Draft Local Solid Waste Management Plan

Prepared For

Chautauqua County

Division of Solid Waste
3889 Towerville Road
Jamestown, New York 14701

January 2025

Barton&Loguidice

Chautauqua County, New York

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EXECUTIVE SUMMARY

The purpose of the Chautauqua County Draft Local Solid Waste Management Plan (LSWMP) is to identify the path to be pursued for managing solid waste generated in Chautauqua 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). The ten-year planning period is anticipated to be 2024-2033.

The residents, businesses, industries, and institutions in Chautauqua County currently produce approximately 649 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 Draft 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.

Chautauqua County serves as the solid waste planning unit for all municipalities within the County. This Draft 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 Chautauqua 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).

In December 2023 the NYSDEC issued an updated statewide SWMP, *Building the Circular Economy Through Sustainable Materials Management*. 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 *the 2023 State SWMP* 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 Draft

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 Chautauqua 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 focus area and corresponding strategies will be evaluated for feasibility and cost-effectiveness on an individual basis according to the implementation schedule included in Appendix E.

Focus Area #1 – Waste Reduction Programs

Program Strategy #1.1: Waste Reduction Policy

Program Strategy #1.2: Green Procurement Process

Focus Area #2 – Reuse Programs

Program Strategy #2.1: Identify and Promote Existing Programs

Program Strategy #2.2: Identify Potential New Programs

Focus Area #3 – Increase Materials Recovered and Improve Local Recyclables Market

Program Strategy #3.1: Evaluate Changes to Recyclables Sorting

Program Strategy #3.2: Plastic Bags and Batteries Collection

Focus Area #4 – Recyclables Recovery Programs

Program Strategy #4.1: Agricultural Recycling

Program Strategy #4.2: Recycling at County Facilities

Program Strategy #4.3: Recycling at County Events

Focus Area #5 –Product Stewardship

Program Strategy #5.1: Product Stewardship Resolution

Program Strategy #5.2: Monitor and Promote Proposed Legislation

Focus Area #6 –Organics Diversion

Program Strategy #6.1: Local Food Banks

Program Strategy #6.2: Yard Waste Management

Program Strategy #6.3: Backyard Composting Education

Focus Area #7 – Incentive-Based Pricing

Program Strategy #7.1: Evaluate Pay-As-You-Throw Fees

Program Strategy #7.2: Evaluate Other Unit Based Pricing Systems

Focus Area #8 – Education and Outreach

Program Strategy #8.1: Revamp County's Educational Outreach Program

Program Strategy #8.2: Maintain Updated County Website

Focus Area #9 – Data Collection and Evaluation Efforts

Program Strategy #9.1: Investigate Identified Data Gaps

Program Strategy #9.2: Develop and Distribute Surveys

Focus Area #10 – Improve C&D Debris Reduction

Program Strategy #10.1: County Bids C&D Debris Reduction Requirement

Program Strategy #10.2: Deconstruction and Reuse/Recovery Program

Focus Area #11 – Private Sector Management and Coordination Opportunities

Program Strategy #11: Leverage partnerships to progress program strategies

ABBREVIATIONS

BUD	Beneficial Use Determination
C&D	Construction and demolition debris
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
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
WTE	Waste to energy
WWTF	Wastewater treatment facility
WWTP	Wastewater treatment plant

1.0 PLANNING UNIT DESCRIPTION

1.1. Physical Description

Chautauqua County (the County) has a land area of 1,060 square miles with a population density of 119 people per square mile (sq mi). The County is the 13th largest county in New York by total area and is largely rural, consisting of mostly farmland, forested hills, and surface water bodies. The County is approximately 29% surface water because of its six beautiful lakes and approximately 50 miles of Lake Erie shoreline, there is no place in the County more than 25 miles from open water. Chautauqua County, the western gateway to New York State, occupies the extreme southwest corner of New York State[1].

1.2. Location

Chautauqua County is located in the southwest corner of New York State, just southeast of Lake Erie and south of Buffalo. Chautauqua County is bounded on the north by Lake Erie, Erie County, and the Cattaraugus County Indian reservation, on the east by Cattaraugus County, on the west by Erie County, Pennsylvania, and on the south by Warren and Erie Counties, Pennsylvania.

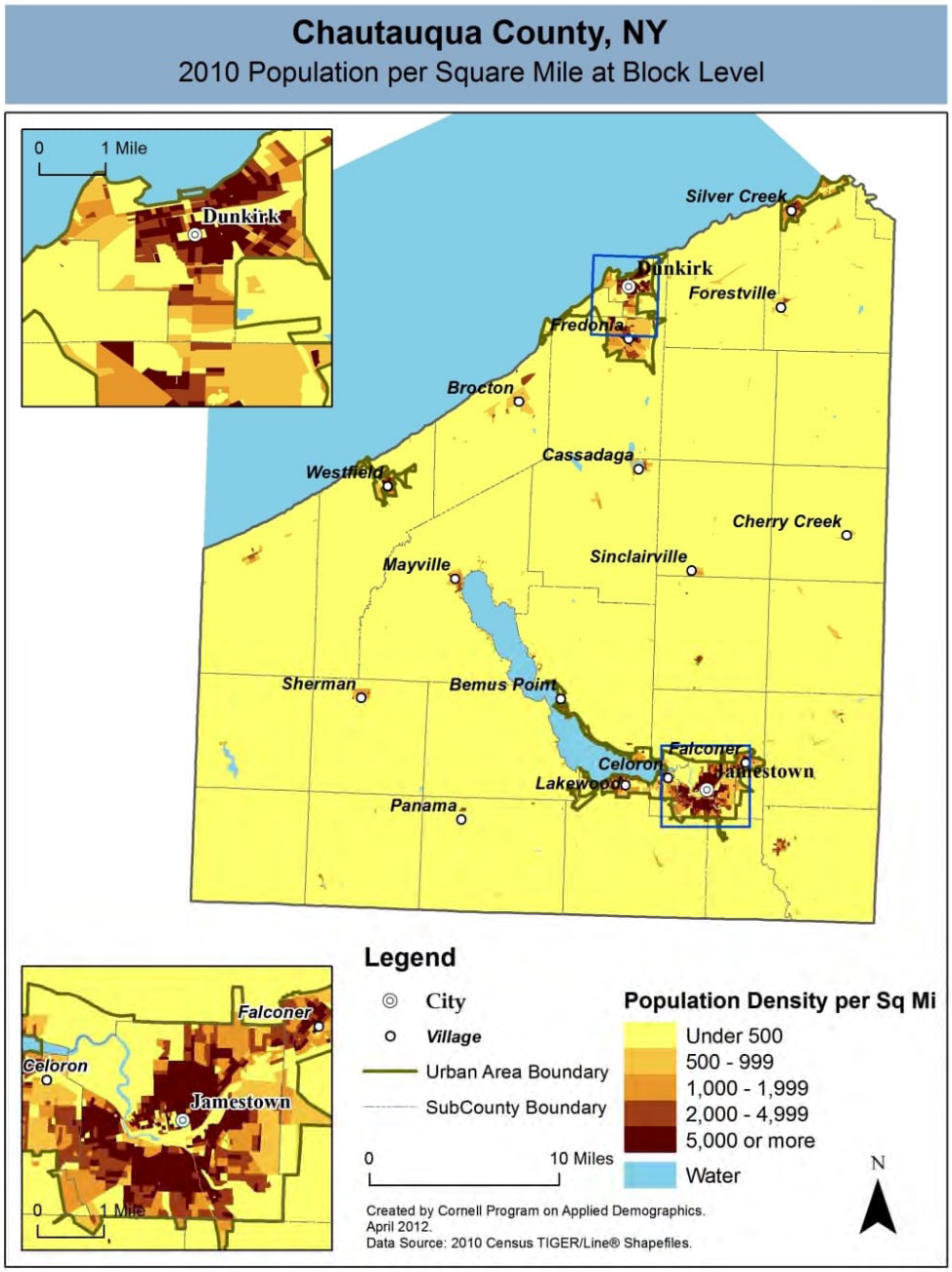
1.3. County Formation

Following the survey of the Holland Purchase in 1798, settlers began migrating to this area. By the act of 1808, the limits of the County were defined and the name "Chautauque" given to it (the spelling was changed to the current usage in 1869). Results of the 1810 federal census indicated a population of more than 500, and the County government was formed in 1811.

The County Seat for Chautauqua is in the Village of Mayville. A map displaying the County's municipal jurisdictions is presented in Figure 1-1.

[1] https://chqgov.com/live-work-play/History

Figure 1-1 – Municipalities in Chautauqua County



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

1.4. Road Network

Chautauqua County is accessible by several state roads, including U.S. Route 20 and NYS Route 62 (running north-south), Interstate-86 (also known as NY 17 or Southern Tier Expressway; running east-west). In addition, the following NY Routes run through Chautauqua County: 5, 39, 60, 83, 394, 426, 430, and 474.

Interstate I-90 passes through the towns of Hanover, Dunkirk, Westfield, and Ripley and has four exits within the county. Chautauqua County is the last New York county located along westbound I-90 (and the first county along eastbound I-90).

Depending on precise location within the County and route taken, travel time is approximately 7 hours to New York City, an hour to Erie, PA, one and a half hours to Buffalo, NY, and five and a half hours to Albany, NY.

1.5. Population

1.5.1. Population and Number of Households in the Local Planning Unit[2,3]

Chautauqua County's population is distributed over 2 cities, 27 towns and 15 villages. According to the U.S. Census data for 2020, the population was approximately 127,657 with an estimated 53,405 households. For comparison, the population has decreased by 5.7% from the 2010 U.S. Census Data number of 134,905.

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 Chautauqua County is projected to be 121,884 in 2030, a decrease of 5,773 persons when compared to the U.S. Census data for 2020. The population is also projected to decrease by an additional 9,025 persons to 112,859 persons by the year 2040.

Table 1-1 – Population By Municipality[2]

Municipality	Population (2020 Census)	Population (2010 Census)	Change 2010 to 2020	% Change
Chautauqua County	**127,657**	**134,905**	**-7,248**	**-5.37**
City of Dunkirk	12,743	12,563	180	1.43
City of Jamestown	28,712	31,146	-2,434	-7.81
Village of Bemus Point	312	364	-52	-14.29
Village of Brocton	1,335	1,486	-151	-10.16
Village of Cassadaga	569	634	-65	-10.25

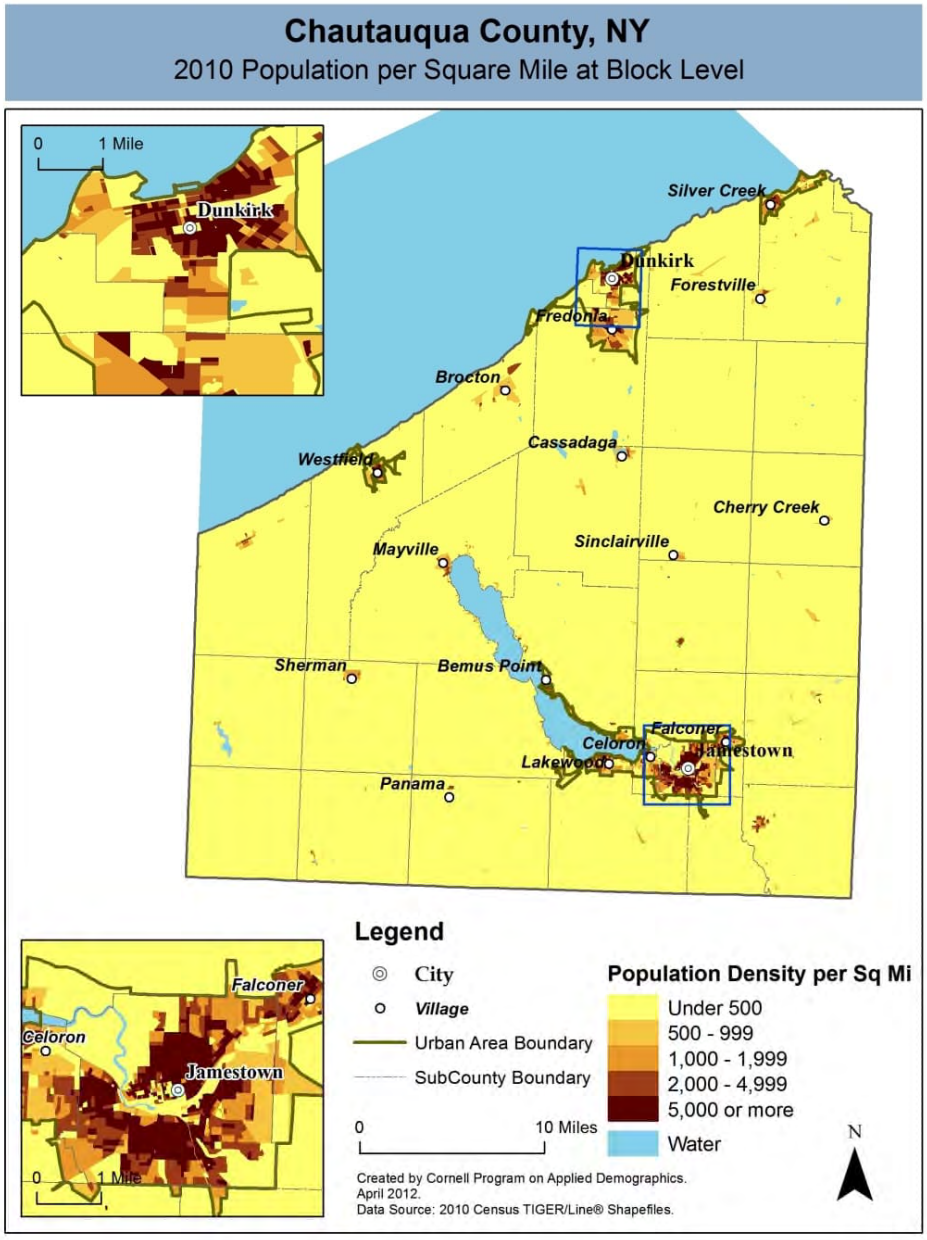
[2] U.S. Census Bureau Census 2020 P.L. 94-171
[3] https://www.census.gov/quickfacts/fact/table/chautauquacountynewyork/PST045223
[4] https://pad.human.cornell.edu/profiles/Chautauqua.pdf

Municipality	Population (2020 Census)	Population (2010 Census)	Change 2010 to 2020	% Change
Village of Celoron	1,082	1,112	-30	-2.70
Village of Falconer	2,284	2,420	-136	-5.62
Village of Fredonia	9,585	11,230	-1,645	-14.65
Village of Lakewood	2,993	3,002	-9	-0.30
Village of Mayville	1,477	1,711	-234	-13.68
Village of Panama	465	479	-14	-2.92
Village of Sherman	681	730	-49	-6.71
Village of Silver Creek	2,637	2,656	-19	-0.72
Village of Sinclairville	578	588	-10	-1.70
Village of Westfield	2,993	3,224	-231	-7.17
Town of Arkwright	1,008	1,061	-53	-5.00
Town of Busti	7,543	7,351	192	2.61
Town of Carroll	3,456	3,524	-68	-1.93
Town of Charlotte	1,521	1,729	-208	-12.03
Town of Chautauqua	4,009	4,464	-455	-10.19
Town of Cherry Creek	1,036	1,118	-82	-7.33
Town of Clymer	1,748	1,698	50	2.94
Town of Dunkirk	1,257	1,318	-61	-4.63
Town of Ellery	4,105	4,528	-423	-9.34
Town of Ellicott	8,768	8,714	54	0.62
Town of Ellington	1,493	1,632	-139	-8.52
Town of French Creek	997	906	91	-8.52
Town of Gerry	1,789	1,905	-116	-6.09
Town of Hanover	6,972	7,127	-155	-2.17
Town of Harmony	2,108	2,206	-98	-4.44
Town of Kiantone	1,338	1,350	-12	-0.89
Town of Mina	1,007	1,106	-99	-8.95
Town of North Harmony	2,182	2,267	-85	-3.75
Town of Poland	2,201	2,356	-155	-6.58
Town of Pomfret	13,035	14,965	-1,930	-12.90
Town of Portland	4,366	4,827	-461	-9.55
Town of Ripley	2,310	2,415	-105	-4.35
Town of Sheridan	2,563	2,673	-110	-4.12
Town of Sherman	1,618	1,653	-35	-2.12
Town of Stockton	2,036	2,248	-212	-9.43
Town of Villenova	1,053	1,110	-57	-5.14
Town of Westfield	4,513	4,896	-383	-7.82
Cattaraugus Reservation	34	38	-4	-10.53

1.5.2. Population Density

While much of the southern and northern portions of the County are rural or agricultural in nature with population densities less than 500 people per square mile, the following municipalities are quite suburban, dominated by single-family residential development, strip commercial, and a few apartment complexes: City of Jamestown, City of Dunkirk, Village of Fredonia, Village of Lakewood, Village of Westfield, Village of Silver Creek, Village of Falconer, Village of Mayville, Village of Brocton, Village of Celoron, Village of Sherman, Village of Cassadaga, and the Village of Bemus Point. The two most densely populated areas of the County are the City of Dunkirk and City of Jamestown, which have population densities of 2,803 and 3,226 people per square mile respectively. See Figure 1-2: 2010 Population Density in Chautauqua County. The County's population is approximately 68% rural, and approximately 32% characterized as suburban, based on the population densities of each municipality.

