

Solid Waste Management Plan

Rappahannock Regional Solid Waste Management Board

City of Fredericksburg and Stafford County, Virginia



Rappahannock Regional Solid Waste
Management Board (R-Board)
489 Eskimo Hill Road Stafford, Virginia
22554

Updated By:
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1.0 INTRODUCTION

This Solid Waste Management Plan (SWMP) has been prepared for the Rappahannock Regional Solid Waste Management Board (R-Board) for the comprehensive planning of solid waste management in accordance with 9 VAC 20-130-10 et seq. The R-Board Planning Region (aka Planning Unit or the Region) includes the City of Fredericksburg and the County of Stafford (see Figure in **APPENDIX A**). The R-Board was officially designated as a regional solid waste management planning area on February 21, 1991, by then Director of the Department of Waste Management - Cynthia V. Bailey.

The goal of the SWMP is to effectively plan for the management of solid waste through a process that considers various solid waste management components including generation, collection, disposal, recycling, financing, and facilities, within the overall framework of the solid waste management hierarchy.

The plan sets forth solid waste management goals and objectives for a 20-year period; and describes the planning and regulatory concepts to be employed by the adopting locality to meet those goals and objectives. The goals and objectives of the SWMP will be realized through the implementation of the various programs authorized and managed by the R-Board.

1.1 Plan Adoption

Each Planning Unit is required to have an approved SWMP. These plans are required to be updated every five years based on the original date of approval by VDEQ or amended when significant solid waste management activities occur in the Planning Unit that would constitute either a major or minor amendment under the regulations.

The R- Board submitted a SWMP in 2005 that was approved by DEQ on June 29, 2006. This SWMP was subsequently recertified in 2011 via a letter dated June 24, 2011 with approval obtained from DEQ on November 10, 2011. On June 17, 2016, the R-Board certified that the 2011 plan was still current. The 2020 plan was a full update to the original 2006 plan. Documentation adopting the original 2005/2006 plan as required by the regulations can be found in **APPENDIX B**. Documentation adopting and DEQ's approval of the 2020 update is included in **APPENDIX B**. On June 29, 2026, the R-Board certified that the 2026 plan was still current pursuant to 9 VAC 20-130-120.

1.2 Legislation

The following Solid Waste Management Plan has been prepared in accordance with the Virginia Waste Management Board's Regulations for Solid Waste Management Planning, 9 VAC 20-130- 10 et seq. as amended.

1.3 Authority (9 VAC 20-130-20)

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

1.4 Purpose (9 VAC 20-130-40)

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

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

1.5 Recycling (9VAC20-130-125)

The Virginia recycling regulations mandate compliance rates and reporting periods. The pertinent section of the regulations states as follows:

A. Each solid waste planning unit shall maintain a minimum recycling rate for municipal solid waste generated within the solid waste planning unit pursuant to the following schedule:

- 1. Except as provided in subdivision 2 of this subsection, each solid waste planning unit shall maintain a minimum 25% recycling rate; or*
- 2. Each solid waste planning unit shall maintain a minimum 15% recycling rate if it has*
 - (i) a population density rate of less than 100 persons per square mile according to the most recent United States Census or*
 - (ii) a not seasonally adjusted civilian unemployment rate for the immediately preceding calendar year that is at least 50% greater than the state average as reported by the Virginia Employment Commission for such year*

With a 2025 population estimate of 198,385 and an area of 333 square miles, the Region does not qualify for the 15% recycling rate. Its density is 596 persons per square mile. It also does not meet the requirement for reduced reporting as it has a population over 100,000 people.

1.6 Planning Area

The planning area for this solid waste management plan is the Rappahannock Regional Solid Waste Management Board (R-Board), which includes the City of Fredericksburg and Stafford County.

1.7 Planning Period

The planning period for this solid waste management plan is 20 years from 2026–2046.

1.8 Definitions

Definitions relating to solid waste management are included in the Virginia Solid Waste Management Regulations 9VAC20-81-10.

Definitions relating to solid waste management planning are also included in the Virginia Solid Waste Planning and Recycling Regulations, 9VAC20-130-10.

2.0 BACKGROUND

2.1 R-Board Composition

Established in 1987, the R-Board is a joint venture of the governments of Stafford County and the City of Fredericksburg charged with the operation and maintenance of the Regional Landfill and recycling drop-off facilities in Stafford County and Fredericksburg. No tax dollars fund the facilities, as revenue is

produced through fees charged to dispose of trash at the landfill which go directly into the operating fund. The R-Board meets quarterly, and agendas and minutes are available online at the R-Board Website.

The R-Board consists of the following members:

- Two elected officials from each jurisdiction,
- The City Manager,
- The County Administrator

Other R-Board participants include the Director, Superintendent, Assistant Superintendent, Recycling Manager, Environmental Coordinator, Outreach Supervisor, Clerk, Attorney and Consultant Engineer.

2.2 R-Board Mission and Vision Statement

The mission of the R-Board is to provide professional, courteous and intelligent solutions to the waste disposal needs of citizens in Stafford County and the City of Fredericksburg.

The R-Board's vision is to operate the best landfill in Virginia. Being the best landfill includes environmentally sound solid waste management policies and having an active Reduce, Reuse, and Recycling program, all coupled with outstanding customer service. The R-Board intends to continually strive to be a leader in the waste management industry and to set an example for others to emulate.

2.3 Virginia Environmental Excellence Program

The R-Board Regional Landfill is considered an "Exemplary Environmental Enterprise" or "E3" certified facility within the Virginia Environmental Excellence Program (VEEP) administered by the Virginia Department of Environmental Quality. In order to be qualified as an exemplary environmental enterprise, a facility must have a good compliance history, a fully implemented environmental management system, and demonstrated performance.

The benefits of this program include positive public recognition and possible reductions in annual permit fees. In addition, as a result of legislation adopted by the 2005 General Assembly, on a case-by-case basis, E3 facilities may be eligible for "alternative compliance methods."

An E3 facility is required to address at least two of the VEEP environmental measures to track impact reduction. The R-Board tracks three measures which will enable transition to an E4 facility to be easier. The three measures that the R-Board tracks are recycling in tons produced, energy generated from the beneficial use of landfill gas in MM btu produced, and compost by tons of biosolids used. The R-Board must prepare and submit an annual report in accordance with program requirements by April 1 of each year.

In addition, an E3 designation requires an Environmental Management System (EMS) which includes an Environmental Impacts and Aspects Evaluation Matrix. The R-Board under this system tracks pollution prevention activities, training, and educational outreach. In 2019, the R-Board added climate change to its matrix. Implementation of this program is dependent on funding availability.

2.4 Record Keeping and Central Archive

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

- Monthly and annual reports to the Board, indicating how the goals and objectives of the program are being met.
- Periodic updates presented to the Board, as requested.
- Annual submittal by March 31 of each year of the Solid Waste Information and Assessment Report (Form 50-25) to DEQ relative to landfill operations.
- Annual submittal by April 30 of each year of the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal to DEQ usually by December of each year of the update for financial assurance for closure and post closure care of the landfill.
- Annual certification of the operations manual by December 31 of each year, maintained in the operating record.
- Maintenance of the operating record of the landfill (all permits, permit documents, monitoring records, inspections etc.)

All these reports, updates, and DEQ submittals as well as the background information are kept in the central archive (files) of the solid waste program located at 473 Eskimo Hill Road, Stafford, VA 22554.

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

- Direct submittal to DEQ of Form 50-25 (Waste Assessment) and Form 50-30 (Recycling).
- New permit requests.
- Permit amendments.
- Updates to the Solid Waste Management Plan.
- General correspondence, which may be required from time to time.

The U.S. Environmental Protection Agency and the Virginia Department of Environmental Quality maintain data on sites and facilities that have been permitted as disposal sites under the Solid Waste Management facility regulations, and of sites and facilities that have been permitted as treatment, storage, and disposal sites under the *Hazardous Waste Management Regulations*.

In addition, sites with potential waste disposal issues are frequently identified by private entities during the Environmental Site Assessment process. To the extent that the results of these site assessments are provided to the R-Board, the inventory of active and closed disposal sites will be updated.

To ensure that current information is available for public review, the R-Board will periodically request from the Virginia Department of Environmental Quality a copy of its latest database of "active – inactive – closed" sites to update this SWMP. Such information will be maintained in the R-Board files for use by the public.

2.5 Status Of Solid Waste Nationally

APPENDIX M-1 contains the U.S. Environmental Protection Agency (EPA) report on the state of waste management in the United States entitled "*Advancing Sustainable Materials Management: 2018 Fact Sheet*". For the latest published information from the EPA regarding solid waste management in the United States the EPA website should be consulted as interest dictates. The fact sheet is provided as background for the Region's own activities. Per this fact sheet, average MSW (municipal solid waste) waste generation in the United States is 4.91 pounds per person per day (0.9 tons per year) although this does not include construction/demolition or debris wastes. This value can be used for waste projections and comparison. Nationally, approximately 50% of the MSW generated is landfilled with the remainder recycled, composted or incinerated.

2.6 Program Highlights

Background on the program can be found on the R-Board website and with the R-Board's Annual Reports and in this solid waste management plan. The R-Board solid waste program consists of several major programs as will be discussed in the report including the following:

- Landfill operation – Permit 589 sanitary landfill
- Recycling collection – materials are sent to a private company for processing
- Composting operation – biosolids and leaf composting programs
- Yard waste processing – grinding for mulch production – mulch is given to residents for use, used in the composting operations, and use in operations at the landfill.
- White good/scrap metal collection – part of the recycling program
- Household hazardous waste – announced collection days (2 times per year) as budget allows
- Public outreach – communications of various types, sponsorship of events, educational programs, etc.
- Public/Private partnerships – with private companies and other public entities

2.7 Flow Control

Unique to this Planning Region is flow control - a legal mechanism that localities can use to require that waste generated within their boundaries be taken to a specified facility. (Allowed under the Code of Virginia in Section 15.2-931) Flow control was implemented by resolution on May 1, 2016 to assure appropriate funding for the R-Board operations and capital programs. To implement flow control, each member locality needed to enact a flow control ordinance.

In order to adopt a solid waste flow control ordinance several findings were required by both localities:

- 1) That other waste disposal facilities, including privately-owned and regional facilities are:
 - Unavailable
 - Inadequate
 - Unreliable, or
 - Not economically feasible to meet the current and anticipated needs of the locality for waste disposal capacity.
- 2) That the ordinance is necessary to ensure the availability of adequate financing for the construction, expansion, or closing of the locality's landfill facilities, and its associated costs; and
- 3) Prior to the adoption of the ordinance the locality must ensure that there is adequate space available to accept all of the locality's refuse at its landfill

These findings were met by both localities and ordinances created and passed. Since the ordinances are slightly different between the two localities both are cited below:

Stafford County Ordinance

Sec. 21-10. - Disposal of solid waste.

- a) All waste collected within Stafford County under the provisions of this chapter, excluding solid waste collected on the Marine Corps Base Quantico, shall be disposed of only at locations designated by the Rappahannock Regional Solid Waste Management Board (R-Board), subject to the limitations stipulated in Code of Virginia, § 15.2-931(A).
- b) It shall be unlawful for any person who is a resident of the county, or any business which operates in the county, to dispose of garbage, trash, or refuse in or at any place other than at locations designated by the R-Board, except as follows:
 - 1) This section shall not apply to the occupants of single-family dwellings or family

farms disposing of their own garbage, trash or refuse if such occupants have paid the fees, rates and charges of other single-family dwellings and family farms in the same service area.

- 2) This section shall not apply to garbage, trash, or refuse generated, purchased, or utilized by an entity engaged in the business of manufacturing, mining, processing, refining, or conversion except for an entity engaged in the production of energy or refuse-derived fuels for sale to a person other than any entity controlling, controlled by, or under the same control as the manufacturer, miner, processor, refiner or converter.
 - 3) This section shall not apply to: (i) recyclable materials, which are those materials that have been source-separated by any person or materials that have been separated from garbage, trash and refuse by any person for utilization in both cases as a raw material to be manufactured into a product other than fuel or energy; (ii) construction debris to be disposed of in a landfill; or (iii) waste oil.
 - 4) This section shall not prevent or prohibit the disposal of garbage, trash, or refuse at any facility: (i) which has been issued a solid waste management facility permit by an agency of the commonwealth on or before July 1, 1991; or (ii) for which a Part A permit application for a new solid waste management facility permit, including local governing body certification, was submitted to the department of waste management in accordance with Code of Virginia, § 10.1-1408.1B on or before December 31, 1991.
- c) Violation of this section shall be a class 1 misdemeanor.

City Of Fredericksburg Ordinance

A. All trash shall be deposited at disposal sites designated by the City Manager. The City Manager shall designate the Regional Landfill and Recycling Center at 489 Eskimo Hill Road in Stafford County for the disposal of all trash collected within the City of Fredericksburg. B. This section shall not apply to:

1. Disposal of household waste by occupants of single-family residences or family farms disposing of their own trash in licensed sanitary landfills.
2. Disposal of solid waste generated, purchased or utilized by an entity engaged in the business of manufacturing, mining, processing, refining or conversion except for an entity engaged in the production of energy or refuse-derived fuels for sale to a person other than any entity controlling, controlled by or under the same control as the manufacturer, miner, processor, refiner or converter.
3. Disposal of construction debris to be disposed of in a licensed sanitary landfill.

4. Waste oil.
5. Disposal of trash at any facility:
 - i. Which has been issued a solid waste management facility permit by an agency of the commonwealth on or before July 1, 1991; or
 - ii. For which a Part A permit application for a new solid waste management facility permit, including local governing body certification, was submitted to the Department of Waste Management in accordance with Code of Virginia § 10.1-1408.1(B) on or before December 31, 1991.

3.0 DEMOGRAPHICS

3.1 Description of Plan Area

Stafford County

Stafford County is located approximately 40 miles south of Washington D.C. and sixty miles north of Richmond, Virginia. The County covers 277 square miles of generally level to rolling land, with elevations ranging from sea level to 425 feet. The County is bordered by Prince William County on the north, Fauquier County and Culpeper County on the west, Spotsylvania County, Caroline County and the City of Fredericksburg below the Rappahannock River to the south and the Potomac River and King George County on the east.

Interstate 95 and US-1 bisect the County and are major north-south transportation routes for commuters, vacationers, business travelers, and residents. In addition, US-17 and SR- 3 provide strategic east-west links. There are two existing rail corridors within the County. The CSX Corporation owns and operates a main rail line that traverses the eastern portion of the County. This main rail line serves freight and passenger trains. There are currently two commuter rail stations in the County. There is also a general aviation airport in the County operating as a reliever airport as defined by the FAA.

Stafford County continues a general east to west transition from a rural-suburban area to a more diversified commercial, industrial, and suburban area, as population growth and economic development impacts are realized. Growth continues to be fueled by the outward expansion of the Washington, DC zone of influence. Improved rail and highway access to Washington DC from Stafford County allows for an easier commute. The Stafford County Comprehensive Plan 2021 gives a greater overview of the county's current plans and situation. Commuter patterns indicate a significantly higher number of individuals commute out of the County then commute into the County. (See VEC Community Profile for Stafford County provided in **APPENDIX M-2**).

More information on growth patterns and land use can be found in the County's Comprehensive Plan. See pertinent graphics from the Comprehensive Plan contained in **APPENDIX M-3**.

City of Fredericksburg

Fredericksburg, Virginia is located on the Rappahannock River, encompasses approximately 10.5 square miles of land and is located midway between Washington D.C. and the City of Richmond. The City is bounded by the river to the north with Stafford County on the other side and Spotsylvania County to the southeast. It is a member of the George Washington Regional Planning District which also includes King George County and Caroline County. Interstate 95 and U.S. Route 1 are major north-south arteries and SR-3 and U.S. Route 17 are major east-west arteries. The Virginia Railway Express provides commuter rail

services to Northern Virginia and Washington D.C. Rail freight service is provided by the CSXT Corporation. AMTRAK provides inter-city passenger service.

The University of Mary Washington is located in Fredericksburg with a population of approximately 3,700 students.

In 2025, Fredericksburg published an update to the City's Comprehensive Plan. The comprehensive plan fully describes the current and expected demographics of the city. According to the Comprehensive Plan, Fredericksburg, because of its more fully developed status, is expected to change at a slower rate than Stafford County and the surrounding counties in the George Washington Regional Planning District and retain a more constant land use pattern. Commuter patterns indicate a significantly higher number of individuals commute into the City and commute out of the City. (See VEC Community Profile for the City of Fredericksburg provided in **APPENDIX M-2**)

The City's Comprehensive Plan lays out a series of goals for transportation, public services, public facilities, environmental protection, business opportunities, residential neighborhoods, historic preservation, and partnerships all which can inform solid waste planning. See pertinent graphics from the Comprehensive Plan contained in **APPENDIX M-4**.

3.2 Population

Population estimates and projections have been made using Information from the Weldon Cooper Center for Public Service. Weldon Cooper Population Estimation data from the 2011 census to 2025 and population projections from 2011 to 2050 are shown in **APPENDIX C**. Tables below provide a comparison of current (2025) population projections compared to the 2006 projections by decade.

TABLE 3.1

**POPULATION PROJECTIONS BY DECADE (2006
PLAN)**

YEAR	STAFFORD COUNTY	FREDERICKSBURG	TOTAL
2020	154,701	21,401	176,102
2030	180,402	22,402	202,804
2040	NA	NA	NA

TABLE 3.2
POPULATION PROJECTIONS BY DECADE
(2020 PLAN)

YEAR	STAFFORD COUNTY	FREDERICKSBURG	TOTAL
2020	154,093	29,403	183,496
2030	183,161	34,015	217,176
2040	209,250	38,094	247,344

TABLE 3.3
POPULATION PROJECTIONS BY DECADE
(UPDATED 2025 PLAN)

YEAR	STAFFORD COUNTY	FREDERICKSBURG	TOTAL
2020	156,927	27,982	184,909
2030	183,416	29,275	212,691
2040	210,033	32,760	242,793
2050	240,831	36,891	244,522

Current projections indicate a higher population than originally projected in 2006 based on the estimated growth rates. (For the total population for 2020, the 2025 projection is 5.0% higher than previously projected in 2006 and 4.9% higher for 2030).

Because the waste generation projections are based primarily upon the application of a per capita waste rate to the Region's population, the increased population projections will have an impact on the R-Board solid waste generation projections, and subsequently the R-Board site life projections. The updated population estimates are factored into the waste generation projections outlined in subsequent sections.

4.0 WASTE QUANTITIES AND PROJECTIONS

The following section provides information on waste quantities and projections throughout the planning period. The R-Board landfill receives solid waste only from the Regional jurisdictions. In FY 2016 flow control was implemented, requiring that most waste collected be directed to the R- Board landfill (with a few exceptions included in the ordinances).

4.1 Composition of Solid Waste

The composition of the waste stream in the Region is a typical mix of municipal solid waste and construction demolition debris. The residential and commercial development that continues to occur throughout the Region provides for a normal mix of residential and commercial solid wastes. The Region includes several major health care facilities, multiple government agencies, the University of Mary Washington, and a small portion of a military installation. These types of waste generators provide site specific institutional wastes, but the waste records at the R-Board Landfill do not break out institutional wastes in their annual reporting. Private haulers bring commercial waste from offices, retail outlets, government facilities, schools, restaurants, and other businesses.

Annually (by March 31), the DEQ requires that landfills report total tonnage received by material types and management practices under the Solid Waste Information and Assessment (SWIA) program. This data along with data compiled by the R-Board provides information on the types of waste being delivered to the landfill and collected at various facilities. Using this data, the following tables are provided in **APPENDIX D**:

- Table D-1 & D-1A: SWIA Summary tonnages – CY 2001 through CY 2025 (Includes data on tonnage landfilled, remaining capacity and reported life remaining; for CY 2025, the landfill reported a remaining life of 21.5 years. A major jump in tonnage can be seen once flow control was implemented.)
- Table D-2 & D-2A: SWIA Reporting information – compiled – CY 2014 through CY 2025 (Used for analysis in tables below.)
- Table D-3: SWIA Tonnage by management category – CY 2014 – CY2025 (The R-Board reports five management categories including landfilling, composting, mulching and recycling with some materials stored on site at the end of the year. On average approximately 92.5% of the wastes received at the facility are landfilled, 0.03% composted, 3.1% mulched, and 4.2% recycled.)
- Table D-4: SWIA Landfilled tonnage by waste types – CY 2014 – CY2025 (The R-Board reports three primary waste categories for landfilling including MSW (municipal solid waste), CDD (construction/demolition/debris), and sludge. On average approximately 61.6% of the material landfilled was MSW, 31.2% CDD and 7.0% sludge.)

- Table D-5 & D-5A: R-Board Annual Reports – Weight and Material Summary – FY 2014 – FY 2025 (The R-Board reports 7 categories of billable wastes, non-billable litter clean-up, and recycling tonnage.)

The data shows an increase in disposal when the Region instituted flow control requiring commercial haulers to dispose of regional waste at the R-Board landfill starting in May 2016. This change has brought waste volumes back in line with former projections and led to a permit revision raising the maximum daily capacity of the landfill from 880 tons per day to 1200 tons per day.

4.2 Solid Waste Generation Projections

The following tables are provided in **APPENDIX E** to inform the narrative below:

- Table E-1: Historic per capita generation – CY 2010 – CY 2025 (Based on population (Table C1 and SWIA landfilled tonnage Table D-1)
- Table E-2: Waste projections using R-Board average per capita rate from CY 2020 – CY 2025)
- Table E-3: Waste projections by waste category landfilled (using average SWIA information from Table D-4.)

Waste generation projections are coupled with population through use of a per capita generation rate usually reported as pounds per person per day (pppd). As indicated in Section 2.5, the US EPA estimates a per capita generation rate of 4.9 pppd but this does not include CDD waste materials. To compare the US EPA value against the Region's generation rate, population data was coupled with SWIA landfilled tonnage since the primary purpose of these projections is to evaluate disposal capacities (see Table E-1). Based on this information and considering the average for CY 2020 – CY 2025, a per capita generation rate of 7.9 pppd was determined and an average daily disposal rate (365 days) of 755 tons per day determined. In the 2006 SWMP this value was reported at 5.2 pppd so tonnage has increased significantly as was predicted in that plan.

Using the R-Board per capita rate and the population projections from Table C-1 waste projections for the planning period (2026 – 2046) were developed (See Table E-2). The following table summarizes key information by decade:

TABLE 4.1

SUMMARY BY DECADE

ANNUAL WASTE TONNAGE AND TONS PER DAY

CATEGORY	2026	2036	2046
Waste Generation (tons)	290,146	332,694	380,263
Tons per day (365 days)	795	911	1042

From 2026 to 2046, the projection is for a 31% increase on tonnage.

Using Table E-3 the following summary can be provided by increase in tonnage by category of waste:

TABLE 4.2

SUMMARY BY DECADE

TONNAGE BY WASTE CATEGORY

CATEGORY	2026	2036	2046
MSW (61.6%)	178,730	204,939	234,242
CDD (31.2%)	90,526	103,800	118,642
Sludge (7.0%)	20,310	23,289	26,618

5.0 SOLID WASTE MANAGEMENT SYSTEM

The current solid waste management system is described in the following section. The technical data that has been used to identify milestone indicators is included within this section and within the various appendices. The R-Board releases an Annual Financial and Operational report on its website with in-depth data on current operations. The most recent report is included in **APPENDIX L**.

5.1 Collection

The City of Fredericksburg provides municipal residential collection and hauling services. Stafford County relies on private haulers for collection of solid waste in the County. In addition, a significant percentage of Stafford County residents also take advantage of the residential drop-off facility adjacent to the landfill to dispose of their solid waste. Websites for both localities should be consulted for details on collection.

Drop off points include the following:

- Eskimo Hill Road Landfill (See drop off diagram in **APPENDIX F**.)
- Belman Road Recycling Center
- Drop-off recycling centers:
 - Fredericksburg: Hugh Mercer Elementary School, Lafayette Upper Elementary School
 - Stafford County: Rowser Building, Central Rappahannock Regional Library Howell Branch

See **APPENDIX F** for a detailed summary of the future R-Board goals and action items for collection.

The R- Board is also aware that Green For Life (*GFL*) collects residential recycling in Stafford County and Fredericksburg and transports the materials to its facility in Spotsylvania County.

5.2 Disposal

The R-Board currently owns and operates the Eskimo Hill Road Landfill Permit No. 589 for disposal.

The R-Board Landfill property includes approximately 806.4 acres with the area encompassed by the total facility boundary accounting for 343.9 acres. This landfill is comprised of one unlined and ten lined disposal units. These units have been operated under three separate sanitary landfill permits: Permit 74 (1972-2002), Permit 509 (1987 – 1996) and Permit 589 (1996 – current).

On September 13, 1972, the VDH issued the County its first solid waste landfill permit, Permit 74. Permit 74 was an unlined disposal area that operated as Permit No. 74 from 1972 through 2001 and certified as closed on August 29, 2002. Per permit records it occupied approximately 33 acres with an estimated 2.3 million cubic yards of airspace. It is currently in post-closure status and was merged into the primary permit for the site (Permit No. 589) on February 19, 2003.

On July 21, 1987, the VDWM issued the R-Board its second solid waste landfill permit, Permit 509. This permitted area occupied approximately 6.6 acres and contained approximately 0.21 million cubic yards of airspace. Fill areas were designated as Areas A and B. These cells were confirmed closed on November 28, 2006.

On July 16, 1996, the VDWM issued the R-Board its third solid waste landfill permit, Permit 589. This permit replaced permit 509 and authorized the R-Board to operate two additional disposal units, Cell C and Cell D. Cell E is also part of this permit. Cells C through E occupy 22.7 acres and contained approximately 2.28 million cubic yards of air space.

On November 15, 2012, the VDEQ issued the R-Board a major modification to Permit 589 for Cells F and G. These cells total approximately 74.5 acres with an estimated capacity of approximately 14.6 million cubic yards (55 years of capacity at 370 tons per day and 358 day per year with a density of 0.5 tons per cy.)

Cells B, C, and D were closed in November of 2016. The Phase II build out of the facility is in operation with Cell F1 constructed in August of 2012, Cell F2 opening in December of 2015 and Cell F3 scheduled for construction in 2020.

The planned progression of the site will be from the Cell E area into the proposed Phase II expansion area which is to the east and north of Cell E. The permitted disposal capacity of the Phase 2 disposal areas is 15,810,670 cubic yards at maximum build out.

The facility has received approval of an increase in the maximum daily tonnage disposal rate allowed from 880 tons per day to 1200 tons per day to account for post flow control loads to the landfill.

The R-Board submitted a Part A Permit Application addendum on January 30, 2017 and a Revised Part A Modification Request on August 1, 2019. The purpose of these submittals was to increase the facility's property boundary by 1.367 acres and the landfill facility boundary by 42.4 acres. No changes were proposed for the waste management or disposal unit boundary. This request was approved by DEQ on August 7, 2019.

The facility has a remaining life of 21.5 years as reported in the SWIA 2025 form submitted to DEQ and a remaining capacity of 9,257,652 cubic yards. The latest SWIA form is included in **APPENDIX G**.

The following documents are included in **APPENDIX G** for reference:

- Part A approval letter – 8/7/2019
- Major modification – 11/15/12
- Landfill layout – Part B – By Resource International
- Landfill Part B – site life calculations

As subsequent approvals are received from DEQ, they will be maintained in the facility's operating record and a copy placed in this appendix in this SWMP.

The R-Board's goals and action items for disposal are also included in **APPENDIX G** and should be consulted.

5.3 Recycling

Since 1990, the R-Board has maintained a comprehensive recycling program to meet State- mandated recycling rates. The Virginia Administrative Code mandates that localities recycle 25% of their household and business-generated waste annually (unless certain qualifying criteria are met – which the R-Board Region does not meet). In recent years the R-Board has reported exceeding the State recycling rate, having reported a recycling rate for 2025 of 30.9% percent. (See **Table I-1 & I-2** in **APPENDIX I** for a summary of recycling reporting from 2010 to 2025.) The latest recycling report is included in **APPENDIX I**.

The R-Board publishes its recycling rate and any changes to its recycling program in a yearly Annual Report which can be found in **APPENDIX L**.

The City and County have designated the R-Board as the reporting entity for their regional recycling program. Recycling activities by the City, County, and R-Board are funded by tipping fees at the landfill as well as from the sale of recycled materials.

5.3.1 Public Recycling Programs

Currently, there are two residential drop-off sites managed by the R-Board as well as four mobile drop-off containers. At these sites, the public is strongly encouraged to separate glass and additional containers for cardboard have been offered. Materials are transported to the R-Board facility at 489 Eskimo Hill Road and transported to a private processor. Recycling programs are funded by the R-Board as their budget allows.

The City of Fredericksburg offers residential curbside pickup as well as the main street downtown historic area. Fredericksburg's curbside collection guidelines are included in **APPENDIX I**.

In addition, the Belman Road recycling center (one of the residential sites operated by the R- Board and located in the City), and the Eskimo Hill collection center offer a variety of recycling opportunities. Currently, residents can recycle the following items at these centers:

- Rechargeable batteries (lithium-ion, small sealed lead acid, nickel cadmium, nickel metal hydride, and nickel zinc)
- Automotive and equipment batteries
- Bicycles (Regional Landfill only)
- Motor oil, transmission fluid
- Antifreeze
- Compact Fluorescent Light Bulbs (CFLs) and fluorescent light bulbs (Regional Landfill only)
- Cooking oil
- Appliances
- Scrap metal
- Small engines
- Electronic waste
- Plastic bags
- Clothing, footwear, accessories, linens, luggage and stuffed animals

All other residential curbside and commercial collection of recyclable materials are performed by private hauling companies. As budgets will allow, the R-Board continues discussions with haulers regarding changes to the system that would promote sustainability. Since May, 2019, the R-Board has only handled the materials collected from their managed sites and the City of Fredericksburg. The R-Board is considering potential public-private partnerships.

Currently, intake from R-Board sites and the City of Fredericksburg is averaging approximately 131 tons per month average. Items collected in the single stream system consist of

Plastic #1 and #2 only

- Bottles and jugs
- No pumps
- Empty, rinse and reattach caps

Metal

- Aluminum/steel cans
- Empty and rinse

Glass

- Bottles and jars
- Empty, rinse, and remove lids

Paper

- Paper, newspaper, magazines, and mail
- Flattened cardboard
- Food and beverage cartons (soup and juice boxes, milk and juice cartons)

Currently, recyclables are handled on property located at 489 Eskimo Hill Rd, Stafford, VA 22554. The property is zoned M-2 heavy commercial. Recyclables are collected and loaded into a compactor which compacts the materials into a haul trailer. The materials are hauled to a private recycler for processing. The loading operation is located within an 8,428 square foot steel building which had been expanded to its current size in 2007. In addition, the operation requires or includes the following:

- 3-Phase high voltage power 208 volts
- Water and sewer available on property but not at the building
- Certified scales on property
- Two 20' automatic roll up bay doors and one 22' vinyl salt dome bay door
- C&D conveyor belt / pit used to load open top trailers, feed the compactor, or to load enclosed trailers

5.3.2 University of Mary Washington

The University of Mary Washington conducts its own recycling program separate and apart from the R-Board's programs as its budget dictates. The University has two campuses (one in Stafford County which operates as a commuter campus and one in Fredericksburg which is full-time residential campus), and tailors its recycling programs to its campuses. The University utilizes single-stream recycling and collects the following materials:

Paper:

- office paper, computer paper, card stock paper & file folders (white & colored)
- envelopes (manila, regular, & windowed)
- post-it notes

Media:

- newspaper, magazines, junk mail
- books (paperback, textbooks, hardbacks, & telephone)
- aerosol cans

Food & Beverage Containers:

- cardboard & paperboard boxes (including empty pizza boxes)
- aluminum & tin cans
- glass bottles and jars
- ferrous & bimetal food & beverage containers
- #1-#7 plastic containers; not including #6 Styrofoam (milk, detergent, yogurt, margarine, etc.

Recycling at the University is overseen by the Office of Sustainability which has published a set of guidelines for solid waste reduction and recycling that can be viewed on the University's website.

5.3.3 Private Recycling Efforts

The R-Board, City and County encourage private citizens and companies to recycle. Independent recycling efforts are undertaken by area educational facilities as well as larger businesses. Most commercial recycling is handled privately for final disposition.

GFL collects residential recyclables from within Stafford County and Fredericksburg and transports the materials to its processing facility in Spotsylvania County.

Scrap metal is recycled in the Region by several facilities including at this time:

- Cero Waste Solutions 360, LLC, Stafford, VA
- Fredericksburg Scrap Metal Inc. (*Smith Industries*), Fredericksburg, VA
- Summit Recycling LLC, Fredericksburg VA

In addition, asphalt millings are reused at the landfill for operations.

5.3.4 Yard Waste

The R-Board landfill accepts yard waste (brush, leaves, clippings, etc.) from private residents. The landfill operates a tub grinder to grind yard waste into mulch. The chipped yard waste is stockpiled at the landfill, and is offered free to residents. The citizens must load and haul away the mulch independently. The R-Board landfill accepts Christmas trees, which it grinds into mulch. Mulch materials are also used in the biosolids composting facility and in landfill operations.

The City operates leaf collection services seasonally. Currently the City sends leaves to the R-Board landfill which uses them to produce leaf compost.

5.3.5 Compost

The R-Board has a composting program where it mixes yard waste with Stafford Wastewater Treatment Biosolids and composts it at a facility on the Eskimo Hill Road landfill site. The compost is then sold as Rappa-Grow compost to residents of the region. A brochure for Rappa-Grow is attached in **APPENDIX H** as in Fredericksburg's composting brochure.

In 2019, the R-Board began a leaf composting program accepting the leaves from the City's collection program. The leaves are placed in windrows and turned periodically.

Goals and action items for the compost program are included in **APPENDIX H**.

5.3.6 Special Wastes

In recent years the R-Board has committed itself to increasing services in the area of special wastes. Residents can recycle oil, antifreeze, auto batteries and fluorescent bulbs at the residential drop off sites year-round.

In 2014, the R-Board reinforced the fluorescent bulb collection program that had been in place since 2006 by encouraging participation and by preventing the breakage of bulbs. Data on the increase in fluorescent bulb collection can be found in the Recycling and Diversion portion of the 2014 and 2015 annual reports which can be viewed on the R-Board website. The R-Board anticipates a decline in these numbers going forward with the introduction in the marketplace of LED lighting.

The R-Board hosts 2 free Household Hazardous Waste days annually as budget allows. These events are conducted in both the City and County and residents from both areas are encouraged to participate.

Electronic waste is collected by the Rappahannock Goodwill Industries alongside the Household Hazardous Waste Collection. Since 2006, over 11,000 residents have participated in these events.

Latex paint is collected daily at the landfill and during Household Hazardous Waste collection days and dried using mulch prior to placement in the landfill.

The R-Board accepts tires from residential generators. Residents may bring in up to 8 tires per year at no charge. An additional fee is charged for dirty or mixed loads. A private processor removes the rims from the tires for recycling and cuts the tires for disposal into the R-Board Landfill.

5.3.7 Summary

In summary, the R-Board and its members have conducted a robust recycling program for many years and continue to do so. Over the past 15 years (CY 2010 – CY 2025) the recycling rate has ranged from 30.9% to 56.8%. Well above the 25% mandated goal. **Table I-1 & I-1A** in **APPENDIX I** summarizes information from the recycling reports. Based on the average from **Table I-1A**, metal recycling represents 37.3% of the recycled materials, paper: 9.5%, yard waste: 11.3% and comingled: 18.3% in recent years.

As budgets will allow, the R-Board continues to be committed to reuse and recycling collection programs. The goal of the R-Board is to divert as much material as possible from landfilling in the most efficient manner possible.

Recent actions include:

- Acceptance of various batteries and plastic bags.
- Free household composting bins and kitchen pales
- Increased public participation
- Enhanced public information – See Section 5.5 below.

Additional goals and action items for the planning period can be found in **APPENDIX I**.

5.4 Treatment

The R-Board does not currently treat municipal solid waste, nor is treatment planned for the future.

5.5 Public Education and Outreach

The R-Board maintains a comprehensive year-round education and outreach program for all ages. An overview of annual efforts with the R-Board's Education and Outreach efforts can be reviewed in the R-Board Annual Report. The latest version of this report can be found in **APPENDIX L-01** and previous versions are readily available on the R-Board website.

Public information has been an important element of the R-Board's work since the inception of the recycling program. The R-Board has often participated in providing informational and educational activities at major community events in Stafford County and Fredericksburg. The R-Board has provided, and continues to provide, numerous public presentations, media interviews, newspaper articles/editorials, tabling events, public forums, public school programming, environmental club outreach, and home school educational activities. A list of ongoing programming and future plans are detailed in **APPENDIX J – Public Education**.

