Solid Waste Management Plan

Five-Year Update

Northampton County, Virginia

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TRC Project Number 505249

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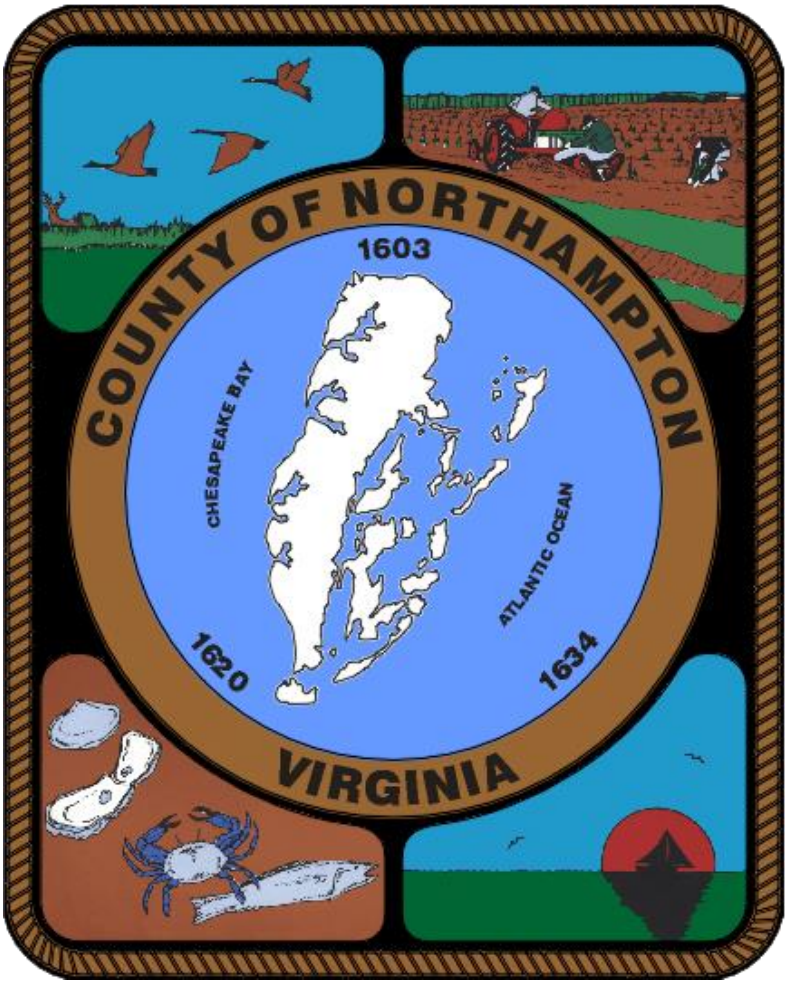

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EXECUTIVE SUMMARY

The following solid waste management plan (SWMP) provides an update to Major Amendment 1 to the SWMP dated June 17, 2013, for the Northampton Solid Waste Management Region (Region). The Region includes the County of Northampton and its five incorporated Towns within its jurisdictional boundaries: Cape Charles, Cheriton, Eastville, Exmore and Nassawadox. Major Amendment 1 reflected the closure of the County's landfill, and the construction and operation of a new transfer station.

This update is submitted in accordance with 9 VAC 20-130-173 which requires planning units to maintain current solid waste management plans containing a 20-year planning window and to review their plan every 5-years with submittal to the Virginia Department of Environmental Quality (DEQ) of a letter verifying conformance with the regulations. As the original SWMP was approved on June 20, 2008, the letter and updated plan are due to DEQ on or before June 20, 2023.

There have been no significant changes in Northampton's solid waste program so this update is not an amendment per 9VAC20-130-175. However, information such as (but not limited to) population and tonnage data need to be updated to reflect the previous 5 years and to project the same for a new planning period which will be set as 2023 through 2043. Documentation will run from 2020 through 2045 for ease of working with various data bases.

There have been no changes in the Towns' programs.

The Region's solid waste program consists of the following components:

Refuse Collection – The County and the Towns of Cape Charles, Exmore, and Nassawadox provide solid waste collection services. Residents of the other two towns rely on the County's collection system for disposal of their waste. The County's collection system now consists of six staffed waste collection centers. The refuse from the waste collection centers is collected by a private hauler.

Cape Charles provides collection through a private contractor to its households and businesses while Exmore provides public collection to its households and businesses. The Town of Cape Charles utilizes its own staff and vehicles to bring in brush. Nassawadox provides collection through a private hauler.

Section 5.1 describes the collection systems in further detail.

Refuse Disposal – Northampton County operated a sanitary landfill permitted by DEQ as Sanitary Landfill Permit 507. The landfill stopped receiving waste on March 31, 2009, and was deemed to be closed by DEQ on February 2, 2011 after meeting all the capping and closure requirements of the Virginia Solid Waste Management Regulations. The landfill is officially in a 30-year post closure period which can be reduced or extended by the DEQ depending on site

conditions. On or before February 2041, the County will be able to petition DEQ for termination of post closure care in accordance with the DEQ guidance at that time.

At this time, the County operates a transfer station located on a parcel adjacent to the closed landfill. Waste is received at this transfer station and loaded on to 100 cubic yards trailers for transport out of County for disposal. Hauling and disposal is procured every 5 years by the County. Currently, the County is contracted with Republic Services/BFI Waste Systems of Virginia, LLC for waste hauling and disposal through June 30, 2025. Waste will be taken to the King and Queen Landfill (Permit 554). The CY 2021 DEQ annual report indicates that the disposal facility has 31 years of life remaining under its current permit. Transferred tonnage includes MSW including commercial waste, CDD materials, industrial waste and sludge as reported on the DEQ Form 50-25.

Section 5.2 describes the transfer and disposal systems in further detail.

Recycling – The County collects vehicle batteries and waste oil at the waste collection sites. In addition, Northampton County and Accomack County contract with Tidewater Fibre Corporation (TFC) to provide for collection of additional recyclable materials. Under this contract, TFC provides some of the recycling containers for the waste collection sites that are used by the citizens of the County for recycling of plastic bottles and dairy tubs, newspapers and inserts, magazines, catalogs, junk mail, office paper, cardboard (OCC), milk cartons, paper egg cartons, cereal boxes, glass bottles and jars, and steel/tin cans and aluminum cans. These materials can be comingled (separation is not required) making it easier for the citizens to recycle. In 2021, approximately 66.6% percent of the materials collected by TFC from the Eastern Shore come from the Northampton County collection system. Cell phones, textiles/shoes/books are also collected.

At this time, the recycling centers do not accept: pizza boxes, aerosol cans, hoses, plants, toys, dishes or paper plates, juice boxes or pouches, tires, Styrofoam, household batteries, plastic bags or electronics.

Section 5.3 describes recycling in greater detail.

Treatment of Solid Waste – The County does not treat or process solid waste.

Implementation of the plan will be under the direction of the County Administrator of Northampton County who will work closely with the County Board of Supervisors and Town Councils. The County will be responsible for:

- Completion and submittal of Form 50-25 (SWIA) annually and Form 50-30 (Recycling) every four years per regulation.
- Periodic update of the SWMP as necessary.

- Annual evaluation of programs to determine their success and to outline any needed improvements or changes.
- Education relative to solid waste management.
- Assuring adequate and economic disposal capacity for the Region.

In addition to the day-to-day record keeping, the County documents their solid waste activities in several ways as follows:

- Annual reports to the Board of Supervisors indicating how the goals and objectives of the program have been met.
- Periodic updates presented to the Board of Supervisors as requested.
- Annual submittal by March 31 of each year of the Waste Information and Assessment Report (Form 50-25) to DEQ.
- Annual submittal by April 30 every 4 years (beginning in 2012) of the Recycling Rate Report (Form 50-30), to DEQ.
- Annual submittal usually by December of each year, of an update of financial assurance to DEQ.

All these reports, updates, and DEQ submittals, as well as the background information are kept in the central archive (files) of the solid waste program located at the County offices, 16404 Courthouse Road, Eastville, Virginia.

The Director of DEQ receives copies of the appropriate information through the following sources:

- Direct submittal to DEQ of Form 50-25 (Waste Assessment) and Form 50-30 (Recycling).
- New permit requests
- Permit amendments
- Updates to the Solid Waste Management Plan.

The following table summarizes important key elements of the Region's existing program:

TABLE ES-1
KEY ELEMENTS
EXISTING SOLID WASTE PROGRAM
AS OF CY 2021

Element	Description	Comments
Collection by County	• The County is operating a series of 6 waste collection sites. No additional sites are planned. There are no longer any green box sites located in the County except at County facilities. • Northampton County currently contracts with Davis Disposal to provide all collection services necessary to bring the waste from the waste collection centers and County facilities to the transfer station.	In 2021, 5,950 tons of waste were hauled from the convenience centers.
Collection by Towns	• Cape Charles – collection is privatized • Cheriton – Davis Disposal provides regular trash pickup. • Eastville – residents use County collection centers. • Exmore – Town provides collection services to its businesses and residents. • Nassawadox – Davis Disposal provides regular trash pickup.	
Disposal	• In April 2009, Northampton County began transferring its waste out of the County through its new transfer station located on a parcel adjacent to the closed landfill. The waste is transported to the King and Queen Landfill. • The King & Queen Landfill (Permit No. 554) is owned by BFI Waste Systems of Virginia, LLC. It is located at 1000 Iris Road, Little Plymouth, VA 23091.	• Municipal solid waste, including commercial waste received at the transfer station was reported as 19,046 tons in 2021, with 18,078 tons transferred. (DEQ SWIA form) • Brush is currently placed in a separate area and burned. • Soil and stone are received at the landfill and are used internally for road base construction and other purposes on the landfill site. • Metal is primarily white goods that are recycled through a third-party vendor.

Element	Description	Comments
Recycling	• A multi-year contract, entered into jointly with Accomack County, was executed with Tidewater Fibre Corporation of Chesapeake, Virginia, to provide at least weekly pickup from the waste collection centers of recycled materials for transport to TFC's Chesapeake facility. • Most of the recycled materials can be commingled in the TFC boxes at the waste collection centers. A few materials are segregated, e.g., textiles. • Materials collected include: plastic bottles and dairy tubs, newspapers and inserts, magazines, catalogs, junk mail, office paper, cardboard (OCC), milk cartons, paper egg cartons, cereal boxes, glass bottles and jars, and steel/tin cans and aluminum cans. Cell phones, textiles, shoes, and books are also collected.	In 2021, 231 tons of recyclable materials were collected from the waste collection centers. The calculated recycling rate for CY 2021 was reported at 21.6%, which exceeds the minimum mandated 15%. TFC no longer offers a rebate.
Treatment	• The County does not treat their waste prior to disposal.	No activities are planned.

The Region continues to try to improve their program. Goals for the program include the following:

Collection - Goals and Objectives:

- Continue to provide cost effective and efficient collection services for residents of County and towns.
- Expand services as development within the County requires.
- Continue to improve the appearance and safety of the waste collection centers.
- Review staffing levels of waste collection centers and transfer station.

Disposal - Goals and Objectives:

- Continue to comply with the 30-year post closure care requirements for the landfill. The County will evaluate the data collected periodically to determine if termination of post closure care can be expedited.
- Assure that all compliance monitoring, maintenance activities and inspections are completed in accordance with the approved Post Closure Care Plan and that the information is organized properly so it will be available for preparation of the

"Termination of Post Closure Care" request per DEQ requirements at some time in the future.

- Renew contracts for hauling and disposal as required by contract and in accordance with Virginia Procurement regulations.
- Assess transfer station annually to evaluate need for repairs or maintenance to the structure or floor and provide appropriate budget for implementing the repairs or maintenance activities.

Recycling - Goals and Objectives:

- Continue collaboration with Accomack County and Tidewater Fibre for recycling collection.
- Support educational programs in the schools relative to recycling or environmental education.
- Short term goals include:
    - Continue to provide recycling for County offices.
    - Continue operation of recycling centers at the waste collection sites to help meet the state-mandated recycling rate.
- Mid-term goals include:
    - Host a computer/technology recycling event (also termed e-waste)
- Long term goal includes:
    - Study the feasibility of curbside pick-up for recycling.
    - Consider establishing a litter campaign and evaluate ordinances for enforcement.
- Consider developing additional programs as funding becomes available.
- Encourage private programs in businesses and industries.
- Develop a reporting program for the commercial and industrial sectors to track recycling, source reduction and reuse tonnages.

Treatment - Goals and Objectives:

- The County does not plan to initiate any operations that would meet the definition of treatment.

Section 8.0 describes the future long-term goals for the program in greater detail and includes a list of action items.

1.0 INTRODUCTION

1.1 Legislation

The following solid waste management plan has been prepared in accordance with the Virginia Waste Management Board's, Solid Waste Planning and Recycling, 9 VAC 20-130-10 et seq., latest revision.

1.2 Authority (9 VAC 20-130-20)

The regulations were promulgated pursuant to Chapter 14 (Sec.10.1-1400 et seq. and specifically Sections 10.1-1402, 10.1-1411 and 10.1-1413 of Title 10.1 of the Code of Virginia which authorized the Virginia Waste Management Board to promulgate and enforce such regulations as may be necessary to carry out its duties and power, and the intent of the Virginia Waste Management Act and the federal acts.

1.3 Purpose (9 VAC 20-130-40)

The purpose of the regulations as generally stated in 9 VAC 20-130-40 and elsewhere in the regulations is to:

1. Establish minimum solid waste management standards and planning requirements for protection of public health, public safety, the environment, and natural resources throughout the Commonwealth;
2. Require the development of a comprehensive and integrated solid waste management plan that addresses all components of the solid waste hierarchy established by the United States Environmental Protection Agency (EPA) as embraced by the Commonwealth as follows:
    - Source Reduction (most desirable activity)
    - Reuse
    - Recycling
    - Resource Recovery (waste-to-energy)
    - Incineration
    - Landfilling (least desirable activity)
3. Promote local and regional planning that provides for environmentally sound and compatible solid waste management with the most effective and efficient use of available resources;
4. Establish procedures and rules for designation of regional boundaries for solid waste management plans;
5. Establish state, local government, or regional responsibility for meeting and maintaining the minimum recycling rates of 15% or 25%;

6. Establish the requirement to withhold permits for failure to comply with the regulations;
7. Provide a method to request reasonable variance or exemptions from the regulations;
8. Provide for reporting and assessment of solid waste management in the Commonwealth.

1.4 Planning Area

This updated solid waste management plan has been prepared for Northampton County and its incorporated towns of Cape Charles, Cheriton, Eastville, Exmore and Nassawadox. Each member of the Region adopted the original solid waste management plan and copies of the original adopting resolutions can be found in **APPENDIX 1** to this plan.

The 2013 Major Amendment was approved by the County Board of Supervisors but approval by the towns was not needed per 9VAC20-130-130 which states: *"when the solid waste planning unit represents multiple government units, the unit submitting a major plan amendment needs to conduct the public participation requirements only in the County or locality involved in the amendment."* The 2013 Major Amendment was focused on the closure of the Northampton County landfill and operation of a new transfer station. **APPENDIX 1** also includes the County's adoption of the Major Amendment.

This 2022/2023 SWMP update is not a major amendment. It was prepared to update the document to mirror data for 2018 through 2022 and to recognize a new planning period of 2023 through 2043.

APPENDIX 2 includes all figures for this SWMP update. Figure 1 illustrates the location of the County of Northampton in relation to the Commonwealth of Virginia. Figure 2 shows the location of existing facilities in the County. For the purpose of this plan, the term "County" and "Region" may be used interchangeably.

1.5 Planning Period

The original planning period for the solid waste management plan was 20 years from 2004 – 2024. The original solid waste plan was approved on June 20, 2008. Five-year updates were then required for 2013, 2018, and 2023 etc. The updated plan considers a planning period from 2023 through 2043 and is part of the 5-year submittal.

1.6 Critical Definitions (9 VAC 20-130-10 and 9VAC20-81-10)

See 9VAC20-130-10 for planning definitions and 9VAC20-81-10 for definitions pertaining to solid waste management facilities and operations.

2.0 BACKGROUND INFORMATION

To provide background to the discussions contained in this updated solid waste management plan, a discussion of the status of solid waste management nationally is provided in this Section.

2.1 Status of Solid Waste Management Nationally

This plan incorporates by reference the "*Advancing Sustainable Materials Management: 2018 Fact Sheet*" published by United States Environmental Protection Agency (EPA) in December 2020. Excerpts of this document have been included in **APPENDIX 3.**

It should be noted that as used by the EPA, the term municipal solid waste (MSW) consists of "everyday" items such as product packaging, grass clippings, furniture, clothing, food scraps, newspapers, appliances, and batteries. It does not include materials that may also be landfilled but are not generally considered MSW, such as construction and demolition debris, sludge, and non-hazardous industrial wastes. Virginia's definition is similar defining MSW as waste that is normally composed of residential (household), commercial (businesses other than manufacturing or construction) and institutional solid waste. However, record keeping of localities may not segregate the waste materials in a similar way. Thus, when comparing the information in this section with the data in the solid waste plan, care must be given to the term MSW.

2.1.1 Waste Generation

According to the 2020 EPA report (for 2018), the United States generated approximately 88.1 million tons of MSW in 1960 and approximately 292.4 million tons in 2018. This represents a 330% increase in the solid waste generated over the period. At the same time the United States population increased from 180.0 million persons in 1960 to 327.2 million persons in 2018 or a 182% increase over the period. Clearly, the increase in tonnage is not just a factor of population but also other factors including changes in retailing and the commercial/business sectors. The following table taken from the 2020 EPA report, summarizes the waste generation for 1960 – 2018 on a pounds per person per day basis:

TABLE 1
GENERATION, MATERIALS RECOVERY, COMPOSTING, COMBUSTION WITH ENERGY RECOVERY, AND DISCARDS OF MSW, 1960 TO 2018
(IN POUNDS PER PERSON PER DAY)

Year	Waste Generation	Materials Recovery and Composting	Combustion with Energy Recovery	Discards to Landfill/Other Disposal	Population (Millions)
1960	2.7	0.2	0.0	2.5	180.0
1970	3.3	0.2	neg	3.1	204.0
1980	3.7	0.4	0.1	3.2	227.3
1990	4.6	0.7	0.7	3.2	249.9
2000	4.7	1.3	0.7	2.7	281.4
2005	4.7	1.5	0.6	2.6	296.4
2010	4.4	1.5	0.5	2.4	309.1
2015	4.5	1.6	0.6	2.3	320.9
2017	4.5	1.6	0.6	2.4	325.1
2018	4.9	1.6	0.6	2.4	327.2

Previous EPA reports had noted that residential waste is estimated to be 55% - 65% of the total MSW generated, and that commercial waste (including institutional wastes, some industrial sites and businesses) constituted between 35% and 45% of the total MSW generated. However, the 2020 report was silent on these metrics.

2.1.2 What Is In The Waste?

In evaluating waste generation, the report examined the composition of the waste materials as discarded before recycling and the amount of the material recovered through recycling programs. The following table summarizes the findings from the 2020 EPA report:

TABLE 2
GENERATION AND RECOVERY OF MATERIALS IN MSW
BY MATERIAL TYPE
2018

Material	Weight Generated (million tons)	Weight as % Total Generated	Weight Recycled (million tons)	Recycling as % Total Recycling
Paper	67.39	23.1%	45.97	66.5%
Glass	12.25	4.2%	3.06	4.4%
Metals	25.60	8.8%	8.72	12.6%
Plastics	35.68	12.2%	3.09	4.5%
Rubber, leather & textiles	26.19	8.9%	4.18	6.1%
Wood	18.09	6.2%	3.10	4.5%
Yard trimmings	35.40	12.1%	NA	NA
Food scraps	63.13	21.6%	NA	NA
Other	8.63	2.9%	0.97	1.4%
TOTAL	**292.36**	**100.0%**	**69.09**	

Based on this information, paper dominates recycling. Recycling weight was approximately 23.6% of the total weight generated.

In addition, the report evaluated the waste stream by product type. The following table summarizes the findings of the report:

TABLE 3
GENERATION AND RECOVERY OF MATERIALS IN MSW
BY PRODUCT TYPE
2018

Material	Weight Generated (million tons)	Weight as % Total Weight Generated	Weight Recycled (million tons)	Recycling as % Total Recycling
Durable goods	57.10	53.1%	10.57	42.7%
Nondurable goods	50.44	46.9%	14.19	57.3%
TOTAL	**107.54**	**100.0%**	**24.76**	**100.0%**

2.1.3 Disposal

The 2020 EPA report tracks the ultimate handling of the wastes generated and indicates that 11.8% of the waste generated is combusted, 34.1% of the waste is recovered and that 50.0% of the waste is landfilled.

2.1.4 Recycling

According to the 2020 EPA report, the United States recycled approximately 5.6 million tons of materials in 1960 and approximately 69.1 million tons in 2018. In addition, composting of yard trimmings, food scraps, and other MSW organic material has increased from negligible reported quantities in 1960 to 24.9 million tons in 2018. This does not include back yard composting projects. Thus, in 1960, the recycling rate as calculated as recyclables over total MSW was 6.4%, and in 2018 the recycling rate was calculated to be 23.6% without composting or 32.1% with composting. The following table taken from the 2020 EPA report, summarizes the recycling and composting rates for 1960 – 2018 on a pounds per person per day (pppd) basis:

TABLE 4
USA RECYCLING AND COMPOSTING RATES, 1960 TO 2018
(IN POUNDS PER PERSON PER DAY)

Year	Materials Recovery	Composting	Total
1960	0.2	Neg.	0.2
1970	0.2	Neg.	0.2
1980	0.4	Neg.	0.4
1990	0.6	0.1	0.7
2000	1.0	0.3	1.3
2005	1.1	0.4	1.5
2010	1.1	0.4	1.5
2015	1.2	0.4	1.6
2017	1.1	0.5	1.6
2018	1.2	0.4	1.6

2.1.5 Waste Reduction and Reuse

When EPA established its waste management hierarchy in 1989, it emphasized the importance of reducing the amount of waste created, reusing whenever possible, and then recycling what is left. When municipal solid waste is reduced and reused, this is called "source reduction", meaning that the material never enters the waste stream. Instead, it is managed at the source of generation. Source reduction includes the design, manufacture, purchase, or use of materials, such as products and packaging, to reduce their amount or toxicity before they enter the MSW waste stream. Examples of source reduction activities are:

- Designing products or packaging to reduce the quantity or the toxicity of the materials used, or to make them easier to reuse.
- Reusing existing products or packaging; for example, refillable bottles, reusable pallets, and reconditioned barrels and drums.
- Lengthening the lives of products so less material is thrown away over time.

- Using packaging that reduces the amount of damage or spoilage of a product.
- Managing non-product organic wastes through onsite composting or other alternative disposal techniques.

2.2 Historical Planning Efforts

Northampton County was originally part of the Accomack-Northampton Planning District – Solid Waste Management Plan, which was adopted on December 23, 1991, by the Accomack-Northampton Solid Waste Management Committee. The plan was prepared by the Accomack-Northampton Planning District Commission and was funded in part by the Virginia Council on the Environment's Coastal Resources Management Program through Grant #NA90aa-H-CZ796. The original Solid Waste Management Plan was approved by the Department of Waste Management on March 31, 1992.

In 2004, Northampton County became its own Region and developed its own solid waste management plan (SWMP or Plan). This Plan was dated January 20, 2005. At that time, the County did not meet the minimum recycling rate of 25% and a Recycling Action Plan was required by DEQ to be submitted. After review of this supplemental plan, the SWMP was approved by DEQ on June 20, 2008.

In 2013, the Region submitted a major amendment to the Plan which addressed the closure of the Northampton County landfill and construction and permitting of a new transfer station. The Plan also updated various metrics and data tables contained in the 2004 plan.

In 2023, the required 5-year certification letter and an updated Plan are being submitted per the regulatory requirements. This update is not an amendment as defined by the regulations.

2.2.1 Waste Generation Projections

Waste generation rates for Northampton County were projected through the year 2030 for the 1991 and 2004 plans.

In the 2013 plan, waste generation was projected through 2040 although the planning period was 2013 - 2033.

In the 2018 5-year update letter, waste generation was projected through 2040 although the planning period was 2018 - 2038.

In 1991, the estimates were prepared using the following assumptions:

- A yearly percentage of change in per capita rates was derived by using the Franklin Associates study, "Discards of Municipal Solid Waste by Individuals, 1986 (update 1988)." An annual percentage change of 0.6% for 1990-2000 and 0.2% for 2000-2003 2030 were then applied to the County's per capita rate.

- The per capita projections were then applied to the population projections developed by the PDC.

For 2005, the estimates were based on a 1.0% growth rate based on a population growth rate of the same.

For 2013, the estimates were based on consideration of a declining population. As indicated in the 2013 plan, the Region's population was expected to decline over the planning period as projected by the Weldon Cooper Center. Regarding the commercial and industrial sectors, it was assumed that there would be minimal growth in those sectors. Thus, for the 2013 plan the future tonnage (after 2012) was frozen at the 2012 rates rather than decreased with the projected decline in population to provide for commercial sector increases.

For 2018, the estimates were based on consideration of a declining population as was the 2013 evaluation. As indicated in the 2018 letter, the Region's population was expected to decline over the planning period as projected by the Weldon Cooper Center. Regarding the commercial and industrial sectors, it was assumed that there would be minimal growth in those sectors. Thus, for the 2018 plan the future tonnage (after 2017) was frozen at the 2018 rates (which were based on the average tonnage received at the transfer station for the period of 2013 through 2017) rather than decreased with the projected decline in population to provide for commercial sector increases.

For the 2022/2023 plan update, generation was frozen at the average of the total tonnage received at the transfer station for the period 2017 through 2021 rather than consider the declining population.

The following table summarizes the projected data from the four different evaluations and illustrates the inherent challenge in projecting waste tonnage.

TABLE 5
COMPARISON
WASTE GENERATION PROJECTIONS - SWMPs BY DECADE
(Tons per year)

Year	1991 TOTAL TONNAGE	2005 TOTAL TONNAGE	2013 TOTAL TONNAGE	2018 TOTAL TONNAGE	2022 TOTAL TONNAGE
1990	11,598	NA	NA	NA	NA
2000	12,686	13,567	NA	NA	NA
2010	11,726	18,652	12,282	NA	*11,726
2020	13,201	20,603	12,640	13,815	*16,549
2030	13,458	22,759	12,640	13,815	16,987
2040	NA	NA	12,640	13,815	16,987

*Indicates actual data from DEQ – SWIA forms.

The County's solid waste program has evolved from the 1991 and 2005 plans and currently, in 2022/2023, mirrors much of the discussion in the 2013 plan. As of 2022/2023, the County has consolidated its collection system, moved to the use of a transfer station for out of County disposal and entered an agreement with a private recycling company to enhance recycling in the County. The earlier plans can be consulted to obtain a historical overview of the County's efforts since the implementation of federal and state solid waste regulations in the early 1990s.

3.0 DEMOGRAPHIC DATA

3.1 Location

Northampton County, along with Accomack County, make up the region known as the Eastern Shore of Virginia, an area located at the southern tip of the Delmarva Peninsula. The 795 square mile County of Northampton is located on the southern part of the peninsula and is bound on the north by Accomack County, on the east by the Atlantic Ocean, and on the south and west by the Chesapeake Bay. Much of the demographic data for Northampton has been developed as regional data for the Eastern Shore, which includes Accomack, the more populated of the two counties.

Northampton County is approximately 35 miles in length and has an average width of 6 miles. The entire peninsula has traditionally been known for extensive agriculture and seafood production and as the site of NASA's launch site at Wallops Island. The County seat is Eastville, which is 125 miles west of Richmond and 30 miles north of Hampton Roads.

Chesapeake Bay and the natural features and conditions of the land on the peninsula have always played a significant role in the lives of the residents of the County. Protection and preservation of these natural resources will have a strong influence on the economy of the County and on the quality of life of its inhabitants.

3.2 Population

The population of the Eastern Shore is remarkably steady considering the level of in-migration and out-migration. The slight decline in County population that began in the 1980s continued into the 1990s. The County's 1980 population was 14,625 but by 1990 it had decreased 10.7% to 13,061. The population rose slightly in 2000 but declined by 2010 and stayed steady as reported for 2020. The table below summarizes the U.S. Census data:

TABLE 6
POPULATION OF THE EASTERN SHORE
1980-2020

Geographic Region	1980	1990	2000	2010	2020
Accomack County	31,268	31,703	38,305	33,164	33,413
Northampton County	14,625	13,061	13,093	12,389	12,282
Eastern Shore of Virginia	45,893	44,764	51,398	45,553	45,695

Source: U.S. Census Bureau as reported by Weldon Cooper

Population projections from the Weldon Cooper Center show that Northampton County will decline in population through 2045.

The Weldon Cooper Center was consulted for population data and population projections. **APPENDIX 4** provides a table with estimated population from 2010 through 2021 and with population projections by year from 2022 through 2045 based on the Weldon Cooper projections. A summary of ten-year increments to 2045 is below. This information is provided in the table below.

TABLE 7
NORTHAMPTON COUNTY – POPULATION
HISTORIC AND PROJECTIONS
2000-2045

YEAR	POPULATION	AVERAGE RATE OF ANNUAL CHANGE
2000	13,025	
2010	12,389	-0.49%
2020	12,282	-0.09%
2030	12,000	-0.23%
2040	11,424	-0.49%
2045	11,221	-0.36%

Population Source: Weldon Cooper Center

As indicated by the Weldon Cooper Center, the County is anticipated to slowly decline in population over the planning period.

Based on the census.gov/quickfacts/northamptoncountyvirgina the following table summarizes pertinent data available for the County (Note this table replaces previous Plan narrative):

TABLE 8
NORTHAMPTON COUNTY
PERTINENT CENSUS DATA
2020

ITEM	DATA
Population estimates – April 1, 2020	12,282
Housing units – July 1, 2021	7,427
Owner occupied housing unit rate 2016 - 2020	63.3%
Median value of owner-occupied housing units 2016 - 2020	$194,000
Building permits 2021	106
Households, 2016 - 2020	5,151
Persons per household, 2016 – 2020	2.24
Median household income (in 2020 dollars), 2016 - 2020	$50,819
Total employer establishments, 2020	305
Total employment, 2020	2,812

3.3 Geographic Conditions

Northampton County is located on the southern half of the Delmarva Peninsula. Measuring approximately 18 miles wide at its northern end, the peninsula tapers to a point 75 miles to the south, where it connects to the Virginia mainland by the Chesapeake Bay Bridge-Tunnel. A string of barrier islands protects the peninsula from the Atlantic Ocean. There is an extensive tidal marsh system between the seaside coast and the barrier islands just off the coast, with a few deep-water channels leading to the Atlantic.

Elevations range from sea level to 50 feet above sea level and averages about 20 feet above sea level. Approximately 95% of the Eastern Shore has slopes less than or equal to 2%, very conducive to development. For the most part, the soil profile consists of 8 to 10 inches of sandy loam topsoil and approximately 30 inches of sandy clay subsoil. Mineral resources include sand, clay, and shell strata.

Detailed soil maps of the county are available and can be viewed at the Northampton County Planning, Permitting and Enforcement Department. The County is well-endowed with excellent soil for agriculture and development. There is, however, a significant part of the county's land area where a soil survey has determined the soil type to be hydric (high moisture content). This area includes the tidal marshes and the barrier islands.

Ground water is the source of potable water on the peninsula. The Department of Environmental Quality designated the region a Groundwater Management Area in 1976, which means that all groundwater users of 10,000 gallons per day or more are subject to a permit process.

Northampton County has approximately 261 miles of shoreline with the majority fronting Chesapeake Bay. Shoreline is also found on the Atlantic side and around the Barrier Islands. Much of the county's land mass is tidal wetlands, estimated to cover 35,000 acres. Marine resources include the abundant marshlands and spawning areas for numerous finfish and shellfish.

Some of the unique features within or bordering the County are the presence of Carolina Bays, the Chesapeake Bay, sand dunes, Barrier Islands, and the Delmarva Cape.

Much of Northampton County lies within what has been designated as the Flood Hazard District.

3.4 Climate

The Eastern Shore enjoys a mild climate with four distinct seasons. The Atlantic Ocean has a moderating effect on the summer highs and winter lows. The area receives an average annual rainfall of 42 inches and the average annual snowfall is 8 inches. Most of the rain falls in the fall and spring months.

Summer months are hot and humid with infrequent thunderstorms. Maritime breezes generally come up at the day's end and provide a cool break in the heat. Hurricanes sometimes skirt the region in the fall, but compared to other Atlantic coastal regions, little damage has been done by hurricanes over the last fifty years.

Average Annual Temperature	58 degrees F
Average July Temperature	77 degrees F
Average January Temperature	41 degrees F

3.5 Transportation

3.5.1 Highways

U.S. Route 13 is a 4-lane arterial highway which runs the length of the Eastern Shore peninsula and connects with I-64 in Virginia Beach, approximately 40 miles to the south. The Chesapeake Bay Bridge-Tunnel places the County within easy reach of the Port of Hampton Roads.

I-95 can be reached via I-64 in Richmond, 165 miles to the southwest, or in Washington D.C., 190 miles to the north.

3.5.2 Air

Accomack County Airport is located in the Accomack Airport Industrial Park near the center of the Eastern Shore of Virginia. This small airport can accommodate most private jet and propeller aircraft.