Figure 1-2 – 2010 Population Density in Chautauqua County



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

Table 1-2 – Population Density

Municipal Member	Population Density – Character[5]
Towns & Cities	
Dunkirk	2,831.8
Jamestown	3,155.2
Arkwright	27.9
Busti	155.7
Carroll	103.6
Charlotte	40.4
Chautauqua	60.1
Cherry Creek	25.3
Clymer	60.1
Dunkirk	210.1
Ellery	87.1
Ellicott	286.5
Ellington	43.6
French Creek	26
Gerry	40
Hanover	141.4
Harmony	54.2
Kiantone	95.2
Mina	25.9
North Harmony	50.4
Poland	55.6
Pomfret	298.7
Portland	123.7
Ripley	48.4
Sheridan	68.5
Sherman	37.4
Stockton	43.6
Villenova	26.3
Westfield	96.9
Villages	
Bemus Point	701.9
Brocton	780.7
Cassadaga	517.3
Celoron	1,482.2
Falconer	2,076.4
Fredonia	1,843.3
Lakewood	1,527.0
Mayville	742.2
Panama	211.4
Sherman	801.2
Silver Creek	2,197.5
Sinclairville	356.8
Westfield	787.6

[5] https://censusreporter.org/profiles/

1.6. Planning Unit Members and Administrative Structure

The Chautauqua County Government is the planning unit for Chautauqua County and is responsible for developing and implementing the Local Solid Waste Management Plan (LSWMP). The County's population is served by the cities of Dunkirk and Jamestown, twenty-seven towns, and fifteen villages.

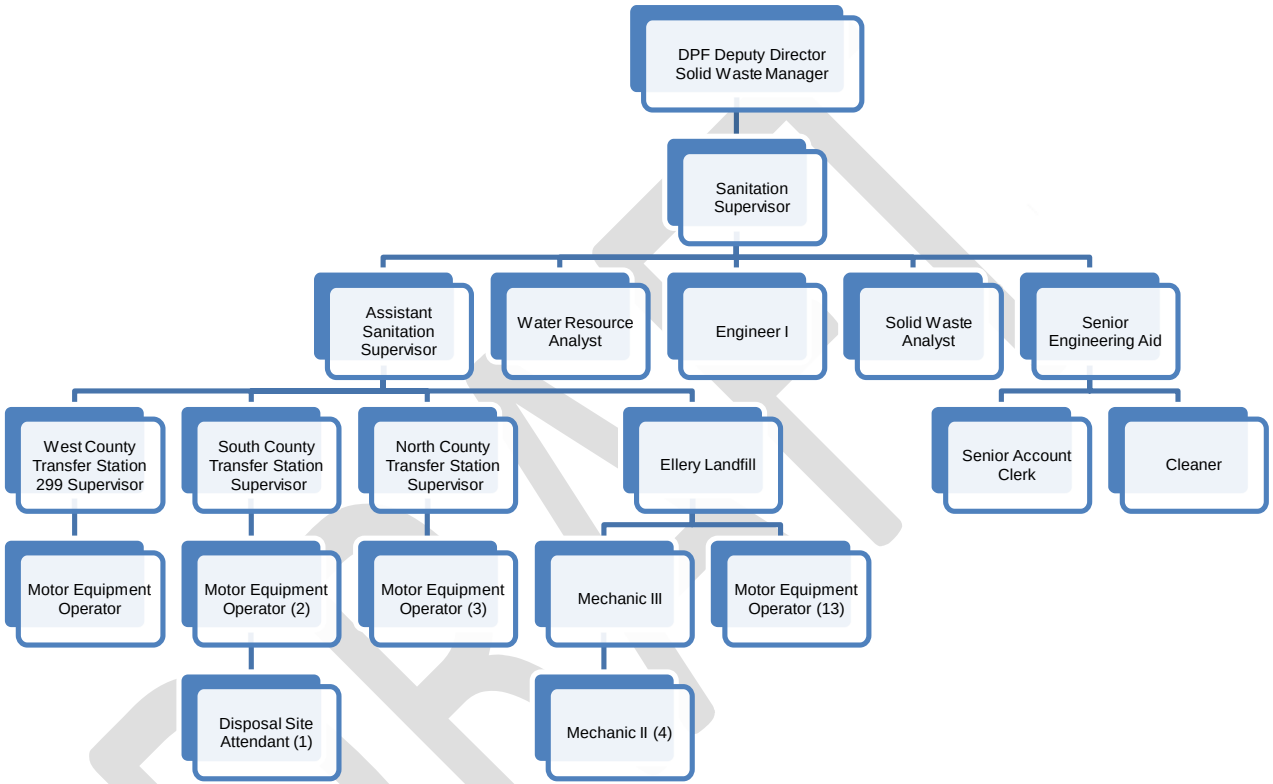
Nearly all towns, cities, and villages participate in managing solid waste within the planning unit through spring or fall clean up events, curbside collection and/or through the operation of waste transfer or recycling stations for the convenience of their residents. There has been no change in Planning Unit membership.

The Seneca Nation of Indians has a solid waste hauling contractor that collects commercial and residential waste on the Cattaraugus Territory and disposes of their waste at Chautauqua County Landfill.

Chautauqua County provides a centrally located landfill in the Town of Ellery, and currently has jurisdictional control of where solid waste and recovered materials are taken for disposal in the Planning Unit. The Chautauqua County Legislature, along with the County Law Department, has implemented a flow control law that requires all non-recoverable waste generated in Chautauqua County, including construction and demolition waste, be disposed of at the Chautauqua County Landfill. It should be noted that a small amount of non-recoverable waste (contaminated soil (BUD), asbestos, C&D, Industrial Waste, and MSW) was disposed of outside of the County in 2023. The flow control law does not apply to source separated organic wastes, regulated medical wastes, or wastes processed pursuant to approved environmental sustainability programs.

The Administrative Structure consists of the County's Solid Waste Department, a sub-department of the Department of Public Facilities, which is responsible to manage solid waste. Chautauqua County will draw upon its existing administrative structure to implement the programs and objectives outlined within this Plan. Chautauqua 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 County's Solid Waste Department, as well as the Department of Public Facilities, 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 reports. This is discussed in more detail in Section 4.0.

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 Appendix D.

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 Draft LSWMP
Seneca Nation of Indians	The Seneca Nations of Indians has a solid waste hauling contractor that collects commercial and residential waste on the Cattaraugus Territory and disposes of their waste at Chautauqua County Landfill.	No known impacts on implementing the Draft LSWMP beyond planning to consume capacity at the Chautauqua County Landfill with this waste. The County could use some of this tip fee revenue to implement Draft LSWMP programs.
Erie County, NY	Erie County operates 12 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. There are two operable landfills within Erie County. Waste from Erie County, including asbestos, C&D, industrial waste, and MSW, is disposed of at the Chautauqua County Landfill.	No known impacts on implementing the Draft LSWMP beyond planning to consume capacity at the Chautauqua County Landfill with this waste. The County could use some of this tip fee revenue to implement Draft LSWMP programs. Facilities in Erie County also receive recyclables from Chautauqua County for processing and consolidation.
Cattaraugus County	Cattaraugus County operates 11 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. Waste from Cattaraugus County, including asbestos, C&D, industrial waste, MSW, and sewage treatment plant sludge, is disposed of at the Chautauqua County Landfill.	No known impacts on implementing the Draft LSWMP beyond planning to consume capacity at the Chautauqua County Landfill with this waste. The County could use some of this tip fee revenue to implement Draft LSWMP programs.
Erie County, PA	Commercial waste haulers dispose of ash, C&D, industrial waste, MSW, contaminated soil, and sewage treatment plant sludge at the Chautauqua County Landfill.	No known impacts on implementing the Draft LSWMP beyond planning to consume capacity at the Chautauqua County Landfill with this waste. The County could use some of this tip fee revenue to implement Draft LSWMP programs.
Warren County, PA	Commercial waste haulers dispose of ash, C&D, industrial waste, MSW, contaminated soil, and sewage treatment plant sludge at the Chautauqua County Landfill.	No known impacts on implementing the Draft LSWMP beyond planning to consume capacity at the Chautauqua County Landfill with this waste. The County could use some of this tip fee revenue to implement Draft LSWMP programs.

Neighboring Planning Unit	Existing or Potential Inter-Jurisdiction Considerations/Impacts	Effects of Opportunities or Impacts to Implement the Draft LSWMP
McKean County, PA	Commercial waste haulers dispose of ash, C&D, industrial waste, MSW, contaminated soil, and sewage treatment plant sludge at the Chautauqua County Landfill.	No known impacts on implementing the Draft LSWMP beyond planning to consume capacity at the Chautauqua County Landfill with this waste. The County could use some of this tip fee revenue to implement Draft LSWMP programs.

1.6.2. Planning Unit Membership and Impacts on Implementing Draft LSWMP

Table 1-4 includes a list of the planning unit members as well as conditions that pose a significant impact to implementing the Draft LSWMP and achievement of the Draft 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 in the Legislature 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 this chapter. Additionally, more details related to organic waste management are provided in Section 2.0.

Table 1-4 – Planning Unit Membership

Municipal Member	Solid Waste Management Facility Present[6]	Unique Conditions or Issues[7]
Towns & Cities		
Dunkirk (City)	City of Dunkirk RHRF	Curbside garbage and recycling collection, yard waste drop-off, and fall leaf collection provided by the City.
Jamestown (City)	Casella Jamestown RHRF, Fluvanna Yard Site CDHRF, Jamestown Macadam CDHRF	Curbside garbage and recycling collection, and yard waste drop-off provided by the City.
Arkwright	N/A	N/A
Busti	Town of Busti TS	N/A
Carroll	N/A	N/A
Charlotte	N/A	N/A
Chautauqua	None outside village	N/A
Cherry Creek	N/A	N/A
Clymer	Town of Clymer TS & RHRF	N/A
Dunkirk	NRG Dunkirk Fly Ash LF, Stericycle RMWF	Future of NRG LF unknown and could be acquired by another entity. In 2023, NRG Dunkirk Power reported receiving 108 tons of emission control activated carbon. Stericycle heat treats medical waste in Dunkirk, NY facility and transports waste out-of-planning unit.
Ellery	Chautauqua County LF, Ellery TS & RHRF	N/A
Ellicott	N/A	N/A

[6] Abbreviations: Transfer Station (TS), Recyclables Handling and Recovery Facility (RHRF), Landfill (LF), Regulated Medical Waste Facility (RMWF), C&D Debris Handling and Recovery Facility (CDHRF), Compost Facility (CF)
[7] Further evaluation will be completed as discussed in Chapter 5.

Municipal Member	Solid Waste Management Facility Present[6]	Unique Conditions or Issues[7]
Ellington	N/A	N/A
French Creek	N/A	N/A
Gerry	N/A	N/A
Hanover	N/A	N/A
Harmony	Town of Harmony TS & RHRF	N/A
Kiantone	Town of Kiantone TS & RHRF	N/A
Mina	N/A	N/A
North Harmony	Town of North Harmony TS & RHRF	N/A
Poland	N/A	N/A
Pomfret	N/A	N/A
Portland	N/A	N/A
Ripley	Town of Ripley TS & RHRF	N/A
Sheridan	N/A	N/A
Sherman	None outside village	N/A
Stockton	N/A	N/A
Villenova	N/A	N/A
Westfield	None outside village	N/A
Villages		
Bemus Point	N/A	The Village provides fall leaf pickup and Spring/Summer leaf/brush pickup. The Village contracts with Casella for curbside garbage and recycling collection.
Brocton	N/A	The Village accepts bulky trash items one day per year at their DPW shop. A metal appliance/furniture curbside collection is provided by the Village once annually. The Village provides curbside brush collection once per month from April-November.
Cassadaga	N/A	The Village provides curbside leaf/brush collection multiple times annually.
Celoron	N/A	The Village provides curbside garbage and recycling collection.
Cherry Creek	N/A	N/A
Falconer	South County TS & RHRF	The Village provides curbside garbage and recycling collection, yard waste drop-off at the highway garage April-October, and fall curbside leaf collection.
Forestville	N/A	N/A
Fredonia	North County TS & RHRF	Summer curbside yard waste collection provided by the Village.
Lakewood	N/A	The Village provides curbside garbage and recycling collection and curbside fall leaf collection.
Mayville	Village of Mayville TS	The Village provides curbside garbage pick up, fall curbside yard waste collection and a June curbside collection of metal/iron, housewares, and C&D. The Village offers an on-call curbside collection service for white goods and large quantities of MSW and C&D.
Panama	N/A	N/A
Sherman	West County TS & RHRF	The Village provides curbside garbage and recycling collection and curbside brush collection April-October.
Silver Creek	N/A	The Village provides curbside garbage and recycling collection, curbside brush collection April-October,

Municipal Member	Solid Waste Management Facility Present[6]	Unique Conditions or Issues[7]
		and curbside heavy metal collection March-November.
Sinclairville	Beichner Waste Services RHRF	The village provides curbside garbage collection.
Westfield	Casella Westfield TS & RHRF, Village of Westfield CF, Gernatt Asphalt Products Hanover CDHRF	The village residents have the option of municipal curbside garbage and recycling collection or using the transfer station.

1.7. Seasonal Variations and Unique Circumstances

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

- Spring is a large cleanup time and influx of brush, downed trees, lawn debris, and scrap metal from residences. The impacts and effects of these wastes are discussed in Section 1.8.1.
- Summer brings the end of the school year for high schools, and brings with it cleanout wastes from lockers, equipment left behind, and wastes from any remodels or construction projects at schools, as well as agricultural clean ups. The impacts and effects of these wastes are discussed in Section 1.8.2.
- April, May, June, July, and August characteristically show an increase in waste tonnage due to summer occupancy of vacation homes and "spring cleaning" activities by area residents and the summer construction season. The population of the Town of Chautauqua can grow by 75,000 during the summer season because summer residences, at the Chautauqua Institution and other vacation properties, throughout Chautauqua County. However, seasonal variations in Chautauqua County solid waste generation does not pose any problems for collection, disposal, or processing of the region's solid waste stream. Current recovery programs for seasonal and public events/spaces waste are described in Section 3.2.8.
- 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 1.8.10.
- 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 Peek'n Peak Resort is open during the winter for skiing and in the summer for golf. This may contribute to a seasonal source of commercial waste.
- There are ten campgrounds in the county that operate seasonally that generate 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 Chautauqua County

The majority of Chautauqua County's commercial, retail, institutional, governmental facilities and major employment centers within the County are concentrated in the greater City of Jamestown or Dunkirk areas.

Chautauqua 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 Jamestown 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 Chautauqua County in 2022 was manufacturing providing 16.8% of employment followed by health care and social assistance (16.0%) and educational services (11.0%).[8]

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 Chautauqua Institution, National Comedy Center, Panama Rocks Scenic Park, Chautauqua Lake, Midway State Park, Long Point State Park, Peek n' Peak Resort, Audubon Community Nature Center, Findley Lake, Lake Erie Wine Country, Chautauqua County Fair, Gerry Rodeo, and Lucille Ball Comedy Festival.

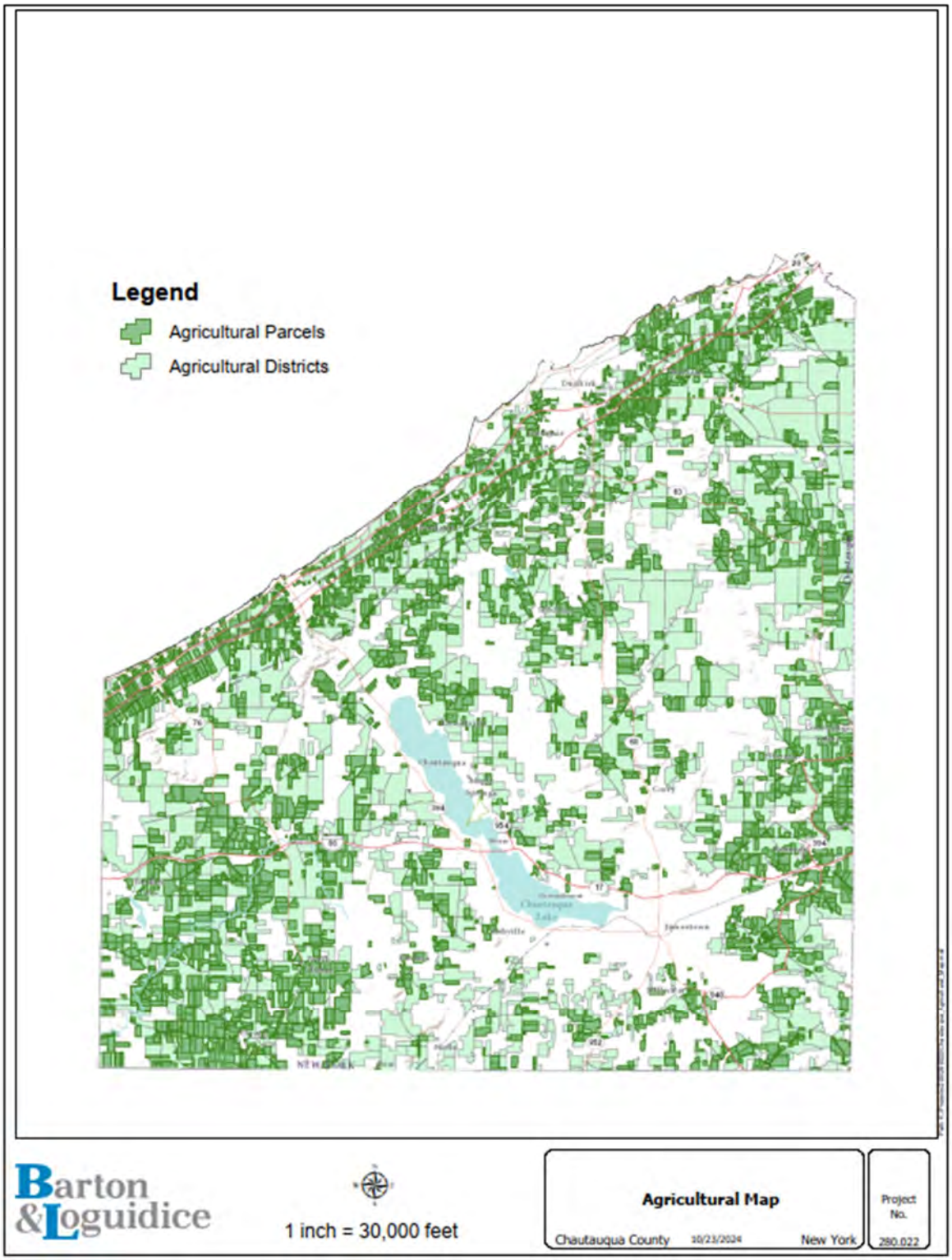
[8] https://datausa.io/profile/geo/chautauqua-county-ny?redirect=true#:~:text=Employment%20by%20Industries&text=The%20most%20common%20employment%20sectors,Educational%20Services%20(6%2C478%20people).

