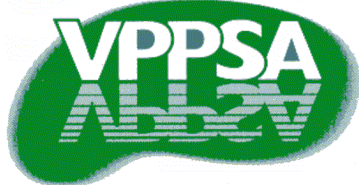


**Prepared for:**

Virginia Peninsulas Public Service Authority  
475 McLaws Circle  
Suite 3B  
Williamsburg, VA 23185



**Submitted by:**

LaBella Associates  
1604 Ownby Ln.  
Richmond, VA 23220  
(804) 355-4520



Solid Waste Management Plan  
Virginia Peninsulas Public Service Authority,  
an Approved Solid Waste Management Region

**JULY 1997**

**REVISION DATE FEBRUARY 2021**

**PROJECT NO. 2203083/PHASE 01**

**Virginia Peninsulas Public Service Authority  
Solid Waste Management Plan**

**TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	SUMMARY .....	1
1.2	PLAN GOALS .....	2
1.3	SWMP COVERAGE AREA .....	2
1.4	GENERAL LOCATION INFORMATION .....	2
1.4.1	ESSEX COUNTY .....	2
1.4.2	JAMES CITY COUNTY .....	3
1.4.3	KING AND QUEEN COUNTY .....	3
1.4.4	KING WILLIAM COUNTY .....	3
1.4.5	MATHEWS COUNTY .....	3
1.4.6	MIDDLESEX COUNTY .....	3
1.4.7	YORK COUNTY .....	4
1.4.8	CITY OF HAMPTON .....	4
1.4.9	CITY OF POQUOSON .....	4
1.4.10	CITY OF WILLIAMSBURG .....	4
<b>2.0</b>	<b>PROJECTIONS AND WASTE QUANTITIES .....</b>	<b>4</b>
2.1	POPULATION DATA AND PROJECTIONS .....	4
2.2	SOLID WASTE COMPOSITION .....	5
2.2.1	SOLID WASTE CATEGORIES .....	5
2.2.2	SOLID WASTE GENERATED IN THE VPPSA REGION .....	6
2.3	SOLID WASTE GENERATION PROJECTIONS .....	8
<b>3.0</b>	<b>SOLID WASTE MANAGEMENT SYSTEM .....</b>	<b>8</b>
3.1	COLLECTION .....	8
3.1.1	RESIDENTIAL WASTE .....	8
3.1.2	COMMERCIAL INSTITUTIONS AND INDUSTRIES .....	11
3.1.3	HOUSEHOLD CHEMICAL COLLECTION .....	13
3.2	DISPOSAL .....	13
3.2.1	MUNICIPAL SOLID WASTE .....	13
3.2.2	CONSTRUCTION DEMOLITION DEBRIS .....	15
3.2.3	INDUSTRIAL WASTE .....	16
3.3	RECYCLING .....	17
3.3.1	ESSEX COUNTY .....	17
3.3.2	JAMES CITY COUNTY .....	18
3.3.3	KING AND QUEEN COUNTY .....	18
3.3.4	KING WILLIAM COUNTY .....	18
3.3.5	MATHEWS COUNTY .....	18
3.3.6	MIDDLESEX COUNTY .....	19

**Virginia Peninsulas Public Service Authority  
Solid Waste Management Plan**

**TABLE OF CONTENTS (Continued)**

3.3.7	YORK COUNTY.....	19
3.3.8	CITY OF HAMPTON.....	19
3.3.9	CITY OF POQUOSON .....	20
3.3.10	CITY OF WILLIAMSBURG .....	20
3.4	YARD WASTE COMPOSTING .....	20
3.5	PUBLIC EDUCATION .....	20
3.6	PUBLIC/PRIVATE PARTNERSHIPS.....	21
<b>4.0</b>	<b>SOLID WASTE HIERARCHY.....</b>	<b>21</b>
4.1	SOURCE REDUCTION .....	22
4.2	REUSE.....	22
4.3	RECYCLING.....	22
4.4	RESOURCE RECOVERY .....	23
4.4.1	MASS BURN INCINERATOR .....	23
4.4.2	COGENERATION.....	23
4.4.3	REFUSE DERIVED FUEL (RDF) SYSTEMS.....	23
4.4.4	ANAEROBIC DIGESTION .....	23
4.4.5	ELECTRICITY PURCHASE AGREEMENTS.....	24
4.5	INCINERATION .....	24
4.6	LANDFILL .....	24
<b>5.0</b>	<b>OBJECTIVES .....</b>	<b>25</b>
<b>6.0</b>	<b>PLAN IMPLEMENTATION .....</b>	<b>25</b>
6.1	SOURCE REDUCTION AND REUSE .....	25
6.2	COLLECTION .....	26
6.3	DISPOSAL .....	26
6.4	RECYCLING.....	27
6.5	HIERARCHY IMPLEMENTATION.....	27
<b>7.0</b>	<b>FUNDING AND CONSTRUCTION SCHEDULES.....</b>	<b>28</b>
7.1	FUNDING .....	28
7.2	CONSTRUCTION SCHEDULES.....	29
<b>8.0</b>	<b>PUBLIC PARTICIPATION.....</b>	<b>29</b>
8.1	CITIZEN ADVISORY COMMITTEE .....	29
8.2	PUBLIC HEARINGS .....	30
8.3	RESOLUTIONS .....	30
<b>9.0</b>	<b>SUMMARY .....</b>	<b>30</b>

Virginia Peninsulas Public Service Authority  
Solid Waste Management Plan

TABLE OF CONTENTS (Continued)

APPENDICES

Appendix I .....	Map of VPPSA Region
Appendix II .....	Population Projections
Appendix III .....	VPPSA Region Annual Waste Summary Reports
Appendix IV .....	VPPSA Region Solid Waste Projections
Appendix V .....	VPPSA Region Solid Waste Facilities
Appendix VI .....	VPPSA Region Solid Waste Facilities Map
Appendix VII .....	Summary of Solid Waste Management Services by Jurisdiction
Appendix VIII .....	Recycling Rate Estimate
Appendix IX .....	Public Hearing Notices
Appendix X .....	VPPSA Board Resolution

## 1.0 INTRODUCTION

### 1.1 SUMMARY

The purpose of this revised Solid Waste Management Plan (SWMP) is to meet the requirements of 9VAC20-130-10 *et seq.*, which are the Regulations for Solid Waste Management Planning, Amendment 1, effective August 1, 2001. The SWMP outlines the long-term goals and objectives established by the Virginia Peninsulas Public Service Authority (VPPSA), a regional consortium that includes the following ten (10) member jurisdictions: the Counties of Essex, James City, King and Queen, King William, Mathews, Middlesex, and York; and, the Cities of Hampton, Poquoson, and Williamsburg; collectively these jurisdictions are referred to as the “Region”.

A map of the Region is provided below as **Figure 1**. A larger map, Drawing No. 1, of the VPPSA Regional Area is provided in **Appendix I**.

*Figure 1: VPPSA Region Map*



VPPSA provides a variety of services to the member jurisdictions, including the following: curbside recycling, drop-off recycling collection, a solid waste management system for the Middle Peninsula, convenience center operation, landfill monitoring, waste disposal services, tire recycling, scrap metal and white goods recycling, oil and antifreeze recycling, battery recycling, household chemical collection, computer recycling, and operation of a compost facility. All of the member jurisdictions participate in at least one of the services provided by VPPSA, as described in Section 3.0.

## 1.2 PLAN GOALS

The goals of this SWMP include coordinating the solid waste management and planning efforts of VPPSA's ten member jurisdictions. The SWMP describes objectives for solid waste management that include, at a minimum, all of the components of the following hierarchy, as required by 9VAC20-130-30: source reduction, reuse, recycling, resource recovery (e.g. waste-to-energy), and landfilling. In addition, the SWMP demonstrates how the objectives will be met for the jurisdictions within the Region and includes a schedule for the implementation of the objectives, as applicable.

## 1.3 SWMP COVERAGE AREA

The coverage area for this SWMP is the VPPSA Region, which includes the following 10 member jurisdictions: the Counties of Essex, James City, King and Queen, King William, Mathews, Middlesex, and York; and, the Cities of Hampton, Poquoson, and Williamsburg. Planning for the Counties of Essex, King and Queen, King William, Mathews, and Middlesex is coordinated by the Middle Peninsula Planning District Commission (PDC). Planning for the Counties of James City and York, and the Cities of Hampton, Poquoson, and Williamsburg (collectively referred to as the Lower Peninsula) is coordinated by the Hampton Roads PDC. All of the jurisdictions also have their own planning departments that prepare independent Comprehensive Plans, concentrating on existing and future land uses throughout the jurisdiction.

## 1.4 GENERAL LOCATION INFORMATION

General information including size, location, and land use for each of the ten member jurisdictions is provided below.

### 1.4.1 ESSEX COUNTY

Essex County is the northern-most County in the VPPSA Region and is approximately 290 square miles in size. Essex County is bordered by the Rappahannock River to the east, King George and Caroline Counties to the north, Caroline and King and Queen Counties to the west, and Middlesex County to the south. Primary travel throughout the County is provided by U.S. Routes 17 and 360. The only incorporated town within the County is the Town of Tappahannock, which is the County seat. Existing land uses throughout the County consists primarily of rural, open space, small village communities, and limited rural development.

#### 1.4.2 JAMES CITY COUNTY

James City County is the northwestern-most County on the Lower Peninsula of the VPPSA Region with a total land area of approximately 144 square miles. James City County is bordered by the York River to the east, New Kent County to the north, Charles City County and the James River to the west, and the City of Williamsburg and York County to the south. The County seat is Williamsburg. Planning throughout the County is provided by the Community Development Department and the Hampton Roads Planning District Commission (PDC). Interstate 64 crosses the eastern portion of the County; other primary roads include U.S. Route 60 and State Routes 30 and 5.

#### 1.4.3 KING AND QUEEN COUNTY

King and Queen County is the central-most county on the Middle Peninsula and is approximately 330 square miles in size. King and Queen County is bordered by Essex and Middlesex Counties to the east, Caroline County to the north, King William and the York River to the west, and Gloucester County to the south. The County seat is King and Queen Court House. Primary travel corridors in the County include U.S. Route 360 and State Routes 14 and 33.

#### 1.4.4 KING WILLIAM COUNTY

King William County is the western-most county on the Middle Peninsula and is approximately 290 square miles in size. The County is bordered by King and Queen County on the east, Caroline County to the north, Hanover and New Kent Counties to the west, and the York River to the south. The County seat is the King William Court House, located in the center of the County. The Town of West Point is the only incorporated town in the County. Primary roads in the County include U.S. Route 360 and State Routes 30 and 33.

#### 1.4.5 MATHEWS COUNTY

Mathews County is the eastern-most county on the Middle Peninsula of the VPPSA Region and is approximately 250 square miles in size. Mathews County is bordered by the Chesapeake Bay to the east, Middlesex County to the north, Gloucester County to the west, and Mobjack Bay to the south. The County seat is the Mathews Court House, located in the center of the County. Primary travel corridors in the County include State Routes 3, 14, and 198. Existing land uses throughout the County include the Mathews Village Center, small crossroads communities, waterfront communities, shoreline management areas, and limited rural development.

#### 1.4.6 MIDDLESEX COUNTY

Middlesex County is approximately 210 square miles in size and is bordered by the Rappahannock River on the east, Essex County to the north, King and Queen and Gloucester Counties to the west, and Mathews County to the south. The only incorporated town in the County is the Town of Urbanna, located in the center of the County on the Rappahannock River. Primary corridors through the County include U.S. Route 17 and State Routes 33 and 3. Existing land uses include rural, open space, rural communities, residential communities, commercial,

waterfront recreational areas, and marinas. Rural, open space comprises approximately 90% of the County.

#### 1.4.7 YORK COUNTY

York County, located on the Lower Peninsula, is approximately 115 square miles in size, and is bordered by the York River on the east, James City County to the north and west, the Cities of Williamsburg and Newport News to the west, and the City of Hampton to the south. Population centers include Camp Peary, the Naval Weapons Station, and the historical area of Yorktown, which is also the County seat. Interstate 64 traverses the County; other transportation routes include U.S. Routes 60 and 17. Approximately 87% of the County is developed with residential communities, businesses, industries, conservation areas, or military reservation areas. Of this, residential communities and military areas encompass 29% and 27%, respectively.

#### 1.4.8 CITY OF HAMPTON

The City of Hampton is the southern-most jurisdiction of the VPPSA Region and is approximately 135 square miles in size. The City of Hampton is bordered by the Chesapeake Bay on the east and south, York County and the City of Newport News to the west, and the City of Poquoson and Back River to the north. Langley Air Force Base is located in the northeastern corner of the City. Interstate 64 bisects the City and provides the primary route of travel throughout the City. Other transportation routes include Interstate 664 and State Routes 134, 172, and 152.

#### 1.4.9 CITY OF POQUOSON

The independent City of Poquoson is approximately 80 square miles in size and is bordered by the Chesapeake Bay on the east, York County to the north and west, and the Back River to the South. The two primary routes of travel through the City are State Routes 171 and 172.

#### 1.4.10 CITY OF WILLIAMSBURG

The City of Williamsburg is approximately 9 square miles in size and is bordered by James City County to the west and south, and York County to the north and east. U.S. Route 60 traverses the City, and State Routes 199 and 132 provide access to the historic portions of the City. Other transportation corridors include State Routes 5 and 143.

## 2.0 PROJECTIONS AND WASTE QUANTITIES

### 2.1 POPULATION DATA AND PROJECTIONS

Population data and projections for each member jurisdiction were obtained from the University of Virginia Weldon Cooper Center for Public Service. Population data and projections for the VPPSA Region member jurisdictions over the 20-year study period are tabulated in [Appendix II](#).



## 2.2 SOLID WASTE COMPOSITION

### 2.2.1 SOLID WASTE CATEGORIES

Solid waste is composed of categories of waste that are defined in the Virginia Solid Waste Management Regulations (9 VAC 20-81-95), which incorporates the Federal definition of waste found in 40 CFR 261.2(a) by reference. These general categories are utilized in required reporting to the Virginia Department of Environmental Quality (DEQ), and consist of the following.

1. Municipal Solid Waste (MSW): MSW is comprised of wastes generated daily by residential, institutional, or commercial sources. Examples of MSW include household garbage, food waste, inorganic wastes, container packaging, durable and non-durable goods and agricultural wastes.
2. Construction and Demolition Debris (CDD): CDD wastes are generated from the renovation, demolition or construction of homes, buildings or development activity. Examples of CDD wastes include concrete, lumber, steel, wire, sheetrock/drywall, bricks, shingles, plaster, glass, metal and plastic construction materials.
3. Industrial Waste: Industrial wastes are generated by industrial activities that are defined as non-hazardous. Industrial wastes are byproducts of electrical generation activities, inorganic and organic chemical manufacturing, paper and pulp processing, plastics and resin manufacturing, textile manufacturing, and many other industries.
4. Vegetative Waste (VW): VW includes yard waste generated by lawn or yard care activities and debris generated from land clearing activities or operations. Examples of VW include decomposable materials such as leaves, grass trimmings, brush, wood chips, tree/shrub trimmings, stumps, logs and tree trunks.
5. Consumer-Separated Recyclables: Consumer-separated recyclables are those materials separated and transported to recycling collection centers. Examples include glass jars and bottles, plastic bottles, aluminum and steel food cans, newspapers, magazines, phone books, mixed office paper, cardboard, paperboard and appliances.
6. Waste Dirt: Waste dirt is primarily generated by land clearing and development activities. The quantity of waste dirt managed varies significantly between the different VPPSA jurisdictions.
7. Special Wastes: Special wastes are those wastes that require special handling and precautions prior to disposal or recycling, and that may be included in the above waste types. Examples of special wastes include waste lumber, petroleum contaminated soils, oil filters, wet cell batteries, refrigerated appliances, asbestos, sludge, waste oil, antifreeze, electronic devices, and waste tires.

## 2.2.2 SOLID WASTE GENERATED IN THE VPPSA REGION

Solid waste managed in the VPPSA Region is reported annually to DEQ on Form 25-30, Locality Recycling Rate Report. Reports are provided for calendar years 2004 through 2019, inclusive; **Appendix III**.