Commercial air service is provided across the Chesapeake Bay Bridge-Tunnel at the Norfolk International Airport approximately 50 miles south, in Norfolk. Also about 50 miles from Northampton County is the Newport News- Williamsburg International Airport in Newport News.

3.5.3 Rail

The Bay Coast Railroad was a bridge line that bypassed the congested Northeast Corridor and its restricted clearances. The railroad had a 26-mile car float operation to cross the Chesapeake Bay from Cape Charles to Little Creek. Two car floats of 18 and 25-car capacity were used over the water route. Commodities handled by the railroad were coal, stone, cement, grain, propane gas, paper, chemicals, fertilizer, food stuffs and brick. The railroad was discontinued in 2018 and is in the process of abandonment with the corridor being converted to a Rail-to-Trail facility.

3.5.4 Water

The largest harbor in the Eastern Shore region is located in Cape Charles. The harbor channels are maintained by the U.S. Army Corps of Engineers with the main channel having a low water depth of 18 feet.

The nearest large port is located in Norfolk, about 20 miles south.

3.6 Utilities & Services

3.6.1 Electricity

Electricity is supplied by Accomack-Northampton Electric Cooperative (ANEC).

3.6.2 Water

Public water in Northampton County is supplied by the Towns of Exmore, Eastville, and Cape Charles. Most of the residents of the County use wells.

3.6.3 Sewage

The Town of Cape Charles has a public wastewater treatment system. The Town of Exmore has constructed a wastewater treatment system. Most of the residents have septic systems. Northampton County receives solids from the Cape Charles Wastewater Treatment Plant.

3.6.4 Solid Waste Disposal

The County provides solid waste disposal to its residents through six waste collection centers. Waste that is collected at these sites, by the Towns or commercial haulers is brought to the transfer station for transportation out of the County to a private landfill. Hauling and disposal of waste is privatized. The private landfill used at this time is reported to have 20+ years of remaining life.

3.7 Economic Growth

Per the Virginia Employment Commission, "Community Profile," dated 9/17/22, the primary industries in Northampton County as of 2022 remain focused on agriculture and forestry, health care and social assistance, and government positions. Unemployment was reported by the Virginia Employment Commission to be 7.8% for 2020 as compared to 6.2% for Virginia. Minor growth in industrial employment is projected.

The isolation of the peninsula means that the population has limited employment options. The Region has remained, until very recently, very rural and the economy dependent on farming and seafood. Approximately 2,400 workers residing in Northampton County workers traveled out of

the county to work in 2020, mostly to Accomack County and just across the bay to the Hampton Roads area.

Economic development is detailed in the following documents that can be found online:

- *"Eastern Shore of Virginia – Regional Economic Development Plan – 2017 – 2022,"* prepared by Accomack-Northampton Planning District Commission – updated November 2021 (129 pages)
- *"Your Northampton County 2040 – Northampton County Comprehensive Plan"*, prepared by Northampton County and approved by the Board of Supervisors o June 8, 2021 (344 pages)
- *"Virginia Community Profile – Northampton County,"* prepared by the Virginia Employment Commission, updated September 17, 2022. (45 pages) **See APPENDIX 5.**

These three documents were prepared to describe current economic conditions in the County and to project future growth. Therefore, the information in these documents should be consulted as related to economic conditions in this Plan. Suffice it to say, that the population is projected to decline over the 20-year planning period and commercial/industrial growth to be slow to moderate.

See Map 4.1 from the Comprehensive Plan entitled, "Future Land Use" included in **APPENDIX 6** to better understand growth in the County.

See Map 6.1 from the Comprehensive Plan entitled, "Economic Drivers" included in **APPENDIX 6** to better understand growth in the County.

The County's solid waste program over the next 20 years will need to make limited if any adjustments based on information provided in these documents.

3.8 Land Use

Cropland and woodland continue to be the predominate land use in Northampton County. The remaining area is developed for residential, commercial, and industrial uses. The total land surface of the County is approximately 212 square miles or approximately 27% of the total area.

3.8.1 Residential

Data from the 2020 Census show that 63.0% of the residents of the County are homeowners. The County has quaint fishing villages and historic towns with homes of varied vintage from ante-bellum to Victorian to Sears Roebuck houses. The major towns in Northampton County, Virginia are Cape Charles, Cheriton, Eastville, Exmore and Nassawadox.

Cape Charles is known for its many large homes that were constructed to house railroad executives as well as for the expanding merchant class. With most of its structures built between 1885 and 1920, Cape Charles has one of the largest concentrations of late-Victorian and turn-of-the-century buildings on the East Coast. In 1989, the town was designated as a Historic District on the Virginia Landmarks Register and in 1991 was placed on the National Register of Historic Places. The population for Cape Charles in 2020 was 1,245 people up from 1,009 reported in the 2010 Census.

The Eastern Shore is experiencing an influx of people moving into the area from elsewhere, purchasing retirement or vacation homes. This influx balances the out-migration of young people from the area. Many are retirees or households in search of a weekend or vacation home on the bay. Land purchases for large resort-type developments and for more modest residential developments have increased notably. Prime farmland has been targeted and purchased for these developments. The County and Town governments are realizing that their zoning and subdivisions ordinances lack strength to support their comprehensive plans when it comes to residential development.

Growth may be limited by the amount of water that the groundwater supply can accommodate. Every aspect of the community's health and economic well-being is dependent on the availability of high-quality water.

In 2021, there were 106 building permits issued, significantly down from previous years.

It is the goal of the County to encourage the existing communities of the Cape Charles/Cheriton, Eastville, Nassawadox, and Exmore/Belle Haven as the primary growth center development areas of the County. These areas are the four most capable of supporting public water and sewerage systems needed for growth. The County also has growth areas of a smaller scale, outside of the incorporated towns, known as rural villages.

3.8.2 Commercial

As reported in the 2020 census, there were a total of 305 employer establishments with a total employment of 2,812 people.

Cape Charles is the largest town in the county and has been designated a Historic District. It offers a commercial center with shops, restaurants, antiques, medical services, public beach, golf, harbor, marinas, boat ramp, sport fishing, and summer rentals. Most of the commercial land use is concentrated in the downtown area but some commercial use exists at the entrance to town where Randolph Avenue and Fig Street connect with Route 184. New commercial development is part of the overall plan for the Bay Creek community under construction in Cape Charles. It will be geared to serve the needs of retirees with an interest in golf and small boat craft.

Commercial development sprawls along Highway 13, the length of the peninsula.

The Town of Cheriton has shopping, medical services, and a restaurant.

The Town of Exmore has undergone a downtown revitalization project to improve the visual attractiveness of the downtown area. The U.S. Highway 13 commercial corridor in the Town of Exmore lacks sufficient sewer service and development will depend on the new sewer system under construction.

The growth of the central business district of Nassawadox has been in question due to lack of sewer service. Businesses such as restaurants have not been able to locate in this downtown area without considerable difficulty or expense. With construction of a regional sewer pipeline starting in 2022 under the control of the Hampton Roads Sanitation District, commercial as well as residential development can be expected to locate not only in Nassawadox but along the entire length of the service line.

Geographic isolation has actually been an asset in attracting small business owners who find the area a great place to live. Studio businesses will continue to be a key to attracting tourists and retirees.

Residents of the region go to Hampton Roads or Salisbury, Maryland to make major purchases although the Eastern Shore has a Walmart store located in Onley (Accomack County).

3.8.3 Industrial

Industrial development is very limited on the peninsula. Industrial land use in the Town of Cape Charles is concentrated at the Cape Charles Harbor area and includes Coastal Precast. The Cape Charles Yacht Center and 120 acres located on the south side of the harbor, is also planned for industrial use.

Eastern Shore's industrial park is described below.

Accomack County Airport Industrial Park, Melfa

Acreage Available:	360 acres
Improved Acreage:	120 acres served by water, sewer, paved streets.
General aviation airport:	New terminal building, new aircraft parking apron and new T-hangars.

3.8.4 Agricultural

As reported in the 2017 Virginia Census of Agriculture, Northampton County has 142 farms encompassing 48,142 acres in farms of which 78% is cropland and 6% is woodland. Cropland is

uniformly distributed throughout the county. Soils are mainly sandy loam, which is considered prime farmland. Much of the County consists of tidal marshes and saltwater bays and creeks.

In 2017, Northampton land in farms totaled 48,142 acres, or 36% of the County's area of 132,724 acres. According to the 2017 Census of Agriculture, there were 142 farms in the area, each averaging 340 acres in size and with an average value of products sold estimated at $675,996. Both the number of farms and land in farms in Northampton had been declining since 2012.

This is one of the leading areas of the state for cropland and vegetable production. All crops accounted for 71% of the total value of all farm products sold with livestock making up the other 29% of the sales.

The seafood industry is an important part of the County's economy. Besides the commercial fishermen who make their living by catching or gathering seafood, farming seafood is also a growing industry. Aquaculture enterprises located in Northampton include Cherrystone Aquafarm and Ballard Fish and Oyster Company.

3.8.5 Open Space/Recreation

See Map 5.1 in **APPENDIX 6,** entitled "Conservation Lands," taken from the Northampton Comprehensive plan illustrating the various conservation lands.

See Map 5.2 in **APPENDIX 6,** entitled "Tree Canopy and Wetlands," taken from the Northampton Comprehensive plan illustrating tree and wetland coverage which could impact expansion of open space and recreation areas as well as economic development.

The County has many open space and recreational areas that are open to the public and are the main draw for the tourist. Nature Conservancy tours of the barrier islands are available by prior arrangement and a federal wildlife refuge offers nature walks on the seaside marshes. The islands are renowned for their expansive beaches, surrounding lush salt marshes, and great concentrations of shorebirds, seabirds, and migrating waterfowl.

The County's sand dunes are a valuable resource and the first line of defense against the sea. They act as barriers to high tides and waves and help keep shorelines intact.

Northampton's barrier islands are among its most important and unique natural resources. Most of the islands are included in the Virginia Coast Reserve, which is an island and salt marsh preserve owned by the Nature Conservancy of Arlington, Virginia. Most of the nine islands located in the county are protected with in the Virginia Coast Reserve, the Federal National Wildlife System, or the Virginia Natural Areas Program. The Virginia Coast Reserve has been designated an International Biosphere Reserve by the United Nations in recognition of the importance and fragility of the ecosystem. Northampton County's islands, together with contiguous islands in neighboring Accomack County, represent the last undeveloped barrier island system on the Atlantic Coast.

The Delmarva Cape is roughly that area south of a line from Cape Charles through Cheriton to Oyster. It is an area of the highest ecological value for many significant reasons, one of which is its critical significance as part of the Atlantic migratory bird flyway. This area is also a primary habitat for breeding birds, turtles, and other fauna, and is ecologically unique as an area where four major ecosystems converge. Thus far, no major resort or subdivision has disturbed the ecological balance.

Parks within the County include

- Indiantown Park, a 52-acre community park
- Eastern Shore of Virginia Wildlife Refuge, an important habitat for wildlife and migratory birds located near the Chesapeake Bay tunnel-bridge.
- Kiptopeke State Park, a nature park located along the bay
- Edward S. Brinkley Nature Preserve, located on the Northampton Sanitary Landfill property.

There are 30,000 acres of forestland in the County with pine stands predominating**.** Their presence is important as wildlife habitat and for their function as a natural buffer and windbreak. Forests serve as filtering agents for sediments and pollutants and as groundwater recharge areas.

3.9 Community Facilities/Activities

See Map 9.1 in **APPENDIX 6,** entitled "Community Facilities," taken from the Northampton Comprehensive plan illustrating the various community facilities.

Riverside Shore Memorial Hospital is located in the community of Onancock VA in Accomack County. Nursing homes are available in the community.

Eastern Shore Community College is located in Melfa in Accomack County. It is a two-year school that has a workforce training focus.

Sources:
U.S. Bureau of the Census, 2020 Census,
2017 Census of Agriculture
Virginia Economic Development Partners
Virginia Employment Commission
Accomack-Northampton Planning District Commission website
Weldon Cooper Center for Public Service
Northampton County Planning Department

4.0 WASTE GENERATION AND COMPOSITION

Northampton County previously operated a sanitary landfill designated as Permit 507 by the Virginia Department of Environmental Quality (DEQ). This landfill is located approximately 2.5 miles east-northeast of Cheriton, Virginia and three-quarters of a mile north of Oyster, Virginia. Figures 2 and 3 in **APPENDIX 2** illustrate the location of the landfill. The landfill was designated for closure under the Virginia Solid Waste Management Regulations on or before December 31, 2012, but the facility reached capacity prior to that date. In 2008/2009, the County constructed a transfer station and began transferring their wastes out of the County for disposal. The landfill was officially approved as closed by DEQ on February 2, 2011 and has now entered a 30 year post closure care period.

All wastes entering this site regardless of the ultimate handling are weighed and recorded. The following section summarizes the 2021 tonnages, provides historical tonnage data and develops future waste generation projections.

4.1 Existing Conditions (2021)

The County tracks their waste in accordance with the categories outlined on DEQ form 50-25 which includes the following:

- Municipal Solid Waste
- Construction/Demolition/Debris
- Industrial Waste
- Regulated Medical Waste
- Vegetative/Yard Waste
- Incinerator Ash
- Sludge
- Tires
- White Goods
- Friable Asbestos
- Petroleum Contaminated Soil

The form allows the County to report "Other" waste materials that may have moved through the transfer station or been recycled. Historically, the other category has been used for the receipt and transfer of agricultural plastic.

The County also tracks the following materials under their recycling program which are identified as special wastes under 9 VAC 20-130-150.3:

- Waste Tires
- Used Oil
- Abandoned automobiles removed (DMV information required)
- Batteries
- Inert debris

The County does not receive any mining or agricultural waste and records land clearing debris as vegetative/yard waste.

Septage cannot be received at the transfer station and is not tracked by the County.

APPENDIX 7 contains the DEQ Form 50-25 for the Northampton County Landfill for 2021. Based on this information, the County received 12,282 tons of waste materials at the facility in the following categories (all values represent tons):

TABLE 9
DEQ FORM 50-20 SUMMARY 2021

Waste Type	Received	Landfilled Offsite	Recycled	Other	Stored Onsite	
					beginning of period	end of period
Municipal Solid Waste	14,619	14,619				
Construction/Demolition Debris	2,807	2,807				
Vegetative/Yard Waste	711			711		
Sludge	187	187				
Tires	54	54				
White Goods	257		683		426	0
Other						
Agricultural plastic	410	410				
TOTAL	**19,046**	**18,078**	**683**	**711**	**426**	**0**
% of Total Received		94.9	NA	3.7	NA	

The County receives a significant amount of soil from VDOT activities such as cleanout of roadside ditches and stone/rubble from demolition projects. These materials are used on site for road base and/or other operations. For 2021, the County received 1,120 tons of soil from VDOT and other sources and used 5 tons of stone for road building purposes.

4.2 Historical Waste Generation (2016 - 2021)

4.2.1 Total Tonnage Delivered

Table 8-1 included in **APPENDIX 8** summarizes the data submitted to DEQ on Form 50-25 from 2010 through 2021. The data is represented as both total tonnage delivered to the facility and tonnage transferred. Transfer began on April 1, 2009, so there was an overlap of landfill operations with transfer for this year.

The table below summarizes the information contained in Table 8-1 and indicates that the total tonnage and landfilled/transferred tonnage have fluctuated throughout this period as the system adjusted to the transfer operations. The economy since 2008 has impacted waste generation as the decline in the construction debris category illustrates.

TABLE 10
TOTAL TONNAGE DELIVERED TO TRANSFER STATION
DEQ FORM 50-25 SUMMARY – 2010 to 2021
(Tons)

YEAR	DELIVERED	TRANSFERRED	% TRANSFERRED
2010	12,282	11,726	95.5%
2011	13,080	12,452	95.2%
2012	12,640	12,183	96.4%
2013	13,404	12,788	95.4%
2014	13,827	13,012	94.1%
2015	13,808	13,343	96.6%
2016	14,335	13,734	95.8%
2017	16,804	16,197	96.4%
2018	17,785	16,783	94.4%
2019	18,209	17,326	95.2%
2020	17,330	16,549	95.5%
2021	19,046	18,078	94.9%

The data is also tracked by the County in slightly different categories as indicated in Table 8-2 provided in **APPENDIX 8.**

Data indicates that tonnage delivered to the Northampton facility varies considerably from year to year, with the greatest increase in residential waste over the past 5 years.

Tonnage is no longer delivered directly by residents or commercial haulers from the County to the southern Accomack landfill as reported in previous plans.

The table below provides a comparison of the Amendment 1 - 2013 projections with the actual tonnage delivered. It illustrates how difficult it is to predict trends in tonnage.

TABLE 11
COMPARISON OF 2013 PROJECTIONS WITH ACTUAL TONNAGE DELIVERED
2013 – 2021

YEAR	2013 SWMP PROJECTIONS	ACTUAL TONNAGE REPORTED
2013	12,640	13,404
2014	12,640	13,827
2015	12,640	13,808
2016	12,640	14,335
2017	12,640	16,804
2018	12,640	17,785
2019	12,640	18,209

YEAR	2013 SWMP PROJECTIONS	ACTUAL TONNAGE REPORTED
2020	12,640	17,330
2021	12,640	19,046

4.2.2 By Category of Waste (DEQ Form 50-25)

Table 8-1 in **APPENDIX 8** also provides information on the historical trends by category of waste delivered. In their form DEQ 50-25, DEQ identifies 11 waste categories for tracking plus a category for other types of materials. Historically, the County has chosen to track seven categories as follows:

- Municipal Solid Waste (MSW) – including commercial
- Construction/Demolition/Debris (CDD)
- Vegetative/Yard Waste
- Sludge
- Tires
- White Goods
- Other (typically rocks, and soil)

MSW has ranged from a low of 69.4% (2019) to a high of 87.8% (2010) of the total waste stream delivered to the facility from 2010 to 2021. MSW has ranged from a low of 72.9% (2019) to a high of 92.0% (2010) of the total waste stream transferred from the facility from 2010 to 2021. Over the past 5 years, the MSW component and CDD component have been increasing.

4.2.3 Tonnage Transferred

Table 8-1 in **APPENDIX 8** summarized the data from the DEQ 50-25 forms from 2010 through 2021 for the total tonnage delivered to the facility and transferred from the facility. One hundred percent of the MSW, construction debris, sludge, and industrial waste was transferred. There has been no significant industrial waste delivered since 2013. Vegetative waste is burned on site; all other materials are recycled.

The data also provides information on the annual change in the tonnage of transferred waste as consideration is given to the changes expected over the 20-year planning period. Using the data from Table 8-1 the following annual changes were noted between 2010 and 2021:

TABLE 12
ANNUAL CHANGE IN TRANSFERRED WASTES
Data from SWIA forms

YEAR	TRANSFERRED TONNAGE (SWIA forms)	ANNUAL CHANGE
2010	11,726	
2011	12,452	6.2%
2012	12,183	-2.2%
2013	12,788	5.0%
2014	13,012	1.7%
2015	13,343	2.5%
2016	13,734	2.9%
2017	16,197	17.9%
2018	16,783	3.6%
2019	17,326	3.2%
2020	16,549	-4.5%
2021	18,078	9.2%

4.2.4 Pounds Per Person Per Day

The population data from **APPENDIX 4** can be coupled with the tonnage data reported above to consider the waste stream transferred as average pounds per person per day. Table 8-1 in **APPENDIX 8** provides historical data for 2010 through 2021 for the total tonnage transferred from the facility and the MSW component. Information for the previous 5 years is summarized below:

TABLE 13
EVALUATION OF WASTE TONNAGE
AS POUNDS PER PERSON PER DAY

Year	Population	Total Tonnage (Transferred)	Total Pounds Per Person Per Day	Total MSW Landfilled	MSW Pounds Per Person Per Day
2017	12,000	16,197	7.4	11,935	5.4
2018	11,862	16,783	7.8	13,157	6.1
2019	11,810	17,326	8.0	12,632	5.9
2020	12,282	16,549	7.4	13,066	5.8
2021	12,222	18,078	8.1	14,619	6.6
AVG	**12,035**	**16,987**	**7.7**	**13,082**	**6.0**

Population from **Table 4-1 – APPENDIX 4**, Tonnages from Table 8-1 – **APPENDIX 8.**

To put these values in perspective, the national average for MSW generation as reported by the EPA for the year 2018 was 4.9 pounds per person per day, which is up from 2.7 pounds per person per day in 1960. MSW as defined by the EPA does not include CDD waste, sludge, or industrial wastes. For 2021, the County's value for pounds per person per day for MSW was calculated to be 6.6 which was higher than the 2018 national average.

4.3 Projected Waste Generation Rates Relative to Disposal Needs

It is important to consider the various ways in which the waste generation within the Region may change to anticipate future needs relative to disposal and collection. The County has closed their landfill, privatized waste collection at their convenience centers and privatized hauling and disposal for materials moving through the transfer station.

There is no one methodology for evaluating future waste generation rates as the rates can be impacted by many different factors including population changes, recycling participation and markets, the commercial or industrial sector, natural disasters etc. For rural areas, changes in the waste will track closely with the population trends. For urban or developing areas, changes in the waste are more difficult to predict. Certainly, the population factor is one aspect, however commercial waste must also be considered. The following section will consider various factors that could impact waste generation in the Region and will propose a final growth factor to be used in the study.

4.3.1 Population Growth Rate

As Section 3.1 discusses, population within the Region is expected to decrease slowly and it would be anticipated that the tonnage would decrease also. However, if the economy improves and the residential communities planned for the County move towards build-out, this pattern could shift in the future but is unpredictable at this time.

4.3.2 Commercial and Industrial Growth

The Region is seeking to increase its commercial and industrial sectors. However, there are no planning projections for this growth. The service sector will need to grow to accommodate the population growth rate.

4.3.3 Annual Change in MSW Tonnages as Noted on DEQ Form 50-25

As noted previously the annual changes in the tonnages for the MSW and the total transferred waste have fluctuated significantly. There is no pattern in this rate of change that can be used for future projections.

4.3.4 Projected Tonnages

As stated at the beginning of this section, there is no single methodology to use to predict the future changes in the Region's waste stream. As indicated, the Region's population is expected to decline over the planning period as projected by the Weldon Cooper Center.

Regarding the commercial and industrial sector, it is assumed that there will be slight growth in the commercial and industrial sectors.

Thus, for this report, and in lieu of any other information, the future tonnage projection (after 2021) was frozen at the average of the past 5 years 2017 through 2021 tonnage rather than decreased with the projected decline in population to provide for commercial sector increases. Thus, waste projections are higher than those projected in the 2013 Major Amendment SWMP which as indicated above, underestimates the tonnage from 2014 through 2021.

Table 8-3 in **APPENDIX 8** projects the total tonnage transferred by year and MSW tonnage by year and as tons per day using the assumption outlined above. A summary in five-year increments is provided below:

TABLE 14
PROJECTED WASTE TONNAGE
2010-2045

Year	Population (From Table 4-1)	TONNAGE TRANSFERRED	Pounds Per Person Per Day	MSW TONNAGE TRANSFERRED	Pounds Per Person Per Day
*2010	12,389	11,726	5.2	10,782	4.8
*2020	12,282	16,549	7.4	13,066	5.8
2025	12,122	16,987	7.7	13,082	5.9
2030	12,000	16,987	7.8	13,082	6.0
2035	11,712	16,987	7.9	13,082	6.1
2040	11,424	16,987	8.1	13,082	6.3
2045	11,221	16,987	8.3	13,082	6.4

*Actual data

4.4 Waste Composition

The Region does not receive significant quantities of unusual or special wastes or industrial wastes. Therefore, the general composition of the County's waste stream would be assumed to be similar to the national estimates discussed in Section 2.1.2. The following tables summarize the expected waste compositions by material type and by product type utilizing the percentages developed by EPA from their 2018 data and the MSW tonnage for 2021 as reported on the DEQ form 50-25 plus yard waste:

TABLE 15
WASTE COMPOSITION
BY MATERIAL TYPE
AS SUMMARIZED IN EPA REPORT - 2018 DATA

MATERIAL	EPA % MSW	ESTIMATED TONNAGE 2021
Paper	23.1%	3,377
Glass	4.2%	614
Metals	8.8%	1,286
Plastics	12.2%	1,784
Rubber, Leather, & Textiles	8.9%	1,301
Wood	6.2%	906
Yard Trimmings	12.1%	1,769
Food Scraps	21.6%	3,158
Other	2.9%	424
TOTAL	**100.0%**	**14,619**
2021 - MSW Tonnage (SWIA)	14,619	

EPA in 2018 also reported composition by product type although with less detail than their previous reporting. The table below summarizes this information:

TABLE 16
REGIONAL WASTE COMPOSITION
BY PRODUCT TYPE
AS SUMMARIZED IN EPA REPORT - 2018 DATA

MATERIAL	EPA % MSW	ESTIMATED TONNAGE 2021
Durable Goods	53.1%	2,857
Nondurable Goods	23.7%	1,275
Containers and Packaging	23.2%	1,248
TOTAL	**100.0%**	**5,380**
2021 - MSW Tonnage (SWIA)	14,619	
2018 -% products of total MSW	36.8%	Calculated from data
2021 - Product tonnage - County	5,380	Calculated

5.0 EXISTING SOLID WASTE MANAGEMENT SYSTEM

The following section describes the major components of the Region's current solid waste management system in existence in 2022.

5.1 Collection

5.1.1 Public Collection

Each member of the Region provides collection services to their residents or relies on the County's collection system. These programs are each independently operated and funded. Members deliver their collected waste to the Northampton County Transfer Station. A brief description of the collection systems for the members of the Region follows.

Northampton County

Northampton County once operated a green box collection system consisting of approximately 28 green box collection sites throughout the County. Sites were located on either County owned property or are rented or leased from the property owners. At that time the County collected waste from the green boxes.

The County has revamped this system since 2006 when the Board adopted the goal of establishing six staffed waste collection sites throughout the County. In 2006 the first three sites were constructed at Birdsnest, Bayview and Wardtown. Later sites at Hare Valley, Cheapside and Eastville were established. Collection of waste from these sites has been contracted with a private hauler.

The centers generally consist of a single stationary compactor with traffic access available to both sides. Open top boxes are also be provided for the collection of bulk items and metal. Recycling bins are provided by Tidewater Fibre Corporation. In addition, facilities for the collection of used oil and antifreeze are provided at each site. A small office is provided for the attendant.

The schools continue to use the 8-cubic yard collection boxes.

The hours of operation will be adjusted to meet the needs of the community/area being served.

Cape Charles: Waste is collected by a private hauler and taken to the Northampton County Transfer Station.

Cheriton: Waste is collected by a private hauler on a voluntary basis or citizens use the County convenience centers.

Eastville: Waste is collected by a private hauler on a residential contractual basis or citizens use the County convenience centers.

Exmore: Exmore provides collection to its households and businesses on a weekly basis. Bulky items are collected once per month as is yard waste. The yard waste is collected on a separate day and chipped for mulch which is given away free to the residents. The Town takes its waste to the Northampton County Transfer Station.

Nassawadox: Nassawadox provides collection through a private hauler.

5.1.2 Commercial Haulers

There are two primary commercial haulers within the Region. Davis Disposal and H&N Hauling both have commercial, municipal and private accounts. Waste collected by these haulers is routed primarily to the Northampton County Transfer Station.

5.1.3 Commercial and Industrial Collection

The majority of the commercial and industrial collection is privatized.

5.1.4 Procedure for Evaluating Collection

Annually during budget preparation, the County will assess the effectiveness of its collection system. In reviewing the system, the County may consider such items as:

- Budget
- Equipment Needs
- Personnel
- Effectiveness
- Aesthetics
- Complaints over previous year
- Traffic or entrance issues
- Safety
- Location of disposal facilities

This assessment will be completed informally. If it appears that modifications to the system are needed, recommendations will be made to the appropriate elected officials.

Periodically the County may consider polling its citizens at the convenience centers to assess the operations and to evaluate the need for expanded services.

Most changes to the collection and transport system will require approval by the Board of Supervisors.

The Towns consider their collection systems periodically and as private contracts are renewed.

5.2 Disposal

5.2.1 General Description

The following table lists solid waste disposal facilities permitted by the VDEQ and located within Northampton County (source: VDEQ "Permitted Solid Waste Management Facilities").

TABLE 17
INVENTORY OF PERMITTED SOLID WASTE DISPOSAL FACILITIES

Facility Name	Permit Number	Type	Year Permitted	Status
KMC Foods Landfill	468	Industrial	1984	Closed
M&B Campground - Northampton	017	Sanitary Landfill	1972	Closed
Northampton County Sanitary Landfill	213	Sanitary Landfill	1976	Closed
Northampton County Sanitary Landfill	002	Sanitary Landfill	1971	Closed
Northampton County Sanitary Landfill	507	Sanitary Landfill	1987	Closed
Northampton County Transfer Station	PBR 540	Transfer Station	2009	Operating
Northampton KMC Foods County Sanitary Landfill	215	Sanitary Landfill	1977	Closed

The Northampton County landfill was certified as closed by DEQ on February 2, 2011. The closure approval letter is included in **APPENDIX 9.**

5.2.2 Historical Information on Northampton County Landfill

The Northampton County landfill is located approximately 2.5 miles east northeast of Cheriton, Virginia, and three-quarters of a mile north of Oyster, Virginia. The landfill site is located on State Route 600, approximately one-half mile south of the intersection of State Route 600 and State Route 636. The facility is bound on the west by undeveloped/agricultural property with a scattering of residences along the western side of State Route 600. On the north and south, the facility is bound by agricultural/undeveloped property. The Atlantic Ocean and its associated barrier islands bound the facility on the east.

The landfill operated under Permit Number 507, obtained June 23, 1987, from the Department of Waste Management. Prior to that, the County operated a solid waste disposal facility at the present site under Permit Number 002, issued in 1971, followed by Permit Number 213, issued

in 1976. Permit 002 was capped and closed in 1982 and Permit 213 was capped and closed in 1983.

The landfill has scales that were installed in 1988.

The existing landfill, operating under Permit No. 507, was constructed over an existing waste disposal area. The existing waste disposal area, consisting of approximately 12 acres, was covered with a 30-mil HDPE membrane system and protective cover soil prior to the placement of waste. A leachate collection system was included as a part of the construction of the liner system. A landfill gas venting system was installed prior to the placement of the flexible membrane liner in order to prevent the accumulation of landfill gas beneath the membrane liner system. Even though the Permit 507 landfill was lined, it did not meet the requirements of Subtitle D and therefore was operating under as HB 1205 facility requiring closure by December 31, 2012. To the best of the County's knowledge, only municipal solid waste (MSW) has been placed in the facility with locally available soil used as daily cover.

The following table summarizes the liner and leachate collection system components as constructed or as designed for the Permit 507 landfill from the bottom up:

TABLE 18
LINER SYSTEM

Component	Design
Subgrade	Compacted soil cover over previously closed landfill
Gas collection system	Included
Membrane	30 mil HDPE
Leachate collection	Included
Cushion soil	Included

Permit 507 required that 12.5 acres of landfill be closed. The following table summarizes the components of the cap system from the bottom up:

TABLE 19
CAP SYSTEM

Component	Design
Subgrade	12" on-site soil
Membrane	40 mil LLDPE
Drainage Layer	Geonet Geocomposite
Cushion layer	18" on-site soils
Top soil	6" augmented on-site soils

Closure of the Permit 507 facility was completed in 2010 with final certification of closure issued by DEQ on February 2, 2011.

Groundwater and gas monitoring are in place and will continue to be monitored throughout the post closure care period. This period by regulations is to last 30 years but may be increased or decreased by the DEQ.

5.2.3 Northampton County Transfer Station

The Northampton County Transfer Station was permitted under a permit by rule by DEQ on March 27, 2009. The facility's official address is listed on the permit as 20371 Seaside Road, Cape Charles, Virginia. The facility consists of a 9,900 square foot pre-engineered, metal panel type building which fully encloses the tipping floor and load-out area. At the paved entrance of the site is a weighing system that monitors the facility's throughput. The design of the transfer station utilizes a bi-level, non-compacted, direct dump design consisting of one refuse hopper and a tipping area on the upper level and a "load-out" area on the lower level. The load out area is also equipped with scales to accurately weigh the out-bound trailers for maximum efficiency.

This facility as designed can handle an average of 150 tons per day and has a maximum capacity of 250 tons per day of sanitary waste. The hours of operation are from 8:00AM to 3:30 PM Monday through Saturday.

The permit for this facility is included in **APPENDIX 10.**

5.2.4 Solid Waste Disposal Facilities in Surrounding Virginia Jurisdictions

The following landfills operate in Virginia within a 50-mile radius of the Northampton County Sanitary Landfill. The County is currently using the King and Queen Landfill owned and operated by BFI Waste Systems of Virginia/Republic Services.

TABLE 20
DISPOSAL FACILITIES IN SURROUNDING JURISDICTIONS
Information taken from DEQ Annual Report for 2021

Facility	Type of Landfill	Permit Number	Tonnage received 2021	Estimated remaining life as reported in 2021
Accomack County Sanitary Landfill – Northern Site –	Sanitary	461	41,653	36.3
Virginia Beach Mt. Trashmore No. 2 –	Sanitary	398	21,044	70.0
King & Queen Landfill	Sanitary	554	620,346	31.0
Middle Peninsula	Sanitary	572	502,144	46.0

As indicated above, the County is contracted with BFI Waste Systems of Virginia, LLC through June 30, 2025, for use of the King and Queen Landfill. BFI also provides the hauling. The agreement between the County and BFI outlines the requirements for waste acceptance, special waste and unacceptable wastes as does the Transfer Station operating plan. BFI can choose to change the disposal site after notification to the County in accordance with the Agreement. BFI must post a performance bond.