5.6 Public/Private Partnerships

Some examples of current successful partnerships include the regional Public Schools' recycling programs and R-Board sponsored "Community Pride" cleanup programs, which are encouraging community involvement with waste management and litter control. Dumpsters and clean up supplies are provided to communities to enable participation. On-line signups and social media promotions are used to encourage neighborhood participation.

Also, cooperative arrangements with the Rappahannock Regional Jail for inmate labor assistance with litter control on the public right of ways in Fredericksburg and Stafford have been working well for several years. A litter collection program for those assigned court ordered community service hours

has been instituted through the Community-Based Probation Program of the Regional Jail. Probationary hours are assigned, and enrollees are trained and equipped for road-way litter collection. The Office on Youth is another public partnership which allows younger people, assigned to court ordered community service, a similar and more highly supervised role in collecting litter on the public roadways.

Beginning, August 2026 the Rappahannock Goodwill Industries, Inc. will collect electronics for recycling at several locations throughout Stafford County and Fredericksburg. Goodwill serves as R-Board's preferred partner for full-service technology recycling at Belman Road Convenience Center and the Regional Landfill. Goodwill supports the collection, loading, transportation, and recycling of accepted electronic items from designated R-Board locations through Goodwill's electronics recycling program (Dell Reconnect).

Helpsy is the R-Board's textile recycler, offering drop-off locations at the Belman Road Convenience Center and the Regional Landfill. Textiles are collected for re-wear, reuse, and recycling.

The Central Rappahannock Regional Library and the local chapter of the Master Gardners have been an environmental educational partner with the R-Board for several years. Monthly composting classes rotate through three library branches. The classes are promoted on social media and online by the R-Board, and taught by the Master Gardners or by R-Board staff. Additional youth education programs are provided by R-Board staff several times annually.

The R-Board has been partnered with Ameresco Inc since 2008 to harness methane in landfill gas to create energy. This waste-to-energy operation has 2 generators and can produce 2.14 MW of power per year. During 2025, a new request for proposals was issued for waste-to-energy operations.

5.7 Litter Control

The current state of litter collection activities can be seen in the R-Board Annual reports, which give a yearly review of litter programs. The latest version of the Annual Report is included in **APPENDIX L-01**. Previous versions are readily available on the R-Board website.

5.8 Inventory Of Disposal Sites

APPENDIX K contains a listing of the active and closed solid waste facilities located within the R-Board service area. The information is based on a database of permitted facilities collected and maintained by the Virginia Department of Environmental Quality.

6.0 BUDGET

The R-Board prepares an annual budget in conjunction with the County's and City's budget cycle for approval at an R-Board meeting, typically in late spring. The R-Board's Annual Report contains information on the year's financial performance.

The latest R-Board Annual Report, Operating Budget, and Capital Improvement Program are included in **APPENDIX L**.

6.1 Funding and Budgeting

The R-Board, after considering its budget and capital requirements, sets fees for the users of its facilities. **APPENDIX L** contains the most recent schedule. Its members set their own budgets and fees for their citizens.

As required, the R-Board conducts a third-party audit of its financial records, policies and procedures to ensure the federal procedures for solid waste management accounting are met.

6.2 Construction Schedules

The capital improvement program, included with the budget, outlines construction and equipment replacement schedules and provides the estimated costs for a rolling 5 year period.

7.0 WASTE MANAGEMENT HIERARCHY

The R-Board has continued to monitor and evaluate its programs and activities on the basis of the solid waste management hierarchy as defined by the regulations in the order of preferred management technique:

- Source reduction
- Reuse
- Recycling
- Resource Recovery (Waste-to-Energy)
- Incineration
- Landfill

7.1 Source Reduction

As defined under 9VAC20-130-10, "Source reduction" means any action that reduces or eliminates the generation of waste at the source, usually within a process. Source reduction measures include process modifications, feedstock substitutions, improvements in feedstock purity, improvements in housekeeping and management practices, increases in the efficiency of machinery, and recycling within a process. Source reduction minimizes the material that must be managed by waste disposal or non-disposal options by creating less waste. "Source reduction" is also called "waste prevention," "waste minimization," or "waste reduction."

At the top of the hierarchy and the most preferred method is source reduction or "waste prevention" programs designed to reduce both the toxic constituents in products and the quantities of waste generated. Source reduction can be a front-end waste management approach by designing and manufacturing products and packaging with minimum volume and toxic content so as to help ensure that the product has a longer useful life. For the individual consumer or household, source reduction means consuming and throwing away less. It can be as simple as declining an unnecessary bag for a small purchase or as elaborate as establishing a backyard composting program or choosing cleaning products that do not contain hazardous chemicals.

7.1.1 Current Status

Source reduction is included in the educational programs that have been introduced by the R-Board.

Since 2018, the R-Board opened a position whose primary focus would be on Outreach and Education. Since that time the R-Board has increased its social media presence, had several front-page articles in the local newspaper, been more active in public presentations, partnership collaborations, event participation and informational messaging.

An example of the R-Board outreach specifically to source reduction, is their collaboration with the Master Gardners to provide education on home composting. This effort was previously identified under Section 5.6.

Because the goal of source reduction is not to produce waste, it is difficult to gauge the effectiveness of educational programs.

7.1.2 Future Considerations

The R-Board will continue to look for improvements in how to increase source reduction methods and practices during the planning period. If changes in source reduction methods or practices are initiated, the Solid Waste Management Plan will be updated to reflect the changes.

7.2 Reuse

As defined under 9VAC20-130-10, "*Reuse*" means 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. Reuse is a waste reduction strategy, where a product is used for the same or new purpose without undergoing a physical change.

7.2.1 Current Status

The R-Board has partnered with Rappahannock Goodwill Industries for electronics recycling at the Belman Road Convenience Center and Regional Landfill.

Helpsy is collecting textiles for reuse and recycling. Two highly successful locations are at Eskimo Hill and the Belman Convenience Center.

Reuse is also targeted in many displays and ads encouraging residents to think about their purchasing habits and various ways to reuse things they've purchased.

The current landfill operation has been expanded recently to actively reclaim certain reusable materials from the working face. Currently, scrap metal is the primary material reclaimed.

7.2.2 Future Considerations

The R-Board will continue to look for improvements in how to increase reuse methods and practices during the planning period. If changes in reuse methods or practices are initiated, the Solid Waste Management Plan will be updated to reflect the changes.

7.3 Recycling

As defined under 9VAC20-130-10, "Recycling" means the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. For the purpose of this chapter, recycling shall not include processes that only involve size reduction.

Recycling provides the opportunity to reclaim valuable resources and to minimize the amount of waste placed in landfills. Recycling diverts materials (such as metal, glass, plastic, and paper) from the waste stream back into the consumer market and contributes to considerable energy savings in the manufacturing of new products made from recycled feedstock.

7.3.1 Current Status

Recycling continues to receive funding and support from the R-Board through the position of Recycling Manager. The manager is responsible for collecting all recycling statistics and managing the recycling programs of the R-Board and for the County. The City also provides recycling support to the R-Board through their Department of Public Works. The efforts of these two offices have enabled the recycling program of the R-Board to expand into the additional areas mentioned previously such as household hazardous waste collection days. More information on the current status of Recycling operations and future goals and considerations can be found in **APPENDIX I**.

Recyclable materials are generated by households and businesses. Packaging, such as cardboard boxes, plastics, glass, aluminum, and bi-metal cans, is a significant portion of the recyclables stream. Newsprint, office paper, and mixed paper are also significant. On a weight basis, yard waste and scrap metal are also significant materials. Certain materials, such as oil, antifreeze, batteries and fluorescent bulbs, are significant based on both their weight and their polluting potential. Currently, R-Board contracts are in place for disposition of a wide range of these materials. In 2013 The R-Board began collecting used cooking oil. The used cooking oil is converted to biodiesel and used by a local business owner.

The R-Board is currently composting wastewater treatment biosolids and yard waste and selling the product as Rappa-Grow Compost. More information is available in the brochure in **APPENDIX H**. A leaf composting program has also been initiated.

7.3.2 Future Considerations

The R-Board will continue to look for improvements in how to increase recycling rates during the planning period as budget allows. If changes in recycling methods or practices are initiated, the Solid Waste Management Plan will be updated to reflect the changes.

See **APPENDIX I** for goals and action items for this program.

7.4 Resource Recovery (Waste-to-Energy)

As defined under 9VAC20-130-10, "*Resource recovery system*" means a solid waste management system that provides for collection, separation, recycling, and recovery of energy or solid wastes, including disposal of nonrecoverable waste residues.

Also known as Waste-to-Energy (WTE), this level of solid waste management hierarchy uses municipal waste combustion to produce energy. Ash is a by-product of this program and is usually landfilled. Current regulatory requirements on air emissions and the need for significantly more tonnage make this option cost prohibitive.

7.4.1 Current Status

Resource recovery, also referred to as Waste-to-Energy (WTE), is not a cost-effective element of the hierarchy for implementation in this service area. Such facilities also are difficult to site and permit due to stricter air emissions requirements, difficulties with jurisdictional/political agreements, and intense public opposition.

7.4.2 Future Considerations

Strict compliance with the Clean Air Act and the need to find additional tonnage would make this option cost prohibitive. The ash generated as a by-product usually must be landfilled, may require analytical testing to determine that the ash is not a hazardous waste, and could potentially require landfilling or disposal at a hazardous waste landfill. No further consideration is given to this option.

7.5 Landfill Gas To Energy

Landfill gas to energy is the use of landfill gas, that would normally be passively vented or flared, to produce energy.

7.5.1 Current Status

R-Board partnered with Ameresco, Inc. to run 2 generators in 2008. This partnership can produce 2.14 MW per year and generates revenues for the R-Board. As stated earlier, a new request for proposal was sent out in 2025 for a gas to energy partnership.

7.5.2 Future Status

As the landfill builds out, additional gas wells will be installed, and additional gas will become available for the gas to energy project. The R-Board will work together with its gas to energy partner as these additional gas wells come online.

7.6 Incineration

Incineration is similar to WTE, but energy is not generated as a result of the burn. Ash is produced, however, and may require analytical testing to determine whether the ash is hazardous.

7.6.1 Current Status

Currently, incineration is not a cost-effective element of the hierarchy for implementation in this service area to manage municipal solid waste. Such facilities also are difficult to site and permit due to stricter air emissions requirements, difficulties with jurisdictional/political agreements, and intense public opposition.

Regulated medical waste (RMW) is typically incinerated or autoclaved prior to disposal. Incineration is currently an acceptable practice for the management of regulated medical waste. The R-Board has no plans to become involved with regulated medical waste.

7.6.2 Future Considerations

Strict compliance with the Clean Air Act and the need for significantly more tonnage would make this option cost prohibitive. The ash generated as a by-product usually must be landfilled, may require analytical testing to determine that the ash is not a hazardous waste, and could require landfilling or disposal at a hazardous waste landfill. No further consideration is given to this option.

7.7 Landfill

A sanitary landfill is an engineered waste burial facility designed to minimize the possibility of environmental degradation to surface and ground water, soil and air. Landfills are designed and constructed with liners according to specifications set forth in Federal and State law and regulations. Operating landfills must maintain current permit with the Virginia Department of Environmental Quality. Landfilling is necessary to manage non-recyclable and noncombustible wastes and is the only actual waste "disposal" method in the hierarchy. If waste cannot be recycled or incinerated, then sanitary landfilling is the next preferred method of treatment. While landfilling is the least preferred method in the hierarchy, it remains the most prevalent in many jurisdictions because it is the cheapest method of disposal.

7.7.1 Current Status

Due to the useable land at the R-Board's landfill site, landfilling will continue to be the primary means of solid waste management within the Region for the foreseeable future. The R-Board will continue to explore additional enhancements to the other elements of the hierarchy (with the exception of the Waste to Energy and Incineration elements), that will expand the life of the landfill. The R-Board also uses the landfill gas to run a gas-to-energy facility with Ameresco, Inc. More Information on the current status of landfill and disposal operations were discussed in Section 5.2, and future goals and considerations can be found in **APPENDIX G**.

7.7.2 Future Considerations

Per the CY 2025 SWIA report, the Permit 589 landfill has 21.5 years of life remaining. This will provide adequate disposal capacity to the Region over the planning period. Operations will maximize use of the site. Future expansions will be considered if and when appropriate.

8.0 GOALS, ACTION ITEMS, AND IMPLEMENTATION PLAN

The Region is required in the solid waste management plan to provide goals and action items for key solid waste categories and an implementation plan. Each operational sector has a detailed table indicating goals, action items to achieve goals, schedule, costs, and responsible parties. Rather than summarize here and, given the complexity of the tables and need for them to be adaptable as new programs develop, the reader is directed to the appendices identified below.

In addition, the R-Board has consistently strived to expand their solid waste management activities with respect to integrated waste management strategies within the Region. The R-Board has worked cooperatively and regionally to accomplish many solid waste management objectives over the years in these areas. The implementation schedule for the R-Board's waste management program has been summarized under separate sections above or in appendices attached.

A brief summary is provided below.

8.1 Source Reduction

Source reduction will be promoted through various public outreach and educational programs as an integral component of the overall solid waste management system. The R-Board will seek opportunities with, and help from, the private sector in promoting source reduction and implement activities as budget allows.

8.2 Reuse

Reuse will be promoted through various public outreach and educational programs as an integral component of the overall solid waste management system. In addition, the R-Board will seek opportunities with, and help from, the private sector in promoting reuse and implement activities as budget allows.

8.3 Recycling

Recycling continues to receive funding and support from the R-Board through the staffing of the Recycling Manager position. The Recycling Manager is responsible for collecting all recycling statistics and managing the recycling programs of the R-Board. The Recycling Manager will continuously assess markets, coordinate collection, manage the contract with the hauling contractor and private processing company, and implement additional programs as interest and the budget allows. Key to

the program will be public private partnerships. See **APPENDIX I** for more information on goals and plans for recycling.

Goals for recycling are provided in **APPENDIX I** and goals for composting are provided in **APPENDIX H**.

8.4 Resource Recovery (Waste-to-Energy)

Resource recovery is not currently cost-effective.

8.5 Landfill Gas-to-Energy

R-Board partnered with Ameresco, Inc. to run 2 generators in 2008. This partnership can produce 2.14MW per year (enough energy to power 1,300 homes) and generates revenue annually. As the landfill expands, additional gas wells will be installed, and the R-Board will work collaboratively with its partners for the potential expansion of the system based on the additional gas flow. In 2025, a new request for proposal was posted for the landfill gas.

8.6 Incineration

Incineration is not currently cost-effective.

8.7 Landfill

The R-Board's primary solid waste management facility is the regional landfill. The operation of this facility has been described by the VDEQ regional inspectors as a well-managed, successful facility within the Region, one which has received the E3 designation under the VEEP program.

There is sufficient disposal capacity in the current landfill to address the needs of the Region over the planning period. After the current proposed expansion area is filled, another expansion area (Phase III) within the site will be identified and permitted through the VDEQ's Part A and B process.

Goals and action items for disposal are provided in **APPENDIX G**.

8.8 Collection

The existing system of solid waste residential, commercial and institutional collection is efficient and will be continued through the planning period. No significant changes are proposed.

The R-Board will continue to look for improvements to its system to support effective collection systems during the planning period. In the event that a change in the current collection and transportation system is required, the Solid Waste Management Plan will be updated to reflect the change.

Goals and action items for collection and transportation are provided in **APPENDIX F**.

8.9 Treatment

The R-Board does not now or plan to in the future to treat waste as defined in the Virginia Solid Waste Management Regulations.

8.10 Litter Control

The existing system used to provide litter control throughout the Region is slated to continue through the planning period. The existing system is functioning well, and no significant changes are proposed. The R-Board will continue to look for improvements and collaborations with organizations and individuals like the Community-Based Probation Program, Office on Youth, Rappahannock Regional Jail, etc. to advance the litter control system. Additional details on the benefits of this program may be found in the R-Board's Annual Report. The most recent version is included in **APPENDIX L**. In the event that a change in the current system is required, the Solid Waste Management Plan will be updated to reflect the change.

8.11 Public Education / Community Outreach Programs

The Public Education and Community Outreach programs throughout the Region will be continued through the planning period. The existing programs are functioning well as discussed in Section 5.5, with expansion of these programs dictated by the R-Board budget. The R-Board will continue to look for improvements to programs during the planning period. In the event that a change in the programs is required, the Solid Waste Management Plan will be updated to reflect the change.

Goals for public education are provided in **APPENDIX J**.

8.12 Public/Private Partnerships

The R-Board will continue to look for public/private partnerships in their solid waste program. The existing programs are functioning well as discussed in Section 5.6. The R-Board will continually strive to form collaborative partnership with organizations to achieve mutual goals. The Region has greatly benefitted by the R-Board's relationships with Rappahannock Goodwill, Central Rappahannock Regional Library, Master Gardeners, etc. and is eager to expand where continued benefits can be found.

The existing partnerships in the Region will therefore be continued and/or expanded through the planning period and new partnerships will be considered. The R- Board will continue to look for improvements in this program and will update the Solid Waste Management Plan as appropriate.

9.0 PUBLIC PARTICIPATION

The original Solid Waste Management Plan upon which this update was based was approved on June 29, 2006. Previous approval information is included in **APPENDIX B**.

9.1 Public Hearing

This update of the Solid Waste Management Plan does not constitute a major amendment, so a public hearing was not held.

9.2 Public Comment Period

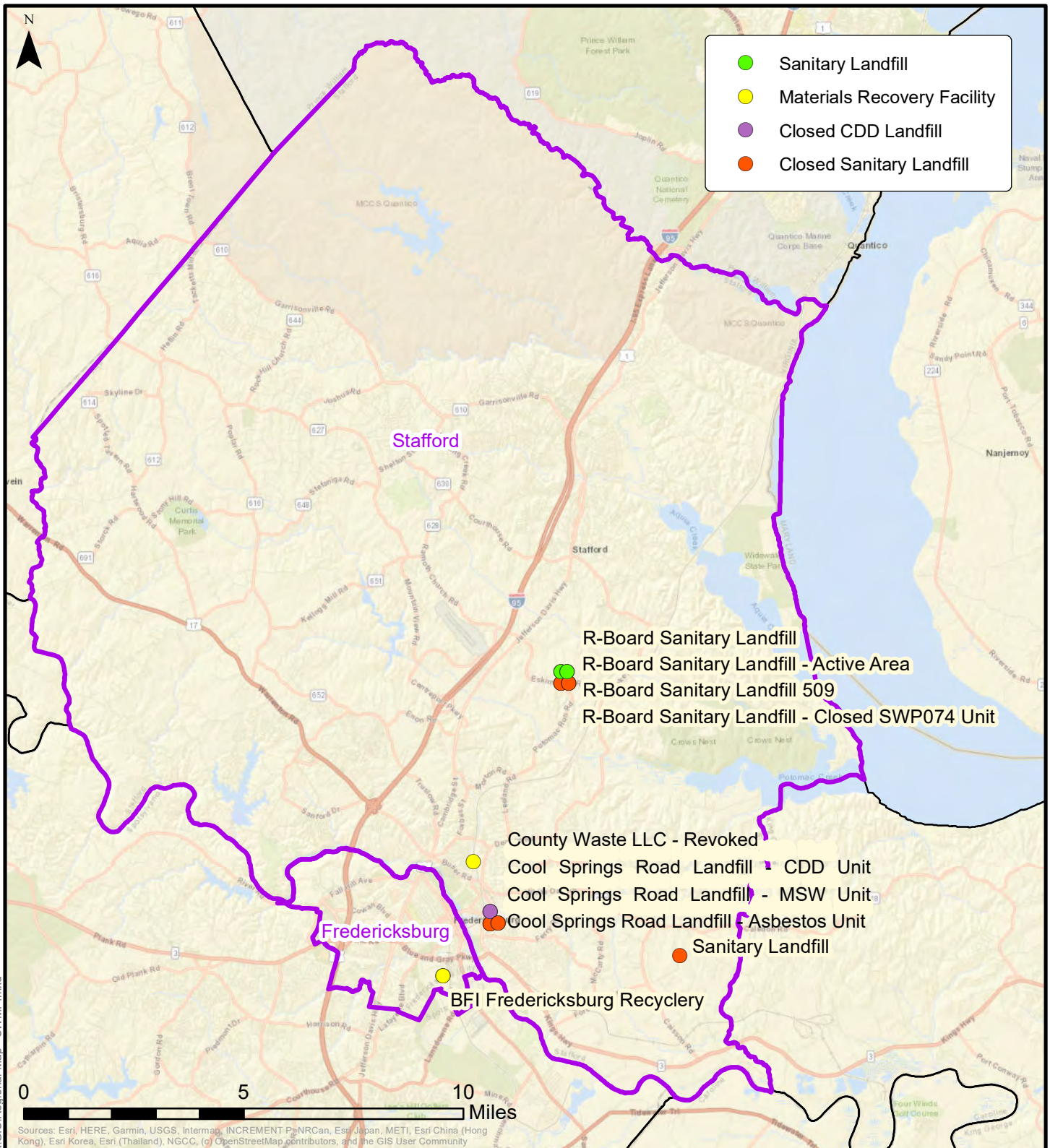
This update of the Solid Waste Management Plan does not constitute a major amendment, so a public comment period was not held. During the 2020 R-Board update, two advertisements were published in the Free Lance Star (July 2, 2020 and July 9, 2020) for a public comment period on the Solid Waste Management Plan. The public comment period extended from July 6, 2020 to August 4, 2020.

APPENDIX B includes "A Summary of Public Notice" and the advertisements. As indicated in the summary, no comments were received from any of the comment venues.

9.3 Resolutions

This update of the Solid Waste Management Plan does not constitute a major amendment, so a resolution was not drafted for this update. During the 2020 update, at the R-Board's regularly scheduled meeting on August 19, 2020 the R-Board received and approved the previous updated Solid Waste Management Plan by resolution. A copy of the resolution is included in **APPENDIX B**.

APPENDIX A
LOCATION MAP



Regional Map

Rappahannock Regional Solid Waste Management Board
Solid Waste Management Plan
Location of Region and Solid Waste Facilities

SCALE: 1:200,000

PROJECT: R14177R-76



Draper Aden Associates

Engineering • Surveying • Environmental Services

2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

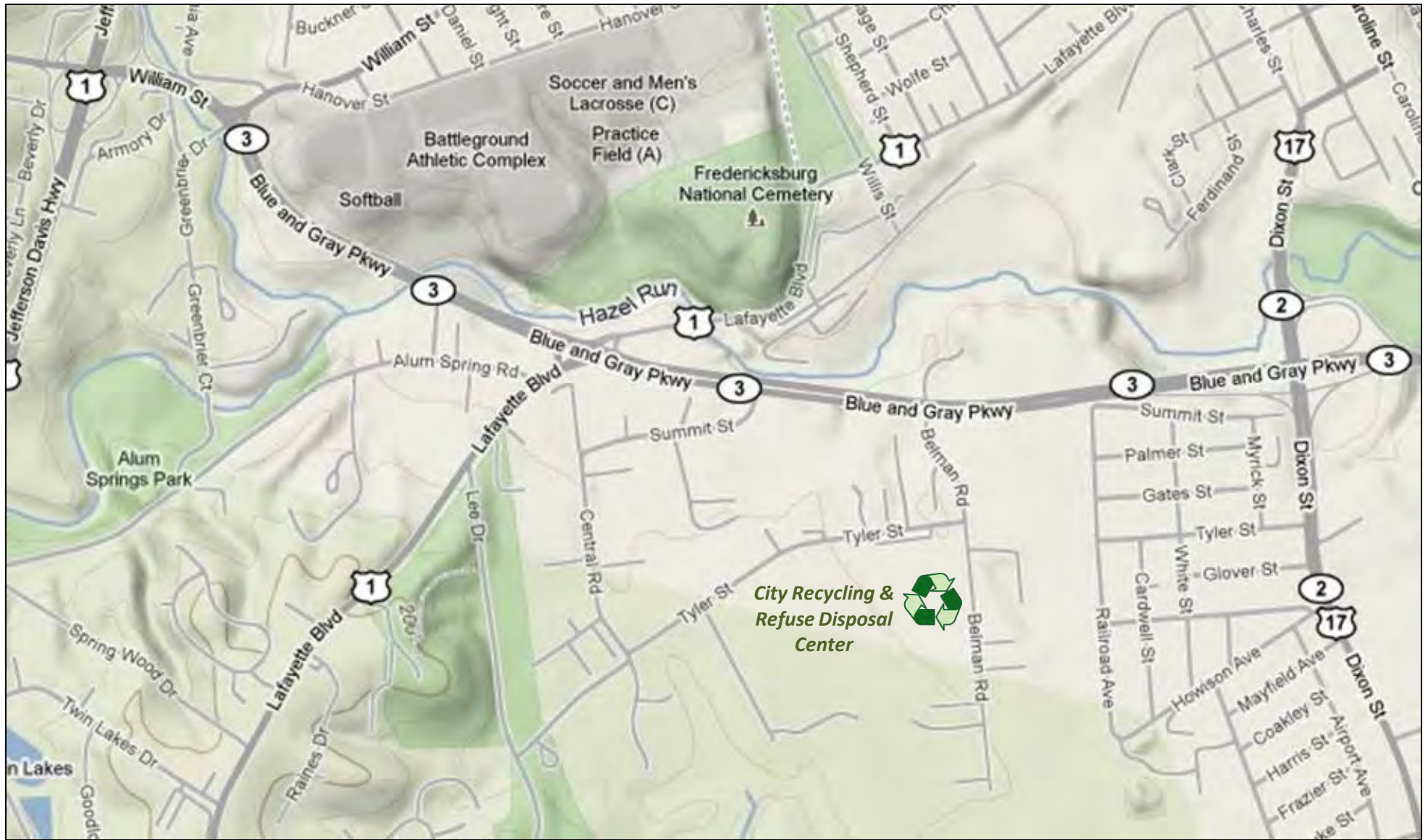
Richmond, VA
Charlottesville, VA
Hampton Roads, VA

Raleigh, NC
Fayetteville, NC
Northern Virginia
Virginia Beach, VA

DESIGNED: LPK
DRAWN: SMF
CHECKED: LPK
DATE: 06-29-26

FIGURE

1



Hours:

Monday – Friday, 8 a.m. until 4 p.m.

Saturday – Sunday, 8 a.m. until 3 p.m.

(Note: The Center will be closed New Year's Day, Easter Sunday, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas.)



City of Fredericksburg, Virginia
Recycling and Refuse Disposal Center

APPENDIX B
SWMP APPROVAL DOCUMENTS

RB04-08

PROPOSED

RAPPAHANNOCK REGIONAL
SOLID WASTE MANAGEMENT BOARD

RESOLUTION

At a regular meeting of the Rappahannock Regional Solid Waste Management Board (R-Board) held in Conference Rooms A,B,C, Stafford County Administration Center, Stafford, Virginia on the 19th day of May, 2004;

Members:

Vote:

Peter J. Fields, Chairman
William C. Withers, Jr., Vice-Chairman
Steve Crosby
Kandy A. Hilliard
Matthew J. Kelly
Phillip L. Rodenberg

On motion of, seconded by, which carried by a vote of, the following was adopted:

**A RESOLUTION TO ADOPT THE RAPPAHANNOCK REGIONAL SOLID WASTE
MANAGEMENT BOARD'S SOLID WASTE MANAGEMENT PLAN UPDATE**

WHEREAS, notices have been posted in the local newspaper on May 8 and May 15 to advertise a public hearing on the R-Board's Solid Waste Management Plan Update; and

WHEREAS, the Plan Update serves the City of Fredericksburg and the County of Stafford; and

WHEREAS, this Plan includes information on demographics, waste generation rates, recycling plans, funding and implementation plans; and

WHEREAS, the initial study was performed in December 1990;

NOW, THEREFORE, BE IT RESOLVED by the Rappahannock Regional Solid Waste Management Board on this the 19th day of May, 2004, that the R-Board's Solid Waste Management Plan Update be and it hereby is approved and adopted.

/pr

**RAPPAHANNOCK REGIONAL
SOLID WASTE MANAGEMENT BOARD**

Wednesday

May 19, 2004

Stafford County Administration Center
Conference Rooms A,B,C

Meeting Convened. A regular meeting of the Rappahannock Regional Solid Waste Management Board (R-Board) was called to order by Chairman Peter J. Fields, at 1:30 P.M., Wednesday, May 19, 2004, at Stafford County Administration Center, Conference Rooms A,B,C.

Roll Call. The following members were present: Peter J. Fields, Chairman; William C. Withers, Jr., Vice Chairman; Kandy A. Hilliard; Matthew J. Kelly; Phillip L. Rodenberg; and Steve Crosby.

Also in attendance were: William H. Hefly, R-Board Attorney; Robert L. Hundley, Consulting Engineer; Andrew J. Mikel, Landfill Superintendent; Diane L. Jones, Recycling Coordinator; and Patricia S. Rowe, Executive Assistant to the R-Board. Max Johns and Brenda Gibbs with BFI attended as well.

Mr. Kelly motioned, seconded by Ms. Hilliard, to approve the March 17, 2004 minutes.

By voice, the vote was:

Yea: (6) Crosby, Fields, Hilliard, Kelly, Rodenberg, Withers
Nay: (0)

Report of the R-Board Attorney. Mr. Hefly reported on the following:

- No litigation at this time.

Report of the Consulting Engineer. Mr. Hundley reported on the following:

- **Permit No. 74 (Old Stafford County Landfill – Post Closure).** SCS Field Services (SCSFS) recently completed the most recent surface emissions monitoring required for compliance with the facility's air permit. To date no emission levels have been detected above compliance thresholds.
- **Weekly gas monitoring continues at the Permit No. 74 disposal area** due to detection of concentration levels above the compliance limit. Three consecutive weeks of below compliance level readings have recently been documented. Resource will inform the DEQ that monthly gas monitoring will now begin in accordance with the facility's contingency plan.
- **Permit No. 589 (Cells A/B/C/D – Active)** The Cell E draft design drawings are complete and a formal submittal will be made to the DEQ within the next two weeks.
- The Part A Permit (hydrogeologic investigation) work for the proposed expansion is nearly complete. An endangered species investigation on the small whorled pogonia must be performed and is planned for late spring.
- **Fredericksburg Landfill.** Weekly gas monitoring continues at the facility. One and sometimes two monitoring wells continue to exhibit gas readings slightly above compliance levels. The Organic Waste Technologies technician is working to install

05/19/04 - Page 2

additional remedial components to the system in order to ensure vacuum is equally applied to the remaining non-compliant area.

Mr. Rodenberg asked if the Fredericksburg landfill continues with gas levels above compliance levels, what is the next step. Mr. Hundley replied that when there is a long wet period, a lot of water in the wells lowers the effectiveness of sucking the gas out and the contractor will be continuously pumping out the wells until improvement is seen.

Report on Finances. Mr. Crosby reported on the following:

- Landfill Aging Report
- Weight and Vehicle Records and Analysis
- Tonnage By Hauler
- Landfill Revenue
- Landfill Expenses

Mr. Crosby reported that currently the R-Board is taking in 13,000-14,000 tons per month that will put the landfill on pace this year for about 160,000 tons. The cash flow will exceed the commercial revenue estimates in the neighborhood of \$1,000,000 for this year.

Ms. Hilliard asked if the accelerated rate of trash puts pressure on the time line for the new cell. Mr. Hundley replied that it does. Ms. Hilliard asked if the issue of construction and demolition debris should be addressed. Mr. Crosby replied that the landfill is accepting construction and demolition debris at \$40 per ton but at the current rate Cells C/D will be full in about one year. That is why the decision was made to construct Cell E under the current permit. Mr. Crosby said the issue of construction and demolition debris may certainly have to be addressed in future meetings.

Report of the Solid Waste Manager. Mr. Crosby reported on the following:

- Mr. Crosby introduced Anthony Romanello, Deputy County Administrator, who will be phasing into the role of daily supervision and oversight responsibilities.
- Andrew Mikel was introduced as the new landfill superintendent and has already started making operational improvements and will be taking on more administrative responsibility beyond the daily operations. Mr. Crosby also shared that Andrew had received a meritorious service medal from the Marine Corps for his work in the first Gulf War with dust abatement having to do with helicopters in a desert environment.

Ms. Jones reported on the following:

- Community Pride Program and spring cleanups totaled 309,000 pounds of debris picked up.
- Future plans are in the works on doing a hazardous waste program with the Home Depot store.
- Hazardous Waste Program has leveled out with 175 people participating from the two jurisdictions.
- The DEQ report showed 27.5% recycling rate.

05/19/04 - Page 3

- There have been no rejection loads at the landfill. This is credited to great work done by the landfill employees.

Mr. Crosby reported on the FY2005 Budget as follows:

- Three new positions proposed as a reflection of the increased waste coming in and the dramatic use of overtime used this past year.
- Positions would be 2 Maintenance Workers and one Equipment Operator.
- Dramatic Increase in repairs and maintenance for major rebuilds on compactor wheels and track loader power train and tracks.
- Machinery and equipment replacement includes funds to replace the scales, tractor and several 40-yard containers.
- \$2.3 million to construct Cell E and expand the gas flare system to Cells A & B.

Mr. Fields asked how many cells are mapped out. Mr. Hundley responded that the new area after Cell E will be 70-75 acres. Cell sizes are ranging 7 to 7-1/2 acres but may be increased due to increased tonnage. The new area could possibly accommodate 6-10 cells. The 75 acres could possibly extend the life to 20-30 years depending on tonnage. Mr. Hundley stated that the entire site is 733 acres with the old #74 area being 35-40 acres and the area of A,B,C,D is 25 acres.

Ms. Hilliard motioned, seconded by Mr. Withers, to approve proposed Resolution RB04-07.

By voice, the vote was:

Yea: (6) Crosby, Fields, Hilliard, Kelly, Rodenberg, Withers
Nay: (0)

Proposed Resolution RB04-07 reads as follows:

**RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
(R-BOARD) BUDGET**

WHEREAS, the R-Board has reviewed the proposed fiscal year 2005 Budget; and

WHEREAS, the R-Board finds the fiscal year 2005 Budget to be acceptable;

NOW, THEREFORE, BE IT RESOLVED by the Rappahannock Regional Solid Waste Management Board on this the 19th day of May, 2004, that the proposed Fiscal Year 2005 Budget be and it hereby is approved in the total amount of FIVE MILLION, EIGHT HUNDRED SEVENTEEN THOUSAND AND SIXTEEN DOLLARS (\$5,817,016).

PUBLIC HEARING.

Mr. Hundley stated that the Solid Waste Management Plan (SWMP) is a separate regulation that is required by VDEQ for all solid waste management regions and the R-Board is an identified solid waste management region. The City of Fredericksburg and Stafford County were designated as the solid waste management region for this area by VDEQ in 1987. SWMP is a requirement of a separate set of regulations that is updated on basically a four-year period. Resource prepared a plan in 1996 and updated it again in 2000. SWMP requires that waste

05/19/04 – Page 4

management regions look at all the different types of solid waste disposal in their areas and requires the R-Board to consider and to evaluate its program on a hierarchy that the state has established and that hierarchy includes source reduction, reuse, recycling, resource recovery, incineration and landfilling. The R-Board utilizes landfilling the most because it is the most cost effective. The R-Board is required to evaluate its program on that hierarchy and address that hierarchy in the plan. A large portion of the plan is the recycling mandate of 25% rated by locality as prepared by Ms. Jones and Mr. King of the City. It describes the recycling rate, what was used, how the private industries were surveyed in terms of recycling, and education, which is all incorporated into an integrated waste management strategy with goals and objectives and to be delineated into the plan.

The Public Hearing opened at 2:05 P.M. Mr. Max Johns and Ms. Brenda Gibbs with BFI attended the Public Hearing and Mr. Johns asked if BFI could submit changes through the R-Board and Mr. Crosby. Mr. Johns also asked about construction debris and whether that might be considered a waste stream and was that considered in the Plan. Mr. Hundley replied that yes, all waste streams had to be identified by category percentage wise and debris waste has been running around 20-25%. Mr. Johns stated that he would like to work directly with Resource to add BFI's waste stream into the plan. The Public Hearing closed at 2:08 P.M.

Mr. Withers motioned, seconded by Ms. Hilliard, to approve proposed Resolution RB04-08.

By voice, the vote was:

Yea: (6) Crosby, Fields, Hilliard, Kelly, Rodenberg, Withers
Nay: (0)

Proposed Resolution RB04-08 reads as follows:

**A RESOLUTION TO ADOPT THE RAPPAHANNOCK REGIONAL SOLID WASTE
MANAGEMENT BOARD'S SOLID WASTE MANAGEMENT PLAN UPDATE**

WHEREAS, notices have been posted in the local newspaper on May 8 and May 15 to advertise a public hearing on the R-Board's Solid Waste Management Plan Update; and

WHEREAS, the Plan Update serves the City of Fredericksburg and the County of Stafford; and

WHEREAS, this Plan includes information on demographics, waste generation rates, recycling plans, funding and implementation plans; and

WHEREAS, the initial study was performed in December 1990;

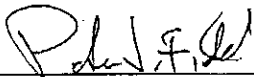
NOW, THEREFORE, BE IT RESOLVED by the Rappahannock Regional Solid Waste Management Board on this the 19th day of May, 2004, that the R-Board's Solid Waste Management Plan Update be and it hereby is approved and adopted.