Generally, waste generated and handled in the VPPSA Region consists of municipal solid waste (MSW), construction and demolition debris (CDD), industrial waste, vegetative waste, and recyclables. The quantities of each category of waste are estimated for the VPPSA region using percentages presented in Table 19 of the DEQ report titled “2020 Annual Solid Waste Report for CY2019”, (DEQ, 2020)<sup>1</sup>. However, since some quantities are small or are not managed within the VPPSA region, some categories are combined into the “Other” category. The percentages are used to calculate a general estimate of total waste quantities, and are for planning purposes only. They do not account for circumstances in member jurisdictions that may result in localized variations in waste quantities. Percentages used in calculations are presented for the DEQ report (DEQ, 2020) and as adjusted for the VPPSA Region; Table 4.1, **Appendix IV**

### 2.2.2.1 *Municipal Solid Waste*

The fraction of total solid waste comprised of municipal solid waste (MSW) is estimated using the percentage from the DEQ report (DEQ, 2020). Historically, based on data recorded by VPPSA for the waste collected in the participating member communities on the Middle Peninsula, residential waste represents approximately 70 percent of the MSW collected and disposed in the Region. The remaining 30 percent of MSW collected and disposed in the Region is generated by local businesses and institutions located throughout the Region and constitutes the commercial fraction of collected MSW.

### 2.2.2.2 *Construction and Demolition Debris*

The fraction of total solid waste comprised of construction and demolition debris (CDD) waste is estimated using the percentage from the DEQ report (DEQ, 2020). The estimated quantity represents the amount of CDD waste generated by residents and small businesses that is not collected separately in the Region or segregated from MSW.

The majority of CDD waste generated in the Region is hauled directly to the two sanitary landfills for disposal or recycled. In addition, there is a CDD processing facility that is permitted to accept CDD materials from private contractors for processing, recycling, and/or disposal; however, the quantities accepted at this facility are very small when evaluated on a regional basis.

It is anticipated that the total quantity of CDD managed in the Region will vary over the 20-year study period, based on market conditions each year. However, for the purpose of these

---

<sup>1</sup> Virginia Department of Environmental Quality; “2020 Annual Solid Waste Report for CY2019, Commonwealth of Virginia”; dated June 2020.

projections, it is assumed that the overall average will not change significantly since the majority of this CDD material is generated by businesses and industries.

#### **2.2.2.3 Industrial Waste**

The fraction of total solid waste comprised of non-hazardous industrial waste is estimated using the percentage from the DEQ report (DEQ, 2020). The estimated quantity represents the amount of industrial waste generated by small businesses and industries that is not collected separately in the Region or segregated from MSW.

The non-hazardous industrial waste generated by most industries within the VPPSA Region is collected by private contractors and hauled to a sanitary landfill located within the Region or just outside of the Region. As a result, the majority of the industrial waste that will be generated within the Region is not included in the MSW projections.

In addition, there are currently two active captive industrial waste facilities in the Region, one in the Town of West Point and one in York County. Captive industrial landfills are permitted to dispose only industrial waste generated by their plant's operations. Thus, they are not permitted to dispose industrial waste generated by other facilities, and are not included in waste generation projections.

#### **2.2.2.4 Vegetative Waste**

The fraction of total solid waste comprised of vegetative waste is estimated using the percentage from the DEQ report (DEQ, 2020). The estimated quantity represents the amount of vegetative waste generated by residents and small businesses that is not collected separately in the Region or segregated from MSW.

Much of the vegetative waste collected separately from MSW in the Lower Peninsula is taken to the VPPSA Yard Waste Compost Facility, located in York County.

#### **2.2.2.5 Other**

The fraction of total solid waste comprised of waste not included in the previous categories is collectively considered to be "other" waste, and is estimated using relative percentages from the DEQ report (DEQ, 2020). For the purpose of this study, this waste category includes those wastes classified as "other" by DEQ, as well as incineration ash, petroleum contaminated soil, sludge, tires, white goods, friable asbestos, and regulated medical waste.

VPPSA provides household chemical (HHC) collections to residents. Since the actual quantities of HHC are very small in comparison to total waste generated, the projections of HHC are included as a component of "other" wastes.

#### **2.2.2.6 Recyclables**

The fraction of total solid waste comprised of recyclable materials is estimated using data from the Locality Recycling Rate Report, form DEQ-50-30, submitted annually by the VPPSA

Region to Virginia DEQ. Recyclables are materials identified as Principal Recyclable Materials (PRM) as defined in 9 VAC 20-130-10, including: paper, metal, plastic, glass, yard waste, wood, textiles, tires, used oil, used oil filters, used antifreeze, batteries, and electronics.

A significant portion of the materials recycled in the Region are generated and recycled separately from MSW by commercial businesses and industries. Based on historic information received by VPPSA, approximately 70 percent of the recyclable materials collected in the Region originates from commercial and industrial programs. These quantities vary significantly with location and industry, and so are not included in total waste generation quantities as there is no way to accurately relate them to a *per capita* solid waste generation rate.

For the purposes of this study, it is assumed that each jurisdiction will continue to provide recycling services to their citizens, and that overall operations of businesses and industries in the Region will not change significantly over the 20-year study period.

## 2.3 SOLID WASTE GENERATION PROJECTIONS

Currently, solid waste is collected either directly from residences, businesses, and industries through municipal curbside collection or private contractors, or is disposed at convenience centers provided throughout many of the jurisdictions. The DEQ calculates and publishes estimates of *per capita* MSW generation for the State of Virginia. The VPPSA Region annually reports solid waste and recycling quantities to DEQ on the Locality Recycling Rate Report, DEQ Form 50-30.

Projections of future solid waste generation in the VPPSA region is estimated by determining the per capita waste generation rate for each member jurisdiction and applying that rate to projections of future population for that jurisdiction. Results for each member jurisdiction in total tons of solid waste are presented in Table 4.2, [Appendix IV](#).

Projections of future solid waste generation in the VPPSA region according to category of waste is estimated by using the total tons of waste generated by each member jurisdiction and applying the composition percentages from Section 2.2.2. Results for each member jurisdiction in total tons of each category of solid waste are presented in Table 4.3, [Appendix IV](#).

## 3.0 SOLID WASTE MANAGEMENT SYSTEM

A list of VPPSA region solid waste management facilities is provided in [Appendix V](#). A map of Active Solid Waste Facilities in the VPPSA Region is provided in [Appendix VI](#). In addition, a summary of the solid waste services provided by each jurisdiction is provided in [Appendix VII](#).

### 3.1 COLLECTION

#### 3.1.1 RESIDENTIAL WASTE

Residential waste collection throughout the VPPSA Region is provided by individual jurisdictions, which provide services through VPPSA, County, and/or City haulers, contracts with private

haulers, or drop-off facilities located throughout the jurisdiction. A breakdown of the residential waste collection by jurisdiction is provided below.

#### *3.1.1.1 Essex County*

Essex County does not offer curbside solid waste collection. Generally, County residents utilize the four convenience centers operated by VPPSA, which accept residential and limited commercial waste.

The Town of Tappahannock provides curbside residential waste collection once per week to town residents. Town personnel are utilized to provide the collection services; however, residents must provide their own waste containers.

#### *3.1.1.2 James City County*

James City County does not provide curbside residential waste collection. Some of the homeowner associations located throughout the County have contracted with private haulers to provide curbside collection services to members of the association. The majority of the County residents individually subscribe directly with a private hauler for curbside waste collection services.

The County operates three convenience centers for residents to drop-off waste. Residents must either purchase coupons from the County and present them at the convenience site when delivering residential waste or pay at the convenience site using a credit or debit card. Bulky waste, such as furniture, is accepted at the Jolly Pond Convenience Center located at 1204 Jolly Pond Road. The County provides limited leaf collection in the fall through a private contractor and allows residents to drop off bagged leaves at the Jolly Pond Convenience Center during certain times of the year free of charge.

The County owns and leases to a private contractor a transfer station facility at the closed landfill, where residential, commercial, and industrial waste is accepted. Currently, the transfer station is operated and maintained by Waste Management, Inc.

#### *3.1.1.3 King and Queen County*

King and Queen County does not provide curbside residential waste collection. Residents throughout the County may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates four convenience center sites throughout the County, which only accept residential and limited commercial waste.

#### *3.1.1.4 King William County*

King William County does not provide curbside residential waste collection. Residents throughout the County may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates four convenience center sites throughout the County, which only accept residential and limited commercial waste.

The Town of West Point provides weekly curbside residential waste collection and monthly bulk item collection to town residents. Town personnel are utilized to provide the collection services, and residents are provided with a 90-gallon roll-out container.

#### *3.1.1.5 Mathews County*

Mathews County does not provide curbside residential waste collection. Residents throughout the County may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates one convenience center that accepts residential waste and limited commercial waste.

#### *3.1.1.6 Middlesex County*

Middlesex County does not provide curbside residential waste collection. Residents throughout the County may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates four convenience center sites throughout the County, which only accept residential and limited commercial waste.

The Town of Urbanna provides curbside residential waste collection twice per week to town residents. A private hauler is contracted to provide the collection services, and residents must provide their own containers.

#### *3.1.1.7 York County*

York County provides curbside collection of residential waste to residents within the County once per week, using a private contractor. Residents are provided with a 96-gallon container. Currently, approximately 95 percent of the residents in the County are using this service. The remaining five percent of the residents within the County may subscribe directly with private waste collection haulers for curbside residential waste collection or may dispose of their waste at the transfer station.

Bulky items are collected by a contracted private hauler. Leaf collection is provided by the County every other week from November through January using clear bags. Residents may also schedule special yard debris collection with the County throughout the year at a nominal cost. The transfer station is located at the closed York County Sanitary Landfill and accepts residential, commercial, and industrial waste. A private company provides Transfer Station operations and maintenance, including scales and drop off services for garbage through a lease agreement.

#### 3.1.1.8 *City of Hampton*

The City of Hampton provides City residents with curbside residential waste collection once per week. City personnel are utilized to provide the collection services and residents are provided with a 90-gallon container. The City provides separate collections for bagged yard waste, small limbs and brush, tires (maximum of five per week), and bulky waste. Residents and contractors may also choose to take their trash and large limbs to the Bethel Landfill, located in the City off Interstate 64.

#### 3.1.1.9 *City of Poquoson*

The City of Poquoson provides curbside residential waste collection once per week to City residents, using a private contractor. Residents are issued a 35 or 65-gallon container and may purchase green plastic bags, bearing the City seal, for waste that will not fit into trash containers. The City also provides bulky waste collection and landscape debris collection to residents, by appointment only. Bagged leaves are collected by City personnel every other Monday, November through February.

#### 3.1.1.10 *City of Williamsburg*

The City of Williamsburg provides curbside collection to residents within the City once per week, using a private contractor. Residents are provided with a 35 or 65-gallon container. Recycling is collected every other week. In addition, the private contractor currently provides yard waste collection. The City, utilizing City personnel, provides leaf collection in the fall and bulky items may be collected curbside, by appointment only.

Residents may use the convenience center in James City County, located at 1204 Jolly Pond Road, to dispose of household items not eligible for pickup by the bulky item collection program; however, residents must purchase coupons through the City or James City County or credit/debit cards are accepted for disposal of waste at the convenience center.

### 3.1.2 COMMERCIAL INSTITUTIONS AND INDUSTRIES

Commercial and industrial wastes are primarily collected through private haulers and delivered to the landfill for disposal.

#### 3.1.2.1 *Essex County*

The Town of Tappahannock provides the collection of commercial waste to most of the commercial institutions and businesses located within the town. These services are provided using Town personnel. Essex County does not provide commercial or industrial waste collection. Outside of the Town, commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.2 *James City County*

James City County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.3 *King and Queen County*

King and Queen County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.4 *King William County*

King William does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.5 *Mathews County*

Mathews County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.6 *Middlesex County*

Middlesex County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.7 *York County*

York County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.8 *City of Hampton*

The City of Hampton does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.9 *City of Poquoson*

The City of Poquoson does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### 3.1.2.10 *City of Williamsburg*

The City of Williamsburg does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.



### 3.1.3 HOUSEHOLD CHEMICAL COLLECTION

VPPSA provides household chemical collection events open to residents of all 10 cities and counties in the region. Residents can deliver household chemicals during scheduled events, where they are consolidated by a private contractor. VPPSA-utilizes a private contractor for the removal of chemicals from the drop-off sites and proper disposal. Collection events are held every other month from February through November in York County, James City County, and the City of Hampton. One event is held in October in the City of Poquoson. Two events, one in April and one in August, are held on the Middle Peninsula.

## 3.2 DISPOSAL

There are currently four landfills, seven transfer stations, and one incineration/energy recovery facility that serve the MSW disposal needs of the VPPSA Region. A map of Active Solid Waste Facilities in the VPPSA Region is provided in Appendix VI.

### 3.2.1 MUNICIPAL SOLID WASTE

There are two privately owned active MSW landfills located within the VPPSA Region that are currently serving the disposal needs of the Region. These facilities are the Bethel Landfill in the City of Hampton and the King and Queen Landfill in King and Queen County; both facilities are currently operated by private contractors.

In addition, there are two privately owned MSW facilities located outside of the Region that serve the disposal needs of the Region. These facilities are the Middle Peninsula Landfill and Recycling Facility (MPLRF) in Gloucester County and the Charles City County Landfill in Charles City County; both facilities are currently operated by private contractors.

The primary disposal facilities that serve each of the member jurisdictions are summarized in the sections below.

#### 3.2.1.1 *Essex County*

VPPSA collects the residential waste delivered to the convenience centers and hauls it to the King and Queen Landfill and the MPLRF. Commercial wastes are generally hauled to the King and Queen Landfill and the MPLRF.

#### 3.2.1.2 *James City County*

Residential and commercial waste from James City County is typically handled in the following four ways: (1) delivered to the James City County Transfer Station and hauled to the Bethel Landfill, (2) directly hauled to the Bethel Landfill, (3) delivered to the York County Transfer Station and hauled to the King and Queen Landfill, and (4) hauled directly to the Charles City County Landfill.

#### 3.2.1.3 *King and Queen County*

Residential waste delivered to the convenience centers and collected by the private contractor is hauled primarily to the King and Queen Landfill. Commercial wastes are hauled to the King and Queen Landfill.

#### 3.2.1.4 *King William County*

VPPSA collects the residential waste delivered to the convenience centers and hauls it to the King and Queen Landfill and the MPLRF. Commercial wastes are generally hauled to the King and Queen Landfill and the MPLRF.

#### 3.2.1.5 *Mathews County*

Residential waste delivered to the convenience center and collected by private contractor is hauled primarily to the King and Queen Landfill and the MPLRF. Commercial wastes are generally hauled to the King and Queen Landfill and the MPLRF.

#### 3.2.1.6 *Middlesex County*

VPPSA collects the residential waste delivered to the convenience centers and hauls it to the King and Queen Landfill and the MPLRF. Commercial wastes are generally hauled to the King and Queen Landfill and the MPLRF.

#### 3.2.1.7 *York County*

Residential and commercial waste are delivered to the York County Transfer Station and hauled to the King and Queen Landfill. Commercial wastes are generally hauled to the Bethel Landfill and the MPLRF.

#### 3.2.1.8 *City of Hampton*

Residential waste is hauled to the Hampton Steam Plant or the Bethel Landfill for disposal. Commercial wastes are hauled to the Bethel Landfill, the Hampton Steam Plant, or the York County Transfer Station.

#### 3.2.1.9 *City of Poquoson*

Residential waste is typically hauled to the Hampton Steam Plant, and the residuals are hauled and disposed of at the Bethel Landfill. Commercial wastes are delivered to the York County Transfer Station and hauled to the King and Queen Landfill, or hauled directly to the Bethel Landfill.

#### 3.2.1.10 *City of Williamsburg*

Residential waste is typically hauled to the Bethel Landfill for disposal. Commercial wastes are delivered to the York County Transfer Station and hauled to the King and Queen Landfill or hauled direct to the Bethel Landfill.

### 3.2.2 CONSTRUCTION DEMOLITION DEBRIS

There are no active construction demolition debris (CDD) landfills located within the VPPSA Region currently in operation. There is one CDD recycling processor operating in York County (S.B. Cox Recycling Center).

Generally, CDD waste is collected by private contractors and is delivered to a CDD recycling center or to private CDD or MSW landfills located inside or outside of the VPPSA Region. The primary disposal facilities that serve each of the member jurisdictions are summarized in the sections below.

#### 3.2.2.1 *Essex County*

CDD wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.2.2 *James City County*

Construction demolition debris (CDD) waste from James City County is typically collected by private contractors and directly hauled to the Bethel Landfill or the Charles City County Landfill.

#### 3.2.2.3 *King and Queen County*

CDD wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.2.4 *King William County*

CDD wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.2.5 *Mathews County*

CDD wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.2.6 *Middlesex County*

CDD wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.2.7 *York County*

CDD waste from York County is typically collected by private contractors and hauled to the S.B. Cox Recycling Center or directly hauled to the Bethel Landfill.