5.2.5 Life Expectancy of Transfer Station

The Transfer Station will require maintenance over time in particular repairs of the tipping floor. The County will assure that appropriate funds are set aside to make the timely repairs to the facility. The life of the facility is anticipated to be a minimum of 25 – 30 years and potentially longer depending on the maintenance of the facility.

5.2.6 Operations

Currently the transfer operations utilize the following equipment:

- 2008 Caterpillar 930H Wheel loader
- 2003 Caterpillar 322CL Excavator
- 2019 Caterpillar 930M Wheel Loader
- 2004 GMC Pickup Truck
- 2004 Caterpillar Dozer

Currently the transfer operations utilize 5 people in the following positions: Scale attendant (2), Heavy Equipment Operators (2), and Solid Waste Management & Recycling Director.

The personnel on site are also tasked with maintenance of the closed landfill. Additional equipment available for maintenance include the following:

- 2019 Ford F250 pickup
- 2019 John Deere Tractor
- 2021 Ford F150 pickup
- 2000 Ford F150 pickup

5.2.7 Household Hazardous Waste Collection

The Northampton County has teamed with Accomack County to provide regional household hazardous waste collection at a facility located at the Accomack County Painter Convenience Center. This facility is open year-round on Saturdays from 10:00 to 2:00. The following materials are accepted at this facility:

TABLE 21
ACCEPTABLE WASTES
HOUSEHOLD HAZARDOUS WASTE COLLECTION

CATEGORY	ACCEPTABLE WASTES
Automotive	Antifreeze Automatic Brake Fluid Carb Cleaner Diesel Exhaust Fluid Gasoline Grease, Degreasers Power Steering Fluid Rust Removers Transmission Fluids Windshield Washer Fluid Wax/Polishes
Garden, Yard and Pool	Algaecide Fungicides Herbicides Insecticides Pesticides Poisons Pool Chemicals Weed Killers
Home Repair	Creosote Products (wood sealers, etc.) Driveway Sealers Fluorescent Bulbs – Unbroken LED bulbs Smoke Detectors Thermostats Wood Preservers
Household Cleaners	Air Fresheners Ammonia Bleach Detergent/Softener Disinfectants Drain Opener Floor Care Products Metal Cleaner/Polish Oven Cleaner Spot Remover Toilet Cleaner

CATEGORY	ACCEPTABLE WASTES
Paint and Paint Products	Acetone Methyl Ethyl Ketone Mineral Spirits Paint – NOT Latex – Oil/Solvent-based Paint Thinner Primer Shellac Stains Toluene Varnish
Personal Care	Thermometers Nail Polish Nail Polish Remover Perfume Peroxide
Other	Acids Aerosols (spray cans) Cooking Oil Glue (solvent-base) Inks & Dyes Mercury Products Moth Balls

The following materials are not accepted at the facility:

- Asbestos
- Ammunition
- Explosives
- Radioactive Materials
- Fireworks Compressed Gas Cylinders/Tanks

5.2.8 Central Archive

The County maintains records of all closed and active solid waste disposal sites within the files of the County Administrator at the following address:

County Administrator
16404 Courthouse Road
Eastville, Virginia 23347
Phone: 757-678-0440

These files constitute the operating record of the operating permitted landfills within the County. New landfills or expansions to existing facilities will be documented in these files. All correspondence to and all correspondence from DEQ relative to the transfer station are also maintained in these files.

In addition, the County considers the SWMP to serve as a central archive and summary of solid waste disposal activities within the County. The Plan will be revised when significant changes occur in these activities and the Plan, if revised, will be submitted to DEQ or other appropriate persons as designated by DEQ for review and approval.

5.3 Recycling

5.3.1 Historical Overview of Recycling Activities

The Region, like most areas has both publicly and privately sponsored programs within it.

Public Programs:

The Towns do not operate any recycling programs but rely on the County's system of recycling. Currently the County collects the following materials as indicated:

- Batteries – The County began collecting batteries at the landfill in 1989 and continues to do so at the transfer station. There is no charge for batteries brought to the transfer station.
- Tires – Tires are collected at the transfer station and recycled.
- Used oil – The County began recycling used oil at the landfill in 1989 and continues to do so at the transfer station. Used motor oil is collected at the waste collection centers and recycled with a private company.
- White goods – White goods and other scrap metals are collected at the transfer station. The metals are collected by a private company for recycling.
- Pesticide containers – Plastic pesticide containers which have been properly prepared including triple rinsing, are collected at the transfer station for recycling. The program is operated in cooperation with the Virginia Department of Agriculture and Consumer Services and Pesticide Control Board.
- Textile recycling – A new initiative was started by the County in late June 2014 involving textile recycling through the Special Olympics organization who collaborates with Tidewater Textile Recycling, an Ohio Mills Corporation Company.

The County in collaboration with Accomack County signed an agreement with Tidewater Fibre Corporation (TFC) on for the provision of a comprehensive privatized recycling collection program whereby TFC would provide the collection containers, pick up the materials, process and market the materials, and provide the County with public education assistance. Each of the waste collection centers is designated as a recycling drop off center. Materials can be comingled in the recycling containers provided. The following materials are collected:

- Plastic bottles and jugs
- Plastic dairy tubs
- Newspaper and inserts
- Magazines and catalogs
- Phone books
- Junk mail
- White office paper
- Brown cardboard boxes and brown paper bags
- Chipboard or carrier stock
- Paper egg cartons
- Metals: Aluminum cans, steel/tin cans.
- Loose glass bottles and jugs

Items not collected include:

- Pizza boxes
- Aerosol cans
- Hoses
- Plants
- Toys
- Dishes and paper plates
- Juice boxes or pouches
- Tires
- Styrofoam
- Batteries
- Plastic bags
- Electronics

According to the proposal, the County would benefit from the program as follows:

- No labor needed to sort recyclables
- No floor space needed to store recyclables
- No dependency on baler or roll-off trucks, which will reduce maintenance costs
- Better collection services set on specific schedules
- Easier to add additional drop off sites
- Transportation costs included in the price.

The program cost to the County in FY 2021 was $2,116.41/month for weekly service to the existing six waste collection sites and one recycling can at the County Administration building.

Private Programs:

There are no private, independent recycling programs operating in the County that are tracked by the County at this time.

5.3.2 Drop Off Facilities

Tidewater Fibre Corporation provides some of the collection boxes at the waste collection sites.

5.3.3 Industrial & Commercial

The Region does not currently track the recycling of its commercial or industrial sectors.

5.3.4 Historical Recycling Rates

See Table 11-1, in **APPENDIX 11** which summarizes the historical recycling data for the Region as reported in the recycling reports for 2013 through 2021. The table below summarizes the annual reported recycling rates:

TABLE 22
SUMMARY OF ANNUAL RECYCLING REPORTING RATES
2007 - 2021

YEAR	RECYCLING RATE
2007	28.8%
2008	18.4%
2009	21.6%
2010	25.1%
2011	25.4%
2012	27.1%
2013	25.2%
2014	26.6%
2015	27.0%
2016	29.3%
2017	27.7%
2018	24.2%
2019	20.7%
2020	20.0%
2021	21.6%

The County does not track its commercial or industrial recycling at this time.

Based on the recycling rates reported for the last fifteen years, the County is exceeding its minimum regulatory recycling goal of 15%.

5.3.5 Methodology to Determine Recycling Rates

Under the Virginia Solid Waste Planning and Recycling Regulations, Section 9VAC20-130-125, Recycling Requirements, the methodology is outlined for determination of recycling rates.

5.4 Public Education

5.4.1 Residential

Northampton County prepares an annual report at the end of each calendar year which summarizes the solid waste activities for the year including collection, disposal and recycling. This report is submitted to the Board of Supervisors and is available to the public for review. **APPENDIX 12** contains a copy of the 2021 report.

In addition to the programs sponsored by the County, the Virginia Department of Environmental Quality (DEQ) and the United States Environmental Protection Agency (EPA) have programs directed at educating people on solid waste management issues. These programs include publications that are widely available, maintaining information hotlines, and sponsoring seminars and conferences.

5.4.2 Industrial/Commercial

The Region does not currently have any specific outreach program that educates businesses in the areas of recycling, reuse, or waste reduction techniques.

5.5 Public/Private Partnership

The Region seeks to support activities relative to reuse, reduction and recycling. At this time, the County, in collaboration with Accomack County, has initiated development of a partnership with the private sector through its relationship with Tidewater Fibre. This program can be expanded as interest and resources are available. In addition, the County initiated a textile recycling program in partnership with the Special Olympics and their relationship with Tidewater Textile Recycling an Ohio Mills Corporation Company.

6.0 BUDGET

6.1 Operating Budget – Northampton County

The operating budget for the County's solid waste services consists of personnel, operations including collections, recycling, the transfer and disposal of waste, and capital improvements. The solid waste programs are funded from tipping fees at the transfer station, as supplemented by the General Fund. The solid waste services budget does not carry any debt service which is assigned to the General Fund.

6.1.1 Solid Waste Services versus Total County Annual Budget

The operating budget for the County's solid waste services represents a small portion of the total County budget as the following table indicates:

TABLE 23
COMPARISON TOTAL BUDGET AND SOLID WASTE BUDGET
FY 2018 - FY 2022

Fiscal Year	Total County Budget	Solid Waste Budget*	Percent Of Total Budget
2018	$43,773,286	$1,437,535.00	3.28%
2019	$46,206,724	$1,563,996.00	3.39%
2020	$48,655,921	$2,066,067.00	4.25%
2021	$50,434,257	$2,116,350.00	4.20%
2022	$56,584,219	$2,011,177.00	3.55%

*Includes collections, disposal, and recycling.

6.1.2 Components of Budget and Total Budget Cost

Table 13-1 in **APPENDIX 13** provides the actual or estimated expenditures for FY 2018 through FY 2022 for the County's total solid waste services including costs associated with collections, recycling and the transfer and disposal of waste.

The table also provides cost per person (using the population assumptions from Table 4-1) and on total cost per ton assuming the tonnage transferred through the transfer station only.

Below is a summary of the information in Table 13-1.

TABLE 24
SOLID WASTE SERVICES BUDGET (Fiscal Year)
(BUDGET CATEGORY 4204)

ITEM	FY2018 Actual	FY2019 Actual	FY2020 Actual	FY2021 Adopted Budget	FY2022 BOS approved
PERSONNEL	$421,002	$434,465	$454,961	$475,646	$507,543
OPERATIONS	$1,221,635	$1,311,829	$1,830,674	$1,433,026	$1,576,551
TOTAL	**$1,642,636**	**$1,746,295**	**$2,285,634**	**$1,908,672**	**$2,084,095**
Population	11,862	11,810	12,282	12,222	12,197
COST PER PERSON PER YEAR	**$138.48**	**$147.87**	**$186.10**	**$156.17**	**$170.87**
Tonnage transferred	16,783	17,326	16,549	18,078	NA
COST PER TON (TOTAL)	**$97.87**	**$100.79**	**$138.11**	**$105.58**	

6.1.3 Net Budget

Revenues are collected at the landfill from tipping fees assessed all users. The following table indicates the expenditures and revenues and provides the net cost to the County for not only the transfer and hauling expense but also for the total net budget. Note the following table is based on calendar year and will not match Table 24.

TABLE 25
BUDGET AS COST PER TON – By Category
FY 2018 – FY 2022
Based on County Annual Reports – Calendar Year

ITEM	CY2017	CY2018	CY2019	CY2020	CY2021
Tonnage through TS	17,889	17,793	18,169	17,408	19,330
TRANSFER AND DISPOSAL					
Transfer and disposal costs	$570,852	$636,641	$643,899	$943,677	$720,847
Cost per ton	$31.91	$35.78	$35.44	$54.21	$37.29
TOTAL COSTS (incl. Collections)					
Total Solid Waste Costs	$1,487,395	$1,579,568	$1,608,795	$2,091,127	$1,935,553
Cost per ton	$83.14	$88.78	$88.55	$121.27	$100.12
NET COSTS					
Total Solid Waste Costs	$1,487,395	$1,579,568	$1,608,795	$2,091,127	$1,935,553
Revenues	$678,325	$742,113	$753,683	$704,299	$775,370
Net costs	$809,070	$837,455	$855,112	$1,386,828	$1,160,183
Tipping fee	$69.00	$72.00	$72.00	$75.00	$75.00

As indicated above the tipping fees do not cover the full cost of solid waste services in the County and supplement from the General Fund is required.

6.2 Revenues and Tonnage Charged

The County receives revenues for the solid waste program from tipping fees assessed at the transfer station. Not all tonnage is assessed the tipping fee. The table above outlines the historical and current tipping fees at the transfer station and tonnage:

As can be seen from the information provided in Section 6.1, the revenues do not offset all the expenditures.

6.3 Future Budget Considerations

Future budget considerations for the County include payment of debt service incurred when financing various programs, and contracts with private sector entities for waste collection, waste hauling and disposal and recycling as discussed below.

6.3.1 Debt Service

The County has borrowed money for the landfill closure and for the waste collection centers. This money was borrowed at the same time as other major projects in the County which included construction of a new courthouse, regional jail, and county administration renovations. The total borrowing was $30.0M of which the solid waste capital expenses was less than 10% of the total funding.

6.3.2 Waste Collection

Waste collection is currently contracted with Davis Disposal. This contract is periodically reviewed in accordance with the County's procedures and policies.

The current contract for collection will need to be re-procured on a routine basis, in accordance with the County ordinances and Virginia Procurement Act.

6.3.3 Hauling and Disposal

Hauling of the waste material from the transfer station and disposal is currently contracted with BFI Waste Systems of Virginia, LLC. Disposal is based on a cost per ton currently frozen through the end of the contract (June 30, 2025). The original disposal fee as contracted in FY 2010 was $24.73/ton. In FY 2020, the fee was set by contract at $18.50/ton.

Transportation is charged per ton and was set at $29.65/ton

The total "Disposal and Transportation Fee" as of the date of the contract was set at $48.15.

However, the contract includes a Monthly Fuel Charge Adjustment described as follows:

"The Disposal and Transportation Fee is based upon a retail diesel fuel (on-highway, all types) price of $2.91 per gallon (the average price for retail diesel fuel (on-highway, all types) as reported by the United States Energy Information Administration for the Lower Atlantic Region [PADD 1C] for the month of November 2019). The Disposal and Transportation Fee shall increase, but never decrease, on a monthly basis by one percent (1%) for every ten-cent ($.10) increase in the price of retail diesel fuel (on-highway, all types) above the threshold price of $2.91 per gallon as reported by the U.S. EIA for PADD 1C. Calculations shall be made the first day of each month based upon the PADD 1C price for the previous Monday (or Tuesday if Monday is a Federal holiday)."

The current contract for hauling and disposal will need to be re-procured on a routine basis, in accordance with County ordinances and Virginia Procurement Act.

The Contractor is required to provide the County with a corporate surety bond as security for their performance and conditions contained in the Agreement between the two entities. The bond amount is calculated as 100% of one year of the estimated contract amount calculated as the current cost per ton times the previous year's tonnage.

The Contractor can subcontract either hauling or disposal but only after approval by the County.

6.3.4 Recycling Adjustments

On March 22, 2011, Northampton and Accomack Counties renewed their recycling contract with Tidewater Fibre Corporation. This contract will run from March 15, 2011, through March 14, 2016. This contract continues to be reviewed and renewed annually by Accomack County. Tidewater Fibre Corporation (TFC) provided a proposal to collect, process and market recyclable solid waste for both Counties. At this time (CY 2022), the County is charged $2,116.41 per month for service at their six active waste collection centers and a recycling can at the County Administration Building.

7.0 WASTE MANAGEMENT HEIRARCHY

Under 9 VAC 20-130-30, the following policy is set forth:

"It is the policy of the Virginia Waste Management Board to require each region designated pursuant to 9 VAC 20-130-180 through 9 VAC 20-130-220, as well as each city, county and town not part of such a region, to develop comprehensive and integrated solid waste management plans that, at a minimum, consider and address all components of the following hierarchy:

1. *Source reduction*
2. *Reuse*
3. *Recycling*
4. *Resource recovery (waste to energy)*
5. *Incineration*
6. *Landfilling"*

Section 9 VAC 20-130-150.6, also addresses this requirement by stating:

"The local government or regional solid waste management plan shall include data and analyses of the following type for each jurisdiction. Each item below shall be in a separate section and labeled as to content:

> *6. A description of programs for solid waste reduction, reuse, recycling, resource recovery, incineration, storage, treatment, disposal, and litter control."*

Elements higher in the hierarchy are more desirable, and tend to reduce the need for lower, less desirable, elements of the hierarchy. Therefore, when developing a solid waste management plan, preference should be given to those elements higher in the hierarchy.

The Region, in particular the County, has developed and implemented an integrated solid waste management strategy. In the past, the Region has relied mainly on landfilling to meet their solid waste disposal needs and will continue to do so by transferring their waste outside of the County for disposal. However, the County has begun to consider the development of a much more comprehensive recycling program as the costs for transfer and disposal of the waste outside of the County increase. Recycling and landfilling will play the major roles in the Region's integrated solid waste management plan with source reduction and reuse having smaller roles in the plan. Resource recovery and incineration are not currently considered viable options for the Region. The Region plans to continue and expand its programs to meet the future solid waste needs of the community. A discussion of how current and future programs fit into the hierarchy follows.

7.1 Source Reduction

Source reduction refers to any change in the design, manufacture, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they become municipal solid waste. Source reduction can help reduce waste disposal and handling costs, conserve resources, and reduce pollution. The EPA has noted that nationally the reduction of yard waste in landfills is currently the most significant source reduction activity as localities and states ban yard waste from landfills.

While individuals can attempt to reduce their volume of waste, source reduction policies will be aimed primarily at businesses and industries. Many source reduction policies are not feasible at the local level but are best handled at the state or federal level. Examples of this are the banning of yard waste from landfills or requiring minimum packaging standards. Financial incentives and disincentives, broad regulations concerning source reduction and changes to manufacturing processes are difficult to implement on a local basis. As waste tipping fees at the commercial sector will become more sensitive to the expenses involved in their disposal programs and will begin to consider source reduction more closely.

To increase citizen awareness of source reduction activities that can be implemented on an individual basis, the Region will implement a public information program designed to increase source reduction activity as time and funding permits. The program will primarily consist of including information on source reduction activities in advertisements and flyers for the recycling program. Local news media will be encouraged to report on opportunities to practice source reduction. The DEQ can be used as a resource for obtaining appropriate literature on source reduction activities and assistance in developing the program.

7.2 Reuse

Reuse is similar to source reduction as it prevents materials from entering the waste stream, but involves separating a given solid waste material from the waste stream and using it, without processing or changing its form, other than size reduction, for the same or another end use. Examples of reuse include such activities as swap shops or thrift stores, clothing collection centers, pallet reuse, use of refillable bottles, reconditioning of drums or barrels, use of saw dust from lumber mills for the manufacture of paper or particle board.

As with source reduction, private citizens can make an effort to reuse or encourage reuse of many items that would normally be discarded to the landfill. However, the focus of the program would be better aimed at the commercial sector including the Region businesses and industries.

The following activities are proposed under this plan relative to reuse, as interest and funding are available:

- Continue to educate public relative to the need for reuse
- Expansion of education to commercial sector to address reuse

- Collection of data on commercial reuse programs

7.3 Recycling

Recycling is the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Section 5.3 outlined the recycling activities in the Region.

The County in collaboration with Accomack County signed an agreement with Tidewater Fibre Corporation (TFC) on for the provision of a comprehensive privatized recycling collection program whereby TFC would provide the collection containers, pick up the materials, process and market the materials, and provide the County with public education assistance. Each of the waste collection centers is designated as a recycling drop off center. Materials can be comingled in the recycling containers provided. The following materials are collected:

- Plastic bottles and jugs
- Plastic dairy tubs
- Newspaper and inserts
- Magazines and catalogs
- Phone books
- Junk mail
- White office paper
- Brown cardboard boxes and brown paper bags
- Chipboard or carrier stock
- Paper egg cartons
- Metals: Aluminum cans, steel/tin cans.
- Loose glass bottles and jugs

Items not collected include:

- Pizza boxes
- Aerosol cans
- Hoses
- Plants
- Toys
- Dishes and paper plates
- Juice boxes or pouches
- Tires
- Styrofoam
- Batteries
- Plastic bags
- Electronics

TFC will partner with Northampton County to promote the recycling program and to educate the citizens as well as providing information to the school system for promotion.

With difficult economic realities faced by the members of the Region, the following general plan has been developed to increase recycling activity in the Region:

- Every year, the County evaluates their recycling rate. They are required to report to DEQ every 4-years.
- If the State mandated recycling level is not met, existing recycling programs will be analyzed to find economically feasible methods of increasing recycling to meet the mandated level.
- If the required recycling level of 15 percent is met, the program will go into a period of stabilization with little effort being expended to increase recycling activity.
- If a decrease in recycling is noted, the program will be reevaluated.
- If the mandated recycling level is not met, the program will be analyzed to determine how current programs should be modified to meet mandated levels.
- If it is determined that it is not feasible to meet mandated recycling levels because of market and economic conditions, the DEQ will be petitioned for relief.

The following activities are proposed under this plan as markets and funding become available:

- Consider expanding the recycling program with private company
- Promote cardboard and white paper recycling in the commercial sector
- Expand education programs
- Develop a commercial and industrial annual reporting program.

7.4 Resource Recovery and Incineration

Resource recovery refers to a system that provides for collection, separation, recycling and recovery of energy from solid wastes, including disposal of non-recoverable waste residues. Incineration means the controlled combustion of solid waste for disposal. According to the EPA burning MSW can generate energy while reducing the amount of waste by up to 90 percent in volume and 75% in weight. The two activities are similar and are therefore combined for this discussion.

Currently, the Region does not generate enough waste to make resource recovery or incineration feasible. In addition, there are no local markets for the steam or electricity generated from the combustion of the wastes. If an industry expressed an interest in participating in the construction of a resource recovery facility to serve the Region, the members would examine the feasibility of such a facility.

The County may in the future explore the beneficial use of landfill gas, which could involve the combustion of the gas for the production of steam or electricity. However, the closed County

landfill is not large enough to consider implementation of a gas recovery system for energy, nor is there a market for the steam if so produced.

7.5 Landfilling

Landfilling is the primary disposal mechanism for the Region. Section 5.2 outlined the disposal activities in detail. Northampton County constructed a transfer station to transport their waste outside the County for disposal. The hauling and disposal of the waste is privatized. The County operates the scales and transfer station. Procurement of the hauling and disposal is completed in accordance with the County's ordinances and the Virginia Procurement Act. The County is currently contracted with BFI Waste Systems Inc. through June 30, 2025, for these operations. Waste is transported to the King and Queen landfill for disposal.

8.0 GOALS AND OBJECTIVES OF PROGRAM

The following sections outline the goals and objectives for the Region's solid waste management program. The Region operates an integrated solid waste management system and will continue to improve on the program as interest is expressed by the County Board of Supervisors and Town officials, as markets open up and as funding is made available. Also included under each section is a schedule of implementation and an estimated cost where applicable. A majority of the items so noted, do not have specific tasks or projects identified at this time but represent on-going activities already incorporated into the program. The County currently does not provide any waste treatment operations and does not plan to in the future. Hence this is not addressed in this section.

The members of the Region have developed and adopted this solid waste management plan for the following reasons:

1. To protect the health, safety, and welfare of their citizens by providing and planning for their present and future solid waste disposal needs.
2. To provide for the efficient and economical disposal of the solid waste.
3. To promote recycling activities and make a substantial effort to comply with State mandated recycling rate of 15 percent.
4. To minimize the amount of solid waste transported outside of the County for disposal.
5. To develop an integrated approach for the handling and disposal of solid waste.
6. To use limited natural resources effectively and efficiently.
7. To protect the environment from the mismanagement of solid waste.
8. To comply with State Regulations 9 VAC 20-130-10 et seq.

8.1 Collections

Collections includes the operation of convenience centers by the County and door-to-door collection of the residential and commercial sectors by the Towns. The Towns do not currently plan any changes to their system. The following table summarizes the goals of the collection program for the County and identifies action items.

TABLE 26
COLLECTION SYSTEM
GOALS AND ACTION ITEMS

Item Number	Goal	Action Item	Schedule	Estimated Costs (2022 dollars)
C-1	Continue to provide a cost-effective collection system for the citizens of the County.	Maintain existing systems.	On-going	
C-2	Provide comprehensive services at the collection sites including trash disposal, bulky item collection, recycling, yard waste handling	Expand the services as interest and funding become available.	As interest and need dictates and as funding becomes available.	No specific project at this time

8.2 Disposal – Transfer Outside of County

The County no longer operates a landfill and must transfer its waste outside of the County. The landfill has been certified as closed by DEQ. The transport and disposal of the waste is contracted with a private company. The County operates the transfer station. Thus, the primary goals for this aspect of the solid waste program are the continued procurement of the private sector operations in a cost-effective manner.

TABLE 27
DISPOSAL SYSTEM
GOALS AND ACTION ITEMS

Item Number	Goal	Action Item	Schedule	Estimated Costs (2022 dollars)
D-1	Comply with all the requirements of post closure care.	Post closure care consists of maintenance of the landfill cover and compliance monitoring. The County must continue to post financial assurance for post closure care through this period.	30 years ± 2/2/11 through 2/2/41	Financial assurance posted for FY 2022 was $2,170,446 for the landfill and $2,695 for the transfer station.

Item Number	Goal	Action Item	Schedule	Estimated Costs (2022 dollars)
	Evaluate post closure care periodically to determine if period can be reduced	Use a qualified engineering or environmental firm to review data to determine if all or part of post closure care can be eliminated.	Periodically – probably every 5 years	$10,000 - $20,000 depending on amount of data for review; Post closure period reduced to 19 years for FY 2022 estimate.
	Maintain closure of the landfill in an environmentally sound manner.	A. Provide adequate training to all personnel in post closure of the landfill.	On-going	$1,000/year for travel and educational expenses.
		B. Conduct internal inspections to assure compliance.	On-going	No funding required.
		C. Contract professional engineering services or HRSD as necessary to assure compliance during post closure period.	On-going	Procured. Includes operational assistance and environmental monitoring.
D-2	Maintain adequate agreements for transportation and disposal with private sector	A. Determine best length of contract to provide cost effective handling of the waste	On-going	Internal
		B. Actively manage existing contracts to assure compliance with Contract	On-going	Internal
		C. Procure Contractors as needed per agreement and procurement regulations	As needed	Internal

Item Number	Goal	Action Item	Schedule	Estimated Costs (2022 dollars)
		D. Evaluate life of disposal facility to assure adequate capacity for planning purposes	Annually	Internal
D-3	Maintain transfer station and scales	Annually review facility and determine if maintenance is required e.g. repairs to metal paneling, hopper and/or tipping floor.	Annually	Internal
		Budget required funding and implement maintenance when approved by BOS	Annually	As needed
D-4	Continue to handle leachate in cost effective manner	Continue to evaporate leachate.	On-going	No specific funding required at this time.

8.3 Recycling

As described previously the County's program is in a state of transition and may be expanded.

TABLE 28
RECYCLING SYSTEM
GOALS AND ACTION ITEMS

Item Number	Goal	Action Item	Schedule	Estimated Costs (2013 dollars)
R-1	Increase the volume of materials collected	A. Expand agreement as appropriate with TFC	On going	Internal
		B. Encourage cardboard and white paper recycling programs for businesses that do not have their own recycling programs. Encourage private	On going	No specific project identified at this time.

Item Number	Goal	Action Item	Schedule	Estimated Costs (2013 dollars)
		collection of this material.		
R-2	Continue to evaluate privatization of recycling to assure most cost-effective method	Evaluate privatized recycling activities periodically to determine if County with or without Accomack County could provide similar services more cost effectively.	On going	No specific project identified at this time.
	Periodically procure private recycling contract	Issue RFP for services as needed	Per agreement	Internal
R-3	Develop a commercial and industrial sector annual reporting protocol.	By ordinance or voluntary	Ongoing discussions	No funding required.
R-4	Increase and improve commercial sector participation in annual reporting.	Encourage the commercial sector to track and report their recycling and disposal tonnages.	On going	No specific project identified at this time.
R-5	Implement brush handling program (other than burning) to allow brush handling to count towards recycling goals.	Evaluate a yard waste mulching program to encourage the use of the product by the citizens.	On going	No specific project identified at this time.

9.0 IMPLEMENTATION SCHEDULE

The implementation schedule for the County's integrated waste management program has been summarized under separate sections above. Most of the proposed expenditures over the planning period will be associated with maintaining the current system.

10.0 FUNDING AND FINANCING

On average, the Solid Waste Program budget for FY 2018 – FY 2022 represented approximately 3.7% of the County's total budget and is anticipated to remain a relatively small part of the overall budget. Solid Waste Expenditures over the past 4 years have averaged around $100 per person per year. The total cost of the system including collection, recycling and transfer and disposal has averaged approximately $160/ton between FY 2018 and FY 2022. (See tables provided in Section 6.0)

The County finances their program through tipping fees assessed commercial businesses, industries, and citizens at the transfer station. Tipping fees have risen from $55/ton prior to transfer operations being initiated (2008) to $61/ton once transfer was fully implemented (2010) and are now set at $75/ton in FY 2022. The tipping fees do not fully fund the program and the County uses General Fund monies to supplement the budget as needed. All Debt Service for closure and the waste collection centers is carried in the General Fund as was included in a broad spectrum borrowing which include other County projects.

The County has an appropriate planning mechanism in their budgetary process to allow ample time to project the funding needed and to provide the funding as necessary. Funding for all programs is determined ultimately by the Board of Supervisors, which must weigh requests from the solid waste program for additional expenditures against the backdrop of the total County budget.

11.0 PUBLIC PARTICIPATION

In 2013, the update to the SWMP was a major amendment. Thus, Northampton County advertised in the Eastern Shore News, on May 11 and May 18, 2013 and held a public hearing on the draft plan at the Northampton County Board of Supervisor meeting on May 28, 2013. A copy of the advertisement is included in **APPENDIX 1.** At that same meeting, the Board of Supervisors approved the plan and adopted a resolution stating such. A copy of the adopting resolution is included in **APPENDIX 1.** A copy of the plan was placed in the following location for public review:

- County Administrator's office, in Eastville.

No written comments were received on the plan.

For the 2022/2023 update of the Plan, the Plan will be provided to the County Board of Supervisors. As this update is not considered a major amendment, a public hearing is not required.

The Board approved the Plan on _____. A copy of the approval is included in **APPENDIX 1.**

No other specific public participation activities were conducted for the plan. However, the plan will become the cornerstone of future public education activities.

12.0 RECORD KEEPING

Implementation of the plan will be under the direction of the County Administrator of Northampton County who will work closely with the County Board of Supervisors and Town Councils. The County will be responsible for:

- Completion and submittal of Form 50-25 and Form 50-30 annually.
- Periodic update of the plan as necessary.
- Annual evaluation of programs to determine their success and to outline any needed improvements or changes.
- Education relative to solid waste management.
- Assuring adequately and economical disposal capacity for the region.

In addition to the day-to-day record keeping, the County documents their solid waste activities in several ways as follows:

- Annual reports to the Board of Supervisors indicating how the goals and objectives of the program have been met.
- Periodic updates presented to the Board of Supervisors as requested.
- Annual submittal by March 31 of each year of the Waste Information and Assessment Report (Form 50-25) to DEQ.
- Annual submittal by April 30 of each year the Recycling Rate Report (Form 50-30), to DEQ.
- Annual submittal usually by December of each year, an update of financial assurance to DEQ.

All these reports, updates, and DEQ submittals, as well as the background information are kept in the central archive (files) of the solid waste program located at the County offices, 16404 Courthouse Road, Eastville, Virginia.

The Director of DEQ receives copies of the appropriate information through the following sources:

- Direct submittal to DEQ of Form 50-25 (Waste Assessment) and Form 50-30 (Recycling).
- New permit requests
- Permit amendments
- Updates to the Solid Waste Management Plan.

APPENDIX 1

ADOPTING RESOLUTIONS

RECEIVED
JUN 23 2008
By

R99524-09
WH
LPK
AA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

June 20, 2008

Ms. Katherine H. Nunez, Administrator
Northampton County
PO Box 66
Eastville, VA 23347

Subject: Approval of the Solid Waste Management Plan for the Northampton County Solid Waste Planning Unit

Dear Ms. Nunez:

I am pleased to inform you that the Solid Waste Management Plan for the Northampton County Solid Waste Planning Unit received in this office on June 24, 2004, and revised with addendums received January 20, 2005 and April 8, 2008 is hereby approved.

The Planning Unit consists of the County of Northampton plus the Towns of Cape Charles, Cheriton, Eastville, Exmore and Nassawadox.

Thank you again for your efforts and cooperation in this matter. If you have any questions about this letter, please contact Daniel S. Gwinner at (804) 698-4218.

