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ZERO WASTE 2020: Ulster County Vision Statement and Action Plan

"Shift the way you see or perceive solid waste; Waste is materials and materials are a commodity"

1. Introduction

The 2020 Ulster County Solid Waste Management Plan will adopt policies and develop plans that move community members to eliminate waste. This vision statement and action plan provide County municipalities, businesses and residents a working document that can be used to guide decision making policies and programs toward achieving a zero-waste goal. In addition, it provides the community with an understanding of their role in moving toward zero waste.

Zero waste is defined as the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.[1] It is a systems approach to eliminating the impacts of products and packaging, resource use and reutilization through the implementation of modern materials management and greenhouse gas reduction programs. Impacts are designated as upstream impacts (e.g., pre-consumer, resource extraction and production of goods); and downstream impacts (e.g., post-consumer, end of life, waste management).

2. Ulster County Zero Waste Vision

Changing consumer behavior will lead to waste reduction, and discarded materials should be evaluated and recovered for their highest and best use with a goal of little to no materials sent to landfills, waste-to energy or biomass facility.

[1] https://www.epa.gov/transforming-waste-tool/how-communities-have-defined-zero-waste#:~:text=Zero%20Waste%3A%20The%20conservation%20of,the%20environment%20or%20human%20health.

To achieve this vision, Ulster County will work to:

1. Educate and engage businesses, organizations, public agencies and residents in zero waste

2. Adopt and implement supporting policies and Zero Waste Action Plans.

3. Support legislation and adopt policies that require minimized environmental impacts through improved product design.

4. Ensure that facilities and infrastructure are in place to properly manage all recovered materials.

3. Guiding Principles for Zero Waste

The 6 R's: Refuse, Reduce, Reuse, Repair; Repurpose, Recycle are part of Zero Waste and are explained below: **REFUSE (Consumer Modification) Definition:** Consumer Modification means eliminating or reducing the quantity of waste which is produced in the first place, thus reducing the quantity of waste which must be managed. Prevention is the most desirable waste management option as it eliminates the need for handling, transporting, recycling or disposal of solid waste. It provides the highest level of environmental protection by optimizing the use of resources and by removing a potential source of pollution. Both the EPA Sustainable Materials Management and NYSDEC Beyond Waste endorse waste prevention through diversion and reuse. Although most waste prevention and minimization measures can be applied at all stages in the lifecycle of a product including: the production process, marketing, distribution, or utilization stages (using the entire product up), discarding the product at the end-of life stage, there should be an aggressive public campaign to alter consumption habits.

REFUSE (Consumerism Modification) – Prevention and Minimization Source: All generators of solid waste are included in this category and is the preferred method for sustainable materials management practices by both the EPA and NYSDEC. Prevention can take the form of reducing the quantities of materials used in a process or reducing the quantity of harmful materials which may be contained in a product. Prevention can also include the reuse/diversion of products.

REDUCE Definition – Waste reduction (or prevention) is the preferred approach to waste management because waste that never gets created doesn't have waste management costs. An example of waste reduction is reducing unnecessary packaging from manufactured products and produce.[2]

Reducing waste through public education by addressing consumer practices (less packaging; buying in bulk and buying only what you need), using everything that is

[2] https://www.calrecycle.ca.gov/

purchased (i.e. food, paint, cleaning products) and promoting swaps, exchanges and other methods to reduce material produced. This philosophy would apply to consumers, institutions and businesses.

REUSE Definition: Re-use means the use of a product on more than one occasion, either for the same purpose or for a different purpose, without the need for reprocessing. It is preferable that a product be re-used in the same state i.e., returnable pallets, using an empty glass jar for storing items and using second-hand clothes.

Re-use avoids discarding a material to a waste stream when its initial use has concluded. Reuse is preferable to recycling as the item is reused or repurposed without going through a detailed treatment process thus helping to save on energy and material usage. It is a method of sustainable materials management that can be used by all solid waste generators.

REPAIR Definition: Repair is to fix or mend something that is broken or has a defect. Repairing items will increase their useful life reducing the need to purchase and discard.

REPAIR – Promoting repair of items can stimulate new local business and increase the life of an item while reducing premature disposal. Consumers should focus on durable items that has access to "fix it" parts.

REPURPOSE Definition: To use something for a different purpose to the one for which it was originally intended.

Repurposing offers many opportunities to divert usable materials from the waste stream for use in crafts, clothing, home and garden items, etc. There is an economic benefit saving on raw materials and an environmental benefit in the reduction of usable materials being discarded.

RECYCLE Definition: Recycling involves the treatment or reprocessing of a discarded waste material to make it suitable for subsequent re-use either in a state similar to its original state or reduced to its raw materials and reconstituted. It benefits the environment by reducing the use of virgin materials. It includes recycling of organic wastes but excludes energy recovery.

Recycling is generated by both consumers and manufacturers. Many different materials can be recycled. Materials can either be recycled for use in products similar to their original use (i.e., paper recycling) or can be recycled into a product which is different than the original use (i.e., recycling plastic bottles into fleece jackets or using construction and demolition waste as road aggregate.

COMPOSTING is also considered recycling. Yard waste (brush and yard clippings) has been banned from New York State landfilling for years due to the production of methane gas resulting from decomposition. New York State recently passed legislation to ban food waste by the Year 2023 and Ulster County's ban on food waste in the waste stream will begin on July 1, 2020 for generators of two (2) tons a week or more.

4. Why is Zero Waste Important?

By current national estimates per capita waste generation has increased from 2.7 lbs./person/day in the early 1990s to 5.5 lbs./person/day in Ulster County. Today, this equals 2,000 pounds/year/person. With such vast quantities of waste being produced, it is of vital importance that it is managed in such a way that it harm is mitigated to both human health and to the environment. The waste coming from households, commercial activities, industry, agriculture, construction and demolition projects, and from the generation of energy can be quantified, characterized and consequently managed in such a way that near net zero waste can be achieved.

The zero-waste philosophy is to reduce as much of the solid waste stream as possible with a goal of eliminating the need to landfill or incinerate. Currently, 133,349 tons of waste is transferred to a landfill four and a half hours away, and 3,686 tons of biosolids are landfilled at a site five hours away, adding 13.4 million pounds of C02 emissions to Ulster County's footprint.[3]

Ulster County depends on disposal of MSW at a landfill many miles away that will be closing in the next decade. There are very few available alternate disposal facilities, and the Solid Waste Management Plan prioritizes managing materials within the County . Reducing the waste stream as much as possible will reduce the size of a disposal facility and its environmental and economic impact.

UCRRA Waste Stream Totals

Material	Total (tons)	Percent of waste stream
MSW	101,379	66.45%
C&D*	31,970	20.96%
Biosolids	3,686	2.42%
Single Stream*	6,423	4.21%
Old corrugated cardboard*	1,553	1.02%
Food Waste*	3,537	2.32%
Mixed News*	1,051	0.69%
Wood Chips*	1,169	0.77%
Commingled*	526	0.34%
Brush*	459	0.30%
E-Waste*	304	0.20%
Glass*	496	0.33%

[3] 137,035 tons of waste at 32 tons per trailer load at 108 gallons of diesel per load at 29 pounds of C02 per gallon

Total	152,553	100.00%

*Volumes not representative of entire Ulster County waste stream

Estimated County Waste Stream Totals

Material	**Total (tons)**	**Process**
MSW	11,000	Transfer
C&D	1000	
Biosolids	0	
RECYCLED/DIVERTED		
C&D	7,000	Diversion and Processing
Biosolids	3686	Permitted Compost Facility
Pomace	3,000	Composted on site of generation or facility
Renderings/Oil	3,000	Reclaimed as biosolid
Single Stream	12,000	Hauler transfer to out of County facilities
Old corrugated cardboard	10,000	MRDC and commercial haulers: Marketed for recycling
Food Waste	60,000	Composted on site or local facilities
Mixed News	8,000	MRDC and commercial haulers: Marketed for recycling
Commingled	20,000	MRDC and commercial haulers; diverted to out of county facilities
Brush/Wood Chips	80,000	Processed at MRDC and roadside
E-Waste	500	Recycled (MRDC and box stores)
Glass	1,500	Recycled (mainly picked up at redemption center
Total	220,686	

It is widely acknowledged that our current way of life is unsustainable in many ways including the pace at which we are consuming our natural resources and the environmental impacts associated with the ongoing pollution of our water, air, and land. Zero waste programs and policies address these issues by educating the consumer on waste reduction through purchasing and diverting, identifying inefficiencies in the use of materials and striving to eliminate them. In doing so, zero waste programs lead us to a more sustainable future.

More specifically, as addressing the issue of climate change has become the focal point for sustainability among most of the governmental agencies in Ulster County, it is essential to recognize the significant way that achieving Zero Waste will reduce greenhouse gas (GHG) emissions. GHG emissions from materials consumption fall into two broad categories:

(1) methane generated as organics decompose in a landfill,

(2) emissions produced in the extraction of resources, the use of energy in the production of goods and services and transportation of goods; and

(3) emissions produced in transporting waste to disposal or processing.

In the recent Drawdown program[4], solid waste has been recognized as the third highest contributor to gareenhouse emissions. A 2009 study by the U.S. EPA, Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices, highlights that 44% of all GHG emissions are related to the extraction of resources and the use of energy in the production of goods and services. Reusing those resources and production of goods, especially those that are not made locally, eliminates the need to extract additional resources and the resulting GHGs and also reduces GHG emissions from disposal in landfills. Reducing the volumes of solid waste that need to be landfilled has no negative impact.