#### 3.2.2.8 *City of Hampton*

CDD waste from the City of Hampton is typically collected by private contractors and hauled to the S.B. Cox Recycling Center in Yorktown or directly hauled to the Bethel Landfill.

#### 3.2.2.9 *City of Poquoson*

CDD waste from the City of Poquoson is typically collected by private contractors and hauled to the S.B. Cox Recycling Center in Yorktown or directly hauled to the Bethel Landfill.

#### 3.2.2.10 *City of Williamsburg*

CDD waste from the City of Williamsburg is typically collected by private contractors and hauled to S.B. Cox Recycling Center in Yorktown or directly hauled to the Bethel Landfill.

### 3.2.3 INDUSTRIAL WASTE

There are two active, privately owned, captive industrial waste landfills located within the VPPSA Region currently in operation. Since these facilities are captive, only the owner of the facility may dispose of industrial waste at that facility. Thus, industrial waste generated by other industrial facilities is typically collected by private contractors and delivered to private MSW landfills located both inside and outside of the VPPSA Region. The primary disposal facilities that serve each of the member jurisdictions are summarized in the sections below.

#### 3.2.3.1 *Essex County*

Non-hazardous industrial wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.3.2 *James City County*

Non-hazardous industrial waste from James City County is typically collected by private contractors and hauled to the Bethel Landfill, King and Queen Landfill, and the Charles City County Landfill.

#### 3.2.3.3 *King and Queen County*

Non-hazardous industrial wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.3.4 *King William County*

The WestRock CP LLC Landfill is located inside the Town of West Point; thus, all industrial waste generated by the WestRock CP LLC is disposed of at this facility. Non-hazardous industrial wastes generated by other industrial facilities are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.3.5 *Mathews County*

Non-hazardous industrial wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.3.6 *Middlesex County*

Non-hazardous industrial wastes are collected by private contractors and hauled to either the King and Queen Landfill or the MPLRF.

#### 3.2.3.7 *York County*

The Plains Marketing LP Landfill is located in York County. Industrial waste generated by this industrial facility is disposed at their facility. Non-hazardous industrial wastes generated by other industrial facilities are collected by private contractors and hauled to the Bethel Landfill.

#### 3.2.3.8 *City of Hampton*

Non-hazardous industrial wastes are collected by private contractors and hauled to the Bethel Landfill.

#### 3.2.3.9 *City of Poquoson*

Non-hazardous industrial wastes are collected by private contractors and hauled to the Bethel Landfill.

#### 3.2.3.10 *City of Williamsburg*

Non-hazardous industrial wastes are collected by private contractors and hauled to the Bethel Landfill.

### 3.3 RECYCLING

Residential recycling is provided to every member community of the VPPSA Region through a contract with a private operator; by utilizing Town, County, or City personnel; or through VPPSA. Commercial institutions, businesses, and industrial facilities of the VPPSA Region also provide a large portion of the recycling. A breakdown of both the residential and non-residential recycling programs throughout the Region per jurisdiction is provided in the sections below.

#### 3.3.1 ESSEX COUNTY

Drop-off recycling services are available at the four convenience centers operated by VPPSA throughout the County. In addition, the Town of Tappahannock provides curbside collection of recyclables from town residents. These services are provided by Town personnel. The recyclables are then transferred to a VPPSA container at the Airport Road Convenience Center.

Essex County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; thus, the County relies on voluntary reporting of recycling performed at these facilities. The major businesses that volunteer and contribute to non-residential recycling in the County are a yarn producer, computer components manufacturer, and auto parts producer.

### 3.3.2 JAMES CITY COUNTY

James City County provides residential curbside collection of recyclables to eligible single-family households in the County, as well as to many multifamily communities, through a subscription service. Drop-off recycling collection is also available at the three convenience sites located throughout the County for all JCC residents.

James City County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; however, the County has enacted an ordinance that requires businesses to report the results of their recycling programs. The major businesses that contribute to non-residential recycling in the County are a brewery and a paving company.

### 3.3.3 KING AND QUEEN COUNTY

King and Queen County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the four convenience centers operated by VPPSA.

King and Queen County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; thus, the County relies on voluntary reporting of recycling performed at these facilities. Currently, there are no major businesses or industrial facilities in King and Queen County that report the results of their recycling programs.

### 3.3.4 KING WILLIAM COUNTY

King William County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the four convenience sites located throughout the County. In addition, the Town of West Point provides residential curbside collection of recyclables using Town personnel, who deliver the recyclables to WestRock paper mill and to County Waste's West Point Transfer Station.

King William County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; thus, the County relies of voluntary reporting of recycling performed at these facilities. Currently, there are no major businesses or industrial facilities in the County that report the results of their recycling programs.

### 3.3.5 MATHEWS COUNTY

Mathews County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the convenience center operated by VPPSA.

Mathews County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; thus, the County relies on voluntary reporting of recycling performed at these facilities. Currently, there are no major businesses or industrial facilities in the County that report the results of their recycling programs.

### 3.3.6 MIDDLESEX COUNTY

Middlesex County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the four convenience centers operated by VPPSA. The Town of Urbanna provides residential curbside collection of recyclables using a private Contractor, who uses a trailer provided by the Town. These recyclables are delivered to the Middlesex Transfer Station.

Middlesex County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; thus, the County relies on voluntary reporting of recycling performed at these facilities. Currently, there are no major businesses or industrial facilities in Middlesex County that report the results of their recycling programs.

### 3.3.7 YORK COUNTY

York County provides residential curbside collection of recyclables to single-family households in the County. Drop-off recycling collection is also available at the York County Waste Management Center.

York County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; however, the County requires businesses that generate more than 500 pounds per year to report the results of their recycling programs to the County. The major businesses that contribute to non-residential recycling in the County are scrap metal collectors, retail stores, and a local refinery.

### 3.3.8 CITY OF HAMPTON

The City of Hampton provides residential curbside collection of recyclables to all eligible single-family households in the City. In addition, Langley Air Force Base provides curbside collection of recyclables, as well as a drop-off facility on the base for use by base residents; services are provided using a private contractor.

The City of Hampton does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; however, the City does have an ordinance that requires businesses to report the results of their recycling programs. The ordinance does not require that businesses implement a recycling program; however, if a program is in place, the business must report the type of recycling activities performed, as well as the quantities of recyclables collected. The major businesses that contribute to non-residential recycling in the City are food and convenience stores and federal government facilities.

### 3.3.9 CITY OF POQUOSON

The City of Poquoson provides residential curbside collection of recyclables to all eligible single-family households in the City, including many townhouse communities.

The City of Poquoson does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities. The City relies on voluntary reporting of recycling performed at these facilities. Currently, there are no major businesses or industrial facilities in the City that report the results of their recycling programs.

### 3.3.10 CITY OF WILLIAMSBURG

The City of Williamsburg provides residential curbside collection of recyclables to all eligible single-family households in the City, including many townhouse communities and condominiums. In addition, the City has an agreement with James City County to provide access to a drop-off recycling convenience site that may be used by small businesses and City residents.

The City of Williamsburg does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities; however, the City does have an ordinance, which requires businesses to report the results of their recycling programs. The major businesses that contribute to non-residential recycling in the City are the College of William and Mary and the Colonial Williamsburg Foundation.

## 3.4 YARD WASTE COMPOSTING

VPPSA operates a yard waste composting facility at the York County Waste Management Center. The City of Hampton, the City of Poquoson, and York County deliver yard waste collected as part of their residential waste collection programs to the composting facility for handling. The composting facility is also open to commercial users.

Operations at the facility include placing leaves and grass into windrows, which are turned on a regular basis. Brush, branches, and tree limbs are ground in a tub-grinder and stockpiled for curing for a period of a minimum of 90 days. The mulch is then screened or reground prior to selling to residents or businesses.

## 3.5 PUBLIC EDUCATION

Information about solid waste management programs and recycling is provided to residents and businesses through VPPSA's regional efforts, as well as through local information programs. VPPSA's public information program includes news releases and advertisements for both local and regional newspapers. Newsletters, brochures, flyers, and presentations are also used, as necessary.

In addition, VPPSA staff provides written material, staff training, and speakers to supplement their efforts listed above. VPPSA staff participates in local and regional public education through committees, coalitions, solid waste workshops, student conferences, and solid waste facility tours.



Holiday schedules for the convenience centers operated by VPPSA, the yard waste composting facility operated by VPPSA, and the recycling collection program operated by VPPSA are announced to residents and businesses through local and regional newspapers as well as through electronic media. New programs and changes in existing programs are advertised and announced in local and regional newspapers, as well as announced through the use of websites and social media.

Other than using VPPSA, many of the jurisdictions have their own personnel who provide and coordinate public education regarding solid waste management. James City County employs a Sustainability Coordinator who utilizes the County's social media accounts, newsletter, and appoints a James City Clean County Commission (J4C), which consists of local volunteers that promote recycling, litter control, and provide environmental educational handouts and tours to residents of James City County.

King William County and Mathews County both employ a litter control coordinator, who publishes recycling information and coordinates cleanup projects.

York County employs an Outreach Coordinator, who provides solid waste management information through the local newspaper, the County's newsletter, website, and television.

The City of Hampton Clean City Commission provides educational materials, promotes litter reduction through volunteer cleanups, and recognizes businesses for keeping Hampton "green." The City's Marking Department (Marking Inc) and the Clean City Commission support the Public Works Solid Waste Division with advertising, publishing education materials, sponsoring cleanups, and other community activities related to solid waste management.

The City of Poquoson provides educational materials through the City's local government cable station, newsletter, and a City solid waste calendar.

Finally, the City of Williamsburg employs a public works administrative assistant who provides educational materials and information to City residents, as well as issues a Quarterly newsletter entitled the Quarterly Quill that provides solid waste management information.

### **3.6 PUBLIC/PRIVATE PARTNERSHIPS**

As mentioned in the previous sections, many of the VPPSA member jurisdictions have partnerships with private businesses and industries to provide solid waste collection and disposal. In addition, many of the jurisdictions request or require businesses and private industries to submit recycling program results for inclusion in their recycling estimates.

## **4.0 SOLID WASTE HIERARCHY**

The Virginia Waste Management Board Regulations for Solid Waste Management Planning, 9 VAC 20-130-10 *et seq.*, require each solid waste management 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; and, (6) landfilling. A description of the existing status of each component of the hierarchy within the VPPSA Region is presented in the sections below.

#### 4.1 SOURCE REDUCTION

The purpose of source reduction is to reduce the amount of waste generated at the source or using less materials at the point of generation. Source reduction may mean a change in a method of packaging or a change in a process design to eliminate or reduce waste. Examples of ways an industry or business may reduce the amounts of waste they generate include reducing office paper by duplexing (double-siding) reports and issuing documents electronically; improving product design to use less materials; redesigning packaging to eliminate excess material; and purchasing products in bulk quantities.

There is currently only limited data available within the Region indicating the efficiency of manufacturing and business operations to quantify source reduction. In addition, standardized methods for quantifying source reduction activities are not readily available at this time. Many of the educational activities and information, discussed in Section 3.5, that are provided by VPPSA and the member jurisdictions, promote the importance of source reduction to the residents, businesses, and industries in the Region.

#### 4.2 REUSE

Reuse is the process of 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. The reuse of products prolongs their useful life, thereby postponing the disposal or recycling of these materials. Reuse, as defined by the EPA's WasteWise program, is the repair, refurbishing, washing, or recovery of used products, appliances, furniture, and building materials for further use. Reuse activities in the Region include the resale of used items through thrift shops, yard/garage sales, flea markets, and the reuse of items donated through charities, such as Goodwill.

Currently, there is limited data available within the Region quantifying the materials that are reused. In addition, standardized methods for quantifying activities resulting in the reuse of materials are not readily available at this time. Many of the educational activities and information, discussed in Section 3.5, that are supplied by VPPSA and the member jurisdictions, provide the benefits of reuse to the residents, businesses, and industries in the Region.

#### 4.3 RECYCLING

Recycling is the process of separating a given waste material from the waste stream and processing it so that it is used again as a raw material for a product, which may or may not be similar to the original product. Recycling involves the separation of a waste material from the waste stream, collection, processing, marketing, sale, and utilization as a raw material.

Recycling is an important option for the VPPSA Region. Diversion of materials from the waste stream into the recycling stream results in less waste managed by landfilling or incineration. Recycling helps to conserve natural resources by utilizing materials that have already been processed, rather than

using virgin materials. Based on information published by the EPA, products containing recycled products generally perform as well as their virgin counterparts and, in some instances, even better.

This recycling rate calculated for the VPPSA exceeds the minimum recycling rate of 25 percent required by the Virginia Administrative Code, 9 VAC 20-130-125 A. Supporting calculations are provided in Appendix VIII.

#### 4.4 RESOURCE RECOVERY

Resource recovery is the processing of solid waste in order to generate energy and is commonly known as “Waste to Energy”. Some methods of converting solid waste to useful energy are briefly discussed below.

##### 4.4.1 MASS BURN INCINERATOR

Mass burn is a process which involves the direct feeding of municipal solid waste into an incinerator. Mass burn incinerators are defined and categorized by the type of furnace (waterwall or refractory) and in terms of their type of construction (modular or site-built). Waste is burned at temperatures ranging from 1,000 to 1,800 degrees Fahrenheit. The heat is used to produce steam for district heating and cooling, generation of electricity using steam turbines, or both. In addition, the volume of waste is reduced by as much as 90% through the thermal conversion process. Mass burn plants have extensive air pollution control systems and produce fly and bottom ash residues that must be managed.

##### 4.4.2 COGENERATION

Cogeneration is the production of both steam and electricity simultaneously, or by one another, and thus both are available as marketable energy resources. Cogeneration can be accomplished by exhausting the steam from the generator at temperature and pressures that satisfy a market need, such as for heating, or for a variety of industrial processes. Large incinerators can produce enough steam to heat and cool hundreds of buildings.

##### 4.4.3 REFUSE DERIVED FUEL (RDF) SYSTEMS

Refuse derived fuels (RDF) are generated by processes by which waste is separated into combustible and non-combustible fractions, and the combustible fraction is further processed into RDF, which is a consistent material with predictable burn characteristics. The RDF is produced as either “fluff” or solid (pellet) form, for combustion in an incinerator. The RDF product is an improved form of solid waste, with a more consistent heat production, and uniform size that allows optimization of the incineration process.

##### 4.4.4 ANAEROBIC DIGESTION

Anaerobic Digestion is the use of biological processes to degrade organic materials in the absence of oxygen, with the production of methane gas. Similar to RDF fuel processing, the feedstock to an anaerobic digester should be consistent in terms of carbon content and should

have a minimum of inert materials such as sand and grit. Anaerobic digestion can occur as wet or dry processes. The gas produced can be extremely high quality and can be used as fuel for heaters, boilers, and natural gas-powered vehicles and equipment.

#### 4.4.5 ELECTRICITY PURCHASE AGREEMENTS

Essential to the feasibility of all resource recovery facilities is the availability of a purchaser for the power or steam generated by thermal processes. Under the Public Utilities Regulatory Policies Act of 1978 (PURPA), a utility must purchase the electricity produced by a “small power generator.” The generator in this case is the resource recovery facility which utilizes energy recovery for the production and sale of electricity. PURPA states that each State or regional electrical management system must set the purchase price of power. In Virginia, this is regulated by the State Corporation Commission (SCC), which requires utilities to file the price based on the “avoided cost” to the utility to produce electricity. Connection to a local electrical grid is a lengthy legal process that can take several years to complete.

#### 4.5 INCINERATION

Unlike in the Resource Recovery section above, incineration without energy or steam production is simply mass burning. The primary advantage to incinerating solid waste is reduction in volume, which can be as high as 90%. Due to the variability of materials in municipal solid waste, the combustion byproducts can be unpredictable. For this reason, solid waste combustion is highly regulated, with stringent air emission control requirements.

There is currently one energy recovery facility located in the City of Hampton, the Hampton Steam Plant. The facility is owned and operated jointly by the City of Hampton, NASA, and the Langley Air Force Base. It is anticipated that this facility will continue its existing operations throughout the planning period.

#### 4.6 LANDFILL

Landfilling is the placement of solid waste and burial under layers of dirt. Modern landfills are highly engineered facilities that are designed to protect the environment from contaminants. Landfilling is the least desirable tier in the solid waste hierarchy because there are multiple means by which a landfill can fail to prevent contamination from escaping. Landfills are also highly regulated and often require dedicated personnel simply to manage regulatory obligations.

Financially, landfills are expensive to design, expensive to build, require annual monitoring for leakage, are a persistent liability for the owner, and require years of maintenance and monitoring long after the revenue-generating waste has ceased.