Sincerely,

Sanjay V. Thirunagari, Director
Office of Waste Technical Support
Waste Division

cc: Milt Johnston-VADEQ
Daniel S. Gwinner-VADEQ
Lynn P. Klappich, Draper Aden Associates

THE DAILY AND SUNDAY TIMES
DELMARVA'S LARGEST NEWSPAPER
618 BEAM STREET
SALISBURY, MARYLAND 21801
PHONE: 410-749-7171
FAX: 410-341-6709

Northampton County Administrator
P. O. Box 66
Eastville, VA 23347

Dear Sir/Madame:

Here is the Certification of Publication for your ad that was run
05/18/13

Sincerely,

Victoria Hagerman, Legals Department
Legals Ext. 253

CERTIFICATION OF PUBLICATION

We hereby certify that the annexed: 5/20/2013

Public Hearing: Tuesday, May 28, 2013 @ 5PM

Was published on 5/11, 18, '13 in THE EASTERN SHORE NEWS

Victoria Hagerman
The Daily Times

NOTICE OF PUBLIC HEARING

The Northampton County Board of Supervisors will conduct a public hearing at 5:00 p.m., Tuesday, May 28, 2013 in the Board Room of the County Administration Building, 16404 Courthouse Road, Eastville, Virginia, to receive public comment on the Northampton County Solid Waste Management Plan. This plan is required in accordance with 9 VAC 20-130-110.B. of the Regulations for Solid Waste Management Planning.

The public is invited to review the document during normal business hours at the Office of the Northampton County Administrator, 16404 Courthouse Road, Eastville, Virginia. Written comments will be accepted until the time of the public hearing. Anyone interested in the above matter should attend the public hearing to express their views.

HANDICAPPED ASSISTANCE AVAILABLE: Call 757/678-0440

Katherine H. Nunez,
County Administrator

vic 5/11, 18, '13

VIRGINIA:

At a recessed meeting of the Board of Supervisors of the County of Northampton, Virginia, held in the Board Chambers of the County Administration Building, 16404 Courthouse Road, Eastville, Virginia, on the 28th day of May, 2013, at 5:00 p.m.

Present:

Willie C. Randall, Chairman	Laurence J. Trala, Vice Chairman
Richard L. Hubbard	Larry LeMond
Oliver H. Bennett	

The meeting was called to order by the Chairman.

County Official's Report:

(1) Mrs. Leslie Lewis, Director of Finance, presented the following budget amendment and supplemental appropriation for the Board's consideration:

MEMORANDUM

TO: Board of Supervisors

FROM: Leslie Lewis, Director of Finance

DATE: May 14, 2013

RE: Budget Amendments and Appropriations – FY 2013

Your approval is respectfully requested for the following budget amendment and supplemental appropriation:

> **$2,280.00** – transfer of funds from the Operating Fund Balance to the ESVA 911 Commission Account (100-3505-56500) to support the use of the ESVBA network (for Internet connectivity) at the 911 Center.

Thank you for your attention to this matter.

* * * * *

Motion was made by Mr. Trala, seconded by Mr. Bennett, that the foregoing budget amendment and supplemental appropriation be approved as presented. All members were present and voted "yes." The motion was unanimously passed.

County Administrator's Report:

(2) The County Administrator indicated that she had no report.

Public Hearing:

Chairman Randall called to order the following public hearing:

(3) Receive public comment on the Northampton County Solid Waste Management Plan, which is required in accordance with 9 VAC 20-130-110.B. of the Regulations for Solid Waste Management Planning.

The Chairman asked if there were any present desiring to speak.

Ms. Nunez provided background information on development of the Solid Waste Management Plan, a requirement of the Virginia Department of Environmental Quality, and a document which must be reviewed and updated at least every five years. She noted that substantial changes have occurred in the County's solid waste system since the initial adoption in 2008, including closure of the sanitary landfill, construction and operation of the transfer station, closure of the unmanned greenboxes, and construction of the manned, waste collection sites. She also reported on the County's single-stream recycling program, a joint, cooperative venture with Accomack County.

The County Administrator also noted that each of the County's five incorporated towns is in the process of conducting its own public hearing on the Plan with regard to its respective plan areas.

The Board made two minor corrections to the text: (1) correction of the facility name of the local hospital and the notation that it will soon be moving to Accomack County, and (2) addition of information relative to the new Walmart store located in Accomack County under "commercial land uses".

There being no one who wished to speak, the Chairman closed the public hearing.

Motion was made by Mr. Hubbard, seconded by Mr. LeMond, that the following resolution be adopted, approving the Solid Waste Management Plan – Amendment 1 – as corrected, inclusive of any amendments to the towns' portions of the Plan. All members were present and voted "yes." The motion was unanimously passed. The Plan as adopted is on file in the office of the County Administrator. Said resolution as adopted is set out below:

RESOLUTION
FOR ACCEPTANCE OF THE
SOLID WASTE MANAGEMENT PLAN
BY THE
NORTHAMPTON COUNTY BOARD OF SUPERVISORS

WHEREAS, the Section 10.1-1411 of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled, "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10 et seq, effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, the County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, Section 9 VAC 20-130-175.F. of the Solid Waste Planning and Recycling Regulations, Amendment 2, requires that solid waste management planning units are required to

maintain current solid waste management plans as well as submit a plan update certification letter on or before the five-year anniversary of the Department's plan approval date; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore the five-year update for the SWMP is due on or before June 20, 2013; and

WHEREAS, the County has carefully considered the public's comments and has incorporated them or will incorporate them into the plan as is in the best interest of the County; and

WHEREAS, the County recognizes the annual reporting requirements pursuant to 9 VAC 20-130-165.A (Waste Assessment Report), and 9 VAC 20-130-165.D (Recycling Report) and agrees to provide said reports; and

WHEREAS, the County recognizes its responsibility to amend the plan as required by the regulations under 9 VAC 20-130-175.

NOW, THEREFORE, BE IT RESOLVED, that Northampton County has reviewed the plan and adopts it, authorizing its submittal to the Virginia Department of Environmental Quality.

* * * * * *

Matters Presented by the Board:

In reference to a recent student injury at the high school and the fact that the School Administration did not provide any notification to the Board members, Mr. Hubbard said that he believed it would have been common courtesy to so notify the Board. He also referenced a recent article in the Virginian-Pilot newspaper which listed scholastic achievement scores of Hampton Roads communities, including Accomack County, but Northampton County was not mentioned.

Recess:

Motion was made by Mr. Trala, seconded by Mr. Bennett, that the meeting be recessed until 7:00 p.m., Monday, June 3, 2013 in the Board Room of the County Administration Building, 16404 Courthouse Road, Eastville, Virginia, to conduct a public hearing on the equalized tax rate as a result of the reassessment. All members were present and voted "yes."

The motion was unanimously passed.

The meeting was recessed.

_____ CHAIRMAN

_____ COUNTY ADMINISTRATOR

RESOLUTION FOR ACCEPTANCE OF THE UPDATED SOLID WASTE MANAGEMENT PLAN BY THE EASTVILLE TOWN COUNCIL

WHEREAS, the Section 10.1-1411 of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled, "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10 et seq, effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, Northampton County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, Section 9 VAC 20-130-175.F. of the Solid Waste Planning and Recycling Regulations, Amendment 2, requires that solid waste management planning units are required to maintain current solid waste management plans as well as submit a plan update certification letter on or before the five-year anniversary of the Department's plan approval date; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore, the five-year update for the SWMP is due on or before June 20, 2013.

WHEREAS, the Eastville Town Council has provided time for the public to review and comment on the updated plan and has held a public meeting relative to the updated plan on June 3, 2013.

NOW, THEREFORE, BE IT RESOLVED, that Eastville Town Council has reviewed the updated plan and adopts it, authorizing its submittal to the Virginia Department of Environmental Quality.

Adopted this 3rd day of June, 2013.

EASTVILLE TOWN COUNCIL

James C. Sturgis

JAMES C. STURGIS, Mayor

ATTEST:

Jonelleen T. Stevenson, Town Clerk

Board of Supervisors of Northampton County
P.O. Box 66 • Eastville, Virginia 23347

BOARD OF SUPERVISORS
Willie C. Randall, Chairman
Laurence J. Trala, Vice Chairman
Oliver H. Bennett
Richard L. Hubbard
Larry LeMond

Katherine H. Nunez
County Administrator

PHONE: 757-678-0440
FAX: 757-678-0483

RESOLUTION
FOR ACCEPTANCE OF THE
SOLID WASTE MANAGEMENT PLAN
BY THE
NORTHAMPTON COUNTY BOARD OF SUPERVISORS

WHEREAS, the Section 10.1-1411 of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled, "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10 et seq, effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, the County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, Section 9 VAC 20-130-175.F. of the Solid Waste Planning and Recycling Regulations, Amendment 2, requires that solid waste management planning units are required to maintain current solid waste management plans as well as submit a plan update certification letter on or before the five-year anniversary of the Department's plan approval date; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore the five-year update for the SWMP is due on or before June 20, 2013; and

WHEREAS, the County has carefully considered the public's comments and has incorporated them or will incorporate them into the plan as is in the best interest of the County; and

WHEREAS, the County recognizes the annual reporting requirements pursuant to 9 VAC 20-130-165.A (Waste Assessment Report), and 9 VAC 20-130-165.D (Recycling Report) and agrees to provide said reports; and

WHEREAS, the County recognizes its responsibility to amend the plan as required by the regulations under 9 VAC 20-130-175.

NOW, THEREFORE, BE IT RESOLVED, that Northampton County has reviewed the plan and adopts it, authorizing its submittal to the Virginia Department of Environmental Quality.

Adopted this 28 day of May, 2013.

NORTHAMPTON COUNTY BOARD OF SUPERVISORS

By: _____
Its Chairman

ATTEST:

_____
County Administrator/Clerk

RESOLUTION FOR ACCEPTANCE OF THE UPDATED SOLID WASTE MAINTENANCE PLAN BY THE NASSAWADOX TOWN COUNCIL

WHEREAS, the Section 10.1-1411 of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled, "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10 et seq, effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, Northampton County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, Section 9 VAC 20-130-175.F. of the Solid Waste Planning and Recycling Regulations, Amendment 2, requires that solid waste management planning units are required to maintain current solid waste management plans as well as submit a plan update certification letter on or before the five-year anniversary of the Department's plan approval date; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore, the five-year update for the SWMP is due on or before June 20, 2013.

WHEREAS, the Nassawadox Town Council has provided time for the public to review and comment on the updated plan and has held a public meeting relative to the updated plan on May 27, 2013.

NOW, THEREFORE, BE IT RESOLVED, that Nassawadox Town Council has reviewed the updated plan and adopts it, authorizing its submittal to the Virginia Department of Environmental Quality.

Adopted this 27th day of May, 2013.

NASSAWADOX TOWN COUNCIL

Estelle D. Murphy
Its Mayor

ATTEST:

Paula Mills
Clerk

RESOLUTION FOR ACCEPTANCE OF THE UPDATED SOLID WASTE MANAGEMENT PLAN BY THE EXMORE TOWN COUNCIL

WHEREAS, the Section 10.1-1411 of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled, "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10 et seq, effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, Northampton County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, Section 9 VAC 20-130-175.F. of the Solid Waste Planning and Recycling Regulations, Amendment 2, requires that solid waste management planning units are required to maintain current solid waste management plans as well as submit a plan update certification letter on or before the five-year anniversary of the Department's plan approval date; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore, the five-year update for the SWMP is due on or before June 20, 2013.

WHEREAS, the EXMORE Town Council has provided time for the public to review and comment on the updated plan and has held a public meeting relative to the updated plan on MAY 6, 2013.

NOW, THEREFORE, BE IT RESOLVED, that THE EXMORE Town Council has reviewed the updated plan and adopts it, authorizing its submittal to the Virginia Department of Environmental Quality.

Adopted this 6 day of MAY, 2013.

EXMORE TOWN COUNCIL

Its Mayor

ATTEST:

Clerk

Municipal Corp. of
Cape Charles

The undersigned Clerk of the Council of the Town of Cape Charles, Virginia (the "Town"), hereby certifies that:

1. A meeting of the Council of the Town (the "Council") was duly called and held on May 16, 2013 (the "Meeting").

2. Attached hereto is a true, correct and complete copy of Resolution 20130516 (the "Resolution") of the Town entitled as recorded in full in the minutes of the Meeting, duly adopted by a majority of the members of the Council present and voting during the Meeting.

3. A summary of the members of the Council present or absent at the Meeting and the recorded vote with respect to the foregoing Resolution as set forth below:

			Voting		
Member Name	**Present**	**Absent**	**Yes**	**No**	**Abstaining**
Dora Sullivan, Mayor		X			
Chris Bannon	X		X		
Steve Bennett	X		X		
Tom Godwin	X		X		
Joan Natali	X		X		
Mike Sullivan	X		X		
Frank Wendell	X		X		

4. The Resolution has not been repealed, revoked, rescinded or amended and is in full force and effect on the date hereof.

Witness my signature and the seal of the Town of Cape Charles, Virginia this 17th day of May 2013.

Libby Hume
Clerk of the Council
Town of Cape Charles, Virginia

(Seal)

Municipal Building · 2 Plum Street · Cape Charles, Virginia 23310
(757) 331-3259 Fax (757) 331-4820

RESOLUTION 20130516

FOR ACCEPTANCE OF THE UPDATED NORTHAMPTON COUNTY SOLID WASTE MANAGEMENT PLAN BY THE TOWN COUNCIL OF CAPE CHARLES, VIRGINIA

WHEREAS, the Code of Virginia, § 10.1-1411 authorized the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10, et seq. effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS, these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, Northampton County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore, the five-year update for the SWMP is due on or before June 20, 2013; and

WHEREAS, the Town Council of Cape Charles has provided time for the public to review and comment on the updated plan and has held a public meeting relative to the updated plan on May 16, 2013.

NOW, THEREFORE BE IT RESOLVED that the Town Council of Cape Charles has reviewed the updated plan and adopts it authorizing its submittal to the Virginia Department of Environmental Quality.

****

Adopted by the Town Council of Cape Charles on May 16, 2013.

By: Laurence "Chris" Bannon
Vice Mayor

ATTEST:

Libby Hume
Town Clerk

RESOLUTION FOR ACCEPTANCE OF THE UPDATED SOLID WASTE MANAGEMENT PLAN BY THE CHERITON TOWN COUNCIL

WHEREAS, the Section 10.1-1411 of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate regulations specifying requirements for local and regional solid waste management planning; and

WHEREAS, the Virginia Waste Management Board has promulgated the regulations entitled, "Regulations for the Development of Solid Waste Management Plans, Amendment 1 as 9 VAC 20-130-10 et seq, effective date August 1, 2001, through the Virginia Department of Environmental Quality; and

WHEREAS these regulations required every county, city and incorporated town within the Commonwealth to submit a Solid Waste Management Plan (SWMP) by July 1, 2004; and

WHEREAS, Northampton County determined that it was in its best interest to submit the plan as a single entity and not as part of a region, enlisted the services of Draper Aden Associates to complete such a plan, and provided copies of such plan to each of the incorporated towns within the County; and

WHEREAS, Section 9 VAC 20-130-175.F. of the Solid Waste Planning and Recycling Regulations, Amendment 2, requires that solid waste management planning units are required to maintain current solid waste management plans as well as submit a plan update certification letter on or before the five-year anniversary of the Department's plan approval date; and

WHEREAS, the Department approved the SWMP for Northampton County on June 20, 2008; therefore, the five-year update for the SWMP is due on or before June 20, 2013.

WHEREAS, the Cheriton Town Council has provided time for the public to review and comment on the updated plan and has held a public meeting relative to the updated plan on May 22, 2013.

NOW, THEREFORE, BE IT RESOLVED, that Cheriton Town Council has reviewed the updated plan and adopts it, authorizing its submittal to the Virginia Department of Environmental Quality.

Adopted this 22nd day of May, 2013.

CHERITON TOWN COUNCIL

Joseph A. Habel, Mayor

ATTEST:

Stacey A. Sparrow, Clerk

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

April 14, 2020

Mr. Charles Kolakowski
County Administrator
Northampton County
P.O. Box 66
Eastville, VA 23347

Re: Acceptance of the 5-Year Update to the Northampton County Solid Waste Management Plan

Dear Mr. Kolakowski:

The 5-Year Update for the Northampton County Solid Waste Management Plan received in this office on May 20, 2018, along with additional information provided on February 2, 2019, as required by the Solid Waste Planning and Recycling Regulations, 9VAC20-130-175.F is hereby accepted.

Per 9VAC20-130-173.C, the Department of Environmental Quality (DEQ) has reviewed the five-year update and provides the following:

1. Based on the staff review and discussion with the planning unit, the SWMP will be revised before the next five-year update.

2. Per 9VAC20-120-173.A, all solid waste planning units are required to maintain current plans containing a 20-year planning window, including any previous and recent updates and amendments submitted to DEQ. All updated plan elements submitted in the five-year update should be reflected in the SWMP.

Please update your copy of the SWMP with items 1 and 2 mentioned above and submit an updated copy to DEQ for our records. This update should be considered as part of the Solid Waste Planning Unit's approved plan.

Thank you for your efforts and cooperation in this matter. If you have any questions, please contact Prina Chudasama at (804)698-4159 or via email at prina.chudasama@deq.virginia.gov.

Sincerely,

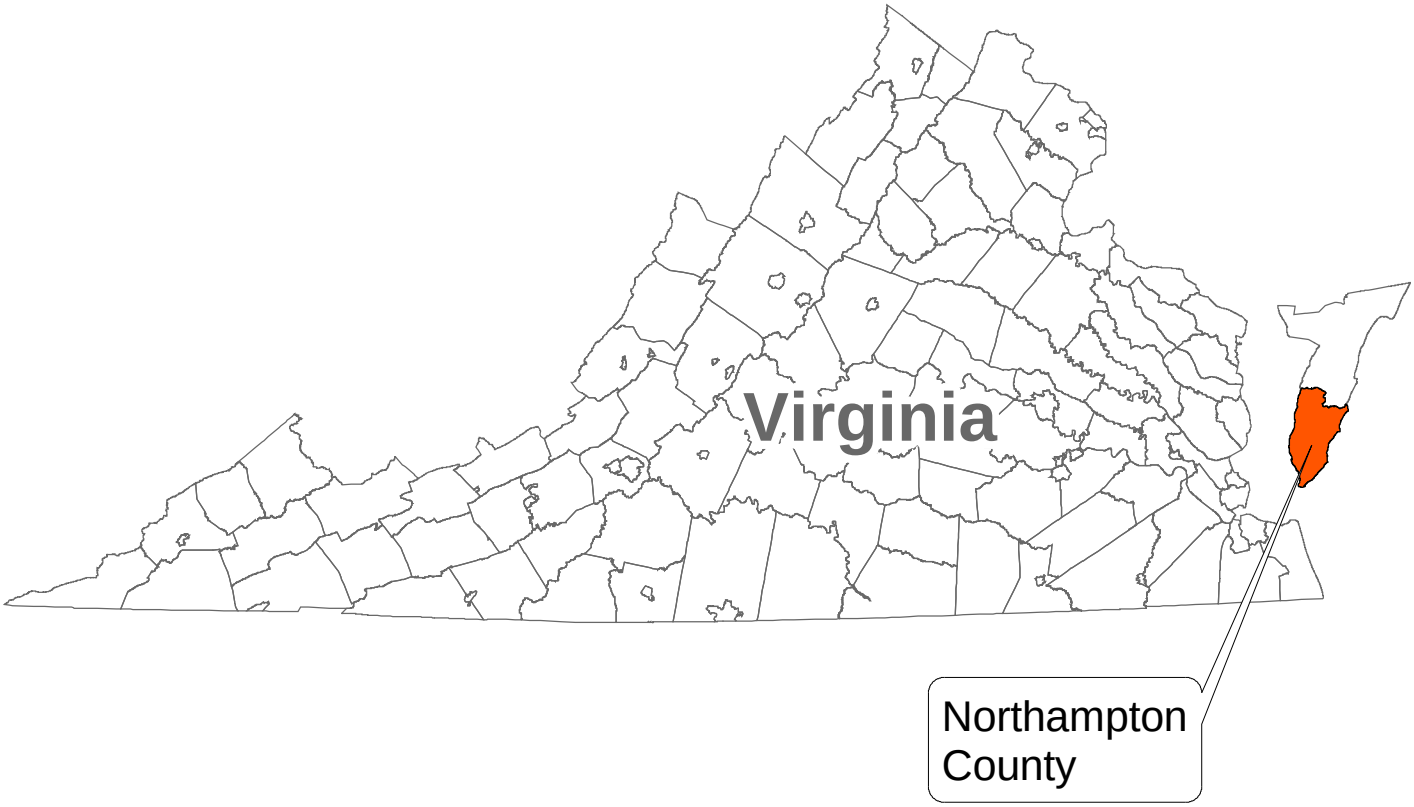
Sanjay Thirunagari, Manager
Office of Financial Responsibility & Waste Programs
Division of Land Protection and Revitalization

Enclosures
cc: Prina Chudasama, DEQ, CO
Melinda Woodruff, DEQ, TRO

APPENDIX 2

FIGURES

Northampton County



Location Map - Northampton County

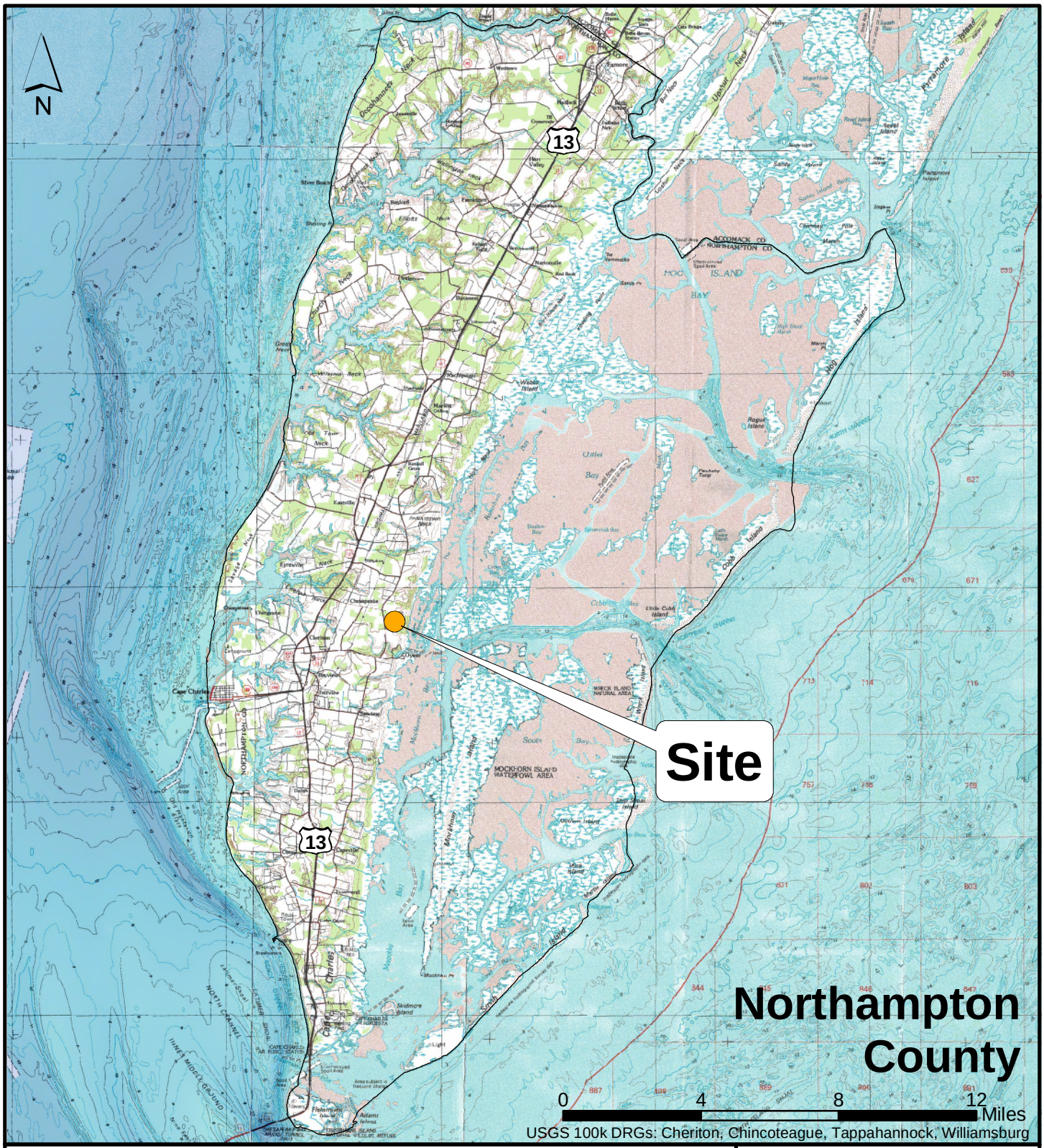
SCALE

PLAN NO. R99524-09

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC

DESIGNED	
DRAWN	MF
CHECKED	LC
DATE	05-27-04

FIGURE 1

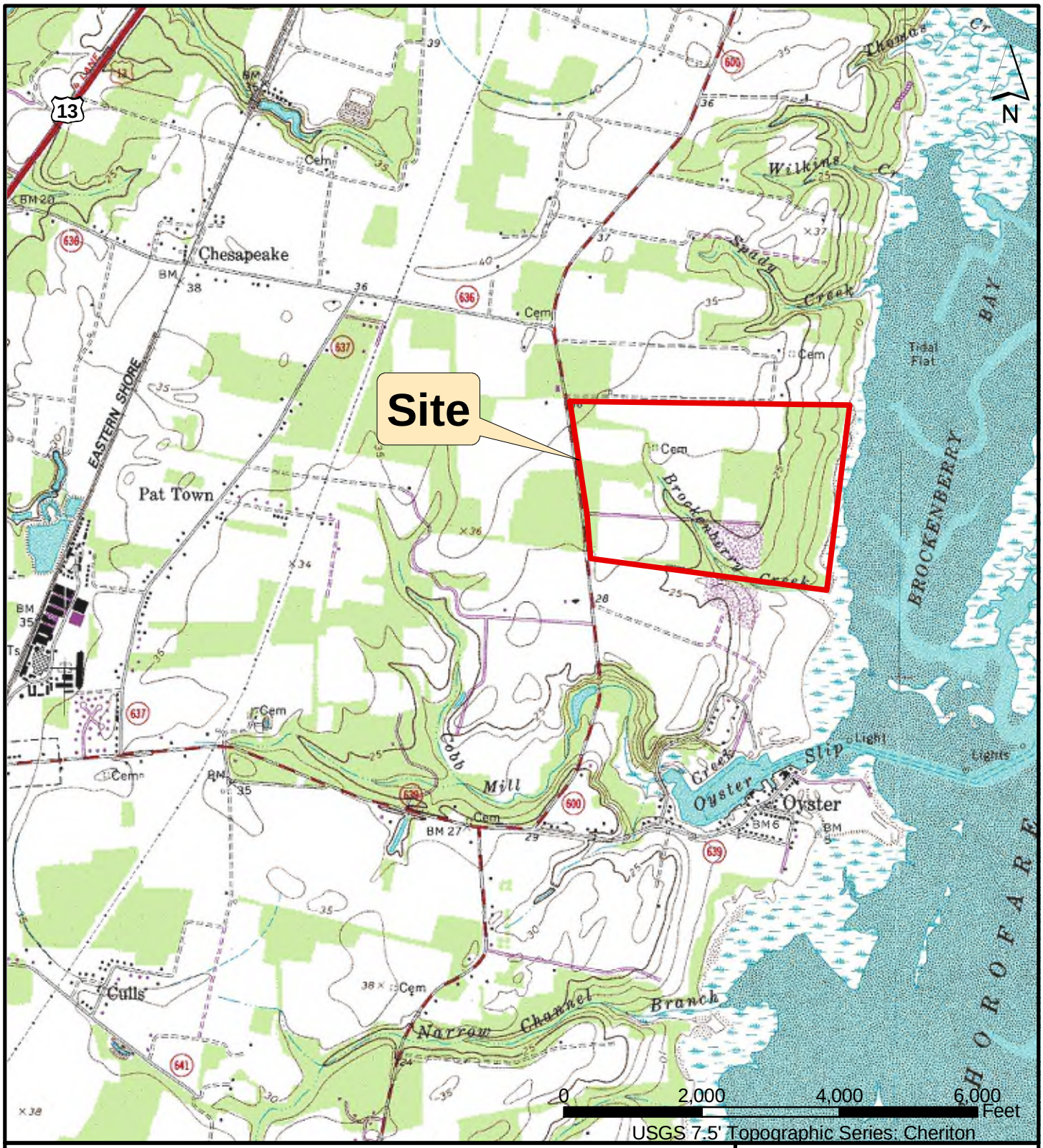


Site Location	**Landfill Facility Permit No. 507**	SCALE 1" = 4 Miles PLAN NO. R99524-09

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC

DESIGNED	
DRAWN	MF
CHECKED	LC
DATE	05-27-04

FIGURE
2



Vicinity Map
Oyster, Virginia

Northampton County
Landfill Facility
Permit No. 507

SCALE: 1" = 2000'

PLAN NO. R99524-09

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC

DESIGNED
DRAWN MF
CHECKED LC
DATE 05-27-04

FIGURE
3

APPENDIX 3

EPA 2020 Report for CY 2018 – Fact Sheet - Excerpts

Advancing Sustainable Materials Management: 2018 Fact Sheet

Assessing Trends in Materials Generation and Management in the United States

December 2020

Introduction

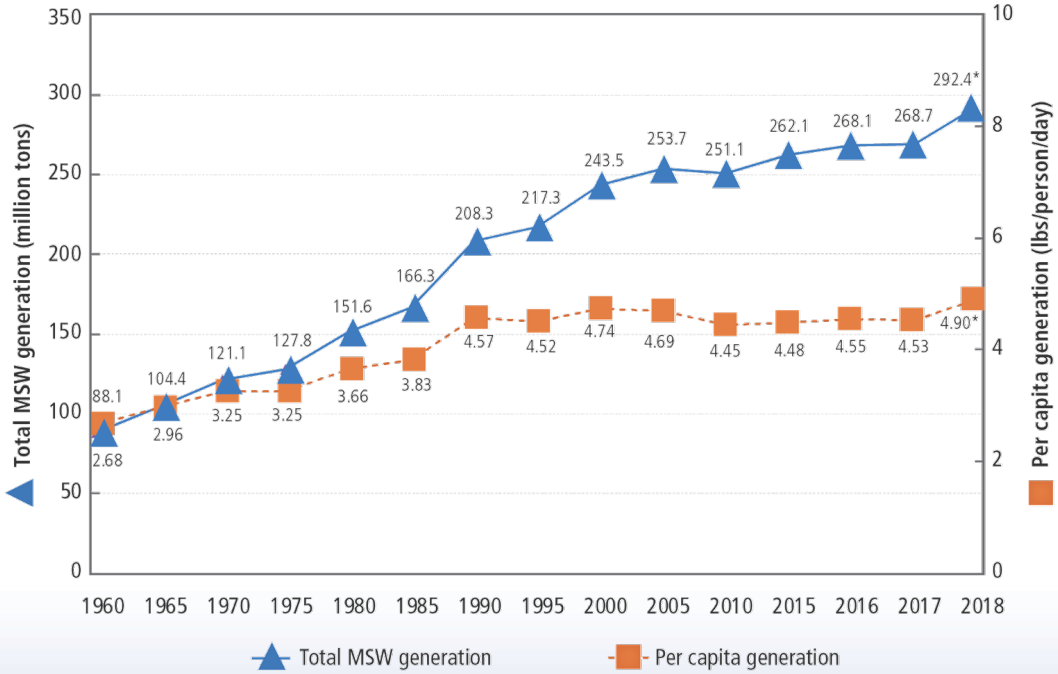
The U.S. Environmental Protection Agency (EPA) has collected and reported data on the generation and disposition of municipal solid waste (MSW) in the United States for more than 35 years. This information is used to measure the success of materials management programs across the country and to characterize the national waste stream. These facts and figures are based on the most recent information, which is from calendar year 2018.

In 2018, in the United States, approximately 292 million tons (U.S. short tons unless specified) of MSW were generated (See Figure 1). Of the MSW generated, approximately 69 million tons were recycled and 25 million tons were composted. Together, about 94 million tons were recycled or composted, equivalent to a 32.1 percent recycling and composting rate (See Figure 2). In addition, about 18 million tons of food (6.1 percent) were processed through other food management pathways (See Figure 3, Table 1 and text box page 5). More than 34 million tons of MSW (11.8 percent) were combusted with energy recovery. Finally, more than 146 million tons (50.0 percent) were landfilled (See Figure 3 and Table 1).

Information about waste generation and management is an important foundation for managing materials. EPA's Sustainable Materials Management (SMM) approach refers to the use and reuse of materials in the most productive and sustainable way across their entire lifecycle. Through SMM, EPA helps to meet the material needs of the future by providing methods to decrease environmental impacts of materials use while increasing economic competitiveness.

This report analyzes MSW trends in generation and management, materials and products, and economic indicators affecting MSW. It also includes a section on the generation and management of construction and demolition (C&D) debris, which is not a part of MSW, but comprises a significant portion of the non-hazardous solid waste stream.

Figure 1. MSW Generation Rates, 1960 to 2018*



*MSW generation rose considerably from 2017 to 2018 mainly because EPA enhanced its food measurement methodology to more fully account for all the ways wasted food is managed throughout the food system.