To reach zero waste objectives, an iterative process of reducing the use of products that remain in the waste stream in the largest quantities or that add the most toxicity would effectively reduce the waste stream while moving towards zero waste.

DETAILED ZERO WASTE PLAN

ACTION PLAN:

- Aggressive zero waste plan to reduce MSW by 80-90% by 2030 based on

    - o improved/expand access to recycling markets,
    - o consumer education on purchasing in bulk, without packaging, and/or exchange
    - o expanding repair cafes and nurturing repair type businesses
    - o expanding reuse centers and encouraging shopping at second hand stores
    - o encouraging legislation for regulating recycling content in geomaterials such as concrete, blacktop etc.
    - o major education campaign with participation from businesses to reduce waste
    - o create a “feedstock” exchange for packaging material such as packaging pillows, peanuts, etc.
    - o legislation banning all plastic foam
    - o promoting the economics of waste diversion

- Create a Zero Waste Demonstration

[4] https://drawdown.org/

This is a pilot program that will demonstrate a Zero Waste System to assist in determining costs, barriers to participation, and methods to handle specific waste streams, markets.

STEPS FOR SETTING UP A ZERO WASTE DEMONSTRATION:

•Select a demonstration community
•Audit the demonstration community to establish a base line for the waste characterization
•Develop a Zero Waste Plan for the selected community
•Establish a demonstration time frame (beginning and ending dates)
•Develop a budget
•Determine funding
•Prepare conclusions and recommendations

- Encourage the vision of a County "Resource Recovery Park" designed to handle every category in the Zero Waste Implementation Plan--and capable of radically diverting waste from landfill disposal which will create green jobs.

- Increase The Green Business Challenge Goal from 100 Ulster County businesses, organizations, or municipalities to ALL Ulster County businesses, organizations or municipalities. (See Attachments for full Green Business Challenge Program)
  Support and acquire funding for the County's Green Jobs Program in partnership with organizations like SUNY Ulster, Ulster BOCES, and local businesses to train residents with the skills to get jobs in alternative energy production

5. Solid Waste Stream

A. Municipal Solid Waste

Solid waste is comprised of several different material streams and includes MSW, construction and demolition debris (C&D), industrial waste and biosolids. Although all these waste streams are managed in the state, the focus of NYSDEC's 2010 Plan titled "Beyond Waste; A Sustainable Materials Management Strategy for New York State" and this LSWMP are the materials categorized as MSW, C&D, biosolids, and industrial waste, as discussed below and in subsequent sections.

The Ulster County Resource Recovery Agency's transfer stations do not accept Industrial Waste; however, Industrial Waste has been included within this Plan to quantify and address this material produced with the County.

5.1 Municipal Solid Waste (MSW)

MSW is comprised of materials generated by the residential, commercial, and institutional sectors that are either discarded or recycled. According to New York State Codes, Rules, and Regulations (NYCRR) Part 360, MSW is defined as residential waste, commercial waste, or institutional waste, or any component or combination thereof, excluding construction and demolition debris and biosolids unless they are commingled. NYCRR Part 360 describes recycling as the series of activities by which materials are collected, sorted, processed, and converted into raw materials or used in the production of new products, or, in the case of organic materials, use productively for soil improvement. NYSDEC estimates that 54 percent of the MSW generated statewide is residential and 46 percent is commercial/institutional. This ratio is important to the planning efforts since the materials generated by each are typically different. In general, the commercial/ institutional sector generates a higher percentage of food scraps and corrugated cardboard than the residential sector. In addition, the population density of a community (urban, suburban, or rural) can have an impact on the composition of the waste stream, particularly the organic content. The components of MSW are listed below along with estimated generation and disposal percentages reported in the NYSDEC's Beyond Waste Plan (disposal represents non-recycled material).

5.2 Recyclables

Recyclables can be managed by either dual stream or single stream methods. Single stream recycling is the combination of all recyclable products (paper, cardboard, plastics, glass, and metal) into one container by the resident or commercial business, which is then picked up by a truck and dumped in one pile at a processing facility. Dual stream recycling is separation of the two main recyclable product streams (paper and cardboard as one and plastics, glass and metal as the other) by the resident or commercial business.

Recycling materials deposited in and shipped from the transfer stations are brought arrive at the UCRRA source separated by material and are recorded on each load to help quantify the tonnages being handled. This data is tracked year to year to help set tipping fees and to help understand recycling trends. Collected data is submitted to NYSDEC annually. The Agency implemented the ability to accept for transfer single stream materials in 2010. However, UCRRA's Materials Recovery Facility (MRF) was not set up for on-site processing of single stream loads, , single stream operations ceased in early 2019 after a substantial drop in available markets due to the high levels of contamination. As a result, only the dual stream recycling method is currently utilized by UCRRA. Haulers can bring dual stream loads of recyclables to the Ulster MRF which are then processed and transferred to vendors for recycling. Dual stream recyclables can be dropped off by residents at the local MRDCs. If the recyclables are dropped off at the local MRDC, they will be transported to the MRF in separate containers, dumped in their own respective piles, and then finally transferred to an end recycling facility for proper disposal.

The UCRRA website provides full details on how to properly recycle and what materials are accepted in the recycling stream. Private or public haulers must also pick up recyclable materials curbside, if residents do not bring the recyclables themselves to a MRDC per

local Law No. 4 of 2010. These materials do not have to be transferred to the UCRRA MRF since the County's flow control legislation does not apply to recyclables. However, it is the responsibility of the generator to ensure the recyclable materials are brought to an appropriate recycling or recovery facility. The City of Kingston provides curbside pickup for MSW, recyclables, and yard waste for the residents that live within the service area, and both the Towns of Kingston, New Paltz and the Village of New Paltz contract with a single hauler for curbside pickup.

Regulated recyclable materials initially established under County local law shall, as defined in Section 4 of the County Source Separation Law, include the following: newspaper, color-separated glass bottles and jars, metal cans, plastics bottles and jugs, corrugated cardboard, office paper, and computer paper.

• Paper – (newspaper, corrugated cardboard, other recyclable paper, and other compostable paper) comprises approximately 33 percent of the MSW generated in NYS and approximately 28 percent of the MSW sent for disposal.

· Glass - (glass food and beverage containers) makes up approximately 4 percent of the materials generated and approximately 3 percent disposed of in NYS.

• Plastics – (plastic bottles, rigid containers, and film plastics) make up more than 13 percent of the MSW generated, and nearly 17 percent of the MSW disposed of in NYS.

• Metals – (steel and aluminum cans, aluminum foil, appliances, and municipally generated scrap metal) make up nearly 7 percent of the waste stream in NYS and approximately 6 percent of MSW disposed in NYS.

• Organics (food scraps) – (uneaten food and food preparation materials from residences, commercial establishments, and institutions) represent nearly 18 percent of the MSW generated every year in NYS.

• Yard Waste – (leaves, grass clippings and garden debris) makes up, on average, approximately 5 percent [urban – 3%, suburban – 10%, rural – 2%] of the MSW stream and combined with food scraps represent almost 30 percent of the materials discarded.

• Textiles – (clothing, towels, sheets, and draperies) make up approximately 5 percent of the materials stream.

• Wood – (generated by small scale or do-it-yourself projects) is nearly 3 percent of the MSW generated in NYS.

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

ACTION PLAN

- Encourage waste reduction through consumer education on buying in bulk and reduced packaging, using reusable items instead of disposable and purchasing items in quantities that will be completely used
- Education campaign promoting proper recycling and all available local resources for materials diversion
- Pass local and/or state legislation requiring a certain content of recycling (i.e. crushed glass to asphalt or concrete)
- Pass local legislation to reduce packaging (focusing on materials that cannot be diverted or recycled such as hinged plastics)
- Update County purchasing and green procurement policy
- Update County source separation and recycling law including enforcement
- Actively support the Green Jobs Program in partnership with organizations like SUNY Ulster, Ulster BOCES, and local businesses to train residents with the skills to get jobs in alternative energy production

5.3 MRF (Materials Recovery Facility for recyclable material)

The County's flow control legislation does not apply to recyclables. (See Local Law No. 10 of 2012). However, a program has been established within Ulster County for the mandatory source separation of regulated recyclable materials from the solid waste stream. The Ulster County Source Separation and Recycling Law of 1991[5] requires the generator to ensure that recyclable materials are brought to an appropriate recycling or recovery facility and that each solid waste facility in Ulster County provides adequate containers for separated recycling. All persons shall separate regulated recyclable materials from solid waste before either setting out solid waste for collection pursuant to lawful procedure or disposing of it in an authorized solid waste management facility.

ACTION PLAN

- Update 2002 MRF with state-of-the-art separating and processing systems

- Improve MRF to process recyclables for market (i.e. glass crusher/washer to NYSDOT specifications for roadway use and/or additives to concrete or blacktopping, pelletizing plastic by color and type, etc.)

[5] https://ulstercountyny.gov/sites/default/files/documents/ILL%20No.%2012%20of%202007.pdf

UCRRA WASTE STREAM TOTALS (Table from 2020 Solid Waste Management Plan)

Material	Total (tons)	Percent of waste stream
MSW	101,379	66.45%
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Biosolids	3,686	2.42%
Single Stream*	6,423	4.21%
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Wood chips	1,169	0.77%
Commingled	526	.34%
Brush	459	.30%
E-Waste	304	.20%
Glass	496	.33%
Total	152,553	100.00%

* No longer being accepted by the UCRRA as of March 2019

5.4 Scrap Metal

Scrap metal has long been separated from the waste stream through a financial incentive to take it to scrap yards. Generally, all types of metal are accepted, and, depending on market value, the user will receive compensation by weight for what was delivered. Since, 2012, the market value of scrap has plummeted offering only pennies a pound for light tin with requirements of dropping a minimum of 100-200 pounds before being compensating. There are several options to separate scrap metal for recycling:

TABLE 2

FERROUS

Light Iron (Tin)

Light Iron can include materials such as thin sheet metal, metal shelving, metal cabinets, water heaters, pots and other thin, magnetic, metal products.

