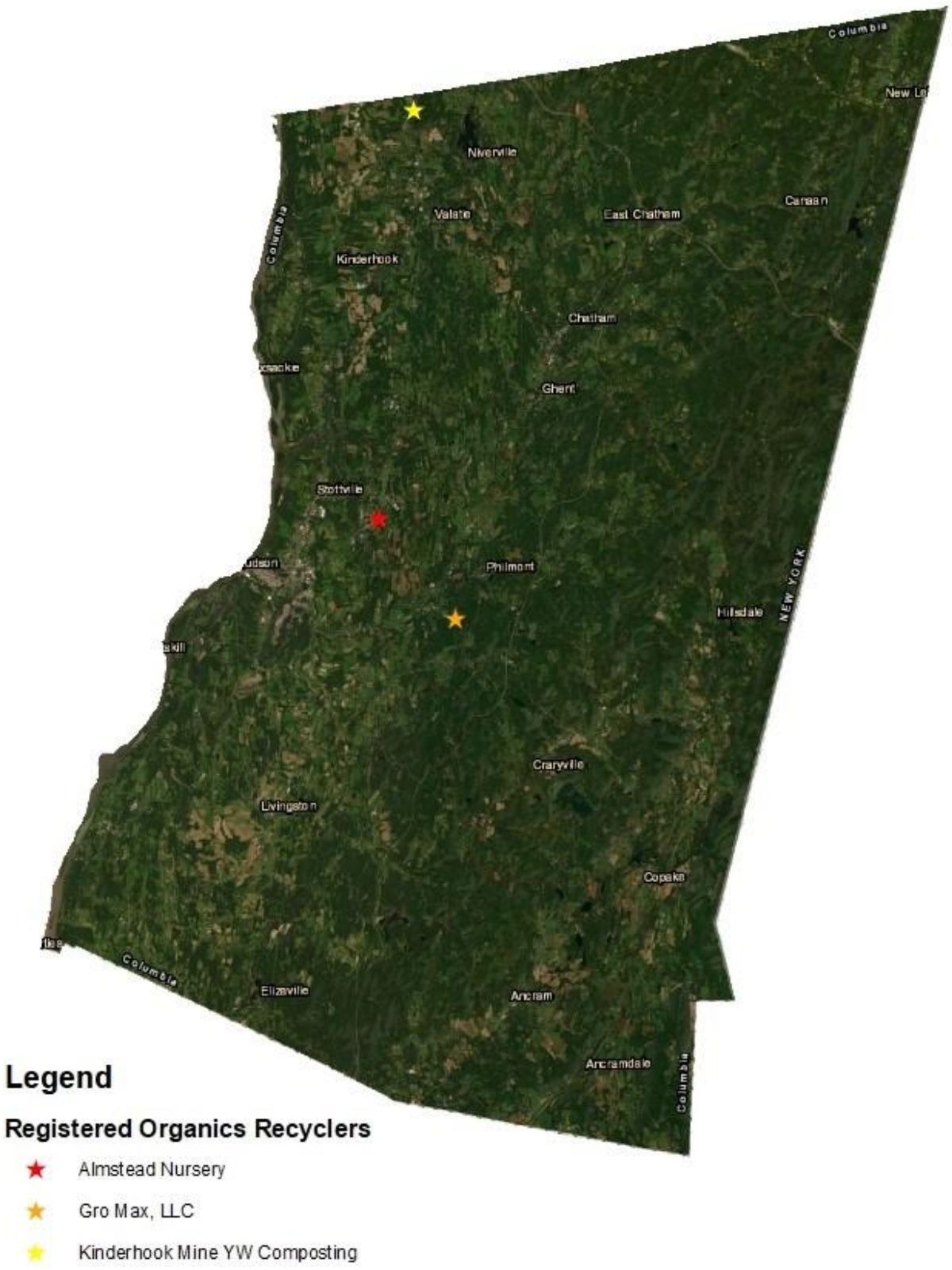
Interest in organic waste diversion has increased over the last few years, particularly because it has the potential to divert a significant portion of the waste stream away from landfills. The composting process can be applied to yard waste, food waste, MSW, sewage sludge, non-hazardous industrial sludge, or some combination of these materials. According to the Cornell Waste Management Institute Compost Facilities Map, 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 Law[33] 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.

[33] 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.

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.

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 can be found in more detail in Appendix D.

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 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 can be found in more detail in Appendix D.

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. 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.[34]

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.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification can be found in more detail in Appendix D.

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

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 can be found in more detail in Appendix D.

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 can be found in more detail in Appendix D.

5.4. Organic Recovery Program

Each American disposes of about 460 pounds of organic waste annually; 100% of that waste can be composted[35]. 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

[35] https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials

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.

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 Sale[36].

[36] https://sites.google.com/a/columbiacountyny.com/columbia-county-solid-waste/events

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 can be found in more detail in Appendix D.

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 can be found in more detail in Appendix D.

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.

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 can be found in more detail in Appendix D.

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 commercials haulers regarding what commodities can be recycled through the County facilities and the process by which these materials see new life.

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 can be found in more detail in Appendix D.

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 can be found in more detail in Appendix D.

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 can be found in more detail in Appendix D.

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 can be found in more detail in Appendix D.

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 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 (H_2), carbon monoxide (CO), carbon dioxide (CO_2), and methane

(CH_4). 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 ton[37].

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 H_2 and CO with smaller quantities of CH_4 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 technologies[38] (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.

[37] https://www.mswmanagement.com/collection/article/13014762/six-waste-conversion-technologies-you-should-know

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

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 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 CO_2. 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 H_2 and CO_2. A third group of bacteria, the methane producers, or methanogens, produce a medium-Btu biogas consisting of 50-70% methane, as well as CO_2. 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 fraction[39].

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 CO_2. 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.

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.

[39] https://www.mswmanagement.com/collection/article/13014762/six-waste-conversion-technologies-you-should-know

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification can be found in more detail in Appendix D.

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.

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.

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.

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 2040[40]. 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.

[40] 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.