A total of 1,228 active farms existed in the County in 2017. These farms occupied approximately 223,634 acres of the County's total land area, and the average farm size was 182 acres[9]. A figure depicting active farmland is shown in

Figure 1-4.

9 https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp36013.pdf

Figure 1-4 – Agricultural Lands in Chautauqua 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 Draft LSWMP and achievement of its goals.

Table 1-5 – Impacts of Residential and Agricultural Wastes in the Planning Unit[10]

Source of Wastes	Unique Circumstance or Situation	Quantity/Quality Impacts	Impacts on Draft 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

Chautauqua 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, BOCES campuses, and two colleges.

Table 1-6 lists the schools[11,12] in the planning unit, along with conditions and impacts that affect implementation of the Draft LSWMP and achievement of its goals. Information and data in the table will be revised throughout the Planning Period as more details become available.

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

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On Draft LSWMP
Elementary and Secondary Schools			
Bemus Point 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.	May participate in education/outreach activities provided by Chautauqua County. Lack of data available on waste generation,

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

[11] https://data.nysed.gov/profile.php?county=06

[12] https://newyorkschools.com/private-schools/chautauqua-county.html

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On Draft LSWMP
		Influx of food wastes. Paper, books and electronics recycling.	further information is needed.
Brocton Central School District	Same as above	Same as above	Same as above
Cassadaga Central School District	Same as above	Same as above	Same as above
Chautauqua Lake Central School District	Same as above	Same as above	Same as above
Clymer Central School District	Same as above	Same as above	Same as above
Dunkirk City Schools	Same as above	Same as above	Same as above
Falconer Central School District	Same as above	Same as above	Same as above
Forestville Central School District	Same as above	Same as above	Same as above
Fredonia Central School District	Same as above	Same as above	Same as above
Frewsburg Central School District	Same as above	Same as above	Same as above
Jamestown City Schools	Same as above	Same as above	Same as above
Panama Central School District	Same as above	Same as above	Same as above
Pine Valley Central School District	Same as above	Same as above	Same as above
Ripley Central School District	Same as above	Same as above	Same as above
Sherman Central School District	Same as above	Same as above	Same as above
Silver Creek Central School District	Same as above	Same as above	Same as above
Southwestern Central School District	Same as above	Same as above	Same as above
Westfield Central School District	Same as above	Same as above	Same as above
Private Schools			
Northern Chautauqua Catholic School	Same as above	Same as above	Same as above
Bethel Baptist Christian Academy	Same as above	Same as above	Same as above
Burdick Rd. Amish School	Same as above	Same as above	Same as above
Caldwell School	Same as above	Same as above	Same as above

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On Draft LSWMP
Central Christian Academy	Same as above	Same as above	Same as above
Clear View School	Same as above	Same as above	Same as above
Gustavus Adolphus Learning Center	Same as above	Same as above	Same as above
Jamestown S D A School	Same as above	Same as above	Same as above
Lake Erie Baptist Church Academy	Same as above	Same as above	Same as above
Lake View School	Same as above	Same as above	Same as above
Open Door Baptist Academy	Same as above	Same as above	Same as above
Pineview School	Same as above	Same as above	Same as above
Pleasant View Amish School	Same as above	Same as above	Same as above
St Hyacinth School	Same as above	Same as above	Same as above
Valley View Amish School	Same as above	Same as above	Same as above
College Campuses			
SUNY Fredonia	Same as above	Same as above	Same as above
Jamestown Community College	Same as above	Same as above	Same as above
BOCES Campuses			
Erie 2 BOCES – Ashville	Same as above	Same as above	Same as above
Erie 2 BOCES – Fredonia	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 Draft 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[13]

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts on Draft LSWMP
Ashville Free 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.
Bemus Point Public Library	Same as above.	Same as above.	Same as above.
Ahira Hall Memorial Library	Same as above.	Same as above.	Same as above.

[13] https://www.cclsny.org/memberlibraries/

Source of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts on Draft LSWMP
Hazeltine Public Library	Same as above.	Same as above.	Same as above.
Cassadaga Branch Library	Same as above.	Same as above.	Same as above.
Smith Memorial Library	Same as above.	Same as above.	Same as above.
Clymer-French Creek Free Library	Same as above.	Same as above.	Same as above.
Dunkirk Public Library	Same as above.	Same as above.	Same as above.
Ellington Farman Library	Same as above.	Same as above.	Same as above.
Falconer Public Library	Same as above.	Same as above.	Same as above.
Alexander Findley Community Library	Same as above.	Same as above.	Same as above.
Fluvanna Free Library	Same as above.	Same as above.	Same as above.
Myers Memorial Library	Same as above.	Same as above.	Same as above.
Darwin R. Barker Library Association	Same as above.	Same as above.	Same as above.
James Prendergast Library Association	Same as above.	Same as above.	Same as above.
Kennedy Free Library	Same as above.	Same as above.	Same as above.
Lakewood Memorial Library	Same as above.	Same as above.	Same as above.
Mayville Library	Same as above.	Same as above.	Same as above.
Ripley Public Library	Same as above.	Same as above.	Same as above.
Minerva Free Library	Same as above.	Same as above.	Same as above.
Anderson-Lee Library	Same as above.	Same as above.	Same as above.
Sinclairville Free Library	Same as above.	Same as above.	Same as above.
Mary E. Seymour Memorial Free Library	Same as above.	Same as above.	Same as above.
Patterson 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[14], nursing homes[15], and other major institutions in the planning unit, along with conditions and impacts that affect implementation of the Draft LSWMP and achievement of its goals. Information in this table will be updated throughout the Planning Period as more detail becomes available.

[14] https://www.countyoffice.org/ny-chautauqua-county-jails-prisons/
[15] https://www.countyoffice.org/ny-chautauqua-county-assisted-living-nursing-home/

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

Source of Wastes	Facility Type/Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On Draft LSWMP
Jails/Juvenile Detention Centers			
Chautauqua County Jail Mayville, NY	Needs further evaluation.	Needs further evaluation.	Needs further evaluation related to existing disposal and recycling activities.
Lakeview Shock Incarceration Correctional Facility Brockton, NY	Same as above.	Same as above.	Same as above.
Nursing Homes			
Absolut Center for Nursing and Rehabilitation at Dunkirk, Dunkirk, NY	Same as above.	Same as above.	Same as above.
Absolut Center for Nursing and Rehabilitation at Westfield, Westfield, NY	Same as above.	Same as above.	Same as above.
Bergquist Adult Home, Gerry, NY	Same as above.	Same as above.	Same as above.
Chautauqua Nursing and Rehabilitation Center, Dunkirk, NY	Same as above.	Same as above.	Same as above.
Frewsburg Rest Home, Frewsburg, NY	Same as above.	Same as above.	Same as above.
Gerry Nursing Home Company, Gerry, NY	Same as above.	Same as above.	Same as above.
Heritage Park Health Care Center, Jamestown, NY	Same as above.	Same as above.	Same as above.
Heritage Village Rehab and Skilled Nursing, Inc., Gerry, NY	Same as above.	Same as above.	Same as above.
Hultquist Place, Jamestown, NY	Same as above.	Same as above.	Same as above.
Johnson Adult Home, Fredonia, NY	Same as above.	Same as above.	Same as above.
Lutheran Retirement Home, Jamestown, NY	Same as above.	Same as above.	Same as above.
Memory Garden, Jamestown, NY	Same as above.	Same as above.	Same as above.
Orchard Grove Residences, Jamestown, NY	Same as above.	Same as above.	Same as above.
Randall Group Home, Jamestown, NY	Same as above.	Same as above.	Same as above.
Southern Tier Meadows, Fredonia, NY	Same as above.	Same as above.	Same as above.
St. Columban's on the Lake, Silver Creek, NY	Same as above.	Same as above.	Same as above.
The Women's Christian Association, Fredonia, NY	Same as above.	Same as above.	Same as above.
Woodlands A Heritage Senior, Jamestown, NY	Same as above.	Same as above.	Same as above.

Source of Wastes	Facility Type/Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On Draft LSWMP
Hospitals[16]			
Brooks Memorial Hospital, Dunkirk, NY	Same as above.	Same as above.	Same as above.
WCA Hospital, Jamestown, NY	Same as above.	Same as above.	Same as above.
Westfield Memorial Hospital, Westfield, NY	Same as above.	Same as above.	Same as above.
Woman's Christian Assoc. Hospital – WCA Hosp. at Jones Memorial Health Center, Jamestown, NY	Same as above.	Same as above.	Same as above.
Recreation			
Peek N Peak Resort, Clymer, NY	Same as above.	Same as above.	Same as above.
Marinas	Same as above.	Same as above.	Same as above.
RV Parks and Campgrounds	Same as above.	Same as above.	Same as above.
Chautauqua Institution	Same as above.	Same as above.	Same as above.
Golf Courses	Same as above.	Same as above.	Same as above.
Midway State Park	Same as above.	Same as above.	Same as above.
Lake Erie State Park	Same as above.	Same as above.	Same as above.
Long Point State Park – Chautauqua Lake	Same as above.	Same as above.	Same as above.
Government Facilities (Federal, State, Local)	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 Draft 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 Draft LSWMP
Chautauqua County Fair	Many vendors and activities with packaging, food waste, and/or recyclable drink bottles. Attendees may or may not	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

[16] https://www.countyoffice.org/ny-chautauqua-county-hospitals/

Sources of Wastes	Unique Situation or Circumstances	Quantity/Quality Impacts	Impacts On Draft LSWMP
	care about recycling or waste diversion.		outreach to the community related to recycling and waste diversion.
Busti Apple Festival	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.
Forestville Apple Festival	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.
Blue Heron Music Festival	Same as above.	Same as above.	Same as above.
Fourth of July	Same as above.	Same as above.	Same as above.
Christmas	Same as above.	Same as above.	Same as above.
Town and Village Spring Clean-up Events	Same as above.	Private hauler collects any waste generated	Same as above.
Town and Village Fall Clean-up Events	Same as above.	Private hauler collects any waste generated	Same as above.
America's Grape County Festival, Chautauqua County Fairgrounds	Same as above.	Same as above.	Same as above.
Westfield Ox Roast	Same as above.	Private hauler collects any waste generated	Same as above.
State Line Speedway	Same as above.	Same as above.	Same as above.
Silver Creek Grape Festival	Same as above.	Same as above.	Same as above.
Grape Harvest	Same as above.	Same as above.	Same as above.
Celeron Rib Fest	Same as above.	Same as above.	Same as above.
Gerry Rodeo	Same as above.	Same as above.	Same as above.
Yassuo Festival	Same as above.	Same as above.	Same as above.
Music on the Pier	Same as above.	Same as above.	Same as above.
Sheman Days	Same as above.	Same as above.	Same as above.
Clymer Tulip Festival	Same as above.	Same as above.	Same as above.
Lucille Ball Comedy Festival	Same as above.	Same as above.	Same as above.
Household Hazardous Waste Collection Events	Events held to collect HHW.	Approximately 32 tons of HHW were collected in 2023	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. 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.

1.8.6. Large or Significant Industries

1.8.6.1 Agriculture

Chautauqua County is an important agricultural county in New York State, ranking first in number of farms and fifth in total number of acres in farming. The county has a diverse farm production sector, strong farm input and service sector. Chautauqua County is a net exporter of dairy products, forestry and food processing products (including wine and pet food). Since the advent of plastic film packaging also known as Ag-plastic for storing on-farm feed, re-usable constructed silos have been abandoned.

The Ag-plastic waste stream was previously being monitored as our Division of Solid Waste participated in the RAPP program (Recycling Agricultural Plastics Project) to develop an understanding of its total annual volume or how it is being disposed or recovered. The RAPP program was managed and support by Cornell; however, as of 2015, it appears as though the initiative is no longer being pursued as the majority of the plastic was dirty with soil.[17]

Current Ag-plastic disposal or recovery methods need to be investigated and alternative recovery methods used outside of the planning unit need to be evaluated in order to develop a sustainable program within the planning unit. Chapter 3 includes current methods as it is understood and alternatives evaluated are in Chapter 5. Our Implementation Schedule includes tasks for data collection, further investigation of current methods, and evaluation of alternatives as discussed in Chapter 5.

1.8.6.2 Food Processing

Most of the grape pumice and tank bottoms that are generated by wineries and juice manufacturers are returned to the vineyards for composting and soil conditioning. Grower's Cooperative, a juice manufacturer, has received a Beneficial Use Determination from the NYS Department of Environmental Conservation to land apply filter aid and tank bottoms as a soil conditioner rather than landfill it. Collaboration between vineyard and food processor manages approximately 20,000 tons of the disposable volume for land applied composting. Fruit is processed in Chautauqua County from across the larger northeast U.S. region (for example, cranberries, apples, and grapes). A small portion of compostable fruit pumice is landfilled when contaminated by non-compostable waste.

Chapter 3 includes current methods of fruit and vegetable pumice recovery or disposal as it is understood and alternatives evaluated are in Chapter 5. Our Implementation Schedule includes tasks for data collection, further

[17] https://www.css.cornell.edu/cwmi/agplastics/index.html

investigation of current methods, and evaluation of alternatives as discussed in Chapter 5.

Table 1-10 – Impacts of Food Processing within the County

Source of Wastes	Unique Circumstance or Situation	Quantity/Quality Impacts	Impacts on Draft LSWMP
Nestle' Purina (Pet Food Manufacturer)	Spoiled food waste, food packaging scraps may or may not be able to be diverted to an organic recycling facility.	Manufacturer is responsible for waste disposal or diversion.	Food diverted from waste disposal may be utilized in aerobic digestion. Waste Packaging material may be landfilled or recycled
Wells Enterprises (Ice Cream Manufacturer)	Need further evaluation.	Needs further evaluation.	Needs further evaluation related to existing waste and disposal activities.
Welches (Juice Processer)	Pumice and tank bottoms are returned to the vineyards for composting and soil conditioning.	Reduces waste landfilled within the planning unit.	Supports organics diversion associated with LSWMP.
Growers Co-Operative (Juice Processor)	BUD issuance for land application of filter aid and tank bottoms as a soil conditioner.	Reduces waste landfilled within the planning unit.	Supports organics diversion associated with LSWMP.
Refresco Beverages (Bottling Company)	Needs further evaluation.	Needs further evaluation.	Needs further evaluation related to existing waste and disposal activities.

1.8.6.3 Timber

There are over 24 sawmills in Chautauqua County and Jamestown is a furniture production center. Saw dust waste generated by the timber and furniture is generally used as animal bedding, biomass fuel, or wood pellets for residential and commercial heating. The timber industry does not directly produce a landfilled waste. For example, Artmeier Commodity Supply recycles approximately 26,000 cubic yards sawmill dust annually from Chautauqua County for animal bedding.

Table 1-11 – Impacts of Timber Industry within the County

Source of Wastes	Unique Circumstance or Situation	Quantity/Quality Impacts	Impacts on Draft LSWMP
eSolutions Furniture/Bush Industries	Needs further evaluation.	Needs further evaluation.	Sawdust materials are generally used as animal bedding, biomass fuel, or wood pellets for heating. Wood packaging containing screws, paint, or non-wood products, are generally landfilled. Further evaluation may be needed to determine reuse markets for wood products containing metal or paint.

Pallets and other wood packaging are manufactured in Chautauqua County and are a common industrial waste that is part of the landfill waste stream. Due to the paint, nails, screws, and other non-wood fasteners, they cannot be pelletized for biomass heating fuel or shredded for animal bedding and are therefore often landfilled.

