

# Solid Waste Management Division

Commissioner of Public Works, Parks, Recreation & Youth Services

Director of Solid Waste Management

## Recycling

- County-wide Recycling program:
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  - Curbside & Drop-off Sites
  - Education & Outreach
  - Technical Assistance
  - Market Research
  - Pilot Projects
- Hazardous Waste Program:
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  - Commercial / Institutional Program
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## Landfill

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- Leachate Treatment Facility
- Landfill Gas Management & Electrical Generation
- Landfill Closure / Remediation



Photo 1: Landfill Section IV – Cell 3

## **INTRODUCTION:**

In 2018, 262,726 tons of municipal solid waste, construction and demolition debris, friable asbestos, non-friable asbestos, industrial waste, auto fluff, contaminated soil, aggregates and sludge were land buried at the Broome County Landfill. In 2018, outgoing materials recycled through Southern Tier Recyclers, Inc accounted for 408.49 tons. An additional 2,004.3 tons of waste received at the landfill were recycled. Materials recycled at the landfill include white goods and scrap metals, tires, leaf and yard waste, bulky plastics, cardboard, waste oil, oil filters and antifreeze. Single stream recyclables collected at the landfill's recycling drop off are included in the above referenced recycling tonnage.

[Note: Since recycling became mandatory in 1992, most businesses and institutions in Broome County recycle through private hauling and recycling companies. As a result, private recycling tonnages are not fully quantifiable through the County's tracking system.]

## **RECYCLING OPERATIONS:**

In 2018, the County continued its contract with Southern Tier Recycling, Inc to process and market the single stream recycling from the landfill residential drop off. For 2018, we collected 28.17 tons of bulky rigid plastics and 408.49 tons of single stream. Recycling markets remained poor and the County received no revenue for single stream recyclables and paid a fee of \$20 per ton for recycling of bulk rigid plastics. The recycling markets continue to decline as a result of policy changes by China. Currently China has banned some materials such as mixed paper and has set an extremely low contamination rate of .05%. The contamination rate is not one most US facilities can meet, and it has had an impact on recycling throughout the US and locally. It is anticipated the cost to have material recycled will increase over the next year.

The County recycling program continued to accept newspaper, corrugated cardboard, kraft paper, magazines, mixed paper, office paper, junk mail, phonebooks, and single layer cardboard, pizza boxes,

frozen food boxes, table-top milk and juice cartons, glass containers, tin and aluminum, a variety of #1-7 plastic containers (ketchup, yogurt, shampoo containers, storage containers, etc), containers and metal pots, pans and bowls.

Recyclables received at the facility accounted for the following tonnage:

<u>MATERIAL:</u>	<u>MRF TOTALS:</u>
Single Stream	407.36 tons



Photo 2: Bulk Rigid Plastic Collection



Photo 3: Single Stream Recycling

**RECYCLING INITIATIVES:**

The Division continues to promote and increase diversion of reusable materials to the Eco Center. Ongoing outreach to home improvement stores and contractors continues in an effort to divert more materials.

**ELECTRONICS RECYCLING:**

The electronics program continued to be a popular and successful program. There is no fee and no required appointment for residents to come on designated hazardous waste/electronics collection days. For electronics dropped off on a non-designated collection day there is a \$5.00 charge. Daily residents are willing to pay the \$5.00 and bring up electronics. The shift in market conditions is still affecting the electronics program as there is a recycling fee charged to the County for monitors and televisions. In 2018, a total of 280.6 tons of electronic equipment was recycled.

## **EDUCATION AND OUTREACH:**

In 2018, the Division ran television ads on WBNG to promote recycling; grass recycling and textile recycling ran at different times from January through December. A new ad was created to promote recycling contamination awareness which will run through 2019. Television ads are linked to a website viewers can go to for more information. In addition, the Division ran ads on WGBH for a 6-month period highlighting the HHW program. Additional radio ads ran to promote the curbside recycling program. Newspaper advertising was prepared to promote the HHW and electronics program collection dates for 2019. In addition, the Division participated in on-air television and radio interviews. Press releases and the county website were utilized to promote all programs.

Landfill tours are given upon request from various groups. Four (4) landfill tours were given with approximately 123 participants in 2018. The Division also provided information to SUNY Broome to conduct self-guided tours for approximately 84 participants. The Division participated in the 2018 Environmental Fair held at Lockheed Martin and Earth Fest sponsored by Earth Day Southern Tier.

The Division continued to work with local schools to improve recycling and share grant opportunities. Specifically, we worked with area schools to improve their current programs. Online flyers are also sent to influence school participation in grant programs.