There are currently two active MSW landfills and two active, captive industrial landfills located in the VPPSA Region. In addition, a large portion of the solid waste collected on the Middle Peninsula is disposed at the Middle Peninsula Sanitary Landfill and Recycling Center, which is located outside of the VPPSA Region in Gloucester County. Together, the King and Queen Landfill, the Bethel Landfill, and the Middle Peninsula Facility have a surplus of permitted airspace available for the disposal of

solid waste. However, since these facilities are privately owned, if the disposal of the waste at these facilities is not cost-effective, additional solid waste disposal facilities may be needed to provide economic alternatives.

## 5.0 OBJECTIVES

Objectives are specific statements defining the means by which progress towards a goal is to be achieved. Objectives may lend themselves to measurement and evaluation and tend to be definite. The objectives of this SWMP are listed below.

**Objective 1:** Coordinate the efforts of the ten member jurisdictions and assist with the provision of solid waste management services to the Region in a cost-effective manner, while maintaining regulatory compliance.

**Objective 2:** Enlist public participation for solid waste management. To accomplish this objective, each jurisdiction should continue to develop education programs to increase public awareness and provide information to residents regarding locations of recyclable collection areas and materials accepted at the areas. In addition, each jurisdiction should continue to promote the importance of source reduction, reuse, and recycling to their residents, as well as provide potential incentives to businesses and industries who actively participate in recycling programs.

**Objective 3:** Maintain regulatory compliance with the Virginia Solid Waste Management Planning Regulations, Virginia Solid Waste Management Regulations, and additional state regulations, federal regulations, and local ordinances. This will be done by consistently providing regular updates and necessary amendments, as required by 9 VAC 20-130-10 et seq.

## 6.0 PLAN IMPLEMENTATION

### 6.1 SOURCE REDUCTION AND REUSE

VPPSA and its member jurisdictions will continue to provide the educational information to the residents, businesses, and industries of the Region promoting the importance of source reduction and reuse. Source reduction and reuse reduce the amount of materials that enter the waste stream and provide cost-effective alternatives to waste disposal. However, currently, there is limited data available on the quantities of materials in the Region that are reuse, and there are no standardized methods that can easily be implemented to quantify source reduction and reuse.

During the planning period, VPPSA and the member jurisdictions will identify and evaluate regional or local programs that utilize and encourage practices that minimize waste generation and the reuse of materials. Further investigation is needed to fully understand and quantify source reduction and reuse programs that may be occurring within the Region.

## 6.2 COLLECTION

VPPSA and its member jurisdictions provide collection services to residents and many businesses within the Region using various methods. Currently, there are no significant changes to the residential waste collection, household chemical collection, waste transfer, and yard waste composting collection services proposed during the planning period of 2020 through 2040. VPPSA and its member jurisdictions will continue to evaluate the expansion or deletion of these services, as necessary, to continue to provide cost-effective waste collection to residents and businesses in the Region.

## 6.3 DISPOSAL

Based on the solid waste projections presented in Appendix IV, approximately 7.95 million tons of municipal solid waste and CDD will be generated in the VPPSA Region between 2020 and 2040. Table 4 of the DEQ report (DEQ, 2020) includes the available capacity and the tonnage accepted for each facility as of 2019. Assuming that the 2019 tonnage accepted at each facility is a reasonable estimate of future tonnage, the remaining life of each facility is calculated.

1. The King and Queen Landfill reported a remaining capacity of 9.6 million tons, and an acceptance rate of 688,000 tons; the calculated remaining life is 13.5 years;
2. The Bethel Landfill reported a remaining capacity of 22.2 million tons, and an acceptance rate of 766,000 tons; the calculated remaining life is 28.0 years;
3. The Middle Peninsula Sanitary Landfill and Recycling Center reported a remaining capacity of 13.5 million tons, and an acceptance rate of 542,000 tons; the calculated remaining life is 24.1 years; and,
4. The Charles City County Landfill reported a remaining capacity of 12.3 million tons, and an acceptance rate of 754,000 tons; the calculated remaining life is 15.3 years

Therefore, as of January 2020, it is estimated that there is a surplus of approximately 50 million tons of permitted airspace at the two sanitary landfills in the VPPSA Region, the Middle Peninsula Facility located in Gloucester County, and the Charles City County Landfill in Charles City County. Despite the surplus volume, it is anticipated that two of the landfills (King and Queen and Charles City County) will exhaust the permitted airspace during the study period.

As there are currently no CDD disposal facilities in the Region, it is assumed that the CDD waste generated in the Region will either be sorted and processed for recycling at the CDD recycling center in Yorktown or be disposed at a sanitary landfill.

The two privately owned captive industrial disposal facilities are owned by WestRock CP LLC, and Plains Marketing LP. Per discussions with each of these facilities, the WestRock CP LLC facility has a remaining life of approximately 35 years and the Plains Marketing LP facility has a remaining life of more than 100 years. After each of these facilities have reached their permitted final closure grades and close, the industrial waste originally disposed at these facilities that is acceptable for disposal at

a sanitary landfill will be transported to one of the sanitary landfills located within or just outside of the Region.

Waste that is not authorized for disposal at a sanitary landfill, such as industrial waste, will be sent to a facility located outside of the Region that is permitted to accept those wastes. The total quantity of industrial waste disposed at facilities outside the VPPSA Region each year is relatively small, and if this waste is diverted to one of the sanitary landfills in the Region, it will not have a significant impact on the surplus of permitted airspace.

There are currently no significant changes planned by the VPPSA communities with regards to solid waste disposal. The member communities will continue to rely upon the privately owned disposal facilities located within and adjacent to the Region to provide solid waste disposal capacity. However, since these facilities are privately owned, if the disposal of the waste at these facilities is not cost-effective, additional solid waste disposal facilities may be needed to provide financial alternatives to the jurisdictions in the VPPSA Region.

#### 6.4 RECYCLING

The VPPSA Region has continued to maintain a recycling rate that exceeds the rate required by the Virginia DEQ. The educational programs and publications that are provided by VPPSA and the member communities, as well as the collection services and drop-off sites, are vital to meeting and maintaining a regional recycle rate greater than the mandated rate of 25 percent. These programs inform residents and industries of the importance and benefits of recycling materials. As a result, VPPSA and its member jurisdictions have committed to continue to provide these services throughout the Region, if financially possible.

Commercial and industrial recycling provides a significant portion of the materials recycled in the Region. VPPSA recognizes the importance of commercial recycling and will continue to encourage recycling, as well as investigate the availability of incentives for industries that actively participate in the recycling program.

#### 6.5 HIERARCHY IMPLEMENTATION

As a result of costs and the amount of waste generated in the Region, recycling, landfilling, and the continual operation of the existing steam plant are the most feasible of the solid waste disposal alternatives available to VPPSA and its member jurisdiction at this time. Therefore, these hierarchy components have been selected to provide solid waste management within the Region and will be continued as described in the sections above.

VPPSA and its member jurisdictions will also continue to provide the educational programs and materials to the residents, businesses, and industries in the Region to promote the importance of proper waste handling, recycling, and disposal. In addition, VPPSA and its member jurisdictions will continue to evaluate alternatives to landfilling whenever feasible and implement available alternatives when it is economically beneficial and environmentally safe to the Region. Currently there are no significant changes planned by VPPSA or its member jurisdictions during the planning period of 2020 through 2040 with regards to solid waste collection, recycling, and disposal.

## 7.0 FUNDING AND CONSTRUCTION SCHEDULES

### 7.1 FUNDING

Currently, each jurisdiction within the Region possesses its own mechanisms for funding solid waste management services. Residents and businesses within the Region are either assessed a user fee for their waste collection services through a direct billing process, or waste collection services are funded by the respective jurisdiction through enterprise or general revenue funds.

Essex County, King and Queen County, King William County, Mathews County, and Middlesex County pay for solid waste programs from a general revenue fund. In each of these Counties, residents and businesses that choose to utilize private contractors for their waste collection and disposal pay those contractors directly.

James City County pays for oil and antifreeze recycling, and automotive battery recycling from the County's general revenue fund. Supplemental funding for the County's convenience centers is provided through the coupon and credit/debit system for the disposal of trash, tires, appliances, and bulky items. Residents are charged quarterly to participate in the curbside recycling program. Residents and businesses that choose to utilize private contractors for their waste collection and disposal pay those contractors directly.

York County utilizes an enterprise fund to pay for the solid waste services that it provides to the residents in the County. Funding is based on user fees assessed to residents who voluntarily choose to participate in the County's collection program. Residents who do not participate in the County's collection program are charged a fee at the transfer station, based on the weight delivered to the facility. Construction demolition debris is also charged based on weight. The collection of recyclables and yard waste is funded by the County's general revenue and is supplemented by user fees.

The City of Hampton charges residents and businesses a solid waste user fee as part of each resident's water bill. These fees supplement the City's enterprise fund to pay for the solid waste services provided to City residents and businesses. As of 2005, the solid waste user fee program finances approximately 100 percent of the City of Hampton's solid waste management program.

The City of Poquoson utilizes an enterprise fund to pay for its solid waste program. Funding is based on user fees assessed to residents and supplemented by the sale of 30-gallon City garbage bags. The collection of bulky items and appliances is funded by the general fund and supplemented by user fees.

The City of Williamsburg pays for its solid waste services from a general fund. Businesses that choose to utilize private contractors for their waste collection and disposal pay those contractors directly.

The funding for each of the privately owned solid waste disposal facilities are provided by their respective Owners. The services provided by these companies and their upcoming construction projects are normally funded by assessing tipping fees at the landfills, enterprise funds, and/or



bonds. The facilities are required to financially assure all closure construction costs and post-closure care costs with the DEQ through a general reserve fund, or other acceptable financial mechanism. Post-closure care costs include landfill gas monitoring, groundwater monitoring, leachate management (if necessary), routine maintenance and mowing, and vector control.

## **7.2 CONSTRUCTION SCHEDULES**

All of the disposal facilities within the VPPSA Region are privately owned, and the construction of new disposal cells and expansion areas are typically performed in phases over the life of the active facilities. Therefore, these types of construction activities cannot be identified or labeled with a set date. Actual construction dates are dependent on the current operating procedures and equipment, as well as the actual volume of material accepted at the facility. Therefore, construction dates may vary by many years.

Information about the current capacity and anticipated operating life of landfills servicing the VPPSA Region are provided in Table 4 of the DEQ Report (DEQ. 2020).

Currently, the King and Queen Sanitary Landfill is projected to remain operational for 13.5 years. If no permit amendments for expansions are applied for and approved by the DEQ prior to that time, the facility is anticipated to undergo closure construction no earlier than 2033.

The Bethel Sanitary Landfill is projected to remain operational for 28 years. If no permit amendments for expansions are applied for and approved by the DEQ prior to that time, the facility is anticipated to undergo closure construction no earlier than 2047.

The Middle Peninsula Sanitary Landfill and Recycling Center, owned by Gloucester County and operated by Waste Management, is projected to remain operational for 24 years. If no permit amendments for expansions are applied for and approved by the DEQ prior to that time, the facility is anticipated to undergo closure construction no earlier than 2043.

The Charles City County Landfill is projected to remain operational for 15 years. If no permit amendments for expansions are applied for and approved by the DEQ prior to that time, the facility is anticipated to undergo closure construction no earlier than 2034.

Currently, there are no improvements or significant changes planned to the facilities operated by VPPSA or its member jurisdictions. Therefore, there are no additional future construction projects other than those mentioned above at the private disposed facilities.

## **8.0 PUBLIC PARTICIPATION**

### **8.1 CITIZEN ADVISORY COMMITTEE**

To provide opportunities for public comment, VPPSA created a citizen advisory committee (CAC) that consists of citizens appointed by the member jurisdictions.

## 8.2 PUBLIC HEARINGS

Public hearings were held by VPPSA on June 23, 2004, in Williamsburg and June 24, 2004, in Saluda, in accordance with the public participation requirements outlined in 9VAC20-130-130. The notice appeared in the Daily Press, Southside Sentinel, Rappahannock Times, and the Gloucester Mathews Gazette Journal on June 17, 2004, and the Tidewater Review on June 23, 2004. No comments were received at either of the public hearings. A copy of the notice published in the local newspapers is provided in Appendix IX

## 8.3 RESOLUTIONS

A copy of the VPPSA resolution adopting this Solid Waste Management Plan is provided in Appendix X.

## 9.0 SUMMARY

The objective of VPPSA and its member jurisdictions is to provide cost-effective waste collection and disposal services to its residents, while maintaining regulatory compliance. VPPSA and its member jurisdictions are meeting these objectives, as described in Section 3.0. As long as they remain cost-effective, VPPSA will continue to utilize public funding to provide these services throughout the planning period. For the Plan to succeed, the full participation of all of the residents, businesses, and industries of the Region is required.

Based on the information collected, the Region continues to report high level of recycling and reuse performed by local residents, as well as on an industrial level, exceeding the regulatory minimum rate of 25 percent. To maintain this high recycling rate and regulatory compliance, each jurisdiction should continue to promote recycling and provide potential incentives to businesses that actively participate in the recycling program.

In addition, the Region should continue to evaluate alternatives to landfilling whenever feasible and implement available alternatives when it is economically beneficial to the Region. Finally, the Plan should be updated, as necessary, to maintain regulatory compliance and consistency with the actual services and needs of the Region.

## **APPENDIX I**

### **MAP OF VPPSA REGION**

# Virginia Peninsulas Public Service Authority

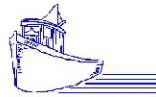


Virginia Coastal Zone  
MANAGEMENT PROGRAM



Although this data has been used by the Middle Peninsula Planning District Committee (MPPDC), no warranty, expressed or implied is made by the MPPDC as to the accuracy or applicability of the database and related material, nor shall the fact of use constitute an endorsement, and no responsibility is assumed by the MPPDC in connection herewith. The map was created on 3-12-2009 by MPPDC staff C. C. C.

This map production is a product of the MPPDC Technical Assistance Program and was 50% funded by Virginia Coastal Zone Management Program of the Department of Environmental Quality, George C. Davis Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended.



Middle Peninsula Planning District Commission - 2009

## APPENDIX II

### POPULATION PROJECTIONS

## APPENDIX II – VPPSA Region Population Projections

### 1. VPPSA Region Population Projections

- a. Projected changes to the population of the VSSPA member jurisdictions are based on data from the University of Virginia, Weldon Cooper Center for Public Service <sup>1</sup>. The total population for the VSSPA region is anticipated to increase approximately 8%, in aggregate, over the 20-year plan period, with some jurisdictions increasing and others declining. Population projections for the VPPSA member jurisdictions are presented in **Table 2.1**.

**Table 2.1: VPPSA Region Population Projections**

Source: Weldon Cooper Center for Public Service Data

VPPSA Jurisdiction	2020 Projected Population	2030 Projected Population	2040 Projected Population
Hampton	135,530	127,842	118,777
JCC	78,016	92,210	104,915
Poquoson	12,960	13,565	14,198
Williamsburg	15,463	17,008	18,306
York County	69,582	75,492	80,327
<b>Peninsula Total</b>	<b>311,551</b>	<b>326,117</b>	<b>336,523</b>
Essex	10,725	11,019	11,171
King & Queen	6,953	7,033	7,024
King William	17,167	19,011	20,576
Mathews	8,665	8,277	7,796
Middlesex	10,897	11,280	11,515
<b>Middle Peninsula Total</b>	<b>54,407</b>	<b>56,620</b>	<b>58,082</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>365,958</b>	<b>382,737</b>	<b>394,605</b>

<sup>1</sup> University of Virginia, Weldon Cooper Center for Public Service website:  
<https://demographics.coopercenter.org/virginia-population-projections>; accessed 10/23/2020

## **APPENDIX III**

### **VPPSA REGION ANNUAL WASTE SUMMARY REPORTS**

## APPENDIX III - VPPSA Region Annual Waste Summary Report Data

### APPENDIX III - VPPSA Region Annual Waste Summary Report Data

Source - Annual Recycling Rate Report submissions to Virginia DEQ.