Figure 2. MSW Recycling and Composting Rate, 1960 to 2018

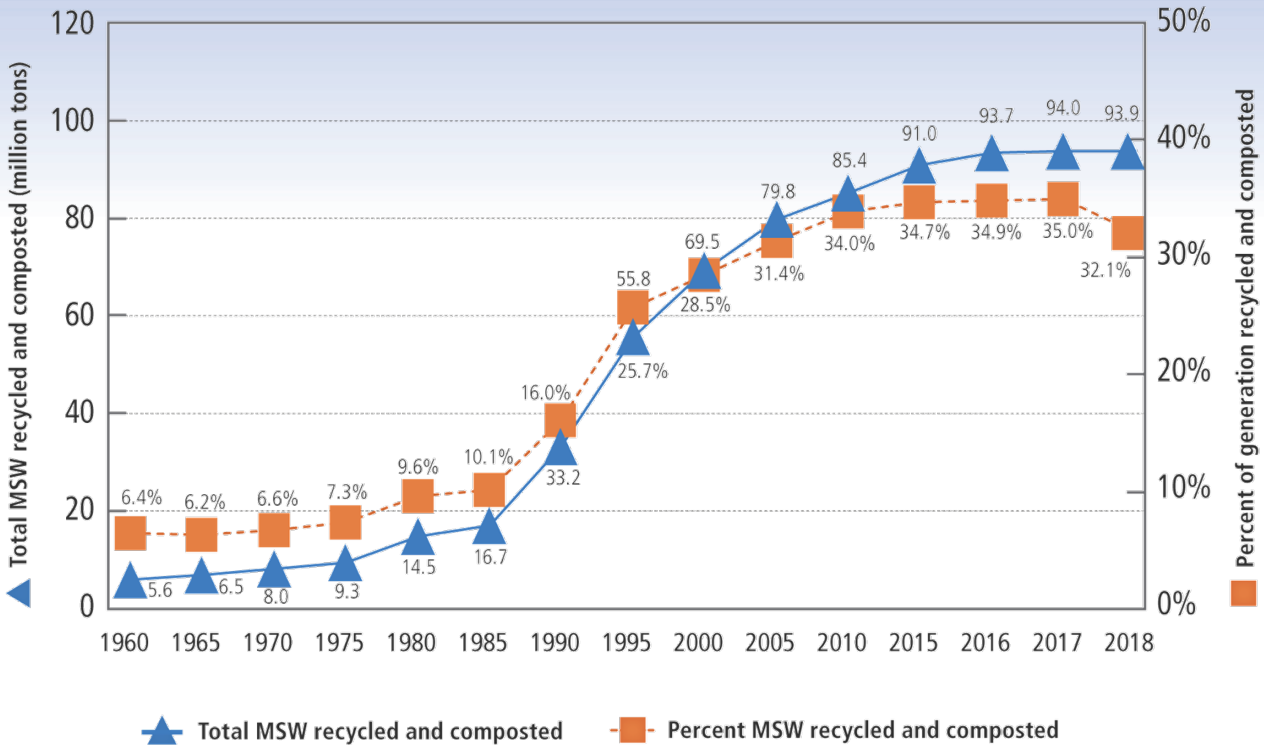


Figure 3. Management of MSW in the United States, 2018

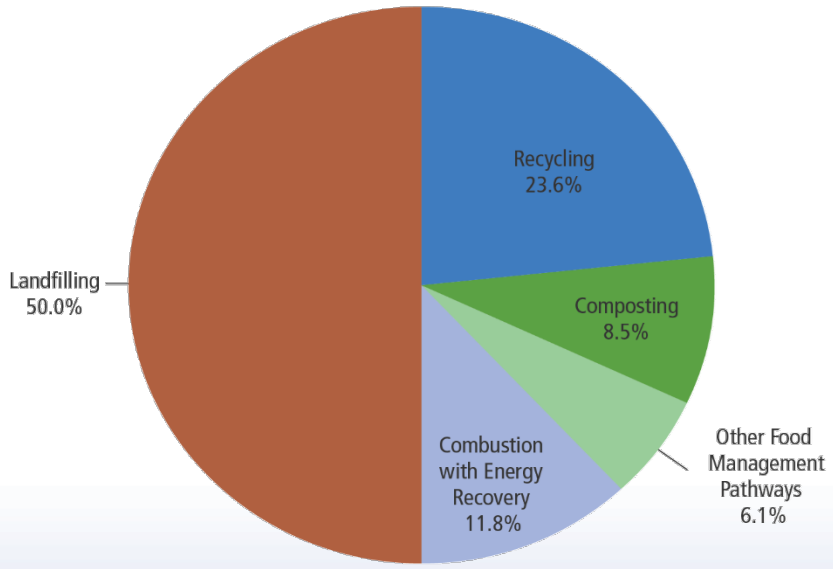


Table 1. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Materials in MSW, 2018*
(in millions of tons and percent of generation of each material)

Material	Weight Generated	Weight Recycled	Weight Composted	Weight Other Food Management Pathways¥	Weight Combusted with Energy Recovery	Weight Landfilled	Recycling as Percent of Generation	Composting as Percent of Generation	Other Food Management Pathways as Percent of Generation	Combustion as Percent of Generation	Landfilling as Percent of Generation
Paper and paperboard	67.39	45.97	-	-	4.20	17.22	68.2%	-	-	6.2%	25.6%
Glass	12.25	3.06	-	-	1.64	7.55	25.0%	-	-	13.4%	61.6%
Metals											
Steel	19.20	6.36	-	-	2.31	10.53	33.1%	-	-	12.0%	54.9%
Aluminum	3.89	0.67	-	-	0.56	2.66	17.2%	-	-	14.4%	68.4%
Other nonferrous metals†	2.51	1.69	-	-	0.08	0.74	67.3%	-	-	3.2%	29.5%
Total metals	**25.60**	**8.72**	-	-	**2.95**	**13.93**	**34.1%**	-	-	**11.5%**	**54.4%**
Plastics	35.68	3.09	-	-	5.62	26.97	8.7%	-	-	15.8%	75.5%
Rubber and leather	9.16	1.67	-	-	2.50	4.99	18.2%	-	-	27.3%	54.5%
Textiles	17.03	2.51	-	-	3.22	11.30	14.7%	-	-	18.9%	66.4%
Wood	18.09	3.10	-	-	2.84	12.15	17.1%	-	-	15.7%	67.2%
Other materials	4.56	0.97	-	-	0.66	2.93	21.3%	-	-	14.4%	64.3%
Total materials in products	**189.76**	**69.09**	-	-	**23.63**	**97.04**	**36.4%**	-	-	**12.5%**	**51.1%**
Other wastes											
Food, other‡	63.13	-	2.59	17.71	7.55	35.28	-	4.1%	28.1%	11.9%	55.9%
Yard trimmings	35.40	-	22.30	-	2.57	10.53	-	63.0%	-	7.3%	29.7%
Miscellaneous inorganic wastes	4.07	-	-	-	0.80	3.27	-	-	-	19.7%	80.3%
Total other wastes	**102.60**	-	**24.89**	**17.71**	**10.92**	**49.08**	-	**24.3%**	**17.3%**	**10.6%**	**47.8%**
Total municipal solid waste	**292.36**	**69.09**	**24.89**	**17.71**	**34.55**	**146.12**	**23.6%**	**8.5%**	**6.1%**	**11.8%**	**50.0%**

* Includes waste from residential, commercial and institutional sources.
¥ Animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application, sewer/wastewater treatment.
† Includes lead from lead-acid batteries.
‡ Includes collection of other MSW organics for composting.

Details might not add to totals due to rounding.

Negligible = Less than 5,000 tons or 0.05 percent.
A dash in the table means that data are not available.

Trends in Municipal Solid Waste

Our MSW, or trash, is comprised of various items consumers throw away. These items include packaging, food, yard trimmings, furniture, electronics, tires and appliances. MSW does not include industrial, hazardous or C&D waste. Sources of MSW include residential waste, as well as waste from commercial and institutional locations, such as restaurants, grocery stores, other businesses, schools, hospitals and industrial facilities. Industrial facility waste includes waste from sources such as offices, cafeterias and packaging, but not process waste.

Over the last few decades, the generation, recycling, composting, combustion with energy recovery and landfilling of MSW has changed substantially. Solid waste generation peaked at 4.74 pounds per person per day in 2000 and 2005, falling to 4.51 pounds per person per day in 2017. The higher rate of 4.91 pounds per person per day in 2018 reflects the change in food waste measurement methodology (*See* Figure 1 and text box).

The combined recycling and composting rate increased from less than 10 percent of generated MSW in 1980 to 35.0 percent in 2017. In 2018, the recycling and composting rate was 32.1 percent (*See* Figure 2). Without including composting, recycling alone rose from 14.5 million tons (9.6 percent of MSW) in 1980 to 69 million tons (23.6 percent) in 2018. Although more tons were recycled in 2018 than ever before, the recycling rate decreased to the lowest levels since 2006. Composting was negligible in 1980, but it rose to 24.9 million tons in 2018 (8.5 percent).

In 2018, for the first time in this report series, EPA revised its food measurement methodology to more fully capture flows of excess food and food waste throughout the food system. The resulting category, other food management pathways, accounted for 17.7 million tons (6.1 percent) (*See* Figure 3, Table 2 and text box for details).

Combustion with energy recovery was less than 2 percent of generation in 1980 at 2.8 million tons. In 2018, 34.6 million tons (11.8 percent of MSW generated) were combusted with energy recovery (*See* Table 2).

Since 1990, the total amount of MSW going to landfills has increased by less than one million tons, from 145.3 million tons in 1990 to 146.1 million tons in 2018 (*See* Table 2). The net per capita 2018 landfilling rate was 2.4 pounds per day, which was lower than the 3.2 per capita rate in 1990 (*See* Table 3).

New Enhanced Food Measurement Methodology

EPA enhanced its food measurement methodology to more fully estimate flows of food throughout the food system. Expanding beyond composting, combustion with energy recovery and landfilling, 2018 estimates include food flowing to a total of nine pathways. The food waste generation estimates for 2018 account for the additional food flowing to the six new pathways which are:

- animal feed
- land application
- codigestion/anaerobic digestion
- bio-based materials/biochemical processing
- donation
- sewer/wastewater treatment

Table 2. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of MSW, 1960 to 2018 (in millions of tons)

Activity	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	88.1	121.1	151.6	208.3	243.5	253.7	251.1	262.1	268.7	292.4
Recycling	5.6	8.0	14.5	29.0	53.0	59.2	65.3	67.6	67.0	69.1
Composting*	neg.	neg.	neg.	4.2	16.5	20.6	20.2	23.4	27.0	24.9
Other Food Management**	-	-	-	-	-	-	-	-	-	17.7
Combustion with energy recovery†	0.0	0.5	2.8	29.8	33.7	31.7	29.3	33.5	34.2	34.6
Landfilling and other disposal‡	82.5	112.6	134.3	145.3	140.3	142.2	136.3	137.6	140.5	146.1

* Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting.

** Other food management pathways include animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application and sewer/wastewater treatment.

Details might not add to totals due to rounding.
neg. (negligible) = less than 5,000 tons or 0.05 percent.
A dash in the table means that data are not available.

† Includes combustion of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).

‡ Landfilling is what remains after recycling, composting, other food management and combustion with energy recovery are accounted for. Landfilling includes other disposal methods such as combustion without energy recovery.

Table 3. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of MSW, 1960 to 2018 (in pounds per person per day)

Activity	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	2.7	3.3	3.7	4.6	4.7	4.7	4.4	4.5	4.5	4.9
Recycling	0.2	0.2	0.4	0.6	1.0	1.1	1.1	1.2	1.1	1.2
Composting*	neg.	neg.	neg.	0.1	0.3	0.4	0.4	0.4	0.5	0.4
Other Food Management**	-	-	-	-	-	-	-	-	-	0.3
Combustion with energy recovery†	0.0	neg.	0.1	0.7	0.7	0.6	0.5	0.6	0.6	0.6
Landfilling and other disposal‡	2.5	3.1	3.2	3.2	2.7	2.6	2.4	2.3	2.4	2.4
Population (In millions)	180.0	204.0	227.3	249.9	281.4	296.4	309.1	320.9	325.1	327.2

* Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting.

** Other food management pathways include animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application and sewer/wastewater treatment.

Details might not add to totals due to rounding.
neg. (negligible) = less than 5,000 tons or 0.05 percent.
A dash in the table means that data are not available.

† Includes combustion of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).

‡ Landfilling is what remains after recycling, composting, other food management and combustion with energy recovery are accounted for. Landfilling includes other disposal methods such as combustion without energy recovery.

Analyzing MSW

EPA analyzes MSW by breaking down the data in two ways: by material and by product. Materials are made into products, which are ultimately reprocessed through recycling or composting or managed by combustion with energy recovery facilities or landfills. They may also be processed by other management methods for food. Examples of materials that EPA tracks include paper and paperboard, plastics, metals, glass, rubber, leather, textiles, wood, food and yard trimmings. For a full list of materials, *see* Table 1.

Products are what people buy and handle, and they are manufactured out of the types of materials listed above. Product categories include containers and packaging, nondurable goods, durable goods, food and yard trimmings. Containers and packaging, such as milk cartons and plastic wrap, are assumed to be in use for a year or less; nondurable goods like newspaper and clothing are assumed to be in use for less than three years; and durable goods, such as furniture, are assumed to be in use for three or more years. Some products, such as appliances, may be made of more than one material. Information about products shows how consumers are using and discarding materials and offers strategies on ways to maximize the source reduction, recycling and composting of materials.

Materials in MSW

Table 1 and the following figures provide specific information about materials in MSW. Table 1 shows generation, recycling, composting, other food management pathways, combustion with energy recovery and landfilling by material, weight and percent of generation.

Figure 4, below, provides the breakdown of MSW generation by material. Paper and paperboard, along with food, continued to be the largest components of MSW generated. Paper and paperboard accounted for about 23 percent, while food accounted for over 21 percent. Yard trimmings and plastics comprised about 12 percent each. The remaining amount of MSW generated consisted of rubber, leather and textiles; metals; wood; glass; and other materials.

Figure 5 provides the breakdown of MSW recycling by material in 2018. Paper and paperboard comprised the largest component of MSW recycling, representing nearly 67 percent. Metals made up over 12 percent of MSW recycled. The remaining amount of MSW recycled consisted of rubber, leather and textiles; plastics; glass; wood; and other materials.

Figure 6 provides the breakdown of MSW composting and other food management pathways by material, Figure 7 provides the breakdown of MSW combustion with energy recovery and Figure 8 provides the breakdown of MSW landfilling.

Figure 4. Total MSW Generation (by material), 2018
292.4 Million Tons

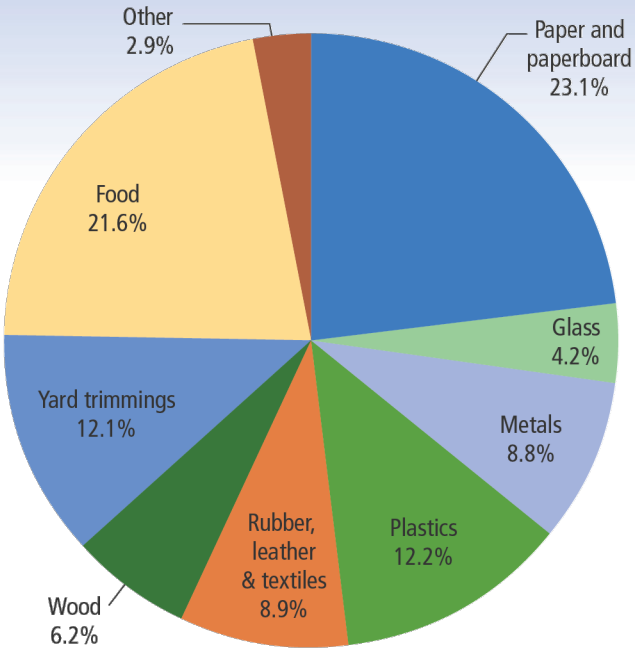


Figure 5. Total MSW Recycling (by material), 2018
69.1 Million Tons

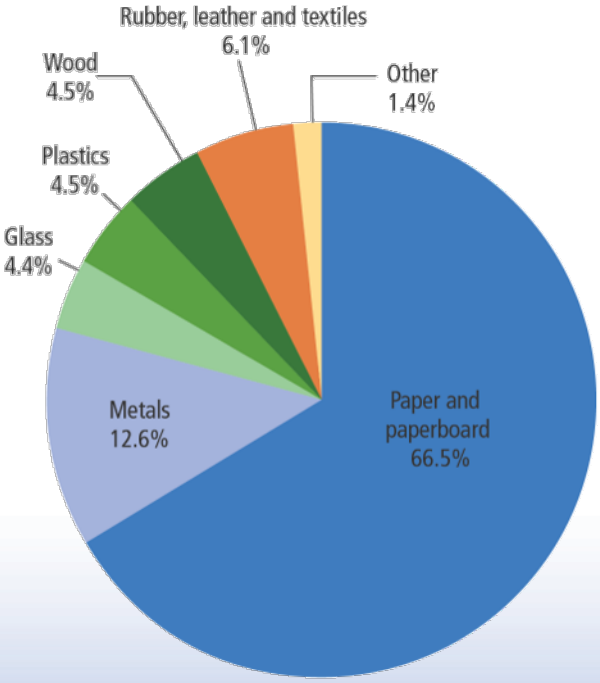


Figure 6. Total MSW Composting and Other Food Management Pathways (by material), 2018
42.6 Million Tons

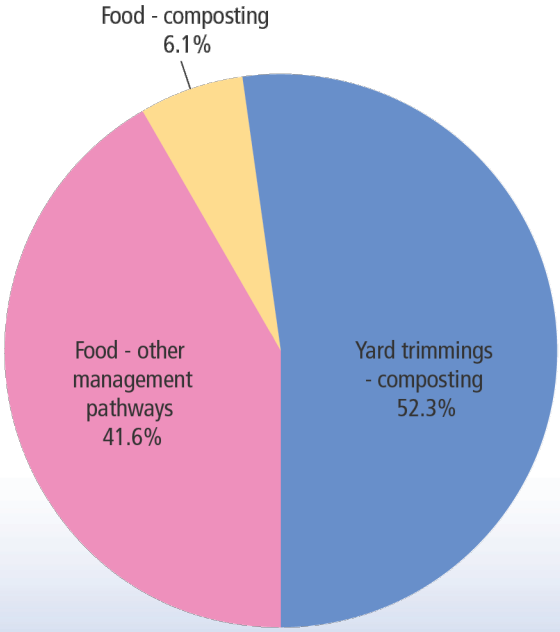


Figure 7. Total MSW Combusted with Energy Recovery (by material), 2018 34.6 Million Tons

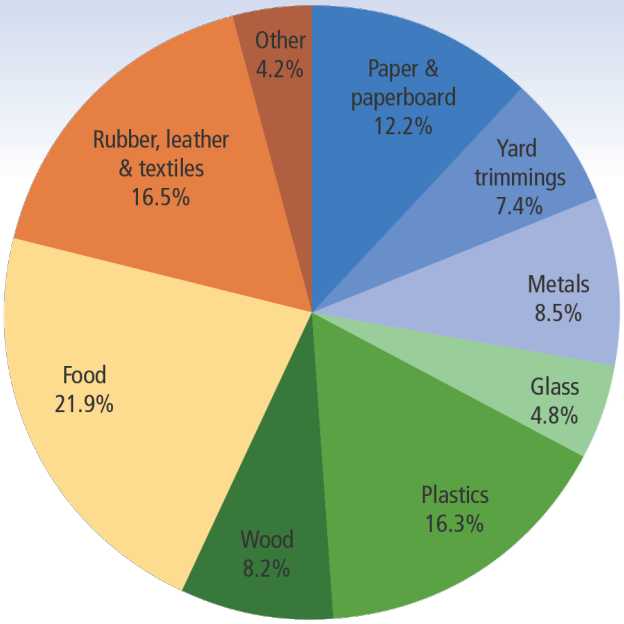
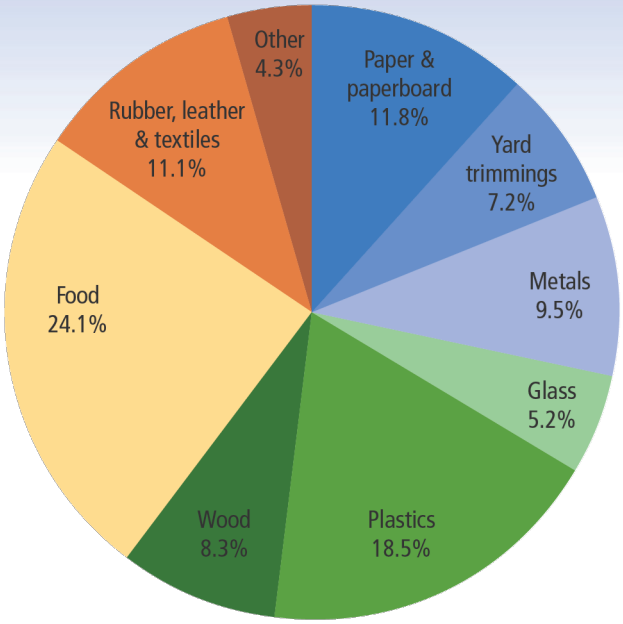


Figure 8. Total MSW Landfilled (by material), 2018 146.1 Million Tons



Products in MSW

The following information provides the details of the products found in MSW, including generation, recycling, composting, other food management pathways, combustion with energy recovery and landfilling by product category, weight and percent of generation. The product categories include containers and packaging, durable goods, nondurable goods, and other wastes which include food, yard trimmings and miscellaneous inorganic wastes. See Table 4 for generation and management by product category.

These other wastes made up the largest portion of MSW generated at 102.6 million tons (35.1 percent) in 2018. More than 82 million tons of containers and packaging (28.1 percent), 57.1 million tons (19.5 percent of MSW generation) of durable goods and more than 50 million tons (17.3 percent of MSW generation) of nondurable goods were generated.

The containers and packaging product category had the highest recycling rate at 53.9 percent in 2018. Paper products, steel and aluminum were the most recycled materials by percentage in this category. The recycling of nondurable goods was 28.1 percent. Paper products such as newspapers/mechanical papers were the most recycled nondurable goods. Newspapers/mechanical papers include newspapers, directories, inserts, as well as some advertisement and direct mail printing. Overall, 18.5 percent of durable goods were recycled. With a 99 percent recycling rate in 2018, lead-acid batteries continued to be one of the most recycled products.

Yard trimmings had the highest composting rate of all product categories at 63 percent. Food was composted at a rate of 4.1 percent. Other food management pathways were estimated at 28.1 percent of food waste generation.

Durable goods were combusted at a rate of 16 percent and nondurables at a rate of 14.1 percent. Food and miscellaneous inorganic wastes were combusted with energy recovery with a rate of 11.9 percent and 19.7 percent, respectively. Containers and packaging, along with yard trimmings, were combusted at rates below 10 percent.

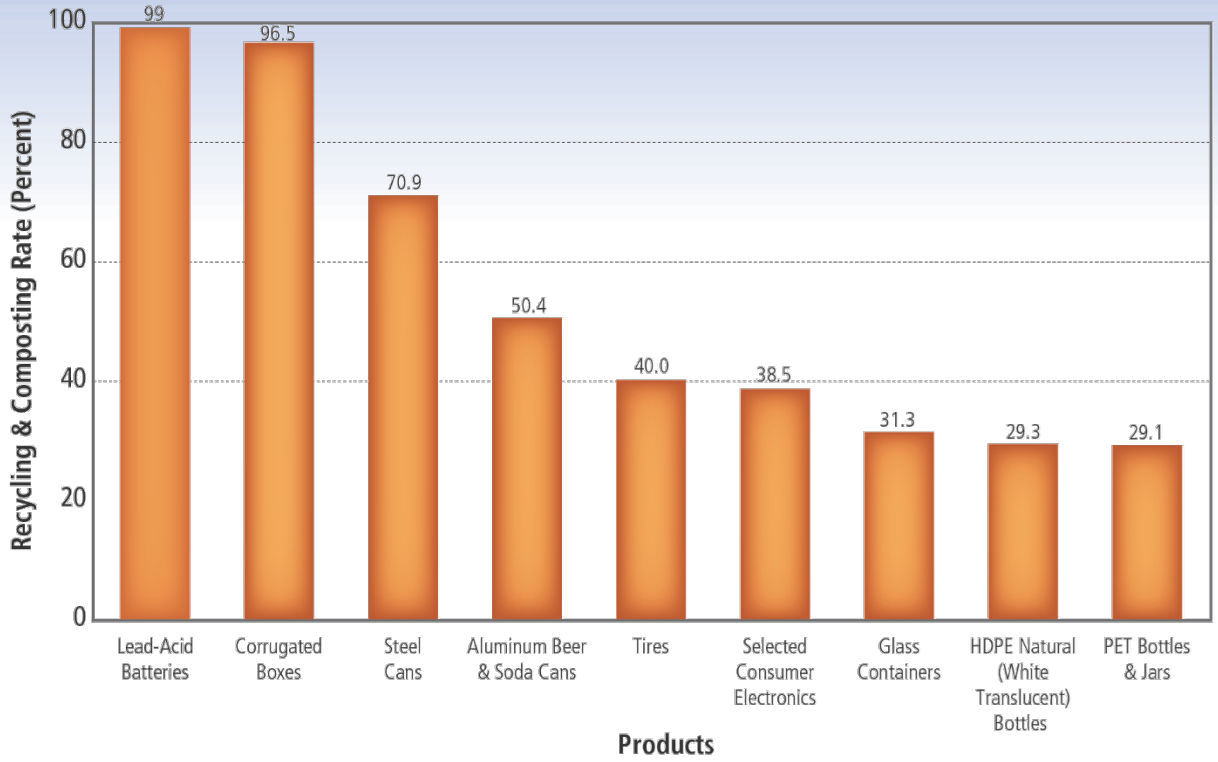
Durable goods had the highest landfill rate of 65.5 percent. Nondurable goods had the second highest landfill rate at 57.8 percent. Food had the third highest landfill rate of 55.9 percent. Containers and packaging, along with yard trimmings, were the product categories with the lowest landfill rates at 37.1 percent and 29.7 percent, respectively.

Figure 9 displays selected individual products with high recycling rates.

Recycling Rates

Measured by percent of generation, individual products with the highest recycling rates in 2018 were lead-acid batteries (99 percent), corrugated boxes (96.5 percent), steel cans (70.9 percent), newspapers/mechanical papers (64.8 percent), major appliances (59.8 percent), aluminum cans (50.4 percent), mixed paper (43.1 percent), tires (40 percent) and selected consumer electronics (38.5 percent).

Figure 9. Selected Products with High Recycling Rates, 2018*



*Does not include combustion with energy recovery

Table 4. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Products in MSW, 2018* (in millions of tons and percent of generation of each product)

Products	Weight Generated	Weight Recycled	Weight Composted	Weight Other Food Management Pathways¥	Weight Combusted with Energy Recovery	Weight Landfilled	Recycling as Percent of Generation	Composting as Percent of Generation	Other Food Management Pathways as Percent of Generation	Combustion as Percent of Generation	Landfilling as Percent of Generation
Durable goods											
Steel	16.99	4.73	-	-	2.20	10.06	27.8%	-	-	13.0%	59.2%
Aluminum	1.75	-	-	-	0.27	1.48	-	-	-	15.4%	84.6%
Other nonferrous metals†	2.51	1.69	-	-	0.08	0.74	67.3%	-	-	3.2%	29.5%
Glass	2.46	Negligible	-	-	0.33	2.13	Negligible	-	-	13.4%	86.6%
Plastics	13.69	0.93	-	-	1.74	11.02	6.8%	-	-	12.7%	80.5%
Rubber and leather	7.98	1.67	-	-	2.27	4.04	20.9%	-	-	28.5%	50.6%
Wood	6.51	Negligible	-	-	1.18	5.33	Negligible	-	-	18.1%	81.9%
Textiles	3.87	0.58	-	-	1.02	2.27	15.0%	-	-	26.3%	58.7%
Other materials	1.34	0.97	-	-	0.03	0.34	72.4%	-	-	2.2%	25.4%
Total durable goods	**57.10**	**10.57**	**-**	**-**	**9.12**	**37.41**	**18.5%**	**-**	**-**	**16.0%**	**65.5%**
Nondurable goods											
Paper and paperboard	25.49	12.08	-	-	2.63	10.78	47.4%	-	-	10.3%	42.3%
Plastics	7.46	0.18	-	-	1.42	5.86	2.4%	-	-	19.0%	78.6%
Rubber and leather	1.18	Negligible	-	-	0.23	0.95	Negligible	-	-	19.5%	80.5%
Textiles	12.87	1.93	-	-	2.14	8.80	15.0%	-	-	16.6%	68.4%
Other materials	3.44	Negligible	-	-	0.67	2.77	Negligible	-	-	19.5%	80.5%
Total nondurable goods	**50.44**	**14.19**	**-**	**-**	**7.09**	**29.16**	**28.1%**	**-**	**-**	**14.1%**	**57.8%**

Table 4 (continued). Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Products in MSW, 2018* (in millions of tons and percent of generation of each product)

Products	Weight Generated	Weight Recycled	Weight Composted	Weight Other Food Management Pathways¥	Weight Combusted with Energy Recovery	Weight Landfilled	Recycling as Percent of Generation	Composting as Percent of Generation	Other Food Management Pathways as Percent of Generation	Combustion as Percent of Generation	Landfilling as Percent of Generation
Containers and packaging											
Steel	2.21	1.63	-	-	0.11	0.47	73.8%	-	-	5.0%	21.2%
Aluminum	1.92	0.67	-	-	0.25	1.00	34.9%	-	-	13.0%	52.1%
Glass	9.79	3.06	-	-	1.31	5.42	31.3%	-	-	13.3%	55.4%
Paper and paperboard	41.90	33.89	-	-	1.57	6.44	80.9%	-	-	3.7%	15.4%
Plastics	14.53	1.98	-	-	2.46	10.09	13.6%	-	-	16.9%	69.5%
Wood	11.58	3.10	-	-	1.66	6.82	26.9%	-	-	14.3%	58.8%
Other materials	0.29	Negligible	-	-	0.06	0.23	Negligible	-	-	20.7%	79.3%
Total containers and packaging	**82.22**	**44.33**	**-**	**-**	**7.42**	**30.47**	**53.9%**	**-**	**-**	**9.0%**	**37.1%**
Other wastes											
Food, other‡	63.13	-	2.59	17.71	7.55	35.28	-	4.1%	28.1%	11.9%	55.9%
Yard trimmings	35.40	-	22.30	-	2.57	10.53	-	63.0%	-	7.3%	29.7%
Miscellaneous inorganic wastes	4.07	-	-	-	0.80	3.27	-	-	-	19.7%	80.3%
Total other wastes	**102.60**	**-**	**24.89**	**17.71**	**10.92**	**49.08**	**-**	**24.3%**	**17.3%**	**10.6%**	**47.8%**
Total municipal solid waste	**292.36**	**69.09**	**24.89**	**17.71**	**34.55**	**146.12**	**23.6%**	**8.5%**	**6.1%**	**11.8%**	**50.0%**

* Includes waste from residential, commercial and institutional sources.

¥ Animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application, sewer/wastewater treatment.

† Includes lead from lead-acid batteries.

‡ Includes collection of other MSW organics for composting.

Details might not add to totals due to rounding.

Negligible = less than 5,000 tons or 0.05 percent.
A dash in the table means that data are not available.

Environmental and Economic Benefits

Environmental Benefits of Recycling and Composting

The energy and greenhouse gas (GHG) benefits of recycling, composting and combustion with energy recovery that are shown in Table 5 are calculated using EPA's WARM (Waste Reduction Model) tool (*See*: https://www.epa.gov/warm). WARM calculates and totals the GHG emissions of baseline and alternative waste management practices, including source reduction, recycling, composting, combustion with energy recovery and landfilling. For example, paper and paperboard recycling, at about 46 million tons, resulted in a reduction of over 155 $MMTCO_2E$ in 2018. This reduction is equivalent to removing over 33 million cars from the road for one year.

> In 2018, about 94 million tons of MSW in the U.S. were recycled and composted, saving over 193 $MMTCO_2E$. This is comparable to the emissions that could be reduced from taking almost 42 million cars off the road in a year.

Table 5. 2018 Environmental Benefits

(The numbers in the Recycled, Composted, Combustion with Energy Recovery and Landfilled columns are listed by weight of material* in millions of tons)

Material	Recycled	Composted	Combustion with Energy Recovery	Landfilled	GHG Benefits ($MMTCO_2E$)	Number of Cars Taken Off the Road Per Year (millions of cars)
Paper and paperboard	45.97	-	4.20	17.22	(155.17)	(33.52)
Glass	3.06	-	1.64	7.55	(0.90)	(0.19)
Metals						
Steel	6.36	-	2.31	10.53	(15.50)	(3.35)
Aluminum	0.67	-	0.56	2.66	(6.12)	(1.32)
Other nonferrous metals**	1.69	-	0.08	0.74	(7.54)	(1.63)
Total metals	**8.72**	**-**	**2.95**	**13.93**	**(29.16)**	**(6.30)**
Plastics	3.09	-	5.62	26.97	4.13	0.89
Rubber and leather†	1.67	-	1.73	0.78	0.17	0.04
Textiles	2.51	-	3.22	11.30	(2.56)	(0.55)
Wood	3.10	-	2.84	12.15	(3.30)	(0.71)
Food, other‡	-	2.59	7.55	35.28	(6.97)	(1.51)
Yard trimmings	-	22.30	2.57	10.53	0.78	0.17
Miscellaneous inorganic wastes	-	-	0.80	3.27	(0.28)	(0.06)
Totals	68.12	24.89	33.12	138.98	(193.26)	(41.74)

*Includes material from residential, commercial, institutional and industrial sources (except not industrial process waste).
**Includes lead-acid batteries. Other nonferrous metals calculated in WARM as mixed metals.
†Only includes rubber from tires. ‡Includes collection of other MSW organics for composting.