Chapter 3 includes current methods of wood byproducts disposal or recovery as it is understood and alternatives evaluated are in Chapter 5. Our Implementation Schedule includes tasks for data collection, further investigation of current methods, and evaluation of alternatives as discussed in Chapter 5.

1.8.6.4 Steel and Metal Works

Chautauqua County has many metal works factories that fabricate sheet metal products, machine, and forged metal products for assembly into custom products, aerospace parts, automotive parts and cabinets. The metal industry generates a steady stream of cutting oil sludge, sand, oily rags, refractory and molding wastes.

Private recycling intermediaries such as junk automobiles recyclers recover scrap metal for processing into metal commodities for remanufacturing. These intermediaries retain the automotive scrap for used part resale and sort and densify other metals for remanufacturing.

Table 1-12 – Impacts of Steel and Metal Works within the County

Source of Wastes	Unique Circumstance or Situation	Quantity/Quality Impacts	Impacts on Draft LSWMP
Cummins Engine Plant	Needs further evaluation.	Needs further evaluation.	Needs further evaluation related to existing waste and recycling efforts.
Ben Weitsman Of Jamestown, 610 W. 8th St., Jamestown, NY 14701	Scrap Metal Processor	2023 Received 29,733 tons of Ferrous Scrap, 687 tons Aluminum Scrap, 1,004 tons Non-Ferrous Scrap Metal.	Receives and processes scrap metal and tins from industry, residents and municipal transfer stations.
Metalico Jamestown 5338 Rt 474, Ashville, NY 14710	Vehicle Dismantling Facility, Mobile Vehicle Crusher	2023 Received 13,324 tons Ferrous Scrap, 498 tons Aluminum, 1,243 tons Non-Ferrous Scrap Metal.	Receives and processes scrap metal and tins from industry, residents and municipal transfer stations.
Mom and Pops Recycling, LLC, 6643 Rt 60, Cassadaga, NY 14718	Scrap Metal Processor	2023 Received 14,578 tons Ferrous Scrap Metal, 158 tons Aluminum Scrap, 288 Non-Ferrous Scrap Metal	Receives and processes scrap metal and tins from industry and residents.
Keywell Metals, LLC, 1873 Lyndon Blvd, Falconer, NY 14733	Scrap Metal Processor	2024 received approx. 2,000 tons of titanium.	Receives and processes scrap metal and tins from industry and residents.

There are currently no waste management issues that need to be addressed regarding the metal industry. Chapter 3 includes current methods of metals recycling as it is understood and alternatives evaluated are in Chapter 5. Our Implementation Schedule includes tasks for data collection, further investigation of current methods, and evaluation of alternatives as discussed in Chapter 5.

1.8.6.5 Industrial Hazardous Waste and Medical Waste

Industrial hazardous waste and medical waste are managed by the various generators through delivery to private out-of-county permitted facilities and an in-county medical waste treatment facility. Industrial hazardous and medical wastes are not disposed of at the Chautauqua County Landfill, so they do not fall within our waste management plan.

Chapter 3 includes current methods of industrial hazardous waste and medical waste disposal as it is understood and alternatives evaluated are in Chapter 5. Our Implementation Schedule includes tasks for data collection, further investigation of current methods, and evaluation of alternatives as discussed in Chapter 5.

1.8.6.6 Other Unique Circumstances

The volume of waste generated in the County is linked to our declining population and local economy. The County has consistently received less industrial waste following the financial crisis in 2008. The subsequent recovery in other parts of the country has largely bypassed Chautauqua County. There could be a small increase in the amount of waste generated in the County if the local economy improves.

Following 2008 Financial Crisis, City of Jamestown received state funding to demolish derelict housing that was disposed in Chautauqua County Landfill.

Large brownfield clean-up projects increased the County's contaminated soil disposal from ordinarily 3% of our annual total waste received to 13% as high as 18.7% between during 2010 to 2016. Large brownfield projects are generally dependent on industrial development and state funded clean-up. Annual contaminated soil disposal is generated by underground storage tank removal and highway vehicle accidents.

Like many upstate counties, Chautauqua County suffers because New York increasingly fails to fund mandated services. No longer able to raise property and sales tax, or significantly improve efficiencies, to make up the shortfall, Chautauqua County is being forced to cut services and sell assets. The County is not in a position to underwrite a significant expansion of solid waste services, unless the new services are self-funding. The out-of-County waste, that the

landfill facility attracts, through the competitive prices that it offers, helps in subsidizing a large portion of the ever-increasing operation costs. Any further erosion of the waste volume served by the Chautauqua County Landfill will add pressure on the County to cut important, unfunded, solid waste management services, like waste reduction efforts, education, recycling, and the long-term monitoring and care of legacy landfills.

Chautauqua County does not believe there are any other factors that are likely to significantly affect the solid waste generation over the planning period.

1.9. Summary of Implementation of Previous LSWMP

1.9.1. History of LSWMP

The Chautauqua County Solid Waste Department adopted its first Solid Waste Management Plan (Final Plan) in April of 1992. 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 1992, the SWMP has served as the foundation for decision-making by the County, for its growing solid waste management and recycling efforts.

In 2015, the County submitted a LSWMP which received comments from NYSDEC in 2018. Due to staffing constraints, a revised LSWMP was not submitted to the NYSDEC.

1.9.2. Goals & Objectives

Throughout the planning period, several modifications have been made in response to planning and development in Chautauqua 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 Chautauqua County Solid Waste Management Plan as defined in the 1992 SWMP:

- 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 Chautauqua County, including municipal solid waste, construction and demolition debris, non-hazardous industrial and commercial waste (excluding sludge), and non-infectious, unregulated medical waste;

- To develop an implementation schedule that is achievable and timely for addressing the needs of Chautauqua 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 Chautauqua County.
- Expand the source separation of plastics at existing sites, separating out Type #1 and #2 poly.
- Designate additional waste stream components for mandatory recycling (i.e., photovoltaic cells and windmills).
- Encourage composting and landspreading by sludge and septage generators, and provide certain technical assistance.
- Enforcement of mandatory recycling requirement, including manufacturers.
- 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 available
- 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. 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 agreements to transport and haul recyclable material
- Annual Household Hazardous Waste Collection events;
- Secured a new market for the electronics waste with a local vendor;
- Continued to replace the aging fleet of the department with a 5-year plan;
- Introduced a local flow control law

- Built stage one of a Phase IV landfill expansion project
- Permitted all three stages of the Phase IV project
- Added appropriate methane collection to the landfill
- Updated all facility lighting to more economical standards
- Updated Ellery transfer station retaining wall
- Began overhead door updates to North County transfer station.
- Updated 2 of three West County Transfer station overhead doors
- Added resolution to enter into a contract to accept out of county waste

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: Chautauqua County owns and operates 4 transfer stations. The facilities are strategically located in the County to best serve the population and there are no plans to construct or acquire additional facilities in the next 10 year period.

Private In-County Facilities: There are three (3) privately owned and operated transfer stations within Chautauqua County and are listed in Table 3-3.

Out-of-County Disposal Facilities: All non-recoverable waste is disposed of within the County; however, recyclables are transported to out-of-County recycling facilities for recovery and reuse.

Recycling Transportation & Disposal: Recyclable material is still being handled by the County and material is being taken to the South County or North County Transfer Station for consolidation. Once transferred to the semi-trailers, the County hauls the recyclables to the marketed destination.

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. Poor recycling markets (especially with regard to plastics) are a serious challenge. Finding places to take the plastic that do not want to charge us another landfill's tipping fee to dispose of it is difficult.

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 a County facility three times per year. 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 events have decreased from three times per year to twice per year.

1.10. Summary of Changes to the Planning Unit

The membership of the Planning Unit has experienced minimal change since the implementation of the previous LSWMP. The towns remain the same and most villages still remain a part of this Unit, with the exception of the dissolution of the Village of Forestville in 2016 and the dissolution of the Village of Cherry Creek in 2017. It is not anticipated that there will be any changes of municipalities within the Planning Unit during the planning period.

All original members of the planning unit are participating in the Solid Waste Management plan.

There have been no changes in schools being introduced to the planning unit. There has been approximately a 19% decrease in the number of operating farms within the unit since 2012.[18] 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 decreased within the planning unit. There are not many larger retail businesses located in the Jamestown area, where there were previously large retail shops. This increases the amount of packaging waste generated from home delivery or shipping services 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.

1.10.1. Updates to 1992 Solid Waste Management Plan

The Chautauqua County Planning Unit population has dropped by approximately 5.4% in ten years according to the 2020 US Census Bureau.

Since the last local solid waste management plan (LSWMP) was completed in 1992, there have been a few changes in the Planning Unit's administrative, financial, or legislative structure. In 2020, the County Legislature adopted a flow control law (LL-2-20) within the Planning Unit to send all waste generated within the County to the Chautauqua County Landfill. In 2022, the County Legislature adopted Local Law 6-22 to create the Landfill Commission to serve as an advisory body to the government of the County concerning solid waste disposal and solid waste related activities. In 2024, the County reorganized their finance department, taking a financial staff member of the solid waste division and putting that position in the County Finance Department. Now

18 https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp36013.pdf

an allocation is paid to that department for the financial work done for the solid waste division.

There has been no significant change in the way solid waste is managed by the County since the last plan was approved, except that electronic waste was banned from the Chautauqua County Landfill in January 2010. Electronic materials are now collected for recycling at County transfer stations. The County currently provides a convenient drop-off location for recyclable electronics at the County's transfer stations. The electronic recycling commodity market is being driven by producer responsibility laws.

The Previous LSWMP stated that a waste-to-energy strategy would be investigated. It was later determined that waste-to-energy was not feasible without a willing private sector partner. No private sector partners were found and there has been no further investigation of the topic.

In light of the County's decision in 2015 to invest $22 million to expand its landfill capacity for another 20 years and continue to accept solid waste from neighboring planning units, including construction and demolition (C&D) waste, there is no need for additional capacity to serve the needs of the County or any of other neighboring planning units that are currently relying upon it. It should be noted that all small C&D landfill facilities that existed under the County's previous LSWMP have been closed and the County's current investment in the County Landfill's expansion would cover all present and future capacity needs of the other former C&D facilities.

2.0 SOLID WASTE AND RECYCLABLES QUANTITIES AND TYPES

This chapter provides information on the waste streams generated in Chautauqua 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

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

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

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

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

Construction and demolition (C&D) debris is generated by the residential, commercial, industrial, and institutional sectors and typically consists of wood, masonry, soil, land clearing debris, plumbing fixtures and other construction related items. About 15%, of the total waste received at the Chautauqua County Landfill is classified C&D. The majority, of this waste stream is generated by demolition rather than construction. Brownfield clean-up projects, commercial and residential structure fires increase C&D disposal.

As a result of the declining economy, businesses closures, and population loss throughout Chautauqua County, the number of derelict commercial and residential buildings is on the rise. Many of these derelict structures have been abandoned by their owners and are no longer safe to occupy. The visible blight due to derelict buildings tends to discourage investment in the community.

The Chautauqua County Legislature has taken several steps to combat this problem. Chautauqua County Resolution No. 65-12 calls to "combat community deterioration by facilitating the return of vacant, abandoned, and tax-delinquent properties to productive use" and resolution No. 239-12, which states that, "Waiver of Landfill Tipping Fees for C&D Waste. Each participating town and village shall receive an annual credit for tipping fees for C&D waste at the County landfill equivalent to one (1) two-family home. The cities of Jamestown and Dunkirk shall annually receive four (4) and two (2) credits, respectively. Unused credits may be carried over to following years and/or conveyed to another municipality in exchange for equipment, materials, and manpower of equivalent value pursuant to the existing shared services agreement."

Derelict structure program can add another 9% to the amount C&D waste received at the Chautauqua County Landfill. This waste is accepted without charge as a service and benefit to all local governments within Chautauqua County. The cost of this and other services are subsidized by the revenue from the tipping fees charged for in-county waste (70%) and out-of-County waste (30%) the landfill accepts. Out-of- County waste, both C&D and municipal, provides essential revenues and waste volume to the County Landfill for a more efficient operation maximizing economies of scale. Providing necessary funding to cover all operational expenses and all environmental services mandated by New York State.

See Appendix B for complete copies of Chautauqua County Resolutions, 65-12 and 239-12.

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. Sewage is treated at various waste water treatment plants and the stabilized sludge is disposed of at the Chautauqua County Landfill in consistent volume evenly distributed throughout the year, and scheduled with the Chautauqua County Landfill working face operations to help manage the moisture content of the landfill. This currently does not impact the daily permitted volume, however if it does become a concern in the future,

alternative disposal or recovery methods, such as land application, which is currently not available, may need to be revisited. Small waste water treatment plants, whose sludge is more soil like and accumulate in dry beds, require landfill disposal only annually or less often. The Implementation Schedule includes evaluation of these alternatives as discussed in Chapter 5.

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, Methodology, and Data Gaps

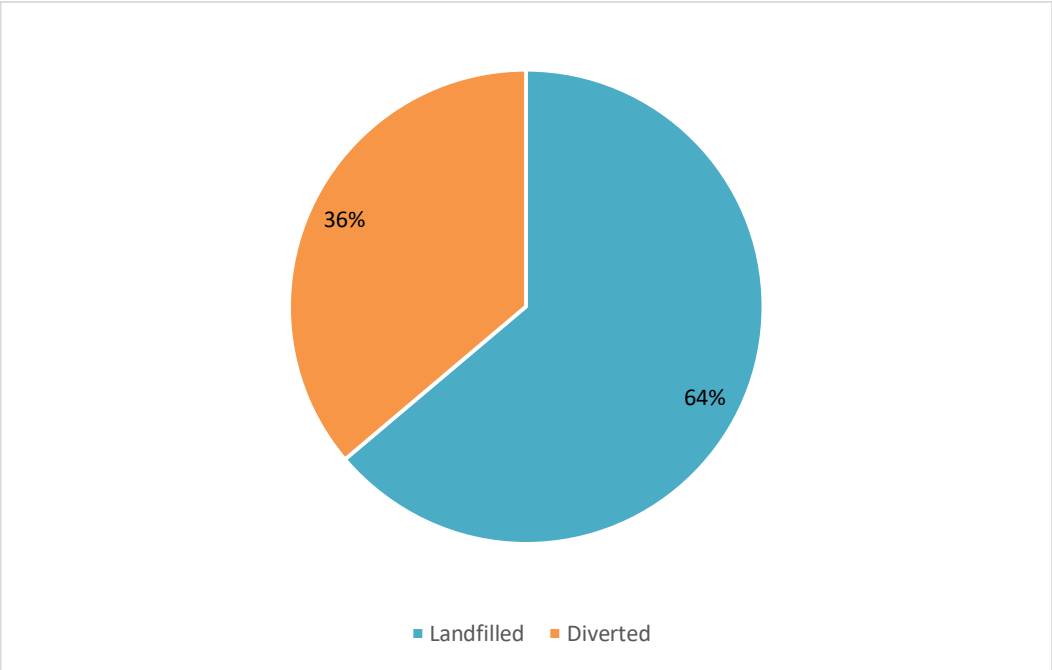
As discussed above, much of the following waste generation estimates were derived from available reports provided to the NYSDEC by transfer stations. Limitations associated with the data are as follows and will be considered when evaluating and implementing new or improved data collection efforts.

- **Incomplete data**: Data on the public sector solid waste management is often incomplete. This is a data gap that will be addressed during this planning period.
- **Inconsistent data:** Where data exists, different methods have been used from year to year and facility to facility to collect and categorize it. This is a data gap that will be addressed during this planning period.
- **Unavailable data:** Data on privately managed waste is generally unavailable. This is a data gap that will be addressed during this planning period.

2.2.2. Estimation of Total Waste Generation in Chautauqua County

Based on annual reports submitted to the NYSDEC for 2023, Chautauqua County residents and businesses generated approximately 236,828.32 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 Chautauqua County. Based on the information available to interpret, the majority of the waste is landfilled (151,218.85 tons or 64 percent) while the remainder is Diverted (85,609.47 tons or 36 percent).

Figure 2-1 - Estimated Waste Management Methods in Chautauqua County in 2023



Source: NYSDEC, Facility Annual Reports, 2023; Self-Reporting

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

Table 2-1 - Municipal Sewage Sludge Generation and Management Summary[19]

Treatment Plant	Treatment Method	Dewatering Device	Tons/Year	Use/Disposal Method
Sherman WWTF	Aerobic Sludge Digestion Diffused Aeration	Not Specified	Unknown	Landfill
Ripley Water Pollution Control Facilities	Aerobic (using aeration tanks)	Not Specified	Unknown	Landfill
Westfield WWTF	Aerobic Sludge Digestion Diffused Aeration	Mechanical Plate & Frame Press	Unknown	Landfill
Brocton Sewage Treatment Plant	Aerobic Sludge Digestion Diffused Aeration	Mechanical Plate & Frame Press	Unknown	Landfill
Fredonia Wastewater Treatment Plant	Anaerobic Sludge Digestion Two Stage	Mechanical Belt Filter Press	Unknown	Landfill
City of Dunkirk WWTP	Not Specified	Mechanical Belt Filter Press	Unknown	Scavenger
Hanover SD #1 Water Pollution Control Facility	Not Specified	Not Specified	Unknown	Landfill
Jamestown Board of Public Utilities WWTP	Anaerobic Sludge Digestion (unspecified)	Mechanical Belt Filter Press, Mechanical Gravity Belt Thickener	Unknown	Landfill
Total Sewage Sludge Used/Disposed On-site			**Unknown**	
Total Sewage Sludge Landfilled			**13,762.39 Tons**	
Total Municipal Sewage Sludge Generated			**Unknown**	

[19] *Source: Descriptive Data of Municipal Wastewater Treatment Plants in NYS, Division of water, 2004*

While some biosolids generated in the County are land applied, the quantity is unknown to the County. The only biosolids quantity known to the County is the 13,762.39 tons that were disposed of at the Chautauqua County Landfill in 2023.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 acknowledges this data gap and plans to investigate the unknowns and complete Table 2-1 during the LSWMP 10-year period. 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 Chautauqua County and landfilled (13,762.39 tons) was derived from 2023 landfill annual reports submitted to the NYSDEC.