VPPSA Region	CY 2004	CY 2004	CY 2004
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	109,225	57,682	166,907
JCC	51,881	133,319	185,200
Poquoson	4,292	3,657	7,949
Williamsburg	10,586	3,828	14,414
York County	35,267	22,824	58,091
<b>Peninsula Total</b>	<b>211,251</b>	<b>221,310</b>	<b>432,561</b>
Essex	13,435	564	13,999
King & Queen	3,337	406	3,743
King William	8,977	650	9,627
Mathews	9,993	712	10,705
Middlesex	11,280	686	11,966
<b>Middle Peninsula Total</b>	<b>47,022</b>	<b>3,018</b>	<b>50,040</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>258,273</b>	<b>224,369</b>	<b>482,642</b>
2004 Regional Recycling Rate for the VPPSA SWPU = 42%			

VPPSA Region	CY 2005	CY 2005	CY 2005
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	125,489	44,933	170,422
JCC	48,404	34,725	83,129
Poquoson	2,895	4,555	7,450
Williamsburg	11,819	4,599	16,418
York County	34,297	23,615	57,912
<b>Peninsula Total</b>	<b>222,904</b>	<b>112,427</b>	<b>335,331</b>
Essex	11,922	418	12,340
King & Queen	3,243	307	3,550
King William	8,908	512	9,420
Mathews	9,747	513	10,260
Middlesex	11,505	510	12,015
<b>Middle Peninsula Total</b>	<b>45,325</b>	<b>2,260</b>	<b>47,585</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>268,229</b>	<b>114,746</b>	<b>382,975</b>
2005 Regional Recycling Rate for the VPPSA SWPU = 30%			



# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2006	CY 2006	CY 2006
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	136,797	47,992	184,789
JCC	48,776	30,462	79,238
Poquoson	2,895	3,459	6,354
Williamsburg	13,908	3,824	17,732
York County	38,121	30,898	69,019
<b>Peninsula Total</b>	<b>240,497</b>	<b>116,635</b>	<b>357,132</b>
Essex	11,504	512	12,016
King & Queen	3,278	342	3,620
King William	9,175	551	9,726
Mathews	10,476	575	11,051
Middlesex	12,028	578	12,606
<b>Middle Peninsula Total</b>	<b>46,461</b>	<b>2,558</b>	<b>49,019</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>286,958</b>	<b>119,544</b>	<b>406,502</b>
2006 Regional Recycling Rate for the VPPSA SWPU = 31%			

VPPSA Region	CY 2007	CY 2007	CY 2007
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	165,927	59,410	225,337
JCC	72,581	121,778	194,359
Poquoson	4,259	4,914	9,173
Williamsburg	14,265	6,669	20,934
York County	34,900	20,549	55,449
<b>Peninsula Total</b>	<b>291,932</b>	<b>213,320</b>	<b>505,252</b>
Essex	11,581	462	12,043
King & Queen	3,246	307	3,553
King William	9,017	524	9,541
Mathews	9,737	533	10,270
Middlesex	10,307	559	10,866
<b>Middle Peninsula Total</b>	<b>43,888</b>	<b>2,385</b>	<b>46,273</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>335,820</b>	<b>215,768</b>	<b>551,588</b>
2007 Regional Recycling Rate for the VPPSA SWPU = 45%			

# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2008	CY 2008	CY 2008
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	115,394	76,553	191,947
JCC	62,191	38,277	100,468
Poquoson	3,428	3,546	6,974
Williamsburg	14,429	3,895	18,324
York County	36,769	26,843	63,612
<b>Peninsula Total</b>	<b>232,211</b>	<b>149,114</b>	<b>381,325</b>
Essex	10,888	451	11,339
King & Queen	2,946	298	3,244
King William	8,709	555	9,264
Mathews	9,109	498	9,607
Middlesex	8,477	552	9,029
<b>Middle Peninsula Total</b>	<b>40,129</b>	<b>2,354</b>	<b>42,483</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>272,340</b>	<b>151,479</b>	<b>423,819</b>
2008 Regional Recycling Rate for the VPPSA SWPU = 38.47%			

VPPSA Region	CY 2009	CY 2009	CY 2009
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	130,557	62,456	193,013
JCC	47,575	29,925	77,500
Poquoson	3,594	2,834	6,428
Williamsburg	20,305	5,092	25,397
York County	23,091	32,270	55,361
<b>Peninsula Total</b>	<b>225,122</b>	<b>132,577</b>	<b>357,699</b>
Essex	9,481	1,158	10,639
King & Queen	2,927	268	3,195
King William	8,171	638	8,809
Mathews	8,462	577	9,039
Middlesex	8,777	555	9,332
<b>Middle Peninsula Total</b>	<b>37,818</b>	<b>3,196</b>	<b>41,014</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>262,940</b>	<b>138,808</b>	<b>401,748</b>
2009 Regional Recycling Rate for the VPPSA SWPU = 35.43%			

# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2010	CY 2010	CY 2010
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	159,485	56,369	215,854
JCC	51,835	28,922	80,757
Poquoson	3,494	2,543	6,037
Williamsburg	10,585	4,047	14,632
York County	33,388	18,887	52,275
<b>Peninsula Total</b>	<b>258,787</b>	<b>110,768</b>	<b>369,555</b>
Essex	7,872	976	8,848
King & Queen	2,611	212	2,823
King William	8,064	643	8,707
Mathews	6,867	545	7,412
Middlesex	8,567	520	9,087
<b>Middle Peninsula Total</b>	<b>33,981</b>	<b>2,896</b>	<b>36,877</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>292,768</b>	<b>116,199</b>	<b>408,967</b>
2010 Regional Recycling Rate for the VPPSA SWPU = 29.06%			

VPPSA Region	CY 2011	CY 2011	CY 2011
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	155,012	53,073	208,085
JCC	48,736	17,832	66,568
Poquoson	5,136	3,041	8,177
Williamsburg	8,712	5,624	14,336
York County	29,385	21,964	51,349
<b>Peninsula Total</b>	<b>246,981</b>	<b>101,534</b>	<b>348,515</b>
Essex	8,610	1,082	9,692
King & Queen	2,745	239	2,984
King William	8,924	636	9,560
Mathews	5,686	502	6,188
Middlesex	9,402	488	9,890
<b>Middle Peninsula Total</b>	<b>35,367</b>	<b>2,947</b>	<b>38,314</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>282,348</b>	<b>107,917</b>	<b>390,265</b>
2011 Regional Recycling Rate for the VPPSA SWPU = 35.96%			

# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2012	CY 2012	CY 2012
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	160,787	40,099	200,886
JCC	55,693	23,911	79,604
Poquoson	2,290	2,341	4,631
Williamsburg	11,250	5,087	16,337
York County	27,126	24,490	51,616
<b>Peninsula Total</b>	<b>257,146</b>	<b>95,928</b>	<b>353,074</b>
Essex	8,333	829	9,162
King & Queen	2,484	227	2,711
King William	8,053	587	8,640
Mathews	5,166	465	5,631
Middlesex	7,453	496	7,949
<b>Middle Peninsula Total</b>	<b>31,489</b>	<b>2,604</b>	<b>34,093</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>288,635</b>	<b>102,499</b>	<b>391,134</b>
2012 Regional Recycling Rate for the VPPSA SWPU = 30.04%			

VPPSA Region	CY 2013	CY 2013	CY 2013
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	129,976	26,150	156,126
JCC	48,494	27,139	75,633
Poquoson	1,299	2,525	3,824
Williamsburg	10,470	4,529	14,999
York County	25,853	25,634	51,487
<b>Peninsula Total</b>	<b>216,092</b>	<b>85,977</b>	<b>302,069</b>
Essex	7,801	1,066	8,867
King & Queen	2,409	217	2,626
King William	7,771	490	8,261
Mathews	5,082	469	5,551
Middlesex	6,113	459	6,572
<b>Middle Peninsula Total</b>	<b>29,176</b>	<b>2,701</b>	<b>31,877</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>245,268</b>	<b>92,842</b>	<b>338,110</b>
2013 Regional Recycling Rate for the VPPSA SWPU = 29.00%			

# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2014	CY 2014	CY 2014
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	162,940	23,844	186,784
JCC	52,938	33,129	86,067
Poquoson	3,241	2,226	5,467
Williamsburg	10,210	3,169	13,379
York County	25,853	37,328	63,181
<b>Peninsula Total</b>	<b>255,182</b>	<b>99,696</b>	<b>354,878</b>
Essex	7,586	1,053	8,639
King & Queen	2,341	205	2,546
King William	7,553	361	7,914
Mathews	4,924	412	5,336
Middlesex	6,143	407	6,550
<b>Middle Peninsula Total</b>	<b>28,547</b>	<b>2,438</b>	<b>30,985</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>283,729</b>	<b>105,640</b>	<b>389,369</b>
2014 Regional Recycling Rate for the VPPSA SWPU = 27.69%			

VPPSA Region	CY 2015	CY 2015	CY 2015
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	138,481	32,085	170,566
JCC	58,250	32,162	90,412
Poquoson	2,428	2,268	4,696
Williamsburg	9,070	5,102	14,172
York County	26,904	61,543	88,447
<b>Peninsula Total</b>	<b>235,133</b>	<b>133,160</b>	<b>368,293</b>
Essex	8,414	8,719	17,133
King & Queen	2,297	193	2,490
King William	8,244	482	8,726
Mathews	5,216	471	5,687
Middlesex	6,370	448	6,818
<b>Middle Peninsula Total</b>	<b>30,541</b>	<b>10,313</b>	<b>40,854</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>265,674</b>	<b>147,164</b>	<b>412,838</b>
2015 Regional Recycling Rate for the VPPSA SWPU = 36.48%			

# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2016	CY 2016	CY 2016
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	131,218	24,262	155,480
JCC	62,694	30,777	93,471
Poquoson	2,713	2,575	5,288
Williamsburg	10,270	5,237	15,507
York County	26,384	40,789	67,173
<b>Peninsula Total</b>	<b>233,279</b>	<b>103,640</b>	<b>336,919</b>
Essex	9,477	979	10,456
King & Queen	2,341	198	2,539
King William	8,068	582	8,650
Mathews	5,240	485	5,725
Middlesex	5,240	485	5,725
<b>Middle Peninsula Total</b>	<b>30,366</b>	<b>2,729</b>	<b>33,095</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>263,645</b>	<b>109,384</b>	<b>373,029</b>
2016 Regional Recycling Rate for the VPPSA SWPU = 34.60%			

VPPSA Region	CY 2017	CY 2017	CY 2017
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	143,980	21,431	165,411
JCC	61,154	30,735	91,889
Poquoson	4,459	1,960	6,419
Williamsburg	10,315	5,962	16,277
York County	29,196	28,398	57,594
<b>Peninsula Total</b>	<b>249,104</b>	<b>88,486</b>	<b>337,590</b>
Essex	8,394	1,006	9,400
King & Queen	2,380	253	2,633
King William	8,076	690	8,766
Mathews	5,299	529	5,828
Middlesex	6,770	509	7,279
<b>Middle Peninsula Total</b>	<b>30,919</b>	<b>2,987</b>	<b>33,906</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>280,023</b>	<b>94,746</b>	<b>374,769</b>
2017 Regional Recycling Rate for the VPPSA SWPU = 26.40%			

# APPENDIX III - VPPSA Region Annual Waste Summary Report Data

VPPSA Region	CY 2018	CY 2018	CY 2018
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	133,510	17,517	151,027
JCC	62,228	48,649	110,877
Poquoson	4,481	1,978	6,459
Williamsburg	11,364	3,967	15,331
York County	24,054	37,753	61,807
<b>Peninsula Total</b>	<b>235,637</b>	<b>109,864</b>	<b>345,501</b>
Essex	8,717	1,097	9,814
King & Queen	2,406	232	2,638
King William	8,194	619	8,813
Mathews	5,394	526	5,920
Middlesex	7,215	470	7,685
<b>Middle Peninsula Total</b>	<b>31,926</b>	<b>2,944</b>	<b>34,870</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>267,563</b>	<b>117,099</b>	<b>384,662</b>
2018 Regional Recycling Rate for the VPPSA SWPU = 29.30%			

VPPSA Region	CY 2019	CY 2019	CY 2019
	Waste Quantities Reported to DEQ	Quantities Recycled Reported to DEQ	Total Waste Generated
Hampton	127,869	33,709	161,578
JCC	67,403	38,943	106,346
Poquoson	2,840	1,862	4,702
Williamsburg	10,250	6,527	16,777
York County	24,804	30,914	55,718
<b>Peninsula Total</b>	<b>233,166</b>	<b>111,955</b>	<b>345,121</b>
Essex	8,517	915	9,432
King & Queen	2,374	203	2,577
King William	8,493	596	9,089
Mathews	5,340	504	5,844
Middlesex	7,055	447	7,502
<b>Middle Peninsula Total</b>	<b>31,779</b>	<b>2,665</b>	<b>34,444</b>
<b>VPPSA Solid Waste Planning Unit Total</b>	<b>264,945</b>	<b>118,008</b>	<b>382,953</b>
2019 Regional Recycling Rate for the VPPSA SWPU = 30.81%			

## **APPENDIX IV**

### **VPPSA REGION SOLID WASTE PROJECTIONS**



## APPENDIX IV – VPPSA Region Solid Waste Generation Projections

### 1. Virginia Solid Waste Report

The Virginia Department of Environmental Quality (DEQ) compiles data provided from Virginia solid waste management region assessments, and develops a summary annual report to document solid waste management activities in the Commonwealth. The most recent report, titled “2020 Annual Solid Waste Report for CY2019, Commonwealth of Virginia” (DEQ, 2020)<sup>1</sup>, was utilized to develop estimates of waste generation for the VPPSA region.

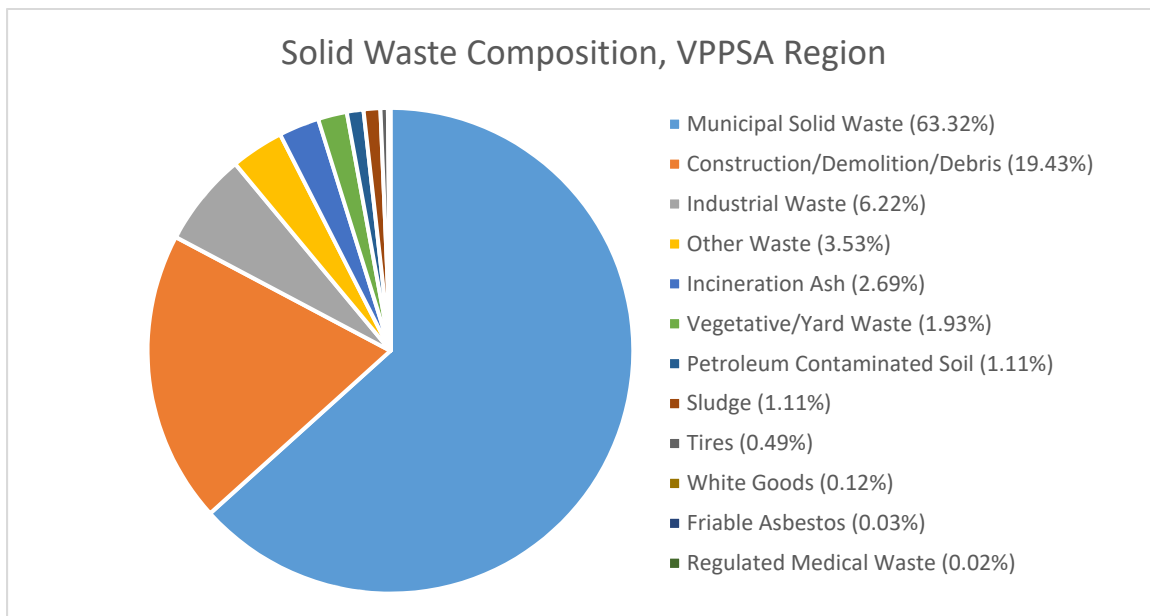
Information from the report that is pertinent to determining waste projections for the VPPSA Region are described in the subparagraphs below.

#### 1.1. Total Solid Waste Managed in Virginia

- a) The total solid waste received by permitted solid waste management facilities during Calendar year 2019, as reported = 22,530,150.85 tons (DEQ, 2020; page i)
- b) Of the total solid waste received by Virginia facilities, 16,745,894.34 tons originated in the Commonwealth and 5,784,256.50 tons originated from other jurisdictions (DEQ, 2020; page i). The resulting distribution is 74.3% Virginia waste, and 25.7% from elsewhere.

#### 1.2. Composition of the Solid Waste Stream

Waste is reported to DEQ in the following categories, and the percentage (by weight) is determined from total tonnages; reproduced from Table 19 (DEQ,2020).



<sup>1</sup> Virginia Department of Environmental Quality; “2020 Annual Solid Waste Report for CY2019, Commonwealth of Virginia”; dated June 2020.

## APPENDIX IV – VPPSA Region Solid Waste Generation Projections

However, since some quantities are small or are not managed within the VPPSA region, some categories are combined into the “Other” category. The percentages are used to calculate a general estimate of total waste quantities, and are for planning purposes only. They do not account for circumstances in member jurisdictions that may result in localized variations in waste quantities. Percentages used in calculations are presented for the DEQ report (DEQ, 2020) and as adjusted for the VPPSA Region are provided in **Table 4.1**.