In 2018, the Division continued to promote our special events recycling container loan program. Sixteen (16) special events requested use of the recycling containers totaling a use of 356 bins during the year.

In 2018, the Division promoted backyard composting by making available the Earth Machine<sup>®</sup> backyard composters for purchase (\$45.00 each). Composting was promoted through programming by Cornell Cooperative Extension, through the county website and through press releases.

For 2018, the Division continued its contract with Cornell University Cooperative Extension of Broome County for additional education and outreach efforts. 248 programs were conducted which were attended by 4,618 participants. In addition, they provided technical support for composting and oversight of the composting demonstrations site. CCE also continued the Master Composters program, which trains residents in proper composting.

## **PRODUCT STEWARDSHIP:**

Several product stewardship bills were proposed to the New York legislature in 2018, but were not voted on during the legislative session. The Division has been actively following and supporting product stewardship for several material types.

### **PAINT STEWARDSHIP:**

In 2018, the Division continued support of implementation of a statewide paint stewardship program which would mean the paint industry would be responsible for collecting and managing leftover paint in New York. The American Coatings Association, a trade association representing paint manufacturers from across the United States has created PaintCare, a non-profit program to manage the reuse, recycling and disposal of leftover paint in support of this initiative. While the Senate bill (S881- Senator O'Mara) was passed, the companion bill (A1038- Assemblyman Stirpe) has not passed in the Assembly. A compromise bill proposed between the two houses passed the Senate, but did not reach the Assembly floor for a vote before the end of the legislative session. The bill is expected to be re-introduced in early 2019.

**ELECTRONICS:**

In 2018, the Division continued to support efforts to revise the current NYS Electronic Equipment Recycling and Reuse Act to reduce the financial burden being put on the county. The DEC has begun the rulemaking process to provide clarity, strengthen its existing provisions, and to improve overall program performance. This process will continue throughout 2019.

**PHARMACEUTICAL / MEDICAL:**

The Division continued to follow efforts to establish a statewide program for unwanted medications. The NYS legislature passed the NY Drug Take-Back Act, which the Governor signed on July 10. The new law requires Pharmaceutical manufacturers to finance and manage the safe collection and disposal of unused medications and requires pharmacies with ten or more US locations to participate as drug collection sites to help ensure convenient access for residents.

**PACKAGING:**

An EPR system for packaging would require brand owners to ensure their packaging materials are reused or recycled responsibly — thus rewarding companies that use less material, switch to readily-recyclable options, and incorporate a higher percentage of recycled content in packaging. Many trade organizations support these efforts and the Division will evaluate further written support.

**LANDFILL OPERATIONS:**

**FLOODING 2018:**

288.93 tons of flood debris were brought to the landfill in 2018. Areas such as Conklin and Kirkwood had severe flood damages that impacted houses and roadways.

**PERMITS:**

Part 360 Solid Waste

A modified Part 360 Permit was received in September 2017; it will expire 3/22/2021. The modification allowed a change in design that increases the depth and air space of Cell4. The variance that allowed a 5-foot separation to bedrock was revoked, thereby requiring a full 10-foot separation. The project for the reclamation and redevelopment of the Old Landfill for future landfilling operations was put on hold for 2018. As a landfill expansion, this will require SEQR review and a permit modification, as well as an amendment to the prior consent order under which the landfill was closed in 1992.

Title V Air

The County operates under a Title V Air Permit that regulates landfill gas and facility boilers/heaters. A permit renewal was issued on 3/29/2018. It will expire on 3/28/2023.

The annual quantification of Green House Gases (GHG) was submitted in 2018 by SCS who performed the calculations and prepared the report. Title V reports are prepared and submitted by the BCDSWM. Broome Energy Resources, under the Landfill Agreement contract does wellfield monitoring and tuning. The County pays them for their services in conjunction with the County owned system in the Old Landfill. SCS Engineers Field Services did the surface emissions monitoring in 2018.

SPDES

The landfill operates under and remains in compliance with a SPDES Multi-Sector General Permit (MSGP). The active sediment pond forebay was cleaned out this year by landfill staff.



### Wetland

An Army Corp of Engineers Wetland Permit was issued for Section IV, Cell 1 construction and in 2009 for the new Knapp Road construction. Monitoring concluded in 2015; there was no activity for wetlands this year.

### Petroleum Bulk Storage

The Spill Prevention, Control and Countermeasures Plan was finalized by OB&G 2011. Routine inspections are ongoing. No new action.