A complete breakdown of waste generated as a whole for Chautauqua 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 2023 Waste Tonnage by Management Method

	Amount (Tons)	% of Management Method	% of Total Generation
Landfilled[20]			
MSW[21]	90,759.12	60%	38%
Construction and Demolition Debris	26,908.27	18%	11%
Asbestos	309.46	0%	0%
Sewage Sludge	13,762.39	9%	6%
Regulated Medical Waste	97.20	0%	0%
Industrial	17,322.21	11%	7%
Contaminated Soil	634.72	0%	0%
Emission Control – Activated Carbon	108.00	0%	0%
Sand (Refractory & Annealing)	1,288.54	1%	1%
Beneficial Use Determination Material	28.94	0%	0%
Total Landfilled	**151,218.85**	100%	64%
Diverted			
Composted Yard Waste	547.37	1%	0%
Recycled	8,263.32	10%	3%
Processed C&D	76,752.33	90%	32%
Bulk/Scrap Metal	46.45	0%	0%
Total Diverted	**85,609.47**	100%	36%
Total Waste Generation	**236,828.32**	100%	100%

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 Chautauqua County with an estimated MSW waste composition for future planning purposes. The complete tables are provided in Appendix A. MSW composition includes residential, commercial and institutional waste generators; consequently, for the purposes of this analysis, the following are excluded from the MSW composition estimates: separately managed C&D debris, several organics streams (biosolids, septage, agricultural materials, etc.), and scrap metal managed outside of the MSW management structures.

Table 2-3 provides a detailed estimate of materials that could be recovered or diverted from a waste disposal location if the appropriate programs were in place based on the waste generation quantities estimated by the County. These numbers are based on the

[20] NYSDEC 2023 Facility Annual Reports

[21] Shaded categories are considered to be part of the MSW category and will be utilized in the MSW composition analysis.

estimated total tons of MSW generated within the County, as reported in Table 2-2. Based on annual reports, Chautauqua County diverted approximately 8,810.69 tons of material (9 percent) from the 99,569.81 tons of MSW generated from residential, commercial, and institutional generators in 2023.

However, not all of the categories tracked by the NYSDEC are populated for the 2023 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 Chautauqua 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 estimated waste generation totals to separate estimated quantities into more specific materials that are not tracked individually within waste streams.

Table 2-3 – Estimated MSW Recoverable Materials in Chautauqua County 2023

Material	Estimated MSW Tons Generated (2023)[22]	Estimated % of Total Tons Generated (2023)	Estimated MSW Tons Diverted (2023)[20]	Estimated % of Each Material Diverted (2023)
Newspaper	3,674	3.7%	771.89	21.0%
Corrugated Cardboard	9,754	9.8%	3,862.11	39.6%
Other Recyclable Paper (Total)	10,792	10.8%	1,001.76	9.3%
Other Compostable Paper	6,535	6.6%	0.00	0.0%
Total Paper	30,754	30.9%	5,635.75	18.3%
Ferrous/Aluminum Containers (Total)	1,700	1.7%	167.36	9.8%
Other Ferrous Metals	5,306	5.3%	26.12	0.5%
Other Non-Ferrous Metals (Total)	1,222	1.2%	2.61	0.2%
Total Metals	8,228	8.3%	196.09	2.4%
PET Containers	900	0.9%	451.34	50.2%
HDPE Containers	839	0.8%	435.77	51.9%
Other Plastic (3-7) Containers	182	0.2%	77.82	42.7%
Film Plastic	5,671	5.7%	0.00	0.0%
Other Plastic (Total)	6,041	6.1%	0.00	0.0%
Total Plastics	13,633	13.7%	964.92	7.1%
Glass Containers	3,887	3.9%	646.33	16.6%
Other Glass	389	0.4%	0.00	0.0%
Total Glass	4,276	4.3%	646.33	15.1%
Food Scraps	13,556	13.6%	0.00	0.0%
Yard Trimmings	7,003	7.0%	547.37	7.8%
Total Organics	20,559	20.6%	547.37	2.7%
Clothing Footwear, Towels, Sheets	3,871	3.9%	20.00	0.5%
Carpet	1,474	1.5%	0.00	0.0%
Total Textiles	5,345	5.4%	20.00	0.4%
Total Wood	4,527	4.5%	0.00	0.0%
C&D Materials	5,126	5.1%	484	9.4%
Other Durables	1,654	1.7%	0.00	0.0%
Diapers	1,635	1.6%	0.00	0.0%
Electronics	1,515	1.5%	188.37	12.4%
Tires	1,654	1.7%	96.32	5.8%
HHW	336	0.3%	31.53	9.4%
Fines	329	0.3%	0.00	0.0%
Total Miscellaneous	12,248	12.3%	800.22	6.5%
Total	**99,570**	**100.00%**	**8,810.69**	**8.8%**

[22] NYSDEC MSW Combined Composition Analysis and Projections

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 Chautauqua 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 2023 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 Chautauqua County 2023

Material	Estimated Components of C&D Debris Tons Generated per Modified[23] NYSDEC Model (2023)	% of Total C&D Debris Generated (2023)	Tons of C&D Debris Diverted per 2023 Data Obtained	
			Tons Diverted	% Diverted
Concrete/Asphalt/Rock/Brick	69,692.3	67.2%	69,692.3	100.0%
Wood	9,012.3	8.7%	40.0	0.4%
Roofing	2,363.9	2.3%	0.0	0.0%
Drywall	1,896.5	1.8%	0.0	0.0%
Soil/Gravel	11,643.8	11.2%	7,020.0	60.3%
Metal	3,319.7	3.2%	46.5	1.4%
Plastic	227.7	0.2%	0.0	0.0%
Corrugated/Paper	1,605.9	1.5%	0.0	0.0%
Other	3,944.9	3.8%	0.0	0.0%
Total	103,707.1	100.0%	76,798.8	74.1%

Based on the quantities of potential divertible materials that were reported to the NYSDEC or estimated, Chautauqua County diverted approximately 76,798.8 tons of material (74 percent) from the C&D disposal stream in 2023.

[23] Due to the large quantity of concrete/asphalt/rock/brick diverted, the C&D debris materials composition was modified to ensure no diversion percentage over 100% would be calculated.

Table 2-4 indicates that 103,707.1 tons of C&D materials were generated within the County in 2023. 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 4 transfer stations in the Towns of Falconer, Ellery, Sherman, and Fredonia, and an additional 8 convenience or transfer stations are municipally or privately run in the Towns of Busti, Kiantone, Harmony, North Harmony, Clymer, Ripley, and Mayville. These convenience or transfer stations deliver their collected waste to the Chautauqua County Landfill for disposal. Recyclables are not required to pass through the County facilities; however, recyclables delivered to County facilities must be source separated from other wastes.

Given the rural nature of Chautauqua 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. Chautauqua 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

Chautauqua County currently owns and operates one solid waste landfill within the County's borders, which began accepting waste in 1981. Prior to 1981, each town or village maintained their own landfill. With the inception of the solid waste regulations, many of these landfills were not in accordance with the regulations; therefore, they were capped and closed and a County-owned landfill was sited and built to handle the wastes generated in the County.

There are twenty-seven closed landfills in Chautauqua County[24]: Allen Street Spoil Area, Carborundum – "New" Landfill, Carborundum – "Old Landfill", Carroll (T) Landfill, Chadakoin Park C&D Debris Landfill, Chadakoin River Park (Jamestown City Landfill), Dinsbier Road Landfill, Don Frame Trucking, Dunkirk Landfill, Dunkirk Radiator, Falconer Landfill (V), Fredonia SLF, Harmony Landfill, James Piede Demolition Site, Jamestown Facility, Jones-Carroll B&D Debris Landfill, Kiantone Landfill, Portland C&D Debris Landfill, Robin Steel Landfill, South Stockton Landfill, Town of Ellery Dump, Town of Hanover Sanitary Landfill, Town of Mina Landfill, Tri James, V&N Construction, and Village of Westfield Landfill.

The County-owned landfill is located in the Town of Ellery on Towerville Road. The County Landfill in Chautauqua County Planning Unit is currently permitted to receive 408,000 tons of waste annually. Specific quantities were previously discussed in Chapter 2. The remaining design capacity as of the end of 2023 is approximately 9,364,000 cubic yards. At

[24] Data was compiled from: https://gisservices.dec.ny.gov/gis/dil/?_gl=1*12sfvnr*_ga*NjgzMzIyODIuMTcxOTU3NTM5MQ..*_ga_QEDRGF4PYB*MTczMDEyNDI5OS41Ni4wLjE3MzAxMjQzMDAuMC4wLjA. and https://extapps.dec.ny.gov/cfmx/extapps/derexternal/haz/results.cfm?pageid=3

a current disposal rate of 209,356 cubic yards per year, the current landfill capacity would last over 25 years into 2048. The Chautauqua County Landfill's 2023 annual report is included as Appendix I. All waste facilities permitted at the Chautauqua County Landfill are done in accordance with NYSDEC Part 360 regulations and any special conditions set forth in the Operating Permit issued by the NYSDEC. Municipal solid waste (MSW), asbestos waste, C&D debris, commercial/industrial waste, and sewage treatment plant sludge are accepted.

There are landfills located outside of Chautauqua County which are available for the disposal of MSW, C&D, asbestos, industrial waste, and contaminated soil. Each of these out-of-county landfills accepted waste that was generated in Chautauqua County in 2023. 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 Chautauqua County. The out-of-county landfills accepting Chautauqua County waste are summarized in Table 3-1.

Table 3-1 – Out-of-County Solid Waste Landfills Servicing Chautauqua County Waste in 2023[20]

Solid Waste Facility	Facility Address	Operating Status	Permitted Capacity (cubic yards)	Expected Site Life (years)	Waste Types Accepted From Planning Unit	Tonnage Accepted From Planning Unit
Chaffee Landfill	10860 Olean Road, Chaffee, NY 14030	Privately owned and operated by Waste Management of NY, LLC	9,610,000	16.5	Contaminated Soil (BUD)	28.94
					Asbestos	4.4
					C&D	17.14
					Industrial Waste	1,386.28
					Contaminated Soil	77.39
					MSW	3.12
Modern Landfill	1445 Pletcher Road, Model City, NY 14107	Privately owned and operated by Modern Corporation	13,100,000	13.2	Asbestos	1.45
					Industrial Waste	469.83
Hyland Landfill	6653 Herdman Road, Angelica, NY 14709	Privately owned and operated by Hyland Facility Associates (Casella Waste Management of NY, Inc.)	4,587,400	7.8	MSW	21.68
NRG Dunkirk Fly Ash Landfill	5141 Van Buren Road, Dunkirk, NY 14048	Privately owned and operated by Dunkirk Power, LLC (NRG Energy)	1,416,302	7.9	Emission Control - Activated Carbon	108.00

3.1.2. Transfer Stations & Recyclables Handling and Recovery Facilities

Most residents that are either not served by a municipal hauler or elect not to contract with a private hauler, deliver their waste to a transfer station or convenience station owned by Chautauqua 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 at the County's transfer stations include: plastic, scrap metal, tin, aluminum, corrugated cardboard, lightweight cardboard, newsprint, magazines, and bottle glass recyclables.

For solid waste disposal at the transfer stations, Chautauqua County residents must pay per bag or item. On April 14, 1995, the County Legislature passed Local Law No. 13-95 establishing user fee policy and procedure to operate the County Landfill and transfer stations in a fiscally responsible manner.

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
0-16 gallon bags	$1.00
17-32 gallon bags	$2.00
33-48 gallon maximum bags	$3.00
Per Cubic Yard	$46.00
Scaled per ton	$46.00
Minimum scaled charge	$20.00
Chair	$5.00
Propane Tank	$5.00
Toilet	$5.00
Couch	$10.00
Boxspring	$10.00
Mattress	$10.00
Sleeper Sofa	$20.00
Carpet Rolls > 3 feet	$10.00
Freon Item	$15.00
C&D Debris – per Cubic Yard	$65.00
C&D Debris – Scaled per ton	$65.00
C&D Debris – Minimum scaled charge	$20.00
Tires (up to 19”)	$5.00
Tires (up to 19” on Rim)	$25.00
Tires (1000-1200)	$10.00
Tires (Off-Road, per lb.)	$0.50
Yard Waste (per Bag)	$1.00
Yard Waste (per Cubic Yard)	$5.00

A listing of the transfer station and recyclables handling and recovery facilities in Chautauqua County is presented in the following Table 3-3.

Table 3-3 – Active Transfer Stations and Recyclables Handling and Recovery Facilities in Chautauqua County[20]

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit	Total Tonnage Accepted From Planning Unit
Ellery Transfer Station & Recyclables Handling and Recovery Facility	3889 Towerville Road, Ellery, NY 14701	Publicly owned and operated by Chautauqua County	408,000 tons/year (MSW, recyclables, C&D)	C&D	9.24	2,120.50
				MSW	1,905.13	
				Glass Containers	25.13	
				Plastic Containers	37.15	
				Commingled Paper	26.14	
				Corrugated Cardboard	8.99	
				Tin & Aluminum Containers	3.52	
				White Goods	70.08	
				Tires	28.10	
				Electronics	0.15	
				Textiles	5.00	
				Yard Waste	1.87	
North County Transfer Station & Recyclables Handling and Recovery Facility	3688 Webster Road, Fredonia, NY 14063	Publicly owned and operated by Chautauqua County	16,850 tons/quarter (MSW, recyclables, C&D)	C&D	3,474.38	26,042.72
				MSW	21,671.00	
				Glass Containers	22.88	
				Plastic Containers	59.02	
				Commingled Paper	66.02	
				Corrugated Cardboard	177.58	
				Tin & Aluminum Containers	13.94	
				White Goods	216.93	
				Tires	55.26	
				Single Stream	211.04	
				Electronics	69.67	
				Textiles	5.00	
South County Transfer Station			14,040 tons/quarter	C&D	3,756.01	10,435.19
				MSW	4,940.12	

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit	Total Tonnage Accepted From Planning Unit
& Recyclables Handling and Recovery Facility	2570 South Work Street, Falconer, NY 14733	Publicly owned and operated by Chautauqua County	(MSW, recyclables, C&D)	Glass Containers	33.02	
				Plastic Containers	450.23	
				Commingled Paper	230.84	
				Corrugated Cardboard	746.76	
				Tin & Aluminum Containers	17.25	
				White Goods	143.22	
				Electronics	112.74	
				Textiles	5.00	
West County Transfer Station & Recyclables Handling and Recovery Facility	121 Osburne Street, Sherman, NY 14781	Publicly owned and operated by Chautauqua County	15,000 tons per year (MSW, recyclables, C&D)	C&D	514.54	1,765.03
				MSW	1,051.29	
				Glass Containers	19.61	
				Plastic Containers	23.65	
				Commingled Paper	22.44	
				Corrugated Cardboard	61.89	
				Tin & Aluminum Containers	4.50	
				White Goods	46.77	
				Tires	10.64	
				Electronics	4.70	
				Textiles	5.00	
Town of Ripley Transfer Station & Recyclables Handling and Recovery Facility	1 Ross Street, Ripley, NY 14775	Publicly owned and operated by Town of Ripley	50 tons per day (MSW and recyclables)	MSW	64.33	64.37
				Newspaper	0.04	
Town of Harmony Transfer Station & Recyclables Handling and Recovery Facility	1001 Blockville-Watts Flats Road, Ashville, NY 14710	Publicly owned and operated by Town of Harmony	50 tons per day (MSW and recyclables)	MSW	188.63	194.40
				Tin & Aluminum Containers	5.77	
Town of Kiantone Transfer Station & Recyclables Handling and Recovery Facility	590 South Main Street Extension, Jamestown, NY 14701	Publicly owned and operated by Town of Kiantone	Holds Part 360 Permit with unknown capacity	MSW	234.00	415.92
				Single Stream	181.92	

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit	Total Tonnage Accepted From Planning Unit
Town of Busti Transfer Station	3646 Lawson Road, Jamestown, NY 14701	Publicly owned and operated by Town of Busti	Holds Part 360 Permit with unknown capacity	MSW	523.65	663.33
				Glass Containers	18.92	
				Plastic Containers	18.70	
				Commingled Paper	25.71	
				Tin & Aluminum Containers	8.40	
				Bulk/Scrap Metal	11.45	
				Yard Waste	56.50	
North Harmony Transfer Station & Recyclables Handling and Recovery Facility	3539 Route 395, Ashville, NY 14710	Publicly owned and operated by Town of North Harmony	Holds Part 360 Permit with unknown capacity	MSW	455.27	648.42
				Commingled Containers	105.55	
				Commingled Paper	87.60	
Village of Mayville Transfer Station	96 Morris Street, Mayville, NY 14757	Publicly owned and operated by Village of Mayville	50 tons per day (MSW and recyclables)	MSW	382.04	513.93
				Glass Containers	15.75	
				Plastic Containers	32.38	
				Commingled Paper	62.04	
				Tin & Aluminum Containers	18.29	
				Tires	2.32	
				Electronics	1.11	
Town of Clymer Transfer Station & Recyclables Handling and Recovery Facility	8026 Route 474, Clymer, NY 14724	Publicly owned and operated by Town of Clymer	50 tons per day (MSW and recyclables)	MSW	189.01	192.23
				Commingled Containers	2.81	
				Tin & Aluminum Containers	0.41	
Casella Westfield Transfer Station & Recyclables Handling and Recovery Facility	12 Bourne Street, Westfield, NY 14787	Privately owned and operated by Casella Waste Management of NY, Inc.	Holds Part 360 Permit with unknown capacity	MSW	204.52	280.39
				Single Stream	75.87	
Casella Jamestown Recyclables Handling and Recovery Facility	2141 Lodestro Lane, Jamestown, NY 14701	Privately owned and operated by Casella Waste Management of NY, Inc.	50 tons per day (MSW and recyclables)	Plastic Containers	244.82	3,407.60
				Corrugated Cardboard	2,139.93	
				Single Stream	1,022.85	

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit	Total Tonnage Accepted From Planning Unit
Beichner Waste Services Recyclables Handling and Recovery Facility	5786 Route 380, Sinclairville, NY 14782	Privately owned and operated by Beichner Waste Services, Inc.	50 tons per day (Recyclables)	Single Stream	699.53	699.53
City of Dunkirk Recyclables Handling and Recovery Facility	W Lucas Avenue, Dunkirk, NY 14048	Publicly owned and operated by the City of Dunkirk	50 tons per day (Recyclables)	Commingled Containers		
				Commingled Paper	66.00	
				White Goods	7.00	
				Bulk/Scrap Metal	65.00	

There are recyclables handling and recovery facilities located outside of Chautauqua County which accepted recyclables that were generated in Chautauqua County in 2023. The out-of-county recyclables handling and recovery facilities accepting Chautauqua County recyclables are summarized in Table 3-4.