These calculations do not include an additional 24.9 million tons of MSW that could not be addressed in the WARM model (including 17.7 million tons from food waste managed by means outside of the scope of the WARM model). $MMTCO_2E$ is million metric tons of carbon dioxide equivalent. Numbers in parentheses indicate a reduction in either greenhouse gases or vehicles, and therefore represent environmental benefits. Details might not add to totals due to rounding.

Source: WARM model Version 15 (https://www.epa.gov/warm). Number of cars taken off the road/year was calculated using the Greenhouse Gas Equivalency Calculator, updated March 2020.

Resources

The 2018 data tables and the summary of the MSW characterization methodology are available on the EPA website, along with information about waste reduction, recycling and sustainable materials management.

Please visit:

https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling
https://www.epa.gov/warm

Endnotes

1. US EPA. 2020. "Recycling Economic Information Report" (2020). The 2020 REI report provided updated economic and recycling information to reflect the most recent available data for input-output modeling in the United States. The 2020 report built on the Waste Input-Output methodology by generating more current results based on transparent and publicly available data. This revised study provides greater clarity and transparency for assessing the economic impacts of recycling activities in the U.S.
2. Scrap can refer to both postconsumer as well as pre-consumer commodities; however, this analysis addresses postconsumer commodities only.
3. Institute of Scrap Recycling Industries (ISRI) 2020. 2019 Recycling Industry Yearbook. https://www.isri.org/recycling-commodities/recycling-industry yearbook.
4. Recycled Commodity Values. Soft mixed paper consists of a clean, sorted mixture of various qualities of paper not limited as to type of fiber content. Prohibitive Materials may not exceed 1 percent. There are specific limits on the percent of contaminants allowed in soft mixed paper. Data were not available for ONP, metals, plastics and glass in 1997 and 1998. For plastics, glass and metals, there was a transition in data sources between 1996 and 1999 and between 2004 and 2005, so some of the change between years could be due to the methodology of the data source for capturing data.

   Additional sources include Secondary Materials Pricing and Secondary Fiber Pricing. 2003-2018. Accessed February 2020. Available at http://www.recyclingmarkets.net/. 1970 to 2004 historical data tabulated from weekly or monthly industry publications and averaged annually during the time periods shown. Publications included Waste Age Recycling Times, Waste News, Paper Recycler, Miller Freeman, Inc.
5. Waste 360. 2018. "EREF Study Shows Continued Increase in Average MSW Landfill Tip Fees". August 1. https://www.waste360.com/landfill-operations/eref-study-shows-continued-increase-average-msw-landfill-tip-fees
6. Sources include National Solid Wastes Management Association (NSWMA) Municipal Solid Waste Landfill Facts. October 2011 (Data from 1985 to 2008). Waste Business Journal. "The Cost to Landfill MSW Continues to Rise Despite Soft Demand." July 11, 2017 (Data for 2010 to 2015). Environmental Research & Education Foundation. "Analysis of MSW Landfill Tipping Fees" April 2018 (Data for 2016 and 2017). Waste 360. "EREF Study Shows Average MSW Landfill Tip Fee Continues to Rise". October 29, 2019. (Data from 2018).
7. MSW Generation: US EPA. 2020. Solid Waste in the United States: 2018 Facts and Figures working papers. Population: U.S. Census Bureau. Population Division. Annual Estimates of the Resident Population. PCE: Bureau of Economic Analysis (BEA). 2019. Tables 2.3.4 and 2.3.5.
8. Wood consumption in buildings also includes some lumber consumed for the construction of other structures. Data were not available to allocate lumber consumption for non-residential and unspecified uses between buildings and other structures except for railroad ties. Since non-residential buildings such as barns, warehouses and small commercial buildings are assumed to consume a greater amount of lumber than other structures, the amount of lumber for construction remaining after the amount for railroad ties is split out is included in the buildings source category.
9. Steel consumption in buildings also includes steel consumed for the construction of roads and bridges. Data were not available to allocate steel consumption across different sources, but buildings are assumed to consume the largest portion of steel for construction.
10. Names of the materials are slightly different in the generation versus management analyses, due to material categorizations across the various data sources and data availability. For example, in the generation analyses the term used is drywall and plasters, whereas in the management analysis the term used is gypsum drywall.

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December 2020

APPENDIX 4

TABLE - POPULATION PROJECTIONS

TABLE 4-1
NORTHAMPTON COUNTY SOLID WASTE PROGRAM
POPULATION ESTIMATES
2010 - 2045

YEAR	POPULATION PROJECTED IN 2013 UPDATE	POPULATION PROJECTED IN 2018 (VML)	POPULATION PROJECTED IN 2022 Weldon Cooper
2010	12,389	12,389	12,389
2011	12,377	12,347	12,433
2012	12,350	12,304	12,441
2013	12,323	12,262	12,089
2014	12,296	12,220	12,207
2015	12,269	12,178	12,176
2016	12,242	12,136	12,139
2017	12,215	12,095	12,000
2018	12,188	12,053	11,862
2019	12,161	12,012	11,810
2020	12,134	11,964	12,282
2021	12,120	11,895	12,222
2022	12,106	11,826	12,197
2023	12,092	11,758	12,172
2024	12,078	11,690	12,147
2025	12,065	11,623	12,122
2026	12,051	11,556	12,097
2027	12,037	11,489	12,072
2028	12,023	11,423	12,047
2029	12,009	11,357	12,022
2030	11,995	11,274	12,000
2031	11,985	11,191	11,942
2032	11,975	11,108	11,884
2033	11,966	11,026	11,826
2034	11,956	10,945	11,768
2035	11,946	10,864	11,712
2036	11,936	10,784	11,654
2037	11,926	10,704	11,596
2038	11,917	10,625	11,538
2039	11,907	10,547	11,480
2040	11,897	10,442	11,424
2041			11,383
2042			11,342
2043			11,301
2044			11,260
2045			11,221

Projected Data from Weldon Cooper Center
Annual Data from Weldon Cooper Center

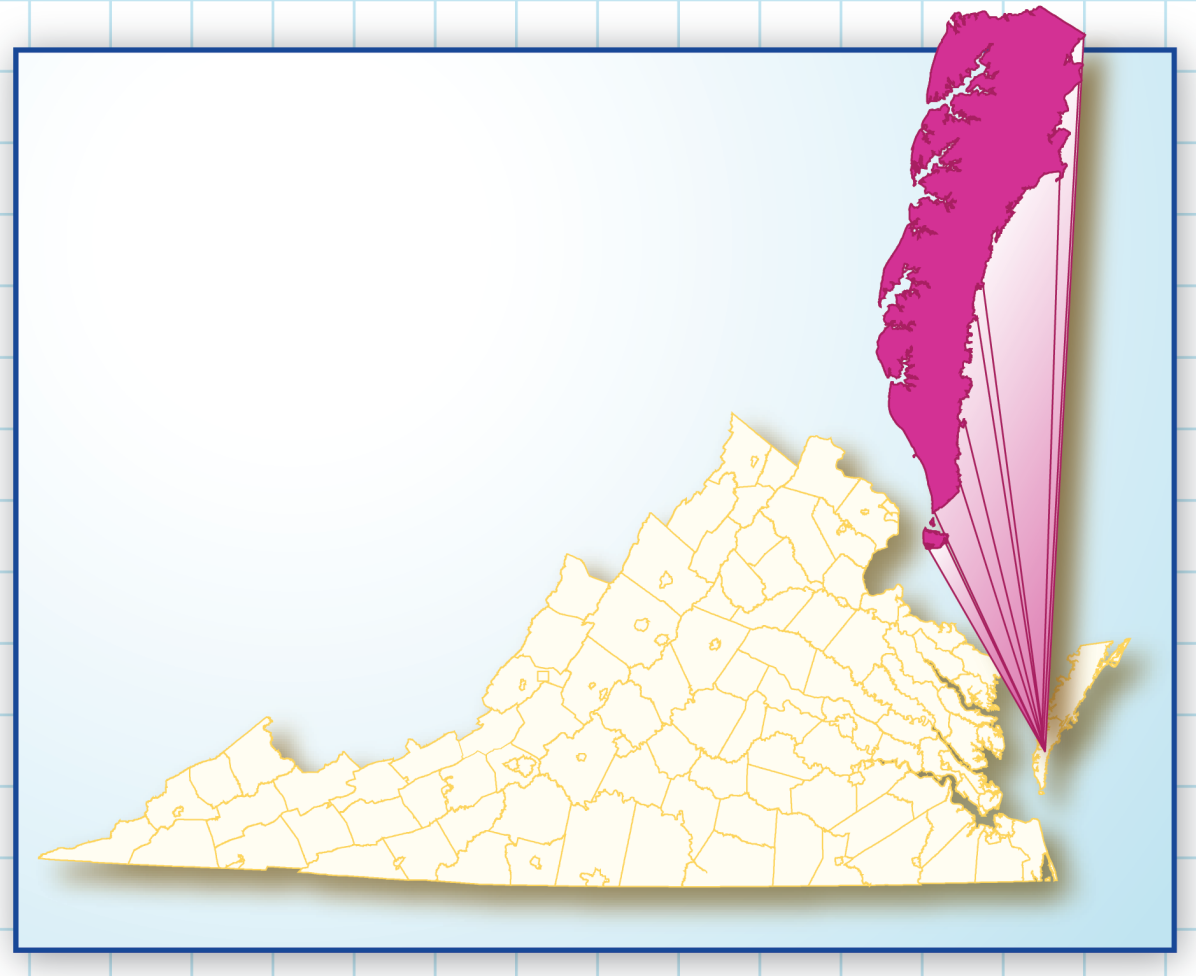
APPENDIX 5

VIRGINIA COMMUNITY PROFILE – VEC – NORTHAMPTON COUNTY EXCERPTS

Virginia

COMMUNITY PROFILE

Northampton County



Virginia Employment Commission

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Last updated: 9/17/2022 1:28:47 AM

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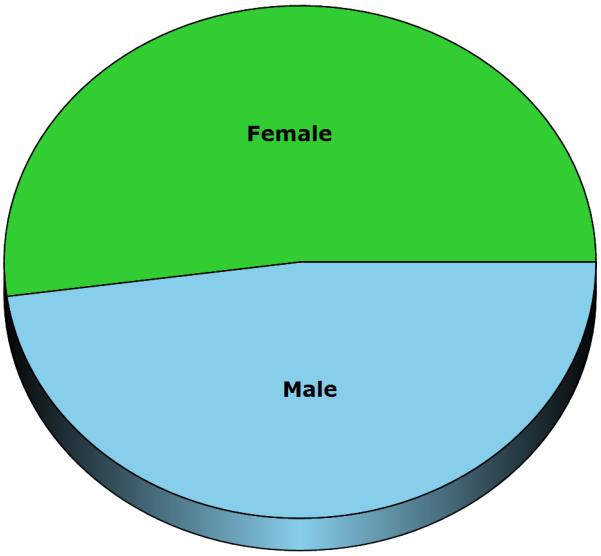
Population by Race/Ethnicity

	Northampton County	Virginia	United States
Total			
Total Population	12,389	8,001,024	308,745,538
Race			
White	7,168	5,486,852	223,553,265
Black or African American	4,528	1,551,399	38,929,319
American Indian or Alaska Native	27	29,225	2,932,248
Asian	83	439,890	14,674,252
Native Hawaiian/Pacific Islander	13	5,980	540,013
Other	393	254,278	19,107,368
Multiple Races	177	233,400	9,009,073
Ethnicity			
Not Hispanic or Latino (of any race)	11,515	7,369,199	258,267,944
Hispanic or Latino (of any race)	874	631,825	50,477,594

Source: 2010 Census.

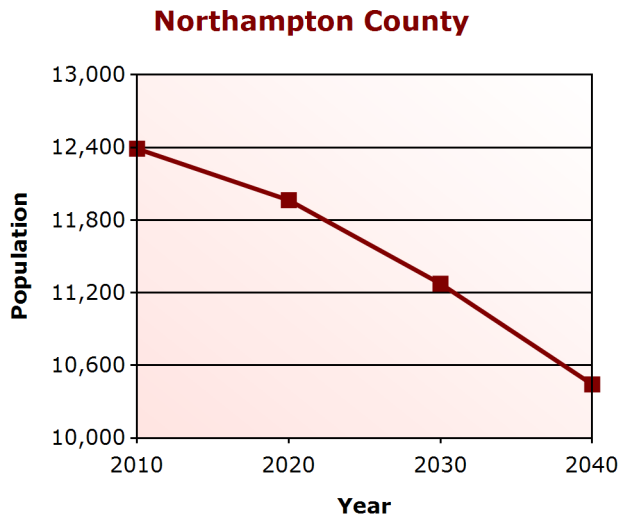
Population by Gender

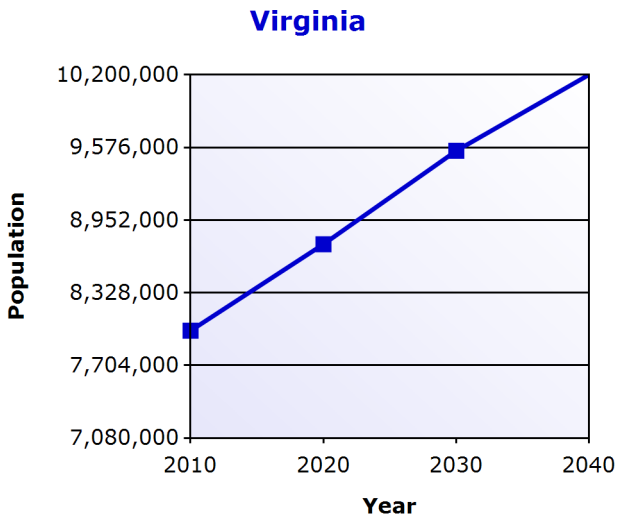


	Northampton County	Virginia	United States
Male	5,929	3,925,983	151,781,326
Female	6,460	4,075,041	156,964,212
	12,389	**8,001,024**	**308,745,538**

Source: 2010 Census.

Population Change





	Northampton County	(% change)	Number Change	Virginia	(% change)
2000	13,093			7,079,030	
2010	12,389	-5.38 %		8,001,024	13.02 %
2020	11,964	-3.43 %		8,744,273	9.29 %
2030	11,274	-5.77 %		9,546,958	9.18 %
2040	10,442	-7.38 %		10,201,530	6.86 %

Source: U.S. Census Bureau, Weldon Cooper Center for Public Service.

Did you know...

you can log on to our website today and see population counts from each Decennial Census all the way back to 1900? Looking for annual population estimates? We have those too, all the way back to the 1970s!

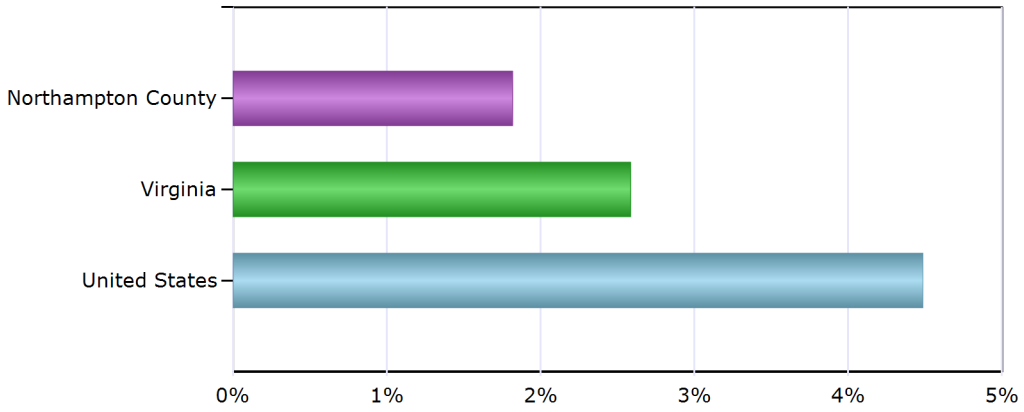
For this data and more, visit us on the web at:

www.VirginiaLMI.com

United States™ Census 2010

English Language Skills

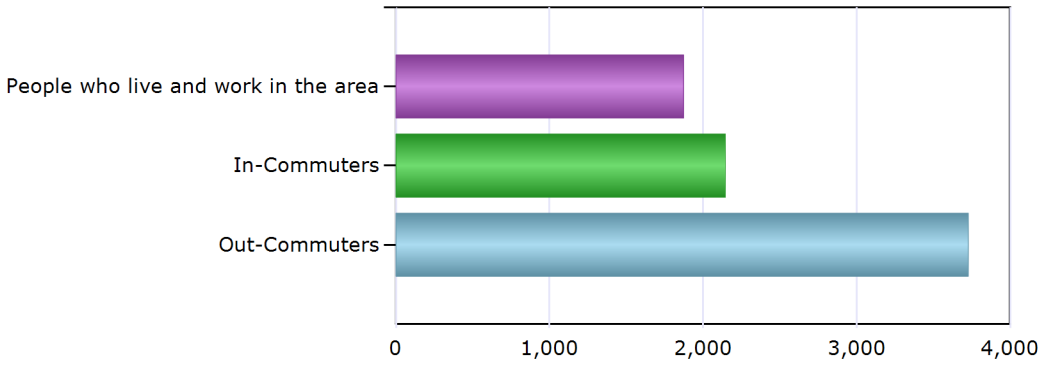
(Age 5 and over that speak English less than well)



	Total	Speak English less than well	Percent
Northampton County	11,389	207	1.82%
Virginia	7,800,044	201,628	2.58%
United States	298,691,202	13,400,003	4.49%

Source: U.S. Census Bureau
American Community Survey, 2012-2016.

Commuting Patterns



Commuting Patterns	
People who live and work in the area	1,873
In-Commuters	2,145
Out-Commuters	3,727
Net In-Commuters (In-Commuters minus Out-Commuters)	-1,582

Source: U.S. Census Bureau,
OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2014.

Top 10 Places Residents are Commuting To

Area	Workers
Accomack County, VA	1,112
Virginia Beach city, VA	255
Newport News city, VA	227
Norfolk city, VA	183
Chesapeake city, VA	142
Fairfax County, VA	109
Henrico County, VA	102
Richmond city, VA	99
Hampton city, VA	79
Chesterfield County, VA	77

Top 10 Places Workers are Commuting From

Area	Workers
Accomack County, VA	977
Virginia Beach city, VA	152
Portsmouth city, VA	54
Chesapeake city, VA	49
Newport News city, VA	49
Norfolk city, VA	49
Suffolk city, VA	43
Hampton city, VA	41
James City County, VA	32
York County, VA	32

Source: U.S. Census Bureau,
OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2014.

Please Note: Commuting patterns data is no longer produced from the Decennial Census. As an alternative, we are providing commuting data from the U.S. Census Bureau's OnTheMap application and LEHD Origin-Destination Employment Statistics program. Since this data is produced from an entirely different data set, it is not advisable to compare the new data with previously released commuting patterns. For more information about the OnTheMap application or the LEHD program, please visit the following website:

http://lehd.ces.census.gov

50 Largest Employers

1. Northampton County Schools
2. County of Northampton
3. Chesapeake Bay Bridge Tunnel
4. David's Nursery
5. Ballard Fish and Oyster Company Inc.
6. Food Lion
7. New Ravenna Acquisition LLC
8. Eastern Shore Rural Health System
9. Bay Creek Resort Llc
10. Nassawadox Rehabilitation and Nursing
11. Tankard Nurseries
12. Broadwater Academy
13. Barrett Business Services Inc
14. McDonald's
15. Coastal Precast Systems
16. Hardee's
17. H M Terry Company Inc
18. The Hungry Crab LLC
19. Town of Cape Charles
20. J C Walker Brothers Inc
21. Royal Farms 79
22. A Friend In Need Home Care LP
23. Totalsource III
24. Burger King
25. Rayfield's Pharmacy
26. Aging Community Action
27. Cherrystone Creek, LLC
28. Postal Service
29. Gingernut LLC
30. Town of Exmore
31. Exxon Gas Station
32. Cobb Heritage Llc
33. Riverside Regional Medical Center
34. Rommels Ace Home Center
35. Bagwell Enterprises Inc.
36. Wescoat Nurseries Inc
37. Bio Medical Applications
38. Cape Charles Brewing Company
39. Shore Stop Store
40. Hermitage Farms Nursery
41. Lfc Agricultural Services Inc
42. Bayford Seafarm LLC
43. 3 Knots Taphouse
44. Lfc Management Services Inc
45. Virginia Department of Conservation
46. Wendell Distributing Company
47. Cape Charles Candy Company
48. Cape Charles Yacht Center
49. Carahsoft Corporation
50. Great Machipongo Clam Shack

Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 1st Quarter (January, February, March) 2022.

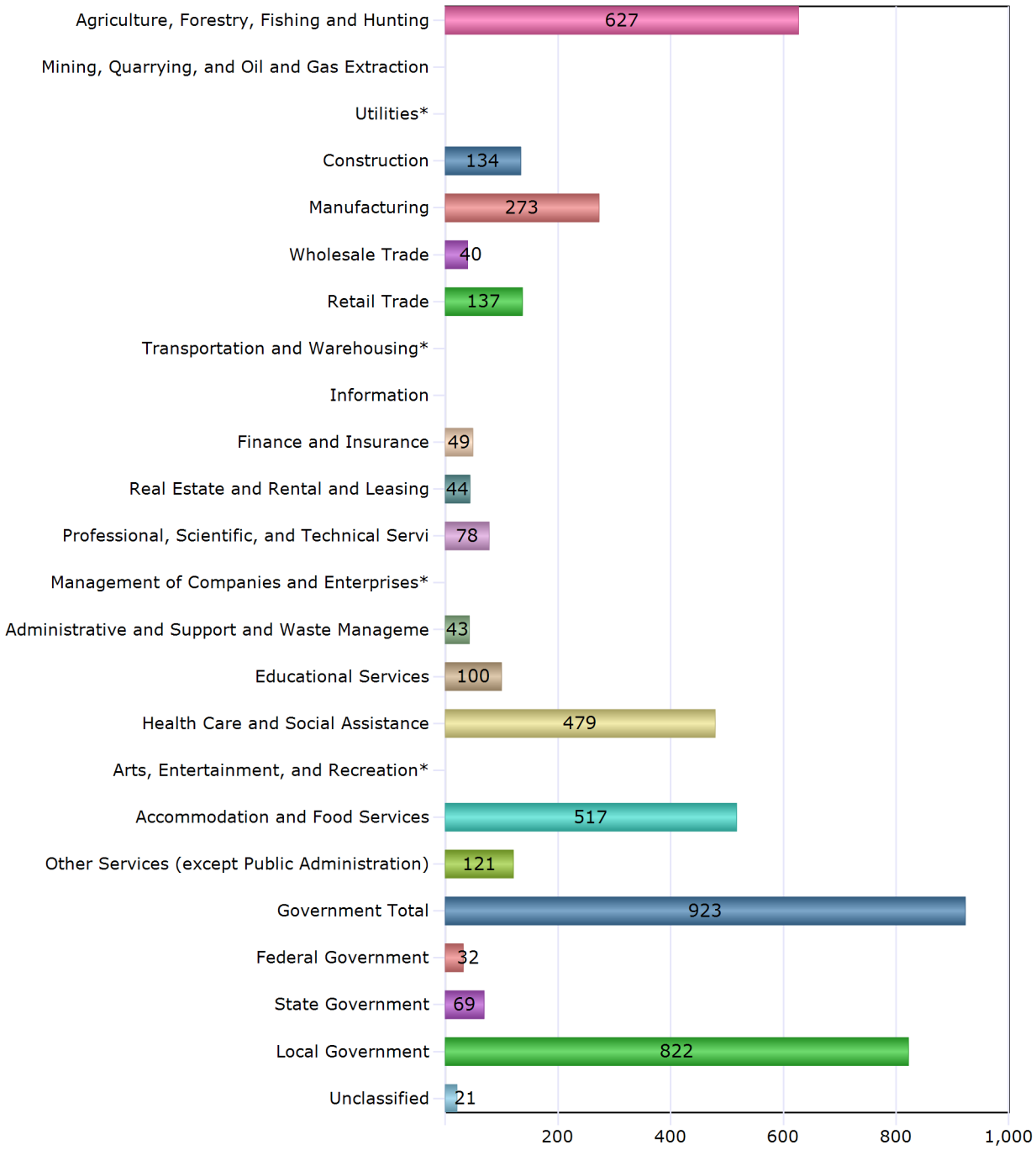
Did you know...

you can search over 300,000 employer listings on our website provided by Infogroup? This easy-to-use feature lets you search for employers by keyword, industry, sales volume, size range, and more!

For this data and more, visit us on the web at:

www.VirginiaLMI.com

Employment by Industry



Total: 3,715

Note: Asterisk (*) indicates non-disclosable data.

Source: Virginia Employment Commission, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 1st Quarter (January, February, March) 2022.

Industry Employment and Projections

Long Term

	Employment			Percent	
	Estimated 2014	Projected 2024	Change	Total	Annual
Total, All Industries	165,334	184,268	18,934	11.45%	1.09%
Agriculture, Forestry, Fishing and Hunting	476	522	46	9.66%	.93%
Mining, Quarrying, and Oil and Gas Extraction	185	184	-1	-.54%	-.05%
Utilities	519	466	-53	-10.21%	-1.07%
Construction	7,245	8,178	933	12.88%	1.22%
Manufacturing	8,849	8,336	-513	-5.8%	-.6%
Wholesale Trade	4,481	4,587	106	2.37%	.23%
Retail Trade	22,080	23,986	1,906	8.63%	.83%
Transportation and Warehousing	3,163	3,348	185	5.85%	.57%
Information	1,508	1,408	-100	-6.63%	-.68%
Finance and Insurance	***	***	***		***
Real Estate and Rental and Leasing	***	***	***		***
Professional, Scientific, and Technical Servi	9,667	11,651	1,984	20.52%	1.88%
Management of Companies and Enterprises	1,891	1,960	69	3.65%	.36%
Administrative and Support and Waste Manageme	4,437	4,793	356	8.02%	.77%
Educational Services	17,784	19,905	2,121	11.93%	1.13%
Health Care and Social Assistance	19,432	24,318	4,886	25.14%	2.27%
Arts, Entertainment, and Recreation	2,041	2,282	241	11.81%	1.12%
Accommodation and Food Services	16,230	19,859	3,629	22.36%	2.04%
Other Services (except Public Administration)	5,484	6,041	557	10.16%	.97%

Note: Asterisks (***) indicate non-disclosable data.
Projections data is for Bay Consortium (LWDA XIII). No data available for Northampton County.

Source: Virginia Employment Commission, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2014-2024.

Industry Employment and Projections

Short Term

	Employment			Percent	
	Estimated 2015	Projected 2017	Change	Total	Annual
Total, All Industries	3,977,496	4,093,656	116,160	2.92%	1.45%
Agriculture, Forestry, Fishing and Hunting	4,210	4,433	223	5.3%	2.61%
Mining, Quarrying, and Oil and Gas Extraction	6,805	5,869	-936	-13.75%	-7.13%
Utilities	10,717	10,695	-22	-.21%	-.1%
Construction	185,026	195,598	10,572	5.71%	2.82%
Manufacturing	232,632	233,073	441	.19%	.09%
Wholesale Trade	110,001	111,188	1,187	1.08%	.54%
Retail Trade	412,345	421,889	9,544	2.31%	1.15%
Transportation and Warehousing	112,837	117,619	4,782	4.24%	2.1%
Information	69,554	68,654	-900	-1.29%	-.65%
Finance and Insurance	131,712	136,266	4,554	3.46%	1.71%
Real Estate and Rental and Leasing	52,593	53,535	942	1.79%	.89%
Professional, Scientific, and Technical Servi	394,584	409,625	15,041	3.81%	1.89%
Management of Companies and Enterprises	74,086	75,252	1,166	1.57%	.78%
Administrative and Support and Waste Manageme	224,339	236,780	12,441	5.55%	2.74%
Educational Services	365,350	372,071	6,721	1.84%	.92%
Health Care and Social Assistance	427,570	446,476	18,906	4.42%	2.19%
Arts, Entertainment, and Recreation	56,096	57,991	1,895	3.38%	1.68%
Accommodation and Food Services	334,516	349,857	15,341	4.59%	2.27%
Other Services (except Public Administration)	133,850	136,332	2,482	1.85%	.92%

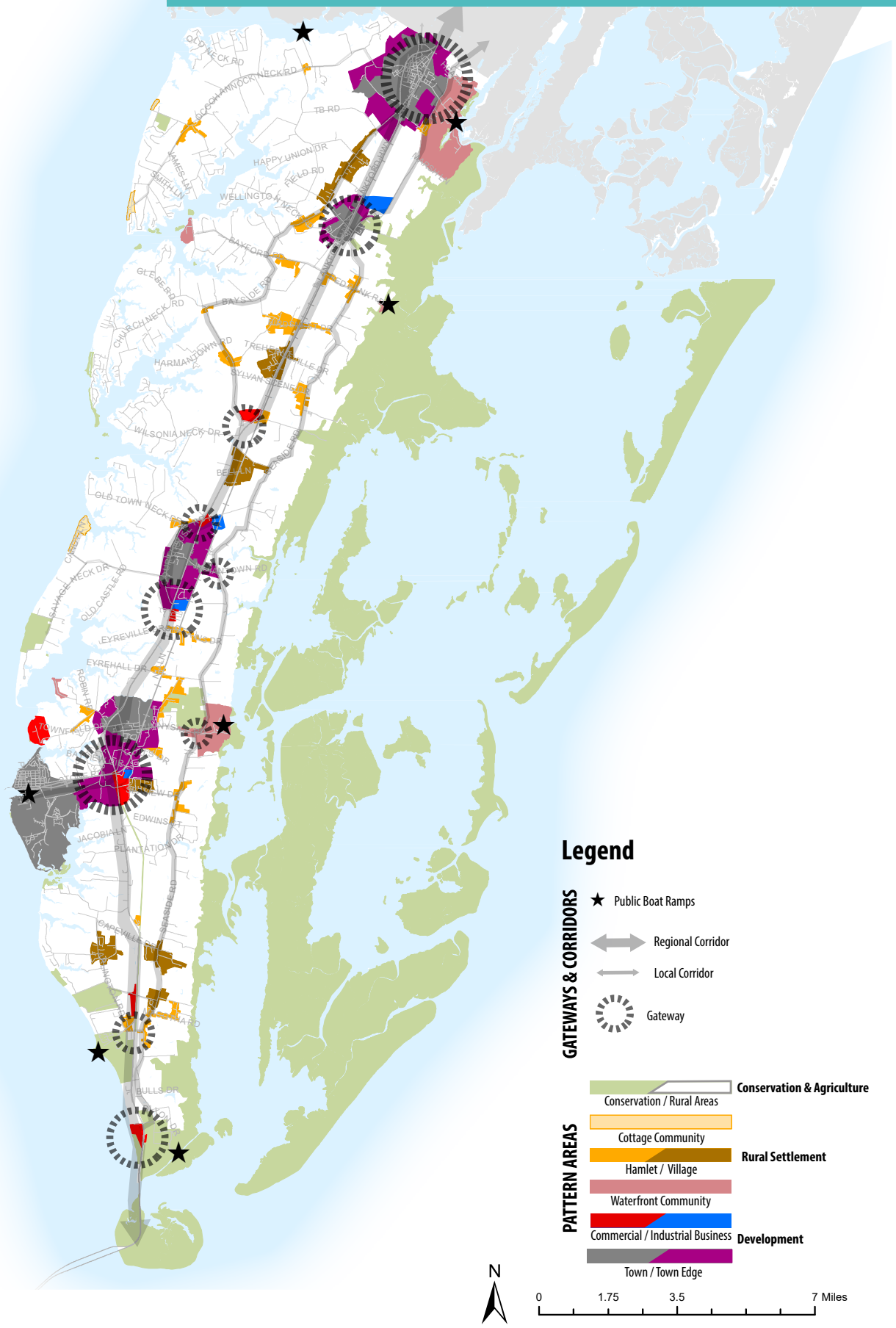
Note: Asterisks (***) indicate non-disclosable data.
Projections data is for Virginia Statewide. No data available for Northampton County.

Source: Virginia Employment Commission, Economic Information & Analytics,
Short Term Industry and Occupational Projections, 2015-2017.