### 2. Population Data

The population of the VPPSA Region was determined using three sources of data:

- United States Decennial Census (US Census);
- United States Census American Community Survey (ACS); and,
- Weldon Cooper Center for Public Service Demographics Research Group.

US Census data was used to establish existing population values for each jurisdiction within the VPPSA Region for 2010, as well as the population of the Commonwealth of Virginia for 2019. Population projections for 2020, 2030, and 2040 are based on Weldon Cooper data.

There are some small differences between the US Census data (which includes both the decennial census and the ACS) and the Weldon Cooper Center data. Since the Weldon Cooper data is used in population projections, it is the source of data used when there is disagreement with the US Census data, in order to maintain consistency.

Final data used for subsequent calculations are as follows:

- 2.1. Virginia Population, calendar year 2019: 8,535,519 persons<sup>2</sup>.
- 2.2. VPPSA Region Total Population, calendar year 2019: 363,002 persons<sup>3</sup>.
- 2.3. Lower Peninsula Population, calendar year 2019 = 308,845 persons<sup>3</sup> (85%).
- 2.4. Middle Peninsula Population, calendar year 2019 = 54,157 persons<sup>3</sup> (15%).
- 2.5. Population Projections for 2020, 2030, and 2040 are provided in **Appendix II**.

### 3. *Per Capita* Waste Generation Rate Estimate

Estimates of *per capita* waste generation were determined using total quantities of waste generated by the region, as reported annually on DEQ Form 50-30, and using the VPPSA Region Total Population noted in 2.2.

- 3.1. Total Waste generated in the VPPSA Region, Calendar year 2019: 379,565 tons<sup>4</sup>.
- 3.2. Total *per capita* solid waste generation rate for the VPPSA Region:

---

<sup>2</sup> US census website: <https://www.census.gov/quickfacts/VA>; accessed 1/21/2021.

<sup>3</sup> University of Virginia, Weldon Cooper Center for Public Service Demographics Research Group; “ July 1, 2019 Population Estimates for Virginia and its Counties and Cities; published January 27, 2020 and accessed from [https://demographics.coopercenter.org/sites/demographics/files/2020-01/VAPopulationEstimates\\_2019-07\\_UVACooperCenter.pdf](https://demographics.coopercenter.org/sites/demographics/files/2020-01/VAPopulationEstimates_2019-07_UVACooperCenter.pdf); accessed 10/23/2020

<sup>4</sup> As reported to DEQ on Form 50-30 by VPPSA.

## APPENDIX IV – VPPSA Region Solid Waste Generation Projections

$$\frac{379,565 \text{ tons}}{363,002 \text{ persons}} \times \frac{2,000 \text{ pounds}}{\text{ton}} \times \frac{\text{year}}{365 \text{ days}} = 5.73 \text{ pounds / person / day}$$

The total *per capita* solid waste generation rate of 5.73 pounds/person/day is a mathematical calculation based on the total waste generated and the population of the Region.

3.3. Total *per capita* solid waste generation rate for the VPPSA Lower Peninsula region:

$$\frac{345,121 \text{ tons}}{308,845 \text{ persons}} \times \frac{2,000 \text{ pounds}}{\text{ton}} \times \frac{\text{year}}{365 \text{ days}} = 6.12 \text{ pounds / person / day}$$

3.4. Total *per capita* solid waste generation rate for the VPPSA Middle Peninsula region:

$$\frac{34,444 \text{ tons}}{54,157 \text{ persons}} \times \frac{2,000 \text{ pounds}}{\text{ton}} \times \frac{\text{year}}{365 \text{ days}} = 3.48 \text{ pounds / person / day}$$

Note that the waste generation rate differs markedly for the two geographic sub-regions, the Lower Peninsula and the Middle Peninsula. For this reason, a *per capita* waste generation rate has been calculated determined for each jurisdictional area in similar fashion to 3.3 and 3.4. These jurisdictional waste generation rates are presented on **Table 4.2**.

### 4. VPPSA Region Solid Waste Generation Projections

Total solid waste generation for the VPPSA region for the study period (2020 – 2040) was estimated using the jurisdictional *per capita* solid waste generation rates calculated in Section 3 and the population projections in Section 2. Total solid waste tonnage for the VPPSA Region is calculated for each jurisdiction for the years 2020, 2030, and 2040, and the total volumes are averaged over that period of time. Total solid waste generated over the study period is 7,995,000 tons. Solid waste generation projections for the VPPSA Region are presented in **Table 4.2**.

Total municipal solid waste managed in the VPPSA Region is also divided into individual waste categories, as discussed in Section 1, and as presented in Table 4.1. The volume of solid waste in each category is calculated for each jurisdiction for the years 2020, 2030, and 2040, and the total volumes are averaged over that period of time. Solid waste composition projections for the VPPSA Region are presented in **Table 4.3**.

## APPENDIX IV - VPPSA Region Solid Waste Generation Projections

**Table 4.1: VPPSA Region Solid Waste Composition**

Source : Virginia Department of Environmental Quality;  
*2020 Annual Solid Waste Report for CY2019, Commonwealth of Virginia;*  
dated June 2020.

Waste Type	DEQ Percentage	VPPSA Percentage
Municipal Solid Waste	63.32%	63.32%
Construction and Demolition Debris	19.43%	19.43%
Industrial Waste	6.22%	6.22%
Other Waste	3.53%	9.10%
Incineration Ash	2.69%	0%
Vegetative/Yard Waste	1.93%	1.93%
Petroleum Contaminated Soil	1.11%	0%
Sludge	1.11%	0%
Tires	0.49%	0%
White Goods	0.12%	0%
Friable Asbestos	0.03%	0%
Regulated Medical Waste	0.02%	0%

## APPENDIX IV - VPPSA Region Solid Waste Generation Projections

**Table 4.2: VPPSA Region Solid Waste Generation Projections**

Population Data: <b>Appendix II, Table 2.1</b> Waste Generation Data : <b>Appendix III</b>							
VPPSA Region	CY 2019 Waste Quantities (tons)	CY 2019 Quantities Recycled (tons)	CY 2019 Total Waste Generated (tons)	CY 2019 Waste Generation Rate (lbs/person/day)	2020 Projected Waste (tons)	2030 Projected Waste (tons)	2040 Projected Waste (tons)
Hampton	127,869	33,709	161,578	6.52	161,313	152,162	141,373
JCC	67,403	38,943	106,346	7.68	109,301	129,187	146,986
Poquoson	2,840	1,862	4,702	2.08	4,916	5,146	5,386
Williamsburg	10,250	6,527	16,777	5.98	16,864	18,549	19,965
York County	24,804	30,914	55,718	4.40	55,858	60,603	64,484
<b>Lower Peninsula Total</b>	<b>233,166</b>	<b>111,955</b>	<b>345,121</b>		<b>348,252</b>	<b>365,647</b>	<b>378,194</b>
Essex	8,517	915	9,432	4.80	9,397	9,655	9,788
King & Queen	2,374	203	2,577	2.05	2,596	2,626	2,623
King William	8,493	596	9,089	2.91	9,107	10,085	10,916
Mathews	5,340	504	5,844	3.70	5,858	5,595	5,270
Middlesex	7,055	447	7,502	3.84	7,632	7,900	8,064
<b>Middle Peninsula Total</b>	<b>31,779</b>	<b>2,665</b>	<b>34,444</b>		<b>34,589</b>	<b>35,861</b>	<b>36,660</b>
<b>VPPSA Region Total</b>	<b>264,945</b>	<b>114,620</b>	<b>379,565</b>	<b>5.73</b>	<b>382,841</b>	<b>401,507</b>	<b>414,854</b>
2019 Regional Recycling Rate for the VPPSA SWPU = 30.8%				Average per capita Rate	Total Projected Waste Generation 2020 - 2040 7,995,000 tons (rounded)		

## APPENDIX IV - VPPSA Region Solid Waste Generation

**Table 4.3: VPPSA Region Solid Waste Waste Composition Projections**

Waste Composition: Appendix IV, Table 4.1		2020				
Total Waste: Appendix IV, Table 4.2						
VPPSA Region	Total MSW (tons)	Total CDD (tons)	Total Industrial (tons)	Total Other (tons)	Total Yard Waste (tons)	Total Recyclables (tons)
Hampton	80,836	24,802	7,941	11,616	2,464	33,654
JCC	43,867	13,459	4,309	6,304	1,337	40,025
Poquoson	1,880	577	185	270	57	1,947
Williamsburg	6,524	2,002	641	938	199	6,561
York County	15,746	4,831	1,547	2,263	480	30,992
<b>Lower Peninsula Total</b>	<b>148,853</b>	<b>45,670</b>	<b>14,623</b>	<b>21,391</b>	<b>4,537</b>	<b>113,178</b>
Essex	5,373	1,649	528	772	164	912
King & Queen	1,514	465	149	218	46	205
King William	5,389	1,653	529	774	164	597
Mathews	3,389	1,040	333	487	103	505
Middlesex	4,545	1,394	446	653	139	455
<b>Middle Peninsula Total</b>	<b>20,210</b>	<b>6,201</b>	<b>1,985</b>	<b>2,904</b>	<b>616</b>	<b>2,673</b>
<b>2020 VPPSA Region Total</b>	<b>169,063</b>	<b>51,871</b>	<b>16,608</b>	<b>24,295</b>	<b>5,153</b>	<b>115,852</b>

## APPENDIX IV - VPPSA Region Solid Waste Generation

**Table 4.3: VPPSA Region Solid Waste Waste Composition Projections**

Waste Composition: Appendix IV, Table 4.1		2030				
Total Waste: Appendix IV, Table 4.2						
VPPSA Region	Total MSW (tons)	Total CDD (tons)	Total Industrial (tons)	Total Other (tons)	Total Yard Waste (tons)	Total Recyclables (tons)
Hampton	76,251	23,395	7,490	10,957	2,324	31,745
JCC	51,848	15,908	5,093	7,451	1,580	47,307
Poquoson	1,968	604	193	283	60	2,038
Williamsburg	7,176	2,202	705	1,031	219	7,216
York County	17,083	5,241	1,678	2,455	521	33,624
<b>Lower Peninsula Total</b>	<b>154,326</b>	<b>47,349</b>	<b>15,160</b>	<b>22,177</b>	<b>4,704</b>	<b>121,930</b>
Essex	5,520	1,694	542	793	168	937
King & Queen	1,532	470	150	220	47	207
King William	5,967	1,831	586	858	182	661
Mathews	3,237	993	318	465	99	483
Middlesex	4,704	1,443	462	676	143	471
<b>Middle Peninsula Total</b>	<b>20,961</b>	<b>6,431</b>	<b>2,059</b>	<b>3,012</b>	<b>639</b>	<b>2,758</b>
<b>2030 VPPSA Region Total</b>	<b>175,287</b>	<b>53,781</b>	<b>17,219</b>	<b>25,189</b>	<b>5,343</b>	<b>124,688</b>

## APPENDIX IV - VPPSA Region Solid Waste Generation

**Table 4.3: VPPSA Region Solid Waste Waste Composition Projections**

Waste Composition: Appendix IV, Table 4.1		2040				
Total Waste: Appendix IV, Table 4.2						
VPPSA Region	Total MSW (tons)	Total CDD (tons)	Total Industrial (tons)	Total Other (tons)	Total Yard Waste (tons)	Total Recyclables (tons)
Hampton	70,844	21,736	6,959	10,180	2,159	29,494
JCC	58,991	18,099	5,795	8,477	1,798	53,825
Poquoson	2,060	632	202	296	63	2,133
Williamsburg	7,724	2,370	759	1,110	235	7,767
York County	18,178	5,577	1,786	2,612	554	35,778
<b>Lower Peninsula Total</b>	<b>157,797</b>	<b>48,414</b>	<b>15,501</b>	<b>22,676</b>	<b>4,809</b>	<b>128,997</b>
Essex	5,597	1,717	550	804	171	950
King & Queen	1,530	469	150	220	47	207
King William	6,459	1,982	634	928	197	716
Mathews	3,049	936	300	438	93	455
Middlesex	4,802	1,473	472	690	146	481
<b>Middle Peninsula Total</b>	<b>21,437</b>	<b>6,577</b>	<b>2,106</b>	<b>3,080</b>	<b>653</b>	<b>2,807</b>
<b>2040 VPPSA Region Total</b>	<b>179,233</b>	<b>54,991</b>	<b>17,607</b>	<b>25,756</b>	<b>5,463</b>	<b>131,804</b>
<b>VPPSA Region Total 2020 - 2040</b>	<b>3,491,000</b>	<b>1,071,000</b>	<b>343,000</b>	<b>502,000</b>	<b>106,000</b>	<b>2,482,000</b>



## **APPENDIX V**

### **VPPSA REGION SOLID WASTE FACILITIES**

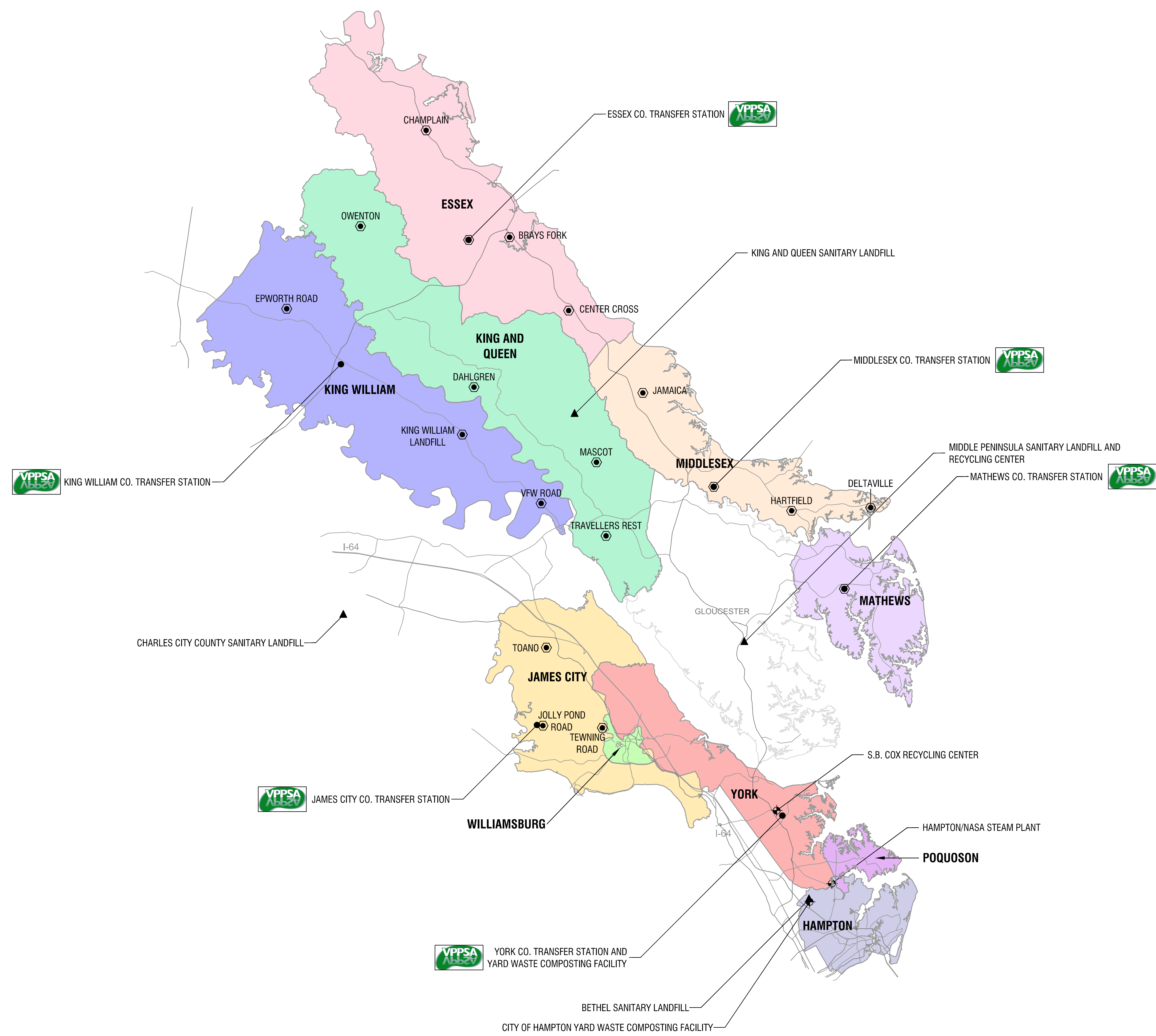
# APPENDIX V - VPPSA Region Solid Waste Facilities

Table 5.1: VPPSA Region Solid Waste Facilities		MSW Landfill	Convenience Center	Transfer Station	Industrial Landfill	CDD Processing Facility	Vegetative Waste Facility	Incinerator/ Energy Recovery
Facility Name	Location							
Brays Fork Convenience Center	Essex County		CC					
Center Cross Convenience Center	Essex County		CC					
Champlain Convenience Center	Essex County		CC					
Essex County Convenience Center	Essex County		CC	TS				
James City County Convenience Center	James City County			TS				
Toano Convenience Center	James City County		CC					
Jolly Pond Road Convenience Center	James City County		CC					
Tewning Road Convenience Center	James City County		CC					
King and Queen Landfill	King and Queen County	LF						
Dahlgren Convenience Center	King and Queen County		CC					
Travelers Rest Convenience Center	King and Queen County		CC					
Mascot Convenience Center	King and Queen County		CC					
Owenton Convenience Center	King and Queen County		CC					
King William County Convenience Center	King William County		CC	TS				
Epworth Road Convenience Center	King William County		CC					
King William Landfill Convenience Center	King William County		CC					
VFW Road Convenience Center	King William County		CC					
Mathews County Convenience Center	Mathews County		CC	TS				
Deltaville Convenience Center	Middlesex County		CC					
Hartfield Convenience Center	Middlesex County		CC					
Jamaica Convenience Center	Middlesex County		CC					
Middlesex County Convenience Center	Middlesex County		CC	TS				
York County Transfer Station	York County			TS				
S.B. Cox Recycling Center (Private)	York County					CDD		
York County Composting Facility	York County						VW	
Bethel Landfill	City of Hampton	LF	CC	TS			VW	
Hampton/NASA Steam Plant	City of Hampton							IN
Charles City County Landfill (out of region)	Charles City County	LF						
Middle Penninsula Landfill (out of region)	Gloucester County	LF						

## **APPENDIX VI**

### **VPPSA REGION SOLID WASTE FACILITIES MAP**

APPENDIX VI: VPPSA Region Solid Waste Facilities Map



## **APPENDIX VII**

### **SUMMARY OF SOLID WASTE MANAGEMENT SERVICES BY JURISDICTION**

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **ESSEX COUNTY**

#### **Residential Waste Collection**

Essex County does not offer curbside solid waste collection. Generally, County residents utilize the four convenience centers operated by VPPSA, which accept residential and limited commercial waste.