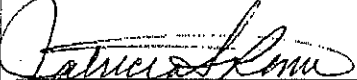
05/19/04 - Page 5

Future Session. The next meeting will be held on Wednesday, July 28, 2004, 1:30 P.M., Stafford County Administration Center, Conference Rooms A, B, C.

Mr. Fields asked support from the R-Board to provide relief for the citizens of Belle Plains and to waive fees for that emergency situation where a lot of trees were destroyed caused by the microburst in that area.

Adjournment. The Chairman adjourned the meeting at 2:10 P.M.



Peter J. Fields, Chairman

Patricia S. Rowe, Clerk

William C. Withers, Jr., Vice Chairman



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

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

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

November 10, 2011

Mr. Anthony J. Romanello
Administrator, Stafford County
P.O. Box 339
Stafford, Virginia 22555

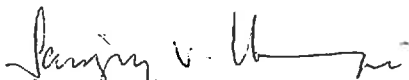
Subject: The Rappahannock Regional Solid Waste Management Board's Solid Waste Management Plan Five-Year Update

Dear Mr. Romanello:

The Rappahannock Regional Solid Waste Management Board's Solid Waste Management Plan (SWMP) 5-year Update received by the Department on June 26, 2011 per § 9 VAC 20-130-175.F is hereby accepted. This update should be considered as part of the Rappahannock Regional Solid Waste Management Board'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 via email at steve.coe@deq.virginia.gov.

Sincerely,


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

cc: Richard Doucette –DEQ NRO
Steve Coe



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

June 29, 2011

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

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

Mr. Anthony J. Romanello, Administrator
Stafford County
PO Box 339
Stafford, VA 22555

Subject: Rappahannock Regional Solid Waste Management Board Solid Waste Management Plan 5-Year Update

Dear Mr. Romanello:

This letter is to acknowledge the receipt of the Five-year Update to the Solid Waste Management Plan for the Rappahannock Regional Solid Waste Management Board by the Department of Environmental Quality on June 28, 2011.

If you have any questions, please contact Stephen Coe at (804) 698-4029 or steve.coe@deq.virginia.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Daniel S. Gwinner".

Daniel S. Gwinner
Environmental Engineer Senior
Division of Land Protection and
Revitalization

Enclosures

cc: Richard Doucette – VADEQ
Sanjay Thirunagari – VADEQ
Steve Coe - VADEQ
Charles T. Wilson – Resource International, Ltd.

Board of Supervisors

Mark Dudenhefer

Chairman

Paul V. Milde, III

Vice Chairman

Harry E. Crisp, II

Gary F. Snellings

Cord A. Sterling

Susan B. Stimpson

Robert "Bob" Woodson



County Administrator

Anthony J. Romanello, ICMA-CM

RECEIVED

JUN 29 2011

June 24, 2011

P.N. 88071.27

Mr. Daniel S. Gwinner
Virginia Department of Environmental Quality
Office of Waste Technical Support
P.O. Box 1105
Richmond, VA 23240-0009

*RE: Rappahannock Regional Solid Waste Management Board
Solid Waste Management Plan
Certification Letter*

Dear Mr. Gwinner:

This letter provides certification that the Rappahannock Regional Solid Waste Management Board (R-Board) Solid Waste Management Plan is currently in accordance with the requirements of 9VAC 20-130-175.F of the Solid Waste Planning and Recycling Regulations. The current Solid Waste Management Plan was approved by the VDEQ on June 28, 2006.

The following elements of the plan have been maintained and are current:

A. Waste Generation Estimates

Current tonnage rates have not exceeded the Annual Tonnage Projections. No significant changes in population growth or development patterns in the plan area are noted. No significant changes in the estimates of solid waste generation are required.

B. 20-Year Planning Increments

The current system of solid waste collection and transportation throughout the plan area is functioning well, and no significant changes are proposed. The proposed R-Board Landfill Phase 2 expansion is currently in the Part B permitting process.



Mr. Daniel S. Gwinner

June 27, 2011

Page 2

C. 20-Year Capacity

The 20-year capacity is addressed by the proposed R-Board Landfill expansion that is currently in the Part B permitting process.

If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,



Anthony J. Romanello, ICMA-CM
County Administrator

/wam

cc: Robert L. Hundley, Jr., P.E.



Rappahannock Regional Solid Waste Management Board

489 Eskimo Hill Road • Stafford, Virginia 22554 • 540-658-5279 • FAX 540-658-4523

June 17, 2016

Mr. Steve Coe
Virginia Department of Environmental Quality
Office of Waste Technical Support
P.O. Box 1105
Richmond, VA 23240-0009

**RE: Rappahannock Regional Solid Waste Management Board
Solid Waste Management Plan
Certification Letter**

Dear Mr. Coe:

This letter provides certification that the Rappahannock Regional Solid Waste Management Board (R-Board) Solid Waste Management Plan is currently in accordance with the requirements of 9VAC 20-130-175.F of the Solid Waste Planning and Recycling Regulations. The current Solid Waste Management Plan update was approved by the VDEQ on November 10, 2011.

The following elements of the plan have been maintained and are current:

A. Waste Generation Estimates

Current tonnage rates have not exceeded the Annual Tonnage Projections. No significant changes in population growth or development patterns in the plan area are noted. No significant changes in the estimates of solid waste generation are required.

B. 20-Year Planning Increments

The current system of solid waste collection and transportation, and disposal throughout the plan area is functioning well, and no significant changes are currently proposed.

C. 20-Year Capacity

The current permit design capacity of the R-Board Landfill, Permit #589, is 51 years.

If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,

Jason M. Pauley
R-Board Superintendent

cc: Keith Dayton, Deputy County Administrator



Rappahannock Regional Solid Waste Management Board

489 Eskimo Hill Road • Stafford, Virginia 22554 • 540-658-5279 • FAX 540-658-4523

Rappahannock Regional Solid Waste Management Board – SWP 589

489 Eskimo Hill Road, Stafford Virginia 22554

Summary of Public Notice

In 2005 the R- Board submitted a Solid Waste Management Plan (SWMP) for the comprehensive planning of solid waste management in accordance with 9 VAC 20-130-10 et seq that was approved by DEQ on June 29, 2006. This SWMP was subsequently recertified in 2011 via a letter dated June 24, 2011 with approval obtained from DEQ on November 10, 2011. On June 17, 2016, the R-Board certified that the 2011 plan was still current. The 2020 plan will be a full update to the original 2006 plan.

The full update of the 2020 plan requires public notice. The R-Board acquired advertisement space in the regional newspaper, The Free Lance Star, for the public notice with two published ads on July 2, 2020 and July 9, 2020. Additionally, the R-Board posted the public notice on its website at www.R-Board.org on July 2, 2020.

The SWMP was available for review at the R-Board Administrative Office at 473 Eskimo Hill Road, Stafford VA 22554 by appointment or by contacting Sofia Gilani at 540-658-5279 or sgilani@staffordcountyva.gov. The SWMP was also available online at the R-Board's website at <http://r-board.org/2020/07/swmp-public-notice/>.

The public notice period extended from July 6, 2020 to August 4, 2020. During the public notice period no comments were received from any of the following comment venues:

- Verbally by phone call to 540-658-5279 or physical visit to R-Board administrative office
- Letters delivered by mail or to the R-Board administrative office
- Emails to sgilani@staffordcountyva.gov
- Faxed letter to 540-658-4531
- Google Forms
(<https://docs.google.com/forms/d/e/1FAIpQLSd4NUHIBIErabpe8k4wm8g5tsMSIwfrKR34ur7NPeenuqFAdg/viewform>)

Attachments:

Advertisement

Resolution RB20-08

The Free Lance-Star

Advertising Affidavit

THE FREE LANCE-STAR
1340 Central Park Blvd
Suite 100
Fredericksburg, Va 22401

Account Number

6121132

STAFFORD COUNTY R-BOARD
489 ESKIMO HILL RD.
STAFFORD, VA 22554

Date

July 09, 2020

Date	Category	Description	Ad Size	Total Cost
07/09/2020	Legal Notices	Public Notice Solid Waste Management Plan (SWMP) PURPOSE	2 x 40 L	832.00

PUBLIC NOTICE - SOLID WASTE MANAGEMENT PLAN (SWMP)

PURPOSE OF NOTICE: To seek public comment on a proposed update to the Rappahannock Regional Solid Waste Management Board (R-Board) Solid Waste Management Plan (SWMP).

PUBLIC COMMENT PERIOD: July 6, 2020 through August 4, 2020.

PERMIT NAME AND NUMBER: Virginia Solid Waste Permit No. 589 issued by the Virginia Department of Environmental Quality (DEQ).

APPLICANT NAME AND ADDRESS: Rappahannock Regional Solid Waste Management Board (R-Board), 489 Eskimo Hill Rd., Stafford, VA. 22554

PROJECT DESCRIPTION: Under 9VAC20-130 (the Solid Waste Planning and Recycling Regulations) each solid waste planning region is to have a current solid waste management plan. The R-Board's planning region consists of the City of Fredericksburg and Stafford County. The R-Board developed its first SWMP in 2005 which was approved in 2006 by VDEQ. SWMPs are to be updated every 5 years but kept current annually. The R-Board has completed an update to the existing plan and a draft copy of this SWMP was given to the R-Board by staff on May 20, 2020. The SWMP is the plan that the R-Board intends to follow in development of its solid waste program taking into consideration projected population growth, projected waste flow, composting, recycling, and outreach education.

PRELIMINARY AND FINAL PLAN DECISION PROCEDURES: The R-Board believes that the plan meets the regulatory intent of 9VAC20-130, and its preliminary decision is to approve the SWMP. However, the R-Board is seeking comments on the draft SWMP that may inform their final decision.

HOW TO COMMENT: The R-Board accepts comments by hand-delivery, online form, fax, or postal mail. All comments must be in writing and be received by the R-Board during the comment period. Submittals must include the name, mailing address and telephone number of the commenter and of all persons represented by the commenter.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: Sofia Gilani, R-Board Administrative Office, 473 Eskimo Hill Road, Stafford, VA 22554; Mailing Address: R-Board Administrative Office, 473 Eskimo Hill Road, Stafford, VA 22554; Phone: 540-658-5279; E-mail: sgilani@staffordcountytva.gov (for information); Fax: 540-658-4531. The public may review the draft plan at the R-Board Administrative Office by appointment or may request copies of the documents from the contact person named above. The plan may also be reviewed at the R-Board's website www.R-Board.org. The R-Board requests that all electronic comments be submitted via Google forms: <https://forms.gle/4yrmP2jxh4fUT5mc9>; also available on the R-Board's website.

Proof of Publication

I hereby certify that the attached notice was published in
The Free Lance-Star, a newspaper published daily in
Fredericksburg, Va. on the following date(s);

07/02, 07/09/2020

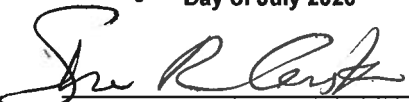
____ Listed additionally on-line @ Fredericksburg.com

Newspaper reference: 0001110119


Publisher, Supervisor or Accounting Assistant

Sworn to and subscribed before me this

9th Day of July 2020


Notary Public

State of Virginia
County/City



My Commission expires NOTARY PUBLIC
Sharon R Carsten
Commonwealth of Virginia
Notary Registration Number 329549
Commission Expires July 31 2021



Rappahannock Regional Solid Waste Management Board

489 Eskimo Hill Road • Stafford, Virginia 22554 • 540-658-5279 • FAX 540-658-4523

RB20-08

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

RESOLUTION

At a regular meeting of the Rappahannock Regional Solid Waste Management Board (R-Board) held in Conference Room A/B/C, George L. Gordon, Jr., Government Center, Stafford, Virginia, on the 19th day of August, 2020:

<u>MEMBERS:</u>	<u>VOTE:</u>
Matthew J. Kelly, Chairman	Yes
Meg Bohmke, Vice Chairman	Yes
Timothy J. Baroody	Yes
Fred J. Presley	Yes
Cindy C. Shelton	Yes
William C. Withers, Jr.	Yes

On motion of Mr. Withers, seconded by Ms. Bohmke, which carried by a vote of 6-0, the following was adopted:

A RESOLUTION TO APPROVE THE SOLID WASTE MANGEMENT PLAN

WHEREAS, under 9 VAC 20-130-10 et seq, the purpose of the regulation is to establish minimum requirements for solid waste management planning and recycling for the protection of the public health, public safety, the environment, and natural resources throughout the Commonwealth; and

WHEREAS, mandatory local/regional solid waste plan requirements in the Planning Regulations at 9 VAC 20-130-120 include: (1) an integrated waste management strategy; (2) a schedule for implementation and objectives; (3) funding needs and sources; (4) a public education strategy; (5) information on source reduction, reuse, recycling, and private/public partnerships; (6) adoption of a 25% recycling rate and the method of calculation; (7) a record of all known disposal sites—closed, inactive and active; (8) adoption of a method to monitor amounts of solid waste produced—by type, to be reported to DEQ; and

WHEREAS, the R-Board's Solid Waste Management Plan was updated with assistance from Draper Aden Associates to meet Virginia Department of Environmental Quality standards and will be re-certified in five years; and



Rappahannock Regional Solid Waste Management Board

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WHEREAS, no public comments were received during the public comment period of July 2, 2020 to August 4, 2020;

NOW, THEREFORE BE IT RESOLVED, by the Rappahannock Regional Solid Waste Management Board on this the 19th day of August, 2020 that the R-Board be and it hereby does approve the Solid Waste Management Plan.

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

Joseph A. Buchanan, Director



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Stefanie K. Taillon
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

October 30, 2025

Mr. Phillip Hathcock
Director
Rappahannock Regional Landfill (R-Board)
473 Eskimo Hill Rd.
Stafford, VA 22554

Re: Acceptance of the 5-Year Update to the Rappahannock Regional Solid Waste Management Plan

Dear Mr. Hathcock:

The 5-Year Update to Rappahannock Regional's Solid Waste Management Plan received in this office on November 10, 2021 along with additional information provided on July 18, 2025 and July 21, 2025, as required by the Solid Waste Planning and Recycling Regulations, 9VAC20-130-173 is hereby accepted.

The next 5-Year Update for Rappahannock Regional is due by June 29, 2026 based on the original plan approval date. Please submit the 5-year certification letter, along with a copy of the updated plan for our review by the due date. Additionally, please include County Recycling LLC (PBR575) in the list of solid waste facilities in the updated plan.

Thank you for your efforts and cooperation in this matter. If you have any questions, please contact Nikolas Churchill at (804) 659-2663 or via email at nikolas.churchill@deq.virginia.gov.

Sincerely,

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

Sanjay Thirunagari, Programs Manager
Virginia Department of Environmental Quality
804-659-1532
sanjay.thirunagari@deq.virginia.gov
Office of Financial Responsibility & Waste Programs
Division of Land Protection and Revitalization
1111 East Main Street, Suite 1400
Richmond, VA 23219

Enclosures

Cc: Nikolas Churchill, DEQ, CO
Prina Chudasama, DEQ, CO
Jim Datko, DEQ, NRO
Tyler Schmidt, Rappahannock Regional Landfill (R-Board)



Rappahannock Regional Solid Waste Management Board

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June 29, 2026

Nikolas Churchill
Virginia DEQ
1111 E. Main St., Suite 1400
Richmond, VA 23219

via email: Nikolas.Churchill@deq.virginia.gov

RE: Rappahannock Regional Solid Waste Management Board - Solid Waste Management Plan 2026 5-YR Update Certification Letter

Dear Mr. Churchill,

In accordance with the requirements of 9VAC20-130-173 (Maintenance of Solid Waste Management Plans), the Rappahannock Regional Solid Waste Management Board (R-Board Landfill) is pleased to submit this letter, certifying that the following plan elements listed in 9VAC20-130-120 C have been maintained and updated:

1. Waste generation estimates are current (9VAC20-130-120 C 3);
2. The schedule increments have been met (9VAC20-130-120 C 5); and
3. A projected 20-year waste management capacity remains available or projects otherwise are on schedule to meet the planning unit's solid waste needs (9VAC20-130-120 C 9).

If you have any questions regarding the SWMP 5-YR Update, please contact Tyler Schmidt at (540) 658-4591 or via email at tschmidt@staffordcountyva.gov.

Thank you,

Phil Hathcock

R-Board Landfill Director

cc: Prina Chudasama, *DEQ*; Sanjay Thirunagari, *DEQ*; Mr. Rick Markwardt, *R-Board Landfill*; Mr. Tyler Schmidt, *R-Board Landfill*.

APPENDIX C
POPULATION PROJECTIONS

TABLE C-1
 RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
 POPULATION PROJECTIONS
 2025 SWMP
 (Population information taken from Weldon Cooper)

YEAR	STAFFORD COUNTY	FREDERICKSBURG	TOTAL	% CHANGE
2011	132174	24521	156551	
2012	134324	25459	159783	2.1%
2013	136541	26218	162759	1.9%
2014	139150	26920	166070	2.0%
2015	142042	27782	169824	2.3%
2016	144402	27614	172016	1.3%
2017	146654	27477	174131	1.2%
2018	149110	27351	176461	1.3%
2019	151601	27567	179168	1.5%
2020	156927	27982	184909	3.2%
2021	159510	27711	187221	1.3%
2022	162111	27910	190021	1.5%
2023	164629	28012	192641	1.4%
2024	166629	28029	194658	1.0%
2025	168519	29866	198385	1.9%
2026	171498	29748	201246	1.4%
2027	174477	29630	204107	1.4%
2028	177456	29512	206968	1.4%
2029	180435	29394	209829	1.4%
2030	183416	29275	212691	1.4%
2031	186078	29624	215702	1.4%
2032	188740	29973	218713	1.4%
2033	191402	30322	221724	1.4%
2034	194064	30671	224735	1.4%
2035	196726	31020	227746	1.3%
2036	199388	31369	230757	1.3%
2037	202050	31718	233768	1.3%
2038	204712	32067	236779	1.3%
2039	207374	32416	239790	1.3%
2040	210033	32760	242793	1.3%
2041	213113	33173	246286	1.4%
2042	216193	33586	249779	1.4%
2043	219273	33999	253272	1.4%
2044	222353	34412	256765	1.4%
2045	225433	34825	260258	1.4%
2046	228513	35238	263751	1.3%
2047	231593	35651	267244	1.3%
2048	234673	36064	270737	1.3%
2049	237753	36477	274230	1.3%
2050	240831	36891	277722	1.3%

APPENDIX D
WASTE COMPOSITION

TABLE D-1
 RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
 SWIA SUMMARY TONNAGES
 2001 through 2019

YEAR	TONNAGE LANDFILLED	REMAINING CAPACITY (Tons) Calculated by DEQ	REPORTED LIFE REMAINING
2001	65,808	600,000	NA
2002	116,675	489,929	NA
2003	165,596	390,000	NA
2004	166,622	234,514	1.0
2005	130,226	79,028	1.0
2006	141,812	489,500	3.5
2007	117,132	366,950	2.6
2008	101,875	265,076	2.5
2009	106,804	173,678	2.1
2010	115,795	73,678	0.8
2011	96,008	80,000	0.8
2012	115,709	4,871,634	55.0
2013	121,388	7,905,335	55.0
2014	120,593	6,475,031	48.0
2015	117,167	6,374,531	48.0
2016	171,038	4,851,634	48.0
2017	206,694	6,395,440	39.0
2018	218,770	5,856,129	38.0
2019	226,669	5,717,526	37.0

TABLE D-1A
 RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
 SWIA SUMMARY TONNAGES
 2020 through 2025

YEAR	TONNAGE LANDFILLED	REMAINING CAPACITY (Cubic Yards) REPORTED ON SWIA	REPORTED LIFE REMAINING
2020	218,468	11,152,795	39.5
2021	235,981	11,011,007	28.7
2022	248,608	10,577,183	22.9
2023	265,366	10,261,935	18.6
2024	281,549	9,953,764	23.0
2025	313,577	9,257,652	21.5

TABLE D-2
RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
SWIA REPORTING INFORMATION - compiled
CY 2014 - 2019

(Numbers have been rounded.)

CY 2019	ON-SITE MANAGEMENT				OFF-SITE	STORED ON SITE	
Waste type	TOTAL AMOUNT RECEIVED	LANDFILLED	COMPOSTED	MULCHED	RECYCLED	beginning of reporting period	End of reporting period
Municipal Solid Waste	153,296	142,903			10,393		
Construction/Demolition/Debris	66,917	66,917					
Vegetative/Yard Waste	7,838			7,838			
Incineration Ash							
Sludge	16,888	16,849	39				
Tires	570				570		
white Goods	194				194		
Other Waste							
TOTAL	245,703	226,669	39	7,838	11,157	0	0
% TOTAL	100.0%	92.3%	0.0%	3.2%	4.5%	0.0%	0.0%
CY 2018	ON-SITE MANAGEMENT				OFF-SITE	STORED ON SITE	
Waste type	TOTAL AMOUNT RECEIVED	LANDFILLED	COMPOSTED	MULCHED	RECYCLED	beginning of reporting period	End of reporting period
Municipal Solid Waste	136,854	129,262			7,593		
Construction/Demolition/Debris	69,935	69,935					
Vegetative/Yard Waste	9,768			9,768			
Incineration Ash							
Sludge	19,664	19,574	90				
Tires	416				416		
white Goods	187				187		
Other Waste	3,730						3,730
TOTAL	240,554	218,770	90	9,768	8,195	0	3,730
% TOTAL	100.0%	90.9%	0.0%	4.1%	3.4%	0.0%	1.6%
CY 2017	ON-SITE MANAGEMENT				OFF-SITE	STORED ON SITE	
Waste type	TOTAL AMOUNT RECEIVED	LANDFILLED	COMPOSTED	MULCHED	RECYCLED	beginning of reporting period	End of reporting period
Municipal Solid Waste	131,965	123,255			8,710		
Construction/Demolition/Debris	70,128	70,128					
Vegetative/Yard Waste	9,805			9,805			
Sludge	13,402	13,311	91				
Tires	394				394		
white Goods	207				207		
Other Waste	697						
TOTAL	226,597	206,694	91	9,805	9,311	0	0
% TOTAL	100.0%	91.2%	0.0%	4.3%	4.1%	0.0%	0.0%

CY 2016	ON-SITE MANAGEMENT				OFF-SITE	STORED ON SITE	
Waste type	TOTAL AMOUNT RECEIVED	LANDFILLED	COMPOSTED	MULCHED	RECYCLED	beginning of reporting period	End of reporting period
Municipal Solid Waste	118,016	109,100			8,916		
Construction/Demolition/Debris	51,950	51,950					
Vegetative/Yard Waste	6,757			6,757			
Sludge	10,125	9,988	136				
Tires	339				339		
white Goods	42				42		
Other Waste	776				169		608
TOTAL	188,004	171,038	136	6,757	9,465	0	608
% TOTAL	100.0%	91.0%	0.1%	3.6%	5.0%	0.0%	0.3%
CY 2015	ON-SITE MANAGEMENT				OFF-SITE	STORED ON SITE	
Waste type	TOTAL AMOUNT RECEIVED	LANDFILLED	COMPOSTED	MULCHED	RECYCLED	beginning of reporting period	End of reporting period
Municipal Solid Waste	78,643	73,145			5,497		
Construction/Demolition/Debris	34,471	34,471					
Vegetative/Yard Waste	5,899			5,899			
Sludge	9,599	9,550	48				
Tires	526				526		
white Goods	151				151		
Other Waste	604				604		
TOTAL	129,893	117,167	48	5,899	6,779	0	0
% TOTAL	100.0%	90.2%	0.0%	4.5%	5.2%	0.0%	0.0%
CY 2014	ON-SITE MANAGEMENT				OFF-SITE	STORED ON SITE	
Waste type	TOTAL AMOUNT RECEIVED	LANDFILLED	COMPOSTED	MULCHED	RECYCLED	beginning of reporting period	End of reporting period
Municipal Solid Waste	89,151	81,812			7,339		
Construction/Demolition/Debris	30,225	30,225					
Vegetative/Yard Waste	8,752			8,752			
Sludge	8,622	8,557	65				
Tires	613				613		
white Goods	6				6		
Other Waste	895				895		
TOTAL	138,263	120,594	65	8,752	8,853	0	0
% TOTAL	100.0%	87.2%	0.0%	6.3%	6.4%	0.0%	0.0%

TABLE D-2A

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

SWIA REPORTING INFORMATION - compiled

CY 2020 - 2025

(Numbers have been rounded.)

CY 2025	ON-SITE MANAGEMENT					OFF-SITE	STORED ON SITE	
Waste Type	Total Amount of Waste Received	Landfilled	Recycled	Composed	Mulched	Recycled	Beginning of Reporting Period	End of Reporting Period
Municipal Solid Waste	189,868	186,787				3,080		
Construction/Demolition/Debris	111,820	105,803	6,017					
Industrial Waste								
Regulated Medical Waste								
Vegetative/Yard Waste	9,005	4,071			4,934			
Incineration Ash								
Sludge	16,665	16,665						
Tires	250	250						
White Goods	122					122		
Friable Asbestos								
Petroleum Contaminated Soil								
Other Waste								
Total	327,730	313,576	6,017	0	4,934	3,202	0	0
%Total	100.0%	95.7%	1.8%	0.0%	1.5%	1.0%	0.0%	0.0%
CY 2024	ON-SITE MANAGEMENT					OFF-SITE	STORED ON SITE	
Waste Type	Total Amount of Waste Received	Landfilled	Recycled	Composed	Mulched	Recycled	Beginning of Reporting Period	End of Reporting Period
Municipal Solid Waste	171,733	166,602				5,130		
Construction/Demolition/Debris	93,337	93,337						
Industrial Waste								
Regulated Medical Waste								
Vegetative/Yard Waste	3,426	3,426						
Incineration Ash								
Sludge	18,110	18,110						
Tires	74	74						
White Goods	149					149		
Friable Asbestos								
Petroleum Contaminated Soil								
Other Waste								
Total	286,829	281,549	0	0	0	5,279	0	0
%Total	100.0%	98.2%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%

CY 2023	ON-SITE MANAGEMENT					OFF-SITE	STORED ON SITE	
Waste Type	Total Amount of Waste Received	Landfilled	Recycled	Composed	Mulched	Recycled	Beginning of Reporting Period	End of Reporting Period
Municipal Solid Waste	163,739	155,024				8,714		
Construction/Demolition/Debris	94,033	94,033						
Industrial Waste								
Regulated Medical Waste								
Vegetative/Yard Waste	7,112				7,112			
Incineration Ash								
Sludge	16,175	16,166		9				
Tires	142	142						
White Goods	140					140		
Friable Asbestos								
Petroleum Contaminated Soil								
Other Waste								
Total	281,341	265,365	0	9	7,112	8,854	0	0
%Total	100.0%	94.3%	0.0%	0.0%	2.5%	3.1%	0.0%	0.0%
CY 2022	ON-SITE MANAGEMENT					OFF-SITE	STORED ON SITE	
Waste Type	Total Amount of Waste Received	Landfilled	Recycled	Composed	Mulched	Recycled	Beginning of Reporting Period	End of Reporting Period
Municipal Solid Waste	154,590	145,789				8,801		
Construction/Demolition/Debris	86,061	86,061						
Industrial Waste								
Regulated Medical Waste								
Vegetative/Yard Waste	7,455				7,455			
Incineration Ash								
Sludge	16,596	16,596						
Tires	162	162						
White Goods	149					149		
Friable Asbestos								
Petroleum Contaminated Soil								
Other Waste								
Total	265,013	248,608	0	0	7,455	8,950	0	0
%Total	100.0%	93.8%	0.0%	0.0%	2.8%	3.4%	0.0%	0.0%

CY 2021	ON-SITE MANAGEMENT					OFF-SITE	STORED ON SITE	
Waste Type	Total Amount of Waste Received	Landfilled	Recycled	Composed	Mulched	Recycled	Beginning of Reporting Period	End of Reporting Period
Municipal Solid Waste	156,851	149,387	7,464					
Construction/Demolition/Debris	69,610	69,610						
Industrial Waste								
Regulated Medical Waste								
Vegetative/Yard Waste	12,073		12,073					
Incineration Ash								
Sludge	16,821	16,820						
Tires	163	163						
White Goods	186			186				
Friable Asbestos								
Petroleum Contaminated Soil								
Other Waste								
Total	255,704	235,981	19,537	186	0	0	0	0
%Total	100.0%	92.3%	7.6%	0.1%	0.0%	0.0%	0.0%	0.0%

CY 2020	ON-SITE MANAGEMENT					OFF-SITE	STORED ON SITE	
Waste Type	Total Amount of Waste Received	Landfilled	Recycled	Composed	Mulched	Recycled	Beginning of Reporting Period	End of Reporting Period
Municipal Solid Waste	147,588	140,047				7,541		
Construction/Demolition/Debris	60,660	60,660						
Industrial Waste								
Regulated Medical Waste								
Vegetative/Yard Waste	9,623				9,623			
Incineration Ash								
Sludge	17,829	17,761		68				
Tires	367					367		
White Goods	163					163		
Friable Asbestos								
Petroleum Contaminated Soil								
Other Waste								
Total	236,230	218,468	0	68	9,623	8,071	0	0
%Total	100.0%	92.5%	0.0%	0.0%	4.1%	3.4%	0.0%	0.0%

TABLE D-3

RAPPAHANNOCK REGIONAL SOLID WASTE MANGEMENT BOARD
 SWIA TONNAGE BY MANAGEMENT CATEGORY

CY 2014 - CY 2025		LANDFILLED		COMPOSTED		MULCHED		RECYCLED		STORED ON SITE	
YEAR	SWIA TONNAGE RECEIVED AT LANDFILL	TONNAGE	%TOTAL RECEIVED	TONNAGE	%TOTAL RECEIVED	TONNAGE	%TOTAL RECEIVED	TONNAGE	%TOTAL RECEIVED	TONNAGE	%TOTAL RECEIVED
2014	138,263	120,594	87.2%	65	0.05%	8,752	6.3%	8,853	6.4%	0	0.0%
2015	129,892	117,167	90.2%	48	0.04%	5,899	4.5%	6,779	5.2%	0	0.0%
2016	188,004	171,038	91.0%	136	0.07%	6,757	3.6%	9,465	5.0%	608	0.3%
2017	226,597	206,694	91.2%	91	0.04%	9,805	4.3%	9,311	4.1%	0	0.0%
2018	240,554	218,770	90.9%	90	0.04%	9,768	4.1%	8,195	3.4%	3,730	1.6%
2019	245,703	226,669	92.3%	39	0.02%	7,838	3.2%	11,157	4.5%	0	0.0%
2020	236,230	218,468	92.5%	68	0.03%	9,623	4.1%	8,071	3.4%	0	0.0%
2021	255,704	235,981	92.3%	186	0.07%	0	0.0%	19,537	7.6%	0	0.0%
2022	265,013	248,608	93.8%	0	0.00%	7,455	2.8%	8,950	3.4%	0	0.0%
2023	281,341	265,365	94.3%	9	0.00%	7,112	2.5%	8,854	3.1%	0	0.0%
2024	286,829	281,549	98.2%	0	0.00%	0	0.0%	5,130	1.8%	0	0.0%
2025	327,730	313,576	95.7%	0	0.00%	4,934	1.5%	9,219	2.8%	0	0.0%
Average	235,155	218,707	92.5%	61	0.03%	6,495	3.1%	9,460	4.2%	362	0.2%

TABLE D-4
RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
SWIA TONNAGE LANDFILLED
BY CATEGORY
CY 2014 - CY 2025

				LANDFILLED TONNAGES AND % OF TOTAL LANDFILLED TONNAGE					
YEAR	SWIA TONNAGE RECIEIVED AT LANDFILL	SWIA LANDFILLED TONNAGE	% LANDFILLED	MSW	% TOTAL	CDD	% TOTAL	SLUDGE	%TOTAL
2014	138,263	120,594	87.2%	81,812	67.8%	30,225	25.1%	8,557	7.1%
2015	129,892	117,167	90.2%	73,145	62.4%	34,471	29.4%	9,550	8.2%
2016	188,004	171,038	91.0%	109,100	63.8%	51,950	30.4%	9,988	5.8%
2017	226,597	206,694	91.2%	123,255	59.6%	70,128	33.9%	13,311	6.4%
2018	240,554	218,770	90.9%	129,262	59.1%	69,935	32.0%	19,574	8.9%
2019	245,703	226,669	92.3%	142,903	63.0%	66,917	29.5%	16,849	7.4%
2020	236,230	218,468	92.5%	140,047	64.1%	60,660	27.8%	17,761	8.1%
2021	255,704	235,981	92.3%	149,387	63.3%	69,610	29.5%	16,820	7.1%
2022	265,013	248,608	93.8%	145,789	58.6%	86,061	34.6%	16,596	6.7%
2023	281,341	265,365	94.3%	155,024	58.4%	94,033	35.4%	16,166	6.1%
2024	286,829	281,549	98.2%	166,602	59.2%	93,337	33.2%	18,110	6.4%
2025	327,730	313,576	95.7%	186,787	59.6%	105,803	33.7%	16,665	5.3%
Average	235,155	218,707	92.5%	133,593	61.6%	69,428	31.2%	14,996	7.0%

TABLE D-5**RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD****WEIGHT AND MATERIAL SUMMARY****Annual financial and operational reports**

	FY2014	FY2015	FY2016	FY2017	FY2018	5-YEAR AVERAGE	% TOTAL
	weight (in Tons)						
BILLABLE							
Commercial waste	28,771	23,254	36,559	45,738	62,340	39,332	23.0%
Residential waste	35,569	20,242	26,689	46,177	37,250	33,185	19.4%
Eskimo Hill	16,220	20,427	21,909	18,843	19,861	19,452	11.4%
Fredricksburg	9,077	9,030	8,848	8,743	7,986	8,737	5.1%
Belman Road	3,036	2,567	1,995	1,880	1,649	2,225	1.3%
Mixed load (\$71/t)	17	24	74	194	110	84	0.0%
Debris waste	23,487	26,325	48,920	53,204	71,263	44,640	26.1%
Dirt	3,094	17,586	2,189	244	2,288	5,080	3.0%
Tires commercial	131	164	238	243	472	250	0.1%
Sludge (County)	8,759	9,503	10,001	11,384	11,277	10,185	5.9%
Sludge (City)					5,175	5,175	3.0%
TOTAL	128,161	129,122	157,422	186,650	219,671	164,205	95.9%
NON-BILLABLE							
Litter/cleanups	294	209	289	227	152	234	0.1%
Recycling	7,795	6,865	5,922	5,664	8,003	6,850	4.0%
TOTAL	136,250	136,196	163,633	192,541	227,826	171,289	100.0%

TABLE D-5A**RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD WEIGHT AND MATERIAL SUMMARY****Annual financial and operational reports**

	FY2021	FY2023	FY2022	FY2024	FY2025	5-YEAR AVERAGE	% TOTAL
	weight (in Tons)						
BILLABLE							
MSW	145,777	151,290	146,552	162,681	174,615	156,183	59.0%
C&D	61,991	91,179	79,694	95,138	94,056	84,412	31.9%
Dirt	566	2,455	866	5,497	3,600	2,597	1.0%
Sludge (city)	3,806	4,646	4,963	4,690	4,292	4,479	1.7%
Sludge (county)	13,469	11,559	11,585	13,173	12,774	12,512	4.7%
Tires	163	162	142	74	250	158	0.1%
Yard waste	1146	1453	2082	1922	14226	4166	1.6%
TOTAL	226,918	262,744	245,884	283,174	303,814	264,507	97.2%
NON-BILLABLE							
Litter/cleanups	40	98	42	247	144	114	0.04%
Recycling	7,940	4,865	8,338	8,415	7,382	7,388	3%
TOTAL	234,898	267,707	254,264	291,836	311,340	272,009	100%

Note: Change in waste tracking software caused tracking capabilities to differ from previous years.