Steel

There are many forms of steel. From HMS (Heavy Melting Steel) to Cast Iron (such as furnaces or old heaters) wrought Iron and I-beams. Material cut to appropriate lengths is considered 'prepared', while longer lengths are unprepared.

NON-FERROUS

Aluminum

Siding, gutters, sheet, signs, and rims are a few examples.

Brass
Fittings, valves, hinges and other assorted fixtures.
Copper
All manner of copper pipe and tubing, gutters and flashing.
Stainless Steel
Sinks, shelving and racks.
Wire
All forms of copper wire, including extension cords, appliance cords and computer cable.

OTHER COMMODITIES

Appliances
Small appliances,
Electric Tools
Powered tools such as drills, saws, grinders, sanders; any tool with an electric motor.
Junk Cars / Trucks
Cars and trucks for scrap. Complete cars should have all parts intact (including motors, tires, batteries,
Gas Powered Equipment
Lawn Mowers, Snow blowers, landscaping equipment, weed whackers, etc.
Oil Tanks / Drums
Oil tanks and drums prepared by cutting the tanks and free of oil or fuel.

Metals can be brought to either municipal transfer stations through mixed loads or solely bulk metal, or to a local NYSDEC registered scrap metal drop off location.

Table 3

NAME	LOCATION	TOWN	CONTACT
City of Kingston	69 Albert St	Kingston	845-331-5787
Denning	1444 Denning Road	Claryville	(845) 985-2543
Esopus	70 West Shore	Esopus	(845) 384-6835
Gardiner	131 Steve's Lane	Gardiner	(845) 255-9675
Hardenburgh	192 Alder Creek Rd	Hardenburgh	(845) 439-3681
Hurley	1043 Dug Hill Road	Hurley	(845) 338-5412
Lloyd	106 Lily Lake Road	Highland	(845) 220-8123
Marlborough	20 Baileys Gap Rd	Milton	(845) 795-2314
Marbletown	135 Canal Road	High Falls	(845) 687-9198
New Paltz	3 Clearwater Rd	New Paltz	(845) 255-8456
Olive	580 Beaverkill Road	Oliverbridge	(845) 657-8177
Plattekill	41 Venuto Road	Modena	(845) 883-6064
Rochester	100 Airport Road	Accord	(845) 626-5273
Rosendale	Whiteport Road	Rosendale	(845) 338-0113
Saugerties	1765 Route 212	Saugerties	(845) 679-0514
Shandaken	7209 Route 28	Shandaken	(845) 688-5004
Shawangunk	267 River Road	Wallkill	(845) 895-2894
Ulster	900 Miron Lane	Kingston	(845) 336-0311
Wawarsing	209 Landfill Road	Wawarsing	(845) 647-3410
West Kingston Recycling	642 Abeel Street	Kingston	(845) 331-3312

A. Messina Recycling	19 Orchard Drive	Gardiner	(845) 883-6543
Canos Recycling	1083 Kings Highway	Saugerties	(845) 331-7600
Doug Tyler & Son	66 Tyler Lane	Cottekill	(845) 849-5909

ACTION PLAN

- Encourage consumer purchasing in metal containers to save valuable raw materials due to its energy efficient recycling costs and durability. The amount of energy that is saved using recycled metals compared to raw metals is:

  - 92% for aluminum
  - 90% for copper
  - 56% for steel

- Promote use of metal/aluminum reusable containers for beverages and food

- Educate public and provide locations for metal recycling

5.5 Tires

Car tires, as well as light and medium truck tires, are accepted at the Transfer Stations. Vehicular tires are occasionally brought into the facility through mixed loads. The tires are taken out of the waste stream and sent for disposal at NYSDEC registered recycling facilities.

Because tires are highly durable and non-biodegradable, they can consume valued space in landfills. In 1990, after tires were banned from landfilling, it was estimated that over 1 billion scrap tires were in stockpiles in the United States. As of 2015, only 67 million tires remain in stockpiles. From 1994 to 2010, the European Union increased the number of tires recycled from 25% of annual discards to nearly 95%, with roughly half of the end-of-life tires used for energy, mostly in cement manufacturing.

Tire recycling, or **rubber recycling**, is the process of recycling waste tires that are no longer suitable for use on vehicles due to wear or irreparable damage. These tires are a challenging source of waste, due to the large volume produced, the durability of the tires, and the components in the tire that are ecologically problematic.[6] Waste tires pose a fire hazard, cause ecological damage to sensitive estuary habitats, and harbor vectors that carry disease..

The downstream impacts of these waste streams are particularly pronounced within the Hudson Estuary and Wallkill River. Each type of waste presents unique challenges and hazards to the environment and the communities affected. A 2009 study funded by

[6] Wikipedia

CalRecycle studied the extent and locations of waste tires, solid waste, and sedimentation. A 2014 U.S. EPA study found embedded chemical pollutants in both plastics and sediments. The 2009 survey revealed extensive amounts of sediment containing an estimated 3,500 tons embedded trash including waste tires and beverage containers. The conditions that produced these results have been only fractionally remediated to date due to lack of funding.

A strong waste tire rubber commodity market is a national concern since the goal is to keep this material out of landfills and the environment. Building a strong commodity market for reuse can create a demand for waste tires, thereby minimizing illegal dumping and use as tire derived fuels.

Tire-derived fuel (TDF) is composed of shredded scrap tires. Tires may be mixed with coal or other fuels, such as wood or chemical wastes, to be burned in concrete kilns, power plants, or paper mills. An EPA test program concluded that, with the exception of zinc emissions, potential emissions from TDF are not expected to be very much different from other conventional fossil fuels, as long as combustion occurs in a well-designed, well-operated and well-maintained combustion device. (NOTE: Ulster County historically has been opposed to any type of incineration/WTE)

Tires are a difficult component of the waste stream to "recycle". Over 242 million scrap tires are generated each year in the United States. In addition, about 2 billion waste tires have accumulated in stockpiles or uncontrolled tire dumps across the country. Millions more are scattered in ravines, deserts, woods, and empty lots. Scrap tires provide breeding sites for mosquitoes which can spread diseases and large tire piles often constitute fire hazards. Most tire and solid waste professionals agree that a tire problem exists. Whole tires are banned from most landfills and the potential for tire dump fires increase the longer the tires remain on the ground. Fires in tire dumps have burned for months, creating acrid smoke and leaving behind a hazardous oily residue. A few tire fire locations have become Superfund sites.

Tires should be utilized to minimize environmental impact and maximize conservation of natural resources. This means reuse or retreading first, followed by reuse of the rubber to make rubber products or paving, and then combustion and disposal. At present, the preferred uses do not accommodate all the tires, and disposal must be utilized to a large degree. Over the past 20 years the average tipping fees for disposing of tires have continually increased.[7]

There are several permitted tire recycling companies that service collection sites in the Hudson Valley/Catskill area that handle and/or process tires.

1. Unity Tire in Saugerties, NY offers recycled rubber (both pre- and post- consumer waste), at their in-house recycling facility and patented manufacturing process produces finished products that play an important role in promoting a cleaner and healthier world by re-using this waste material that once went into landfills.

[7] https://archive.epa.gov/epawaste/conserve/materials/tires/web/pdf/tires.pdf

2. Casings on Maple Avenue in Catskill offer used passenger or truck tires for export and recapping, and process for use as a tire derived fuel.

3. Don Stevens Tire Southington Connecticut also offers used passenger or truck tires for sale and processes unusable tires.

There are goals that can be set to reduce tire disposal (1700 tons collected annual by EPA standards; 1167 tons as reported by UCRRA 2019 actuals).

ACTION PLAN

- Encourage use of public transportation to reduce wear and tear on tires and support Ulster County's Climate Smart goals
- Encourage the use of non-motorized transportation on Ulster County's expanding pedestrian/bike paths
- Encourage municipal building departments to consider use of tires for "Earthship" type structures, retaining walls and outdoor landscaping

- Nurture businesses who resell usable tires and/or recapped tires

- Bring in manufacturers who use tires as a "raw" material to make new products such as mats, playground material or car accessories

5.6 Textiles

A **textile** is a flexible material consisting of a network of natural or artificial fibers (yarn or thread). Yarn is produced by spinning raw fibers of wool, flax, cotton, hemp, or other materials to produce long strands. **Textiles** are formed by weaving, knitting, crocheting, knotting, tatting, felting, or braiding.[8] Textiles in MSW Include used and discarded clothing from residents.

In 2014, over 16 million **tons** of **textile** waste was generated, according to the Environmental Protection Agency. Nearly 100 percent of **textiles** and clothing are recyclable. It is estimated that 95% of all used clothing, footwear and other cloth household products such as sheets, towels, curtains, and pillowcases can be recycled.

Even if items are torn… stained… are missing buttons… have broken zippers, etc., they can still be recycled. As long as the items are dry and oil/grease and odor-free (not stained with solvents such as gasoline) they can be recycled.

Recyclable textiles include:

Clothing: Shirts, pants, jackets, suits, hats, belts, ties, gloves, scarves, socks (even single ones) undergarments, handbags and backpacks.