Photo 4: Pulling Recycling Roll-off

### **SURVEYS:**

Annual volume surveys are now being done by Hulbert Engineering and Land Surveying. The Engineering Dept. calculates the volume. Hulbert's other survey tasks for the year included mining operations in Cell 4.

### **TIPPING FEES:**

In 2016, the County Legislature amended the Local Law in chapter 89 of the Broome County Charter and Code to waive 100% of the tipping fees for demolitions of residential one or two family homes that are sold by the County to municipalities or quasi-governmental agencies. In 2018, tipping fees were waived on 498.79 tons resulting in a loss of revenue of \$25,957. In 2014 the Legislature amended the County Charter and Code section 317-9(6) to include the Landbank in the \$30,000 municipal one-day cleanup allotment. The Landbank used \$20,617 of that allotment for building demolitions in July and August. Municipalities who sponsored cleanup days used the remainder.

### **LEAF AND YARD WASTE:**

The Division continued to process yard waste using a windrow composting technique, creating high quality compost offered free to residents and municipalities. Approximately 696 tons of leaf and yard waste were composted and 100 tons of stumps were collected. The Division contracted with a vendor to grind the yard waste and stumps.

**SCRAP METAL:**

The Division continued to recycle all forms of scrap metal including large appliances and lead-acid batteries based on quarterly quotes. Scrap metal tonnage for 2018 was 181.99 tons and lead acid battery tonnage was 6.39 tons.

**FREON:**

Units containing Freon are handled carefully, in compliance with the Clean Air Act and according to Division policy. Building and Grounds certified personnel remove the Freon and the tagged units are then taken to the scrap metal vendors. In 2018, 902 units were serviced and 0.203 tons of refrigerant were recovered.

**TIRES:**

In 2018, the Division continued its contract with Geiter Done located in Buffalo, NY for the processing and recycling of tires. Approximately, 536.75 tons of tires were collected during 2018.

**OIL & ANTIFREEZE:**

The County collects oil and antifreeze for recycling in addition to oil filters. This is a free service the County offers. Resident can bring their used oil and antifreeze to the landfill during operating hours. The County utilizes private vendors to recycle the materials. In 2017, there was a shift in the markets for waste oil and the County no longer was paid for waste oil. In turn, there was a \$15 field test fee each time there was an oil pick-up. In 2017, 8,520 gallons of used oil, 1,464 gallons of antifreeze and 10 drums of oil filters were recycled.

**MAJOR OPERATIONS AT BROOME COUNTY LANDFILL:**

**LANDFILL EXPANSION SECTION IV:**

NYS Department of Environmental Conservation approved Cell 1 for use via a letter dated August 13, 2009 and the first select waste (residential garbage) was deposited on August 18, 2009. Cell 2 opened on October 24, 2012. Cell 3 opened on July 20, 2017.

On September 26, 2017, Cell 4 construction was approved by DEC through a permit modification that allows the bottom of the cell be lowered about 15 feet. Bedrock blasting across the cell commenced soon after, followed by berm reconstruction. GHD Consulting Services did the design and Maine Drilling & Blasting and ZMK Construction were the contractors for the projects. Chenango Contracting was subcontracted by ZMK to do the liner work.

Airspace gained by lowering the bottom of Cell 4 and reconstructing the berm is 160,000 cy making the total volume of the cell 1,260,000 cy. The dollar value of the additional airspace is over \$6 million.

Landfill staff worked throughout 2018 to remove rock and soil from Cell 4 in anticipation of construction in 2019.

**FORESTRY:**

There were no forestry activities in 2018 though there are still areas of the Nanticoke landfill property that were slated for management activities to promote forest growth and health. Bob Moore, dba as Forestate, inventoried the trees at the Broome County Landfill and the Colesville Landfill and submitted Forest Management Plans for both. A new forester may be retained for 2019.

### **LANDFILL GAS MANAGEMENT:**

The County installed a gas collection and control system in the old landfill and is responsible for its maintenance and operation. Broome Energy Resources (BER) has been assisting the County with this responsibility through our Landfill Gas Agreement with them. Total gas collected from the old landfill was 52,929,364 standard cubic feet (scf).

BER owns and operates the gas collection system throughout Sections I-IV and the electric generation facility. Gas flows, as reported by BER, were down for the year 2018 with an average of 1309 scfm and total landfill gas collected of 688,491,395 scf versus 723,426,009 scf in 2017. 26,006 MW-hrs were generated in 2018 versus 28,977 MW-hrs of electricity in 2017.