Table 3-4 – Out-of-County Recyclables Handling and Recovery Facilities Servicing Chautauqua County Waste in 2023[20]

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit	Total Tonnage Accepted From Planning Unit
Casella Recycling Stanley Recyclables Handling and Recovery Facility	3555 County Road 49, Stanley, NY 14561	Public/Private Partnership. Co-owned by Ontario County and Casella Waste Services of Ontario, LLC. Privately operated by Casella Waste Services of Ontario, LLC.	Holds Part 360 Permit with unknown capacity	Single Stream	206.04	206.04
Buffalo Recycling Enterprises RHRF	266 Hopkins Street, Buffalo, NY 14220	Privately owned and operated by Modern Corporation	Holds Part 360 Permit with unknown capacity	Glass Containers	293.44	629.34
				Single Stream	214.44	
				Corrugated Cardboard	121.46	

3.1.3. Organic Waste Recycling Facilities

Organic waste management within Chautauqua County generally involves land application or composting and bio-digestion. Sometimes the organic waste is damaged or off specification food that needs to be landfilled in compliance with food sanitation regulations or company best management practices. However, in January of 2022, the State introduced the NYS Food Donation and Food Scraps Recycling law. Which requires businesses and institutions that generate an annual average of at least two tons of wasted food per week to donate edible food scraps and recycle inedible food scraps if they are within 25 miles of an organics recycler with capacity. Due to the rural character of the planning unit, most organic waste from farms, wineries and food production waste are composted or land applied in form of manure, septage, tank bottoms, or fruit and vegetable pumice. An anaerobic digester is in operation at Ridgeline Farm in Clymer, New York. Cow manure and occasionally, food production waste is anaerobically digested for electricity production. The plant now has a capacity of 280 kw with a combined heat and power (CHP) system.

LF Bioenergy is partnering with a local farm in South Dayton to convert dairy farm manure into renewable natural gas (RNG). An anaerobic digester was installed at Nobles Farms BD LLC in 2024 to generate RNG and a low-carbon fertilizer that is a coproduct of RNG production.

There are three (3) registered composting facilities in Chautauqua County; one (1) is municipally owned and two (2) are privately owned and operated. The two (2) private facilities, Slab City Organics (source separated organics) and S St. George Enterprises, Inc. (yard waste), indicated that they did not operate during 2023 in their annual reports. See Table 3-5 for list of active registered composting facilities in Chautauqua County.

Table 3-5 – Active Registered Composting Facilities in Chautauqua County[20]

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit
Village of Westfield Compost Facility	51 Bourne Street, Westfield, NY 14787	Publicly owned and operated by the Village of Westfield	10,000 cubic yards per day (yard waste) ~30 tons per day	Yard Waste	489.00

3.1.4. C&D Debris Handling and Recovery Facilities

Construction and Demolition material processing facilities process asphalt, concrete and brick for aggregate**.** See Table 3-6 for a list of C&D debris handling and recovery facilities in Chautauqua County.

Table 3-6 – Active C&D Debris Handling and Recovery Facilities in Chautauqua County[20]

Solid Waste Facility	Facility Address	Operating Status	Approved Waste Acceptance Capacity	Waste Type	Tonnage Accepted From Planning Unit	Total Tonnage Accepted From Planning Unit
Fluvanna Yard Site C&D Debris Handling and Recovery Facility	191 Fluvanna Avenue, Jamestown, NY 14701	Publicly owned and operated by the City of Jamestown	500 tons per day (C&D)	Soil or Fill Types F1-F3	1,015.00	1,535.00
				Unadulterated wood	40.00	
				Bricks	90.00	
				Asphalt Pavement	35.00	
				Asphalt Millings	90.00	
				Gravel	265.00	
Jamestown Macadam, Inc. C&D Debris Handling and Recovery Facility	75 Walden Avenue, Jamestown, NY 14701	Privately owned and operated by Jamestown Macadam, Inc.	500 tons per day (C&D)	Asphalt Pavement	5,721.00	67,284.00
				Asphalt Millings	40,525.00	
				Sand	2,870.00	
				Gravel	2,870.00	
				Concrete	15,298.00	
Gernatt Asphalt Products, Inc. Hanover C&D Debris Handling and Recovery Facility	7802 Persons Road, Westfield, NY 14787	Privately owned and operated by Gernatt Asphalt Products, Inc.	500 tons per day (C&D)	Asphalt Millings	7,933.33	7,933.33

Table 3-7 – Out-of-County Waste Handled by Facilities in Chautauqua County[20]

Reporting Facility	Origin Municipality (Out-of-County)	Waste Type	Tonnage	Total Waste Received at Facility from Municipality
Chautauqua County Landfill 3889 Towerville Rd Ellery, NY 14701	Cattaraugus County, NY	Asbestos	48.55	26,644.40
		C&D	4,569.38	
		Industrial Waste	21.20	
		MSW	20,332.83	
		Sewage Treatment Plant Sludge	1,672.44	
	Erie County, NY	Asbestos	55.54	6,758.09
		C&D	1,053.05	
		Industrial Waste	225.04	
		MSW	5,424.46	
	Allegany County, NY	MSW	1.51	1.51
	Niagara County, NY	C&D	8.95	8.95
	Tioga County, NY	Contaminated Soil	8.84	8.84
	Pennsylvania	Ash (Coal)	9.76	28,154.05
		C&D	3,607.68	
		Industrial Waste	4,483.21	
		MSW	14,837.84	
		Contaminated Soil	2,196.87	
		Sewage Treatment Plant Sludge	3,018.69	
	Ohio	Sewage Treatment Plant Sludge	63.24	63.24
Stericycle, Inc. RMWF 3472 Progress Dr Dunkirk, NY 14048	Allegany County, NY	Regulated Medical Waste	14.95	14.95
	Cattaraugus County, NY	Regulated Medical Waste	48.75	48.75
	Erie County, NY	Regulated Medical Waste	1,271.21	1,271.21
	Genesee County, NY	Regulated Medical Waste	22.30	22.30
	Niagara County, NY	Regulated Medical Waste	143.89	143.89
	Orleans County, NY	Regulated Medical Waste	12.14	12.14
	Steuben County, NY	Regulated Medical Waste	0.02	0.02
	Wyoming County, NY	Regulated Medical Waste	0.37	0.37
Gernatt Asphalt Products, Inc. Hanover CDHRF 12670 Buffalo Rd Irving, NY 14081	Cattaraugus County, NY	Asphalt Millings	289.80	289.80

3.2. Reduction, Reuse Recycle Programs

3.2.1. Residential Sector Recycling Facilities and Efforts

Table 3-3 provides a summary of the transfer stations and recyclables handling and recovery facilities that accept recyclables. Recycling materials that most consistently have market value (cardboard, paper, and plastic) that are accepted at the county convenience centers are consolidated at the North and South County transfer stations and transported to highest bidding material recover facilities out of county. All metals (tin, aluminum cans, appliances, etc.) are transported to a private local metal recycler, as they consistently provide the highest price for these commodities. All car tires and glass containers are hauled to the landfill, for beneficial reuse. The car tires are bailed (100 tires per bale) and used in horizontal landfill gas collection trenches, within the landfill. Glass containers have no recycling market demand in our area and there are no interested markets within a reasonable transportation distance. We therefore collect glass at the landfill, where it's used to replace aggregate materials in construction of landfill gas collection systems.

Casella Waste, Storer's Container Service Inc., and Beichner Waste Service, Inc. provide waste hauling services in the County, including 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 transfer stations across the County. Recycling flyers available to residents are provided in Appendix C for further information.

Electronics are collected at the North, South, and West County Transfer Stations 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 Chautauqua County. The evaluations are to assess the effectiveness and/or needs of these facilities and programs and Chautauqua 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.

3.2.2. 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 Chautauqua County are difficult for the County track. Tasks in chapter 5 are 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 Chautauqua 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.

3.2.3. 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 Chautauqua 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 Chautauqua County: Slab City Organics (SSO compost site in the Town of Sherman), Westfield(v) Composting Facility (yard waste compost site in the Village of Westfield), and S. St. George Enterprises, Inc (yard waste compost site in the Town of Fredonia). Chautauqua County will continue to monitor P2I's site and identify possible agricultural operations that are managing organic components of MSW.

3.2.4. 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.

3.2.5. 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. Chautauqua 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 Chautauqua 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 Chautauqua 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.

3.2.6. 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. The County provides numerous recycling services to residents at the transfer and convenience stations. On July 22, 1992, the County Legislature adopted Local Law 9-92 which supports New York General Municipal Law Section 120-aa, in which all solid waste within the Planning Unit which has been left for collect or which is delivered by the generator of such waste to the solid waste management facility shall be separated into recyclable, reusable, or other components for which economic markets for alternative uses exist. .

3.2.7. Industrial Facility Recycling Efforts

A few of the large industrial facilities[25] located within Chautauqua County include: Chautauqua Chemicals Company/Chautauqua Metal Finishing Supply, Chautauqua Precision Machining, Inc., Cummins, Inc., Hopes Windows, Inc., Jamestown Electro Plating, Ramjet Enterprise, LLC, Ideal Coatings, Inc., Specials Metals, Stuart Tool & Die, Inc., and Superior Grinding, Inc.. Industrial recycling efforts are currently handled individually by each company.

3.2.8. 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.

3.2.9. 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[26]:

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

[25] https://chautauquanycoc.weblinkconnect.com/Industrial-Manufacturing
[26] http://www.norstar.com.au/Recycling/Processing/Benefits.aspx

- 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.

3.2.10. Public Education Efforts to Promote Recycling

Chautauqua County recognizes the importance of educating the community on waste reduction, recycling and material recovery opportunities. The County Landfill maintains an informative webpage[27], with instructions for the businesses and the public as to what services are provided, where and when. The County maintains a phone and email hotline, which are widely used by the public, to provide the answers to all their waste-disposal related questions.

An information flyer, which is updated yearly, is available to all county residents, providing guidance and answers to frequently asked questions, about recycling and waste disposal options.

All County public schools provide educational classes to our children, in all grades, about current environmental issues and concerns. To supplement their education efforts, the County provides Landfill and transfer station tours as well as educational movies and slide-presentations, promote recycling and protection of the environment in general.

3.2.11. 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 theP2I Organics Resource Locator, there are currently three registered organics composting facilities located within Chautauqua County: S. St. George Enterprises; Inc. in Fredonia composts yard waste, Westfield (v) Composting Facility in Westfield composts yard waste, and Slab City Organics in Sherman composts source separated organics.

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

[27] http://www.co.chautauqua.ny.us/340/Landfill

diversion efforts, the County relies on educating and informing communities on how to properly compost organics.

The Food Donation and Food Scraps Recycling Law[28] went into effect January 1, 2022, and requires 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 fourteen (14) designated food scraps generators identified by the NYSDEC in Chautauqua County; of these fourteen (14) designated generators, all fourteen (14) are required to donate edible food waste and six (6) are required to divert all food scraps to a nearby organics recyclers, as capacity allows. Table 3-8 lists information about the designated food scraps generators in Chautauqua County as released on November 5, 2024.

Table 3-8 – Designated Food Scraps Generators[29]

Name	Required to Donate	Required to Recycle	City	Tonnage per Week[30]
State University of New York College at Fredonia	Yes	No	Fredonia	5.1
Tops Friendly Markets	Yes	No	Dunkirk	2.4
Wegman's	Yes	Yes	Jamestown	14.9
Tops Friendly Markets	Yes	No	Jamestown	4.0
Applebee's Neighborhood Grill & Bar	Yes	No	Lakewood	2.0
Applebee's Neighborhood Grill & Bar	Yes	No	Dunkirk	2.0
Olive Garden	Yes	Yes	Lakewood	5.9
Denny's	Yes	No	Fredonia	2.0
La Cocina	Yes	Yes	Lakewood	2.3
Walmart	Yes	Yes	Lakewood	2.5
Chautauqua Mall	Yes	No	Lakewood	2.0
Wells Foods Corp.	Yes	No	Dunkirk	2.0

[28] https://www.dec.ny.gov/chemical/114499.html
[29] https://dec.ny.gov/sites/default/files/2024-01/dfsglist2024.pdf
[30] https://docs.google.com/spreadsheets/d/1sg4RY_EZuGMTIej854rp7iwbDMSr2FciE1VjV2kj6oI/edit?gid=997437454#gid=997437454

3.2.12. 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 composting facilities listed in Section 3.1.4.

3.2.13. Food Scraps/Food Processing Waste/Food Banks

There are currently twenty-six food pantries located in Chautauqua County identified by the Cornell Cooperative Extension[31], where the public can obtain quality food that would otherwise be landfilled.

3.2.14. Electronics Recycling

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

3.2.15. Sharps Collection

Sharps collection is managed by the County Health Department[32] in conjunction with the local police, fire, and health systems.

3.2.16. 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 3-3.

3.3. Biosolids/Sewage Sludge Handling

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

[31] https://chqgov.com/sites/default/files/inline-files/Food%20Resource%20Guide.pdf

[32] https://www.health.ny.gov/diseases/aids/consumers/prevention/needles_syringes/sharps/docs/alternate_sites.pdf

3.4. Management of Household Hazardous Waste

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

Table 3-9 summarizes the quantities of HHW that was collected in 2023 during the annual household hazardous waste collection.

Table 3-9 – 2023 HHW Collected in Chautauqua County

Material	Quantity	Units
Antifreeze	330.00	Gallons
Hazardous Paint Aerosols	1,616.00	Gallons
Flammable Liquids	2,092.73	Gallons
Flammable Soilds	83.30	Gallons
Pesticides (Solids)	4,431.31	Pounds
Pesticides (Liquids)	1,192.88	Gallons
Oxidizer Liquids	290.00	Gallons
Corrosive Acids	445.00	Gallons
Bulk Mercury	10	Gallons
Corrosive Bases	898.94	Gallons
Misc. Solid Waste (Solids)	358.41	Pounds
Fluorescent Bulbs	376.65	Pounds

3.5. 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.

3.6. 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 0-16 gallon, 17-32 gallon, and 33-48 gallon bag. Most recyclables are accepted at these facilities based on an annual permit fee structure.

3.7. Recycling Market Agreements

All recyclables collected at the transfer and convenience stations that are under contract with private waste management companies are marketed at the discretion of the hauler. Therefore, the County is not responsible for the sale of recyclable commodities and is not party to any recycling market agreements associated with privately operated transfer stations.

Recycling market demand is weak, and commodities lose market value during recessions and large market demand shocks. Metal markets have the most consistent demand and Chautauqua County has an agreement with a metal recycler. Cardboard and paper markets have much less consistent market demand. Plastic market demand is dependent on the plastic resin type. Plastic resins 1 and 2 have market demand. Plastic resins 3, 4, 5, and 6 have no demand. Chautauqua County currently distributes recycling commodities to three vendors. Each vendor communicates a monthly bid for cardboard, paper, and plastic.