Footwear: Shoes, sandals, sneakers, cleats, boots, flip-flops, and slippers

Household textiles: Curtains, drapes, sheets, blankets, comforters, towels, table linens, throw rugs, pillows, stuffed dolls and animals.[9]

There are collection boxes at local County transfer stations and MRDCs as well as non-profit agency sponsored clothing drop boxes located throughout the County for public use. In 2015, the Ulster County Controllers office did an audit of donations boxes as part of an investigation into claims by companies that they were not-for-profit or donating all proceeds. Although that didn't impact recycling or sales of donated textiles, the audit did lead to new signage that disclosed the status of the organization, where proceeds were going and the destination of the material.

According the EPA, only about 15% of textiles are recycled/reused. Textile manufacturers are among the top contributors to CO2 emissions. To reduce emissions caused by this waste stream, end users can initiate several diversion methods.

[8] https://en.wikipedia.org/wiki/Textile
[9] https://www.dec.ny.gov/chemical/100141.html

ACTION PLAN

- Textile/Clothing Swap-exchange wearable clothing and accessories for a "new wardrobe"
- Create a two-bin system for textiles (ready to wear, fiber for recycling)
- Clothing/Coat Drive-to donate wearable clothing and accessories to local shelters
- Participate in Repair Cafés and/or other venues to learn how to repair ripped/worn clothing and accessories rather than discarding them
- Create a pilot composting program for cotton containing textiles
- Create or participate in a cotton textile reuse program i.e. insulation
- Reuse/repurpose fabrics to create other items such as braided rugs, reusable bags, wall hangings, clothing, etc.

5.7 Organics: FOOD

Food waste is a matter intrinsically linked with the growing challenges of food security, resource and environmental sustainability, and climate change. According to the U.S. Environmental Protection Agency, food scraps and yard waste together currently make up about 30 percent of what we throw away. The proposed composting law requires regulated entities to prioritize their diversion practices based on a clearly delineated hierarchy. A significant amount of waste in our landfills should have been composted leaving critical landfill space open for material that cannot be recycled or composted. Benefits of composting include creation of nutrient rich soil for agriculture and landscaping uses, increased tilth and the ability of soil to retain water and to store greenhouse gases, and reduced erosion. The Ulster County Legislature believes that banning disposal of food by large food waste generators aligns with Ulster County's sustainability initiatives and vision, and passed Local Law 1 of 2020 to require such generators to divert food waste from the MSW stream. Such dDiversion of food waste from disposal to programs for the purpose of providing nourishment to the food insecure, programs to supplement local farms with animal feed, composting to improve soil quality, and/or conversion to energy is key to a sustainable Ulster County and further reduction of its carbon footprint.

The following hierarchy represents Ulster County's policy for prioritizing the reduction, reuse and recycling of food scraps. The hierarchy shall be used in the County's education and outreach programs, and all food scraps generators are encouraged to manage food scraps accordingly.

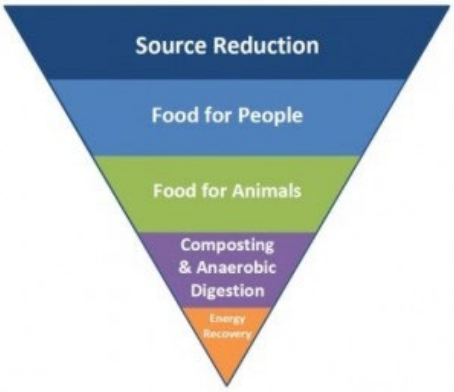
1.The first tier of the hierarchy is source reduction (modifying consumerism), reducing the volume of surplus food generated. Food scraps generators may follow federal, state or county guidelines or use other methods to reduce spoilage, monitor waste and make other adjustments to reduce food waste and save money.

2. The second tier is recovery, feeding wholesome food to hungry people. Facilities with excess edible food should distribute excess foods for the purpose of providing

nourishment to the food insecure through the local network of pantries and soup kitchens and other food-reuse programs following New York State Sanitary Code Part 14 and Ulster County Sanitary Code Article II. Donations of food are covered under the Bill Emerson Good Samaritan Act of 1996.

3. Third is repurposing, feeding animals. Federal, state and municipal governments and entities regulate the use of food scraps in animal feed by setting requirements which govern the type of animals that may be fed food scraps and the kind of food scraps that may be fed to animals. When done responsibly and in conformity with applicable regulations, feeding food scraps to animals has many economic and environmental benefits.

4. Fourth is recycling, processing any leftover food such as by composting or anaerobic digestion to create a nutrient-rich soil amendment. The material that is left over from anaerobic digestion must be either composted or land applied. For the purpose of this law, pulverizers and other sink disposal systems are not acceptable alternatives for composting.[10]



Food scraps generated in Ulster County[11] 42,705 tons annually.

a) Food Recovery (Viable food still fit for human consumption)

There has been a strong movement in the mid-Hudson Valley to sustain food pantries by increasing donations and reducing the cost and volume of food being landfilled or composted. A local not for profit "The Food Insecurity Collaborative" was formed with three organizations (Family of Woodstock, Rondout Valley Growers Association and Ulstercorp) with the intent of coordinating volunteers with farms that would glean/donate

[10] https://ulstercountyny.gov/sites/default/files/Proposed%20Local%20Law%20No.%205%20of%202019%20-%20Composting%20By%20Large%20Generators.pdf
[11] https://ulstercountyny.gov/sites/default/files/Proposed%20Local%20Law%20No.%205%20of%202019%20-%20Composting%20By%20Large%20Generators.pdf

fresh produce to be delivered to a food hub for distribution to local food pantries. In 2019, more than 68,000 pounds of produce for distribution to thirty-two pantries.[12]

The Town of New Paltz is one of five distribution hubs where more than six (6) pantries come out weekly to pick up fresh and processed produce. In 2017, New Paltz initiated a Food Recovery Program to remove food fit for human consumption from the waste stream program which began with donations from four local businesses including Sodexo SUNY New Paltz[13] and a summer camp before building a refrigerated shed to store produce until pantries could pick up. The concept expands storage space for the pantries so they don't have spoilage and end up throwing out food. Fresh produce comes in ten months a year from a local volunteer organization that does gleaning and food processing in a certified kitchen. They work with the Food Insecurity Collaborative and Hudson Valley Farm Hub.[14]

Annually over fifteen tons of food is distributed to sixteen food pantries from the New Paltz Hub alone. Much of the food collected is from the Ulstercorp gleaning program and a local big box store.

ACTION PLAN

[12] https://hvfarmhub.org/gleaning-and-giving/
[13] https://sites.newpaltz.edu/news/2018/12/new-paltz-food-recovery-program-wins-state-award-for-recycling-leadership/
[14] https://hvfarmhub.org/

- Educate the public about smart purchasing and reducing food waste

- Expand food hub to increase storage and reduce travel time

- Incentivize participating businesses by recognizing green business practices

- Adopting well known practices such as “Eat Me First” boxes and “Smart Shopping”

b) Food Recovery (Food fit for animal feed)

Feeding Animals is the third tier of EPA's Food Recovery Hierarchy. Farmers have been doing this for centuries. With proper and safe handling, anyone can donate food scraps to animals. Food scraps for animals can save farmers and companies money. It is often cheaper to feed animals food scraps rather than having them hauled to a landfill. There are many opportunities to feed animals, help the environment and reduce costs.[15]

There are several farms in Ulster County including Briar Creek and Litts Farms that pickup leftover food from processing facilities, local restaurants and big box stores to supplement or replace animal feed. A local snack franchise stated that “this green business stuff really pays off” (meaning after marketing their cardboard and donating outdated snacks as animal feed, there was an instant operating savings) after being connected with a local farm who said “chickens and pigs love snack chips!”. In one year, a farm diverted nearly seventy tons of food to feed his animals saving $900 ton in commercial feed purchases.

ACTION PLAN

- Create a list of local farms willing to accept clean source separated food waste from local restaurants and retail businesses
- Educate farms and retail on proper handling of food waste suitable for animal feed
- Incentivize a food recovery program by recognizing green business practices of those who participate

Diversion of Food Waste from the solid waste stream:

Out of the annual 42,705 tonnage, 25% 10,000 tons is recoverable to supplement food pantries, 11,000 tons is suitable to supplement animal feed and the rest can be composted at a registered facility that does source separated food waste. Backyard composting of fruit and vegetable scraps can be done by the homeowner or generator on their property. Vegetables and fruits will break down as quickly as commercial composting of meats and dairy but they don’t need to achieve the high temperatures to kill off pathogens. As a Climate Smart Community Ulster County Shall Calculate Green House

[15] https://www.epa.gov/sustainable-management-food/reduce-wasted-food-feeding-animals

Gases (GHG) utilizing the EPA WARM Model to access positive/negative effects on Climate Change.

c) Composting

Composting is the aerobic, thermophilic decomposition of organic waste to produce a stable, humus-like material. Compost is a valuable amendment that restores soil by building health and structure to improve water retention and plant vitality.

ACTION PLAN

- Audit of food waste to create baseline and quantify with a goal of 50% diversion

- Create a demonstration site/program to create a model program and design for other expanded programs

- Expand an education program on proper handling and components that go into the compost bin

- Pass local laws/policies to improve composting and access to facilities (Large generators will be required to divert food scraps down to ½ ton per week by January 1, 2024)

- Provide public information on consumer habits including steps to guide smart shopping and bulk purchases techniques along with non-invasive household lifestyle changes such as creating menus and an "Eat Me First" spot in the refrigerator will develop long term changes to reduce food waste.