APPENDIX 6

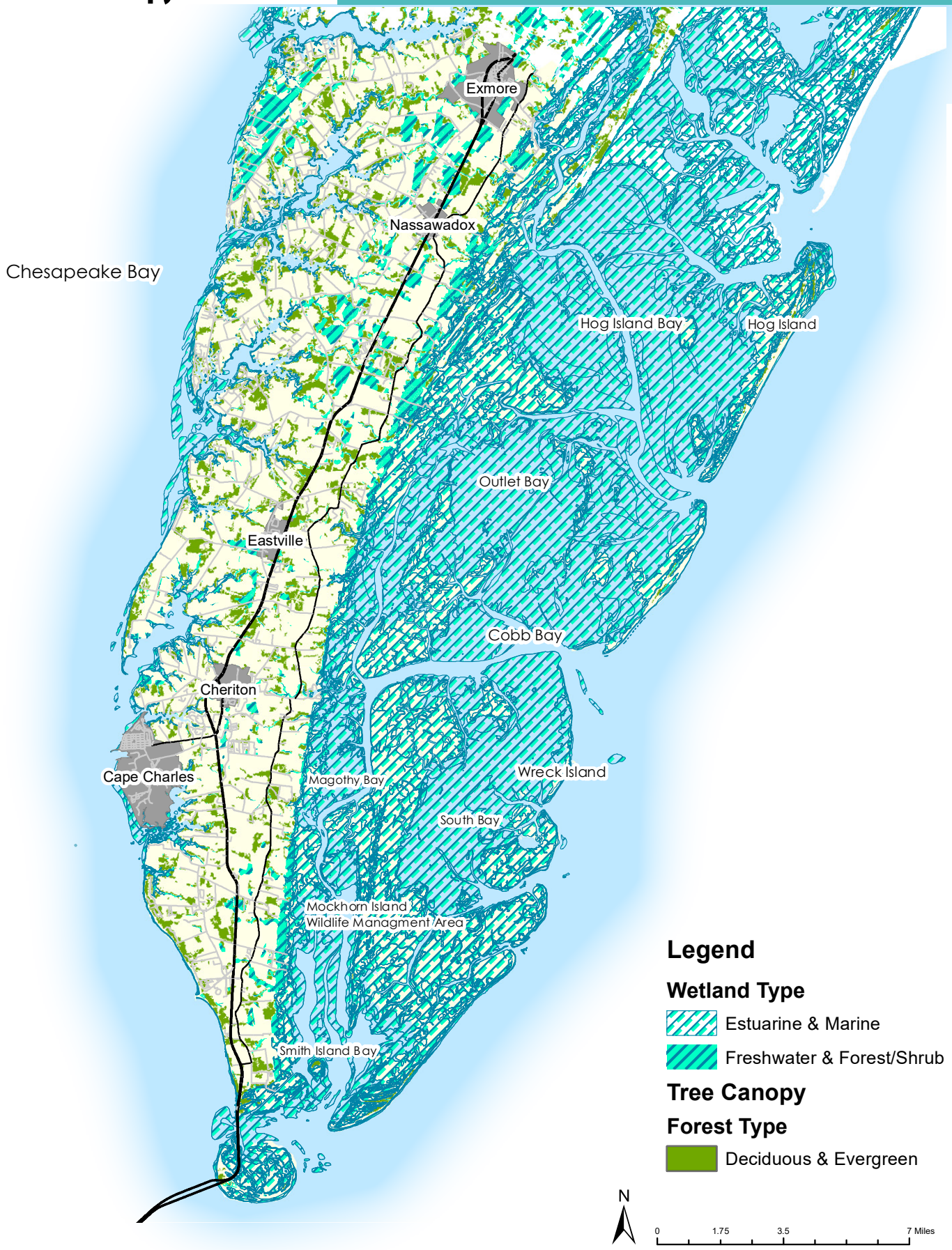
COMPREHENSIVE PLAN – KEY MAPS

Map 4.1 Future Land Use



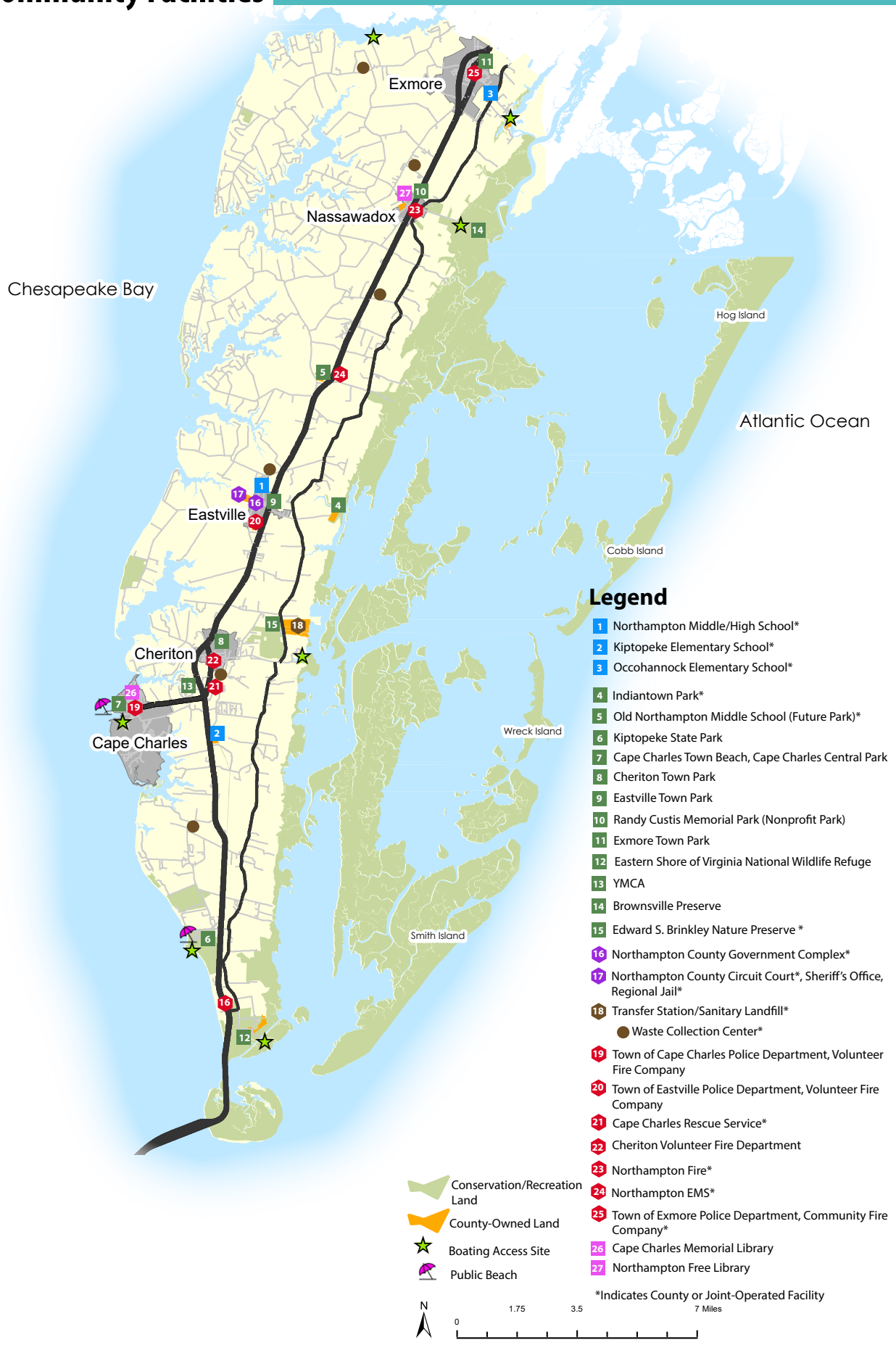
Map 5.1 Conservation Lands

Map 5.2 Tree Canopy & Wetlands



Map 6.1 Major Economic Drivers

Map 9.1 Community Facilities



APPENDIX 7

SWIA FORM - 2021

Janice Williams

From: SWIAExternal@deq.virginia.gov
Sent: Tuesday, March 08, 2022 8:41 AM
To: Janice Williams; Lisa.Silvia@deq.virginia.gov
Cc: lisa.silvia@deq.virginia.gov
Subject: The Annual SOLID WASTE INFORMATION AND ASSESSMENT PROGRAM report has been approved

DEQ has approved SWIA Form 50-25 for reporting period: 2021

Date: 3/8/2022 8:41:08 AM

Facility: Northampton County - Transfer Station

Permit Number: PBR540

Jurisdiction:

- VA - Virginia

Preparer: jwilliams@co.northampton.va.us

You are receiving this message because the SWIA data that you submitted to DEQ has now been approved by DEQ staff on the date noted above.

To view the data online, please click here: https://portal.deq.virginia.gov/v2/swia/#/swiaReport/7808

If you need further assistance with SWIA on-line application, please send a message to: swia@deq.virginia.gov

Attachment 1 – SWIA Reporting Table (Form DEQ 50-25)

SOLID WASTE INFORMATION AND ASSESSMENT PROGRAM REPORTING TABLE - FORM DEQ 50-25 (Revised 12/17/2018)

1	Facility Name	Northampton County Transfer Station				
2	Permit Number	PBR 540	3 Date Submitted to DEQ	2/28/2022	4 Annual Reporting Period	Jan 1 - Dec 31,2021
5	Preparer's First Name	Janice	Middle Initial K	Last Name Williams	6 Telephone	757/678-0440 ext 516
7	Preparer's E-mail Address	jwilliams@co.northampton.va.us				
8	Has there been a change to the Annual Fee Billing Contact. Address or Telephone Number? ☐Yes ☒ No					
	Contact First Name	Charles	Last Name	Kolakowski	Contact Phone	757/678-0440 ext. 515
	Address	P O Box 66			E-Mail	ckolakowski@co.northampton.va.us
	City	Eastville	State	VA	Zip Code	23347

9A and 9B Landfills only	9A	Remaining Permitted Capacity Yards	Cubic	9B	Expected Remaining Permitted Life Years

10	Does facility use active scales? ☒ Yes or ☐ No	Landfills not using active scales - enter the total amount landfilled in cubic yards (sum of all jurisdictions)
11	Originating Jurisdiction Northampton County	11A Statement of Economic Benefits submitted? ☐Yes or ☒ No
12	**Facilities landfilling VA incineration ash**	Use the supplemental form to provide the facility from which ash was received and the amount.

Waste amounts measured in : ☒ Tons or ☐ Cubic Yards

Waste Type		Total Amount of Waste Received (a)	Mined Materials (b)	On-site Management of Waste						Sent Off-site to be: (i)		Stored On-site (j)	
				Landfilled (c)	Recycled (d)	Composted (e)	Incinerated (f)	Mulched (g)	Other (h)	Recycled	Treated, Stored, Disposed	Beginning of Reporting Period	End of Reporting Period
13	Municipal Solid Waste	14,619.35									14,619.35		
14	Construction/ Demolition/Debris	2,807.08									2,807.08		
15	Industrial Waste												
16	Regulated Medical Waste												
17	Vegetative/Yard Waste	710.71							710.71				
18	Incineration Ash												
19	Sludge	187.24									187.24		
20	Tires	54									54		
21	White Goods	257								683		426	0
22	Friable Asbestos												
23	Petroleum Contaminated Soil												
24	Other Wastes (specify) AP	410.39									410.39		
25	Total	19,045.77							710.71	683	18,078.06	426	0

Facility Comments

Complete a separate form for each jurisdiction.
See the instructions for completing Form DEQ 50-25. A separate form is provided for the optional Statement of Economic Benefits.

APPENDIX 8

TABLES - WASTE GENERATION

TABLE 8-1
NORTHAMPTON COUNTY SOLID WASTE PROGRAM
VDEQ - SWIA REPORTING FORMS
TONNAGE RECEIVED AND TRANSFERRED
2013 through 2021

Waste Type	2010 Total Received	2011 Total Received	2012 Total Received	2013 Total Received	2014 Total Received	2015 Total Received	2016 Total Received	2017 Total Received	2018 Total Received	2019 Total Received	2020 Total Received	2021 Total Received
Municipal Solid Waste	10,782	11,456	10,973	11,325	10,654	11,101	11,281	11,935	13,157	12,632	13,066	14,619
Construction/Demolition Debris	848	771	938	1,049	2,151	2,098	1,928	2,791	2,313	3,544	2,476	2,807
Industrial Waste	92	192	149	234			8	8				
Vegetative/Yard Waste	501	559	378	528	713	355	455	474	810	685	624	711
Sludge	4	33	124	180	207	144	158	171	199	300	163	187
Tires	21	16	19	29	29	30	38	37	25	44	41	54
White Goods	34	53	60	59	74	80	108	96	167	198	157	257
Other												
agricultural plastic							359	1,292	1,114	806	803	410
TOTAL	**12,282**	**13,080**	**12,640**	**13,404**	**13,827**	**13,808**	**14,335**	**16,804**	**17,785**	**18,209**	**17,330**	**19,046**

Waste Type	2010 Total Transferred	2011 Total Transferred	2012 Total Transferred	2013 Total Transferred	2014 Total Transferred	2015 Total Transferred	2016 Total Transferred	2017 Total Transferred	2018 Total Transferred	2019 Total Transferred	2020 Total Transferred	2021 Total Transferred
Municipal Solid Waste	10,782	11,456	10,973	11,325	10,654	11,101	11,281	11,935	13,157	12,632	13,066	14,619
Construction/Demolition Debris	848	771	938	1,049	2,151	2,098	1,928	2,791	2,313	3,544	2,476	2,807
Industrial Waste	92	192	149	234			8	8				
Vegetative/Yard Waste												
Sludge	4	33	124	180	207	144	158	171	199	300	163	187
Tires										44	41	54
White Goods												
Other												
agricultural plastic							359	1,292	1,114	806	803	410
TOTAL	**11,726**	**12,452**	**12,183**	**12,788**	**13,012**	**13,343**	**13,734**	**16,197**	**16,783**	**17,326**	**16,549**	**18,078**
% Total Transfer/Total Received	95.5%	95.2%	96.4%	95.4%	94.1%	96.6%	95.8%	96.4%	94.4%	95.2%	95.5%	94.9%

TABLE 8-2
NORTHAMPTON COUNTY
WASTE TONNAGE RECEIVED
2017 THROUGH 2021
Reported by County - total from monthly records

	2017		2018		2019		2020		2021	
WASTE MATERIAL	**TONS**	**% TOTAL**	**TONS**	**% TOTAL**	**TONS**	**% TOTAL**	**TONS**	**% TOTAL**	**TONS**	**% TOTAL**
Agriculture Plastic	1,292	7.7%	1,114	6.3%	806	4.4%	803	4.6%	410	2.2%
Brush	474	2.8%	810	4.6%	685	3.8%	624	3.6%	711	3.8%
Biosolids	171	1.0%	199	1.1%	300	1.7%	163	0.9%	187	1.0%
Construction debris	2,791	16.6%	2,313	13.0%	3,544	19.5%	2,476	14.3%	2,807	14.8%
Commercial waste	5,922	35.3%	6,632	37.3%	5,745	31.6%	5,613	32.5%	5,996	31.7%
Lime	8	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Metal	96	0.6%	117	0.7%	198	1.1%	150	0.9%	186	1.0%
Rubble	2	0.0%	61	0.3%	0	0.0%	0	0.0%	0	0.0%
Residential	6,013	35.9%	6,526	36.7%	6,888	37.9%	7,454	43.1%	8,624	45.6%
TOTAL WASTE	16,767	100.0%	17,772	100.0%	18,167	100.0%	17,281	100.0%	18,921	100.0%
Soil	1,050		308		2,836		1,248		1,120	
Stone	72		311		27		16		5	
GRAND TOTAL	17,889		18,391		21,029		18,544		20,047	

Table 8-3
NORTHAMPTON COUNTY SOLID WASTE PROGRAM
PROJECTED WASTE AND PER CAPITA GENERATION
2010-2045

Year	Population (From Table)	TOTAL TONNAGE TRANSFERRED	Pounds Per Person Per Day	MSW TONNAGE TRANSFERRED	Pounds Per Person Per Day
2010	12,389	11,726	5.2	10,782	4.8
2011	12,433	12,452	5.5	11,456	5.0
2012	12,441	12,183	5.4	10,973	4.8
2013	12,089	12,788	5.8	11,325	5.1
2014	12,207	13,012	5.8	10,654	4.8
2015	12,176	13,343	6.0	11,101	5.0
2016	12,139	13,734	6.2	11,281	5.1
2017	12,000	16,197	7.4	11,935	5.4
2018	11,862	16,783	7.8	13,157	6.1
2019	11,810	17,326	8.0	12,632	5.9
2020	12,282	16,549	7.4	13,066	5.8
2021	12,222	18,078	8.1	14,619	6.6
2022	12,197	16,987	7.6	13,082	5.9
2023	12,172	16,987	7.6	13,082	5.9
2024	12,147	16,987	7.7	13,082	5.9
2025	12,122	16,987	7.7	13,082	5.9
2026	12,097	16,987	7.7	13,082	5.9
2027	12,072	16,987	7.7	13,082	5.9
2028	12,047	16,987	7.7	13,082	6.0
2029	12,022	16,987	7.7	13,082	6.0
2030	12,000	16,987	7.8	13,082	6.0
2031	11,942	16,987	7.8	13,082	6.0
2032	11,884	16,987	7.8	13,082	6.0
2033	11,826	16,987	7.9	13,082	6.1
2034	11,768	16,987	7.9	13,082	6.1
2035	11,712	16,987	7.9	13,082	6.1
2036	11,654	16,987	8.0	13,082	6.2
2037	11,596	16,987	8.0	13,082	6.2
2038	11,538	16,987	8.1	13,082	6.2
2039	11,480	16,987	8.1	13,082	6.2
2040	11,424	16,987	8.1	13,082	6.3
2041	11,383	16,987	8.2	13,082	6.3
2042	11,342	16,987	8.2	13,082	6.3
2043	11,301	16,987	8.2	13,082	6.3
2044	11,260	16,987	8.3	13,082	6.4
2045	11,221	16,987	8.3	13,082	6.4

Note: Tonnage for 2022 is the average tonnage received at the transfer station (2017 - 2021)
Given decrease in population, tonnage maintained at average through 2045.
Signifies actual data either from Weldon Cooper or SWIA forms.

APPENDIX 9

DEQ - LANDFILL CLOSURE APPROVAL LETTER

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
5636 Southern Boulevard, Virginia Beach, Virginia 23462
(757) 518-2000 Fax (757) 518-2009
www.deq.virginia.gov

Doug Domenech
Secretary of Natural Resources

David K. Paylor
Director

RECEIVED
FEB - 4 2011

February 2, 2011

Ms. Katherine H. Nunez
Northampton County Administrator
Post Office Box 66
Eastville, VA 23301

RE: **Northampton County Landfill, Permit No. 507**
Construction Quality Assurance Report
Facility Closure Certification

Dear Ms Nunez:

The Department has reviewed the following documents that were prepared on your behalf by Draper Aden and Associates for the Northampton County Landfill, Permit No. 507. The Report was received by the Department July 22, 2010.

- *Construction Quality Assurance Certification Report*, dated July 16, 2010.
- A construction quality assurance certification, in accordance with the requirements of 9 VAC 20-80-250 B 18 of the Virginia Solid Waste Management Regulations (VSWMR) signed by Kenneth M. Piazza Jr., P.E., Draper Aden and Associates and dated July 12, 2010.
- A certification verifying that closure has been completed in accordance with the requirements of 9 VAC 20-80-250.E.5.d(1) – E.5.d(3) of VSWMR signed by William G. Hase, P.E., of Draper Aden and Associates and dated July 19, 2010..

The documentation provided and Department site inspections conducted on September 21, 2010 and January 31, 2011 indicates that the final cover construction of the Cells 1A and 1B an area of approximately 12.7 acres of the Northampton County Sanitary Landfill has been completed consistent with the requirements of VSWMR, 9 VAC 20-80 and therefore, satisfies 9 VAC 20-80-250.E.5.b, and closure has been completed in accordance with the requirements of 9 VAC 20-80-250.E.5.d(1) – E.5.d(3)

The final cover system (listed from lowest to upper layer) and the specific sections of the report that document the construction of each component are shown below:

Final Cover Component	Documentation
• Intermediate Cover (12 inches of intermediate cover soil)	Section 5.0, subsections 5.1-5.3 and Volume II, Section IV Record Drawings, sheet 1 of 3.
• Cap Bedding Layer comprised of 12" approved on-site soil. Permeability not specified. Designed to also function as gas transmission layer.	Section 6.0, subsections 6.1-6.3 and Volume II, Section IV Record Drawings, sheet 2 of 3.
• Geomembrane (40-mil LLDPE, Microspike textured)	Section 7.0, subsections 7.1-7.7 and Volume II, Section II and section IV Record Drawings, MAL as built Panel Layout sheet 1 of 1.
• Geocomposite drainage layer	Section 8.0, subsection 8.1 and Volume II, Section I.
• Cover soil (18 inches protective cover soil; 6 inches of soil for vegetative support)	Section 9.0, subsections 9.1-9.3 and Volume II, Section IV.

The establishment of adequate vegetative cover in accordance with 9 VAC 20-80-250.C.2.f will be ascertained during the next compliance inspection for the facility.

The post-closure period for this facility begins on July 19, 2010. This closure certification is approved and the post-closure care period may commence with the following conditions:

1) In accordance with VSWMR, 9 VAC 20-80-250.F.1.a-d, following closure of all disposal units, the owner or operator shall conduct post-closure care of the facility. Post-closure care shall consist of at least the following:

   a. Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

   b. Maintaining and operating the leachate collection system in accordance with the requirements in VSWMR, §9 VAC 20-80-290 and §9 VAC 20-80-300. The director may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment; and

c. Monitoring the ground water in accordance with the requirements of subsection D of this section and maintaining the ground water monitoring system

d. Maintaining and operating the gas monitoring system in accordance with the requirements of VSWMR, §9 VAC 20-80-280.

2) In accordance with VSWMR, §9 VAC 20-80-250.F.2.b, the post-closure care period must be conducted for a minimum of 30 years.

3) In accordance with VSWMR, 9 VAC 20-80-250.F.3, the length of the post-closure care period may be:

a. Decreased by the director if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the director; or

b. Increased by the director if the director determines that the lengthened period is necessary to complete the corrective measures or to protect human health and the environment. If the post-closure period is increased, the owner or operator shall submit a revised post-closure plan for review and approval, and continue post-closure monitoring and maintenance in accordance with the approved plan.

4) In accordance with VSWMR, 9 VAC 20-80-250.F.6, following completion of the post-closure care period for each disposal unit, the owner or operator shall submit to the department a certificate, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan. The certificate shall be accompanied by an evaluation, prepared by a professional engineer licensed in the Commonwealth and signed by the owner or operator, assessing and evaluating the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued.

A copy of the construction quality assurance report and all record drawings must be retained in the operating record for Permit No. 507.

If you have any questions, please do not hesitate to contact Donald H. Brunson, Regional Solid Waste Permit Writer at 804-698-4239 or Donald.Brunson@deq.virgnia.gov.

Sincerely,

Milton L. Johnston
Land Protection Manager

cc: DEQ – File – SWP 413
Don Brunson, DEQ
William G. Hase, P.E. Draper Aden Associates

APPENDIX 10

DEQ – PERMIT BY RULE - TRANSFER STATION PERMIT

COMMONWEALTH *of* VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
5636 Southern Boulevard, Virginia Beach, Virginia 23462
(757) 518-2000 Fax (757) 518-2103
www.deq.virginia.gov

L. Preston Bryant, Jr
Secretary of Natural Resources

David K. Paylor
Director

Francis L. Daniel
Regional Director

March 27, 2009

Ms. Katherine H. Nunez
Northampton County Administrator
Post Office Box 66
Eastville, VA 23301

RE: Northampton County Solid Waste Transfer Station
Permit-by-Rule #540
Northampton County, Virginia

Dear Ms. Nunez:

The Department has received the notice of intent and application to operate a Transfer Station located at 20371 Seaside Road, Cape Charles, VA.

Attached to this letter are two documents, which must not be separated from this letter for compliance purposes. The two documents are:

ATTACHMENT I: CONDITIONS OF THE PERMIT-BY-RULE STATUS

ATTACHMENT II: FACILITY DESCRIPTION

The purpose of this letter is to acknowledge receipt of the documentation submitted in accordance with the requirements of 9 VAC 20-80-485.A.1 of the Virginia Solid Waste Management Regulations (VSWMR, 9 VAC 20-80-10, et seq.) for Permit-by-Rule facilities. In accordance with 9 VAC 20-80-485.A.7 this facility is deemed to have permit-by-rule status. The reference number for this facility is Permit-By-Rule Number 540. Please note, however, that in accordance with 9 VAC 20-80-485.A.7, and the attached "Conditions of the Permit-by-Rule Status," the Director may require changes in the documents designed to assure compliance with the standards of the VSWMR. Should such changes not be accomplished by the facility owner or operator, the Director may require the owner or operator to submit the full application and to obtain a regular solid waste management facility permit.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of the service of this decision to initiate an appeal of this decision, by filing notice with:

David K. Paylor, Director
Virginia Department of Environmental Quality
ATTN: Office of Solid Waste
Post Office Box 1105
Richmond, Virginia 23218

In the event this decision is served to you by mail, three days will be added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which the appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

Please note that it is the responsibility of Northampton County to obtain any other permits or authorizations that may be necessary. If you have any questions regarding this matter, please contact Don Brunson, Environmental Engineer Senior, at (804) 698-4239.

Sincerely,

Milton L. Johnston
Regional Waste Program Manager

Attachments

c: Mr. William G. Hase, P.E.,
Draper Aden Assoicates
8090 Villa Park Drive
Richmond, VA 23228

Ms. Susan Estes, P.E.
Draper Aden Assoicates
2206 South Main Street
Blacksburg, VA 24060

Jason E. Williams – DEQ, Solid Waste Permit Coordinator (letter only)
Josiah Q. Bennett – DEQ, Financial Assurance
Don Bruson, Regional Office
file

ATTACHMENT I
CONDITIONS OF THE PERMIT-BY-RULE STATUS

I. CHANGE OF OWNERSHIP

A permit-by-rule may not be transferred by the permittee to a new owner or operator. However, when the property transfer takes place without proper closure, the new owner shall notify the Department of the sale and fulfill all the requirements contained in 9 VAC 20-80-485.A.1 through 9 VAC 20-80-485.A.6 of the Virginia Solid Waste Management Regulations (VSWMR, 9 VAC 20-80-10, *et seq.*). Upon presentation of the financial assurance proof required by the Financial Assurance Regulations for Solid Waste Facilities (9 VAC 20-70-10, *et seq.*) by the owner, the Department will release the old owner from his closure and financial responsibilities and acknowledge the new permit-by-rule in the name of the new owner.

II. FACILITY MODIFICATIONS

The owner or operator of a facility operating under a permit-by-rule may modify its design and operation by furnishing the Department a new certificate prepared by the professional engineer and a new operational plan. Whenever modifications in the design or operation of the facility affect the provisions of the approved closure plan, the owner or operator shall also submit an amended closure plan.

III. LOSS OF PERMIT-BY-RULE STATUS

In the event that a facility operating under a permit-by-rule violates any applicable siting, design and construction, or closure provisions of Part VI [9 VAC 20-80-320 - 470], the owner or operator of the facility will be considered to be operating an unpermitted facility as provided for in 9 VAC 20-80-80 of the VSWMR and shall be required to either obtain a new permit as required by Part VII [9 VAC 20-80-480 - 620] or close under Part V [9 VAC 20-80-240 - 310] or VI [9 VAC 20-80-320 - 470] of these regulations, as applicable.

IV. TERMINATION

The Director shall terminate permit-by-rule and shall require closure of the facility whenever he finds that:

a. As a result of changes in key personnel, the requirements necessary for a permit-by-rule are no longer satisfied;

b. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in his disclosure statement, or any other report or certification required under this regulation, or has knowingly or willfully failed to notify the Director of any material change to the information in the disclosure statement;

c. Any key personnel have been convicted of any of the crimes listed in § 10.1 - 1409 of the Code, punishable as felonies under the laws of the Commonwealth or the equivalent thereof under the laws of any other jurisdiction; or have been adjudged by an administrative agency or a court of competent jurisdiction to have violated the environmental protection laws of the United States, the Commonwealth or any other state and the Director determines that such conviction or adjudication is sufficiently probative of the permittee's inability or unwillingness to operate the facility in a lawful manner.

V. CERTIFIED OPERATOR

In accordance with the Virginia Waste Management Act (Title 10.1, Chapter 14 of the Codes of Virginia), § 10.1 - 1408.2, this facility must employ a facility operator licensed by the Board of Waste Management Facility Operators (Licensing Regulations, 18 VAC 155-20-10 *et seq.*).

ATTACHMENT II
FACILITY DESCRIPTION

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF SOLID WASTE
Permit-By-Rule #540

Facility Name: Northampton County Solid Waste Transfer Station

Facility Type: Transfer Station

Latitude: 38° 17'56" North
Longitude: 77° 55'41" West

Site Location: Cape Charles, VA

Location Description: The facility is located at 20371 Seaside Road in Northampton County. Access is provided by a paved road.

Background: The facility is owned and operated by Northampton County. The facility consists of a 9,900 square feet pre-engineered, metal panel type building which fully encloses the tipping floor and load-out area. At the paved entrance of the site is a weighing system that monitors the facility's throughput. The system consists of a single motor truck scale and a scalehouse. The scale attendant directs incoming vehicles and controls access. The design of the Transfer Station utilizes a bi-level, non-compacted, direct dump design consisting of one refuse hopper and a tipping area on the upper level and a "load-out" area on the lower level. The load out area is also equipped with scales to accurately weigh out-bound trailers for maximum efficiency. Normal operating procedures will entail collection of waste from residents, commercial haulers, contractors and County collection vehicles onto the concrete tipping floor. The collected waste will be pushed using a rubber wheel loader through the refuse hopper and into contractor supplied tractor trailers for containment. The trailers will be hauled to a permitted sanitary landfill also under contract with the County. Stormwater will be managed through a series of ditches and retention basins. Bioretention basins have been designed to provide stormwater quantity management by attenuating peak and post-development run-off and will ultimately discharge into existing roadside ditch. Wash down of the facility will be performed as needed. Floor drains in both the tipping and loading areas are connected to the adjacent landfill's leachate holding basin. This facility as designed can handle an average 150 tons per day and has a maximum capacity of 250 tons per day of sanitary waste. Northampton County's Solid Waste Management Plan estimates the County generates 18,000 tons of lanfillable waste annually. The hours of operation for the facility are 8:00 a.m. to 3:30 p.m. Monday through Saturday.

Submission Highlights: The Department is in receipt of an application that contains the following documents:

A. A notice of intent, dated January 17, 2008. A notarized disclosure statement dated January 14. 2008. A local government certification dated January 17, 2008, and signed by Katherine Nunez, County Administrator for Northampton County. These documents are in accordance with 9 VAC 20-80-500.B, and are required submissions under 9 VAC 20-80-485 A.1.a.

B. A document signed by William Hase dated December 31, 2008Date certifying that the facility conforms to the siting standards of 9 VAC 20-80- 340 B. This is a required submission under 9 VAC 20-80-485.A.1.b.

C. A document signed and stamped by William Hase, a professional engineer, dated December 31, 2008 certifying that the facility has been designed and constructed in accordance with the standards of 9 VAC 20-80- 340.C. This is a required submission under 9 VAC 20-80-485.A.1.c.

D. An operational plan entitled "Operations Manual", dated December 2008 and submitted February 3, 2009, in accordance with 9 VAC 20-80- 340.D, and is a required submission under 9 VAC 20-80-485.A.1.d.

E. A closure plan, entitled "Closure Plan" dated February 3, 2009, which meets the requirements of 9 VAC 20-80-340.E. This is a required submission under 9 VAC 20-80-485.A.1.e.

F. Public participation documents which resulted from the public participation effort, in accordance with 9 VAC 20-80-485 A 6. The advertisement of the public meeting was published in the Eastern Shore News newspaper on August 22 and 29, 2007. The public meeting was held on September 10, 2007. The public comment period closed on September 22, 2007. There were no comments received from the public during the public comment period. This is a required submission under 9 VAC 20-80-485.A.1.g.

G. Financial Assurance in the amount of $2,100, based on an average daily throughput of 60 tons per day, has been provided in the form of a Local Government Financial Test. This is a required submission under 9 VAC 20-80-485.A.1.f.