SOLID WASTE INFORMATION AND ASSESSMENT PROGRAM REPORTING TABLE - FORM DEQ 50-25

1. Facility Name: Rappahannock Regional Solid Waste Management Board			
2. Permit Number: SWP589		3. Date Submitted: 3/20/2026 10:35:26 AM	
4. Annual Reporting Period: 2025		5. Preparer's Name: Tyler Schmidt	
6. Preparer's Telephone Number: 5406584591		7. Preparer's Email: TSchmidt@staffordcountyva.gov	
8. Has there been a change to the Annual Fee Billing Contact, Address, or telephone? Y			
Contact's Name: Rick Markwardt		Contact's Phone: 5406584596	
Address: 473 Eskimo Hill Rd.		Email: RMarkwardt@staffordcountyva.gov	
City: Stafford		State: VA	Zip: 22554
9A and 9B Landfills only	9A Remaining Permitted Capacity: 9257652 Cubic Yards		9B Expected Remaining Permitted Life: 21.5 Years
10. Does this facility use active scales? Y		Landfills not using active scales - enter the total amount landfilled in cubic yards (sum of all jurisdictions):	
11. Originating Jurisdiction: VA - Virginia		Statement of Economic Benefits submitted? No	
12. Facilities landfilling VA incineration ash		Use the supplemental form to provide the facility from which ash was received and the amount.	

Waste amounts measured in TONS

					On-site Management of Waste					Sent Off-site to be: (i)		Stored On-Site(j)	
	Waste Type	Total Amount of Waste Recieved (a)	Mined Materials (b)	Landfilled (c)	Recycled (d)	Composed (e)	Incinerated (f)	Mulched (g)	Other (h)	Recycled	Treated, Stored, Disposed	Beginning of Reporting Period	End of Reporting Period
13	Municipal Solid Waste	189868.12		186787.75						3080.37			
14	Construction/Demolition/Debris	111820.35		105803.49	6016.86								
15	Industrial Waste												
16	Regulated Medical Waste												
17	Vegetative/Yard Waste	9004.94		4071.14				4933.80					
18	Incineration Ash												
19	Sludge	16665.27		16665.27									
20	Tires	249.59		249.59									
21	White Goods	122.32								122.32			
22	Friable Asbestos												
23	Petroleum Contaminated Soil												
24	Other Waste												
25	Total	327730.59		313577.24	6016.86			4933.80		3202.69			

Facility Comments:

Below is an explanation for each category/subcategory and its associated percentage increase/decrease:
Municipal Solid Waste (Landfilled): Increase due to residential and commercial developmental growth, population growth (Stafford County & City of Fredericksburg), and consumer habits. Upward trending.
Municipal Solid Waste (Recycled): Decrease can be attributed to reclassification/tracking of certain waste streams to C&D (Recycled). Metals and Single-Stream Recycling tonnage is consistent with previous years and can fluctuate due to inflationary pressures and consumer habits.
Construction/Demolition/Debris (Landfilled): Increase due to residential and commercial developmental growth.
Construction/Demolition/Debris (Recycled): Waste materials that can be crushed/pulverized and used as roadway material (i.e. brick, asphalt, concrete, etc.).

Vegetative/Yard Waste (Landfilled): Increase can be attributed to land clearing activities from data centers and developmental growth. This category includes mulched material used for road traction during weather events and erosion control within the lined cell areas.

Vegetative/Yard Waste (Mulched): Mulched vegetative waste generated on-site and offsite (data centers), that was used for erosion control.

Sludge (Landfilled): Decrease in sludge can be attributed to drought conditions in 2025. Upward trending expected with developmental growth.

Tires (Landfilled): Increase attributed to new tire cutting business in the service area.

White Goods (Recycled): Linear decrease due to commercial comprehensive services (appliance installation & haul away) and possibly inflationary pressures.

Note: commercial recycling is not accepted at the R-Board Landfill

Comment Added during Report Submission on 3/20/2026:

Please refer to facility comments provided within the report.

APPENDIX E
WASTE GENERATION

TABLE E-1

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

HISTORICAL PER CAPITA GENERATION

BASED ON POPULATION AND SWIA LANDFILLED TONNAGE

YEAR	POPULATION	SWIA TONNAGE	PER CAPITA GENERATION	TONS PER DAY (365 days)
2010	153,270	115,795	4.1	317
2011	156,551	96,008	3.4	263
2012	159,783	115,709	4.0	317
2013	162,759	121,388	4.1	333
2014	166,070	120,593	4.0	330
2015	169,824	117,167	3.8	321
2016	172,016	171,038	5.4	469
2017	174,131	206,694	6.5	566
2018	176,461	218,770	6.8	599
2019	179,168	226,669	6.9	621
2020	184,909	236,230	7.0	647
2021	187,221	255,704	7.5	701
2022	190,021	265,013	7.6	726
2023	192,641	281,341	8.0	771
2024	194,658	286,828	8.1	786
2025	198,385	327,731	9.1	898
AVERAGE (2020 - 2025)	191,306	275,475	7.9	755

TABLE E-2

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

WASTE PROJECTIONS - Use of R-Board Average for 2020-2025

BASED ON POPULATION AND SWIA LANDFILLED TONNAGE

YEAR	POPULATION	PER CAPITAGENERATION	WASTEGENERATION	TONS PER DAY(365 days)
2025	198,385	7.9	286,022	784
2026	201,246	7.9	290,146	795
2027	204,107	7.9	294,271	806
2028	206,968	7.9	298,396	818
2029	209,829	7.9	302,521	829
2030	212,691	7.9	306,647	840
2031	215,702	7.9	310,988	852
2032	218,713	7.9	315,329	864
2033	221,724	7.9	319,671	876
2034	224,735	7.9	324,012	888
2035	227,746	7.9	328,353	900
2036	230,757	7.9	332,694	911
2037	233,768	7.9	337,035	923
2038	236,779	7.9	341,376	935
2039	239,790	7.9	345,717	947
2040	242,793	7.9	350,047	959
2041	246,286	7.9	355,083	973
2042	249,779	7.9	360,119	987
2043	253,272	7.9	365,155	1000
2044	256,765	7.9	370,191	1014
2045	260,258	7.9	375,227	1028
2046	263,751	7.9	380,263	1042
2047	267,244	7.9	385,299	1056
2048	270,737	7.9	390,335	1069
2049	274,230	7.9	395,371	1083
2050	277,722	7.9	400,406	1097

TABLE E-3

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

WASTE PROJECTIONS - BY WASTE CATEGORY LANDFILLED

(See Table E-2 for waste generation projection and Table D-4 for percentages)

YEAR	WASTE GENERATION	MSW	CDD	SLUDGE
Average % SWIA by category		61.6%	31.2%	7.0%
2025	286,022	176,189	89,239	20,022
2026	290,146	178,730	90,526	20,310
2027	294,271	181,271	91,813	20,599
2028	298,396	183,812	93,100	20,888
2029	302,521	186,353	94,387	21,176
2030	306,647	188,895	95,674	21,465
2031	310,988	191,569	97,028	21,769
2032	315,329	194,243	98,383	22,073
2033	319,671	196,917	99,737	22,377
2034	324,012	199,591	101,092	22,681
2035	328,353	202,265	102,446	22,985
2036	332,694	204,939	103,800	23,289
2037	337,035	207,614	105,155	23,592
2038	341,376	210,288	106,509	23,896
2039	345,717	212,962	107,864	24,200
2040	350,047	215,629	109,215	24,503
2041	355,083	218,731	110,786	24,856
2042	360,119	221,833	112,357	25,208
2043	365,155	224,935	113,928	25,561
2044	370,191	228,038	115,500	25,913
2045	375,227	231,140	117,071	26,266
2046	380,263	234,242	118,642	26,618
2047	385,299	237,344	120,213	26,971
2048	390,335	240,446	121,785	27,323
2049	395,371	243,549	123,356	27,676
2050	400,406	246,650	124,927	28,028

APPENDIX F
COLLECTION

Item Number	Goal	Action Item	Current Status	Estimated Costs and Responsible Party	Schedule
C-1	Continue to implement the flow control ordinance.	Keep accurate contact information for private haulers to ensure a line of communication.	Maintained.	Fixed within budget & R-Board responsibility	On-going
C-2	Provide two no charge residential household hazardous waste collection days.	Continue to provide the service and work with procurement to set up contracts as needed.	Contacted vendors, higher cost than anticipated, exploring other options (landfill drop-off).	\$80,000 & R-Board responsibility	FY-26
C-3	Provide residential fluorescent bulb collection at no charge.	Set up collection area at Eskimo Hill Residential Center and ensure enough supplies are on-site.	Completed.	\$12,000 & R-Board Responsibility	On-going
C-4	Provide residential waste oil & antifreeze collection at no charge.	Set up and monitor residential center.	Completed.	\$2,000 & R-Board responsibility	On-going
C-5	Replace Scale House and Scales.	Replace the aging Scale House and Scales.	New scales and scale house being installed during CY-26.	\$500,000 & R-Board responsibility	FY-27
C-6	Install new truck wheel wash system.	Old system has been inoperative for several years, install complete new system.	Completed.	\$200,000 & R-Board responsibility	FY-20
C-7	Resurface Residential road area.	Mill and asphalt the residential road area.	Completed.	\$57,709 & R-Board responsibility	FY-21
C-8	Widen and asphalt road from resident area to brush area.	Expand current dirt road and asphalt it from the resident area to the brush area.	Completed.	\$8,310 & R-Board responsibility	FY-21
C-9	Improve/redesign commercial gate entrance.	Improve/redesign the commercial gate entrance to allow the commercial vehicle to enter and exit in a safer manner.	Completed.	\$100,000 & R-Board responsibility	FY-24
C-10	Continue to collect trash on applied schedule from residents and businesses in the City.	Continue trash collection as currently.	Maintained.	City of Fredericksburg responsibility & disposal cost depends on fee schedule	On-going
C-11	Recycling Collection.	Continue, as long as feasible, to collect recycling from residents/businesses of City of Fredericksburg.	Maintained.	City of Fredericksburg Responsibility & cost @ \$50/ton	On-going

APPENDIX G
DISPOSAL

Item Number	Goal	Action Item	Current Status	Estimated Costs and Responsible Party	Schedule
D-1	Provide environmentally secure disposal	Train staff to properly maintain landfill operations under all permits & regulations.	Maintained/ exploring VEEP E4 Status and providing various enviromental education opportunities.	Direct costs related to training & permit fees; & indirect costs related to labor R-Board Responsibility	On-going
D-2	Continue to encourage reduction in waste stream	Provide education on source reduction, recycling, and composting.	Maintained/ participation in various events throughout each year.	R-Board Responsibility Cost Varies	On-going
D-3	Continue to expand active gas system	Install new gas wells as needed per regulations & monitor gas system per regulations.	Maintained/ gas well expansion plan developed. Two gas wells installed CY-26.	R-Board Responsibility Cost Varies	On-going
D-4	Continue updating/replacing aging equipment	Keep updating our equipment in accordance with our CIP.	Maintained/ new and replacement equipment in CIP (road vehicles, loader, compactor, etc.).	Cost will vary by FY & R-Board responsibility	On-going
D-5	Purchase GPS for compactor	To improve compacting at the working face install a GPS on the compactor.	Exploring options.	\$76,543 & R-Board responsibility	FY-26
D-6	Continue to improve infrastructure	Keep improving roads, water, internet, and power.	Maintained.	Cost will vary by project & R-Board responsibility	On-going
D-7	Provide for revenue-generating disposal capacity well into the future	Expand landfill as needed to maintain disposal capacity.	Maintained/ new cell built (Partial G1+G3). Partial G1 + G2 final design plans CY-26.	~\$4-5million per cell construction R-Board Responsibility	As needed due to cells reaching capacity



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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David K. Paylor
Director

Thomas A. Faha
Regional Director

Matthew J. Strickler
Secretary of Natural Resources

August 7, 2019

Rick Markwardt
Landfill Superintendent
Rappahannock Regional Solid Waste Management Board
489 Eskimo Hill Road
Stafford, Virginia 22554

**Re: Rappahannock Regional Solid Waste Management Board
Sanitary Landfill, Solid Waste Permit Number 589
Permit Modification Application, Part A Approval**

Dear Mr. Markwardt:

The Virginia Department of Environmental Quality (DEQ), Northern Regional Office (NRO), has reviewed the *Part A Permit Application Addendum*, dated January 30, 2017, and the *"Revised Part A Modification Request"*, dated August 1, 2019, pertaining to the Rappahannock Solid Waste Management Board Sanitary Landfill, operated under Solid Waste Permit number 589 (SWP589). The above documents were prepared by Draper Aden Associates, and submitted on behalf of the Rappahannock Regional Solid Waste Management Board (R-Board) to propose expanding the facility's property boundary by adding a 1.367 acre parcel to the southwest of the property, so that the total area within the property boundary will consist of 806.4 acres. In addition, R-Board proposes to augment the area encompassed by the facility boundary by adding 42.4 acres, so that the total area within the facility boundary will comprise 343.9 acres. As part of this Part A modification application, R-Board does not propose any changes to the facility's waste management and disposal unit boundaries.

This Part A permit modification is the second to the original Part A application entitled *"Part A Permit Application Rappahannock Regional Solid Waste Management Board Proposed Sanitary and Debris Landfill Expansion,"* prepared by Resource International, Ltd. The original Part A Application was approved on February 25, 1991, to authorize the facility to expand beyond the solid waste disposal units, designated as cells A and B, constructed previously under Solid Waste Permit number 509 (SWP509). The first Part A modification application, entitled *"Notice of Intent and Part A Application for Proposed Expansion of R-Board Sanitary Landfill, Permit No.*

589, Stafford County, Virginia,” was approved on December 7, 2009, and authorized the facility to expand the facility boundary and the waste management boundary by 171.3, and 80.5 acres, respectively.

In accordance with § 9VAC20-81-450.A, B, and C; § 9VAC20-81-460; and § 9VAC 20-81-120 of the Virginia Solid Waste Management Regulations (VSWMR, 9VAC 20-81-10, *et seq.*), the Part A Permit Modification Application has been reviewed for technical adequacy and regulatory compliance. The Department deems the application to be complete and technically adequate. Pursuant to § 9VAC20-81-450.C.3 of the VSWMR, this Part A Modification Application is hereby approved and subject to the following conditions, which must be met in order to maintain the validity of this approval:

1. The facility boundary of 343.9 acres, and the Phase II waste management boundary of 80.5 acres, are limited to those areas identified as the “Facility Property Boundary” and the “Waste Management Boundary Phase II”, respectively, on the Near Vicinity Map, dated April 9, 2019.
2. This Part A approval letter and the Near Vicinity Map, dated April 9, 2019, shall be included with the Part B permit application as an attachment to the Design Report. The Part B permit application must discuss how the conditions described in this Part A approval letter have been met.
3. The area incorporated into the facility boundary as part of this Part A modification contains an existing cemetery, located approximately 140 feet southeast of the office and maintenance building. A buffer zone of at least 50 feet shall be created around the cemetery and there shall be no waste or recycling related activities conducted at, or near the cemetery within the buffer zone.
4. Prior to construction, any piezometers or groundwater monitoring wells located within the previously approved waste management area shall be completely removed or overdrilled followed by grouting to the ground surface.
5. On June 15, 2017, the facility requested an increase of maximum daily disposal rate from 880 ton/day to 1,200 ton/day. According to the Virginia Department of Transportation (VDOT) memorandum, dated June 6, 2017, no appreciable impacts, in terms of vehicular traffic on roads in the vicinity of the facility, are expected due to the proposed increase of daily disposal rates. Accordingly, the maximum daily disposal rate is limited to 1,200 tons per day.
6. The maximum height of the landfill is limited to 348 feet Above the Mean Sea Level (AMSL). Accordingly, the Part B permit application for a landfill design exceeding 348 feet AMSL at any point cannot be submitted.
7. The maximum daily disposal rate for the R-Board Sanitary Landfill is 1,200 tons per day. This figure is subject to change during the Part B permit application process, depending on the planning and permitting for the equipment and other operational needs of the

facility. Future requests to increase the daily disposal limit will be processed as a Part B major permit modification and will require a submission of a new VDOT approval and adequacy report. Revision of the daily disposal limit may potentially require a revision to the local solid waste management plan.

8. During the Part B design, the disposal cells and the leachate storage system layout and location must be within the waste management boundary that is delineated in the Part A modification application and the disposal capacity considering the maximum built-out, must be equal to, or less than that mentioned in the Part A application and in the Stafford County Solid Waste Management Plan (SWMP), in this case it is 15,810,670 cubic yards for Phase II. The base grade elevation for the disposal areas of Phase II are limited to a minimum of 132 feet AMSL. The Part B landfill design shall address a separation of waste from the groundwater table.
9. All containment structures, including liners, leachate collection systems, and surface water control systems shall be designed to resist the maximum horizontal ground acceleration, with a 10% or greater probability of occurring in 250 years, for this site. The value submitted with the previous Part A application, in the seismic analysis, was estimated to be 0.25g. Accordingly, the Part B design analysis must be performed using the maximum horizontal acceleration of 0.25g or more.

If you have any questions regarding the Part A modification process, please contact Richard Doucette, Land Protection and Revitalization Program Manager at 703-583-3813 or at Richard.Doucette@deq.virginia.gov.

Respectfully,



Thomas A. Fahs
Regional Director

Cc: William G. Hase, P.E., Draper Aden Associates
Leonard "Rip" Ford, P.G., Draper Aden Associates
Richard Doucette, DEQ-NRO
Kathryn Perszyk, DEQ-CO
Yurek Aurelson, DEQ-NRO



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Secretary of Natural Resources

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Thomas A. Faha
Regional Director

SOLID WASTE FACILITY PERMIT PERMIT NUMBER 589

Facility Name: Rappahannock Regional Solid Waste Management Board (R-Board) Landfill

Facility Type: Sanitary Landfill

Latitude: 38° 23' 03" N

Site Location: Stafford County

Longitude: 77° 24' 35" W

Location Description: The facility is located on Eskimo Hill Road (State Route 628), approximately 600 feet west of the intersection with State Route 626 (Potomac Run Road) and one mile east of U.S. Route 1.

Background: The facility is a publicly owned/operated sanitary landfill that serves Stafford County (County) and the City of Fredericksburg (City). The wastes accepted include those wastes identified in Module II, which is based on the information provided on DEQ Form SW PTB dated May 8, 2012.

This sanitary landfill is located on approximately 805 acres of County property designated for landfill disposal. This landfill was opened in 1972 and is operated by the Rappahannock Regional Solid Waste Management Board (R-Board). This landfill is referred to as the R-Board Sanitary Landfill. This landfill is comprised of one unlined and five lined disposal units. These units have been operated under three separate state solid waste landfill permits since 1972: Permit 74 (1972 - 2002), Permit 509 (1987 - 1996) and Permit 589 (1996 - present).

On September 13, 1972, the Virginia Department of Health issued to the County its first solid waste landfill permit, Permit 74. This permit authorized the County to operate its first sanitary landfill disposal unit. This unit is unlined and occupies approximately 33 acres of land in the above area. This unit was operated under the provisions of Virginia House Bill 1205 and was eventually closed on August 29, 2002 by authority of the Virginia Department of Environmental Quality. This unit contains approximately 2.3 million cubic yards of airspace filled with municipal solid waste and earthen cover materials.

On July 21, 1987, the Virginia Department of Waste Management issued the R-Board (County/City) its second solid waste landfill permit, Permit 509. This permit authorized the R-Board to operate two additional sanitary landfill disposal units, Cells A and B. These units have been designed and constructed with a single clay liner, and occupy approximately 6.6 acres of land in the above area. Collectively, these units contain approximately 0.212 million cubic yards of airspace filled with municipal solid waste and

earthen cover materials. These units were operated under the provisions of Virginia House Bill 1205 and stopped receiving waste on April 15, 2005. These cells were confirmed closed by the Department on November 28, 2006.

On July 16, 1996, the Virginia Department of Waste Management issued the R-Board its third solid waste landfill permit, Permit 589. This permit replaced permit 509, and authorized the R-Board to operate two additional Subtitle D sanitary landfill disposal units, Cell C and Cell D. Permit 589 was then modified on February 19, 2003 to incorporate old disposal area in Permit 74. Permit 589 includes provisions to construct and operate additional Subtitle D landfill disposal units. Cell E is the only additional unit constructed under this provision. Cells C through E have been designed and constructed with a composite clay/synthetic geomembrane liner. Cell C and Cell D occupy approximately 14.7 acres of land in the above area and have a combined airspace design capacity of approximately 1.3 million cubic yards. Cell E has been constructed and occupies approximately 8.0 acres of land in the above area. Cell E has a design airspace capacity of approximately 0.979 million cubic yards.

Permit Modification: This permit modification is the 10th to Permit No. 589, which was originally issued on July 16, 1996. This modification incorporates a new disposal area that consists of Cells F and G, totaling approximately 74.5 acres of additional disposal area. The estimated site life for Cells F and G is 55 years (until 2066). This landfill life is based on the average waste acceptance of 370 tons/day, operating 358 days/year with an estimated in-place waste density of 0.5 tons/cubic yard.

Permit Variance: A variance to the seven-day leachate storage capacity as required in 9VAC20-81-210.B. was also processed as part of this modification. The variance is granted on the merit that the facility's 66,000-gallon leachate tank does not function as a storage tank but is used as an above-ground wet well pump station. In addition, an overflow pipe installed in the tank will allow discharge via gravity to the Camp 21 pump station if needed.

Previous permit amendments, authorizations, approvals, variances, and old Permits 74 and 509 are listed Module I, Section I.G., and copies of correspondence are provided in Permit Module I, Attachment I-1. Note that old permits 74 and 509 are superseded by permit 589, and are included only for the purpose of historical reference.

THIS IS TO CERTIFY THAT:

Rappahannock Regional Solid Waste Management Board (R-Board)
489 Eskimo Hill Road
Stafford, VA 22554

is hereby granted a permit to construct, operate, and maintain the facility as described in the attached Permit Modules I, II, III, X, XI, XII, and XIII and Permit Documents incorporated by reference. These Permit Modules and Permit Documents are as referenced hereinafter and are incorporated into and become a part of this permit.

The herein described activity is to be established, modified, constructed, installed, operated, used, maintained, and closed in accordance with the terms and conditions of this permit and the plans, specifications, and reports submitted and cited in the permit. The facility shall comply with all regulations of the Virginia Waste Management Board. In accordance with Chapter 14, § 10.1 - 1408.1 D of the Code of Virginia, prior to issuing this permit, any comments by the local government and general public have been investigated and evaluated and it has been determined that the facility poses no substantial present or potential danger to human health or the environment. The permit contains such conditions and requirements as are deemed necessary to comply with the requirements of the Virginia

Code, the regulations of the Board, and to prevent substantial or present danger to human health or the environment.

Failure to comply with the terms and conditions of this permit shall constitute grounds for the revocation or suspension of this permit and for the initiation of necessary enforcement actions.

The permit is issued in accordance with the provisions of § 10.1-1408.1 A, Chapter 14, Title 10.1, Code of Virginia (1950) as amended. To date, three variances have been issued to the facility: two allowing the use of alternate concentration limits for the development of groundwater protection standards and one allowing an alternate liner for Cell B. Variance approval letters can be found in Permit Module I, Attachment I-1.

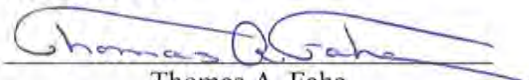
Permit No. 74: Issued: September 13, 1972
Amended: March 11, 1999
Revoked: February 19, 2003

Permit No. 509: Issued: July 21, 1987
Amended: September 9, 1987
Amended: September 30, 1987
Amended: December 29, 1987
Amended: October 15, 1989
Revoked: July 16, 1996

Permit No. 589: Part A Issued: February 5, 1991
Part A Amended: December 7, 2009

Part B Issued: July 16, 1996
Amendment 1: October 22, 2001
Amendment 2: December 17, 2002
Amendment 3: February 19, 2003
Amendment 4: February 24, 2004
Amendment 5: October 30, 2006
Amendment 6: April 30, 2007
Amendment 7: August 21, 2008
Amendment 8: May 13, 2009
Amendment 9: September 23, 2010

APPROVED:


Thomas A. Faha
Regional Director

DATE: November 15, 2012
Modified

PERMIT MODULES REFERENCE LIST

PERMIT MODULE I – GENERAL PERMIT CONDITIONS

PERMIT ATTACHMENT I-1 – PERMIT RELATED APPROVAL LETTERS

PERMIT MODULE II – CONDITIONS OF OPERATIONS

PERMIT MODULE III – SANITARY LANDFILL DESIGN

PERMIT MODULE X – DETECTION MONITORING

PERMIT MODULE XI – ASSESSMENT MONITORING

PERMIT MODULE XII – CLOSURE

PERMIT MODULE XIII – POST-CLOSURE CARE

PERMIT DOCUMENTS

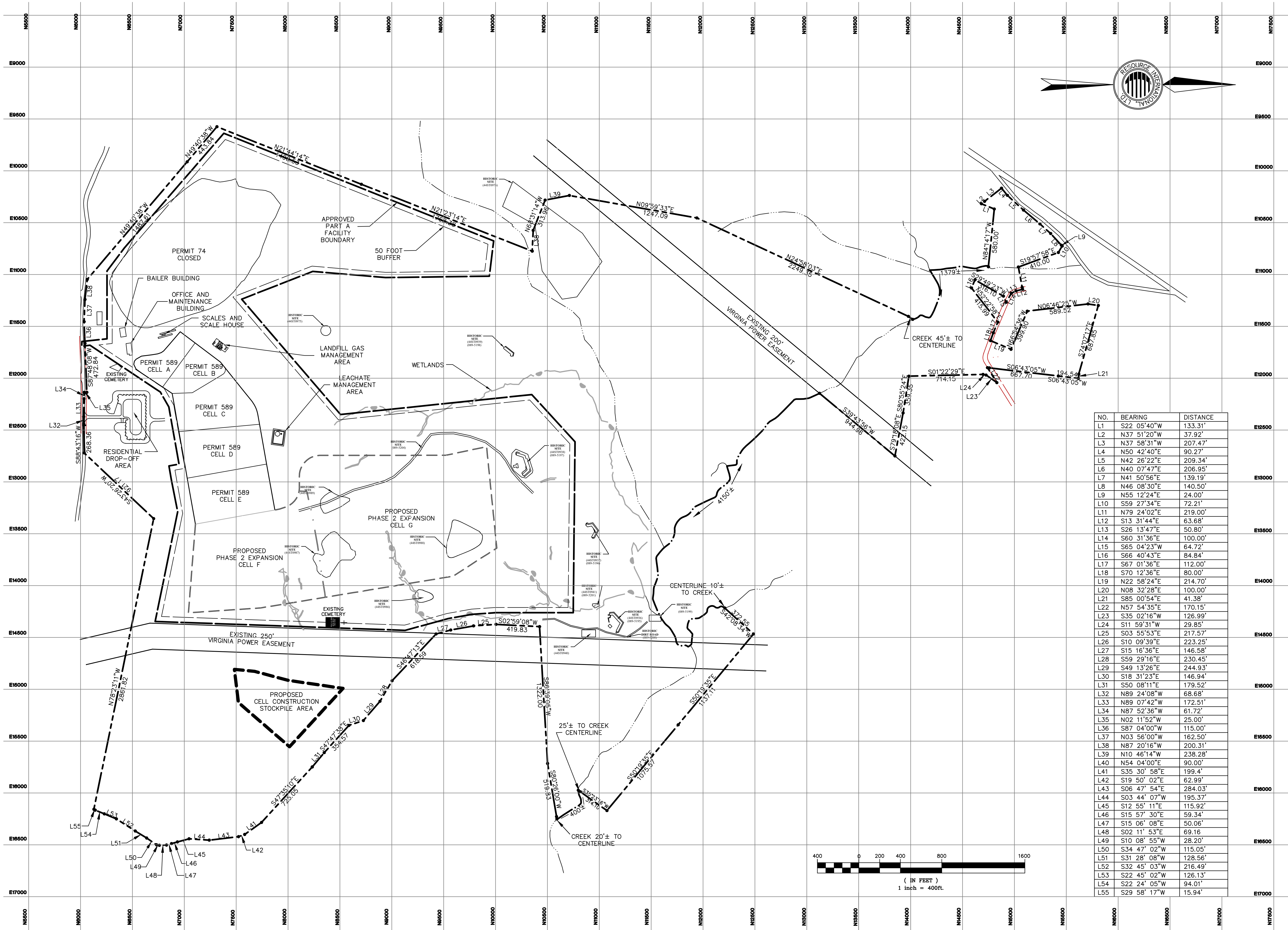
The documents listed below are hereby incorporated into this permit and the permittee is subject to all conditions contained therein. It is the responsibility of the permittee to properly maintain and update these documents. Any version with a revision date other than as listed below is not considered to be the official approved version and is subject to Department review and approval prior to being recognized as the “permitted” version.

1. *DEQ Form SW PTB* signed by Anthony J. Romanello dated May 8, 2012, with the following attachments:
 - a. Attachment III: *Phase 2 – Lateral Expansion Permit Drawings, Rappahannock Regional Solid Waste Management Board Sanitary Landfill, Stafford County, Virginia, Permit #589*, prepared by Resource International, Ltd., dated November 2010/revised date July 30, 2012.
 - b. Attachment IV: *Closure and Post-Closure Plan, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated March 2012.
 - c. Attachment VI: *Design Report, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated July 2012.
 - d. Attachment VII Appendix A: *Quality Assurance and Quality Control Plan, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated March 2012.
 - e. Attachment VII Appendix B: *Technical Specifications, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated May 2012.
 - f. Attachment VIII: *Leachate Management Plan, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated July 2012.
 - g. Attachment VIII: *Landfill Gas Management Plan, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated March 2012.
 - h. Attachment X: *Groundwater Monitoring and Sampling & Analysis Plan, Rappahannock Regional Solid Waste Management Board R-Board Landfill, Stafford County, Virginia*, prepared by Resource International, Ltd., dated April 2012.
 - i. Attachment XII: *Closure and Post-Closure Cost Estimate*
2. *Design Report, R-Board Sanitary Landfill, Permit No. 589, Stafford, Virginia*, prepared by Resource International, dated February 2006 (applicable to Cells C, D, and E).
3. *Part B Application Drawings – Permit #589, Amendment No. 3, Addendum 1, Continued Operation and Closure of Cells A through D; Development, Operation and Closure of Cell E*, prepared by Resource International, LTD, last revised March 23, 2006.
4. *Landfill Gas Collection and Control System Design Plan, Permit No. 589 Disposal Area, Stafford County, Virginia*, prepared by Resource International, LTD, last revised April 21, 2010.

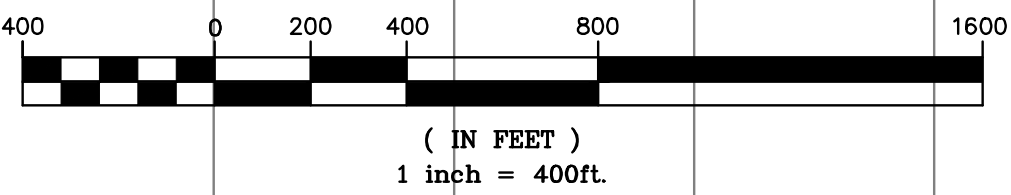
The following documents have been submitted to satisfy permit or regulatory requirements; however, they are considered reference documents and are not incorporated into Permit No. 589.

1. *Part A Application – Rappahannock Regional Solid Waste Management Board Proposed Sanitary and Debris Landfill Expansions*, prepared by Resource International, LTD, approved February 25, 1991.
2. *Notice of Intent and Part A Application for Proposed Expansion of R-Board Sanitary Landfill, Permit No. 589, Stafford County, Virginia*, prepared by Resource International, LTD., dated September 2005 and last revised October 2009.

H:\88071.244 Part B\Permit Drawings\P2-OVERALL.dwg Plotted: Oct 07, 2015-10:44am



NO.	BEARING	DISTANCE
L1	S22 05'40\"W	133.31'
L2	N37 51'20\"W	37.92'
L3	N37 58'31\"W	207.47'
L4	N50 42'40\"E	90.27'
L5	N42 26'22\"E	209.34'
L6	N40 07'47\"E	206.95'
L7	N41 50'56\"E	139.19'
L8	N46 08'30\"E	140.50'
L9	N55 12'24\"E	24.00'
L10	S59 27'34\"E	72.21'
L11	N79 24'02\"E	219.00'
L12	S13 31'44\"E	63.68'
L13	S26 13'47\"E	50.80'
L14	S60 31'36\"E	100.00'
L15	S65 04'23\"W	64.72'
L16	S66 40'43\"E	84.84'
L17	S67 01'36\"E	112.00'
L18	S70 12'36\"E	80.00'
L19	N22 58'24\"E	214.70'
L20	N08 32'28\"E	100.00'
L21	S85 00'54\"E	41.38'
L22	N57 54'35\"E	170.15'
L23	S35 02'16\"W	126.99'
L24	S11 59'31\"W	29.85'
L25	S03 55'53\"E	217.57'
L26	S10 09'39\"E	223.25'
L27	S15 16'36\"E	146.58'
L28	S59 29'16\"E	230.45'
L29	S49 13'26\"E	244.93'
L30	S18 31'23\"E	146.94'
L31	S50 08'11\"E	179.52'
L32	N89 24'08\"W	68.68'
L33	N89 07'42\"W	172.51'
L34	N87 52'36\"W	61.72'
L35	N02 11'52\"W	25.00'
L36	S87 04'00\"W	115.00'
L37	N03 56'00\"W	162.50'
L38	N87 20'16\"W	200.31'
L39	N10 46'14\"W	238.28'
L40	N54 04'00\"E	90.00'
L41	S35 30' 58\"E	199.4'
L42	S19 50' 02\"E	62.99'
L43	S06 47' 54\"E	284.03'
L44	S03 44' 07\"W	195.37'
L45	S12 55' 11\"E	115.92'
L46	S15 57' 30\"E	59.34'
L47	S15 06' 08\"E	50.06'
L48	S02 11' 53\"E	69.16'
L49	S10 08' 55\"W	28.20'
L50	S34 47' 02\"W	115.05'
L51	S31 28' 08\"W	128.56'
L52	S32 45' 03\"W	216.49'
L53	S22 45' 02\"W	126.13'
L54	S22 24' 05\"W	94.01'
L55	S29 58' 17\"W	15.94'



RAPPAHANNOCK REGIONAL SOLID WASTE
MANAGEMENT BOARD
R-BOARD SANITARY LANDFILL
STAFFORD COUNTY, VIRGINIA

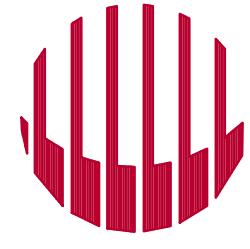
PROJECT NO.:
88071.24
SHEET:
3 OF 48

REVISIONS:
2-18-11 REVISED PER VDEQ COMMENTS
2-13-12 REVISED PER VDEQ TECH-1 COMMENTS

DESIGNED: CTW
DRAWN: CTW
CHECKED: EAH/RLH
DATE: NOVEMBER 2010

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PART B PERMIT DRAWINGS
OVERALL LAYOUT



RESOURCE
INTERNATIONAL, LTD.
ENGINEERS • SCIENTISTS • SURVEYORS • PLANNERS
P.O. BOX 6160 • 9560 KINGS CHARTER DRIVE • ASHLAND, VA 23005
(804) 550-9200 FAX (804) 550-9259

Year	Gate Rate (cy)	Airspace Remaining (cy)	Permitted Airspace (cy)	Leachate Generation Time Period
2010	213,608	347,357	F-1 558,158	1
2011	213,608	133,749		
2012	213,608	478,299		
2013	213,608	264,691		
2014	213,608	51,083	F-2 1,833,938	2
2015	217,880	1,667,141		
2016	217,880	1,449,261		
2017	217,880	1,231,380		
2018	217,880	1,013,500		
2019	217,880	795,620		3
2020	217,880	577,740		
2021	228,774	348,966	F-3 1,235,856	4
2022	228,774	1,356,048		
2023	228,774	1,127,273		
2024	228,774	898,499		
2025	228,774	669,725	G-1 1,205,898	5
2026	228,774	440,951		
2027	228,774	212,177		
2028	228,774	1,189,301		6
2029	228,774	960,526		
2030	240,213	720,314	G-2 846,783	7
2031	240,213	480,101		
2032	240,213	239,888		
2033	240,213	846,458		
2034	240,213	606,245	G-3 2,462,730	8
2035	240,213	366,032		
2036	240,213	125,819		
2037	240,213	2,348,336		
2038	240,213	2,108,124		
2039	240,213	1,867,911		
2040	252,224	1,615,687		9
2041	252,224	1,363,464		
2042	252,224	1,111,240		
2043	252,224	859,017		
2044	252,224	606,793		
2045	252,224	354,570		

Year	Gate Rate (cy)	Airspace Remaining (cy)	Permitted Airspace (cy)	Leachate Generation Time Period
2046	252,224	2,048,293	G-4 1,945,947	10
2047	252,224	1,796,070		
2048	252,224	1,543,846		
2049	252,224	1,291,622		
2050	252,224	1,039,399	G-5 3,241,910	11
2051	252,224	787,175		
2052	252,224	534,952		
2053	252,224	282,728		
2054	252,224	30,505		
2055	252,224	3,020,191		
2056	252,224	2,767,968		12
2057	252,224	2,515,744		
2058	252,224	2,263,521		13
2059	252,224	2,011,297		
2060	264,835	1,746,463		
2061	264,835	1,481,628		
2062	264,835	1,216,793		14
2063	264,835	951,958		
2064	264,835	687,124		
2065	264,835	422,289		
2066	264,835	157,454		15
2067	264,835	-107,380		
2068	264,835	-372,215		
2069	264,835	-637,050		
2070	264,835	-901,884		
2071	264,835	-1,166,719		
2072	264,835	-1,431,554		
2073	264,835	-1,696,388		
2074	264,835	-1,961,223		
2075	264,835	-2,226,058		

Cell	Footprint (acres)	Airspace (cy)
F-1	9.02	558,158
F-2	9.31	1,833,938
F-3	7.21	1,235,856
Total	25.54	3,627,952
G-1	10.23	1,205,898
G-2	10.25	846,783
G-3	7.92	2,462,730
G-4	9.52	1,945,947
G-5	11.04	3,241,910
Total	48.96	9,703,268

Note: For a compaction rate of 1,000 lbs/cy then
 264,835 cy/year = 132,418 tons/year
 132,418 tons/year = 370 ton/day (Average)
 Airspace based on 3.5 to 1 Interior Fill Slope

SOLID WASTE INFORMATION AND ASSESSMENT PROGRAM REPORTING TABLE - FORM DEQ 50-25

1. Facility Name: Rappahannock Regional Solid Waste Management Board			
2. Permit Number: SWP589		3. Date Submitted: 3/20/2026 10:35:26 AM	
4. Annual Reporting Period: 2025		5. Preparer's Name: Tyler Schmidt	
6. Preparer's Telephone Number: 5406584591		7. Preparer's Email: TSchmidt@staffordcountyva.gov	
8. Has there been a change to the Annual Fee Billing Contact, Address, or telephone? Y			
Contact's Name: Rick Markwardt		Contact's Phone: 5406584596	
Address: 473 Eskimo Hill Rd.		Email: RMarkwardt@staffordcountyva.gov	
City: Stafford		State: VA	Zip: 22554
9A and 9B Landfills only	9A Remaining Permitted Capacity: 9257652 Cubic Yards		9B Expected Remaining Permitted Life: 21.5 Years
10. Does this facility use active scales? Y		Landfills not using active scales - enter the total amount landfilled in cubic yards (sum of all jurisdictions):	
11. Originating Jurisdiction: VA - Virginia		Statement of Economic Benefits submitted? No	
12. Facilities landfilling VA incineration ash		Use the supplemental form to provide the facility from which ash was received and the amount.	