- Implement Community based learning on backyard composting

- Collection frequency re-evaluated

- Evaluated creation districts and/or incorporate municipal transfer station programs, private collection, educate generators to compost on site

- Increase public understanding of sustainability by providing information and encouraging individuals to cooperate in protecting environmental quality and reducing carbon emissions through education and creation of clear guidelines/locations for food donations and composting.

- Encourage haulers to offer residents and businesses a three-bin blue, red & green carts for more extensively, eliminating recyclables and organics from the trash collection system.

5.8 Organics: Yard Waste, Clean Wood

Yard Waste

Yard waste is grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs that comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. In Ulster County, yard waste is prohibited from being mixed with MSW and C&D per the UCRRA's NYSDEC transfer station permit.

ACTION PLAN (yard waste)

Clean Wood

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Action Plan

- Educate generators to source separate clean, unadulterated lumber from other material for grinding into chips

5.9 (a) Waste Oil

Waste oil is defined as any petroleum-based or synthetic oil that, through contamination, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties.[16] Approximately 104,000 gallons of oil is generated annually in Ulster County.

Waste oil can be disposed of in different ways, including sending the used oil off-site (some facilities are permitted to handle the used oil such as your local garages and local waste disposal facilities), burning used oil as a fuel (some used oil is not regulated by burner standards, but others that are off-specification used oil can only be burned in either industrial furnaces, certain boilers, and permitted hazardous waste incinerators), and marketing the used oil (claims are made that the used oil is to be burned for energy

[16] https://en.wikipedia.org/wiki/Waste_oil

recovery, it is then shipped to a used oil burner who burns the used oil in an approved industrial furnace or boiler).

Storage and handling of waste oil

For on-site burning of used oil, the oil must be stored in tanks or containers, above or underground. The containers must be in good condition with no leaks, the tanks/containers must be labeled with the words "used oil", and there must be a spill prevention plan (or a control and countermeasures plan).

Storage Containers must have a valid NYSDEC Bulk Storage permit and have sufficient spill containment to prevent leaks/catastrophic failure of the tanks from contaminating surrounding soil.

Used Oil Management

The State's used oil regulations are located in Subpart 6 NYCRR 374-2: *Standards for the Management of Used Oil* and are based largely upon the RCRA-based federal used oil regulations in 40 CFR 279 . Federally based management standards are provided in subpart 374-2 for used oil generators, transporters and transfer facilities, processors and re-refiners, and for facilities that burn used oil for energy recovery. This Subpart also provides standards for marketing used oil as a fuel, standards for used oil disposal, and the ECL-based requirements concerning acceptance of DIY used oil by service establishments and retailers. Section 374-2.10, in conjunction with Part 360 , provides permitting requirements for used oil transfer facilities, processors and re-refiners, and registration requirements for used oil collection centers.[17]

Waste oil furnaces and boilers

Waste oil furnace is a type of furnace used for heating purposes and is fueled by used oil that is free of hazardous contaminants, as described by the EPA. Waste-oil-fueled boilers can be used for various industrial purposes as well as heating. To implement a waste oil reuse program for furnaces and boiler, the oil coming in must be monitored to ensure there is no debris or contaminants such as water and gasoline. Generally, waste oil burning units are in larger automotive service stations where they can ensure quality.

ACTION PLAN

- Educate the public on proper disposal of waste oil including locations
- Promote alternative means for waste oil reuse
- Research and promote alternatives for waste oil (i.e. refined for reuse)

[17] https://www.dec.ny.gov/chemical/8786.html

5.10 (b) Vegetable oil

Used cooking oil ("UCO") is generally a by-product of running a restaurant or other food service and is governed by multiple agencies depending on location including health department, sewer districts, state environmental agencies, etc.

Vegetable oils, or **vegetable fats**, are oils extracted from seeds, or less often, from other parts of fruits. Like animal fats, vegetable fats are *mixtures* of triglycerides. Soybean oil, rapeseed oil, and cocoa butter are examples of fats from seeds. In common usage, vegetable *oil* may refer exclusively to vegetable fats which are liquid at room temperature.

Opportunities for businesses and consumers to recycle used cooking oil ("yellow grease") has increased. Used cooking oil can be refined into different types of biofuels used for power generation and heating. A significant benefit is that biofuels derived from recycled cooking oil typically burn clean, have a low carbon content and do not produce carbon monoxide. This helps communities to reduce their carbon footprints. The recycling of cooking oil also provides a form of revenue for restaurants, which are sometimes compensated by cooking oil recyclers for their used deep fryer oil. Cooking oil recycling also results in less used oil being disposed of in drains, which can clog sewage lines due to the build-up of fats and has to be collected there as "brown grease" by grease traps.

Vegetable oil refining is a process to transform vegetable oil into fuel by hydrocracking or hydrogenation. These methods can be used for production of gasoline, diesel, and propane. The diesel fuel that is produced has various names including green diesel or renewable diesel.[18]

In the past, waste oils were collected by pig farmers as part of food waste for pig swill bins. The grease was skimmed off the swill tanks and sold for further processing, while the remaining swill was processed into pig food.

An average of 35 gallons of oil is used daily in a restaurant.

ACTION PLAN

- Promote local businesses that use or make biofuel from used vegetable oil through local business organizations (i.e. chambers, business alliance, Ulster County Green Business, etc.)
- Encourage residents to convert their vehicles with diesel engines to use vegetable oil as a fuel
- Create list of local farms that may reuse oil in farm equipment or use as a feed for livestock

[18] https://en.wikipedia.org/wiki/Vegetable_oil

3.11 Refrigerants

Refrigerant is a compound typically found in either a fluid or gaseous state. It readily absorbs heat from the environment and can provide refrigeration or air conditioning when combined with other components such as compressors and evaporators. The R22 refrigerant is being phased out in favor of R410A refrigerant.

Most refrigerants are known for having a negative effect on the environment since they contribute to global warming and ozone layer depletion.

Four hundred metric tons of cooling water is used per ton of refrigerant produced. Substantial emissions reductions could be achieved through the adoption of practices to (1) avoid leaks from refrigerants and (2) destroy refrigerants at end of life, both after the adoption of alternatives to HFC refrigerants.

The most common refrigerants used are:

-Chlorofluorocarbons (CFCs), including R12. This is known to contribute to the greenhouse gas effect. Production of new stocks ceased in 1994.

-Hydrochlorofluorocarbons (HCFCs), including R22. They are slightly less damaging to the ozone than R12, but the EPA has still mandated a phase out as a result of the Clean Air Act of 2010. R22 will phase out completely by 2020.

-Hydrofluorocarbons (HFCs), including R410A and R134. With no chlorine in the molecular structure, this is safer for the environment and is now being used in place of R22. Air conditioners that run on R410A are more efficient, offer better air quality, increase comfort and improve reliability.

Refrigerants are NO. 1 on the DRAWDOWN[19] hierarchy for climate change and are regulated. The Drawdown mission is to "Drawdown"— the point in the future when levels of greenhouse gases in the atmosphere stop climbing and start to steadily decline, thereby stopping catastrophic climate change — as quickly, safely, and equitably as possible.

Refrigerants, specifically CFCs and HCFCs, were once causes of substantial depletion of the stratospheric ozone layer, which screens the earth from ultraviolet radiation. Thanks to the 1987 Montreal Protocol, they have been phased out. HFCs, the primary replacement, spare the ozone layer, but have 1,000 to 9,000 times greater capacity to warm the atmosphere than carbon dioxide.

Because 90 percent of refrigerant emissions happen at end of a product's life, effective disposal of those currently in circulation is essential. After being carefully removed and

[19] https://drawdown.org/

stored, refrigerants can be purified for reuse or transformed into other chemicals that do not cause warming.[20]

Generated in Ulster County 1,279 pounds annually.

ACTION PLAN

- Encourage purchase of propane, ammonia or HFC containing cooling units
- Support local and state legislation to enhance and/or enforce refrigerant handling and maintenance of refrigerant containing equipment
- Provide public outreach and education on proper disposal
- Pass local policies/requirements for proper recycling and handling of refrigerants and refrigerant containing items
- TABLE 4 Disposal Locations

5.12 Paint

Paint is any pigmented liquid, liquefiable, or solid mastic composition that, after application to a substrate in a thin layer, converts to a solid film. It is most commonly used to protect, color, or provide texture to objects. Paint can be made or purchased in many colors—and in many different types, such as watercolor or synthetic. Paint is typically stored, sold, and applied as a liquid, but most types dry into a solid. Most paints are either oil-based or water-based and each have distinct characteristics.

It is illegal in most municipalities to discard oil-based paint down household drains or sewers. Ulster County solid waste transfer stations are not permitted to take liquid waste with the exception of NYSDEC permits for bulk oil.

Americans purchase over 120 million gallons of paint every year. For Ulster County that is 3,780 tons of paint. Americans **generate** more than 64 million **gallons** of leftover house-**paint** each **year**, enough to fill 100 Olympic-sized swimming pools. On site storage of unused paint in basements, sheds and garages poses a substantial risk of contamination in the case of flooding.

The New York State Legislature has approved legislation creating a "Post-consumer Paint Collection Program." This legislation directs NYSDEC to develop a plan for paint manufacturers and sellers to form and cover the costs of a statewide, not-for-profit Paint Stewardship Program. The plan would seek to minimize the involvement of local governments in the management of post-consumer paint by reducing its generation and establishing agreements to collect, transport, reuse, recycle, and/or burn for energy recovery at appropriately licensed collection sites and facilities using environmentally sound management practices. The measure further specifies that the plan include annual program audits and reports, education and outreach to consumers, and details on how post-consumer paint would be collected, treated, stored, transported, and disposed. A commencement date for this program has not yet been established. The current

[20] https://drawdown.org/solutions/refrigerant-management

expectation is that this program, if possible, will be in place on, or before, January 1, 2021.