The Town of Tappahannock provides curbside residential waste collection once per week to town residents. Town personnel are utilized to provide the collection services; however, residents must provide their own waste containers.

#### **Recycling**

Drop-off recycling services are available at the four convenience centers operated by VPPSA throughout the County. The Town of Tappahannock provides curbside collection of recyclables from town residents. Essex County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

Essex County does not provide commercial or industrial waste collection. The Town of Tappahannock provides the collection of commercial waste to most of the commercial institutions and businesses located within the town. These services are provided using Town personnel. Outside of the Town, commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

VPPSA provides two household chemical collection events annually on the Middle Peninsula, one in April and one in August.

#### **Waste Transfer**

Operation of the transfer station operation and waste hauling to King and Queen Landfill and the MPLRF are provided by VPPSA.

#### **Yard Waste Composting**

Essex County does not provide yard waste composting services.

#### **Disposal**

The majority of the waste in the County is hauled by VPPSA. The King and Queen Landfill and the MPLRF are used for disposal.

#### **Waste to Energy**

Essex County is not involved in Waste to Energy.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **JAMES CITY COUNTY**

#### **Residential Waste Collection**

James City County does not provide curbside residential waste collection. Some homeowner associations contract with private haulers to provide curbside collection services to association members. The majority of County residents subscribe directly with a private hauler for curbside waste collection services.

The County operates three convenience centers for residents to drop-off waste. Residents must either purchase coupons from the County and present them at the convenience site when delivering residential waste or pay at the convenience site using a credit or debit card. Bulky waste, such as furniture, is accepted at the Jolly Pond Convenience Center.

The County owns and leases a transfer station facility at the closed James City County landfill, where residential, commercial, and industrial waste is accepted.

#### **Recycling**

James City County provides residential curbside collection of recyclables to eligible single-family households and multifamily communities through a subscription service. Drop-off recycling collection is also available at the three convenience sites. James City County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

James City County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

The collection of household chemicals is provided by VPPSA every other month from February through November.

#### **Waste Transfer**

James City County operates four (3) convenience centers and one convenience center/transfer station.

#### **Yard Waste Composting**

The County provides limited leaf collection in the fall through a private contractor and allows residents to drop off bagged leaves at the Jolly Pond Convenience Center during certain times of the year free of charge.

#### **Disposal**

Waste generated in the County is disposed of in the Bethel Landfill, the Charles City Landfill, and the King and Queen Landfill.

#### **Waste to Energy**

James City County is not involved in Waste to Energy.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **KING AND QUEEN COUNTY**

#### **Residential Waste Collection**

King and Queen County does not provide curbside residential waste collection. Residents may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates four convenience center sites, which only accept residential and limited commercial waste.

#### **Recycling**

King and Queen County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the four convenience centers operated by VPPSA. King and Queen County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

King and Queen County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

VPPSA provides two household chemical collection events annually on the Middle Peninsula, one in April and one in August.

#### **Waste Transfer**

VPPSA operates four (4) convenience centers in King and Queen County, and the waste is transferred to the King and Queen Landfill and the Middle Peninsula Landfill and Recycling Facility (MPLRF).

#### **Yard Waste Composting**

King and Queen County does not provide yard waste composting services

#### **Disposal**

The King and Queen Landfill serves as the primary disposal source for the County's municipal solid waste, and the MPLRF receives most of the CDD and industrial solid waste.

#### **Waste to Energy**

King and Queen County is not involved in any Waste to Energy.



## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **KING WILLIAM COUNTY**

#### **Residential Waste Collection**

King William County does not provide curbside residential waste collection. Residents may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates four convenience center sites throughout the County, which only accept residential and limited commercial waste.

The Town of West Point provides weekly curbside residential waste collection and monthly bulk item collection to town residents. Town personnel are utilized to provide the collection services, and residents are provided with a 90-gallon roll-out container.

#### **Recycling**

King William County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the four convenience sites. In addition, the Town of West Point provides residential curbside collection of recyclables using Town personnel, who deliver the recyclables to WestRock paper mill and to County Waste's West Point Transfer Station. King William County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities

#### **Commercial Waste Collection**

King William does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

VPPSA provides two household chemical collection events annually on the Middle Peninsula, one in April and one in August.

#### **Waste Transfer**

VPPSA operates four (4) convenience centers in King William County, and the waste is transferred to the King and Queen Landfill and the Middle Peninsula Landfill and Recycling Facility (MPLRF).

#### **Yard Waste Composting**

King William County does not provide yard waste composting services

#### **Disposal**

The majority of the waste in the County is hauled by VPPSA. The King and Queen Landfill and the MPLRF are used for disposal.

#### **Waste to Energy**

King William County is not involved in Waste to Energy.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **MATHEWS COUNTY**

#### **Residential Waste Collection**

Mathews County does not provide curbside residential waste collection. Residents throughout the County may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates one convenience center that accepts residential waste and limited commercial waste.

#### **Recycling**

Mathews County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the convenience center operated by VPPSA.

Mathews County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

Mathews County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

VPPSA provides two household chemical collection events annually on the Middle Peninsula, one in April and one in August.

#### **Waste Transfer**

VPPSA operates one transfer station in Mathews County, and the waste is transferred to the King and Queen Landfill and the Middle Peninsula Landfill and Recycling Facility (MPLRF).

#### **Yard Waste Composting**

Mathews County does not provide yard waste composting services.

#### **Disposal**

The majority of the waste in the County is hauled by VPPSA. The King and Queen Landfill and the MPLRF are used for disposal.

#### **Waste to Energy**

Mathews County is not involved in Waste to Energy.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **MIDDLESEX COUNTY**

#### **Residential Waste Collection**

Middlesex County does not provide curbside residential waste collection. Residents may choose to individually subscribe directly with a private hauler for curbside collection services.

VPPSA operates four convenience center sites throughout the County, which only accept residential and limited commercial waste.

The Town of Urbanna provides curbside residential waste collection twice per week to town residents. A private hauler is contracted to provide the collection services, and residents must provide their own containers.

#### **Recycling**

Middlesex County does not provide residential curbside collection of recyclables. Drop-off recycling collection is available at the four convenience centers operated by VPPSA. The Town of Urbanna provides residential curbside collection of recyclables using a private Contractor. Middlesex County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

Middlesex County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

VPPSA provides two household chemical collection events annually on the Middle Peninsula, one in April and one in August.

#### **Waste Transfer**

VPPSA operates four (4) convenience centers in Middlesex County, and the waste is transferred to the King and Queen Landfill, the Middle Peninsula Landfill and Recycling Facility (MPLRF), and the Bethel Landfill.

#### **Yard Waste Composting**

Middlesex County does not provide yard waste composting services.

#### **Disposal**

The majority of the waste in the County is hauled by VPPSA. The King and Queen Landfill and the MPLRF are used for most solid waste disposal, with some commercial waste hauled to the Bethel Landfill.

#### **Waste to Energy**

Middlesex County is not involved in Waste to Energy.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **YORK COUNTY**

#### **Residential Waste Collection**

York County provides curbside collection of residential waste to approximately 95 percent of County residents once per week, using a private contractor. The remaining residents may subscribe directly with private waste collection haulers for curbside residential waste collection or may dispose of their waste at the transfer station. Bulky items are collected by a contracted private hauler. The transfer station is located at the closed York County Sanitary Landfill and accepts residential, commercial, and industrial waste. A private company provides Transfer Station operations and maintenance, including scales and drop off services for garbage through a lease agreement.

#### **Recycling**

York County provides residential curbside collection of recyclables to single-family households in the County. Drop-off recycling collection is also available at the York County Waste Management Center. York County does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

York County does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

The collection of household chemicals is provided by VPPSA every other month from February through November.

#### **Waste Transfer**

VPPSA operates one (1) convenience center in York County, and the waste is transferred to the King and Queen Landfill, the Middle Peninsula Landfill and Recycling Facility (MPLRF), the Bethel Landfill, and the S.B. Cox Recycling Center.

#### **Yard Waste Composting**

Leaf collection is provided by the County every other week from November through January. Yard waste composting is provided by VPPSA at the York County Composting Facility, located at the York County Waste Management Center. Residents may also schedule special yard debris collection with the County throughout the year at a nominal cost.

#### **Disposal**

The majority of the waste in the County is hauled by VPPSA to the King and Queen Landfill. Commercial waste is transferred to the Middle Peninsula Landfill and Recycling Facility (MPLRF), and the Bethel Landfill, industrial waste is transferred to the Bethel Landfill, and CDD waste is transferred to the Bethel Landfill and S.B. Cox Recycling Center.

#### **Waste to Energy**

York County is not involved in Waste to Energy.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **CITY OF HAMPTON**

#### **Residential Waste Collection**

The City of Hampton provides residents with curbside residential waste collection once per week. City personnel are utilized to provide the collection services and residents are provided with a 90-gallon container. The City provides separate collections for bagged yard waste, small limbs and brush, tires (maximum of five per week), and bulky waste. Residents and contractors may also choose to take their trash, yard waste, and large limbs to the Bethel Landfill, located in the City.

#### **Recycling**

The City of Hampton provides residential curbside collection of recyclables to all eligible single-family households in the City, except for townhouses and condominiums, using City personnel and equipment. In addition, Langley Air Force Base provides curbside collection of recyclables, as well as a drop-off facility on the base for use by base residents. The City of Hampton does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

The City of Hampton does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

The collection of household chemicals is provided by VPPSA every other month from February through November.

#### **Waste Transfer**

Most wastes are hauled directly to the Bethel Landfill or the Hampton Steam Plant. Some commercial waste is hauled to the York County Transfer Station, and some CDD waste is hauled to the S.B. Cox Recycling Center.

#### **Yard Waste Composting**

The City provides separate collections for bagged yard waste, small limbs and brush. Residents and contractors may also choose to take their yard waste and large limbs to the Bethel Landfill. Yard waste composting is provided by VPPSA at a compost facility located at the York County Waste Management Center.

#### **Disposal**

Residential waste is hauled to the Hampton Steam Plant or the Bethel Landfill for disposal. Commercial wastes are hauled to the Bethel Landfill, the Hampton Steam Plant, or the York County Transfer Station.

#### **Waste to Energy**

Residential waste and some commercial waste are processed at the Hampton Steam Plant.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **CITY OF POQUOSON**

#### **Residential Waste Collection**

The City of Poquoson provides curbside residential waste collection once per week to City residents, using a private contractor. Residents are issued a 35 or 65-gallon container and may purchase green plastic bags, bearing the City seal, for waste that will not fit into trash containers. The City also provides bulky waste collection and landscape debris collection to residents, by appointment only. Bagged leaves are collected by City personnel every other Monday, November through February.

#### **Recycling**

The City of Poquoson provides residential curbside collection of recyclables to all eligible single-family households in the City, including many townhouse communities.

The City of Poquoson does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

The City of Poquoson does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

The collection of household chemicals is provided by VPPSA every other month from February through November in York County, James City County, and the City of Hampton. One event is held in October in the City of Poquoson.

#### **Waste Transfer**

Most wastes are hauled directly to the Bethel Landfill or the Hampton Steam Plant. Some commercial waste is hauled to the York County Transfer Station, and CDD waste is hauled to the Bethel Landfill or the S.B. Cox Recycling Center.

#### **Yard Waste Composting**

Yard waste composting is provided by VPPSA at the York County Composting Facility, located at the York County Waste Management Center.

#### **Disposal**

Bethel Landfill serves as the primary disposal source. A portion of the commercial waste is delivered to the York County Transfer Station and hauled to the King and Queen Landfill.

#### **Waste to Energy**

Residential waste and some commercial waste are processed at the Hampton Steam Plant.

## **APPENDIX VII – VPPSA Region Solid Waste Services by Jurisdiction**

### **CITY OF WILLIAMSBURG**

#### **Residential Waste Collection**

The City of Williamsburg provides curbside collection to residents within the City once per week, using a private contractor. Residents are provided with a 35 or 65-gallon container. Recycling is collected every other week. In addition, the private contractor currently provides yard waste collection. The City, utilizing City personnel, provides leaf collection in the fall and bulky items may be collected curbside, by appointment only.

Residents may use the convenience center in James City County, located at 1204 Jolly Pond Road, to dispose of household items not eligible for pickup by the bulky item collection program; however, residents must purchase coupons through the City or James City County or credit/debit cards are accepted for disposal of waste at the convenience center.

#### **Recycling**

The City of Williamsburg provides residential curbside collection of recyclables to all eligible single-family households in the City, including many townhouse communities and condominiums. In addition, the City has an agreement with James City County to provide access to a drop-off recycling convenience site that may be used by small businesses and City residents. The City of Williamsburg does not provide collection of recyclables from commercial institutions, businesses, or industrial facilities.

#### **Commercial Waste Collection**

The City of Williamsburg does not provide commercial or industrial waste collection. Commercial institutions and industries must contract with private haulers for waste collection services.

#### **Household Chemical Collection**

The collection of household chemicals is provided by VPPSA every other month from February through November in York County, James City County, and the City of Hampton.

#### **Waste Transfer**

Most wastes are hauled directly to the Bethel Landfill. Some commercial waste is hauled to the York County Transfer Station or the Bethel Landfill. CDD waste is hauled directly to the Bethel Landfill or the S.B. Cox Recycling Center.

#### **Yard Waste Composting**

A private contractor currently provides yard waste collection. The City, utilizing City personnel, provides leaf collection in the fall.

#### **Disposal**

Residential Waste is delivered to the Bethel Landfill. Commercial waste is disposed of in the York County Transfer Station, and the King and Queen Landfill.

#### **Waste to Energy**

The City of Williamsburg is not involved in Waste to Energy.

## APPENDIX VIII

### RECYCLING RATE ESTIMATE



## Appendix VIII – VPPSA Region Recycling Rate Calculation

### 1. Applicability

In accordance with the Virginia Administrative Code, 9 VAC 20-130-125 A., the minimum recycling rate for each Virginia solid waste planning unit is 25%, unless the population density rate is less than 100 persons per square mile according to the most recent United States Census, in which case the required recycling rate is 15%. The population projected for 2020 in the VPPSA region is 365,958 and the land area is approximately 1,889 mi<sup>2</sup>.