Waste amounts measured in TONS

					On-site Management of Waste					Sent Off-site to be: (i)		Stored On-Site(j)	
	Waste Type	Total Amount of Waste Recieved (a)	Mined Materials (b)	Landfilled (c)	Recycled (d)	Composed (e)	Incinerated (f)	Mulched (g)	Other (h)	Recycled	Treated, Stored, Disposed	Beginning of Reporting Period	End of Reporting Period
13	Municipal Solid Waste	189868.12		186787.75						3080.37			
14	Construction/Demolition/Debris	111820.35		105803.49	6016.86								
15	Industrial Waste												
16	Regulated Medical Waste												
17	Vegetative/Yard Waste	9004.94		4071.14				4933.80					
18	Incineration Ash												
19	Sludge	16665.27		16665.27									
20	Tires	249.59		249.59									
21	White Goods	122.32								122.32			
22	Friable Asbestos												
23	Petroleum Contaminated Soil												
24	Other Waste												
25	Total	327730.59		313577.24	6016.86			4933.80		3202.69			

Facility Comments:

Below is an explanation for each category/subcategory and its associated percentage increase/decrease:
Municipal Solid Waste (Landfilled): Increase due to residential and commercial developmental growth, population growth (Stafford County & City of Fredericksburg), and consumer habits. Upward trending.
Municipal Solid Waste (Recycled): Decrease can be attributed to reclassification/tracking of certain waste streams to C&D (Recycled). Metals and Single-Stream Recycling tonnage is consistent with previous years and can fluctuate due to inflationary pressures and consumer habits.
Construction/Demolition/Debris (Landfilled): Increase due to residential and commercial developmental growth.
Construction/Demolition/Debris (Recycled): Waste materials that can be crushed/pulverized and used as roadway material (i.e. brick, asphalt, concrete, etc.).

Vegetative/Yard Waste (Landfilled): Increase can be attributed to land clearing activities from data centers and developmental growth. This category includes mulched material used for road traction during weather events and erosion control within the lined cell areas.

Vegetative/Yard Waste (Mulched): Mulched vegetative waste generated on-site and offsite (data centers), that was used for erosion control.

Sludge (Landfilled): Decrease in sludge can be attributed to drought conditions in 2025. Upward trending expected with developmental growth.

Tires (Landfilled): Increase attributed to new tire cutting business in the service area.

White Goods (Recycled): Linear decrease due to commercial comprehensive services (appliance installation & haul away) and possibly inflationary pressures.

Note: commercial recycling is not accepted at the R-Board Landfill

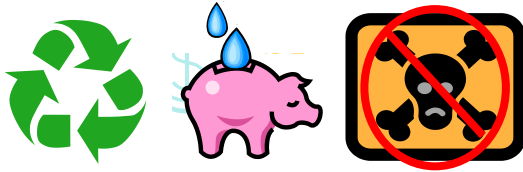
Comment Added during Report Submission on 3/20/2026:

Please refer to facility comments provided within the report.

APPENDIX H
COMPOSTING

Item Number	Goal	Action Item	Current Status	Estimated Costs and Responsible Parties	Schedule
CM-1	Continue to provide compost services to Region.	Renew compost permit through Office of Land Application Purchase mixer to double the capacity to produce under current program.	Completed renewal, evaluating expansion.	No Fee, built into annual permit \$43,000; R-Board	On-going
CM-2	Continue household composting classes.	Use Partnerships to do classes for both adults; (Compost 101) and children; (Worms Eat My Waste)	Maintained/ 6+ classes per year.	\$1000.00 / R-Board, Central Rappahannock Regional Library system, and VA Co-operative Extension Master Gardeners	On-going
CM-3	Continue to seek partnerships for composting programs.	Fall 2019 received leaf collection from City of Fredericksburg (>400 tons of material are being windrowed for compost Actively exploring the outsourcing and expanding of grinding of browns. Partnerships to collect food waste; handle compost operation or carry material to compost operations.	Maintained/ continuing partnerships and seeking additional opportunities.	\$14,000 annual /R-Board City of Public Private Partnerships between R-Board and Outside Vendors. Public Private Partnerships between R-Board and Outside Vendors. Fredericksburg Public Works Dept. & R-Board	On-going
CM-4	Evaluate food waste and other composting opportunities.	Actively pursuing sources for pre-consumer and postconsumer food waste. Have pre-consumer and postconsumer food waste for composting incorporated in our updated Solid Waste Management Plan.	Food waste composting tested, exploring other opportunities and having discussions with private sector. Providing food waste composting collection at farmers markets.	R-Board and Public Private vendor sources. R-Board and Consultant firm. Cost included in overall SWMP update.	FY-29

**Grade A Compost:
An Environmentally Friendly
Product**



- Rappa-Grow is a **recycled product** made from yard trimmings and biosolids from the wastewater treatment plant.
- Rappa-Grow helps to increase soil nutrient content and **eliminate** the need for toxic **chemical fertilizers and pesticides**.
- Rappa-Grow improves water filtration in clay soil and the ability of sandy soil to retain water, **reducing the need for watering**.
- Rappa-Grow is a locally generated, recycled product that will help you **create a healthy and beautiful landscape while saving money**.

Limited Warranty/Disclaimer

The Rappahannock Regional Solid Waste Management Board (R-Board) guarantees that all Rappa-Grow Compost has been treated by a process to reduce pathogens as defined by the United States Environmental Protection Agency (EPA). The R-Board in accordance with the requirements of the Virginia Department of Health, Virginia Department of Environmental Quality, Virginia Department of Agriculture, and the EPA guarantees the concentrations of heavy metals are below the regulatory limits established for exceptional quality biosolids. There is no warranty of fitness of Rappa-Grow for any purpose. According and without limitation, there is no warranty, expressed or implied, as to the quality or productivity of any Rappa-Grow and the R-Board is not responsible for crops, gardens, or other vegetative growth damaged, injured, or destroyed from its application. Rappa-Grow is hygienically and environmentally safe if it is used properly. The user agrees to abide by the instructions for usage provided with this Rappa-Grow compost by the R-Board. Application of this product to the land is prohibited except in accordance with the instructions in this brochure. For any other use not specified in this brochure, contact the manufacturer.

Nutrient Content ~5%, PH ~5%
For additional analytical data, please call us.
Phone: (540) 658-5279



Compost - It's Mulch Better

Rappa-Grow Compost



Rappahannock Regional
Solid Waste Management Board

489 Eskimo Hill Road
Stafford, VA

www.r-board.org

Phone: (540) 658-5279

What is Compost and What's it to You?

Rappa-Grow is a soil amendment made by combining wastewater biosolids and yard trimmings, through the controlled biological decomposition process of composting. Decomposition is performed by naturally occurring bacteria and fungi that use the organic material for their energy sources. Composting requires the correct ratio of organic materials, proper moisture content, and temperature. At the Regional Landfill Rappa-Grow is monitored from the beginning of the process until the mature compost is finished. After a curing period, Rappa-Grow will not produce unpleasant odors and can be beneficially used in your landscape.

Benefits of Compost

- Improves soil structure
- Reduces soil compaction
- Increases ease of cultivation
- Improves water infiltration
- Increases earthworm populations
- Improves nutrient holding capacity
- Reduces the need for fertilizers
- Improves root growth and yields
- Protects plants from disease and pests

Intended Uses and Tips for Rappa-Grow Compost

The nutrients in compost are released slowly, so there is no risk of "burning" plants. Water all new plants thoroughly.

General Soil Amendment

- Work 1" to 2" of compost into the top 3" to 5" of soil.

Lawn/Turf

- New turf: Till 2" of compost into the soil to a depth of 5" to 8" and seed or sod as desired.
- Existing turf: treat bald spots by working 1" of compost into the soil before reseeding.
- Topdressing: apply 1/2" of compost with a spreader (or shovel for small areas) over existing turf. The compost will sift down into the soil.

Flowers

- In the spring, loosen the top few inches of annual and perennial beds and mix in a one-inch layer of compost.
- Apply a one-inch layer of compost as a mulch.



Potted Plants

- For good potting soil mix equal parts loam, sand, and compost.
- Or mix one part compost with three parts commercial potting soil.
- Twice a year add 1" of compost, working it into the soil. Remove some of the existing soil to accommodate the additions if necessary.

Tree and Shrub Maintenance

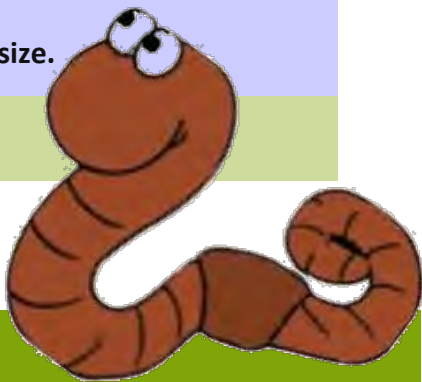
- Remove grass from under the canopy and use 1" to 2" of compost as mulch. Keep mulch away from the base of the trunk.

Vegetables

- In the fall, place several inches of compost on top of the existing bed and till it in in the spring.
- Place a handful of compost in each hole when you're planting.
- Mulch around the plants with compost.
- Provide "heavy feeder" plants such as tomatoes, broccoli, corn, and squash 1/2" of compost monthly.

Compost Troubleshooting chart

Problem	Cause	Solution
Pile is too Wet.	Too much moisture.	Add browns to soak up excess moisture.
Pile too dry.	Not enough moisture	Add moist greens and/or water using a watering can or hose with shower head.
Pile smells like ammonia	Too much nitrogen	Add coarse browns. (leaves, sawdust)
Pile smells like Rotten eggs	Not enough air or too much moisture	Turn or fluff pile and incorporate course browns.
Pile just smells!	Greens not covered	Incorporate greens into browns
Pile isn't heating up/ decomposing slowly	Lack of Nitrogen.	Incorporate greens
	Not enough air.	Turn/fluff pile.
	Cold weather.	Insulate with straw or a tarp to warm.
	Not enough moisture.	Add greens and/or water.
Nothing is happening	Pile too small.	Add more organics to increase size.
	Lack of nitrogen	Add greens, Turn pile



How to Use Compost

- ★ Once your compost is finished, you can add it to soils anytime of year without fear of burning plants.
- ★ An easy way to incorporate compost is to use it as top-dressing, or mulch.
- ★ Use compost when potting indoor plants. It will allow the soil to retain nutrients.
- ★ **FUN FACT!** Compost can hold 200% of its dry weight in water, so it's great for potted plants and gardens!
- ★ **FUN WORM FACTS!** Worms can live for up to 15 years, and they have been on this earth for 120 million years. Every grain of healthy soil capable of growing food has already gone through a worm!

To Contact Us

CITY OF FREDERICKSBURG
PUBLIC WORKS DEPARTMENT
715 PRINCESS ANNE ST
FREDERICKSBURG, VA 22401
(540) 372-1023

Visit us on the web at:
<https://www.fredericksburgva.gov>



CITY OF FREDERICKSBURG
PUBLIC WORKS DEPARTMENT
715 PRINCESS ANNE ST
FREDERICKSBURG, VA 22401

ONSITE COMPOSTING

A How To Guide for Citizens City of Fredericksburg Public Works Department

What is Composting & Why Do It?

Composting is a natural process that turns organic materials into a nutrient rich soil amendment that can be used in gardens and flowerbeds. It can be done on any scale, including on-site at your home. This method is usually most environmentally sustainable and carries the smallest carbon footprint.

Benefits of composting include:

- Reducing the amount of waste that ends up in landfills.
- Potential for reduction in bulk trash costs.
- Provides free, organic fertilizer for lawns, gardens, trees and flower beds.
- Creates awareness of food waste and other compostable materials.

Tips for Getting Started

Decide what you want to compost.

Knowing what you want to include in your compost pile will help in choosing the correct containers. Common items to include are: vegetable and fruit wastes, grass clippings, garden items such as spent flowers or leaves from harvested veggies, coffee grounds, tea bags, even shredded paper.

Choose your compost container.

There are many options regarding what sort of container you use. You can build your own or purchase one that is ready to go. Ready made composters are sufficient for small amounts of compostables, but if you are thinking of composting grass clippings and leaves, you may want to consider constructing a bin or two. There are many good plans online for building bins. A small container for gathering materials inside is also handy.

Pick a Location.

This area should be easy to access in all seasons, have protection from the wind to keep the compost from drying out, and adequate sun exposure to speed up the composting process. Depending on the type of composter you choose, keep the views of passers by and neighbors in mind when siting your operation. Leave space around your containers for air flow and potential extra compostables, such as grass clippings and leaves that may accumulate at times. Also keep in mind how far you are willing to carry materials from the kitchen. Closer to the house might be welcome on a rainy or cold day.

What Can I Compost?

Two types of organic materials are needed for a successful compost program, GREENS and BROWNS. Layering these materials will help your compost “work” faster. Green materials provide nitrogen to the mixture, and brown materials provide carbons. For microorganisms to survive, a compost system must also have adequate moisture and air. Odorless composting means you have the right amount of oxygen. Experimentation will make you an expert in no time!



Take a look at the chart inside for good GREENS and BROWNS. Correctly layering compost helps it to decompose more thoroughly.

“I find that a real gardener is not a man who cultivates flowers; he is a man who cultivates the soil.”

Karel Capek

COMPOSTING 101

Greens (Nitrogen)

- Food scraps
- Vegetable scraps
- Fruit wastes
- Coffee grounds
- Tea bags/leaves
- Fresh grass clippings
- Other garden waste (plants, stalks, flowers)
- Chicken/livestock manure
- Corn husks
- Stale/moldy bread



Browns (Carbon)

- Leaves
- Shredded straw, hay
- Sawdust
- Woody chips & twigs
- Shredded newspaper
- Nut shells
- Corn stalks and cobs
- Brown paper bags
- TP & paper towel rolls
- Crushed eggshells
- Cereal boxes
- Ashes from wood
- String/cotton thread
- Wool



Carbon/Nitrogen ratio
is important
for compost
to form properly.

A good ratio

to keep in mind is

3 BROWN:1 GREEN



Prohibited Items

- Meat
- Fish
- Poultry
- Bones
- Milk products
- Oil
- Pet manures
- Weed seeds
- Diseased/insect infested plants
- Glossy paper
- Anything with harsh chemicals



Troubleshooting

Ideal N:C Ratio = 2:1

(brown material volume is packed)

Too much Nitrogen = Smelly Compost

Too much Carbon = Won't break down

Adequate air
Adequate moisture
Roll bin around twice a week
Bury food scraps into can for pest control

What else do I need to compost?

Turning tools. Depending on the type of bin you choose, you may need to turn your pile from time to time. A small pitchfork or narrow shovel would work well.

Hose/Close by water source.

Buckets/wheelbarrow to move finished compost.

That's it!



Kitchen containers
can be as simple as a
plastic coffee container or a
fancier specialty container.

A dedicated
container for
collecting kitchen
scraps can be kept
under the sink or on
the counter,
depending on how
often you empty it.



DIY Backyard Compost Options are numerous!

How Big?

Size your composter based on the amount of browns and greens you think you will be providing to the pile, and willing to maintain.

Consider a larger bin if you have lots of leaves and/or grass clippings.

You can build your own bin(s) or purchase them ready made.

LINKS FOR ASSISTANCE

Links for building own bins.

<https://www.wikihow.com/Build-a-Tumbling-Composter>

<https://learn.eartheasy.com/guides/how-to-build-a-compost-bin/>

<https://compostguide.com/18-cool-diy-compost-bin-designs/>

How to fix my compost problems. Troubleshooting.

<https://www.planetnatural.com/composting-101/making/problems/>

Winter composting.

<https://www.familyhandyman.com/garden/winter-composting-101/view-all/>

Backyard Composting. (University of Maryland)

https://extension.umd.edu/sites/extension.umd.edu/files/images/programs/hgic/Publications/HG35_Backyard_Composting.pdf

EPA Composting at Home.

<https://www.epa.gov/recycle/composting-home>

Composting Activities for Kids.

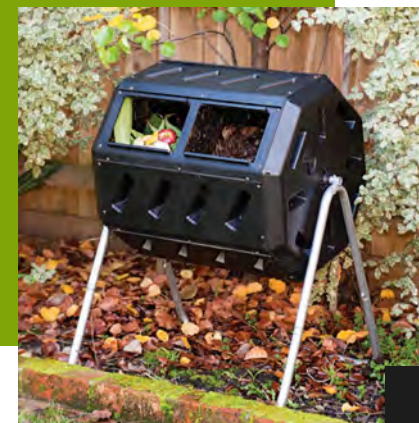
<https://ecommons.cornell.edu/bitstream/handle/1813/11729/Composting%20Wastes%20to%20Resources.pdf?sequence=1&isAllowed=y>

Worm Composting.

<http://homecompostingmadeeasy.com/wormcomposting.html>

Planning to Reduce Food Wastes.

<https://www.epa.gov/recycle/reducing-wasted-food-home>



Tumbler composters reduce the work needed to mix decomposing materials

APPENDIX I
RECYCLING

TABLE I-1
RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
RECYCLING SUMMARY
Annual DEQ reporting

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVERAGE	% CATEGORY
Household Waste	54,162	58,154	53,171	56,402	49,105	43,449	60,799	65,630	61,474	55,816	59.0%
Commercial Waste	31,095	22,891	16,820	25,984	27,544	23,871	42,709	52,086	64,334	34,148	36.1%
Institutional Waste	1,253	4,206	5,917	5,266	5,167	5,825	5,671	5,539	3,454	4,700	5.0%
Other	0	0	0	0	0	0	0	0	0	0	0.0%
Total MSW	86,510	85,251	75,908	87,652	81,817	73,145	109,179	123,255	129,262	94,664	100.0%
Paper	9,514	5,275	5,443	5,979	4,991	50,357	10,938	9,224	9,382	12,345	16.1%
Metal	57,209	48,788	25,101	36,765	34,901	14,124	20,745	26,797	24,077	32,056	41.7%
Plastic	102	1,238	128	157	173	120	177	190	345	292	0.4%
Glass	19	16	0	4	0	0	3	0	0	5	0.0%
Commingled	8,488	8,246	15,101	18,297	16,052	14,162	15,985	14,215	13,339	13,765	17.9%
Yard Waste	20,420	13,640	14,745	8,914	8,690	5,899	13,730	9,831	12,653	12,058	15.7%
Waste Wood	647	476	0	0	107	789		1,390	2,449	732	1.0%
Textiles	2,566	2,124	1,300	1,110	1,161	2,401	1,300	285	950	1,466	1.9%
Waste Tires	1,017	1,179	2,938	1,336	1,212	879	1,117	2,140	1,256	1,453	1.9%
Used Oil	1,442	1,182	576	808	461	275	421	580	758	723	0.9%
Used Oil Filters	66	0	32	23	14	4	19	12	60	26	0.0%
Used Antifreeze	59	46	24	83	48	18	18	21	24	38	0.0%
Batteries	842	571	527	990	812	520	616	743	788	712	0.9%
Electronics	299	588	187	84	319	397	148	111	88	247	0.3%
Inoperative Motor Vehicles	0	0	0	0	0	0		0	0	0	0.0%
fat,bones, meat used cook oil	592	893	896	652	892	975	1,532	1,261	884	953	1.2%
Other (Specify)	3	0	0	0	0	0		0	0	0	0.0%
Total PRM in Tons	103,285	84,262	66,998	75,202	69,833	90,920	66,749	66,800	67,053	76,871	100.0%
RR credit	0	0	0	0	0	0		560	600	145	2.1%
SWR credit	1,663	10,034	1,408	3,149	2,971	1,452	49	696	3,930	2,817	41.3%
C&D credit	0	0	0	0	0	0	0	0	0	0	0.0%
Non MSW recycled	0	0	100	62	65	2,268	3,439	13,532	15,265	3,859	56.6%
Credit tons total	1,663	10,034	1,508	3,211	3,036	3,720	3,488	14,788	19,795	6,821	100.0%
Source reduction	2%	2%	2%	2%	2%	2%	2%	2%	2%		
Base Recycling Rate	54.4%	49.7%	46.9%	46.2%	46.0%	55.4%	37.9%	35.1%	34.2%		
Adjusted Recycling Rate	54.8%	52.5%	47.4%	47.2%	47.1%	56.4%	39.1%	39.8%	40.2%		
Adjusted Recycling Rate + SRP	56.8%	54.5%	49.4%	49.2%	49.1%	58.4%	41.1%	41.8%	42.2%		
Credit Max Allowed Base +5	56.8%	54.5%	49.4%	49.2%	49.1%		42.9%	40.1%	39.2%		
Final Recycle Rate	56.8%	54.5%	49.4%	49.2%	49.1%	58.4%	41.1%	40.1%	39.2%		

TABLE I-1A

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD RECYCLING SUMMARY

Annual DEQ reporting

Year	2019	2020	2021	2022	2023	2024	2025	AVERAGE	% CATEGORY
Household Waste	73,556	82,516	85,851	77,791	67,833	39,009	47,102	67,665	43.6%
Commercial Waste	65,835	55,227	61,500	67,878	87,191	127,593	139,685	86,416	55.7%
Institutional Waste	3,512	2,465	2,036	121				2,033	1.3%
Other	-	-		-	-	-	-	-	0.0%
Total MSW	142,903	140,208	149,387	145,789	155,024	166,602	186,787	155,243	100.0%
Paper	10,997	12,203	7,319	5,221	5,483	1,314	684	6,174	9.5%
Metal	18,749	20,372	35,859	21,377	25,750	24,519	22,890	24,217	37.3%
Plastic	363	426	311	127	122	126	99	225	0.3%
Glass	57	159	146	36	-	4,828	-	747	1.1%
Commingled	11,348	10,086	9,122	12,260	9,684	15,763	14,895	11,880	18.3%
Yard Waste	7,838	9,623	12,072	7,455	7,112		-	7,350	11.3%
Waste Wood	2,479	2,947	1,512	16	0		-	1,159	1.8%
Textiles	1,910	1,851	4,838	2,174	2,183	2,304	2,276	2,505	3.9%
Waste Tires	2,031	1,608	813	909	163	362	1	841	1.3%
Used Oil	690	271	86	391	1,005	1,110	1,063	659	1.0%
Used Oil Filters	11	10	10	140	71	15	21	40	0.1%
Used Antifreeze	21	8	4	25	41	82	57	34	0.1%
Batteries	471	323	235	206	270	371	503	340	0.5%
Electronics	123	164	186	9,949	13,825	14,668	20,918	8,548	13.2%
Inoperative Motor Vehicles	0	0	0	0	0	0	0	-	0.0%
Other	1,015	950	1,406	40	395	188	6,083	39,029	60.1%
Total PRM in Tons	58,103	61,001	73,919	60,326	66,103	65,652	69,490	64,942	100%
RR credit	-	-	-	-	-	-	-	-	0.0%
SWR credit	3,226	1,275	1,377	1,439	811	2,845	6,352	2,475	40.4%
C&D credit	-	-	-	-	-	-	-	-	0.0%
Non MSW recycled	13,170	5,126	3,522	2,354	1,428	-	-	3,657	59.6%
Credit tons total	16,396	6,401	4,899	3,793	2,239	2,845	6,352	6,132	100%
Source reduction	2%	2%	2%	2%	2%	2%	2%		
Base Recycling Rate	28.9%	30.3%	33.1%	29.3%	29.9%	28.3%	27.1%		
Adjusted Recycling Rate	34.3%	32.5%	34.5%	30.5%	30.6%	29.1%	28.9%		
Adjusted Recycling Rate + SRP	36.3%	34.5%	36.5%	32.5%	32.6%	31.1%	30.9%		
Credit Max Allowed Base +5	33.9%	35.3%	38.1%	34.3%	34.9%	33.3%	32.1%		
Final Recycle Rate	33.9%	34.5%	36.5%	32.5%	32.6%	31.1%	30.9%		

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD
RECYCLING
GOALS AND ACTION ITEMS

Item Number	Goal	Action Item	Current Status	Estimated Costs and Responsible Party	Schedule
R-1	Use current resources to higher efficiency	Look at Trans load agreements. Look at partners to manage the existing infrastructure.	Completed/ exploring other options.	Private Public partnership with R-Board	RFP scheduled for FY-21 budget incorporation
R-2	Revisit what materials collected	Encourage glass separation both at our controlled collection sources as well as private haulers. We haul glass in-house sources. Encourage the separation and handling of cardboard. Look at collection and separation activities in future. Ex: cans, plastics, fibers.	Completed.	\$12,000 R-Board and Fairfax County R-Board Private Public partnership with R-Board	Sept. 2018 Sept 2018 RFP scheduled for FY-21 budget incorporation
R-3	Cost of hauling	Researching current costs whether in-house or outsourced. Includes Scrap Metal, Tires.	Completed.	R-Board	FY-21 budget cycle. RFP for Metal Fall 20. Tire Hauling FY-21
R-4	Expand recycling efforts	The R-Board manages the City's convenience center which has expanded the types of materials collected and expanded hours of service available at the site.	Added batteries and plastic bags to recycling efforts.	\$357,000/ R-Board	On-going
R5	Look at efficiency of current mobile recycling drop-Off sites	Analyze cost and report to the Board.	Completed.	\$181,000/ R-Board	FY-21

Recycling Rate Report

version 1.6

(Submission #: HQM-GRGB-21WKA, version 1)

Details

Submitted 4/28/2026 (57 days ago) by Francesca Johnson

SWPU Rappahannock Regional Solid Waste Management Board (R-Board) - CY2025

Submission ID HQM-GRGB-21WKA

Status Submitted

Active Steps Ready for Review

Form Input

General Information

Date Submitted
4/28/2026

Calendar Year
CY2025

Solid Waste Planning Unit
Rappahannock Regional Solid Waste Management Board (R-Board)

SWPU Web Page
www.r-board.org

Contacts

Primary Contact

First Name	Last Name	
Francesca	Johnson	
Title		
Recycling Manager		
Phone Type	Number	Extension
Business	5406585273	
Email		
fjohnson@staffordcountyva.gov		
Address		
473 Eskimo Hill Rd		
Stafford, VA 22554		

Secondary Contact

First Name **Last Name**

Rick Markwardt

Title

Landfill Superintendent

Phone Type **Number** **Extension**

Mobile 540-446-8573

Email

rmarkwardt@staffordcountyva.gov

Address

473 Eskimo Hill Rd

Stafford, VA 22554

Population and Sources Information

Total Population for SWPU

184,909

Reporting Frequency

Yearly

SWPU Population Density

663

State Unemployment Average (VEC), if applicable

NONE PROVIDED

Unadjusted Civilian Unemployment Rate, if applicable

NONE PROVIDED

Mandated Recycling Rate (%)

25%

Sources for PRM Data

Source	Source Type	PRM or non-PRM Source
Best Buy	Commercial Waste	PRM
Darling Ingredients	Commercial Waste	PRM
Fredericksburg Scrap Metal	Commercial Waste	PRM
GFL	Commercial Waste	PRM
GFL	Commercial Waste	PRM
Giant	Commercial Waste	PRM
Goodwill	Commercial Waste	PRM
Greenchip	Commercial Waste	PRM
Home Depot	Commercial Waste	PRM
Interstate Batteries of NOVA	Commercial Waste	PRM
Kohls	Commercial Waste	PRM
McLane	Commercial Waste	PRM
Metal Pro	Commercial Waste	PRM
Planet Aid	Commercial Waste	PRM
Republic Waste	Commercial Waste	PRM
Safety Kleen	Commercial Waste	PRM
Sims Metal	Commercial Waste	PRM

Source	Source Type	PRM or non-PRM Source
Summit Recycling	Commercial Waste	PRM
Target	Commercial Waste	PRM
TFC	Commercial Waste	PRM
TJ Maxx	Commercial Waste	PRM
Universal	Commercial Waste	PRM
Verizon	Commercial Waste	PRM
Wal-Mart	Commercial Waste	PRM
Wegmans	Commercial Waste	PRM
Weis	Commercial Waste	PRM
SWPU Rappahannock Regional Solid Waste Management Board (R-Board)	Construction, Demolition and Debris Waste	non-PRM

Principal Recyclable Materials (PRM)

PRM Material	Tons Recycled
Paper	684
Metal	22,890
Plastic	99
Glass	0
Commingled	14,895
Yard Waste	0
Waste Wood	0
Textiles	2,276
Waste Tires	1
Used Oil	1,063
Used Oil Filters	21
Used Antifreeze	57
Batteries	503
Electronics	20,918
Inoperative Motor Vehicles	0

Specify Other PRMs

PRM Material	Tons Recycled
Cardboard	5,233
Plastic Film	35
Compost	782
Cooking Oil	18
Fats Bones Meat	15

Total PRM in Tons

69,490

MSW Disposed

MSW Disposed	Tons Disposed
Household Waste	47,102
Commercial Waste	139,685
Institutional Waste	0
Other	0

Total MSW Disposed

186,787

Credit for Source Reduction Programs: In order to receive credit, the source reduction programs must be documented in the solid waste management plan (SWMP). Does your solid waste planning unit have a source reduction program(s) in place?

Yes

List the Source Reduction Program

Home Composting

SRP Page(s) in SMWP

27-28

Credit for Source Reduction Program (%)

2

Credit Information**Credits Recycling Residue**

Facility/Operation	Material	Tons
NONE PROVIDED	NONE PROVIDED	NONE PROVIDED

Total Recycling Residue Credits

NONE PROVIDED

Credits Solid Waste Reuse

Reuse Method	Material	Tons
Donated food	food	328
Donated general merchandise	general merchandise	8
Use as road bed / other operations	milling and pavings	6,016

Total Solid Waste Reused Credits

6352

Credits Non-MSW Recycled

Recycling Method	Material	Tons
NONE PROVIDED	NONE PROVIDED	NONE PROVIDED

Total Non-MSW Recycled Credits

NONE PROVIDED

Credits Total

6,352

Recycling Rate Report - General Comments

NONE PROVIDED

Recycling Rates**Base Recycling Rate (%)**

27.1

Adjusted Recycling Rate (%)

28.9

Adjusted Recycling Rate + SRP (%)
30.9

Credit Max Allowed Base +5 (%)
32.1

Final Recycling Rate (%)
30.9

Status History

	User	Processing Status
4/2/2026 10:28:24 AM	Francesca Johnson	Draft
4/28/2026 12:07:05 PM	Francesca Johnson	Submitted

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted	Francesca Johnson	4/28/2026 12:07:05 PM
Ready for Review		
Administrative / Technical Review		
Report Approved		

Single-Stream Recycling



Paper



**Clean paper, empty cartons,
and flattened cardboard.**

Metal



**Empty aluminum and
steel cans.**

Plastic #1 and #2



**Empty bottles and jugs.
No pumps.**

Glass



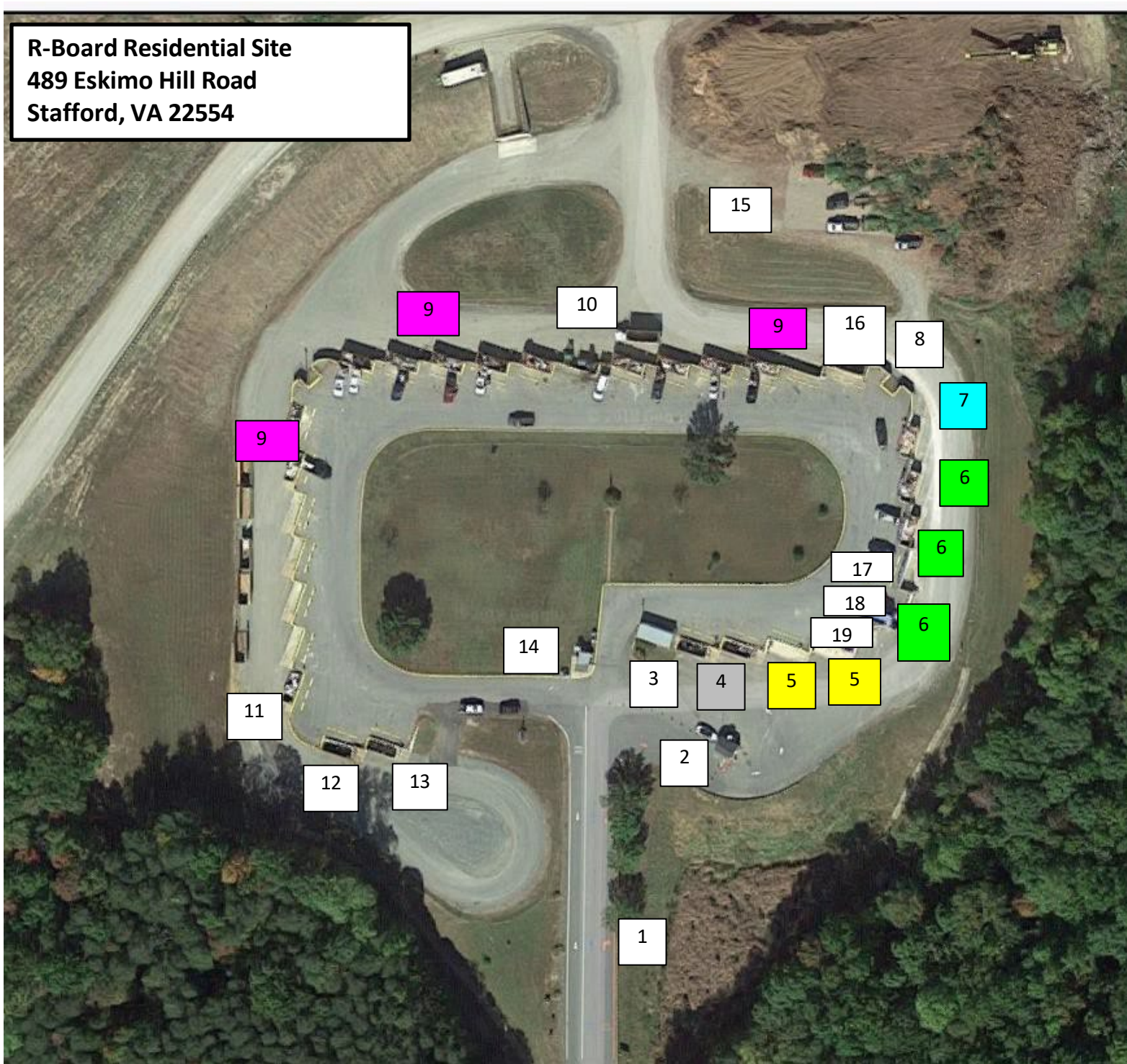
**Empty bottles and jars
with no lid.**

**DO NOT BAG
RECYCLABLES!**

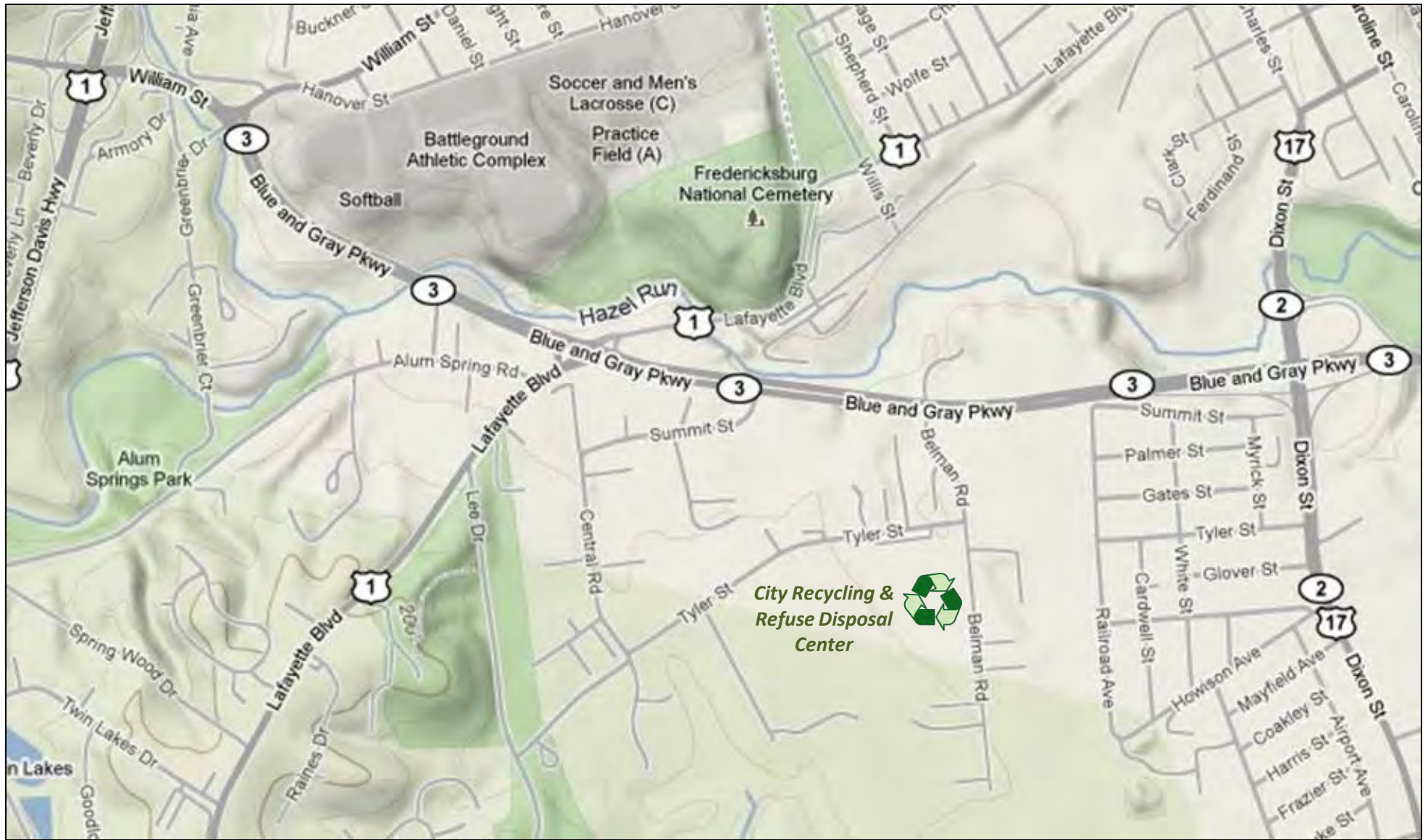
KEEP THEM LOOSE.

www.r-board.org/recycling

R-Board Residential Site
489 Eskimo Hill Road
Stafford, VA 22554



1. Entrance (two inbound lanes, one outbound lane)
2. Sales shed (purchase annual pass, coupon books, and pay per visit)
3. Auto Batteries and cooking oil
4. Scrap metal recycling
5. Cardboard recycling (cardboard, magazines, newspapers, paper products)
6. Single stream recycling area
7. Glass Bottles & Jars (clear, green, brown)
8. Electronic Recycling (blue shed)
9. Household trash
10. Motor Oil & Antifreeze
11. Freon equipment (fridge, freezer)
12. Small engines (lawn mowers, weedwhackers)
13. Tires
14. Gate attendant (Fluorescent bulbs & cellphones)
15. Yard Waste
16. Textile Recycling
17. Bicycle Restoration
18. Rechargeable Battery Recycling
19. Plastic Bag Recycling



Hours:

Monday – Friday, 8 a.m. until 4 p.m.