The first step to paint recycling is proper storage. A can of paint (once opened) should be kept tightly covered so the paint doesn't dry up. The lid can also be wrapped in plastic to provide an additional seal. Store it in a cool, dry place between uses.

Water-based paint is the most commonly accepted product at a household hazardous waste events nationwide, even though the EPA doesn't consider it to be hazardous waste. In Ulster County, water-based paint is not accepted at an HHW event and the consumer is advised to dry it out with a clay-based cat litter.

ACTION PLAN

- Encourage consumers to use new water-based paint by mixing together to create new colors used for projects like graffiti removal.
- Encourage locally operated paint swaps for use by school drama clubs, community theaters and the public
- Consumer Education on purchasing and reuse

VILLAGE OF NEW PALTZ PAINT SWAP PROGRAM

DONATIONS: Please drop off your unwanted paint at the Paint Swap Station set-up on the second floor of Village Hall (directly up the stairs/just outside the large meeting room) any SECOND SATURDAY 9-11 AM. A volunteer MUST BE PRESENT for drop-off (but you can pick-up paint anytime). All latex, acrylic & water-based products are accepted; NO OIL-BASED PRODUCTS. Please see below for a complete list of acceptable materials.

A waiver must be signed when picking up AND/OR dropping off paints.

5.13 Electronics

The NYS Electronic Equipment Recycling and Reuse Act went into effect on April 1, 2011. The law is intended to ensure that every New Yorker will have the opportunity to recycle their electronic waste in an environmentally responsible manner. The law requires manufacturers to provide free and convenient recycling of electronic waste to most consumers in the state, including, resident, schools and governments and many businesses, non-profits.

Electronics waste became a nationally recognized environmental health issue in the 90's when the mishandling of obsolete electronic waste, much of which was exported by the United States, was made public. There was an international outcry to protect workers and children who were dismantling e-waste and discovered to have health issues. Seven out of every ten children in Guiyu, China (the "e-waste capital of the world") were found to be suffering from some sort of exposure related illness. E-waste contains lead, mercury, cadmium, polyvinyl chlorides, and chromium; many with known toxicological effects that range from brain damage to kidney disease to mutations causing cancers. Lead, even in low levels of exposure, can cause problems such as brain and kidney damage, as well as slowed cognitive development and reduced growth in children. An old computer monitor can contain up to seven pounds of lead. Mercury can greatly impact fetuses, infants, and children by impairing neurological development, including cognitive thinking, attention span, and motor skills. The short-term effects of cadmium exposure include lung irritation, but the chronic impacts include kidney disease and lung cancer. Polyvinyl chlorides cause short-term effects such as dizziness, drowsiness, and headaches, but over the long term can lead to liver damage and cancer. 9.4 million tons of e-waste is disposed nationally; 4,950 tons in Ulster County.

ACTION PLAN

- Encourage repair and maintenance of electronic equipment rather than replacement;

- Promote the conditions of the NYS Electronic Equipment Recycling and Reuse Act to all eligible entities;

- Educate entities not covered under the NYS Electronic Equipment Recycling and Reuse Act of their responsibilities for e-waste disposal

- Supplement retail drop-off locations with safe and responsible electronic recycling opportunities at transfer stations and other locations;

- Foster local downstream electronic businesses that repair and/or dismantle e-waste and keep material local rather than being shipped internationally;

- Compile and keep current lists of local electronics repair shops and e-waste drop-off locations;

- Integrate messaging on e-waste with messages on Universal Waste, Household Hazardous Waste (HHW) and Conditionally Exempt Small Quantity Generators (CESQG) of hazardous wastes

5.14 (a) Household Hazardous Wastes (HHW)

Household hazardous wastes are waste materials that would be regulated as hazardous waste if they were generated outside of a household. Waste materials that are ignitable, toxic, corrosive, or reactive are commonly labelled as hazardous.

To manage HHW in the County, the Agency runs two (2) to four (4) HHW collection events every year. This provides an outlet for Ulster County residents to dispose of environmentally unfriendly materials in a safe manner at no additional cost. The HHW events are not open to other counties, businesses, farms, non-profit organizations, schools, or other institutions.

Materials collected at these events include but are not limited to lawn and garden chemicals, pool chemicals, waste fuels, aerosols, pharmaceutical waste, and lead- and oil-based paints. Approximately 1,000 residents participate in the program each year. In 2018, the Agency collected over 110,000 lbs. of material during the HHW events.

Approximately 55 tons of HHW is collected annually.

ACTION PLAN

- Educate consumers on purchasing only what they need and not to over purchase

- Launch education program on safer alternatives for cleaning, gardening, etc.

- Encourage swapping of unused material such as paint, stains, oils, etc.

- Consider legislative action on bans/limits to certain types of HHW

5.14 (b) Pharmaceuticals

A pharmaceutical is substance used in the diagnosis, treatment, or prevention of disease and for restoring, correcting, or modifying organic functions.[21] Heavily regulated by the FDA, prior to 2008, the acceptable method of disposal to ensure discarded

[21] https://www.britannica.com/technology/pharmaceutical

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

As part of the HHW collection events, UCRRA added on pharmaceutical collection which required a chain of possession using Sheriff Deputies and delivery of all drugs collected to the Dutchess County Waste-to-Energy facility for incineration. By 2015, the Ulster County Sheriff offices provided four locations where medications can be dropped off available seven days per week, twenty-four hours per day by appointment or as long as a deputy was present. Ulster County now has twenty-three locations to drop of medication:

TABLE 1

Name	Location	Contact	Type of Medication
			YES: prescriptions and over the counter medications, vitamins, pet medications, ointments and lotions, and liquid medicines in plastic bottles NO: needles, thermometers, blood, infectious or hazardous waste, inhalers, hydrogen peroxide or any medication in glass containers
Saugerties Police Department	4 High Street Saugerties, NY 12477	845.246.9909	
Ellenville Police Department	2 Elting Court Ellenville, NY 12428	845.647.4422	
Rosendale Police Department	520 Lefever Falls Road Rosendale, NY 12472	845.658.9000	
SUNY New Paltz	1 Hawk Drive, Service Building #100 New Paltz, NY 12561	845.257.2222	
New Paltz Police Department	83 South Putt Corners Road New Paltz, NY 12561	845.255.1323	
Kingston Police Department	1 Garraghan Drive Kingston, NY 12401	845.331.1671	
Woodstock Police Department	76 Tinker Street Woodstock, NY 12498	845.679.2422	
Town of Lloyd Police Department	25 Milton Ave. Highland, NY 12528	845.691.6102	
Town of Ulster Police Department	1 Town Hall Drive Lake Katrine, NY 12449		
Marlborough Police Department	21 Milton Turnpike Milton, NY 12547	845.795.2181	

Plattekill Police Department	1124 Milton Turnpike Clintondale, New York 12515	845.883.6373	
Olive Police Department	50 Bostock Road Shokan, NY 12481	845.657.2849	
Shandaken Police Department	58 Route 214 Phoenicia, NY 12464	845.688.9748	
Ulster County Law Enforcement Center	380 Boulevard Kingston, NY 12401	845.338.3640	
Wawarsing Sub-Station	155 Airport Road Napanoch, NY 12458	845.647.2677 or 895.3011	
Esopus Sub-Station	384 Broadway Port Ewen, NY 12466	845.338.3640	
SUNY Ulster Sub-Station	491 Cottekill Road Stone Ridge, NY 12484	845.338.6131	
Shandaken Sub-Station	Route 28 Allaben, NY 12480	845.688.2233	
Wallkill Sub-Station	Route 208, Ellenville	(845) 895-3011	
NYS Troopers	Route 299, Highland, 12528	(845) 691-2922	
NYS Troopers	Route 209, Accord, NY 12404	(845) 626-2800	
NYS Troopers	Route 209, Hurley, NY 12443	(845) 338-1702	

Furthermore, Pursuant to Chapter 120 Laws of 2018, the New York State Drug Take Back Act (DTB) mandates that manufacturers establish, fund, and manage a New York State approved drug take back program(s) for the safe collection and disposal of unused covered drugs. Pharmacies of ten or more establishments within NYS and non-resident pharmacies that provide covered drugs to NYS residents by mail must implement such programs by providing consumers with a pre- approved method(s) of collection and disposal, free of charge to the consumer and pharmacy. [22]

ACTION PLAN

- Aggressive public campaign on proper disposal and locations of medical drop off boxes

- Enforcement of NYS law Chapter 120 of 2018 to ensure pharmacies are in compliance

- Coordinate with local substance abuse programs and professionals to educate the public on proper use and disposal of pharmaceuticals

[22] https://health.ny.gov/professionals/narcotic/drug_take_back.htm#:~:text=Pursuant%20to%20Chapter%20120%20Laws,disposal%20of%20unused%20covered%20drugs.