Therefore:  $\frac{365,958 \text{ persons}}{1,889 \text{ mi}^2} = \frac{193.7 \text{ persons}}{\text{mi}^2} \rightarrow$  The required recycling rate is 25%

### 2. Method of Calculating Recycling Rate

The recycling rate is calculated in accordance with the formula provided in 9 VAC 20-130-125 C.

The Base Recycling Rate,  $B$ , and the Adjusted Recycling Rate,  $A$ , are given by:

$$\text{Equation (1) } B = \frac{P}{M} \times 100 \quad \text{Equation (2) } A = \frac{P + C}{M + C} \times 100$$

And, if a source reduction program is in place,  $S = B + 2\%$ , or  $S = A + 2\%$

Where:

$A$  = adjusted recycling rate; (%)

$B$  = base recycling rate; (%)

$C$  = total added mass allowed by 9 VAC 20-130-125 B2, B3, B4; (mass)

$M$  = sum of Principal Recyclable Materials (PRM) and Municipal Solid Waste (MSW); (mass)

$P$  = total Principal Recyclable Materials (PRM); (mass)

$S$  = base or adjusted recycling rate with SRP (source reduction program) credit; (%)

## Appendix VIII – VPPSA Region Recycling Rate Calculation

### 3. Annual Recycling Rate Calculation Results

The VPPSA Region does not claim credit under 9 VAC 20-130-125 B, and does not have a Source Reduction Program (SRP). The Annual Recycling Rate calculation is given by Equation (1); calculation results are based on data from DEQ Form 50-25; **Table 8.1**.

<b>Table 8.1: VPPSA Annual Recycling Rate Calculation Results</b>			
Based on data submitted on DEQ Form 50-30, Locality Recycling Report			
<b>Year</b>	<b>Principle Recyclable Material (tons)</b>	<b>Total Municipal Solid Waste Disposed (tons)</b>	<b>Recycling Rate</b>
2004	224,369	258,273	46%
2005	114,746	268,229	30%
2006	119,544	286,958	29%
2007	215,768	335,820	39%
2008	151,479	272,340	36%
2009	138,808	262,940	35%
2010	116,199	292,768	28%
2011	107,917	282,348	28%
2012	102,499	288,635	26%
2013	92,842	245,268	27%
2014	105,640	283,729	27%
2015	147,164	265,674	36%
2016	109,384	263,645	29%
2017	94,746	280,023	25%
2018	117,099	267,563	30%
2019	118,008	264,945	31%
2020			
2021			
2022			
2023			
2024			
2025			
2026			
2027			
2028			
2029			
2030			

## **APPENDIX IX**

### **PUBLIC HEARING NOTICES**

VIRGINIA PENINSULAS PUBLIC SERVICE AUTHORITY  
PUBLIC HEARING  
PROPOSED SOLID WASTE MANAGEMENT PLAN

Wednesday, June 23, 2004, 7:00 pm

Thursday, June 24, 2004, 7:00 pm

In accordance with 9VAC20-230-10 *et seq.* of the Virginia Administrative Code, the Virginia Peninsulas Public Service Authority (VPPSA) will hold public hearings on the proposed Solid Waste Management Plan at 7:00 p.m. on Wednesday, June 23, 2004, at the VPPSA Administrative Offices, 300 McLaws Circle, Suite 200, Williamsburg, Virginia and at 7:00 p.m. Thursday, June 24, 2004 at the Cooks Corner Office Complex, 2893 General Puller Highway, Saluda, Virginia .

The purpose of the public hearing is to receive comments on the proposed revised Solid Waste Management Plan for the VPPSA Region prior to submittal to the Virginia Department of Environmental Quality. The VPPSA Region includes the following 10 member jurisdictions: the cities of Hampton, Poquoson, and Williamsburg; and the counties of Essex, James City, King and Queen, King William, Mathews, Middlesex, and York. The revised Solid Waste Management Plan develops objectives for the management of solid waste, such as source reduction, reuse, recycling, resource recovery, and landfilling.

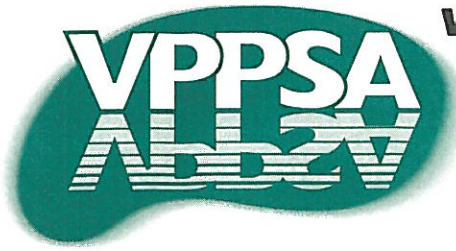
Written comments may be submitted to Stephen Geissler, Executive Director, Virginia Peninsulas Public Service Authority, 300 McLaws Circle, Suite 200, Williamsburg, Virginia 23185 until June 25, 2004. Interested parties will be given the opportunity to provide comments at the public hearings.

The revised Solid Waste Management Plan may be examined at the Virginia Peninsulas Public Service Authority Administrative Office located at 300 McLaws Circle, Suite 200 in Williamsburg, Virginia and the Middlesex County Administrator's Office located at the Woodward Building, Courthouse Complex, Saluda, Virginia, between the hours of 8:30 a.m. to 4:30 p.m. from Wednesday, June 16, 2004, through Thursday, June 24, 2004. Please contact the VPPSA Administrative Office at (757) 259-9850 with any questions.

All requests for reasonable accommodations due to a disability should be made to the Virginia Peninsulas Public Service Authority Office by calling (757) 259-9850, with at least a 48-hour notice. All interested parties are encouraged to attend.

## **APPENDIX X**

### **VPPSA BOARD RESOLUTION**



## Virginia Peninsulas Public Service Authority

June 3, 2011

Jeffery Steers  
Department of Environmental Quality  
629 East Main Street  
Richmond, Virginia 23219

Subject: Solid Waste Management Plan  
Virginia Peninsulas Public Service Authority  
Bay Disposal and Recycling

Dear Mr. Steers:

At the regular meeting on June 3, 2011, the Board of Directors of the Virginia Peninsulas Public Service Authority (VPPSA) approved the inclusion of the Hampton Recovery Center proposed by Bay Disposal and Recycling to be located at 301 E Street in Hampton, Virginia in the VPPSA Solid Waste Management Plan.

Based on information provided by Bay Disposal and Recycling, the facility will accept and process single stream recyclables and other commercial recyclables with throughput as follows:

Anticipated average daily acceptance rate – 150 tons per day, initially  
Peak Daily design capacity – 400 tons per day

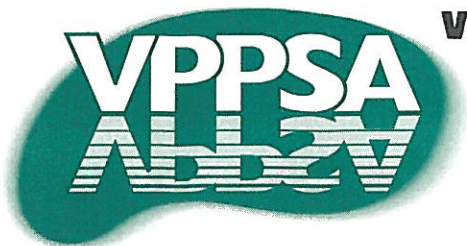
Please contact me if you have any questions or if you need additional information.

Sincerely,

Stephen B. Geissler, P.E.  
Executive Director

Cc: Dave Smiley, Bay Disposal and Recycling  
Peter Morley, City of Hampton





## Virginia Peninsulas Public Service Authority

June 3, 2011

Jeffery Steers  
Department of Environmental Quality  
629 East Main Street  
Richmond, Virginia 23219

Subject: Solid Waste Management Plan  
Virginia Peninsulas Public Service Authority  
S.B. Cox, Inc.

Dear Mr. Steers:

At the regular meeting on April 1, 2011, the Board of Directors of the Virginia Peninsulas Public Service Authority (VPPSA) approved the inclusion of the S.B. Cox Yorktown Recycling Facility proposed by S.B. Cox, Inc. to be located at 217 Cox Drive in Yorktown, Virginia in the VPPSA Solid Waste Management Plan.

Based on information provided by Joyce Engineering on behalf of S.B. Cox, the facility will accept construction / demolition / debris wastes for recycling with throughput as follows:

Anticipated average daily acceptance rate – 750 tons per day  
Peak Daily design capacity – 1,500 tons per day

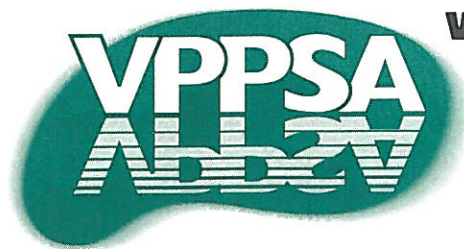
Please contact me if you have any questions or if you need additional information.

Sincerely,

Stephen B. Geissler, P.E.  
Executive Director

Cc: April Swanson, Joyce Engineering  
John Hudgins, York County





## Virginia Peninsulas Public Service Authority

June 20, 2012

Daniel S. Gwinner  
Virginia Department of Environmental Quality  
Office of Waste Technical Support  
P.O. Box 1105  
Richmond, Virginia 23218

Subject: Solid Waste Management Plan – Five Year Update  
Virginia Peninsulas Public Service Authority

Dear Mr. Gwinner:

The Virginia Peninsulas Public Service Authority (VPPSA) has reviewed the Solid Waste Management Plan submitted in 2004 and all documents subsequently submitted to DEQ in support of the submittal and other information generated since the submittal. Based on our review of the Plan and supporting documents, we hereby certify that:

- Waste Generation estimates are current, both in quantities generated and composition
- The scheduled 20-year planning increments have been met
- The projected 20-year waste management capacity remains available

Waste generation estimates have been compared with available data such as Regional Recycling Rate Reports and the estimates appear to be reasonable.

Initiatives identified in the plan have been implemented.

Sufficient disposal capacity is available in the region to accommodate anticipated waste quantities for at least 20 years.

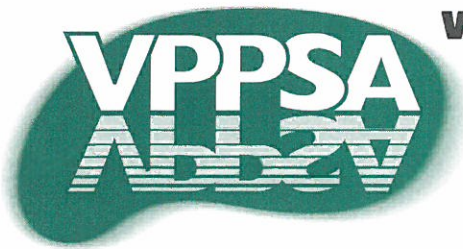
Please contact me if you have any questions or if you need additional information.

Sincerely,

Stephen B. Geissler, P.E.  
Executive Director







## Virginia Peninsulas Public Service Authority

July 22, 2013

G. Stephen Coe  
Environmental Specialist - Recycling  
Department of Environmental Quality  
Office of Land protection and Revitalization  
629 East Main Street  
Richmond, Virginia 23219

Subject: Solid Waste Management Plan  
Virginia Peninsulas Public Service Authority

Dear Mr. Coe:

Following are our responses to the comments presented in your email dated July 13, 2012.

1. Add Bay Disposal CDD MRF Hampton - PBR 588  
**Response:** The Disposal Facility Inventory has been revised to reflect the change.
2. Add S.B. Cox CDD MRF York County - PBR 572  
**Response:** The Disposal Facility Inventory has been revised to reflect the change.
3. Waltrip CDD LF is closed - SWP 322  
**Response:** The Disposal Facility Inventory has been revised to reflect the change.
4. Wolftrap CDD LF is closed - SWP 436  
**Response:** The Disposal Facility Inventory has been revised to reflect the change.
5. Reclamation Inc. CDD/tire MRF is closed - PBR 062  
**Response:** The Disposal Facility Inventory has been revised to reflect the change.
6. Is the divestiture of the VPPSA York County Transfer Station to York County discussed? - PBR 022  
**Response:** On December 7, 2012, VPPSA notified DEQ of its intent to surrender PBR 022 for the York County Transfer Station – see the attached letter.



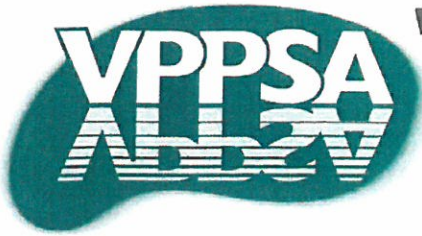
7. Giant Yorktown Refinery is now Plains LLC Industrial Waste LF - SWP 363  
**Response:** The Disposal Facility Inventory has been revised to reflect the change.
8. Dominion Yorktown Power Station Industrial Waste LF - SWP 457 has made a filing with the SCC stating the power station will reduce operations by 2015 with a shutdown in 2022  
**Response:** Noted
9. Is waste tire management discussed anywhere in the plan? I was unable to identify a specific reference to waste tire management in the SWMP on file. What is the VPPSA strategy for waste tires?  
**Response:** The policies for waste tire handling are made individually by each member city and county.
- The City of Hampton collects tires from residents curbside at no additional cost above the monthly solid waste fee.
  - The City of Poquoson accepts tires at the Public Works complex for a fee.
  - The City of Williamsburg residents may deliver tires to the Jolly Pond Convenience Center in James City County for a fee.
  - York County will accept tires at the Waste Management Center on Goodwin Neck Road for a fee.
  - James City will accept tires at the Jolly Pond Convenience Center for a fee.
  - VPPSA operates transfer stations and convenience centers for the five Middle Peninsula counties – Essex, King and Queen, King William, Mathews and Middlesex. VPPSA accepts tires from residents – no commercial users – at no cost. Each county has at least one location where tires can be delivered.

Please contact me if you have any questions or if you need additional information.

Sincerely,



Stephen B. Geissler  
Executive Director



## Virginia Peninsulas Public Service Authority

December 7, 2012

Mr. Milt Johnston  
Commonwealth of Virginia  
Department of Environmental Quality  
Tidewater Regional Office  
5636 Southern Blvd.  
Virginia Beach, Virginia 23462

RE: York County Transfer Station (PBR 022)

Dear Mr. Johnston:

On behalf of York County, the Virginia Peninsulas Public Service Authority (VPPSA) hereby notifies the Virginia Department of Environmental Quality of the intent of VPPSA to surrender Permit By Rule 022 for the York County Transfer Station. The facility is not closing – it will continue to be operated by BFI Transfer Systems of Virginia LLC through a contract with York County. It is our request that Permit by Rule No. 022, currently in the name of VPPSA, be revoked and reissued to York County, Virginia.

Sincerely,

Stephen B. Geissler, P.E.  
Executive Director

CC: John Hudgins, York County



Serving the Communities of Essex, Hampton, James City, King and Queen, King William, Mathews, Middlesex, Poquoson, Williamsburg and York



JUL 25 2013

## 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](http://www.deq.virginia.gov)

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

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

July 23, 2013

Mr. Stephen B. Geissler  
Executive Director, VPPSA  
475 McLaws Circle, Suite 3B  
Williamsburg, Virginia 23185-5676

**Subject: Virginia Peninsulas Public Service Authority's Regional Solid Waste Management Plan Five-Year Update**

Dear Mr. Giessler:

The Virginia Peninsula Public Service Authority's Solid Waste Management Plan (SWMP) 5-year Update received by the Department on June 20, 2012 per § 9 VAC 20-130-175.F is hereby accepted. This update should be considered as part of Region's approved plan. All Solid Waste Planning Units are required to maintain plans current, including any updates submitted to the Department.

Thank you again for your efforts and cooperation in this matter. If you have any questions about this letter, please contact Steve Coe at (804) 698-4029 or [steve.coe@deq.virginia.gov](mailto:steve.coe@deq.virginia.gov).

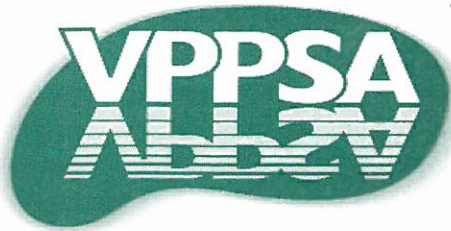
Sincerely,

A handwritten signature in black ink, appearing to read "Sanjay V. Thirunagari".

Sanjay V. Thirunagari, Manager  
Division of Land Protection & Revitalization

cc: Steve Coe – VADEQ  
Jason Miller, VADEQ-PRO; Milt Johnston, VADEQ-TRO





# Virginia Peninsulas Public Service Authority

June 30, 2017

Prina Chudasama  
Environmental Programs Coordinator  
Department of Environmental Quality  
Office of Land Protection and Revitalization  
629 East Main Street  
Richmond, Virginia 23219

Subject: Solid Waste Management Plan  
Virginia Peninsulas Public Service Authority

Dear Ms. Chudasama:

The Virginia Peninsulas Public Service Authority (VPPSA) has reviewed the Solid Waste Management Plan submitted in 2004 and all documents subsequently submitted to DEQ in support of the submittal and other information generated since the submittal. Based on our review of the Plan and supporting documents, we hereby certify that:

- Waste Generation estimates are current, both in quantities generated and composition
  - The scheduled 20-year planning increments have been met
  - The projected 20-year waste management capacity remains available
- Waste generation estimates have been compared with available data such as Regional Recycling Rate Reports and the estimates appear to be reasonable. Initiatives identified in the plan have been implemented. Sufficient disposal capacity is available in the region to accommodate anticipated waste quantities for at least 20 years.

Please contact me if you have any questions or if you need additional information.

Sincerely,

Stephen B. Geissler  
Executive Director