Saturday – Sunday, 8 a.m. until 3 p.m.

(Note: The Center will be closed New Year's Day, Easter Sunday, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas.)



City of Fredericksburg, Virginia
Recycling and Refuse Disposal Center

APPENDIX J
PUBLIC EDUCATION

RAPPAHANNOCK REGIONAL SOLID WASTE MANAGEMENT BOARD

PUBLIC OUTREACH

GOALS AND ACTION ITEMS

Item Number	Goal	Action Item	Current Status	Estimated Costs and Responsible Party	Schedule
PE-1	Continue to provide information on waste services – via multiple mediums including Broadcast, Electronic and Social Media Platforms	Keep current on best practices and trends in recycling markets and compost opportunities and provide engagement opportunities.	Maintained and hosting compost events.	R-Board Responsibility	On-going
PE-2	Provide information and education on waste reduction and reuse	Keep up to date on resources and improvements for waste reduction/reuse and facilitate workshops, online education, sharing content from others on ideas & improved practices.	Maintained.	R-Board Responsibility	On-going
PE-3	Incorporate education relating to climate change and globalization.	Continue to offer educational experiences and onsite landfill education to high school+ age groups to promote critical thinking, discussions, and behavior modifications.	Maintained and hosting tours for younger age groups.	R-Board Responsibility	On-going
PE-4	Invest in an updated website to further publicize education/outreach efforts	Create an outline of ideas for the website & digitalize education/outreach.	Completed.	R-Board Responsibility	FY-20
PE-5	Invest in the R-Board Education Center	Procure models, video/virtual landfill tours, hands-on learning etc. to enhance educational experiences.	Maintained.	R-Board Responsibility	On-going
PE-6	Upgrade and Further invest of interior remodel to our Environmental Education Trailer	Trailer has been a mobile component of recycling education. We will be upgrading the content to "share more information on all 5-R's".	Completed.	R-Board Responsibility	On-going
PE-7	Continue to Enhance our Social Media Platforms.	Background: Prior to 2015 we began a Facebook page, by annual report same year we reported 70 Facebook followers. Social media efforts significantly enhanced beginning Fall 2018. As of April 2020 we have 506 page likes. Staff began a Twitter, Instagram and YouTube page as well. These mediums allow us to deliver our messages directly to our audience.	Maintained.	R-Board Responsibility	On-going
PE-8	Litter Collection Initiatives on public right of ways	Several staff people attribute their time to working with volunteers, paid contractors, and employees to provide litter collection on state maintained roadsides. We also support community cleanups by residents within our service areas and special cleanups by groups (e.g. Friends of the Rappahannock).	Maintained.	R-Board Responsibility	On-going

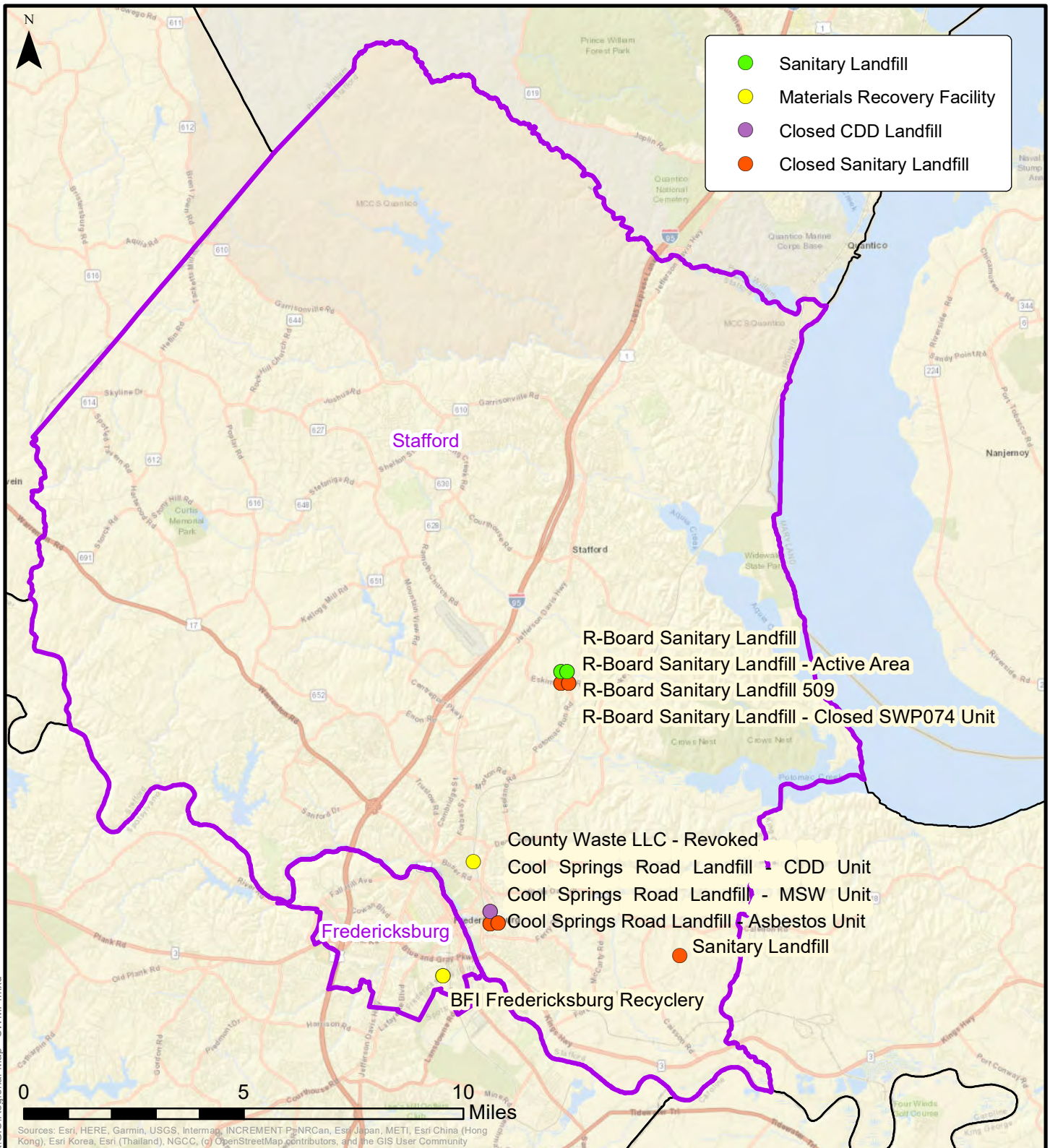
APPENDIX K
ACTIVE / INACTIVE / CLOSED FACILITIES
DEQ DATA

**Permitted Active and Closed Solid Waste Facilities
Rappahannock Regional Solid Waste Management Board Service Area**

Solid Permit ID	Solid Permit #	Permit Status	Facility Name	Facility Address	City	State	Zip Code	Solid Waste Unit Type
SWP	32	Post Closure	Cool Springs Road Landfill	131 Cool Springs Rd	Stafford	VA	22405	Closed CDD/Sanitary Landfill
SWP	74	Post Closure	Rappahannock Regional Solid Waste Management Board	489 Eskimo Hill Rd	Stafford	VA	22554	Closed Sanitary Landfill
PBR	107	Closed	BFI Fredericksburg Recyclery	1321 Belman Rd	Fredericksburg	VA	22401	Materials Recovery Facility
PBR	120	Closed	Mary Washington Hospital	1001 Sam Perry Blvd	Fredericksburg	VA	22401	RMW Facility
PBR	159	Closed	University of Mary Washington	1301 College Ave	Fredericksburg	VA	22401	RMW Facility
SWP	163	Closed	White Oak Landfill	125 Perry Winkle Ln	Fredericksburg	VA	22405	Closed Sanitary Landfill
PBR	234	Closed	Elliot Patricia L MD					RMW Facility
PBR	252	Closed	DMHMRSAS - Northern VA Training Center - Fburg	103 Westwood Office Park	Fredericksburg	VA	22401	RMW Facility
PBR	254	Closed	Hazelton Laboratories America Incorporated					RMW Facility
PBR	264	Closed	Mary Washington Hospital	1001 Sam Perry Blvd	Fredericksburg	VA	22401	RMW Facility
PBR	396	Closed	DOC - Stafford Correctional Unit 21	384 Eskimo Hill Rd	Stafford	VA	22554	RMW Facility
SWP	509	Closed	Rappahannock Regional Solid Waste Management Board	489 Eskimo Hill Rd	Stafford	VA	22554	Closed Sanitary Landfill
PBR	575	Revoked	County Recycling LLC	39 Synan Drive	Fredericksburg	VA	22405	Solid Waste Permit-by-Rule
SWP	589	Active	Rappahannock Regional Solid Waste Management Board	489 Eskimo Hill Rd	Stafford	VA	22554	Sanitary Landfill

DEQ Database
Active - Inactive - Closed Solid Waste Facilities

Facility Name	Site Name	Address	City	State	Zip Code	Permit ID	Permit Status	Operating Status	Operating StatusDate	Permit IssuedDate	Unit Name	Unit Type
Stafford												
R-Board	R-Board Sanitary Landfill	489 Eskimo Hill Road	Stafford	VA	22554	SWP589	Permitted	Active	7/16/1996	7/16/1996	R-Board Sanitary Landfill - Active Area	Sanitary Landfill
Cool Springs Road Landfill	Cool Spring Road Landfill	131 Cool Springs Road	Stafford	VA	22405	SWP032	Permitted	Post Closure	7/26/1996	12/3/1971	Cool Springs Road Landfill - MSW Unit	Sanitary Landfill
Cool Springs Road Landfill	Cool Spring Road Landfill	131 Cool Springs Road	Stafford	VA	22405	SWP032	Permitted	Post Closure	7/26/1996	12/3/1971	Cool Springs Road Landfill - CDD Unit	CDD Landfill
Cool Springs Road Landfill	Cool Spring Road Landfill	131 Cool Springs Road	Stafford	VA	22405	SWP032	Permitted	Post Closure	7/26/1996	12/3/1971	Cool Springs Road Landfill - Asbestos Unit	Sanitary Landfill
R-Board	R-Board Sanitary Landfill	489 Eskimo Hill Road	Stafford	VA	22554	SWP074	Revoked	Post Closure	8/29/2002	9/13/1972	R-Board Sanitary Landfill	Sanitary Landfill
White Oak Landfill	White Oak Lf					SWP163	Revoked	Closed	5/31/1988	6/18/1974	Sanitary Landfill	Sanitary Landfill
R-Board	R-Board Sanitary Landfill	489 Eskimo Hill Road	Stafford	VA	22554	SWP509	Revoked	Closed	11/28/2006	7/21/1987	R-Board Sanitary Landfill 509	Sanitary Landfill
R-Board	R-Board Sanitary Landfill	489 Eskimo Hill Road	Stafford	VA	22554	SWP589	Permitted	Active	7/16/1996	7/16/1996	R-Board Sanitary Landfill - Closed SWP074Unit	Sanitary Landfill
Fredericksburg												
BFI Fredericksburg Recyclery	BFI Fredericksburg Recyclery	1321 Belman Road	Fredericksburg	VA	22404	PBR107	Permitted	Closed	9/23/1996	9/23/1996	BFI Fredericksburg Recyclery	Materials Recovery Facility
County Recycling LLC	County Recycling LLC	39 Synan Drive	Fredericksburg	VA	22405	PBR575	Revoked	Closed			County Recycling LLC	Recycling & Salvage Yard



Regional Map

Rappahannock Regional Solid Waste Management Board
Solid Waste Management Plan
Location of Region and Solid Waste Facilities

SCALE: 1:200,000

PROJECT: R14177R-76



Draper Aden Associates

Engineering • Surveying • Environmental Services

2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA

Raleigh, NC
Fayetteville, NC
Northern Virginia
Virginia Beach, VA

DESIGNED: LPK
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FIGURE

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APPENDIX L
BUDGET INFORMATION



Rappahannock Regional Solid Waste Management Board Annual Financial and Operational Report

July 1, 2024, through June 30, 2025



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MISSION AND VISION

R-Board Mission

The mission of the Rappahannock Regional Solid Waste Management Board (R-Board) is to provide professional, courteous, and intelligent service and solutions to the waste disposal needs of citizens residing in Stafford County and the City of Fredericksburg.

R-Board Vision

The R-Board's vision is to operate the best landfill in Virginia. Being the best landfill includes environmentally sound solid waste management policies and having an active Reduce, Reuse, and Recycling program, all coupled with outstanding customer service. The R-Board intends to continually strive to be a leader in the waste management industry and to set an example for others to emulate.

R-BOARD MEMBERS

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Richmond, Virginia 23220

VIRGINIA ENVIRONMENTAL EXCELLENCE PROGRAM

The R-Board continues to maintain its E3 status this year through Virginia's Environmental Excellence Program (VEEP). The Virginia Department of Environmental Quality (VA DEQ) administers the E3 certification. It only certifies facilities that have a positive compliance history, a fully implemented environmental management system, and a pollution prevention program in place with demonstrated performance. The R-Board has held its VEEP E3 certification since 2004.



OPERATIONAL OVERVIEW

Cell G1/G3 Operation

Cell G1/G3 was constructed and opened in fiscal year 2025. All filling activities in the landfill will now occur in Cell G1/G3.



REGULATORY OVERVIEW

The R-Board maintains several permits under various local, state, and federal regulatory agencies. This list of permits includes the Solid Waste Permit (SWP - VADEQ), which authorizes construction, operation, and modification of solid waste disposal facilities; Title V & NSR Air permits (40946 – VADEQ/EPA), landfill gas and air emissions; Virginia Pollutant Discharge Elimination System (VPDES:051413 - VADEQ), stormwater maintenance, monitoring and discharges; Virginia Pollution Abatement (VPA:00066 - VADEQ), composting operations; Significant Industrial User (SIU: STFRD006 – Stafford County Utilities Department), wastewater monitoring and discharges; Grading Permit (GR243006530 – Stafford County Environmental Department), erosion sediment control for cell construction.

EMPLOYEE ACHIEVEMENTS AND ACCOLADES

The R-Board continues to encourage and support employees as they pursue certifications and continuing education to enhance their skills and knowledge. The following are the courses and training that staff have participated in:

- 2025 Unauthorized Waste Training (Cornerstone)
- Whitlow Green EPA Smoke School
- EPA Lithium-ion Battery Disposal & Emission in a Emergency Response
- Stafford County Government Leadership Institute
- LEAD through UVA
- Commonwealth Of VA Dept. of Environmental Quality – Erosion & Sediment Control
- 608 Universal Technician Certification
- 2025 SWANA Regulatory Training
- 32nd Annual Landfill Seminar
- Post-Collection Safety Seminar
- Cleaner, Safer, Stronger: Building a Sustainability Culture that Powers Business Performance
- First Aid/CPR/AED Training

The R-Board appreciates and recognizes the following employees for significant milestones of their years of service with the R-Board and Stafford County:

- Alphanso Webster– 3 years
- Dylan Morrow – 3 years
- Phil Hathcock – 3 years
- Liam Christenson – 5 years
- Jeramy Ellis - 5 years

The R-Board recognizes and welcomes the following employees hired in FY2025:

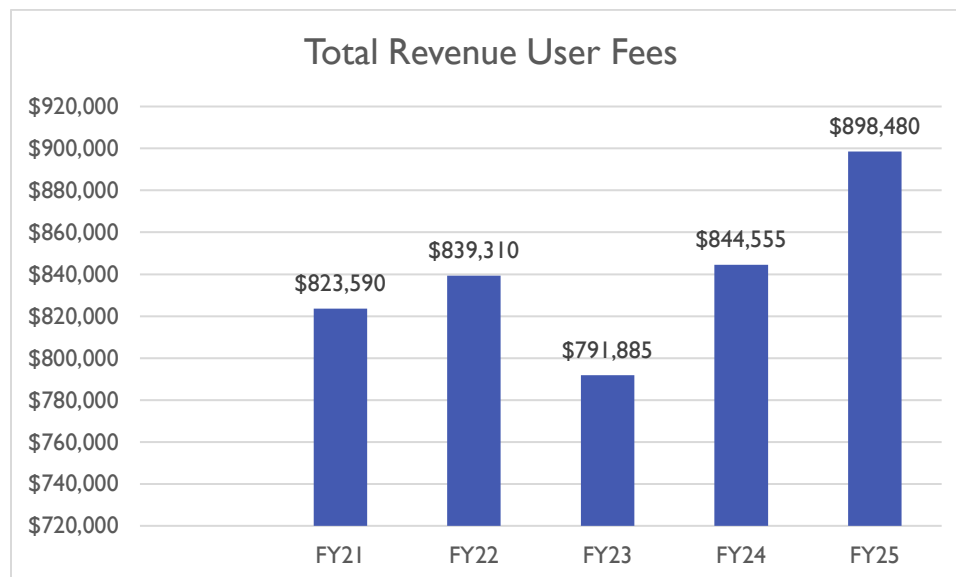
- Michael Jones
- Sherry Baker
- Jackie Ferris
- William Kinsella
- Thomas Hinderliter
- Rhonda Clukey
- Shawn Coates
- Shawn Simmons

OPERATIONAL AND FINANCIAL PERFORMANCE

RESIDENTIAL USER FEE

The R-Board is supported by user fees and does not receive tax funding. Residential user fees are used to assist with costs of managing residential use areas. The R-Board manages two such facilities, Eskimo Hill Road, and Belman Road drop-off sites. Residential user fee options are as follows:

- One-time pass \$5
- Coupon book \$40 (10 passes that never expire)
- Annual pass \$120 (passes are effective from January 1st to December 31st)
- Oversize residential loads
 - 8' trailer or less \$5 or covered by annual pass
 - Trailers greater than 8' up to 14' \$10
 - Trailers greater than 14' or cargo vehicles \$20



Overall residential user fee revenue increased from FY24 \$844,555 to FY25 \$898,480.

Figure 1 Residential User Fees

Annual passes or coupon books are available for purchase at the Regional Landfill, Stafford Treasurer, City of Fredericksburg Treasurer, and Online. The following chart shows the revenue by point of sale.

Residential revenue is dominated by the Regional Landfill drop-off site, which accounts for 85% of the total.

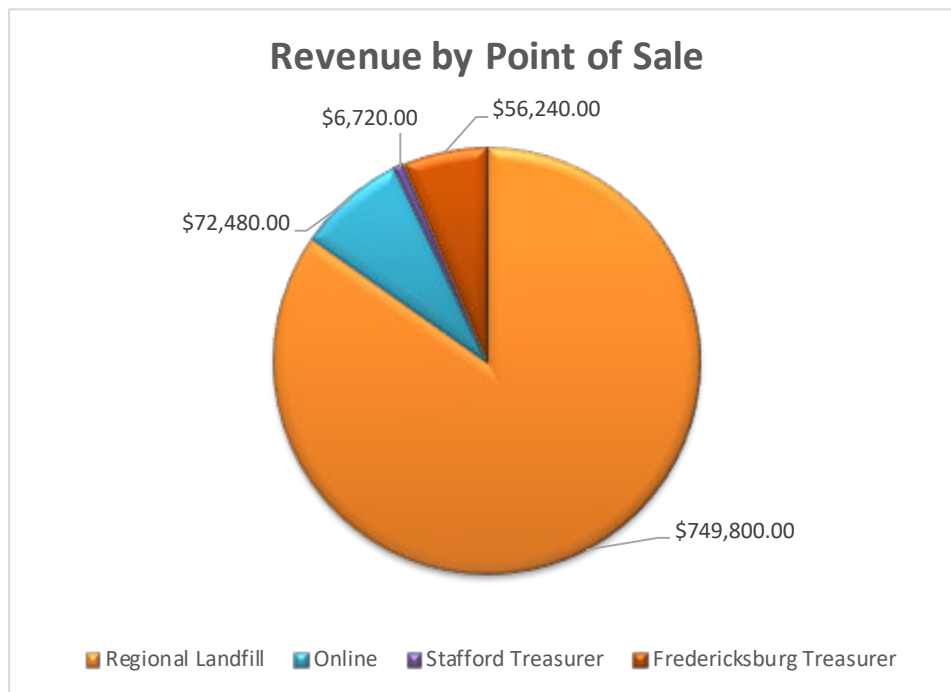


Figure 2 Revenue by Point of Sale

Pay-per-visit is the most common transaction as depicted below.

Type	Transactions	Revenue
Pay-Per-Visit	54,586	\$ 272,730.00
8 to 14 ft Load	4,903	\$ 49,030.00
14ft plus	358	\$ 7,160.00
Oversized Load	3,836	\$ 76,720.00
Coupon Books	3,597	\$ 147,360.00
Annual Pass	1,637	\$ 196,440.00
Total	68,917	\$ 749,440.00

Table I User Fee Transactions & Revenue

FINANCIAL SUMMARY (UNAUDITED)

	Revenue
Rental Cell Tower Sites Milestone	\$60,987.92
Recycling Revenue	\$132,141.22
Commercial	\$9,999,203.69
Municipal-Stafford	\$60,000.00
Municipal-Fredericksburg	\$252,585.74
Sludge/Dirt/Debris Stafford	\$368,159.93
Residential User Fees	\$749,740.00
Sale of LF Gas	\$3,333.33
Sludge Disposal Fred	\$10,000.00
Miscellaneous	\$416.67
Totals	\$11,636,568.50

Table 2 Financial Summary (Unaudited)

END YEAR WEIGHT AND MATERIAL SUMMARY

	FY2024 Y-T-D	FY2025 Y-T-D	Difference
CATEGORY	<u>Weight</u>	<u>Weight</u>	<u>%</u>
Billable			
MSW	162,681	175,484	8%
C&D	95,138	94,056	-1%
Dirt	5,497	3,600	-34%
Sludge (city)	4,690	4,292	-8%
Sludge (county)	13,173	12,774	-3%
Yard waste	1,922	14,226	640%
Not Specified/Special Fee			
BILLABLE TONNAGE	283,100	304,433	8%
Non-Billable			
Litter/Cleanups	247	144	-42%
Recycling	8,415	7,382	-12%
TOTAL TONNAGE	291,762	311,959	7%

Table 3 End Year Weight and Material Analysis

PORTFOLIO COMPOSITION

Portfolio Composition (Investments Only)

Security Type			% of Portfolio
U.S. Agencies and Securities		\$ 6,442,898	63.53%
Corporate Notes and Bonds		\$ 1,431,374	14.12%
Certificates of Deposit		\$ 756,263	7.46%
Commercial Paper		\$ 1,436,131	14.16%
Money Market Mutual Funds		\$ 73,931	0.73%
Total		\$ 10,140,597	100.00%

Table 4 Portfolio Composition

Cash on Hand (Operating Funds — Not Included in Portfolio Composition):
\$11,620,055

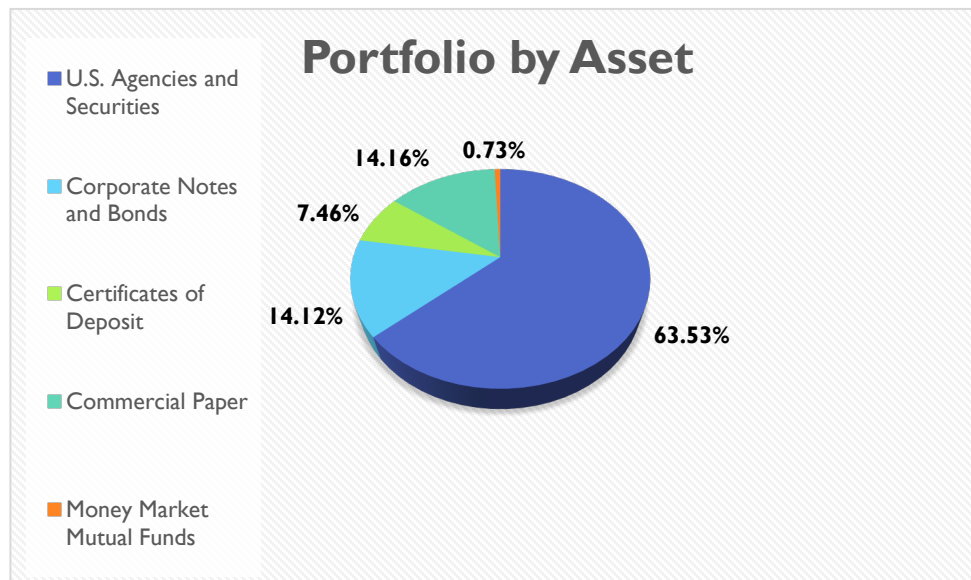


Figure 3 Portfolio by Asset

RECYCLING AND DIVERSION

The following locations accept residential recyclables:

City of Fredericksburg

Belman Road Recycling Center

1200 Belman Road

Hugh Mercer Elementary School

2100 Cowan Boulevard

Lafayette Upper Elementary School

3 Learning Lane

Stafford County

Regional Landfill

489 Eskimo Hill Road

Rowser Building

1739 Patriot Highway

Howell Branch Library

806 Lyons Boulevard



Regional Landfill Residential Side



Unmanned Mobile Drop-off Site

One of the primary goals of the R-Board is to divert materials from landfill. Recyclable materials are received from the unmanned drop-off sites and residential drop-off sites, as well as the City of Fredericksburg's Public Works curbside collections. Recycling for residents is at no charge. The following items are accepted in single-stream recycling:

Plastic #1 and #2 only

- Bottles and jugs
- No pumps
- Empty, rinse, and reattach caps



Metal

- Aluminum/steel cans
- Empty and rinse



Glass

- Bottles and jars
- Empty, rinse, and remove lids



Paper

- Paper, cartons, and paperboard
- Flattened cardboard
- Paper food and beverage cartons (soup and juice boxes, milk and juice cartons)



The R-Board also recycles the following materials:

- Rechargeable batteries
- Automotive and equipment batteries
- Bicycles (Regional Landfill only)
- Motor oil, transmission fluid, and antifreeze (limit 5 gallons of each per resident per day)
- These areas are locked to prevent unauthorized materials from being disposed of. If you want to keep your containers, please see the gate attendant so they can assist you.
- Compact Fluorescent Light Bulbs (CFLs) and fluorescent light bulbs (Regional Landfill only, no bulbs longer than 4')
- Cooking oil
- Appliances
- Scrap metal
- Small engines (lawnmowers, weed whackers, etc.)
- Electronic waste (No TVs or CRT monitors)
- Plastic bags
- Clothing and shoes

The total cost of single-stream recycling for fiscal year 2025 was \$99,696.83, compared with \$110,294.56 in fiscal year 2024.

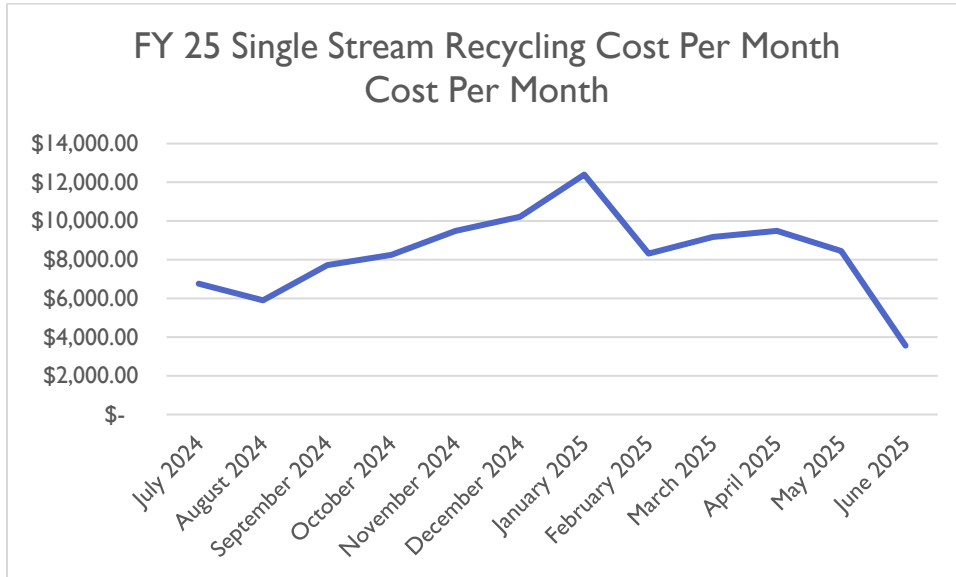


Figure 4 Single Stream Recycling Charge Per Month

RECYCLING AUDIT

According to Section 9 VAC 20-130-120 B & C of the Virginia State Regulations, it is mandatory to maintain a minimum recycling rate of the total municipal solid waste generated annually in each solid waste planning unit. For populations exceeding 100,000, the report should be submitted annually, before April 30th. For population densities over 100 per square mile, the required rate is 25%.

Our team submitted the R-Board's report to the Virginia Department of Environmental Quality on April 28th. The report estimated that we achieved a 31.1% recycling rate. This was a slight decrease from last year's approved rate which was 32.6%. At the time of this report, the State has not formally approved the report's submission.

HOUSEHOLD HAZARDOUS WASTE COLLECTION

The Household Hazardous and Electronics Waste Collection Day took place on Saturday, September 7, 2024, from 9 AM to 3 PM. The event attracted a steady flow of vehicles throughout the day. The Aquia Harbour Host Lions Club, along with the VA Star program from Brooke Point High School, was on hand to assist with electronics recycling. The event was staffed by R-Board and City of Fredericksburg employees. A total of 618 vehicles attended the event: 510 brought hazardous waste only, 99 brought hazardous waste and e-waste, and 9 brought e-waste only. The disposal cost for the Household Hazardous Waste event was \$46,175.60.

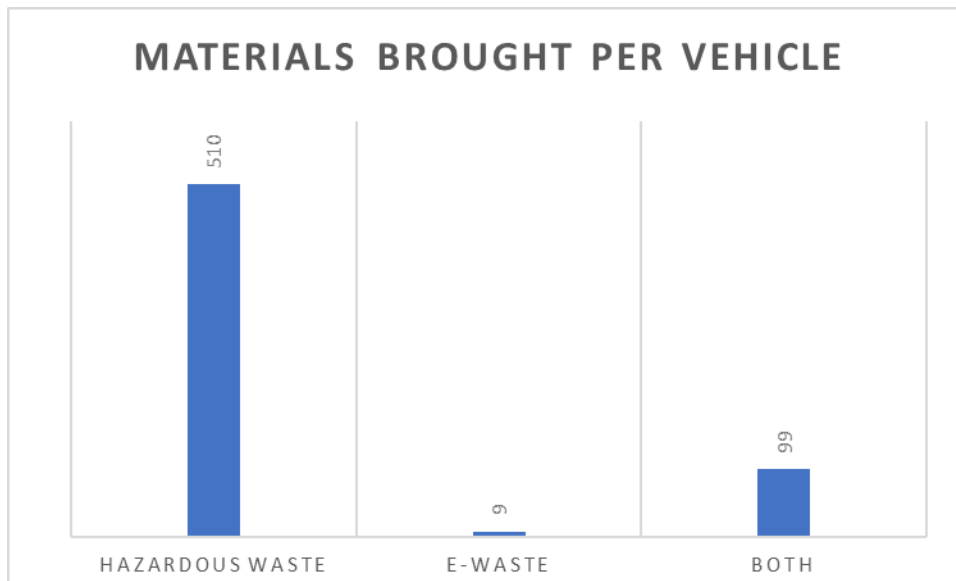


Figure 5 Materials Brought Per Vehicle

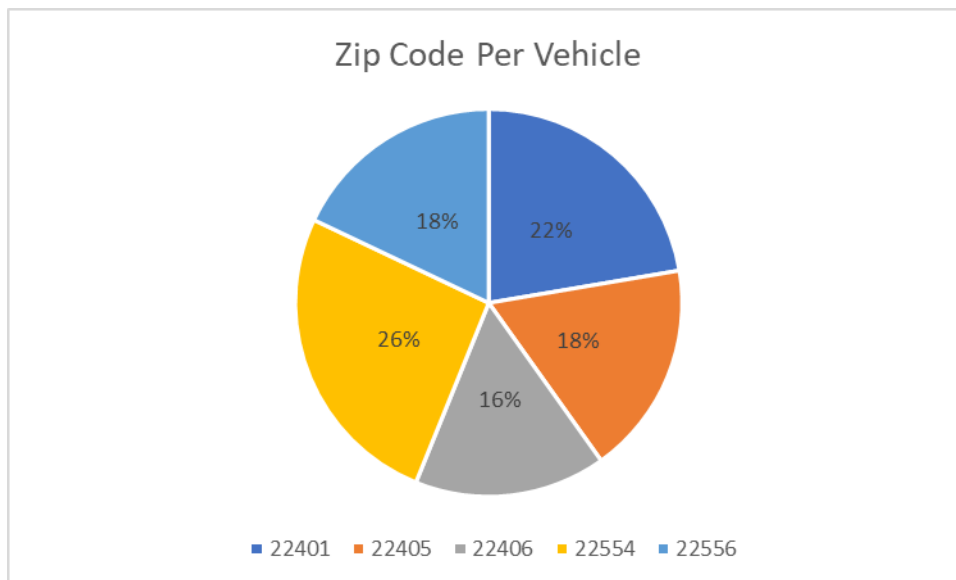


Figure 6 Zip Code Per Vehicle

ELECTRONIC WASTE COLLECTION

The Aquia Harbour Lions Club successfully launched an electronics recycling program during the fiscal year 2025, which resulted in the impressive recycling of a total of 102,594 pounds of electronic waste. This initiative not only aimed to reduce the environmental impact of discarded electronics but also encouraged community members to responsibly dispose of their old devices. Through various collection events and partnerships, the program helped divert a significant amount of electronic materials from landfills, promoting sustainability and raising awareness about the importance of recycling in the modern digital age.