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 (Except Town of Canaan)
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 (Except Town of Canaan)

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):
- ( ) 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 disposed here: 29,691.45

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:

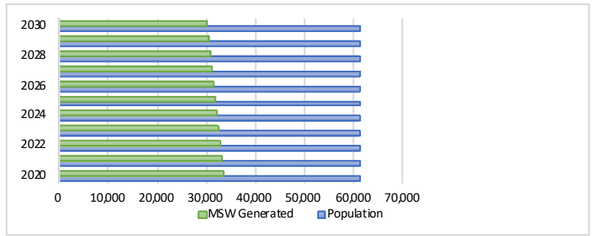
As a result of successfully implementing the Local Solid Waste Management Plan, MSW generation will be reduced by an annual factor of …
An **Annual Factor of Reduction (%)** should be calculated, defined, and selected by the planning unit. This factor will be the numerical representation of one of the 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 (Except Town of Canaan) 2022-2031

Current Data	
2010 Population Census	61,386
2020 Population	61,386
2020 MSW Generated (Tons/yr)	33,488
2020 MSW generation rate (Lb/person/day)	2.65
2020 MSW Disposed (Tons/yr)	29,691
2020 MSW Diverted (Tons/yr)	3,797



Annual rate of population growth (%)	0.00%

Population Projection

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386

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
- 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	
2.98	2.95	2.92	2.90	2.87	2.84	2.81	2.78	2.75	2.73	2.70	2.67	(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

MSW generation rate (Lb/person/day)	2.98

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/mi^2
- Suburban: >325 and <5,000 persons/mi^2
- Urban: >5,000 persons/mi^2

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 (Except Town of Canaan) 2022-2031

		Density Population Distribution	Rural			Suburban			Urban			MSW Materials Composition (%)
			70.82%			29.18%			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%	100.00%
Material	Newspaper		5.20%	1.90%	4.87%	5.00%	1.90%	3.45%	6.60%	2.00%	0.00%	4.46%
	Corrugated Cardboard		6.60%	13.90%	7.33%	6.60%	13.90%	10.25%	6.90%	13.70%	0.00%	8.18%
	Other Recyclable Paper	Paperboard	3.20%	1.10%	2.99%	3.30%	1.00%	2.15%	3.60%	0.90%	0.00%	2.74%
		Office Paper	0.80%	3.80%	1.10%	0.90%	4.20%	2.55%	1.10%	5.80%	0.00%	1.52%
		Junk Mail	3.00%	0.70%	2.77%	3.20%	0.70%	1.95%	3.50%	0.70%	0.00%	2.53%
		Other Commercial Printing	1.70%	2.30%	1.76%	1.70%	2.40%	2.05%	2.30%	2.60%	0.00%	1.84%
		Magazines	1.10%	0.90%	1.08%	1.00%	0.80%	0.90%	1.10%	1.00%	0.00%	1.03%
		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%	0.43%
		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%	11.07%
	Other Compostable Paper		6.80%	6.80%	6.80%	6.40%	6.40%	6.40%	6.80%	6.80%	0.00%	6.68%
	Total Paper		***29.90%***	***32.50%***	***30.16%***	***29.60%***	***32.30%***	***30.95%***	***33.70%***	***34.50%***	***0.00%***	***30.39%***
	Ferrous/Aluminum Containers	Ferrous Containers	1.90%	1.00%	1.81%	1.20%	0.70%	0.95%	1.40%	0.70%	0.00%	1.56%
		Aluminum Containers	0.70%	0.40%	0.67%	0.60%	0.30%	0.45%	0.50%	0.40%	0.00%	0.61%
	Ferrous/Aluminum Containers (Total)		2.60%	1.40%	2.48%	1.80%	1.00%	1.40%	1.90%	1.10%	0.00%	2.16%
	Other Ferrous Metals		5.20%	5.40%	5.22%	5.00%	5.80%	5.40%	3.30%	3.70%	0.00%	5.27%
	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%	0.71%
		Other non-aluminum	0.50%	0.30%	0.48%	0.30%	0.40%	0.35%	0.40%	0.20%	0.00%	0.44%
	Other Non-Ferrous Metals (Total)		1.50%	1.10%	1.46%	1.20%	1.10%	1.15%	0.80%	0.70%	0.00%	1.37%
	Total Metals		***9.30%***	***7.90%***	***9.16%***	***8.00%***	***7.90%***	***7.95%***	***6.00%***	***5.50%***	***0.00%***	***8.81%***
	PET Containers		1.10%	0.80%	1.07%	0.90%	0.80%	0.85%	1.20%	1.00%	0.00%	1.01%
	HDPE Containers		1.10%	0.60%	1.05%	0.90%	0.70%	0.80%	1.00%	0.70%	0.00%	0.98%
	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%	5.70%
	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%	1.33%
	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%***	***13.96%***
	Glass Bottles, Jars and Containers		4.10%	3.80%	4.07%	3.90%	3.80%	3.85%	4.30%	3.80%	0.00%	4.01%
	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%	0.45%
	Total Glass		***4.60%***	***4.20%***	***4.56%***	***4.20%***	***4.20%***	***4.20%***	***4.70%***	***4.20%***	***0.00%***	***4.45%***
	Food Scraps		12.70%	13.30%	12.76%	12.90%	15.50%	14.20%	17.20%	25.20%	0.00%	13.18%
	Leaves and Grass / Pruning and Trimmings		3.10%	1.10%	2.90%	11.30%	9.10%	10.20%	4.20%	1.50%	0.00%	5.03%
	Total Organics		***15.80%***	***14.40%***	***15.66%***	***24.20%***	***24.60%***	***24.40%***	***21.40%***	***26.70%***	***0.00%***	***18.21%***
	Clothing Footwear, Towels, Sheets		4.60%	3.00%	4.44%	4.40%	3.20%	3.80%	4.80%	2.50%	0.00%	4.25%
	Carpet		1.40%	1.30%	1.39%	1.70%	1.40%	1.55%	1.70%	0.90%	0.00%	1.44%
	Total Textiles		***6.00%***	***4.30%***	***5.83%***	***6.10%***	***4.60%***	***5.35%***	***6.50%***	***3.40%***	***0.00%***	***5.69%***
	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%***	***4.27%***
	DIY - Construction & Renovation Materials		8.00%	7.60%	7.96%	3.80%	2.70%	3.25%	4.40%	3.80%	0.00%	6.59%
	Diapers		1.90%	1.10%	1.82%	2.10%	1.20%	1.65%	2.30%	1.10%	0.00%	1.77%
	Electronics		1.30%	1.40%	1.31%	1.60%	1.70%	1.65%	1.30%	1.30%	0.00%	1.41%
	Tires		1.80%	1.80%	1.80%	1.70%	1.40%	1.55%	0.50%	0.40%	0.00%	1.73%
	HHW		0.60%	0.00%	0.54%	0.60%	0.00%	0.30%	0.50%	0.00%	0.00%	0.47%
	Soils and Fines		0.60%	0.60%	0.60%	0.10%	0.20%	0.15%	0.10%	0.10%	0.00%	0.47%
	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%	1.78%
	Total Miscellaneous		***16.10%***	***14.20%***	***15.91%***	***11.50%***	***8.70%***	***10.10%***	***11.00%***	***8.20%***	***0.00%***	***14.21%***
	Total		***100.00%***	***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