In 2015, BER installed a gas treatment system that dewater, condenses and filters the landfill gas prior to sending it to the flare or engines. This relieves them from some aspects of federal NSPS requirements.

The County receives a royalty of 7.5% of the BER's gross revenue from all sources for the exportation of electricity in excess of 21,024 megawatt hours annually. Payments have decreased every year. BER also provides up to 600,000 kW-hrs. to the leachate plant at no cost.

### **LEACHATE TREATMENT FACILITY:**

2018 was the 22st year of County operation of the Broome County Leachate Pre-Treatment Facility (LTF). A total of 21,134,398 gallons were treated. We continue to receive free electricity from BER for the operation of the facility resulting in a significant saving.

The LTF pre-treated 18,093,908 gallons that was transported via the sewer line to the Endicott Wastewater Treatment Plant for final treatment and discharge.

The remaining 3,040,490 gallons of raw leachate was transported to i3 Electronics for treatment and disposal. The analytical results of the pilot have demonstrated that the facility can treat the leachate to well within discharge standards.

The sewer line is utilized to carry pretreated leachate from the landfill and waste water from the airport to the Endicott WWTP. On November 29 and December 3 there was spill of pretreated leachate as it overflowed from the wet well at pump station #2. Pump station #2 had an electrical malfunction that prevented the generator for engaging and dialer from calling out. As a result through January 2019 the County was not permitted to use the sewer line without restrictions. This resulted in increased staff costs and hauling and processing costs to take leachate to i3 in Endicott. The County received a Notice of Violation and a Consent Order. The Consent Order called for a \$4,000 fine and increased measures to be put in place. The Division worked closely with the DEC and provided routine updates in addition to submitting a Corrective Measures Plan.

### **HAZARDOUS WASTE MANAGEMENT:**

At the Hazardous Waste Facility located at the Landfill, hazardous waste and end of life electronics are collected from residents and Conditionally Exempt Small Quantity Generators (CESQG) in Broome and Tioga Counties. The Facility is open year-round with 2 or 3 collections scheduled monthly.

- Types of wastes collected at the facility include pesticide & fertilizers, household cleaners, pool chemicals, latex and oil-based paints and sealers, wood preservatives, solvents, acids, motor oil and antifreeze, oil filters, photography chemicals, adhesives, drain and oven cleaners, aerosol sprays, poisons, fire extinguishers, small propane cylinders, household batteries, fluorescent light tubes and ballasts and electronic equipment.
- This year 291,664 pounds of hazardous materials were collected, consolidated and shipped. All materials collected are sent for recycling or environmentally safe disposal.



- Dry-cell batteries were collected at the Hazardous Waste Facility and a drop-off collection kiosk at Wegmans located in Johnson City. This year, 44,200 lbs. of dry cell batteries and 12,780 lbs. of automotive batteries were collected.
- This year, 5,825 gallons of motor oil and 1,100 gallons of antifreeze were collected and recycled.
- Collection of fluorescent bulbs/ballasts from Small quantity generators and households continued, with 22,269lbs. of fluorescent lamps collected and recycled.
- There were 31 collection days with an estimated attendance of 3,746 households and 78 conditionally exempt small quantity generators which yielded 108 scheduled appointments.
- Tioga County residents disposed of 24,2000 lbs. of hazardous waste with 205 households participating through an inter-municipal agreement. The agreement is reviewed for renewal annually.



Photo 5: 2017 Landfill Working Face – Section VI Cell 3.

## **GENERAL OPERATIONS AT THE BROOME COUNTY LANDFILL:**

### **MAINTENANCE OF CLOSED SECTIONS:**

Routine maintenance and monitoring were performed for the Old Landfill and Sections I, II, and III including two mowings.

### **ODOR CONTROL:**

There were no significant odor complaints from neighbors in 2018.

### **LITTER CONTROL:**

Litter fencing is modified to stay current with filling operations on an ongoing basis and is purchased annually. Landfill operations are planned so that filling provides wind breaks behind the lifts in the winter. Routine litter patrol in and around the landfill site is performed as staff availability permits. After periods of high winds, it is done daily. No contracted labor or prisoners were used this year at the landfill.



Photo 6: Landfill Section IV- Cell 4 Shale Blasting

**HOST COMMUNITIES:**

The County paid the Host Communities \$917,362 in 2018 as per the Host Community Agreement (HCA). This was \$76,273 more than the prior year. Since payments started in 2000, \$13,822,670 has been paid to the Host Communities. This total includes \$1,122,737 for fire departments. The Citizens Advisory Committee meets about 4 times per year. Landfill projects and operational updates are discussed.