3.15 Universal Waste

The Universal Waste Rule (UWR), 6 NYCRR Part 374-3, is an alternate way of managing certain common types of hazardous wastes (otherwise they would be subject to all applicable requirements of Parts 370 through 374 and 376). Handlers may choose to manage eligible wastes under the UWR, or under ordinary hazardous waste regulations. In New York State, hazardous wastes of the following types may be managed as Universal Waste (UW):

1. **Batteries** such as lead/acid, lead, nickel-cadmium, silver, lithium or mercury (Information on the Rechargeable Battery Recycling Act).
2. **Certain pesticides** that would otherwise be a hazardous waste.
3. **Thermostats and other mercury-containing equipment (MCE)** (Additional information on thermostat management). MCE is included as Universal Waste by Commissioner's Policy 39, approved in 2006.
4. **Lamps** (Additional information on hazardous waste lamp management).

Small Quantity Handlers of Universal Waste (less than 5,000 kg or 11,000 lbs. of total universal wastes, including hazardous batteries, certain hazardous pesticides, hazardous thermostats, or hazardous lamps, calculated collectively, on site at any time): Requirements include packaging in a way to minimize breakage; immediately cleaning up any leaks or spills; and properly labeling containers.

Large Quantity Handlers of Universal Waste (5,000 kg or 11,000 lbs. or more of total universal wastes on site at any time): Requirements include EPA notification; packaging in a way to minimize breakage; immediately cleaning up any leaks or spills; properly labeling containers; and complying with record keeping and reporting requirements.

Universal Waste Transporters: Requirements include meeting applicable DOT standards; complying with record keeping and reporting requirements; and complying with applicable requirements of 6 NYCRR Part 364 if transporting more than 500 lbs. of total universal waste in any shipment. Common carriers can transport up to 500 lbs. of universal waste in any shipment.

Destination Facilities: Comply with all applicable requirements of 6 NYCRR Parts 370 through 374-3 and 376, including notification of hazardous waste activity and obtaining a Part 373 (hazardous waste) permit, if applicable.[23]

Batteries

The NYS Rechargeable Battery Recycling Act (PDF) (Article 27, Title 18 of the Environmental Conservation Law) was signed into law on December 10, 2010. The law requires manufacturers of covered rechargeable batteries to collect and recycle the batteries statewide in a manufacturer-funded program at no cost to consumers. Most rechargeable batteries contain toxic metals that can be released into the environment when improperly disposed. Consumers across the state will now be able to safely return to retail stores rechargeable batteries, from a large number of electronic products, for recycling or proper management at the end of their useful life.

Which types of rechargeable batteries are covered by the law?

- 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[24]

"Other Pesticides"

40 CFR § 273.9 defines a pesticide as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, with the exception of any that is (a) a new animal drug under FFDCA section 201(w), or (b) an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or (c) an animal feed under FFDCA section 201(x) that bears or contains any substances described by either (a) or (b).

The universal waste regulations can be used to manage pesticides that have been recalled if they are either stocks of a suspended and canceled pesticide that are part of a voluntary or mandatory recall under FIFRA Section 19(b) (including, but not limited to those owned

[23] https://www.dec.ny.gov/chemical/8787.html
[24] https://www.dec.ny.gov/chemical/72065.html

by the registrant responsible for conducting the recall). Universal waste can also be used to manage stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.

- A recalled pesticide becomes a waste on the first date upon which both of the following conditions apply: (i) the generator of the recalled pesticide agrees to participate in the recall; and (ii) the person conducting the recall decides to discard the recalled materials (e.g., burn the pesticide for energy recovery).
- Note that the universal waste requirements apply only in the situation of a recall, suspension, or cancellation described above or when collected as part of a waste pesticide collection program. Hazardous waste pesticides that do not fit into these categories must be managed under the requirements in parts 260 through 272 or in compliance with 40 CFR 262.70 (link), which addresses pesticides disposed on a farmer's own farm in a manner consistent with the disposal instructions on the label when the container is triple rinsed.
- The universal waste requirements do not apply to pesticides that are not wastes or are not hazardous wastes[25]

Thermometers/Thermostats

On December 18, 2013 the Mercury Thermostat Collection Act of 2013 (PDF) was signed into law. This legislation adds a new Title 29 to Environmental Conservation Law (ECL) Article 27, "Mercury Thermostat Collection Act" and provides for the mandatory collection and environmentally sound management of mercury thermostats. **It is illegal to throw mercury thermostats in the trash, as New York State has had a disposal ban in place since 2005.**

The Act requires thermostat manufacturers, individually or collectively with other manufacturers, to establish and maintain a program for the collection, transportation, recycling, and proper management of out-of-service mercury thermostats at no cost to the consumer or other persons participating in the program. Manufacturers were required to:

CFL and Fluorescent Bulbs

Many waste fluorescent lamps are hazardous wastes due to their mercury content. Other examples of lamps that, when spent, are commonly classified as hazardous waste include: high-intensity discharge (HID), neon, mercury vapor, high pressure sodium, and metal halide lamps. Low-mercury or green end cap lamps that pass the TCLP are not as

[25] https://www.epa.gov/hw/universal-waste#:~:text=The%20universal%20waste%20regulations%20can,registrant%20responsible%20for%20conducting%20the

regulated hazardous wastes but still contain mercury and are subject to the Mercury-Added Consumer Products Law, described above.

Generators of hazardous waste lamps may choose between handling their lamps under the traditional regulatory scheme or as universal wastes. To facilitate compliance with New York State's Mercury Added Consumer Products Law, low mercury lamps may also be handled under the universal waste rule. However, once lamps are declared to be universal wastes, they must continue to be handled as universal wastes. A handler of hazardous waste lamps who fails to comply with the New York state universal waste rule may be considered to be in violation of hazardous waste laws and regulations. Under New York state's Universal Waste Rule, 6 NYCRR Part 364 Waste Transporter requirements are still applicable, requiring a waste transporter permit for transporters carrying more than 500 pounds of universal wastes.

Universal Waste Rule - To streamline environmental regulations for wastes generated by numerous sources in relatively small quantities, USEPA issued the Universal Waste Rule in 1995. This rule is designed to reduce the amount of hazardous waste in the municipal solid waste stream, to encourage the recycling and proper disposal of some common hazardous wastes and to reduce the regulatory burden on generators. For hazardous waste lamps, this rule has been available for use in New York state since January 6, 2000.

Fluorescent lighting contains mercury, so it should NOT be disposed with the household trash. Residentially-generated tube and compact fluorescent bulbs (CFLs) are accepted at UCRRA household hazardous waste events and facilities registered or permitted to accept universal waste. (See TABLE 3)

Generated 67 tons of universal waste annually (2.48 pounds of mercury)

ACTION PLAN

- Educate consumers on non-hazardous alternatives to universal waste including safer alternatives for pest control and non-mercury containing bulbs

- Create list with companies and locations of local facilities registered to accept universal waste (i.e. CFLs and fluorescent bulbs)

- Create an incentivization program with local businesses to offer collection/recycling/rebates for proper handling of universal waste including drop off boxes

- Promote legislation for additional collection locations

Table 4

NAME	LOCATION	TOWN	MATERIAL
American Lamp	Route 9W	Milton	E-waste, lamps, batteries
Call2Recycle	website	https://www.call2recycle.org/	Batteries, cell phones
Waste Management	Website	https://www.wm.com/healthcare/what-we-do/universal-waste.jsp	lamps, battery, mercury devices
NLR Recycling	website	http://www.nlr-green.com/what-we-recycle/	Lamps, mercury devices, batteries, E-waste
Republic Services	website	https://www.republicservices.com/shop/categories	Lamps, batteries, E-waste
Safety Kleen	Website	https://www.safety-kleen.com/services	All universal waste

3.16 Extended Producer Responsibility (EPR)

Product Stewardship is an environmental management strategy that means whoever designs, produces, sells, or uses a product takes responsibility for minimizing the product's environmental impact throughout all stages of the products' life cycle, including end of life management.

The principals of EPR require producers to design, manage, and finance programs for end-of-life management of their products and packaging as a condition of sale to combat planned obsolescence. These programs may or may not use existing collection and processing infrastructure. Programs should cover all products in a given category, including those from companies no longer in business and from companies that cannot be identified.

ACTION PLAN

- Mandate a manufacturer take back collection programs for materials that are hazardous, strictly regulated or not accepted as recyclable i.e. household hazardous and universal waste, automotive items (oil, antifreeze, tires, batteries) and packaging

- Encourage local manufacturers to donate residual or overstock material to local businesses who can reuse or resell it

3.17 Ulster County Green Business Challenge

The Ulster County Green Business Challenge is designed to encourage businesses, organizations and municipalities to reduce greenhouse gas emissions, mitigate climate change and reap considerable savings. This program also supports local green building

contractors, renewable energy providers and other businesses that implement sustainability practices.

The “Kick Off” challenge was held on June 27, 2018 with a goal of 100 Ulster County businesses, organizations, or municipalities completing an energy retrofit, install solar or other renewable energy, or implement another action that would both save money and significantly reduce carbon emissions. Currently the program includes the following benefits:

FINANCING. All projects are eligible for financing from a variety of sources. Ulster County is a member of the Energy Improvement Corporation (EIC), which offers low cost, long-term, easily accessible Energize NY Property Assessed Clean Energy (PACE) financing to fund clean energy projects in commercially owned buildings. Local banks and credit unions also offer financing for energy improvements and other climate solutions, as do the Ulster County Revolving Loan and the New York State Energy Research & Development Authority (NYSERDA).

ACKNOWLEDGEMENT. Participating businesses, organizations and municipalities will be acknowledged for becoming a Green Business Leader with a Certificate of Appreciation and/or a Pride of Ulster County Award, listed on the County’s GBC website -- and more -- for their contribution to this important, if ambitious, challenge!