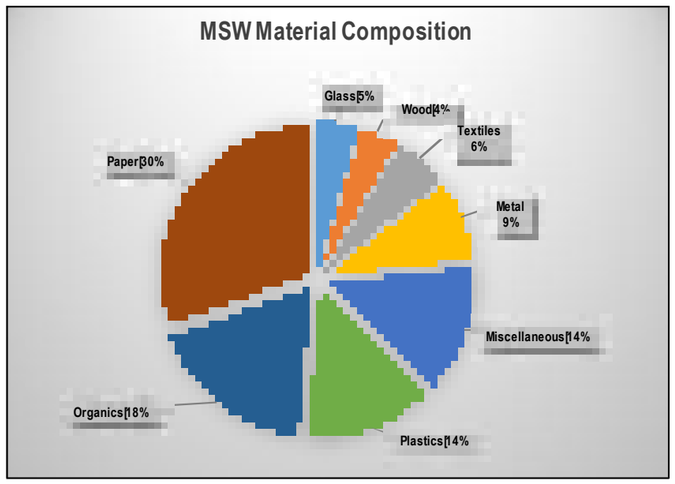
On this tab, the composition of the municipal waste stream will be estimated based on the amount of material generated in the planning unit and the state average of the different waste materials. A pie chart will be generated to clearly show the composition of the waste stream and to identify key categories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

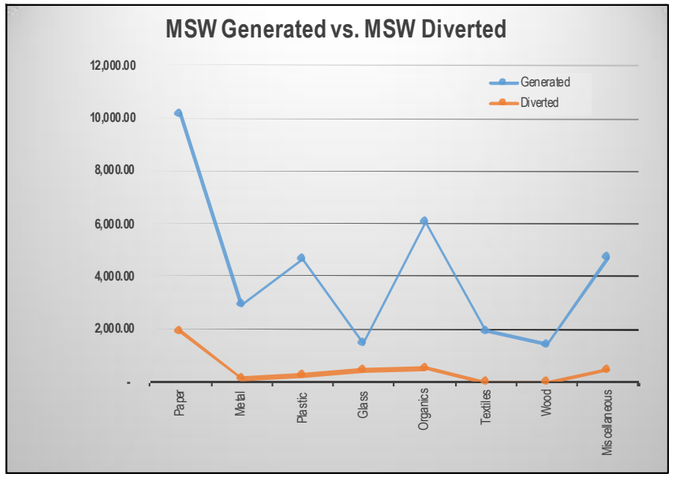
The total tons of MSW diverted per year will be auto populated based on previous data inputs, while the amount tons diverted for each material by category should be populated by the user. Purple cells should be used for amounts of diverted waste by type of material, and a totaled number by category (e.g. 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 (Except Town of Canaan) 2022-2031

		2020		
		MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)
	Material	**100.0%**	**33,488**	**3,796.78**
Paper	Newspaper	4.5%	1,492	572.29
	Corrugated Cardboard	8.2%	2,740	633.17
	Other Recyclable Paper (Total)	11.1%	3,707	742.76
	Other Compostable Paper	6.7%	2,238	0.00
	Total Paper	**30.4%**	**10,177**	**1,948.23**
Metal	Ferrous/Aluminum Containers (Total)	2.2%	725	118.46
	Other Ferrous Metals	5.3%	1,766	23.35
	Other Non-Ferrous Metals (Total)	1.4%	459	2.34
	Total Metals	**8.8%**	**2,949**	**144.15**
Plastic	PET Containers	1.0%	337	127.24
	HDPE Containers	1.0%	327	122.85
	Other Plastic (3-7) Containers	0.2%	65	21.94
	Film Plastic	5.7%	1,909	0.00
	Other Plastic (Total)	6.1%	2,038	0.00
	Total Plastics	**14.0%**	**4,675**	**272.02**
Glass	Glass Bottles, Jars and Containers	4.0%	1,341	438.75
	Other Glass (Flat glass, dishware, light bulbs, etc.)	0.4%	150	0.00
	Total Glass	**4.5%**	**1,492**	**438.75**
Organics	Food Scraps	13.2%	4,414	0.00
	Leaves and Grass / Pruning and Trimmings	5.0%	1,685	544.89
	Total Organics	**18.2%**	**6,098**	**544.89**
Textiles	Clothing Footwear, Towels, Sheets	4.3%	1,424	0.00
	Carpet	1.4%	481	0.00
	Total Textiles	**5.7%**	**1,905**	**0.00**
Wood	***Total Wood*** **(Pallets, crates, adulterated and non-adulterated wood)**	**4.3%**	**1,431**	**0.00**
Miscellaneous	DIY Construction & Renovation Materials	6.6%	2,205	0.00
	Diapers	1.8%	593	0.00
	Electronics	1.4%	472	51.31
	Tires	1.7%	578	0.00
	HHW	0.5%	157	63.30
	Soils and Fines	0.5%	157	0.00
	Other Composite Materials - Durable and/or inert	1.8%	597	334.13
	Total Miscellaneous	**14.2%**	**4,760**	**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 (Except Town of Canaan) 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	4,378	5,318	5,777	6,463	6,712	6,917	7,117	7,313	7,431

		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%	16.6%	18.2%	20.5%	21.5%	22.4%	23.3%	24.2%	24.8%
Paper	Newspaper 4.5%	1,492	572	38.4%	39.4%	40.4%	41.4%	42.4%	43.4%	49.4%	51.4%	52.4%	53.4%	54.4%	55.4%
	Corrugated Cardboard 8.2%	2,740	633	23.1%	24.1%	25.1%	26.1%	27.1%	28.1%	38.1%	40.1%	41.1%	42.1%	43.1%	44.1%
	Other Recyclable Paper (Total) 11.1%	3,707	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%	2,238	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 30.4%	10,177	1,948	19.1%	20.1%	21.1%	21.1%	23.1%	24.1%	29.8%	31.2%	32.2%	33.2%	34.2%	35.2%
Metal	Ferrous/Aluminum Containers (Total) 2.2%	725	118	16.3%	17.3%	18.3%	19.3%	20.3%	21.3%	22.3%	23.3%	24.3%	25.3%	26.3%	27.3%
	Other Ferrous Metals 5.3%	1,766	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%	459	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 8.8%	2,949	144	4.9%	5.9%	6.9%	6.9%	8.9%	9.9%	10.9%	11.9%	12.9%	13.9%	14.9%	15.9%
Plastic	PET Containers 1.0%	337	127	37.8%	38.8%	39.8%	40.8%	41.8%	42.8%	47.8%	48.8%	49.8%	50.8%	51.8%	52.8%
	HDPE Containers 1.0%	327	123	37.5%	38.5%	39.5%	40.5%	41.5%	42.5%	47.5%	48.5%	49.5%	50.5%	51.5%	52.5%
	Other Plastic (3-7) Containers 0.2%	65	22	34.0%	34.5%	35.0%	35.5%	36.0%	36.5%	37.0%	37.5%	38.0%	38.5%	39.0%	39.5%
	Film Plastic 5.7%	1,909	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%	2,038	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%	4,675	272	5.8%	6.4%	6.5%	6.5%	6.7%	6.8%	7.4%	7.5%	7.5%	7.6%	7.7%	7.8%
Glass	Glass Bottles, Jars and Containers 4.0%	1,341	439	32.7%	33.7%	34.7%	35.7%	36.7%	37.7%	38.7%	39.7%	40.7%	41.7%	42.7%	43.7%
	Other Glass (Flat glass, dishware, light bulbs, etc.) 0.4%	150	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%	1,492	439	29.4%	30.4%	31.4%	31.4%	33.4%	34.4%	35.4%	36.4%	37.4%	38.4%	39.4%	40.4%
Organic	Food Scraps 13.2%	4,414	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 5.0%	1,685	545	32.3%	33.3%	34.3%	35.3%	45.3%	50.3%	51.3%	52.3%	53.3%	54.3%	55.3%	56.3%
	Total Organics 18.2%	6,098	545	8.9%	9.9%	10.9%	11.9%	21.9%	26.9%	27.9%	28.9%	29.9%	30.9%	31.9%	32.9%
Textiles	Clothing Footwear, Towels, Sheets 4.3%	1,424	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%	481	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%	1,905	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) 4.3%	1,431	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 6.6%	2,205	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%	593	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%	472	51	10.9%	11.9%	12.9%	13.9%	14.9%	15.9%	16.9%	17.9%	18.9%	19.9%	20.9%	21.9%
	Tires 1.7%	578	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%	157	63	40.2%	41.2%	42.2%	43.2%	44.2%	45.2%	46.2%	47.2%	48.2%	49.2%	50.2%	51.2%
	Soils and Fines 0.5%	157	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%	597	334	55.9%	56.9%	57.9%	58.9%	59.9%	60.9%	61.9%	62.9%	63.9%	64.9%	65.9%	66.9%
	Total Miscellaneous 14.2%	4,760	449	9.4%	10.4%	11.4%	11.5%	13.4%	14.4%	15.4%	16.4%	17.4%	18.4%	19.4%	20.4%