LITTER CONTROL

GOALS

- Coordinate efforts from available resources: R-Board litter crew, probation workers, volunteers, and partnerships
- Focus roadside litter pickup efforts on high-traffic areas in the City of Fredericksburg and Stafford County
- Reduce illegal dumping through litter crew enforcement
- Provide timely responses to citizen calls on areas of concern

PROGRAMS

- Rappahannock Regional Jail (RRJ) Inmate Roadside Litter
- Rappahannock Regional Jail (AAP) Adult Probationer Program
- Rappahannock Area Office on Youth (OOY)
- Community Cleanups
- Volunteer Cleanups
- Social Media & Website Messaging

R-Board staff monitors roadways for the City of Fredericksburg and Stafford County and collects litter by using the R-Board litter crew, probation workers, and the Rappahannock Regional Jail. In FY2025 316,363 pounds of litter were removed from our communities.

Litter Clean-up

Total Number of Program Clean-up Events: 59

Total Number of Volunteers for all Clean-up Events: 447

Total Litter Collected from All Activities (cubic yds): 320.59

Community Service

Number of Probationers Assigned: 120

Number of Road Miles Cleaned: 317

Total Litter Collected from the Assign-a-Highway Program (cubic yds): 350.23

COMMUNITY OUTREACH AND EDUCATION

Goals

- Provide recycling and litter prevention education in the City of Fredericksburg and Stafford County
- Provide Backyard Composting classes to the City of Fredericksburg and Stafford County
- Participate in special events to promote recycling and litter prevention in the City of Fredericksburg and Stafford County

Programs

- Recycling and Litter Prevention tabling
- Recycling and Litter Prevention education for the community
- Environmental Education Trailer
- Social Media & Website Messaging

More than 19,599 people were reached through group presentations, workshops, and tabling events that provided education on topics such as recycling, litter prevention, and composting.

Over 12,000 K-12 youth were educated on recycling and litter prevention. Below are some outreach activities completed last year:

- The R-Board also attended Stafford's National Night Out on October 1st, where we engaged over 1,200 residents.
- The R-Board took the environmental educational trailer to the Stafford Fall Festival at Pratt Park on October 5th, where we were able to share environmental education and outreach with over 700 residents.
- The R-Board and Stafford County Schools hosted a "Get Rid of Litter" 3-Dimensional Recycled Art Contest on April 12th and 13th, where there were 221 participants from 22 schools. Over 9,200 residents attended the event.



- The R-Board attended the Fredericksburg Rappahannock Earth Day on April 26, 2024. The R-Board brought the environmental education trailer, which provided environmental education and community outreach to over 3,700 residents.
- The R-Board took the environmental education trailer to Hugh Mercer's Earth Day, where we shared the day with over 1,000 students and teachers.
- The R-Board took the environmental education trailer to Grafton Village Elementary for a fourth-grade compost demonstration and trailer tour. There, we engaged 180 students and teachers.
- The R-Board compost program engaged over 2,500 residents through compost classes, mini compost-a-thons, and demos throughout the year.

Achievements

- The R-Board received a 2025 NACo Achievement Award for the Get Rid of Litter 3-Dimensional Recycled Art Contest.

2025 Achievement Award Winner

"Without continual growth and progress, such words as improvement, achievement, and success have no meaning." Benjamin Franklin

The National Association of Counties is proud to award
Stafford County, Va.

A 2025 Achievement Award for its program titled:
Get Rid Of Litter Dimensional Recycled Art Contest



APPENDIX M-1
EPA INFORMATION



Advancing Sustainable Materials Management: 2018 Fact Sheet

Assessing Trends in Materials Generation and
Management in the United States

December 2020

Introduction

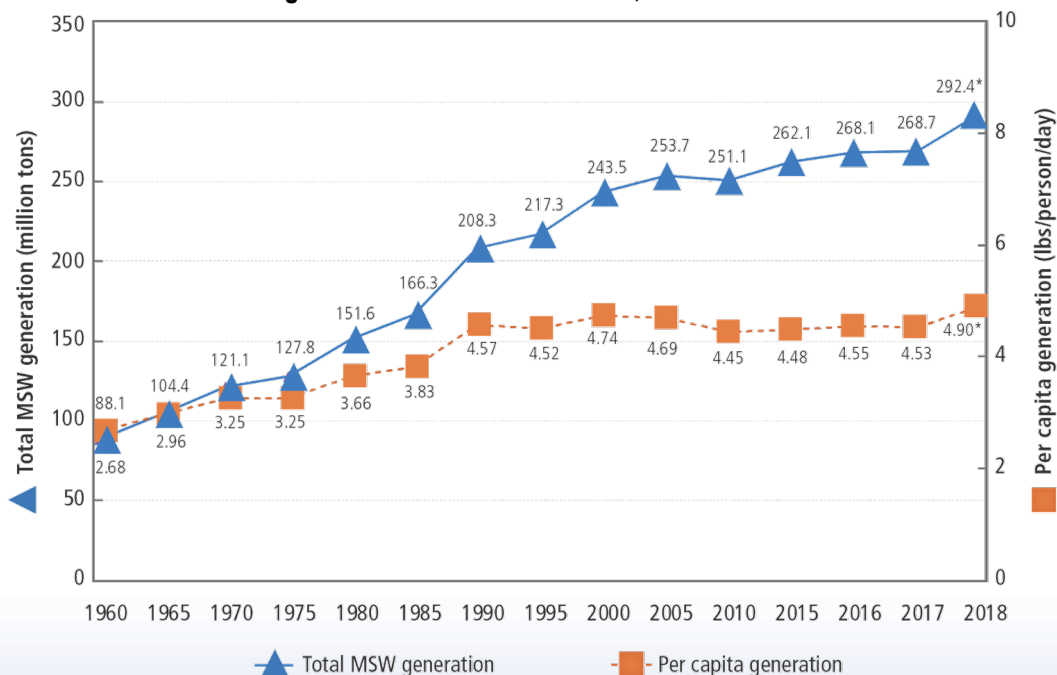
The U.S. Environmental Protection Agency (EPA) has collected and reported data on the generation and disposition of municipal solid waste (MSW) in the United States for more than 35 years. This information is used to measure the success of materials management programs across the country and to characterize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

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

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

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

Figure 1. MSW Generation Rates, 1960 to 2018*



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

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

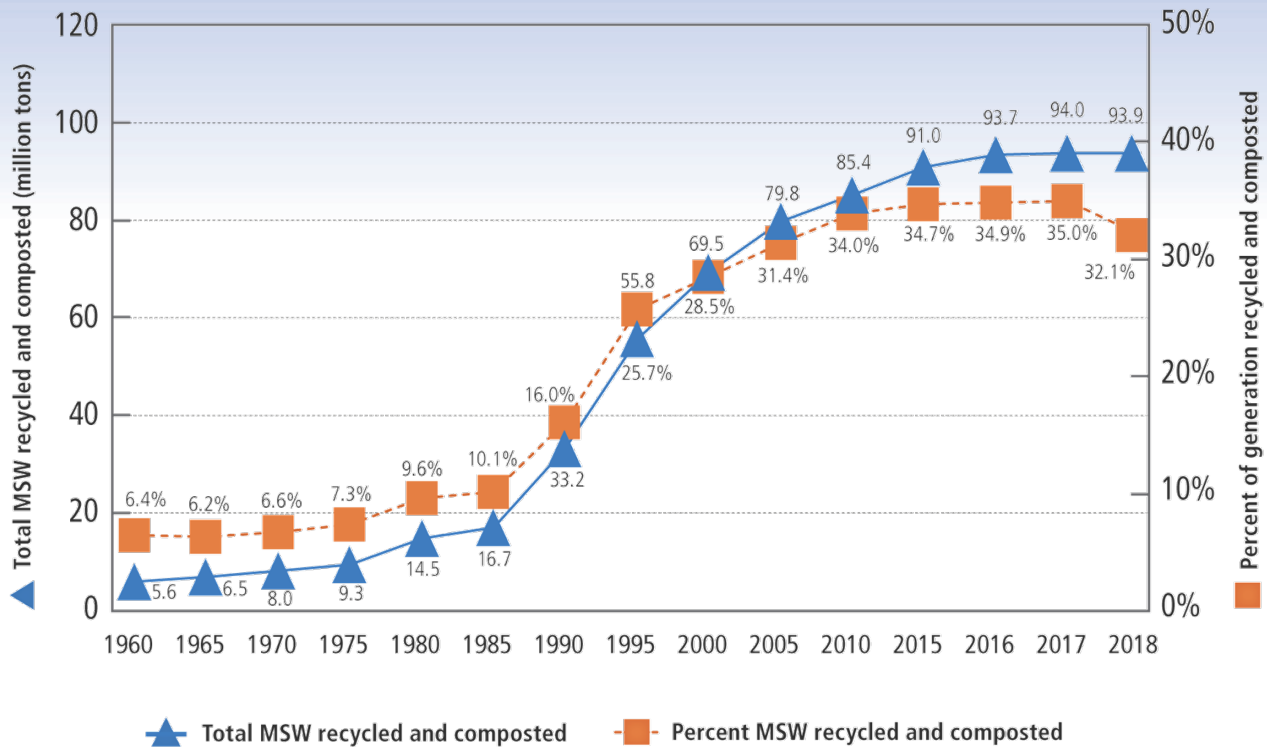


Figure 3. Management of MSW in the United States, 2018

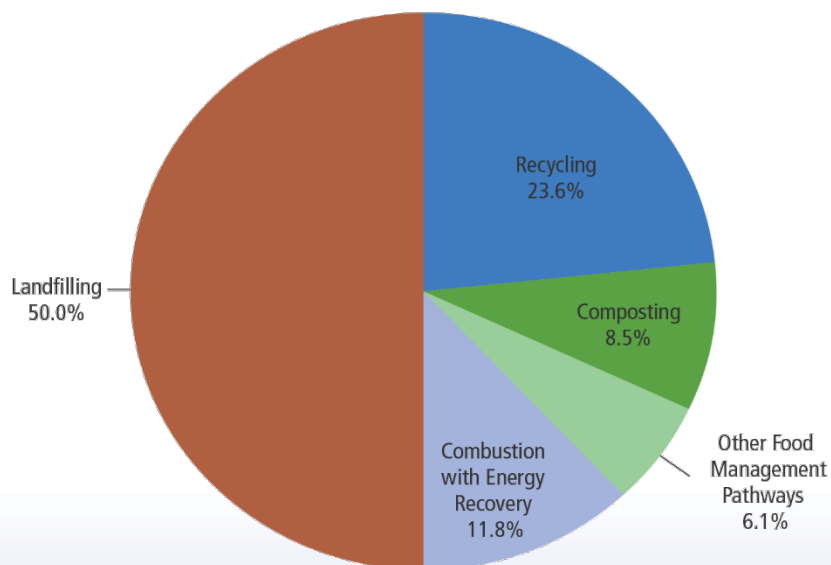


Table 1. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Materials in MSW, 2018*
(in millions of tons and percent of generation of each material)

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

* Includes waste from residential, commercial and institutional sources.

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

† Includes lead from lead-acid batteries.

‡ Includes collection of other MSW organics for composting.

Details might not add to totals due to rounding.

Negligible = Less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

Trends in Municipal Solid Waste

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

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

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

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

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

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

New Enhanced Food Measurement Methodology

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

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

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

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

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

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

Details might not add to totals due to rounding.

neg. (negligible) = less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

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

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

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

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

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

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

Details might not add to totals due to rounding.

neg. (negligible) = less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

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

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

Analyzing MSW

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

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

Materials in MSW

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

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

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

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

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

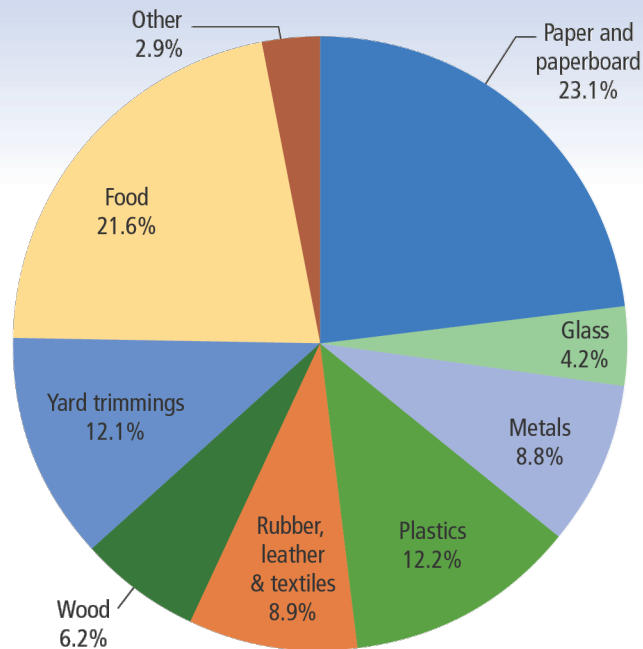


Figure 5. Total MSW Recycling (by material), 2018
69.1 Million Tons

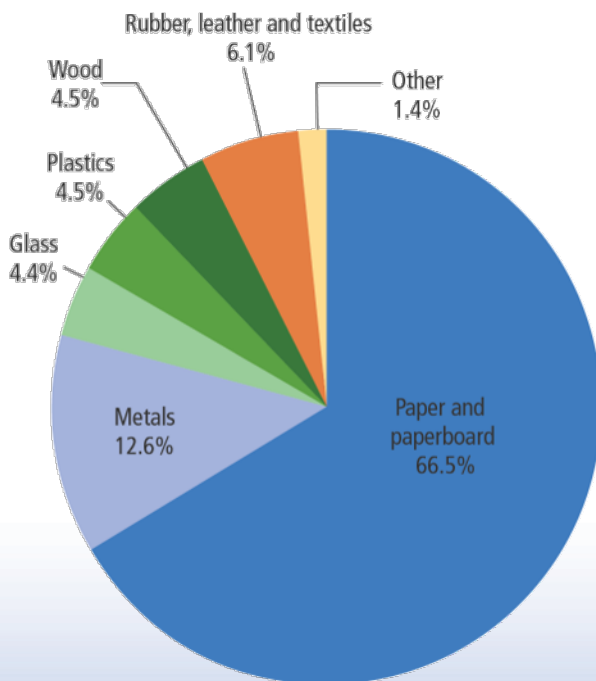


Figure 6. Total MSW Composting and Other Food Management Pathways (by material), 2018
42.6 Million Tons

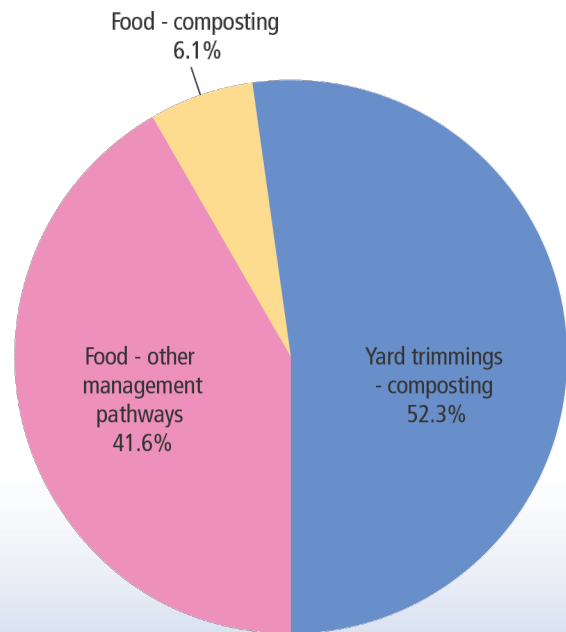


Figure 7. Total MSW Combusted with Energy Recovery (by material), 2018 34.6 Million Tons

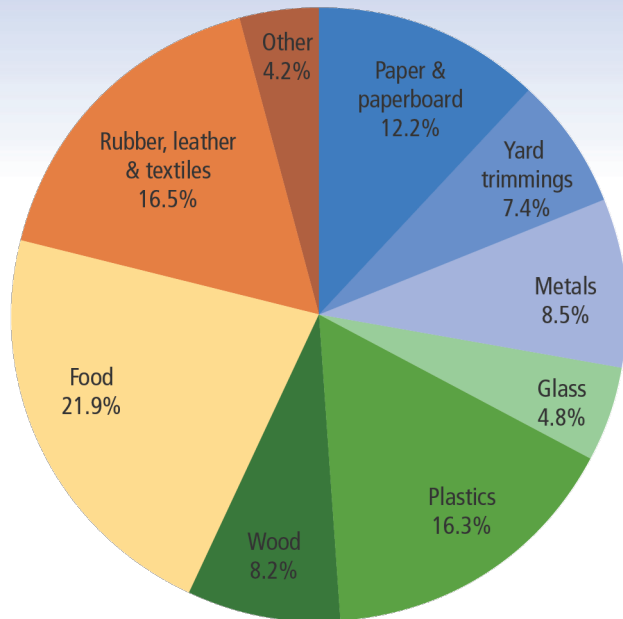
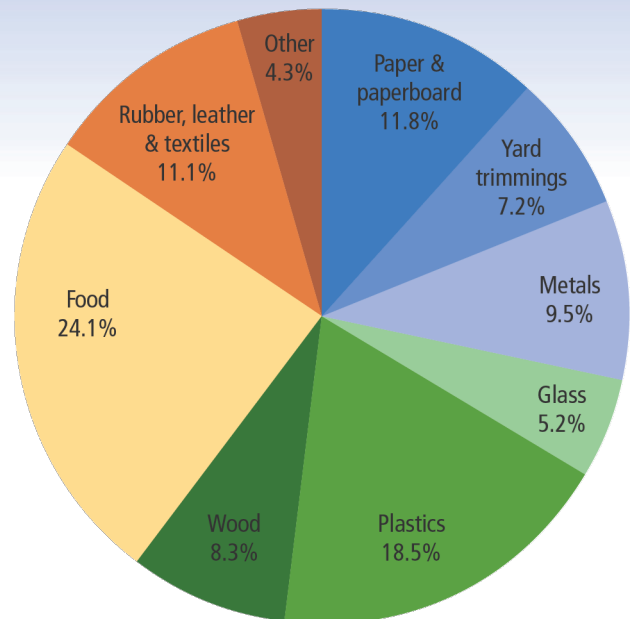


Figure 8. Total MSW Landfilled (by material), 2018 146.1 Million Tons



Products in MSW

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

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

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

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

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

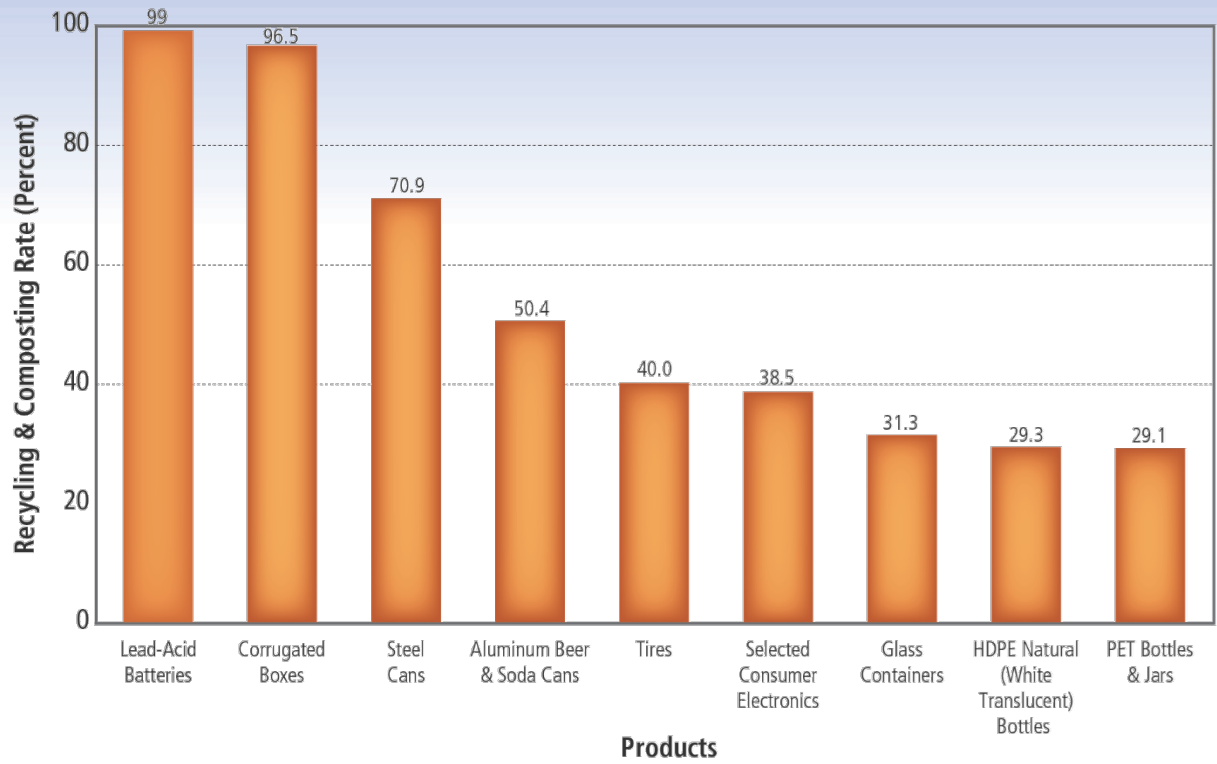
Durable goods had the highest landfill rate of 65.5 percent. Nondurable goods had the second highest landfill rate at 57.8 percent. Food had the third highest landfill rate of 55.9 percent. Containers and packaging, along with yard trimmings, were the product categories with the lowest landfill rates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

Figure 9 displays selected individual products with high recycling rates.

Recycling Rates

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

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



*Does not include combustion with energy recovery

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

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

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

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

* Includes waste from residential, commercial and institutional sources.

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

† Includes lead from lead-acid batteries.

‡ Includes collection of other MSW organics for composting.

Details might not add to totals due to rounding.

Negligible = less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

Environmental and Economic Benefits

Environmental Benefits of Recycling and Composting

The energy and greenhouse gas (GHG) benefits of recycling, composting and combustion with energy recovery that are shown in Table 5 are calculated using EPA's WARM (Waste Reduction Model) tool (See: <https://www.epa.gov/warm>). WARM calculates and totals the GHG emissions of baseline and alternative waste management practices, including source reduction, recycling, composting, combustion with energy recovery and landfilling. For example, paper and paperboard recycling, at about 46 million tons, resulted in a reduction of over 155 MMTCO₂E in 2018. This reduction is equivalent to removing over 33 million cars from the road for one year.

In 2018, about 94 million tons of MSW in the U.S. were recycled and composted, saving over 193 MMTCO₂E. This is comparable to the emissions that could be reduced from taking almost 42 million cars off the road in a year.

Table 5. 2018 Environmental Benefits

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

Material	Recycled	Composted	Combustion with Energy Recovery	Landfilled	GHG Benefits (MMTCO ₂ E)	Number of Cars Taken Off the Road Per Year (millions of cars)
Paper and paperboard	45.97	-	4.20	17.22	(155.17)	(33.52)
Glass	3.06	-	1.64	7.55	(0.90)	(0.19)
Metals						
Steel	6.36	-	2.31	10.53	(15.50)	(3.35)
Aluminum	0.67	-	0.56	2.66	(6.12)	(1.32)
Other nonferrous metals**	1.69	-	0.08	0.74	(7.54)	(1.63)
Total metals	8.72	-	2.95	13.93	(29.16)	(6.30)
Plastics	3.09	-	5.62	26.97	4.13	0.89
Rubber and leather†	1.67	-	1.73	0.78	0.17	0.04
Textiles	2.51	-	3.22	11.30	(2.56)	(0.55)
Wood	3.10	-	2.84	12.15	(3.30)	(0.71)
Food, other‡	-	2.59	7.55	35.28	(6.97)	(1.51)
Yard trimmings	-	22.30	2.57	10.53	0.78	0.17
Miscellaneous inorganic wastes	-	-	0.80	3.27	(0.28)	(0.06)
Totals	68.12	24.89	33.12	138.98	(193.26)	(41.74)

*Includes material from residential, commercial, institutional and industrial sources (except not industrial process waste).

**Includes lead-acid batteries. Other nonferrous metals calculated in WARM as mixed metals.

†Only includes rubber from tires.

‡Includes collection of other MSW organics for composting.

These calculations do not include an additional 24.9 million tons of MSW that could not be addressed in the WARM model (including 17.7 million tons from food waste managed by means outside of the scope of the WARM model). MMTCO₂E is million metric tons of carbon dioxide equivalent. Numbers in parentheses indicate a reduction in either greenhouse gases or vehicles, and therefore represent environmental benefits. Details might not add to totals due to rounding.

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

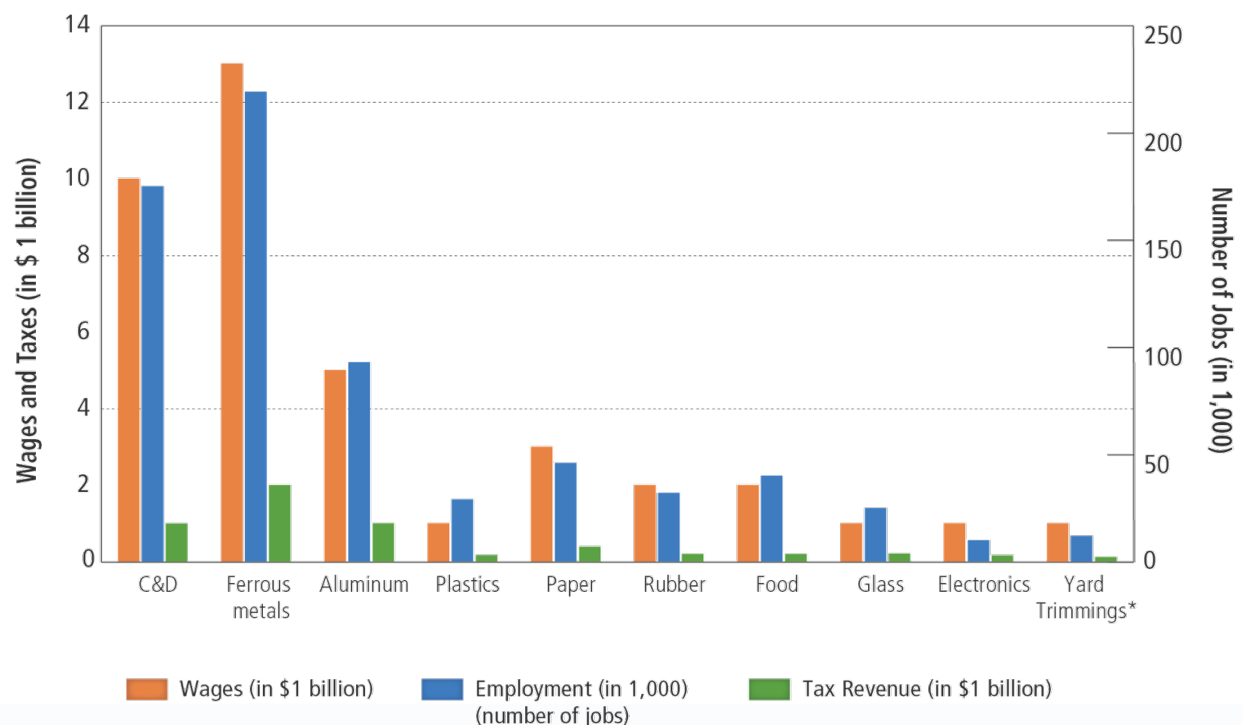
Economic Indicators

Economic Benefits of Recycling and Composting

How our nation uses materials is fundamental to our economic and environmental future. Economic and community benefits of recycling include increasing economic security by tapping a domestic source of materials; supporting American manufacturing; conserving valuable resources; and creating jobs in the recycling and manufacturing industries.

In 2020, EPA updated the Recycling Economic Information (REI) Report¹ to increase the understanding of the economic implications of material reuse and recycling. The 2020 REI Report included updated information about the number of recycling jobs, wages and tax revenue (See Figure 10). The report showed that the recycling and reuse of materials creates jobs and also generates local and state tax revenues. The data from the most recent year available showed that in 2012, recycling and reuse activities in the United States accounted for: 681,000 jobs; \$37.8 billion in wages; and \$5.5 billion in tax revenues. This calculation equates to 1.17 jobs for every 1,000 tons of materials recycled. Ferrous metal provided the largest contribution to all three categories (jobs, wages and tax revenue), followed by C&D and nonferrous metals, such as aluminum.

Figure 10. Wages, Taxes and Jobs Attributed to Recycling



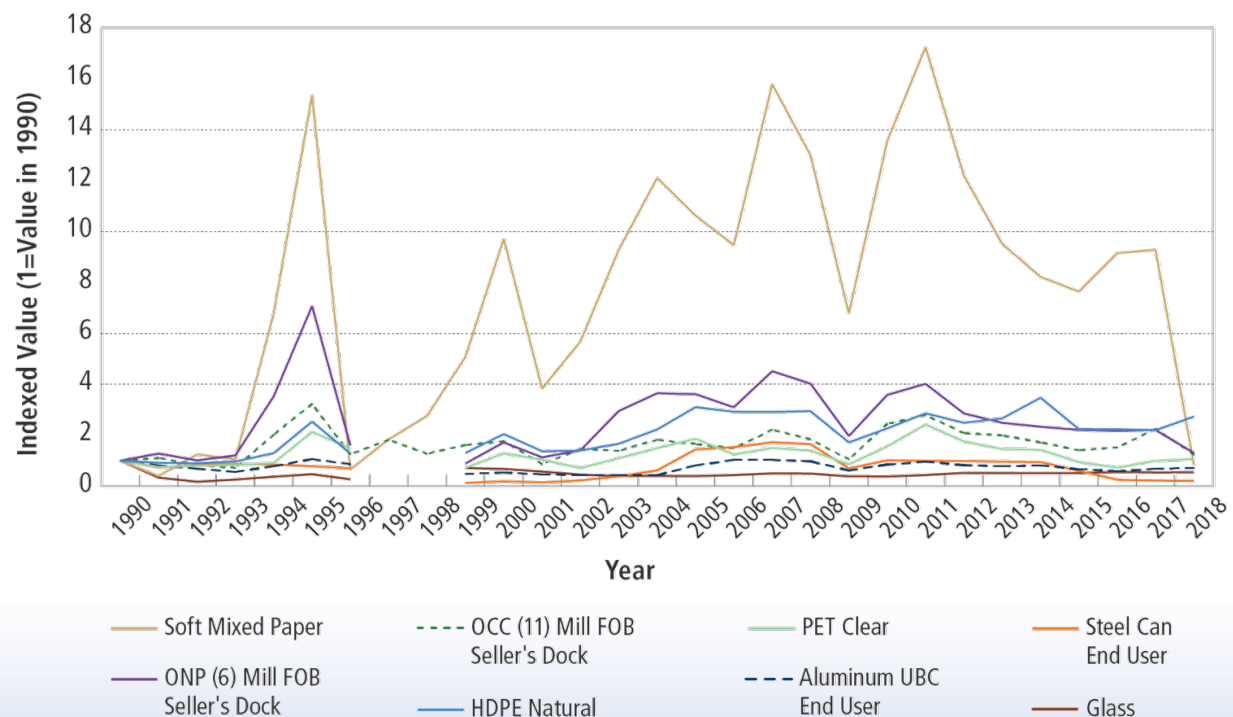
* Yard Trimmings category includes biodiesel, biogas, compost, mulch and wood chips

Recycled Commodity Values

Scrap² commodity markets set the price for materials that are being recycled, such as various types of paper or plastic. Manufacturers can realize cost, energy and environmental savings when scrap commodities are used as raw materials instead of virgin materials³. The prices for these markets are determined by the perceived value of the commodity and the relative supply and demand at any given point in time. This could provide insight on how municipalities or other organizations responsible for recycling may change their behavior to promote recycling practices and the resulting prices could be a driver toward the overall incentive to recycle across the country. This analysis focuses on the market set prices of a variety of postconsumer plastics, steel and aluminum cans, paper and glass, which represent a subset of all recycled commodity markets.

Figure 11 shows trends in commodity prices over time. It provides the indexed values by year for the following recycled commodities from 1990 to 2018: high-density polyethylene (HDPE) natural bottles; polyethylene terephthalate (PET) clear bottles; aluminum used beverage cans (UBC); steel cans; old newspaper (ONP) (grade 6 and 56); old corrugated containers (OCC) (grade 11); paper stock (PS) (grade 1 and 54) soft mixed paper; and glass containers. The values are normalized to 2018 using the Consumer Price Index (CPI) from the Bureau of Labor Statistics (BLS). They are indexed to allow commodity values with different metrics, such as dollars per ton, dollars per gross ton and dollars per short ton, to be shown on the same graph and to compare their relative rates of change. The indexed value indicates the change in value of the data since 1990, where one is equal to the value in 1990. For example, an indexed value of two would mean the commodity value for that year would be two times the 1990 value.

Figure 11. Indexed Recycled Commodity Values by Year



Source: Pulp & Paper Global Fact & Price Book, 2003-2004. Page 128. Paperloop, Inc. 2004. See endnotes for additional sources⁴

Figure 11 shows similar trends across all commodities for indexed values, where one is equal to the value in 1990. For example, all commodity values spiked in 1995, except steel cans, and dipped in 2009. Many commodities also experienced a price spike in 2000, 2007 and 2011. In contrast, the indexed lines for glass, aluminum and steel cans appear to fluctuate less frequently. Figure 11 also shows all paper grades (ONP, OCC and mixed paper) experienced a drop in 2018.