Action Plan

1) Energy Audit: Undertaking an energy audit will help GBC participants to prioritize the most effective actions, however the audit must be followed by one or more of the following actions:

2) Energy Retrofit: Undertake an energy retrofit, which can include: Air-sealing and insulation; Installing ground-source (geothermal) or air-source heat pump for heating and cooling; switching to LED lighting: interior, exterior or municipal street lighting

3) Install a solar array or other renewable energy system to generate your own power: Wind or small, low impact hydroelectric would also qualify.

4) Purchase 100% renewable energy from a LOCAL source of renewable energy, such as a Community Solar Project or hydroelectric facility.

5) Purchase an electric vehicle or install one or more electric vehicle charging stations. Switching to EV fleets is a great way to improve transportation, especially if combined with renewable energy generation

6) Restaurants and other food waste generators implement food waste reuse with Food Bank of the Hudson Valley and/or food/recovery/composting via local haulers who will take it to the UCRRA or other composting facilities.

7) Significantly reducing single use plastic and host of other actions that reduce energy use and greenhouse gas emissions, or otherwise addresses climate change.

Additional Actions8) Prioritize businesses that use reused feedstocks for their products and/or inject reuse into consumer habits.

9) Ulster County, through Economic Development and the IDA, incentivize and/or prioritize business parks that embrace reduction and reuse as part of their mission.

10) Engage and coordinate implementation of the zero waste plan with commercial waste haulers including but not limited to training certification, pledges, and education for the public

11) Engage and coordinate implementation of the zero waste plan with local schools including but not limited to training certification, pledges, access to low cost/free materials and education for the students/teachers

12) Foster a network of second hand/thrift stores reuse infrastructure that accept used materials diverted from the waste stream similar to the ReStore and New Paltz ReUse Center for resale or as a resource center for free material to eligible organizations i.e. schools, shelters, etc.

3.18 Repair

Repairing or repurposing items is higher on the NYSDEC Beyond Waste hierarchy than recycling. In Repair Cafes, older more reliable (and fixable) items can be repaired by skilled volunteers while owners watch and learn.

Still usable items that are in disrepair may be diverted from the waste stream by training craftworkers through existing programs such as BOCES or trade organizations and/or creating a means to teach people have to do simple repairs such as sewing or changing the switch on a lamp. Or, simply by encouraging people to access information through social media/channels for easy DIY instructions. It is also conceivable that new “green” jobs can be created by fostering dismantling companies who can salvage materials from discarded items in lieu of purchasing new raw material to market to manufacturers or by manufacturers themselves. (See 3.16)

The first Repair Café was started in 2009 in Amsterdam by Martine Postma. While Europe has the most Repair Cafes, more and more are being created in the U.S. and worldwide. Repair Cafés are free meeting places and they’re all about repairing things (together). In the place where a Repair Café is located, you’ll find tools and materials to make needed

repairs , on clothes, furniture, electrical appliances, bicycles, crockery, appliances, toys, etc. You'll also find expert volunteers, with repair skills in all kinds of fields.

Visitors bring their broken items from home. Together with the specialists they start making their repairs in the Repair Café. It's a socially beneficial process, where visitors can lend a hand with someone else's repair job, or get inspired at the reading table – by leafing through books on repairs and DIY.

Repairing items can divert 9,900 tons annually from the MSW stream.

ACTION PLAN

- Advocate for consumers purchasing quality products with a longer life expectancy and access to replacement parts for repairs

- Expand Repair Café network to repair broken items while teaching people how to do their own repairs

- Encourage entrepreneurs to hold repair workshops such as computers, lawn equipment, etc.

- Foster training programs with trade unions and other professionals to train consumers on how to repair and/or open business opportunities

B. Construction and Demolition Debris

C&D material is defined by NYSDEC as uncontaminated solid waste resulting from the construction, remodeling, repair and demolition of utilities, structures and roads; and uncontaminated solid waste resulting from land clearing. Such waste includes, but is not limited to bricks, concrete and other masonry materials, soil, rock, wood (including painted, treated and coated wood and wood products), land clearing debris, wall coverings, plaster, drywall, plumbing fixtures, non-asbestos insulation, roofing shingles and other roof coverings, asphaltic pavement, glass, plastics that are not sealed in a manner that conceals other wastes, empty buckets ten gallons or less in size and having no more than one inch of residue remaining on the bottom, electrical wiring and components containing no hazardous liquids, and pipe and metals that are incidental to any of the above. C&D materials often contain bulky, heavy materials such as the following:

• Concrete/Asphalt/Rock/Brick (CARB) – CARB comprises approximately 35 percent of the C&D material stream.

• Soil/Gravel - soil and gravel make up approximately 27 percent of the C&D material stream.

• Wood – wood makes up approximately 15 percent of the C&D material stream.

• Other Materials – the remaining components consist of roofing, drywall, metal, plastic, corrugated/paper and "other." In New York State, solid waste that is not considered to be C&D debris (even if it is associated with construction, remodeling, repair and demolition of utilities, structures and roads and land clearing) includes, but is not limited to: asbestos waste, garbage, corrugated container board, electrical fixtures containing hazardous liquids such as fluorescent light ballasts or transformers, fluorescent lights, carpeting, furniture, appliances, tires, drums, containers greater than ten gallons in size, any containers having more than one inch of residue remaining on the bottom, and fuel tanks. Additionally, solid waste that would otherwise be considered C&D debris that has been processed to make individual waste components unrecognizable, other than at a NYSDEC approved C&D processing facility, are no longer classified as C&D debris. Biosolids consists primarily of septage, manure, and other agricultural waste.

MSW generated within Ulster County must be delivered to a facility designated by the Agency as a result of flow control that was implemented in 2012. (**Flow control is a** legal provision that allows the UCRRA exclusive authority to dispose of the MSW stream. Even though UCRRA transfer stations have the ability to process C&D waste, this material, as well as recyclables, are not covered under the 2012 law.

Since flow control is not implemented for C&D, private haulers can also bring C&D waste to be processed at other facilities:

Construction and Demolition Processing Facilities:

Name	Location	Material
LaMela's	Marlborough	C&D
Taylor Recycling	Orange County	C&D
Recycling Depot	Dutchess County	C&D

As defined above, C&D materials often contain bulky, heavy materials that include:

• Concrete and bricks,

• Wood from buildings,

• Asphalt from roads,

• Roofing shingles and other roof coverings,

• Plaster and gypsum wall covering material,

- Metals,

- Glass,

- Plastics,

- Salvaged building components such as doors, windows, and plumbing fixtures,

- Earth and rock from clearing sites.

Reducing and/or recycling C&D materials conserves landfill space and reduces the environmental impacts associated with producing the materials. It can also reduce building project expenses with the reduction of purchase and disposal costs. Based on numbers provided for 2018, the following table provides a summary of the combined materials collected (in tons) at the Ulster and New Paltz transfer stations.

Action Plan

- Create a C&D recovery program similar to Taylor Recycling to recovery drywall, lumber, nails and other metals, rubble (brick and concrete – see Rockland County)[26] with a goal of reducing it by 80- 90%

- Drywall recycling (paper for animal bedding; lime for agriculture)

- Clean, unadulterated wood for resale or grinding into cover material/bulking agent for composting biosolids

- Metal rebar, nails, beams etc. removed for scrap recycling

- Separate brick and concrete for both resale if unbroken or as rubble

C. Biosolids

[26] http://www.rocklandgreen.com/page/concrete-crushing-facility-26.html **Tip Fees:** Asphalt $20.00 per ton; Minimum Fee for Concrete is $10.00; Concrete $15.00 per ton; Oversized Concrete, material exceeding 24"x24"x8" dimensions, has an additional charge of: less than 10 tons $30.00 per load; Concrete with a PSI of 3,500 or greater will have a surcharge of $25.00 per ton.

Biosolids are the accumulated semi-solids or solids resulting from treatment of wastewater in sewage treatment plants. Biosolids do not include grit or screenings, or ash generated from the incineration of biosolids. **Biosolids** are a beneficial resource, containing essential plant nutrients and organic matter and are recycled as a fertilizer and soil amendment. In the past, it was common for farmers to use animal manure to improve their soil fertility. In the 1920s, the farming community moved from animal manure to using local wastewater treatment plants. Currently in Ulster County, biosolids are collected at the New Paltz Transfer Station only and sent for disposal at the Chemung County Landfill in Elmira, New York.

The Clean Water Act (CWA) of 1972 (the Law or Statute), as amended, has been the primary Federal Law in the U.S. governing water pollution and has been central to our country's endeavors to treat sewage.

Section 405 sets the framework for sewage sludge (biosolids) regulations and in 1993 brought the management of residuals from the wastewater treatment processes under the National Pollutant Discharge Elimination System permit program.

40 CFR Part 503, *Standards for the Use or Disposal of Sewage Sludge*, establishes standards, which consist of general requirements, pollutant limits, management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site.

ACTION PLAN

- Permit a countywide or regional facility to compost biosolids to create a usable, salable product
- Pass legislation allowing spreading of manures/treated sludges for agricultural use
- Investigate alternative composting technology (i.e. City of Kingston pelletizer)

- Create a NYSDEC permitted biosolid composting facility (additional information under "Biosolids" in this section.)

Attachments

Ulster County Flow Control Law

Ulster County Food Scrap Law

Ulster County Source Separation and Recycling Law

Ulster County Zero Waste Policy

Ulster County Climate Smart Pledge

Ulster County Paint Stewardship (redundant? In SWMP)

Ulster County Green Business Challenge
https://ulstercountyny.gov/sites/default/files/documents/environment/Building%20Ulster%20County%20Together%20GBC%20Launch%20flyer.6.11.18.pdf