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 (Except Town of Canaan) 2022-2031

			MSW Materials Composition (%)	2020			2021			2022			2023			2024			2025			2026			2027			2028			2029			2030			2031		
				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	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**	**4,593**	**14.2%**	**32,113**	**5,375**	**16.7%**	**31,792**	**5,846**	**18.4%**	**31,474**	**6,555**	**20.8%**	**31,159**	**6,822**	**21.9%**	**30,848**	**7,044**	**22.8%**	**30,539**	**7,260**	**23.8%**	**30,234**	**7,472**	**24.7%**	**29,932**	**7,756**	**25.9%**
Paper	Newspaper		**4.46%**	1,492	572	38.4%	1,475	580	39.4%	1,460	589	40%	1,445	598	41.4%	1,431	606	42.4%	1,417	614	43.4%	1,402	692	49.4%	1,388	713	51.4%	1,374	720	52.4%	1,361	726	53.4%	1,347	732	54.4%	1,347	746	55.4%
	Corrugated Cardboard		**8.18%**	2,740	633	23.1%	2,708	653	24.1%	2,681	673	25%	2,654	693	26.1%	2,628	712	27.1%	2,601	731	28.1%	2,575	981	38.1%	2,549	1,023	40.1%	2,524	1,038	41.1%	2,499	1,052	42.1%	2,474	1,066	43.1%	2,474	1,091	44.1%
	Other Recyclable Paper	Paperboard	**2.74%**	919	0	0.0%	908	9	1.0%	899	18	2%	890	27	3.0%	881	35	4.0%	873	44	5.0%	864	52	6.0%	855	60	7.0%	847	68	8.0%	838	75	9.0%	830	83	10.0%	830	91	11.0%
		Office Paper	**1.52%**	510	0	0.0%	504	5	1.0%	499	10	2%	494	15	3.0%	489	20	4.0%	484	24	5.0%	479	29	6.0%	475	33	7.0%	470	38	8.0%	465	42	9.0%	460	46	10.0%	460	51	11.0%
		Junk Mail	**2.53%**	847	0	0.0%	838	8	1.0%	829	17	2%	821	25	3.0%	813	33	4.0%	805	40	5.0%	797	48	6.0%	789	55	7.0%	781	62	8.0%	773	70	9.0%	765	77	10.0%	765	84	11.0%
		Other Commercial Printing	**1.84%**	618	0	0.0%	610	6	1.0%	604	12	2%	598	18	3.0%	592	24	4.0%	586	29	5.0%	581	35	6.0%	575	40	7.0%	569	46	8.0%	563	51	9.0%	558	56	10.0%	558	61	11.0%
		Magazines	**1.03%**	344	0	0.0%	340	3	1.0%	337	7	2%	333	10	3.0%	330	13	4.0%	327	16	5.0%	323	19	6.0%	320	22	7.0%	317	25	8.0%	314	28	9.0%	311	31	10.0%	311	34	11.0%
		Books	**0.46%**	153	0	0.0%	151	2	1.0%	150	3	2%	148	4	3.0%	147	6	4.0%	145	7	5.0%	144	9	6.0%	142	10	7.0%	141	11	8.0%	139	13	9.0%	138	14	10.0%	138	15	11.0%
		Paper Bags	**0.43%**	146	0	0.0%	144	1	1.0%	143	3	2%	141	4	3.0%	140	6	4.0%	138	7	5.0%	137	8	6.0%	136	9	7.0%	134	11	8.0%	133	12	9.0%	132	13	10.0%	132	14	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%**	69	0	0.0%	69	1	1.0%	68	1	2%	67	2	3.0%	67	3	4.0%	66	3	5.0%	65	4	6.0%	65	5	7.0%	64	5	8.0%	63	6	9.0%	63	6	10.0%	63	7	11.0%
	Other Recyclable Paper (Total)		**11.07%**	3,707	743	20.0%	3,664	771	21.0%	3,627	799	22%	3,591	827	23.0%	3,555	854	24.0%	3,519	881	25.0%	3,484	1,046	30.0%	3,449	1,071	31.0%	3,415	1,094	32.0%	3,381	1,117	33.0%	3,347	1,139	34.0%	3,347	1,173	35.0%
	Other Compostable Paper		**6.68%**	2,238	0	0.0%	2,212	22	1.0%	2,190	44	2%	2,168	65	3.0%	2,146	86	4.0%	2,125	106	5.0%	2,104	126	6.0%	2,082	146	7.0%	2,062	165	8.0%	2,041	184	9.0%	2,021	202	10.0%	2,021	222	11.0%
	Total Paper		**30.39%**	10,177	1,948	19.1%	10,058	2,026	20.1%	9,958	2,105	21%	9,858	2,183	22.1%	9,759	2,259	23.1%	9,662	2,333	24.1%	9,565	2,846	29.8%	9,469	2,952	31.2%	9,375	3,016	32.2%	9,281	3,079	33.2%	9,188	3,140	34.2%	9,188	3,232	35.2%
Metal	Ferrous/Aluminum Containers	Ferrous Containers	**1.56%**	522	85	16.3%	516	89	17.3%	511	94	18%	506	98	19.3%	501	102	20.3%	496	106	21.3%	491	110	22.3%	486	113	23.3%	481	117	24.3%	476	121	25.3%	471	124	26.3%	471	129	27.3%
		Aluminum Containers	**0.61%**	203	33	16.3%	200	35	17.3%	198	36	18%	197	38	19.3%	195	40	20.3%	193	41	21.3%	191	43	22.3%	189	44	23.3%	187	45	24.3%	185	47	25.3%	183	48	26.3%	183	50	27.3%
	Ferrous/Aluminum Containers (Total)		**2.16%**	725	118	16.3%	716	124	17.3%	709	130	18%	702	136	19.3%	695	141	20.3%	688	147	21.3%	681	152	22.3%	675	157	23.3%	668	163	24.3%	661	168	25.3%	655	172	26.3%	655	179	27.3%