**ENVIRONMENTAL MONITORING:**

ALS Global is contracted to monitor both the Nanticoke and Colesville Landfills with Barton and Loguidice Engineers continuing to analyze data and write the reports for Nanticoke and ARCADIS to do the same for Colesville. There were no significant problems in groundwater.

**SAFETY:**

Proactive and required safety training for all landfill employees was conducted throughout 2017 with the assistance of John Nezelek, Broome County Safety Specialist.

**DIVISION PROJECTS / UPDATES:**

**OLD LANDFILL RECLAMATION/GROUND WATER INTRUSION PROJECT OF THE ORIGINAL NANTICOKE LANDFILL:**

GHD Consulting Services completed a Conceptual Feasibility Study in May of 2012. They completed a Field Investigation Report in December 2013. In 2014-2015 the Landfill Reclamation Work Plan was developed and submitted to NYSDEC, but DEC has declined to review the Work Plan until a new Consent Order for the project is signed. Meanwhile, a final design plan for Phase I of the project was done and bidding documents were prepared. In June of 2015 it was decided to place the construction of the

project on hold until the sewer project was completed. Also in 2015, a landfill gas collection system was installed in the old landfill as mandated by EPA. A draft Consent Order was received from the NYSDEC in 2015, but it needs to be rewritten to specify that the reclamation will not proceed unless and until Section V is permitted. In order to construct new landfill space, Part 360, Solid Waste and Title V, Air permit modifications are needed. In the summer of 2016, as part of the effort to reduce stormwater infiltration, the stormwater diversion ditches, which were no longer functioning as intended and, in fact, appeared to be allowing infiltration into the landfill, were filled in and sealed with clay.

The project was on hold in 2017 while permitting of Section IV Cell 4 was occurring and bedrock blasting and berm reconstruction was completed in Section IV. In 2018 costs for the project were re-evaluated and due to staffing constraints the project remains on hold.



Photo 7: Cell 3-4 Berm Reconstruction

**SOLID WASTE MANAGEMENT PLAN:**

In 2008, the Division began updating the Local Solid Waste Management Plan (LSWMP). Currently, the Division submitted a response to DEC comments in October 2010 and received additional DEC comments in January 2011. The County responded to the January 2011 comments and has been waiting for DEC's response back since then. Recently on December 3, 2018 a DEC representative stated they would review our plan and notify the Division of any required updates. The Division has now received two pages of updates DEC would like to see done.

**COLESVILLE LANDFILL REMEDIATION:**

Arcadis prepared and submitted a Remedial Systems Optimization Report (RSO) to NYSDEC on March 30, 2017. The purpose of the RSO report was to evaluate the effectiveness of the site-wide remedies relative to the remedial action objectives (RAOs) documented in the Record of Decision (ROD). In the Recommendations for Implementation section of the report they wrote: "In light of the success of the IRZ (in-situ reactive zone) Discontinuation Pilot Test, demonstration of a stable to decreasing plume extent, and no deterioration in the quality of springs, sediment or surface water associated with the



North Stream, a transition to MNA (monitored natural attenuation) will be an effective alternative to the current remedy.

Furthermore, based on projections for continued improvement, and unfavorable costs with no significant remedial benefit associated with groundwater extraction and treatment and ARI (automated reagent injection) system groundwater treatment, a transition to MNA is implementable and more favorable than the ROD remedy. An MNA remedy should be implemented at the Site upon approval by the NYSDEC.”

Following submittal of the RSO, the NYSDEC issued a change in classification for the Colesville Landfill in the Registry of Inactive Hazardous Waste Disposal Sites. In a letter from the NYSDEC dated September 27, 2017, Broome County was notified of a classification change from 2 to 4 based on the rationale that residual contamination is being managed under a Site Management Plan. This plan describes the institutional and engineering controls in place, as well as, an environmental monitoring plan. In 2018, NYSDEC requested that the county revise the 2017 monitoring report to extend the data tables further back in time to 2012. This was done and submitted in August along with the most recent well monitoring report. A Periodic Review Report covering the years 2016-2018 was prepared and submitted to NYSDEC, as well as, an annual monitoring report that discussed results of ground, surface, and spring waters.

The landfill parcels and the Scott property to the south have environmental easements, that prohibit the development or use of the property in any way that could interfere with the landfill cap or other treatment facilities on the property. The easements also prohibit the installation of drinking water wells.