APPENDIX 11

TABLE - RECYCLING DATA – CY 2013 TO CY 2021

Table 11-1
NORTHAMPTON COUNTY SOLID WASTE PROGRAM
SUMMARY OF RECYCLING DATA
2013 - 2021

	County use only		County use only		County use only		Approved by DEQ		County use only		Approved by DEQ		Approved by DEQ		Approved by DEQ		Submitted to DEQ	
MATERIAL	**2013**	**% TOTAL**	**2014**	**% TOTAL**	**2015**	**% TOTAL**	**2016**	**% TOTAL**	**2017**	**% TOTAL**	**2018**	**% TOTAL**	**2019**	**% TOTAL**	**2020**	**% TOTAL**	**2021**	**% TOTAL**
Total Principle RM																		
Paper	1,303.24	34.5%	1,301.56	34.1%	1,304.00	32.68%	1,302.00	35.98%	1,302.00	37.19%	1,300.00	33.3%	1,300.00	39.83%	1,430.00	43.88%	1,400.00	34.87%
Metal	1,891.80	50.0%	2,008.24	52.7%	2,181.00	54.66%	1,635.00	45.18%	1,630.00	46.56%	2,212.00	56.7%	1,560.00	47.79%	1,449.00	44.46%	2,213.00	55.12%
Plastic	1.02	0.0%	3.02	0.1%	5.00	0.13%	5.00	0.14%	4.00	0.11%	3.00	0.1%	3.00	0.09%	2.00	0.06%	-	0.00%
Glass																		
Commingled	532.06	14.1%	444.13	11.6%	421.00	10.55%	394.00	10.89%	336.00	9.60%	321.00	8.2%	291.00	8.92%	263.00	8.07%	231.00	5.75%
Yard Waste (composted or mulched)							248.00	6.85%										
Waste Wood (chipped or mulched)									186.00	5.31%								
Textiles			1.95	0.1%	5.00	0.13%	5.00	0.14%	6.00	0.17%	21.00	0.5%	56.00	1.72%	60.00	1.84%	78.00	1.94%
Waste Tires	28.90	0.8%	28.90	0.8%	24.00	0.60%	21.00	0.58%	25.00	0.71%	25.00	0.6%	44.00	1.35%	34.00	1.04%	79.00	1.97%
Used Oil	12.58	0.3%	10.63	0.3%	21.00	0.53%	9.00	0.25%	12.00	0.34%	19.00	0.5%	10.00	0.31%	21.00	0.64%	14.00	0.35%
Used Oil Filters																		
Used Antifreeze																		
Auto Bodies																		
Batteries			0.04	0.0%														
Sludge (composted)																		
Electronics			0.01	0.0%														
Other (Rubber)	12.70	0.3%	14.15	0.4%	29.00	0.73%												
Other																		
SUBTOTAL	***3,782.30***	***100.00%***	***3,812.63***	***100.00%***	***3,990.00***	***100.00%***	***3,619.00***	***100.00%***	***3,501.00***	***100.00%***	***3,901.00***	***100.00%***	***3,264.00***	***100.00%***	***3,259.00***	***100.00%***	***4,015.00***	***100.00%***
Credits																		
Recycling Residue																		
Solid Waste Reused																		
Non MSW Recycled	28.15	100.00%	52.64	100.00%	98.00	100.00%	25,206.00	100.00%	18,951.00	100.00%	311.00	100.00%	27.00	100.00%	16.00	100.00%	5.00	100.00%
SUBTOTAL	28.15	100.00%	52.64	100.00%	98.00	100.00%	25,206.00	100.00%	18,951.00	100.00%	311.00	100.00%	27.00	100.00%	16.00	100.00%	5.00	100.00%
TOTAL PRM and Credits	***3,810.45***		***3,865.27***		***4,088.00***		***28,825.00***		***22,452.00***		***4,212.00***		***3,291.00***		***3,275.00***		***4,020.00***	
Total waste disposed	11,325.00		10,654.00		11,101.00		11,281.00		11,935.00		13,158.00		12,633.00		13,067.00		14,619.00	
Recycling Rate	**25.2%**		**26.6%**		**27.0%**		**29.3%**		**27.7%**		**24.2%**		**20.7%**		**20.0%**		**21.6%**	

APPENDIX 12

COUNTY ANNUAL REPORT 2021

Purchased in January 2021, a replacement Compactor was installed at the Wardtown Convenience Center. In the summer, new siding and porch light installed on the attendant's house.

NORTHAMPTON COUNTY SANITARY LANDFILL

ANNUAL REPORT

CALENDAR YEAR 2021

INTRODUCTION

The Northampton County Sanitary Landfill began operation of its new landfill in April 1988. The new landfill includes a liner, leachate collection and monitoring wells. Beginning in January 1989, the County began operation of its weigh scales, computerized data collection, and tipping fees. This report addresses the twenty-ninth full year of operation for the complete system. Items covered include solid waste types, their sources, and revenue generation.

Northampton County ceased accepting solid waste for burial on March 31, 2009 with the commencement of the transfer station operation. For the past several years, the County's use of the spray-back method has been sufficient to dispose of leachate without resorting to pump-and-haul in most years. Pump-and-haul was used once in 2003. A new leachate pond was completed in 2001.

SOLID WASTE INFORMATION

Two methods are used to account for solid waste received at the landfill; by unit count and by weight. Currently, only tires and batteries are tracked by unit count. A fee is charged for accepting tires but not for batteries. All other items received are weighed. Items accounted for by weight are referred to as "waste volumes".

TIRES

A fee is charged for each tire checked through the landfill entrance. The fee assessed is based upon tire size. Five thousand one hundred fifty-five (5,155) tires of all sizes were accounted for at the landfill during this reporting period and seven thousand thirty-six (7,036) were recycled during 2020.

It is important to remember that the number of tires "accounted for" does not necessarily equal the number "received". Tires "accounted for" are documented and fees collected; that is, they are legally deposited in the landfill. Many tires, however, from the waste collection sites (hidden in the bulk containers), find their way to the County landfill.

BATTERIES

As stated previously, no fee is charged for batteries. The total number of batteries "accounted for" at the landfill was 0. When received, these batteries are sold to a private recycler for reuse.

VOLUME WASTE

Total waste received at the landfill was 38,665,742 pounds (19,332.87 tons), an increase of 2,090.29 tons over 2020. It should be noted here that all waste received was not shipped out from the Transfer Station. Of the total amount, 2,240,670 pounds of this amount was soil obtained from the Virginia Department of Transportation and other sources and was used for internal purposes. Additionally, 10,300 pounds were stone used for road building purposes. It is important to

remember that these amounts, while counted as part of the "total waste received at the landfill", should not be included when one speaks of normal County waste generation. Therefore, municipal solid waste accepted into the Landfill amounted to 36,414,772 lbs. (18,207.39 tons).

With these deductions, using the 2020 U. S. Census for Northampton County, this volume equates to a per capita waste generation rate of 8.12 pounds per person per day (lbs/p/d).

Waste accounted for by volume (weight) includes Agricultural Plastic (AP), Brush (BR), Biosolids (BS), Construction Debris (CD), Commercial Waste (CW), Metal (MT), Rubble (RB), Residential Waste (RW), Soil (SO), and Stone (ST). Definitions for waste types may be found in the appendix. Tabulations of waste received by waste type and by month are presented in Table 1.

TABLE 1

(insert Table 1 here)

While Agricultural Plastic was initially approved for acceptance in 1994, it was denied acceptance to the County's landfill in 2005. Since then, this waste type steadily decreased from 823.11 tons in Calendar Year 2006, to 453.21 tons in Calendar Year 2007, to 422.17 tons in Calendar Year 2008, to 7.50 tons in Calendar Year 2009, to finally 0 tons in 2010, 2011 and 2012. However, starting in 2013, Northampton County again received agricultural plastic waste with 1,925,560 lbs. (962.78 tons) received; 942,810 lbs. (471.40 tons) received in 2014; 601,160 lbs. (300.58 tons) received in 2015; 718,400 lbs. (359.20 tons) received in 2016; 2,583,080 lbs. (1,291.54 tons) received in 2017; 2,227,120 lbs. (1,113.56 tons) received in 2018; 1,611,760 lbs. (805.68 tons) received in 2019; 1,605,000 lbs. (802.50 tons) received in 2020; and 820,780 lbs. (410.39 tons) received in 2021.

With the exception of Brush, Metal, Soil, and Stone, the waste volumes shown in Table 1 are shipped out of the County. Brush, 3.97% of the waste volume, is currently placed in a separate area and burned. Soil, 6.26%, and Stone, 0.03%, of the total gross waste volume, are used internally for road base construction and other purposes on the landfill site. Metal, amounting to 2.95% of the waste stream, is white goods that were recycled through a third-party vendor.

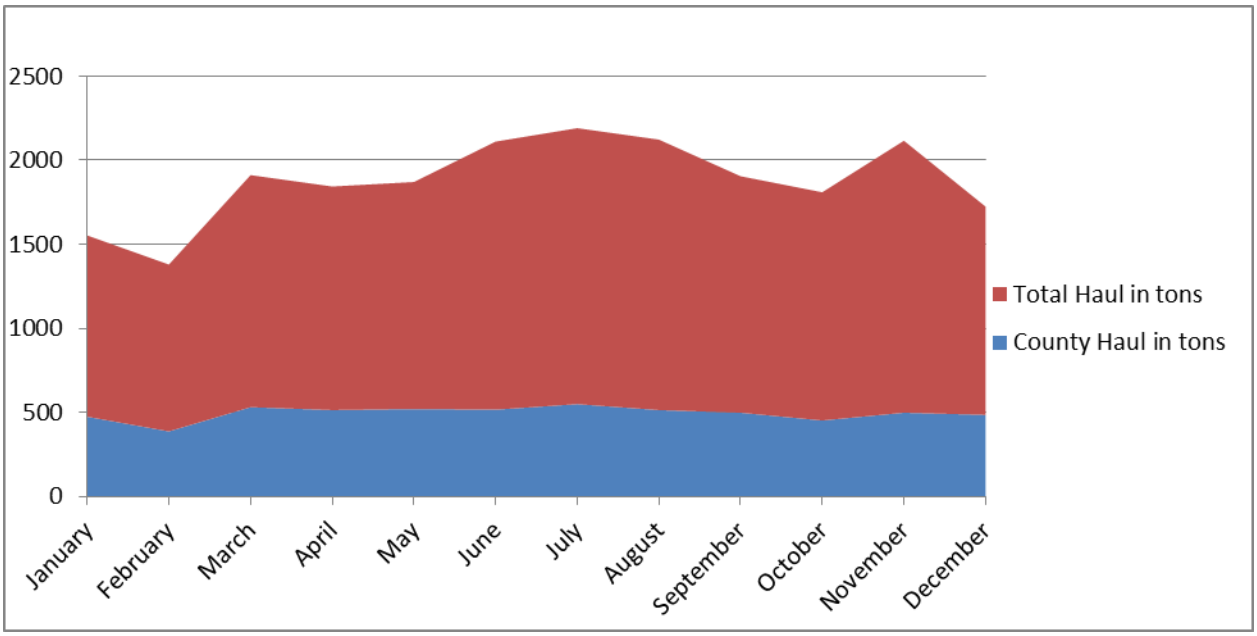
As one might expect, the waste volume received at the landfill varies from month to month. The monthly landfill volumes as a percentage of the total yearly volume are presented in Table 1. This presentation shows the heaviest use to be in December.

The source of the waste is an important consideration given that it affects revenue. The major source of non-revenue producing solid waste is the County collection system. The County accounted for 20.37% of the gross waste received at the landfill in 2021. Again, when stone and soil are removed from the calculation, the County's waste accounted for 21.18% of the modified waste tonnage. This came primarily from the waste collection sites and the minimum volumes collected from the County properties such as the Courthouse, Indiantown Park, etc. Chart 1 plots the monthly tonnage received, including County haul, with that hauled only by the County. While monthly County increases and decreases track the total from all sources, the County volume is more stable. That is, County haul does not exhibit as wide a variation with regard to highs and lows.

CHART 1

Date	County Haul in Tons	Total Haul in Tons
January	475	1078
February	388	992
March	532	1380
April	515	1329
May	521	1350
June	517	1594
July	550	1641
August	515	1608
September	499	1406
October	453	1357

November	499	1617
December	486	1238



WASTE COLLECTION CENTERS

In support of Board-adopted Goals & Objectives, there was established in 2006 a series of manned Convenience Centers, now re-named Waste Collection Centers. The first such site, Birdsnest, was opened in January 2006. Bayview became operational in July 2006 and Wardtown shortly thereafter in September 2006. Hare Valley opened in June 2008 and the fifth site, Cheapside, commenced operations in January 2011. Eastville, the County's sixth and final waste collection site, commenced operations in January 2014.

These manned sites offer safe, clean and environmentally secure solid waste disposal as well as recycling opportunities for the County's citizens by reducing the number of unmanned greenbox locations from approximately 28 randomly placed sites to 6 strategically located waste collection centers. An attendant staffs each site during all hours of operation, answers questions and offers assistance to those citizens needing help with their waste disposal. The attendant also provides the initial screening of the County-controlled waste stream, which is a condition of the joint Agreement with Accomack County should Northampton need to dispose of its solid waste in the Accomack facility.

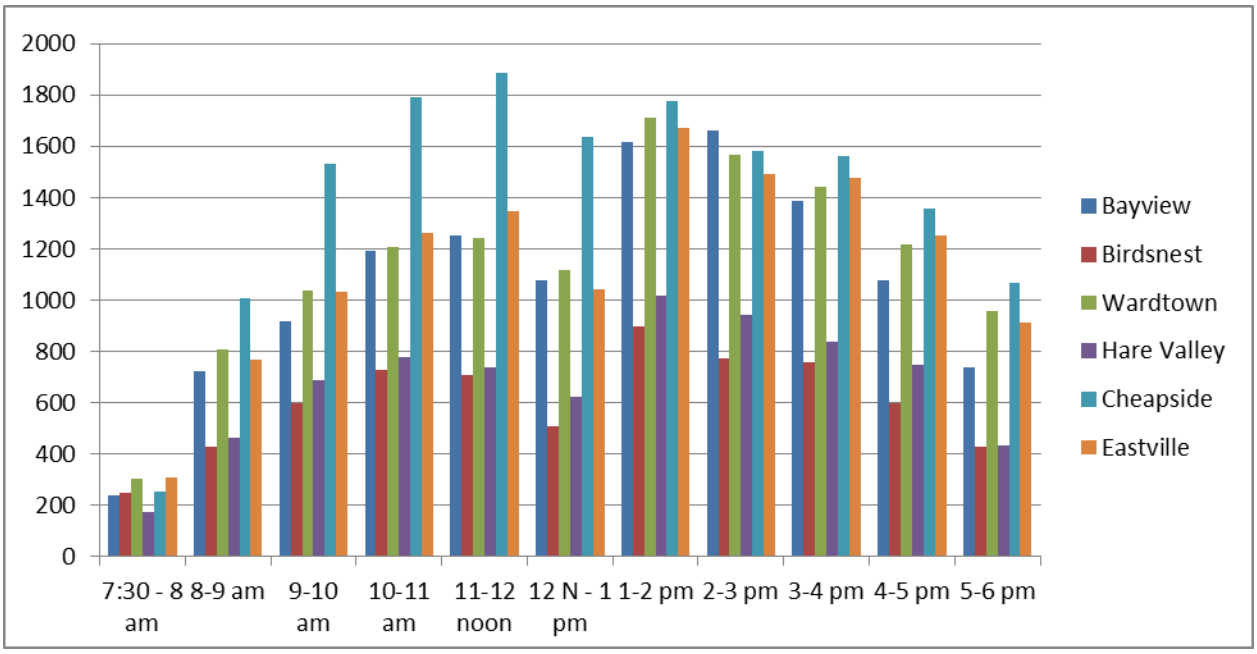
Having an attendant present on site eliminated existing problems of scavenging and, in some cases loitering, at the old greenbox sites. In addition, loose blowing litter and unsightly piles of waste and bulk items placed in and around the existing greenbox sites have been eliminated.

A key feature of the Waste Collection Centers is the recycling component. A multi-year contract, entered into jointly with Accomack County, was executed with Tidewater Fibre Corporation of Chesapeake, Virginia, to provide at least weekly pickup of recycling products for transport to TFC's Chesapeake facility, utilizing its unique single-stream recycling process. This innovative technique allows all recycling products to be commingled at the Waste Collection Centers rather than having to be separated by the consumer. Glass, paper, plastic and cardboard are accepted and are generating approximately 19.25 tons per month county-wide, approximately 66.62 % of the total from the two Shore county governments. The proportion is 32.4% for Northampton County when compared against the total counties' recycling efforts – public and private. In fact, when the Centers began operation, three recycling containers were in place at each site. Since that time, the number of containers has doubled at some of the sites due to the demand by County residents. Waste oil and battery disposal are also features of the Waste Collection Centers.

Statistics show that, with the exceptions of Bayview and Cheapside, the Waste Collection Centers' recycling activities are most active in the 1 - 2 p.m. hour. See Chart 2.

CHART 2

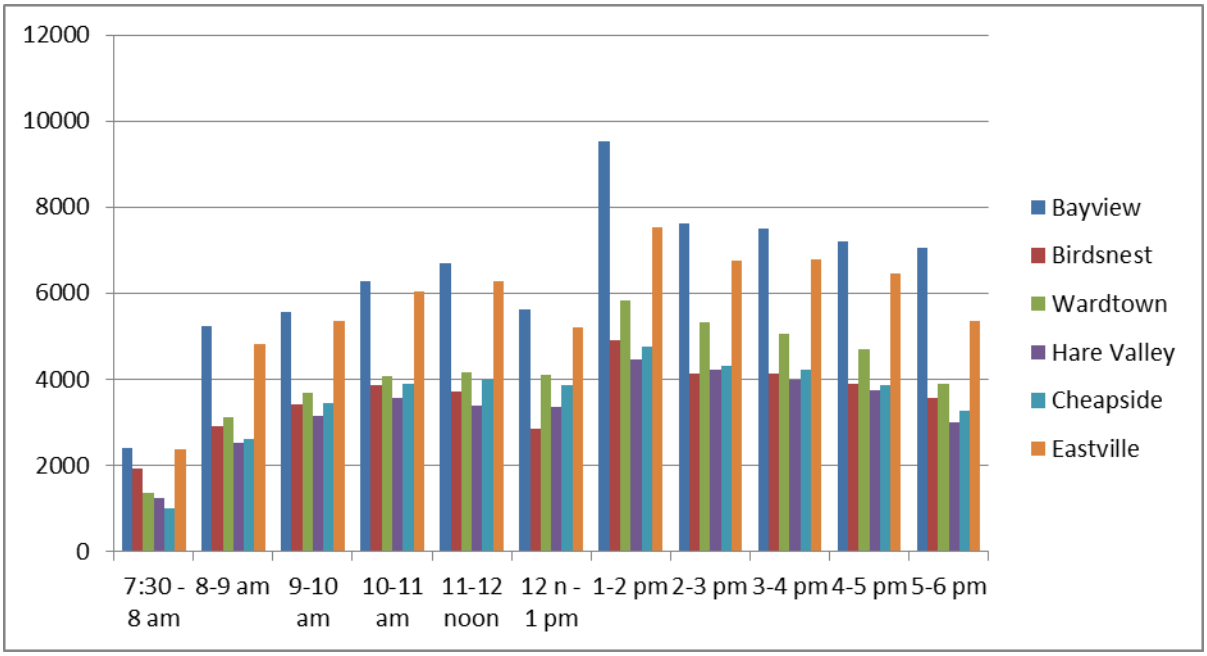
	Bayview	Birdsnest	Wardtown	Hare Valley	Cheapside	Eastville	
7:30 - 8 am	237	248	302	174	256	311	
8-9 am	721	430	806	461	1006	766	
9-10 am	918	598	1037	688	1530	1033	
10-11 am	1190	729	1205	777	1793	1261	
11-12 noon	1252	710	1244	736	1884	1349	
12 N - 1 pm	1076	507	1115	625	1638	1041	
1-2 pm	1614	896	1711	1018	1776	1671	
2-3 pm	1662	774	1566	941	1580	1494	
3-4 pm	1389	756	1441	840	1562	1476	
4-5 pm	1078	598	1219	748	1359	1253	
5-6 pm	740	430	956	432	1066	912	
	11877	6676	12602	7440	15450	12567	66612



With regard to solid waste disposal, again, the 1-2 p.m. time frame was also the most active See Chart 3.

CHART 3

	Bayview	Birdsnest	Wardtown	Hare Valley	Cheapside	Eastville	
7:30 - 8 am	2411	1934	1365	1228	998	2383	
8-9 am	5234	2914	3114	2525	2613	4806	
9-10 am	5573	3407	3697	3160	3440	5341	
10-11 am	6291	3857	4083	3565	3889	6046	
11-12 noon	6685	3705	4162	3380	3986	6281	
12 n - 1 pm	5628	2853	4110	3367	3862	5209	
1-2 pm	9530	4893	5843	4458	4746	7533	
2-3 pm	7629	4139	5314	4211	4310	6751	
3-4 pm	7500	4140	5059	3987	4223	6774	
4-5 pm	7214	3896	4685	3747	3872	6461	
5-6 pm	7051	3562	3878	2993	3266	5354	
	70746	39300	45310	36621	39205	62939	294121



With the opening of the Birdsnest Waste Collection Center in January 2006, five greenbox locations were closed: Bridgetown, Bayford, Red Bank, Machipongo and Birdsnest. This site saw 39,300 visitors in Calendar Year 2021, averaging 3,275 visitors per month.

With the opening of the Bayview Waste Collection Center, in July 2006, the existing Bayview greenbox site was closed as well as the container placed in the CDBG Bayview project area. The site saw 70,746 visitors in Calendar Year 2021, averaging 5,896 visitors per month, our most heavily used site in the County, by far.

With the opening of the Wardtown Waste Collection Center in September 2006, the existing greenbox sites at Willis Wharf, Wardtown and West Town were closed. The site saw 45,310 visitors in Calendar Year 2021, averaging 3,776 visitors per month.

With the opening of the Hare Valley Waste Collection Center in June 2008, the "Rt. 13 North" greenbox site was closed. This site saw 36,621 visitors in Calendar Year 2021, an average of 3,052 per month.

With the opening of the Cheapside Waste Collection Center in January 2011, the greenbox site at Cheapside was closed. This site saw 39,205 visitors in Calendar Year 2021, an average of 3,267 per month.

There were no remaining public greenbox sites to close with the opening of the Eastville Waste Collection Site in January 2014. This site saw 62,939 visitors in Calendar Year 2021, an average of 5,245 per month.

Three sites showed increases and three sites showed decreases in visitors for solid waste

disposal. Overall, there was a decrease of 2,377 solid waste visitors during calendar year 2021.

The construction of the Eastville Waste Collection Site represented the sixth and final site to be constructed under the Board of Supervisors' Capital Improvement Plan. An analysis of the last seven calendar years' solid waste visitor volume for all six sites is shown below:

Site	2015	2016	2017	2018	2019	2020	2021
Birdsnest	42,177	42,468	40,746	37,866	37,900	39,882	39,300
Bayview	69,281	72,047	69,750	67,718	70,579	75,423	70,746
Wardtown	41,351	41,345	38,628	38,991	40,945	43,670	45,310
Hare Valley	36,586	36,817	36,732	36,581	38,959	41,664	36,621
Cheapside	29,046	30,417	34,614	36,236	35,193	37,714	39,205
Eastville	47,404	49,573	51,370	53,060	55,405	58,145	62,939
TOTAL SOLID WASTE VISITORS	265,845	272,667	271,840	270,452	278,981	296,498	294,121

Recycling volumes collected from the Waste Collection Centers during Calendar Year 2021 amounted to 231 tons, a decrease of 32.33 tons from 2020, (representing 66.62% of the total shipments from the two Eastern Shore county governments) and 32.4% from the total of the two counties' recycling efforts (government and private industry) and are set forth below:

Month	Tonnage Collected
January 2021	18.37 tons
February 2021	18.75 tons
March 2021	20.30 tons
April 2021	19.88 tons
May 2021	15.04 tons
June 2021	22.02 tons
July 2021	21.19 tons
August 2021	23.24 tons
September 2021	22.15 tons
October 2021	18.08 tons
November 2021	15.72 tons
December 2021	16.26 tons

An analysis of the last seven calendar years' recycling visitor volumes is shown below:

Site	2015	2016	2017	2018	2019	2020	2021
Birdsnest	8,891	7,921	7,874	7,083	6,707	7,676	6,676

Bayview	12,913	13,842	14,517	15,323	14,935	12,308	11,877
Wardtown	16,332	16,274	14,199	13,129	13,154	13,767	12,602
Hare Valley	9,061	8,494	8,685	8,300	8,120	7,746	7,440
Cheapside	8,684	9,450	13,959	12,845	12,808	13,830	15,450
Eastville	11,261	12,421	13,236	12,759	12,751	12,749	12,567
TOTAL RECYCLING VISITORS	67,232	68,402	72,470	69,439	68,475	68,076	66,612

FINANCIAL

INCOME

Total revenue generated from landfill tipping fees in 2021 was $775,370.37, an increase of $51,071.60 from 2020.

Monthly revenue from tipping fees varied from a low of $41,658.53 in January to a high of $80,503.75 in November. The average monthly income was $62,947.53. The tipping fee is $75.00 per ton as established by the Board to become effective August 12, 2019.

A new revenue source in 2011 was a recycling rebate. This rebate was put forth by Tidewater Fibre Corporation in its bid proposal to provide recycling services effective with the 2011 year. However, due to lower industry costs, Northampton County received no recycling rebate funds during Calendar Years 2013, 2014, 2015 and 2016. With a slight increase in industry costs in 2017, Northampton received $1,300.59. No recycling rebate was received in 2018, 2019, 2020, or 2021 and in fact, with the collapse of the worldwide recycling market, Tidewater Fibre instituted a processing fee of $90.00 per ton in August 2018. In many months, this new fee is actually greater than the monthly fee paid to Tidewater Fibre for the recycling collection program.

EXPENSES

There are two major cost centers in the solid waste management system; solid waste disposal and solid waste collection. This report addresses only the solid waste disposal aspect of the operation. Since April 2009, Northampton County ceased actual "disposal" of its solid waste and commenced operation of a transfer station which transported the waste to the King and Queen Landfill. Rebid of the transportation and disposal contract in 2014 resulted in waste being disposed of in the Bethel Landfill in Hampton, Virginia. The most recent rebid of the contract in 2020 resulted in waste being disposed of again in the King and Queen Landfill with hauling by Republic Services/BFI. Costs associated with the operation of the transfer station are included in the "disposal" cost center. Currently, Northampton County contracts with Davis Disposal to provide all collection services necessary to bring the waste from the waste collection centers and the few remaining greenboxes (utilized at county properties); that cost is what constitutes the "collection" segment of the solid waste system.

Disposal costs also include equipment operation and maintenance, labor, capital outlay and

other routine operating expenses. The total operating cost (disposal only) for calendar year 2021 was $720,846.82, an average of $60,070.57 per month. The equivalent per ton cost for solid waste disposal was $37.29; *$37.71 per ton less than the $75.00 per ton tipping fee.* It must be remembered, however, that these costs are for the disposal portion only of the solid waste system. Collection costs for 2021 amounted to an additional $1,214,706.19. When the disposal and collection parts are combined, the equivalent cost per ton is $100.12 or *$25.12 more than the $75.00 per ton tipping fee.*

RECYCLING EFFORTS

BATTERIES

Beginning in 1989, the County began recycling efforts with removal of batteries from the waste stream. Batteries are collected at the landfill entrance for disposal to a recycler. No fee is assessed for batteries left at the landfill.

TIRES

Tires are also separated at the transfer station but are subject to a fee. Fees are based on tire size.

GLASS

With the establishment of the waste collection centers and their associated recycling component, the former glass recycling sites, first opened in 1989, have been dismantled. Glass is now collected along with other recyclable materials through the County's single-stream recycling program by Tidewater Fibre Corporation. Part of the newly-implemented "processing fee" charged by Tidewater Fibre (and referenced earlier in this report) is to cover the associated costs of glass recycling. Accomack County, our partner in the joint recycling contract, has made the decision to eliminate glass from its recycling waste stream and therefore pays a lesser "processing fee".

USED OIL

In December 1989, oil recycling efforts began with the installation of tanks for this purpose at the sanitary landfill. The recycling center accepts petroleum products such as used motor oil and hydraulic and brake fluids.

Items that can not be accepted include gasoline, transformer oil, paint and paint thinners, and solvents.

No fee is charged for deposit of acceptable petroleum products.

During 2021, approximately 4,091 gallons of used oil (approximately 14.40 tons) was removed by a private recycler. This includes quantities deposited at the County's sanitary landfill and its six waste collection centers.

WHITE GOODS

The term "white goods" refers to home appliances such as refrigerators, stoves, air conditioners and water heaters. In practice, the term also includes scrap metal. While initially handled through a multi-year contract with a third-party scrap metal vendor and the County of Accomack, scrap metal is now removed as necessary with each County seeking market quotations at the time of disposal.

For the first time in several years, a total of 1,303,270 pounds (651.63 tons) of scrap metal was sold during 2018, netting the County $84,712.55 in unanticipated revenue. No scrap metal was sold during 2019. In the 2020-2021 period, a total of 90,580 pounds (45.29 tons) of scrap metal was removed from the landfill in December 2020. Completion of the job did not occur until March 2021 and during the January – March time frame, another 1,528,080 pounds (764.04 tons) of scrap metal were sold. Revenues resulting from this sale amounted to $80,933.00.

PESTICIDE CONTAINERS

The Virginia Department of Agriculture & Consumer Services is utilizing a new contractor and did not come to the Eastern Shore during 2021 for recycling of pesticide containers. It is hoped that the Eastern Shore will be serviced before the growing season starts.

TEXTILE RECYCLING

A new initiative was started by the County in late June 2014 involving textile recycling through the Special Olympics organization. Donations every other week were received, resulting in 155,060 pounds (77.53 tons) in 2021, an increase over 2020 of almost 18 tons.

COMMUNITY DEVELOPMENT

Since the opening of the Northampton County Sanitary Landfill, the governing body has demonstrated a very generous nature in allowing free solid waste disposal for community development projects. While the Northampton Alliance Against Trash (N.A.A.T.) ceased its regular monthly clean-ups in the Spring of 2009, it remains available on an as-needed basis and during 2013, collected 1,160 pounds (and 18 tires) in a clean-up event in the Nassawadox area. No events have been held since then.

The Nature Conservancy has received waivers from the governing body for the last four years in order to conduct clean-up activities in Oyster Harbor. In 2016, a total of 2,880 pounds was cleaned up from the surrounding area. Debris from the 2017 event was carried to a nearby waste collection site. For 2018, 1,880 pounds and 2 tires were cleaned up from the Oyster Harbor area, representing $68.86 in waived tipping fees. While the Nature Conservancy received a fee waiver from the Board of Supervisors for a June 1, 2019 Oyster Harbor Cleanup, no waste was delivered to the landfill. With the coronavirus pandemic, no cleanups of the Harbor were scheduled during 2020. During the June 5, 2021, Oyster Harbor Cleanup event, a total of 1,100 pounds of solid waste was

brought to the landfill for disposal.

While obviously a loss in revenue, these beautification efforts are seen to far outweigh any monetary loss, providing both a cleaner, healthier county and a spirit of teamwork and community pride.

With the elimination of the County's full-time Code Compliance officer position effective July 1, 2015, the use of Northampton County probationers assigned by the County's Court Systems to provide litter pick-up, ceased. However, through the efforts of the County's Planning, Permitting & Enforcement Office, a dangerous structure on Sylvan Scene was demolished in 2018, resulting in 768,620 pounds (384.31 tons) of debris being delivered to the landfill at a resulting cost of $26,517.39, which cost has been added as a lien on the property owner. Twelve structures were demolished in 2019 either through outside contractors or through the use of the County's Facilities Management Department, which resulted in 1,181,100 (590.55 tons) of debris being brought to the landfill. For 2020, several dangerous structures were slated for demolition; however, only three resulted in debris deposition to the landfill. (The others were burned on site or demolished by the owners who took the debris to the landfill themselves). Specifics on the three structures noted above are as shown below:

2/27/2020	Indian Walk Lane	80,540 lbs.
7/28/2020	15463 James Circle	14,400
8/27/2020	29465 Seaside Road	37,140 lbs.
TOTAL WGT REC'D		132,080 lbs. (66.04 tons)

For 2021, demolitions of dangerous structures were conducted as follows:

Address	**Debris Delivered**	**Equates in Tipping Fees**
5565 James Circle	62,080 pounds (31.04 tons)	$2,234.88
21005 Cheriton Cross Road	37,200 pounds (18.60 tons)	$1,395.00
Stumptown Drive (no #)	51,960 pounds (25.98tons)	$1,948.50
6279 Occohannock Neck Road	5,600 pounds (2.80 tons)	$210.00
4476 KMC Lane	50,420 pounds (25.21 tons)	$1,890.75
4476 KMC Lane #2	84,600 pounds (42.30 tons)	$3,172.50

Respectfully submitted,

Janice K. Williams

January 18, 2022

APPENDIX 13

BUDGET SUMMARIES – FY 2018 TO FY 2022

TABLE 13-1
NORTHAMPTON COUNTY SOLID WASTE PROGRAM
BUDGET BY CATEGORIES
FY 2018 THROUGH FY 2022

ITEM	FY 2018 Actual	FY 2019 Actual	FY 2020 Actual	FY 2021 Actual	2022 BOS approved
Personnel	$421,002	$434,465	$454,961	$475,646	$507,543
OPERATIONS					
Professional Services	$53,550	$7,800	$7,745	$7,913	$7,990
Repairs	$81,502	$83,834	$150,042	$66,225	$69,351
Contracted Services (Collection)	$240,496	$267,840	$319,188	$336,381	$325,376
Recycling Services	$35,666	$56,332	$57,241	$52,390	$59,613
Waste Hauling Services	$407,625	$411,495	$441,552	$465,251	$486,434
Waste Disposal Services (tipping fees)	$302,903	$316,064	$345,911	$290,810	$299,546
Other services	$99,894	$168,465	$508,995.59	$214,056	$328,241
SUBTOTAL	$1,221,635	$1,311,829	$1,830,674	$1,433,026	$1,576,551
TOTAL	**$1,642,636**	**$1,746,295**	**$2,285,634**	**$1,908,672**	**$2,084,095**
Population (CY)	11,862 Weldon Cooper	11,810 Weldon Cooper	12,282 Weldon Cooper	12,222 Weldon Cooper	12,197 Weldon Cooper (est)
COST PER PERSON PER YEAR	**$138.48**	**$147.87**	**$186.10**	**$156.17**	**$170.87**
Tonnage transferred through station (SWIA)	16,783	17,326	16,549	18,078	NA
COST PER TON (TOTAL)	**$97.87**	**$100.79**	**$138.11**	**$105.58**	