	Other Ferrous Metals		**5.27%**	1,766	23	1.3%	1,745	41	2.3%	1,728	57	3%	1,710	74	4.3%	1,693	90	5.3%	1,676	106	6.3%	1,659	122	7.3%	1,643	137	8.3%	1,626	152	9.3%	1,610	166	10.3%	1,594	180	11.3%	1,594	196	12.3%
	Other Non-Ferrous Metals	Other aluminum	**0.22%**	74	0	0.0%	73	1	1.0%	73	1	2%	72	2	3.0%	71	3	4.0%	70	4	5.0%	70	4	6.0%	69	5	7.0%	68	5	8.0%	68	6	9.0%	67	7	10.0%	67	7	11.0%
		Automotive batteries	**0.71%**	236	0	0.0%	234	2	1.0%	231	5	2%	229	7	3.0%	227	9	4.0%	224	11	5.0%	222	13	6.0%	220	15	7.0%	218	17	8.0%	216	19	9.0%	213	21	10.0%	213	23	11.0%
		Other non-aluminum	**0.44%**	148	0	0.0%	146	1	1.0%	145	3	2%	143	4	3.0%	142	6	4.0%	141	7	5.0%	139	8	6.0%	138	10	7.0%	136	11	8.0%	135	12	9.0%	134	13	10.0%	134	15	11.0%
	Other Non-Ferrous Metals (Total)		**1.37%**	459	2	0.5%	453	7	1.5%	449	11	3%	444	16	3.5%	440	20	4.5%	435	24	5.5%	431	28	6.5%	427	32	7.5%	422	36	8.5%	418	40	9.5%	414	44	10.5%	414	48	11.5%
	Total Metals		**8.81%**	2,949	144	4.9%	2,915	172	5.9%	2,886	199	7%	2,857	225	7.9%	2,828	251	8.9%	2,800	277	9.9%	2,772	302	10.9%	2,744	326	11.9%	2,717	350	12.9%	2,690	374	13.9%	2,663	396	14.9%	2,663	423	15.9%
Plastic	PET Containers		**1.01%**	337	127	37.8%	333	129	38.8%	330	131	40%	326	133	40.8%	323	135	41.8%	320	137	42.8%	317	151	47.8%	313	153	48.8%	310	154	49.8%	307	156	50.8%	304	157	51.8%	304	160	52.8%
	HDPE Containers		**0.98%**	327	123	37.5%	323	125	38.5%	320	127	40%	317	129	40.5%	314	130	41.5%	311	66	21.3%	308	146	47.5%	304	148	48.5%	301	149	49.5%	298	151	50.5%	295	152	51.5%	295	155	52.5%
	Other Plastic (3-7) Containers		**0.19%**	65	22	34.0%	64	22	34.5%	63	22	35%	63	22	35.5%	62	22	36.0%	61	13	21.3%	61	22	37.0%	60	23	37.5%	60	23	38.0%	59	23	38.5%	58	23	39.0%	58	23	39.5%
	Film Plastic		**5.70%**	1,909	0	0.0%	1,886	9	0.5%	1,867	19	1%	1,849	28	1.5%	1,830	37	2.0%	1,812	115	6.3%	1,794	54	3.0%	1,776	62	3.5%	1,758	70	4.0%	1,741	78	4.5%	1,723	86	5.0%	1,723	95	5.5%
	Other Plastic	Durables	**3.11%**	1,041	0	0.0%	1,028	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%	958	77	8.0%	949	85	9.0%	939	94	10.0%	939	103	11.0%
		Non-Durables	**1.64%**	550	0	0.0%	544	5	1.0%	538	11	2%	533	16	3.0%	528	21	4.0%	522	26	5.0%	517	31	6.0%	512	36	7.0%	507	41	8.0%	502	45	9.0%	497	50	10.0%	497	55	11.0%
		Packaging	**1.33%**	447	0	0.0%	442	4	1.0%	437	9	2%	433	13	3.0%	429	17	4.0%	424	21	5.0%	420	25	6.0%	416	29	7.0%	412	33	8.0%	408	37	9.0%	404	40	10.0%	404	44	11.0%
	Other Plastic (Total)		**6.09%**	2,038	0	0.0%	2,014	10	0.5%	1,994	20	1%	1,974	30	1.5%	1,954	39	2.0%	1,935	48	2.5%	1,915	57	3.0%	1,896	66	3.5%	1,877	75	4.0%	1,858	84	4.5%	1,840	92	5.0%	1,840	101	5.5%
	Total Plastics		**13.96%**	4,675	272	5.8%	4,620	295	6.4%	4,574	318	7%	4,529	341	7.5%	4,483	363	8.1%	4,438	379	8.5%	4,394	431	9.8%	4,350	452	10.4%	4,307	472	11.0%	4,264	491	11.5%	4,221	511	12.1%	4,221	535	12.7%
Glass	Glass Bottles, Jars and Containers		**4.01%**	1,341	439	32.7%	1,326	447	33.7%	1,313	456	35%	1,299	464	35.7%	1,286	472	36.7%	1,274	480	37.7%	1,261	488	38.7%	1,248	496	39.7%	1,236	503	40.7%	1,223	510	41.7%	1,211	517	42.7%	1,211	529	43.7%
	Other Glass (Flat glass, dishware, light bulbs, etc.)		**0.45%**	150	0	0.0%	149	1	1.0%	147	3	2%	146	4	3.0%	144	6	4.0%	143	7	5.0%	141	8	6.0%	140	10	7.0%	139	11	8.0%	137	12	9.0%	136	14	10.0%	136	15	11.0%
	Total Glass		**4.45%**	1,492	439	29.4%	1,474	448	30.4%	1,460	458	31%	1,445	468	32.4%	1,431	478	33.4%	1,416	487	34.4%	1,402	496	35.4%	1,388	505	36.4%	1,374	514	37.4%	1,361	523	38.4%	1,347	531	39.4%	1,347	544	40.4%
Organics	Food Scraps		**13.18%**	4,414	0	0.0%	4,362	44	1.0%	4,319	86	2%	4,275	128	3.0%	4,233	550	13.0%	4,190	754	18.0%	4,148	788	19.0%	4,107	821	20.0%	4,066	854	21.0%	4,025	886	22.0%	3,985	917	23.0%	3,985	956	24.0%