3.8. Flow Control

The County adopted flow control in 2020 with Local Law 2-20, 14-95, and 9-92 requiring all solid waste, including C&D Debris, and wastes generated from residences, businesses, institutions, and other locations within the County of Chautauqua shall be delivered for disposal to the County Solid Waste Facility.

3.9. Recycling Data Collection Efforts

As demonstrated in the previous sections of this plan, Chautauqua 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.

4.0 EXISTING ADMINISTRATIVE AND FINANCIAL STRUCTURE

4.1. Staff in Charge of Implementing New System

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. The County will draw upon its existing administrative structure to implement the program and objectives outlined within this Plan. Specifically, staff within the Solid Waste Division, the Department of Public Facilities, and the Landfill Commission 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.

Ultimately, the County is responsible for the implementation of this Plan. The Planning Board and the Department of Public Facilities, in addition to other duties and responsibilities, is charged with the implementation of this Draft LSWMP. As warranted, the County will reassess county department responsibility in regards to the Draft LSWMP. 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 assisted with County oversight. The towns and villages with a municipal transfer station or convenience station will be involved with implementing the Draft LSWMP. Figure 1-3 in Section 1.7 depicts the administrative structure to be utilized for implementing the programs and objectives outlined in this Plan. Each entity has a role in the success of the solid waste management system including administration, finance, outreach and education, enforcement, data collection and evaluation, and LSWMP updates and reporting, as listed in Table 4-1 below.

Table 4-1: Entities Responsible for LSWMP programs implementation.

Implementation Program	Responsible Entity
Operations Administration	Solid Waste Division Staff, Department of Public Facilities, Landfill Commission
Finance	Solid Waste Division Staff, Department of Public Facilities, Landfill Commission
Outreach and Education	Landfill Director, Solid Waste Analyst
Enforcement	NYSDEC, Landfill Director, Sanitation Supervisor, Assistant Sanitation Supervisor, Transfer Station Supervisors, and Operational Staff
Data Collection and Evaluation	Landfill Director, Solid Waste Analyst, Water Resource Specialist
LSWMP Updates and Reports	Landfill Director, Solid Waste Analyst, Water Resource Specialist

While this administrative structure allows for more staff to be involved in implementing this Draft LSWMP, accommodating variable workloads, with no staff solely dedicated to implementing this plan, there may be oversights.

4.2. Financial Structure

Since 1981, the Solid Waste Division has been managing the operation of an 870-acre regional landfill and four transfer stations, providing convenient, efficient, affordable and above all, environmentally responsible solid waste services to the county residents and taxpayers. In 1991, the County legislature, with Resolution No. 105-91, authorized the establishment of Enterprise Fund, to account for the operations of the Chautauqua County Landfill and the Solid Waste operations that originally had been part of the Public Works Department. The initial 1991 account appropriations totaled to $5,816,000.

Generally Accepted Accounting Principles (GAAP) requires state and local governments to use the enterprise fund type to account for "business - type activities" – activities similar to those found in the private sector. Business type activities include services primarily funded through user charges.

The Governmental Accounting Standards Board (GASB) defines the purpose of enterprise funds as: "...to account for operations that are financed and operated in a manner similar to private business enterprises" — where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges.

Over the years, the responsibilities and services of the Solid Waste Division have expanded, in order to meet the needs of the people of the county and at the same time, comply with Federal and State mandates. All expenses, including capital expenses, are and have been funded by the revenues from the waste tipping fees, received at the transfer stations and the landfill facility. A summary of annual expenses is attached in Appendix G for a portion of the 2024 calendar year.

4.3. Laws, Regulations or Ordinances

Since the last planning period New York State and the United State Drug Enforcement Agency (DEA) have passed recycling laws or created a program that have been helpful in keeping toxic and recyclable materials out of the landfill waste stream and increased recycling. These laws have helped to remove from the landfill waste stream: plastic grocery bags, plastic water bottles, cell phones, electronics, rechargeable batteries and prescription drugs.

4.3.1. Local Laws

The County Legislature adopted Local Law 5-84 on July 13, 1984, later amended by Local Law 5-84 on March 27, 1985, Local Law 3-91 on January 23, 1991, Local Law 14-95 on May 24, 1995, and Local Law 20-95 on October 25, 1995, to begin to manage and regulate the

use of the County Sanitary Landfill and Transfer Stations such that the proper deposit or disposal of refuse is done so in accordance with applicable statues and regulations governing solid waste disposal.

The County Legislature adopted Local Law 13-91 on August 28, 1991, later amended by Local Law 8-92 on June 10, 1992, Local Law 2-94 on March 23, 1994, Local Law 13-95 on April 24, 1995, to specify the policy of the County of Chautauqua to operate the County landfill and transfer stations in a fiscally responsible manner, with the user fees and other charges designed to cover all the expenses. It was also intended to provide the Department of Public Facilities at the County owned solid waste facilities sufficient flexibility and authority to operate the facility like a business as efficiently and cost-effectively as possible, including the ability to adjust user fees to take advantage of market conditions and to reflect changing costs, subject to the continuing review of the County Legislature.

As discussed in Section 3.2.6, the County Legislature adopted Local Law 9-92 on July 22, 1992, to comply with the requirements of section 120-aa of the New York General Municipal Law regarding the source separation and segregation of recyclable or reusable materials from solid waste.

The County Legislature adopted Local Law 19-95 on October 11, 1995, to modify and supersede the lease term limitations contained in County Law Section 215 and Local Law 7-1975 for landfill refuse gas development projects.

As discussed in Section 3.8, the County Legislature adopted Local Law 2-20 on July 24, 2020, to ensure that solid waste generated within Chautauqua County continues to be managed in a manner which protects public health, public safety and the environment, and which provides for the financially stability of the County solid waste system.

Local Law 6-22 was adopted by the County Legislature on August 24, 2022, to form the Landfill Commission whose purpose is to serve as an advisory body to the government of the County of Chautauqua concerning solid waste disposal and solid waste related activities.

The Planning Unit does not have any local laws that limit waste importation from outside of the planning until for landfilling at the Chautauqua County Landfill, local laws outlining disposal prohibitions, or local zoning laws related to solid waste management.

4.3.2. Bottle Deposits

New York State Returnable Container Act of 1982 as amended in 2009 includes 5 cent deposit on carbonated beverage and water bottle containers smaller than 1 gallon volume. Consumers of these beverages pay a 5-cent deposit on each container and get

the 5 cents back when the containers are put into the recycling stream at redemption centers.

Incentivizing recycling of these containers with a nickel has encouraged consumers to provide a separate and clean recycling stream of container aluminum, glass and plastic that is diverted away from the landfill waste stream and into the recycling stream to produce new containers. Redemption centers and reverse vending machines at grocery stores separate the aluminum, glass and plastic material commodities that are marketable to the bottle food container making industry.

Since 1982, New York State claims 90 billion containers equal to 6 million tons of materials were recycled at no cost to local governments.

Going forward into the next 10 years, we predict this successful legislation will continue to divert recyclable glass, metal and plastic from the landfill waste stream.

4.3.3. Cell Phone Recycling

The New York State Wireless Recycling Act of 2006 requires all wireless telephone service providers that offer phones for sale must accept cell phones for reuse or recycling.

Cell phones contain hazardous materials including mercury and lead, that if improperly disposed of can harm the environment and are toxic to humans and wildlife. These same hazardous materials are also necessary to manufacture new cell phones, and this act provides free and convenient collection locations for consumers to place old/obsolete cell phones in the recycling stream.

4.3.4. Plastic Grocery Bags

The New York State Plastic Bag Reduction, Reuse and Recycling Act became effective January 1, 2009, and stores larger than 10,000 square feet are required to:

a. Establish an "at-store" plastic bag recycling program. Stores must make collection bins for plastic bag recycling available to customers in a visible, easily accessible location.
b. Ensure that collected plastic bags are actually recycled. Stores are required to recycle the plastic bags collected and are prohibited from disposing of the collected plastics as solid waste.
c. Label all plastic bags. Any bags distributed in affected stores must state Please Return to a Participating Store for Recycling.
d. Keep records. The records must include the weight of plastics collected and where they were recycled.

e. Sell reusable bags. Stores are required to offer reusable bags to their customers for purchase and allow the use of reusable shopping bags.

On March 1, 2020, New York State put into effect a NYS Bag Waste Reduction Act. All plastic carryout bags (other than an exempt bag) are banned from distribution by anyone required to collect New York State sales tax. The law affects anyone required to collect New York State sales tax, bag manufacturers and consumers. Cities and counties are also involved. Under this law:

- Cities and counties are authorized to adopt a five-cent paper carry-out bag reduction fee. One way to avoid paper bag fees no matter where you are across New York State is to always bring your own bag.
- Stores covered under the NYS Plastic Bag Reduction, Reuse and Recycling Act are still required to collect plastic bags and other film plastics from consumers for recycling. (Film plastics include items such as bread bags and plastic wraps that come over cases of water, paper towels and other similar items). As a consumer you can help by continuing to recycle these items at participating retailers.
- Bags for some uses are exempt under the law, so plastic bags may still be distributed to consumers in a few specific circumstances, such as a bag used by a pharmacy to carry prescription drugs and produce bags for bulk items such as fruits and vegetables. But as a consumer, you can aid in protecting our environment by using reusable bags as much as possible.

4.3.5. Computer and TV Electronics Recycling

The NYS Electronic Equipment Recycling and Reuse Act of 2010 requires that all computer and TV electronic equipment manufacturers to provide their customers with "free and convenient" recycling opportunities.

In practice, three Chautauqua County operated transfer stations provide space to collect electronic waste for transfer to electronics recyclers. Cummins Engine plant hosted an electronics recycling event for its employees and community.

The electronic dissemblers take electronic components apart and separates different materials into recyclable commodities, like metals, plastics and glass for recycling. This law also includes a landfill disposal ban.

This NYS legislation requires covered electronic manufacturers to pay for operation of recycling infrastructure, transferring financial burden away from municipal solid waste system to electronic manufacturers. Implementation of this legislation has been successful. Expanding this legislation to all electronic waste is recommended. Expanding the list of covered electronics to include

stereo components, Photovoltaic cells (solar panels), and microwaves would further encourage electronic recycling.

Chautauqua County Division of Solid Waste began recycling electronics in 2007 with a Dell Computer grant and all electronics were banned from Chautauqua County Landfill waste stream in 2010 encouraging electronics to be recycled within the Planning Unit.

4.3.6. Rechargeable Batteries

NYS Rechargeable Battery Recycling Act 2010 requires rechargeable battery retailers that sell "covered rechargeable batteries" within New York State to accept used rechargeable batteries from consumers during normal business hours for recycling. This law includes and landfill disposal ban.

Most rechargeable batteries contain toxic metals that can be released into the environment when improperly disposed. Consumers across the state can now safely return rechargeable batteries to retailers, from a large number of electronic products, for recycling or proper management at the end of their useful life.

The following rechargeable battery chemistries are included in this regulation:

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

The Chautauqua County Planning Unit and Chautauqua County Landfill have benefited from the above identified deposit and collection regulations by removing toxic, highly valued and infinitely recyclable wastes from the landfill waste stream.

4.3.7. U.S. Drug Enforcement Agency

Twice per year (April and October) prescription drug collection event sponsored by U.S. Drug Enforcement Agency (DEA) and Chautauqua County Sheriff Department that helps keep prescription drugs out of landfill and surface waters.

Four days after the first Take-Back event in September 2010, Congress passed the Secure and Responsible Drug Disposal Act of 2010, which amends the Controlled Substances Act to allow an “ultimate user” of controlled substance medications dispose of them by delivering them to

entities authorized by the Attorney General to accept them. The Act also allows the Attorney General to authorize long-term care facilities to dispose of their residents controlled-substances in certain instances.

4.3.8. Fluorescent Bulbs

Compact fluorescent bulbs are growing in popularity and acceptance, yet when broken they release a significant amount of mercury, a neuro-toxic metal. A statewide or nationwide recycling law requiring retailer take-back for recycling will be helpful in keeping mercury out of the landfill waste stream and container glass recycling stream.

In Chautauqua County, Home Depot receives compact fluorescent bulbs for disposal at their customer service desk.

4.4. Local Laws or ordinances that must be adopted

The Chautauqua County Planning Unit has not identified any county-wide ordinances that must be adopted to improve efficient operation of the solid waste and recycling markets. Due to growing popularity with dual and single stream recycling in our large population areas there is less incentive for a resident to increase their recycling. Flat rate waste tipping fees are included in city resident utility bills. Mandatory recycling laws with enforcement are an alternative that has been tried in other nearby Planning Units.

Waste industry consolidation within the Planning Unit has encouraged adoption of dual and single stream recycling methods. A small local material recovery facility and waste transportation company was purchased by one of their competitors that provide single stream recycling. The buyer is a single stream recycling service provider that will increase the number of plastic types and paper collected from the Planning Unit, due to their large regional footprint and therefore greater access to recycling markets through the Northeast and Midwest United States.

4.4.1. Comply with General Municipal Law section 120-aa

Chautauqua County legislature adopted Local Law 11-92 in 1992 in compliance with General Municipal Law 120-aa. Hence recyclable commodities are collected throughout the planning unit for recycling.

4.4.2. Develop and enhance economic markets for recyclables recovered within the service areas, such as procurement laws or building codes

In recent years, market dynamics in the scrap metal and tin recycling industry sector have allowed regional and national companies to make capital investments into operations within the Planning Unit. Two companies have bought existing operations within the Planning Unit and brought their processing and logistical resources to increase efficient flow of scrap metal and tin commodities from the Planning Unit. Prior to their local

investment, both companies invested in metal shredding and sorting operations in Buffalo, Owego, NY and Pittsburgh, PA.

New York State could increase glass recycling of wine and liquor bottles by including them in an amended deposit law referenced above.

4.5. Effectiveness of the Current Laws and Regulations

4.5.1. Incentive Based Pricing (PAYT)

The Pay-As-You-Throw (PAYT) system requires users of services to pay for service by the bag or other unit and often increases recycling rates as users are incentivized to recycle as much as possible. County residents who are not included in City or Village curbside waste collection services, pay either a subscription fee to private haulers or pay a per ton or per bag disposal fee at the County's four transfer stations and landfill. Within the Chautauqua County Planning Unit there are twelve transfer stations where county residents may dispose of their household waste at nominal fees by the ton or by the bag and recycling is collected free of charge. The fewer bags of trash they accumulate, the less the resident pays for disposal.

Recycling of glass, paper, cardboard, tin, covered electronics and other metal is free at county/town/village operated transfer stations. Recycling provides an opportunity for residents to reduce their volume of trash.

The City of Dunkirk and Jamestown both have curbside waste, single and source-separated stream recyclable collection programs respectively. Waste disposal fees are collected with city utility bills at flat rates providing no incentive pricing in Dunkirk, while in Jamestown tagged recycling bins allow the City to track who is participating. Those who recycle at least one time per billing period receive a 50% rebate on their fees. From 2013-2014, the recycling rate increase 10% with the implementation of this program.

4.5.2. Hauler Licensing

Waste hauler licensing is not currently imposed within the Planning Unit. Waste generated within the Planning Units is controlled by the Flow Control laws described in Section 4.5.3.

4.5.3. Flow Control or Districting

The Chautauqua County has implemented flow control (Local Law 2-20) to ensure future volumes and protections of the waste coming to the Ellery Landfill. No waste collection districting is imposed on waste haulers.

The free-market system has worked best since the landfill began operation and Chautauqua County has been fortunate to have the centrally located County operated Ellery Landfill. Private

enterprise within our Planning Unit is also been able to provide efficient collections services to our communities and often will extend their own services into to the surrounding Planning Units and municipal jurisdictions.

4.6. Solid Waste Management Policies

Local Laws associated with solid waste management with the Planning Unit are listed in Section 4.3.1. There are no local environmental justice policies. Chautauqua County relies on the New York State Office of Environmental Justice (OEJ) to address environmental justice issues and concerns that affect primarily low income and minority communities.

5.0 ALTERNATIVES EVALUATION AND SELECTION

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 and expanding upon the current integrated approach to solid waste services – providing diversion, recycling, and disposal opportunities for County residents.

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.
- Increasing the availability of recycling receptacles in County buildings and at County events.
- Modifying waste descriptions in accounting software to better identify wastes

In addition to the waste reduction policy, the County could develop a green procurement process for all County buildings. This policy could include:

- Prioritizing products with environmentally friendly aspects and minimal environmental footprint.
- Considering the entire lifecycle of products when evaluating environmental impact.
- Defining clear sustainability requirements in procurement processes that consider lifecycle impact, energy efficiency, and recycled material content.
- Assessing potential suppliers based on their environmental performance, including energy efficiency, material sustainability, and waste management.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #1.1 and #1.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #1.1 and #1.2 can be found in Appendix E.

5.2. Reuse Programs

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

The planning unit has numerous thrift/secondhand shops and clothing drop off locations including several churches, Helping Hands, St. Pauley, Planet-Aid, Hearts for the Homeless, Salvation Army, and the four County Transfer Stations.