	Leaves and Grass / Pruning and Trimmings		**5.03%**	1,685	545	32.3%	1,665	555	33.3%	1,648	566	34%	1,632	577	35.3%	1,615	733	45.3%	1,599	805	50.3%	1,583	813	51.3%	1,567	820	52.3%	1,552	828	53.3%	1,536	835	54.3%	1,521	842	55.3%	1,521	857	56.3%
	Total Organics		**18.21%**	6,098	545	8.9%	6,027	599	9.9%	5,967	652	11%	5,907	705	11.9%	5,848	1,283	21.9%	5,789	1,559	26.9%	5,732	1,601	27.9%	5,674	1,642	28.9%	5,617	1,682	29.9%	5,561	1,720	30.9%	5,506	1,758	31.9%	5,506	1,813	32.9%
Textiles	Clothing Footwear, Towels, Sheets		**4.25%**	1,424	0	0.0%	1,408	14	1.0%	1,394	28	2%	1,380	41	3.0%	1,366	55	4.0%	1,352	68	5.0%	1,339	80	6.0%	1,325	93	7.0%	1,312	105	8.0%	1,299	117	9.0%	1,286	129	10.0%	1,286	141	11.0%
	Carpet		**1.44%**	481	0	0.0%	475	5	1.0%	471	9	2%	466	14	3.0%	461	18	4.0%	457	23	5.0%	452	27	6.0%	448	31	7.0%	443	35	8.0%	439	39	9.0%	434	43	10.0%	434	48	11.0%
	Total Textiles		**5.69%**	1,905	0	0.0%	1,883	19	1.0%	1,864	37	2%	1,846	55	3.0%	1,827	73	4.0%	1,809	90	5.0%	1,791	107	6.0%	1,773	124	7.0%	1,755	140	8.0%	1,738	156	9.0%	1,720	172	10.0%	1,720	189	11.0%
Wood	***Total Wood* (Pallets, crates, adulterated and non-adulterated**		**4.27%**	1,431	0	0.0%	1,414	14	1.0%	1,400	28	2%	1,386	42	3.0%	1,372	55	4.0%	1,358	68	5.0%	1,345	81	6.0%	1,331	93	7.0%	1,318	105	8.0%	1,305	117	9.0%	1,292	129	10.0%	1,292	142	11.0%
Miscellaneous	DIY Construction & Renovation Materials		**6.59%**	2,205	0	0.0%	2,180	22	1.0%	2,158	43	2%	2,136	64	3.0%	2,115	85	4.0%	2,094	105	5.0%	2,073	124	6.0%	2,052	144	7.0%	2,032	163	8.0%	2,011	181	9.0%	1,991	199	10.0%	1,991	219	11.0%
	Diapers		**1.77%**	593	0	0.0%	586	6	1.0%	580	12	2%	574	17	3.0%	569	23	4.0%	563	28	5.0%	557	33	6.0%	552	39	7.0%	546	44	8.0%	541	49	9.0%	535	54	10.0%	535	59	11.0%
	Electronics		**1.41%**	472	51	10.9%	466	55	11.9%	462	59	13%	457	63	13.9%	453	67	14.9%	448	71	15.9%	444	75	16.9%	439	78	17.9%	435	82	18.9%	430	86	19.9%	426	89	20.9%	426	93	21.9%
	Tires		**1.73%**	578	0	0.0%	572	6	1.0%	566	11	2%	560	17	3.0%	555	22	4.0%	549	27	5.0%	544	33	6.0%	538	38	7.0%	533	43	8.0%	527	47	9.0%	522	52	10.0%	522	57	11.0%
	HHW		**0.47%**	157	63	40.2%	156	64	41.2%	154	65	42%	152	66	43.2%	151	67	44.2%	149	68	45.2%	148	68	46.2%	146	69	47.2%	145	70	48.2%	144	71	49.2%	142	71	50.2%	142	73	51.2%
	Soil sand Fines		**0.47%**	157	0	0.0%	155	2	1.0%	154	3	2%	152	5	3.0%	151	6	4.0%	149	7	5.0%	148	9	6.0%	146	10	7.0%	145	12	8.0%	143	13	9.0%	142	14	10.0%	142	16	11.0%
	Other Composite Materials - Durable and/or inert		**1.78%**	597	334	55.9%	590	336	56.9%	584	339	58%	579	341	58.9%	573	343	59.9%	567	346	60.9%	561	348	61.9%	556	350	62.9%	550	352	63.9%	545	354	64.9%	539	356	65.9%	539	361	66.9%
	Total Miscellaneous		**14.21%**	4,760	449	9.4%	4,705	491	10.4%	4,657	532	11%	4,611	573	12.4%	4,565	613	13.4%	4,519	652	14.4%	4,474	690	15.4%	4,429	728	16.4%	4,385	764	17.4%	4,341	800	18.4%	4,298	835	19.4%	4,298	878	20.4%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Population	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386	61,386
MSW Generated (tons)	33,488.23	33,096	32,765	32,438	32,113	31,792	31,474	31,159	30,848	30,539	30,234	29,932
Per Capita MSW Generated (lb/person/year)	1,091	1,078	1,068	1,057	1,046	1,036	1,025	1,015	1,005	995	985	975
MSW Diverted (tons)	3,796.78	4,063	4,331	4,593	5,375	5,846	6,555	6,822	7,044	7,260	7,472	7,756
Per Capita MSW Diverted (lb/person/year)	124	132	141	150	175	190	214	222	229	237	243	253
MSW Disposed (tons)	29,691.45	29,033	28,434	27,845	26,738	25,946	24,919	24,338	23,804	23,279	22,762	22,175
Per Capita MSW Disposed (lb/person/year)	967	946	926	907	871	845	812	793	776	758	742	722
Per Capita MSW Disposed (lb/person/day)	2.65	2.59	2.54	2.49	2.39	2.32	2.22	2.17	2.12	2.08	2.03	1.98