In addition to promoting existing programs, the County plans to investigate the reuse programs of other planning units and consider implementing a similar program.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #2.1 and #2.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #2.1 and #2.2 can be found in Appendix E.

5.3. Recycling Programs

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

every day. Of the waste generated, over 75% of waste is recyclable, but only 34% of it is recycled.[33]

Chautauqua County source separates their recyclable materials. A few towns and villages are considered to be using dual stream recycling tactics. The County continues to separate materials by type to allow for the best market price for each commodity on behalf of the residents of the County. Listed below is a summary of current recycling efforts:

- Chautauqua County transfer stations receive recyclable commodities source-separated by residential customers keeping commodity values high for transfer to recycling markets.
- City of Jamestown provides source-separated strategy and delivers recyclable commodities to the South County Transfer Station in Falconer, where commodities are transferred and sent to recycling markets.
- City of Dunkirk provides single-stream collection and delivers recyclable commodities to the North County Transfer Station in Fredonia, where commodities are transferred and sent to recycling markets.
- Village of Fredonia provides single-stream collection and delivers recyclable commodities to Casella Waste Services in Jamestown, NY.
- Town of Busti has chosen a source-separated stream tactic where recyclables are collected at the town transfer station in separate roll-off containers and transported to South County Transfer Station and cardboard to Beichner Waste Services transfer station in Sinclairville, NY.
- The Town of Harmony has chosen a dual-stream tactic where recyclable metal containers are collected in roll-off containers and delivered to Ben Weitsman of Jamestown; and plastic, paper, and cardboard are delivered to Casella Waste Services for sorting at their material recovery facility in Ontario County.

The recyclable volumes that are collected/generated within the County are accumulated at the county-owned and operated transfer stations. These quantities cannot economically support the construction and operation of a local material recovery facility (MRF) currently; therefore, they are transported to privately-owned MRFs in the Buffalo metropolitan area. The revenues from the sale of the transported materials help to offset part of the cost for handling and transportation of the recyclables. The remainder of the cost is subsidized from the fees charged by the solid waste disposal operation at the County Landfill.

5.3.1. Increase Materials Recovered and Improve Local Recyclables Market

Sustainable diversion includes locating markets that, at the minimum, are long-term, consistent, safe (to human health and the environment), and economical. The County

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

has always aggressively expanded its recycling/recovery program as emerging markets allow for sustainable diversion.

In 2011, the Chautauqua County Transfer Stations began collecting paperboard/carton board with corrugated cardboard in hope of increasing the recycling of this low-grade paper.

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 or plastic bags derived from feedbags or wood pellets.

The County is responsible for the sale of recyclable commodities, is not party to any recycling market agreements. However, the County is in regular communication with Casella, Royal Oakes, Buffalo recycling, and Mortenson's recycling 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.

The County plans to evaluate and compare recycling source separation alternatives including source separated plastic, which could increase market value, and single stream recyclables, which could increase diversion rates.

The County will leverage existing programs to increase recovered materials by identifying which large retailers offer plastic bag and battery collection receptacles and promote these outlets on the County website.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #3.1 and #3.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #3.1 and #3.2 can be found in Appendix E.

5.3.2. Recyclables Recovery Programs

Given the County's bountiful agricultural lands, there is an opportunity to increase recycling of agricultural waste. The County plans to quantify the amount of agricultural waste being generated, investigate existing agricultural recycling programs conducted by nearby planning units, and identify alternative disposal options. This may be a good opportunity to leverage partnerships. The County has worked with Cornell Cooperative Extension and the Soil and Water Conservation District (SWCD) 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 and the SWCD on this initiative.

Chautauqua County is interested in taking the initiative to promote recycling at county-owned facilities and in-county events. Chautauqua 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. Chautauqua County realizes that in order to increase recycling county-wide, their staff must be engaged to achieve this goal. Chautauqua 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 schools and institutions. 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 Appendix E provides an outline of the resources and subtasks necessary to increase recycling at county owned facilities and County events.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #4.1, #4.2, and #4.3 can be found in more detail in Appendix D. Specific tasks and a timeline associated with strategies #4.1, #4.2, and #4.3 can be found in Appendix E.

5.3.3. Product Stewardship

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

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #5.1 and #5.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #5.1 and #5.2 can be found in Appendix E.

5.4. Organics Diversion

Each American disposes of about 460 pounds of organic waste annually; 100% of that waste can be composted[34]. Composting of organic materials from the solid waste stream not only provides a valuable benefit to nutrient deficient soils but also reduces the amount of waste that ends up in landfills or incinerators. Other benefits of composting organic matter include the increase in beneficial soil organisms such as worms and centipedes, suppression of certain plant diseases, the reduced need for fertilizers and pesticides, prevention of soil erosion and nutrient run-off, and assistance in land reclamation projects.

In New York State, thousands of tons of organic waste materials are composted each year. These include treated sewage sludge, otherwise known as biosolids/sewage sludge from wastewater 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. There is one registered composting facility, Westfield (V) Composting Facility, is located within Chautauqua 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 and Food Donation

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.

In 2010, the Chautauqua County Landfill received 16,833 tons of off-specification food and pomace, approximately 31% of the landfill's total annual industrial waste volume. According to a phone survey conducted in 2008 by the Chautauqua County Solid Waste

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

Analyst, another 16,000 tons of fruit and vegetable pomace is applied to farms and vineyards throughout the planning unit. While a phone survey is not scientific, it did provide some insight to the disposal methods beyond the sight of the landfill.

In 2022, The State set up a website with a list of institutions required to comply with the Food Donation and Food Scraps Recycling law.

At this time the County does not have complete information on the total amount of food that is being donated, the State may have reports from its Food Donation and Food Scraps Recycling law to gain this information. There are several donation programs that the County is aware of in the County:

- Rural Ministries Gleaning Program: This program harvests the produce from local farms after mechanical harvesters have been run. The food is donated to residents in need
- WNY Food Bank: This system of food collections moved unwanted, surplus food to local food pantries
- Master Food Preserver/Master Gardener Program: These programs educate residents in home gardening and food preservation to keep food from going to waste. They also work with local food pantries to preserve the donated food for later use.

The County will develop a list of local food banks, their hours, and location and add this information to the County website. This information will be updated periodically throughout the planning period to ensure accurate information is being promoted.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #6.1 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #6.1 can be found in Appendix E.

5.4.2. Backyard Composting

The Cornell Cooperative Extension encourages residential composting through sale of inexpensive composters and instructions for small compost bin construction, educational sessions, and public education through PSAs and gardening outreach.

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.

The County will identify training materials available on the NYSDEC and Cornell Cooperative Extension websites for assistance in developing training courses or locating

backyard composting demonstration sites. These resources will be linked on the County website.

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.

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, Chautauqua 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. Information about backyard composting and "grass-cycling" will be added to the County website.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #6.2 and #6.3 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #6.2 and #6.3 can be found in Appendix E.

5.5. 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. Transfer station attendants monitor the receipt of recyclables at transfer stations and landfill attendants place surcharges on landfilled waste loads that contain large amounts of recyclable materials.

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.

5.6. Incentive-based Pricing

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 discussed previously, Chautauqua 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. The Implementation Schedule in Appendix E provides the milestones through the planning period that are anticipated to evaluate this task.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #7.1 and #7.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #7.1 and #7.2 can be found in Appendix E.

5.7. 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.

Chautauqua 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 went 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
- Solar Panels and PV Cells Recyclable Opportunities
- Foam packaging ban

The County continues to establish and implement a recycling educational outreach program, which will complement the existing curriculum provided by K-12 schools, colleges, and service groups (i.e., 4-H and Scouts) with educational tours of the transfer stations, landfills, and other waste management facilities. 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. Additionally, Recycle Right New York intends on developing educational materials, and the County will share those materials with the public to further inform residents of available programs and initiatives.

The County will continue to provide educational memos and news articles related to solid waste disposal and recycling best practices. Some examples of historical articles published by the Department of Public Facilities and the Solid Waste Division are attached in Appendix J.

During this planning period, the County will evaluate its current and potential education methods for promoting the Chautauqua 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.

When electronics waste was ban from the landfill waste stream, our Solid Waste Analyst met with waste haulers and municipal services representatives such as Town & Village Clerks Association, Town Highway Superintendents and local chapter of New York State School Superintendents of Buildings & Grounds educating them regarding change in policy from electronics disposal to recycling. During these meetings, it was explained why electronics waste was planned to be banned and where recycling opportunities would be provided.

The County Executive's press releases and participation in in-class discussions regarding electronic waste recycling at both Jamestown Community College and SUNY Fredonia also helped spread the word that this waste banned from the landfill waste stream and why.

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 County will also update the webpage with useful links associated with education resources associated with waste reduction, recycling, reuse, and solid waste management information. Continued public outreach to community through landfill tours, college participation and meetings with municipal service representatives is planned in the implementation schedule.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #8.1 and #8.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #8.1 and #8.2 can be found in Appendix E.

5.8. Data Collection and Evaluation Efforts

The County plans to reach out to solid waste management facilities to identify key aspects. For every facility/program that manages MSW, biosolids/sewage sludge, C&D debris, processed scrap metal, recyclables, and/or industrial waste generated in Chautauqua 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.

If deemed necessary, the County will also prepare and distribute surveys for distribution to large industrial, agricultural, and institutional waste generators.

Additional data will be collected to understand seasonal waste data (composition, sources, etc.). This information may be used in the future to understand how education and outreach should be targeted around seasonal influxes of individuations to the Planning Unit.

The County will work to gather data from recycling partners in the Planning Unit in order to gain accurate numbers associated with the amount of asphalt, concrete, and wood chips that are recycled or reused at facilities not owned or operated by the County.

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

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #9.1 and #9.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #9.1 and #9.2 can be found in Appendix E.

5.9. Local Hauler Licensing

Waste hauler licensing is not imposed within the Planning Unit. Chautauqua County does not intend to revisit or evaluate local hauler licensing or collection districting during the planning period.

5.10. Flow Control and Districting Potential

The County adopted flow control in 2020 with Local Law 2-20, 14-95, and 9-92 requiring all solid waste, including C&D Debris, and wastes generated from residences, businesses, institutions, and other locations within the County of Chautauqua shall be delivered for disposal to the County Solid Waste Facility. There are no needed changes to the flow control law anticipated during the planning period. No waste collection districting is imposed on waste haulers.

5.11. C&D Debris Reduction

There are currently no upstream or downstream separation requirements/regulations for C&D waste in Chautauqua 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 are three registered C&D processing facilities located in Chautauqua County, listed in Table 3-6. These facilities recycle approximately 120 tons of brick, concrete, and stone for aggregate.

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.

In addition to the potential C&D debris reduction requirement on county bids, the County plans to research deconstruction and reuse/recovery programs of other planning units to evaluate the feasibility of implementing a similar program.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #10.1 and #10.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #10.1 and #10.2 can be found in Appendix E.

5.12. Private Sector Management and Coordination

Opportunities for teaming up with private sector entities will be monitored by Chautauqua 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.

Chautauqua County, in the past and will in the future, bid out the recycling of materials diverted from the landfill waste stream to achieve the best pricing. The Chautauqua County Planning Unit has one Casella owned recyclable processing facility. Large single-stream recycle commodity sorting facilities that service this planning unit are in Erie and Ontario Counties. Chautauqua

County has an agreement with a metal recycler for recovery of metal materials delivered to County facilities.

The Chautauqua County planning unit is surrounded by a large number of private landfills that operate, for the most part, below capacity. Within a 100-mile radius of Chautauqua County borders there are the following landfills:

- Lake View Landfill (PA), owned by Waste Management
- McKeen County Landfill (PA), operated by Casella
- Green Tree Landfill (PA), owned by Waste Management
- Chaffee Landfill (Erie County, NY), owned by Waste Management
- Hyland Landfill (Alleghany County, NY), owned by Casella

All of the above landfill facilities are commercial businesses and have more than enough capacity to absorb Chautauqua County's waste, if necessary, provided our planning unit can afford to pay the transportation cost and tipping fees. At this time, the County does not have a contractual agreement in place with any landfill or other waste accepting or processing facility to receive any of the County's waste. If and when the need arises, one or more agreements could be established to ensure the proper disposal of non-recoverable waste. The County will develop a contingency plan to evaluate the disposal alternatives for waste generated within the Planning Unit.

The results of data gathered as part of Program Strategy No. 8 could aid the County in identifying potential partners and/or opportunities for additional programs.

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

5.13. Review of Available Waste Management Technologies and Waste Disposal Options

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.

5.13.1. 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 Chautauqua 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 process 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 costs approximately $290 million.

There are approximately 70 active WTE facilities in the State. It should be noted that there no active WTE facilities in Chautauqua County; however, there are WTE facilities in operation in the adjacent counties: 1) the Carbon Activated Corporation in Blasdell, NY (Erie County). Farther north there exists the Calgon Carbon corporation in North Tonawanda, NY (Niagara County) and Covanta Niagara I, LLC in Niagara Falls, NY (Niagara County). Farther east there exists the Onondaga County Resource Recovery Facility in Syracuse, NY (Onondaga County) and the Oswego County Energy Recovery Facility in Fulton, NY (Oswego County). 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 Chautauqua County.

5.13.1. 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[35].

5.13.2. 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[36] (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.

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

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

5.13.3. 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.

5.13.4. 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.

5.13.5. 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.

The Ridgeway Digester is located in Clymer, NY on the Ridgeway Dairy Farm and currently uses cow manure to produce electricity through an anaerobic digestion plant.

The LF Bioenergy LF 3 is located in Cherry Creek, NY on the Nobels Farms BD LLC and currently uses cow manure to produce renewable natural gas and a low-carbon crop fertilizer through an anaerobic digester.

5.13.6. 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[37].

5.13.7. 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.

5.13.8. Alternative Chosen

Based on the technologies discussed above, currently 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 Chautauqua County. Unless circumstances change, Chautauqua County does not propose re-evaluating the feasibility of these other alternative waste disposal options during the 10-year planning period; however, Chautauqua County does

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

acknowledge that they are available and will keep abreast of their further development. If circumstances change or advances in the above technologies occur, the County will reassess these opportunities during the next planning period.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #12.1 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #12.1 can be found in Appendix E.

5.13.9. Landfill Contingency Plan

Since the opening of the Chautauqua County Landfill, the County-owned transfer stations transport waste to the in-County Landfill for disposal. Privately-owned transfer stations are required to transport waste to the in-County Landfill for disposal in accordance with the flow control law (LL-2-20, 2020). While the prominent focus of this Plan is overall waste reduction and local recycling/reuse and composting programs, the planning unit will still require a local, dependable facility for the disposal of all non-recyclable and non-hazardous waste.

In the first few years of the planning period the County plans to develop a contingency plan for use in the event of closure of the Chautauqua County Landfill. Bi-annually, the County will evaluate alternate disposal opportunities for waste within the Planning Unit should the Chautauqua County Landfill reach or approach permitted capacity and update the Contingency Plan accordingly.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategy #12.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategy #12.2 can be found in Appendix E.

5.14. Review County Local Solid Waste Management and Recycling Laws

The following legislative acts by the Chautauqua 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;
- Amendment to provide legislation for the disposal and recycling of renewable energy systems (photovoltaic cells, wind turbines, etc.) that are within the County.

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

With the fast rise in the use of solar panels across our region, on both a Utility Energy and Residential scale, Chautauqua County will only accept solar panels and photovoltaic cells (PV's) that have zero recyclable value. Most panels and PV's contain recyclable aluminum, glass, plastic, and valuable materials such as earth metals. The County will consider adding legislation to provide the groundwork for the properdisposal and recycling of photovoltaic cells and solar panels.

The Administrative/Technical Impacts, Jurisdictional Impacts, and Selected Alternatives Identification of program strategies #13.1 and #13.2 can be found in more detail in Appendix D. Specific tasks and a timeline associated with program strategies #13.1 and #13.2 can be found in Appendix E.

6.0 IMPLEMENTATION SCHEDULE

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

7.0 WASTE STREAM PROJECTIONS

Previous sections of this Plan discussed the quantities of waste generated, disposed of, 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

Chautauqua County has experienced a relatively consistent population decrease over the past four decades. U.S. Census data reveals that Chautauqua County's population steadily decreased from 141,895 in 1990 to 134,905 in 2010. In 2020, the population census was 127,891 persons.

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. Chautauqua County's population projections indicate a continued decrease in the County's total population from its present level to 119,116 in 2030. After 2030, Chautauqua County's population projections indicate a decrease in the County's total population to 112,833 in 2040[38]. 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.

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 Chautauqua County as well. Consumers have moved towards a throw-away society where one-time use products are preferred for convenience's 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.

[38] https://pad.human.cornell.edu/profiles/Columbia.pdf

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

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

8.0 PUBLIC PARTICIPATION[39]

A draft of this Local Solid Waste Management Plan was issued for public comment on MONTH DAY, YEAR. The Legislature published a notice for the public meeting in the Post Journal (the official County newspaper), posted it on the County website and sent notifications to the Landfill Commission. A public meeting and overview presentation were held on MONTH DAY, YEAR . Less than NUMBER (0) residents attended the public meeting and no one verbally provided comments during the meeting. Public comments were received through MONTH DAY, YEAR . The NUMBER (0) public comments received and a public comment inventory with responses are included as Appendix H.

[39] This is example language that will be updated with details following the public comment period