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 steam.

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 (Except Town of Canaan)
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.

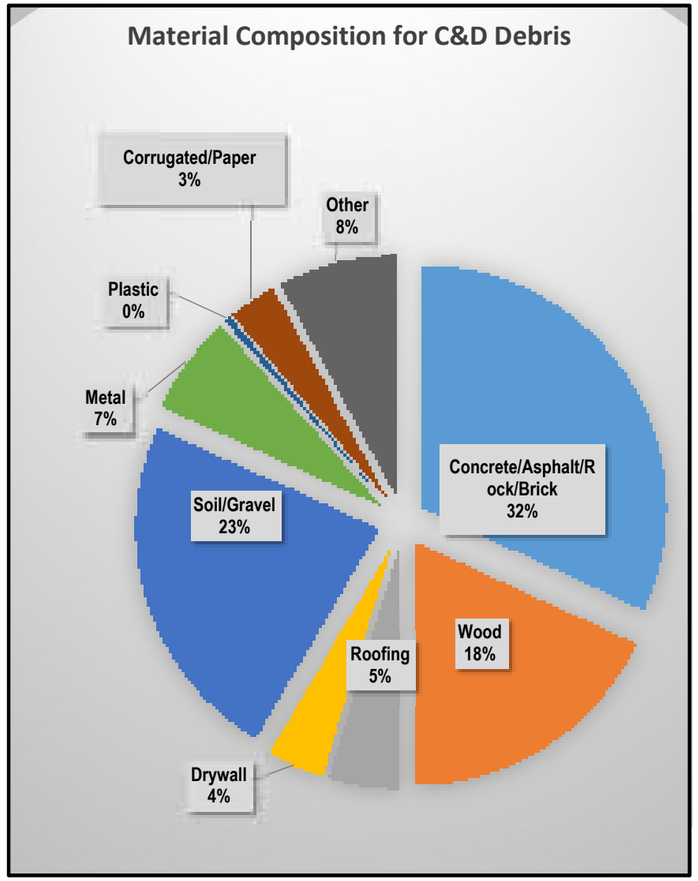
The results are presented on the last right column under C&D Debris Waste Stream Composition. Be aware of color changes on the cells, whenever a category represents over 15% of the total generation, the cell will turn **red** to easy identify key categories on the waste stream. It will also aid with 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 (Except Town of Canaan) | **2022-2031**

		Generation source									
		Residential				Non- Residential (commercial-institutional)				Other Municipal Infras-tructure	C&D Debris Materials Composition (%)
		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%	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%	31.88%
	Wood	29.90%	19.10%	25.70%	25.22%	22.70%	12.40%	24.20%	20.94%	10.50%	18.05%
	Roofing	6.00%	22.00%	6.10%	9.26%	2.10%	21.20%	5.10%	6.52%	0.00%	4.73%
	Drywall	15.60%	7.90%	5.10%	7.76%	4.60%	6.40%	4.30%	4.90%	0.00%	3.80%
	Soil/Gravel	11.30%	7.10%	18.50%	14.78%	13.10%	6.50%	15.60%	12.28%	38.00%	23.32%
	Metal	5.30%	11.30%	5.20%	6.44%	12.00%	15.50%	11.10%	12.52%	2.40%	6.65%
	Plastic	1.50%	0.70%	0.30%	0.62%	0.50%	0.70%	0.30%	0.50%	0.30%	0.46%
	Corrugated cardboard/ Paper	9.30%	2.90%	3.10%	4.30%	7.10%	4.60%	4.20%	6.02%	0.30%	3.22%
	Other	11.30%	12.90%	14.50%	13.54%	7.20%	13.60%	12.10%	9.46%	2.50%	7.90%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	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 (Except Town of Canaan)	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)	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	13,557.8

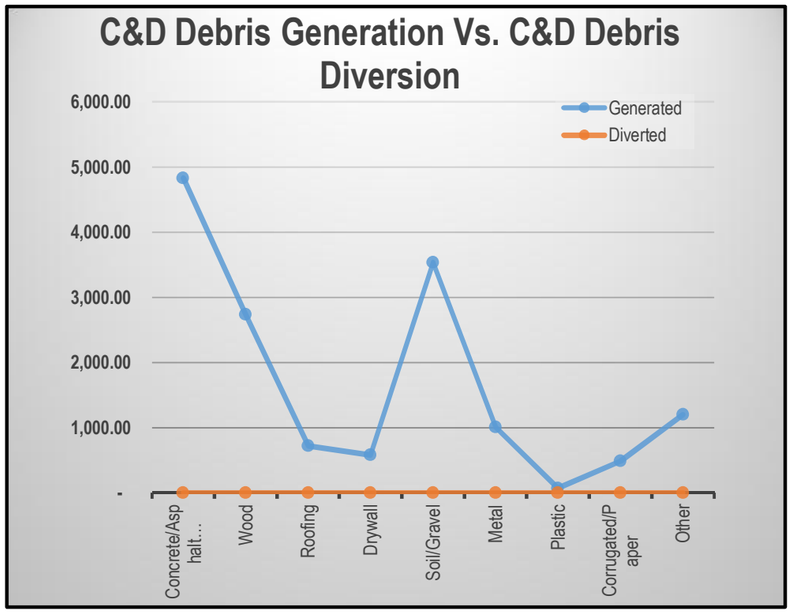
Step 4. Construction & Demolition (C&D) Debris Divertion Projections

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 (Except Town of Canaan)

2022-2031

		2020			
		C&D Debris Materials Composition (%)	C&D Debris Generated (Tons)	C&D Debris Diverted (Tons)	% C&D Diverted
Materials	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

(Please Use this Form for Filing your Local Law with 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~~
~~Town~~ of .....Columbia.....
~~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~~ of ..Columbia..... as follows:
~~Village~~

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 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 90 of the County ~~City~~ ~~Town~~ ~~Village~~ of Columbia was duly passed by the Board of Supervisors (Name of Legislative Body) on January 10 19 90 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..... of the County City Town Village of ..... was duly passed by the ..... (Name of Legislative Body) on ..... 19 ..... ~~not disapproved and was approved repassed after disapproval~~ by the ..... 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~~ ..... of the County City Town Village of ..... was duly passed by the ..... (Name of Legislative Body) on ..... 19 ..... ~~not disapproved and was approved repassed after disapproval~~ by the ..... Elective Chief Executive Officer* 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~~.

~~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 ..... of the County City Town Village of ..... was duly passed by the ..... (Name of Legislative Body) on ..... 19 ..... ~~not disapproved and was approved repassed after disapproval~~ by the ..... 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 paragraph .....1..... 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
Signature

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

Date: January 11, 1990

County
~~City~~
~~Town~~
~~Village~~ of ...Columbia.....

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

I hereby certify that the local law annexed hereto, designated as local law No. ---------- of20------ 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. ---------- of20------ 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-----1------, 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

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

GERALD SIMONS
CHAIRMAN

DONALD KLINE
DEPUTY CHAIRMAN

COMMITTEE CHAIRMEN:

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

GLADYS GOESCH
Clerk

MELISSA PULLEN
Deputy Clerk

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, NewYork 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 Lawa Book

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

Local Law No. 1 **of the year** 1999

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

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

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

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) of ---COLUMBIA--- was duly passed by the ---BOARD 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
(Name of Legislative Body)
disapproval) by the ---------- and was deemed duly adopted on ---------- 19----,
(Elective Chief Executive Officer)*
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------ of the (County)(City)(Town)(Village) of ---------- was duly passed by the ---------- on ---------- 19----, and was (approved)(not approved)(repassed after
(Name of Legislative Body)
disapproval) by the ---------- on ---------- 19----. Such local law was submitted
(Elective Chief Executive Officer)*
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.

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
(Name of Legislative Body)
disapproval) by the ---------- on ---------- 19---. Such local law was subject to
(Elective Chief Executive Officer)*
permissive referendum and no valid petition requesting such referendum was filed as of ---------- 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 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

(Seal)

Date: April 15, 1999

(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~~
~~Village~~ of COLUMBIA

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

Local Law No. 2 of the year 19 94

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

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
(Name of Legislative Body)
disapproval) by the ..... and was deemed duly adopted on ..... 19....,
(Elective Chief Executive Officer)*
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..... of the (County)(City)(Town)(Village) of ..... was duly passed by the ..... on ..... 19...., and was (approved)(not approved)(repassed after
(Name of Legislative Body)
disapproval) by the ..... on..... 19.... . Such local law was submitted
(Elective Chief Executive Officer)*
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.

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
(Name of Legislative Body)
disapproval) by the ..... on ..... 19 --- . Such local law was subject to
(Elective Chief Executive Officer)*
permissive referendum and no valid petition requesting such referendum was filed as of ..... 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 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
~~City~~
~~Town~~
~~Village~~ of COLUMBIA

Date: JULY 13, 1994

(Please Use this Form for Filing your 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~~
~~Town~~ of ..Columbia.....
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 the .....Board of Supervisors..... of the
(Name of Legislative Body)

County
~~City~~
~~Town~~ of ..Columbia..... as follows:
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 defintion 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 instutitional 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 desireable 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..... of the ~~City~~ County Town Village of ..Columbia.... was duly passed by the Board.of.Supervisors..... (Name of Legislative Body) on .....June..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..... of the County City Town Village of ..... was duly passed by the ..... (Name of Legislative Body) on ..... 19 ..... not disapproved and was approved repassed after disapproval by the ..... 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 ..... of the County City Town Village of ..... was duly passed by the ..... (Name of Legislative Body) on ..... 19 ..... not disapproved and was approved repassed after disapproval by the ..... Elective Chief Executive Officer* 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 ~~special~~ general ~~annual~~ election held on .....19 ....., in accordance with the applicable ~~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 ..... of the County City Town Village of ..... was duly passed by the ..... (Name of Legislative Body) on ..... 19 ..... not disapproved and was approved ~~repassed after disapproval~~ by the ..... 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 paragraph ....1..... above.

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

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 Jr.
Signature

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

Date: June 19, 1989

County
~~City~~
~~Town~~
~~Village~~ of .....Columbia.....

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 diposal 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:

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

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 recycables 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%.

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	2023	2024	2025	2026	2027	2028	2029	2030	2031
	1	2	3	4	5	6	7	8	9	10
6) Support Organics Diversion Efforts and Promote Backyard Composting	Collect data on current programs offered by different municipalities within the County. Conduct a poll of transfer station users to evaluate the implementation of a residential food scraps drop off program.		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

Program Strategy	Year									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	1	2	3	4	5	6	7	8	9	10
11) Identify Private Sector Management and Coordination Opportunities	Investigate potential partnerships or similar programs with other organizations such as Soil & Water Conservation District, private solid waste management companies, and community organizations as other implementation items progress and needs for assistance are identified.									
12) Review Available Technologies		Monitor existing and potential available technologies that may be economically feasible to implement within the County.			Monitor existing and potential available technologies that may be economically feasible to implement within the County.			Monitor existing and potential available technologies that may be economically feasible to implement within the County.		Update tasks for new 10 year planning period depending on any new information and resources available.
13) Continue Existing Disposal Methods as Primary Disposal for Non-Recyclable/Non-Recoverable Waste	Whenever the disposal contract is near expiration, explore all feasible available disposal facilities. Then, either pursue a new disposal contract or renew the current disposal contract.									Update tasks for new 10 year planning period depending on any new information and resources available.
14) Review County Local Solid Waste Management and Recycling Law	Conduct internal review of Local Solid Waste Management and Recycling Law.		Update Local Solid Waste Management and Recycling Law as necessary to support Implementation Plan initiatives.		Monitor and gather data related to modification of Local Solid Waste Management and Recycling Law.					
15) Participate in Agricultural Plastics Recycling	Define what constitutes agriculatural plastics and estimate total tonnage. Make inquiries to existing agricultural recycling programs conducted by nearby Planning Units. Identify alternative disposal options.		Determine if a partnership could be made with existing agricultural plastics recyclers or if there is interest in hosting a collection event in the County.		Support and promote a county-wide agricultural plastics recycling event, if deemed appropriate.		Update task for the remainder of the planning period depending on progress.			
Optimal MSW Recycling Diversion Goals	13%	15%	18%	21%	22%	22%	23%	24%	25%	26%
Optimal C&D Diversion Goals	2%	2%	2%	2%	2%	2%	3%	3%	14%	14%

Notes:

1. The above implementation schedule includes tasks and subtasks. Details related to the efforts required to achieve the projected results can be found in each implementation task description in Chapter 5. The bulk of the tasks are expected to be undertaken in the earlier years of the planning period, and more detail will be added through compliance reports for all impending tasks as the planning period progresses.

2. The recycling diversion projections are intended for use as a planning tool only and as such are not a commitment of achievement by the County. As programs progress and new information becomes available, these projections are expected to evolve and require revision over time. Accordingly, to remain a valuable planning tool, it is expected these optimal rate projections will be updated or revised in each biennial compliance report along with the implementation schedule, as necessary.

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

Table of Contents

Appendix G

Columbia County Budget Excerpts

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-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 -	PERMITT/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-CLAVERACK	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-0R -1001-0000-0R1001-	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 REVENU	(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

ACCOUNT ##	ACCOUNT DESCRIPTION	2018 ACTUAL YTD	2019 BUDGET	2019 YTD As of 6/30	2019 % USED	2020 BUDGET	INCRS/(DCRS) OVER 2019 BUDGET	%%% INCRS/DRCS
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 -	PERMITT/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-CLAVERACK	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/DRCS
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

ACCOUNT ##	ACCOUNT DESCRIPTION	2018 ACTUAL YTD	2019 BUDGET	2019 YTD As of 6/30	2019 % USED	2020 BUDGET	INCRS/(DCRS) OVER 2019 BUDGET	%%% INCRS/DRCS
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 ACTUAL YTD	2018 BUDGET	2018 YTD As of 6/30	2018 % USED	2019 BUDGET	INCRS/(DCRS) OVER 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 -	PERMITT/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 CLEANUI	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-0R -1001-0000-0R1001-	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/DRCS
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 PGI	(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

ACCOUNT ##	ACCOUNT DESCRIPTION	2016 YTD ACTUAL	2017 BUDGET	2017 YTD AS of 6/30	2017 AVAILABLE BUDGET @ 6/30	% USED	2018 BUDGET	INCRS/(DCRS) OVER 2017 BUDGET	%%% INCRS/DRCS
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

ACCOUNT ##	ACCOUNT DESCRIPTION	2016 YTD ACTUAL	2017 BUDGET	2017 YTD AS of 6/30	2017 AVAILABLE BUDGET @ 6/30	% USED	2018 BUDGET	INCRS/(DCRS) OVER 2017 BUDGET	%%% INCRS/DRCS
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-0R -1001-0000-0R1001-	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%
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