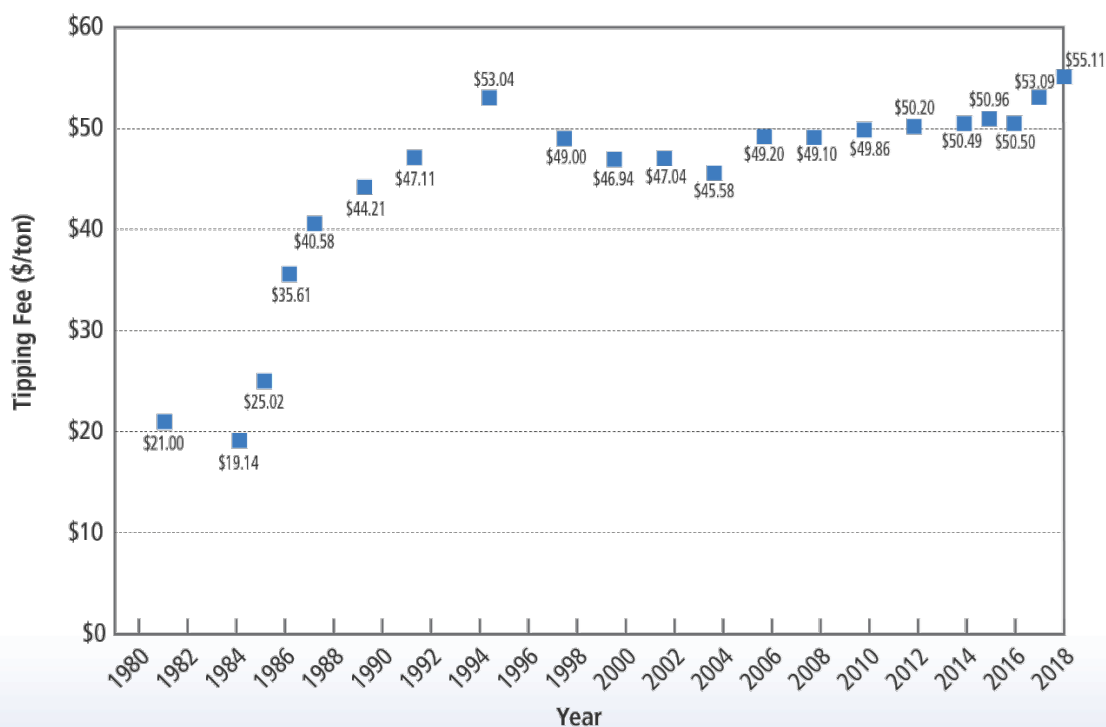
Landfill Tipping Fees

Tipping fees are important to consider as they typically increase as landfill capacity decreases. For example, the average tipping fee in South Central states (\$34.80) with more available space for landfills (Arkansas, Louisiana, New Mexico, Oklahoma, Texas) is about half of the average in the Northeast (\$67.39).⁵

From 1985 to 1995, there was a rapid rise in national landfill tipping fees, followed by a steady decrease from 1995 to 2004. Since 2004, there has been a slow and steady average increase of about one percent per year in landfill tipping fees (See Figure 12). The tipping fees are expressed in constant 2018 dollars.

To allow for meaningful comparisons, national mean annual landfill tipping fees were normalized to the value of the dollar in 2018 using the Consumer Price Index (CPI) from the Bureau of Labor Statistics. This figure shows an average increase from 1985 to 1995 of \$3.39 per year, followed by a steady decrease of \$0.83 per year through 2004 and an average increase of \$0.68 per year from 2004 to 2018.

Figure 12. National Landfill Tipping Fees, 1982-2018 (\$2018 per ton)



Source: National Solid Wastes Management Association (NSWMA) Municipal Solid Waste Landfill Facts. See endnotes for additional sources⁶

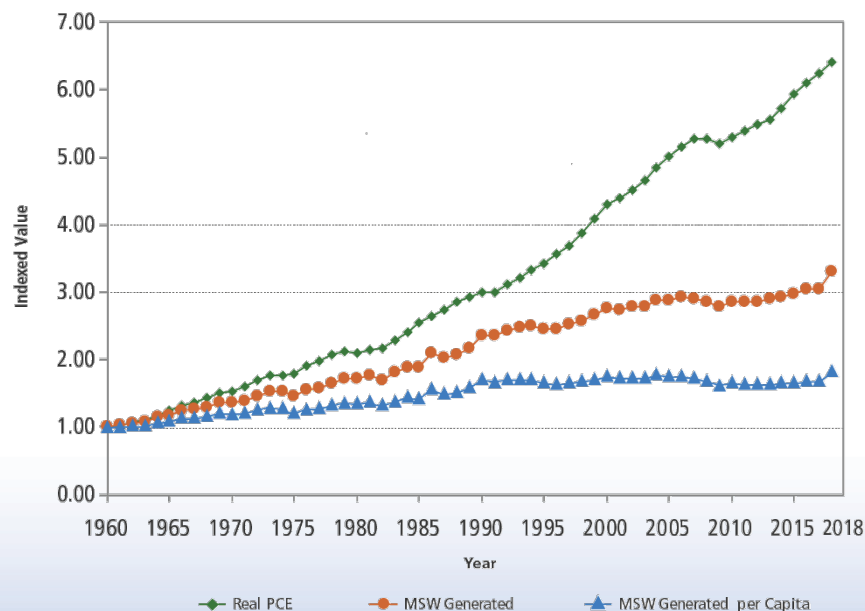
MSW Generation and Household Spending

In the United States, the change in the amount of MSW generated typically mirrors trends in how much money households spent on goods and services. Personal Consumer Expenditures (PCE) measure household spending on goods and services such as food, clothing, vehicles and recreation services. PCE is one of the four components of economic growth, along with government spending, private investments and net exports. As PCE is an indicator of the household consumption of goods and services, which make up nearly 70 percent of the gross domestic product (GDP), PCE has a stronger conceptual tie to MSW generation than the other three GDP components. PCE adjusted for inflation is referred to as real PCE. This metric is more useful in making comparisons over time because it normalizes the value of a dollar by considering how much a dollar could purchase in the past versus today. Figure 13 explores the relationship between MSW generated and real PCE.

Figure 13 is an indexed graph, showing the relative changes in real PCE, MSW generated and MSW generated per capita over time. It is indexed to allow all three of these metrics to be shown on the same graph and to compare their relative rates of change since 1960. The indexed value indicates the change in the value of the data since 1960. For example, if, for a given year, the value was three, then the data value for that year would be three times the 1960 value. In this case, a 1960 value of 200 would mean the resulting year's value would be 600. The 2018 MSW per capita generation indexed value is 1.8, which means that MSW per capita generation has increased by 80 percent since 1960.

Figure 13 shows that real PCE has increased at a faster rate than MSW generation, and the disparity has become even more distinct since the mid-1990s. This index indicates that the amount of MSW generated per dollar spent is falling. In other words, the U.S. economy has been able to enjoy dramatic increases in household spending on consumer goods and services without the societal impact of similarly increasing MSW generation rates. This figure also shows that the MSW generated per capita leveled off in the early-to-mid 1990s.

Figure 13. Indexed MSW Generated and Real PCE over Time (1960-2018)



Source: See endnotes⁷

MSW Methodology

The data summarized in this fact sheet characterizes the MSW stream as a whole by using a materials flow methodology that relies on a mass balance approach. EPA recognizes that there are several approaches to measuring material flows. To be consistent, EPA reports the quantities of materials in tons in the current fact sheet, but the Agency will continue to explore options for alternative measurement methodologies to describe materials management in the United States.

Using data gathered from industry associations, businesses and government sources, such as the U.S. Department of Commerce and the U.S. Census Bureau, EPA estimates the weight in tons of all MSW materials and products generated, recycled, composted, managed by other methods for food, combusted with energy recovery and landfilled. Other sources of data, such as waste characterizations and research reports performed by governments, industry or the press, supplement these data.

EPA has consistently used materials flow analysis to allow for the comparison of data over the last three decades. EPA recognizes that this methodology differs from other methodologies that also estimate the generation of MSW and other waste data. EPA will continue to work with stakeholders to identify methodologies and additional publicly available data to improve our national understanding of materials flow in the United States.

Construction and Demolition (C&D) Debris Generation and Management Results

Construction and demolition (C&D) debris is a type of waste that is not included in MSW. Materials included in C&D debris are steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles, concrete and asphalt concrete (asphalt pavement). These materials are used in buildings, roads and bridges, and other structures. The generation estimate represents C&D debris amounts from construction, renovation and demolition activities for buildings, roads and bridges, and other structures. C&D debris end-of-life (EOL) management includes quantities of materials going to next use or directed to landfills. "Next use" designates an intended next-use market which, depending on the material, may include fuel, manufactured products, aggregate, compost and mulch or soil amendment. The manufactured products next use encompasses estimates of C&D debris processed (e.g., ground, crushed or extracted and melted) for incorporation in the manufacture of new materials and products. For example, C&D asphalt is processed for use in the production of asphalt mixtures.

In 2018, 600 million tons of C&D debris were generated. Figure 14 shows the 2018 generation composition for C&D debris. C&D concrete was the largest portion at 67.5 percent, followed by asphalt concrete at 17.8 percent. C&D wood products made up 6.8 percent, and the other products accounted for 7.9 percent combined. The 2018 generation estimates are presented in more detail in Table 6. As shown in Figure 15, demolition represented over 90 percent of total C&D debris generation. Construction, on the other hand, represented under 10 percent.

**Figure 14. C&D Debris Generation Composition by Material (before processing), 2018
600 Million Tons**

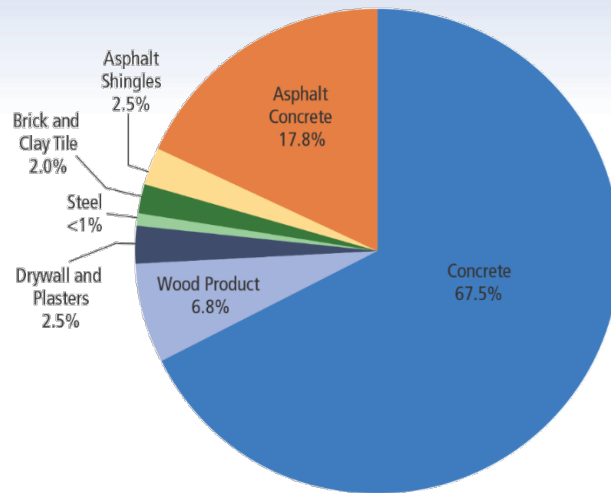


Table 6. C&D Debris Generation by Material and Activity, 2018 (in millions of tons)

	Waste During Construction	Demolition Debris	Total C&D Debris
Concrete	24.2	381.0	405.2
Wood Products ⁷	3.4	37.4	40.8
Drywall and Plasters	3.9	11.3	15.2
Steel ⁸	0	4.7	4.7
Brick and Clay Tile	0.3	12.0	12.3
Asphalt Shingles	1.2	13.9	15.1
Asphalt Concrete	0	107.0	107.0
Total	33.0	567.3	600.3

^{8,9} See endnotes.

Figure 15. Contribution of Construction and Demolition Phases to Total 2018 C&D Debris Generation

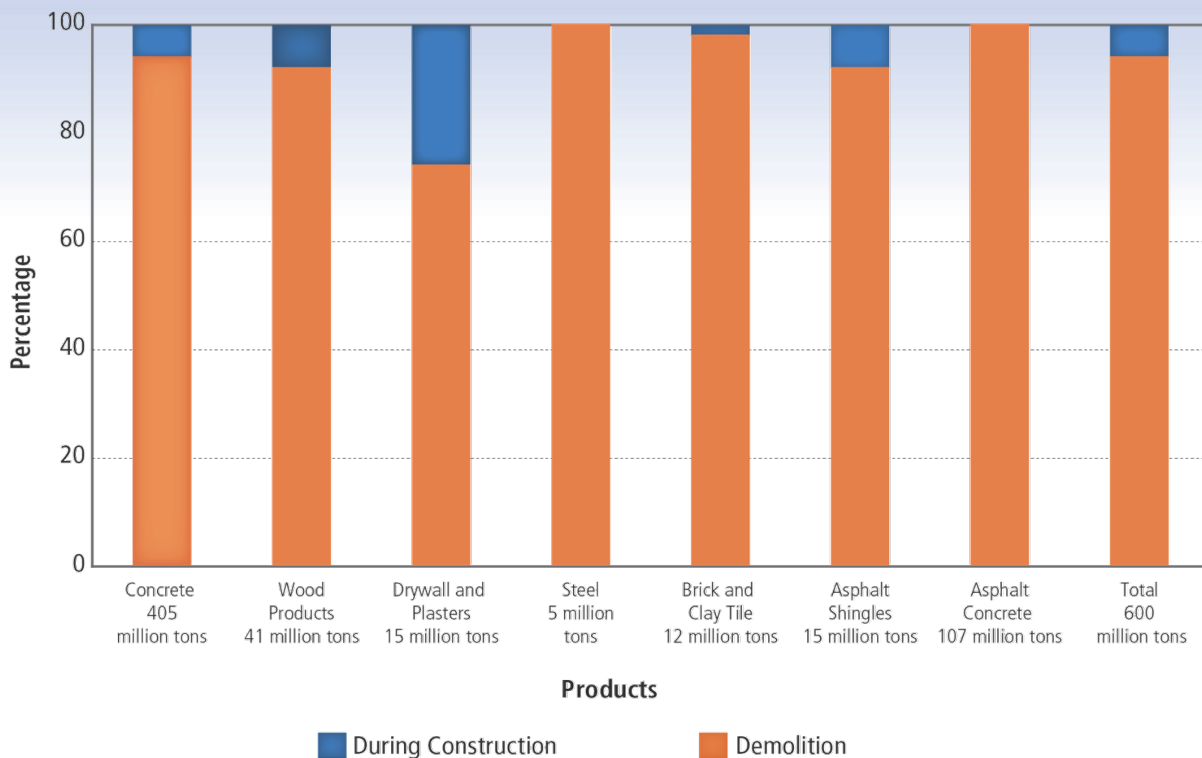


Table 7 displays the amount of C&D debris generation from buildings, roads and bridges, and other structures for each material. The “other structures” category includes C&D debris generation estimates from communication, power, transportation, sewer and waste disposal, water supply, conservation and development, and the manufacturing infrastructure. In 2018, roads and bridges contributed significantly more to C&D debris generation than buildings and other structures, and concrete made up the largest share of C&D debris generation for all three categories.

Table 7. C&D Debris Generation by Source, 2018 (in millions of tons)

	Buildings	Roads and Bridges	Other
Concrete	102.0	168.3	134.9
Wood Products ⁷	39.5	0.0	1.3
Drywall and Plasters	15.2	0.0	0.0
Steel ⁸	4.7	0.0	0.0
Brick and Clay Tile	12.3	0.0	0.0
Asphalt Shingles	15.1	0.0	0.0
Asphalt Concrete	0.0	107.0	0.0
Total	188.8	275.3	136.2

Figure 16 shows 2018 C&D debris managed through next use or sent to landfills. Aggregate was the main EOL next use for C&D debris at 52 percent. The total quantity of all C&D debris that was sent to aggregate was about 313 million tons. Concrete alone, was sent to aggregate at the quantity of about 301 million tons (see Table 8). The next largest end destination was landfill, at 24 percent of the total amount of C&D debris. The total quantity of all C&D debris that was sent to landfills was about 144 million tons. Over 71 million tons of concrete alone were sent to landfills (see Table 8).

Figure 16. C&D Debris Management by Destination, 2018
600 million tons

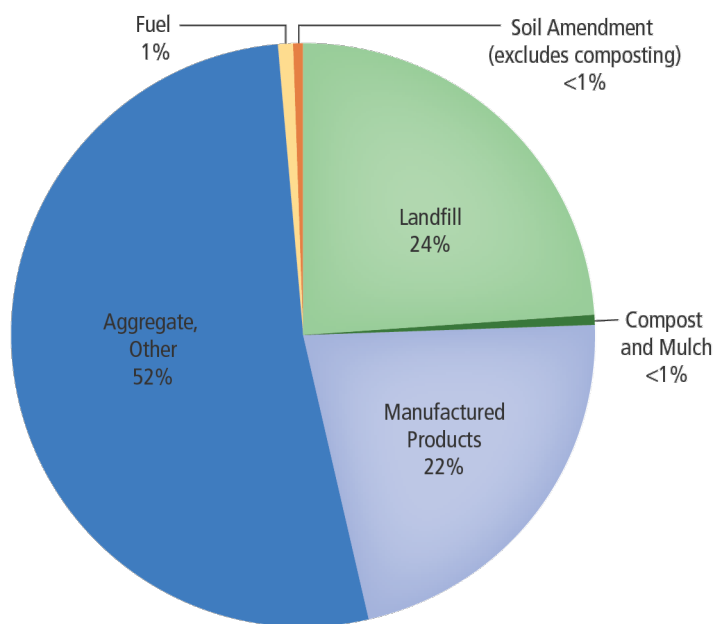


Figure 16 also shows that the “manufactured products” next use followed at 22 percent of the total generated C&D debris amount. The total quantity of all C&D debris that was sent to manufactured products was 132 million tons. About 92 million tons of C&D asphalt pavement alone, were incorporated in manufactured products (see Table 8). About 3 percent of the total C&D debris was directed to fuel, compost and mulch, and soil amendment (see Figure 16).

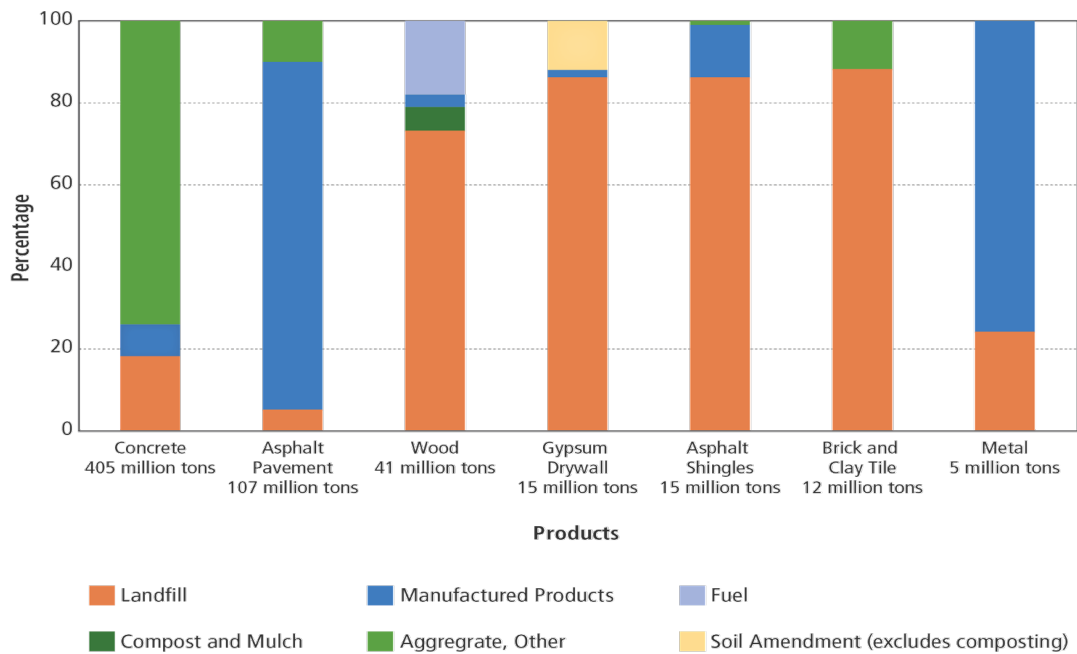
Table 8 is a summary of the total tonnages of each material type intended for next use destinations or sent to landfills. About 457 million tons were directed to next use and over 143 million tons of C&D debris were sent to landfills in 2018.

Figure 17 depicts quantities of a material in each destination as a fraction of the total generated amount for the material in 2018. The use in manufactured products was the dominant next use for asphalt concrete (asphalt pavement) and metals. Aggregate was the main destination for C&D concrete. Landfills were the primary destination for C&D debris wood, asphalt shingles, gypsum drywall¹⁰ and brick and clay tile.

Table 8. C&D Debris Management by Material and Destination, 2018 (in millions of tons)

Material Type in C&D Debris	Landfill	Next Use					Total Next Use
		Compost and Mulch	Manufactured Products	Aggregate, Other	Fuel	Soil Amendment	
Concrete	71.2	0	32.8	301.2	0	0	334.0
Wood	29.6	2.5	1.2	0	7.5	0	11.2
Gypsum Drywall	13.2	0	.2	0	0	1.9	2.1
Metal	1.1	0	3.6	0	0	0	3.6
Brick and Clay Tile	10.8	0	0	1.5	0	0	1.5
Asphalt Shingles	13.0	0	2.0	.1	.02	0	2.1
Asphalt Concrete	4.9	0	91.8	10.3	0	0	102.1
TOTAL	143.8	2.5	131.6	313.1	7.5	1.9	456.6

Figure 17. C&D Debris Management by Destination, 2018 (percent of total generation amount for the material)



Resources

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

Please visit:

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

<https://www.epa.gov/warm>

Endnotes

1. US EPA. 2020. "Recycling Economic Information Report" (2020). The 2020 REI report provided updated economic and recycling information to reflect the most recent available data for input-output modeling in the United States. The 2020 report built on the Waste Input-Output methodology by generating more current results based on transparent and publicly available data. This revised study provides greater clarity and transparency for assessing the economic impacts of recycling activities in the U.S.
2. Scrap can refer to both postconsumer as well as pre-consumer commodities; however, this analysis addresses postconsumer commodities only.
3. Institute of Scrap Recycling Industries (ISRI) 2020. 2019 Recycling Industry Yearbook. <https://www.isri.org/recycling-commodities/recycling-industry-yearbook>.
4. Recycled Commodity Values. Soft mixed paper consists of a clean, sorted mixture of various qualities of paper not limited as to type of fiber content. Prohibitive Materials may not exceed 1 percent. There are specific limits on the percent of contaminants allowed in soft mixed paper. Data were not available for ONP, metals, plastics and glass in 1997 and 1998. For plastics, glass and metals, there was a transition in data sources between 1996 and 1999 and between 2004 and 2005, so some of the change between years could be due to the methodology of the data source for capturing data.
Additional sources include Secondary Materials Pricing and Secondary Fiber Pricing. 2003-2018. Accessed February 2020. Available at <http://www.recyclingmarkets.net/>. 1970 to 2004 historical data tabulated from weekly or monthly industry publications and averaged annually during the time periods shown. Publications included Waste Age Recycling Times, Waste News, Paper Recycler, Miller Freeman, Inc.
5. Waste 360. 2018. "EREF Study Shows Continued Increase in Average MSW Landfill Tip Fees". August 1. <https://www.waste360.com/landfill-operations/eref-study-shows-continued-increase-average-msw-landfill-tip-fees>
6. Sources include National Solid Wastes Management Association (NSWMA) Municipal Solid Waste Landfill Facts. October 2011 (Data from 1985 to 2008). Waste Business Journal. "The Cost to Landfill MSW Continues to Rise Despite Soft Demand." July 11, 2017 (Data for 2010 to 2015). Environmental Research & Education Foundation. "Analysis of MSW Landfill Tipping Fees" April 2018 (Data for 2016 and 2017). Waste 360. "EREF Study Shows Average MSW Landfill Tip Fee Continues to Rise". October 29, 2019. (Data from 2018).
7. MSW Generation: US EPA. 2020. Solid Waste in the United States: 2018 Facts and Figures working papers. Population: U.S. Census Bureau. Population Division. Annual Estimates of the Resident Population. PCE: Bureau of Economic Analysis (BEA). 2019. Tables 2.3.4 and 2.3.5.
8. Wood consumption in buildings also includes some lumber consumed for the construction of other structures. Data were not available to allocate lumber consumption for non-residential and unspecified uses between buildings and other structures except for railroad ties. Since non-residential buildings such as barns, warehouses and small commercial buildings are assumed to consume a greater amount of lumber than other structures, the amount of lumber for construction remaining after the amount for railroad ties is split out is included in the buildings source category.
9. Steel consumption in buildings also includes steel consumed for the construction of roads and bridges. Data were not available to allocate steel consumption across different sources, but buildings are assumed to consume the largest portion of steel for construction.
10. Names of the materials are slightly different in the generation versus management analyses, due to material categorizations across the various data sources and data availability. For example, in the generation analyses the term used is drywall and plasters, whereas in the management analysis the term used is gypsum drywall.



United States Environmental Protection Agency
Office of Land and Emergency Management (5306P)
Washington, DC 20460

Official Business

Penalty for Private Use \$300

EPA 530-F-20-009

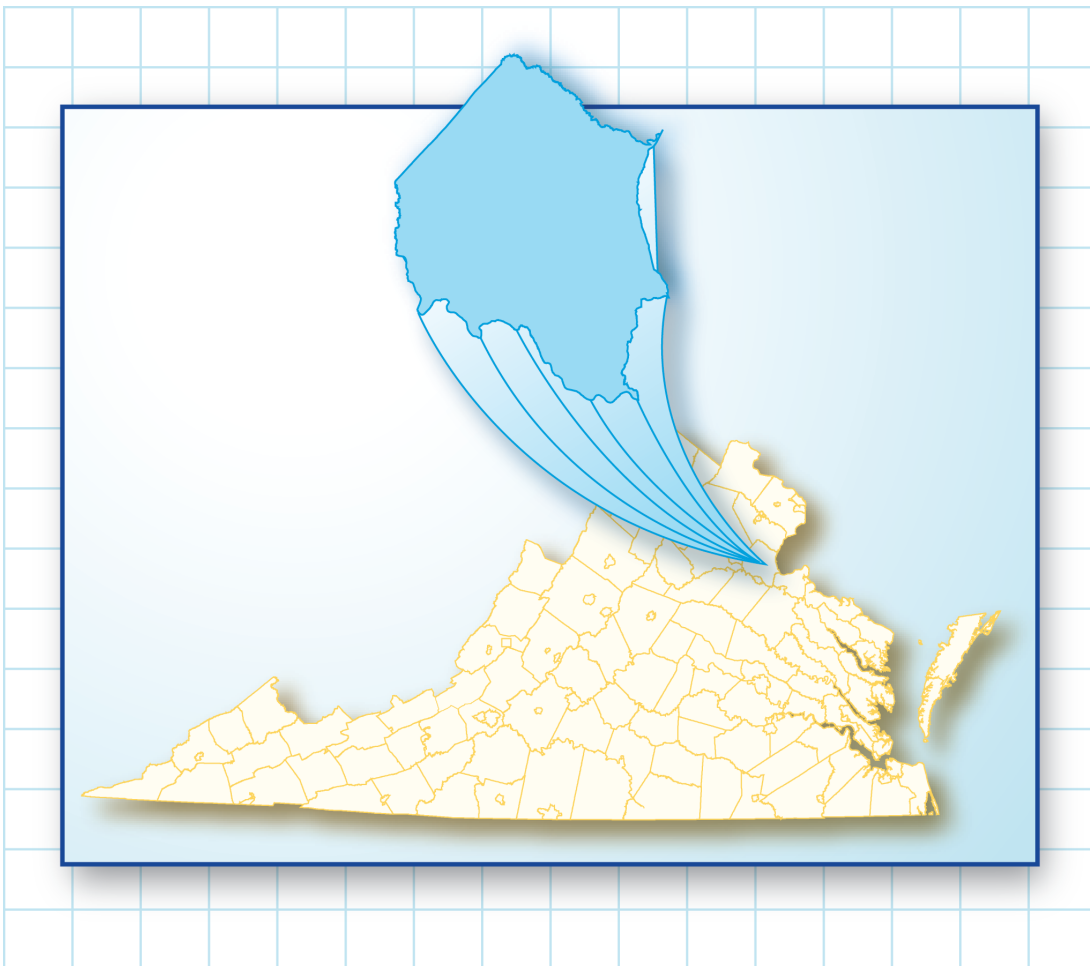
December 2020

APPENDIX M-2
VEC PROFILES

Virginia

COMMUNITY PROFILE

Stafford County



Virginia Works
Economic Information & Analytics Division

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<https://www.virginiaworks.com>

Last updated: 4/1/2026 1:47:47 AM

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I. Introduction

This report provides a community profile of Stafford County. It is intended to complement the information found in our Virginia Workforce Connection application, which can be accessed online at:

www.virginiaworks.com

The report is divided into three major sections. The first contains a profile of regional demographic characteristics and trends, the second supplies similar information for the regional economy, and the third provides a profile of regional education characteristics.

II. Demographic Profile

Overview

This Demographic Profile provides an in-depth analysis of the population in Stafford County. Most of the data is produced by the U.S. Census Bureau, and includes demographic characteristics such as age, race/ethnicity, and gender.



Related Terms and Definitions

Ability to speak English

For people who speak a language other than English at home, the response represents the person's own perception of his or her ability to speak English. Because census questionnaires are usually completed by one household member, the responses may represent the perception of another household member.

Age

The age classification is based on the age of the person in complete years as of April 1, 2010. The age of the person usually was derived from their date of birth information. Their reported age was used only when date of birth information was unavailable.

Gender

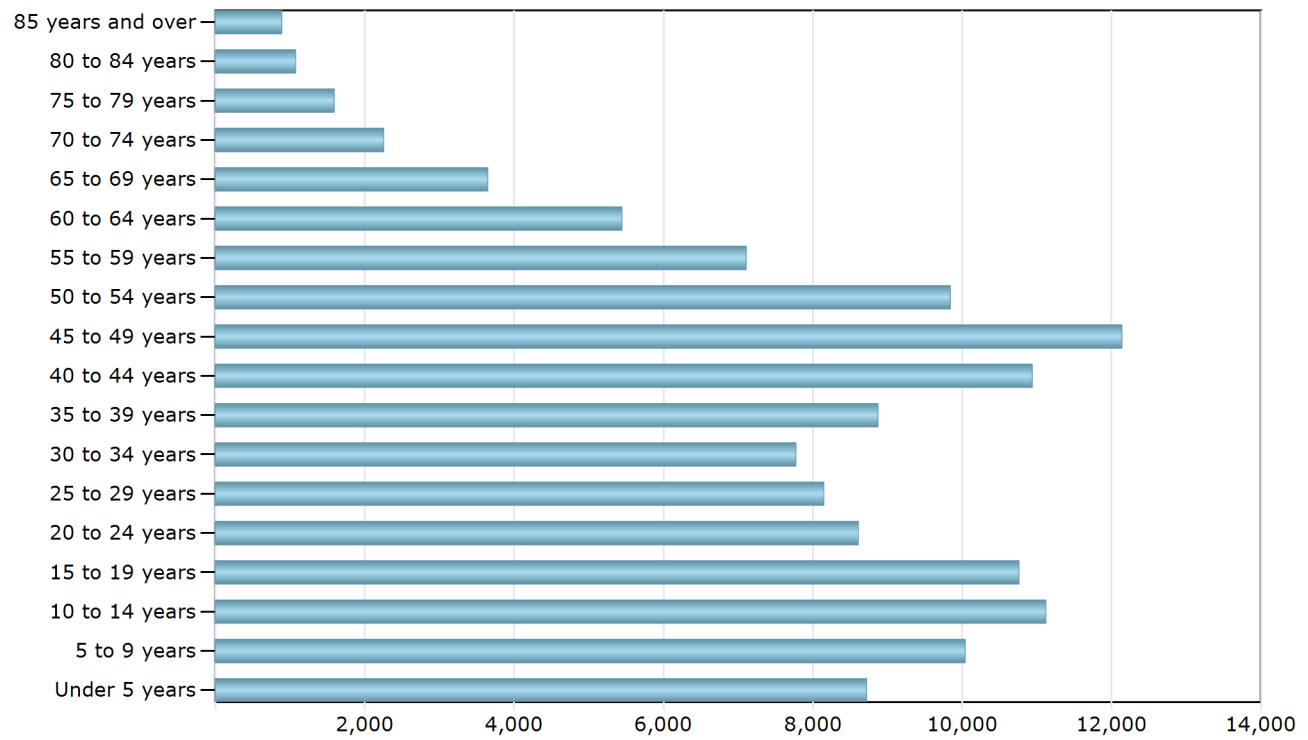
The data on gender were derived from answers to a question that was asked of all people. Individuals were asked to mark either "male" or "female" to indicate their gender. For most cases in which gender was not reported, it was determined by the appropriate entry from the person's given (i.e., first) name and household relationship. Otherwise, gender was imputed according to the relationship to the householder and the age of the person.

Race

The concept of race as used by the Census Bureau reflects self-identification by people according to the race or races with which they most closely identify. The categories are sociopolitical constructs and should not be interpreted as being scientific or anthropological in nature. Furthermore, the race categories include both racial and national-origin groups.

Please note: In the past, our population by race/ethnicity data has always excluded the Hispanic ethnicity from each race category. Starting in January 2013, each race category now includes all ethnicities.

Population by Age



	Stafford County	Virginia	United States
Under 5 years	8,719	509,625	20,201,362
5 to 9 years	10,038	511,849	20,348,657
10 to 14 years	11,117	511,246	20,677,194
15 to 19 years	10,758	550,965	22,040,343
20 to 24 years	8,610	572,091	21,585,999
25 to 29 years	8,148	564,342	21,101,849
30 to 34 years	7,773	526,077	19,962,099
35 to 39 years	8,871	540,063	20,179,642
40 to 44 years	10,936	568,865	20,890,964
45 to 49 years	12,136	621,155	22,708,591
50 to 54 years	9,840	592,845	22,298,125
55 to 59 years	7,107	512,595	19,664,805
60 to 64 years	5,444	442,369	16,817,924
65 to 69 years	3,648	320,302	12,435,263
70 to 74 years	2,256	229,502	9,278,166
75 to 79 years	1,593	173,929	7,317,795
80 to 84 years	1,077	130,801	5,743,327
85 years and over	890	122,403	5,493,433
	128,961	8,001,024	308,745,538

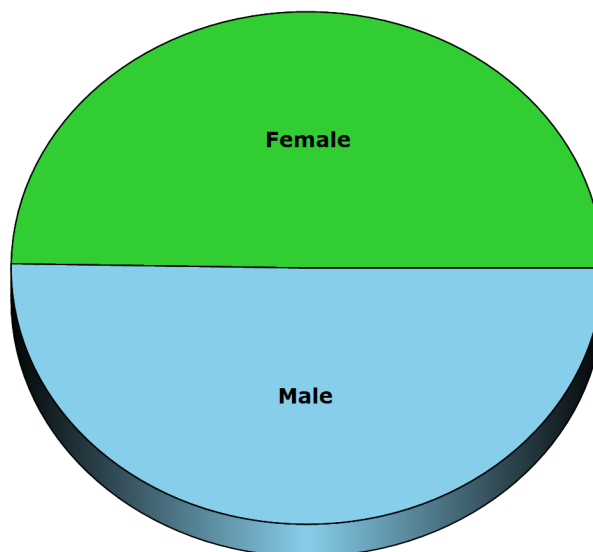
Source: 2010 Census.

Population by Race/Ethnicity

	Stafford County	Virginia	United States
Total			
Total Population	128,961	8,001,024	308,745,538
Race			
White	93,483	5,486,852	223,553,265
Black or African American	21,881	1,551,399	38,929,319
American Indian or Alaska Native	576	29,225	2,932,248
Asian	3,620	439,890	14,674,252
Native Hawaiian/Pacific Islander	164	5,980	540,013
Other	4,120	254,278	19,107,368
Multiple Races	5,117	233,400	9,009,073
Ethnicity			
Not Hispanic or Latino (of any race)	117,086	7,369,199	258,267,944
Hispanic or Latino (of any race)	11,875	631,825	50,477,594

Source: 2010 Census.

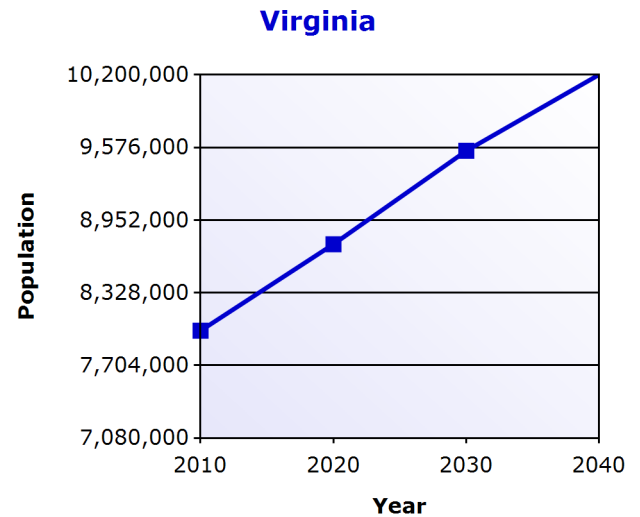
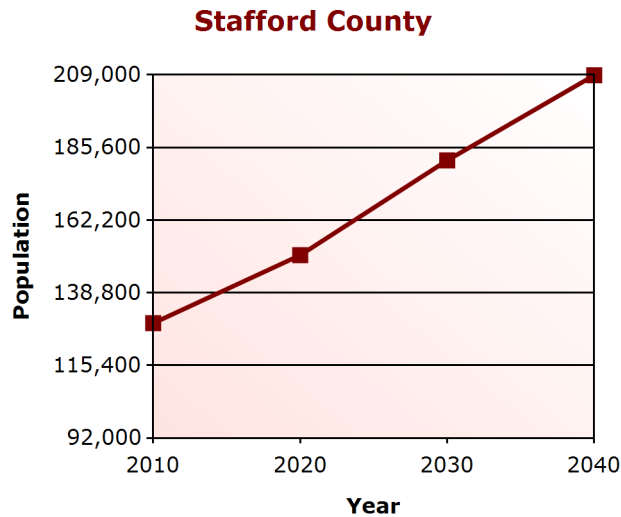
Population by Gender



	Stafford County	Virginia	United States
Male	64,822	3,925,983	151,781,326
Female	64,139	4,075,041	156,964,212
	128,961	8,001,024	308,745,538

Source: 2010 Census.

Population Change



	Stafford County	Percent change	Number Change	Virginia	Percent change	Number Change
2000	92,446			7,079,030		
2010	128,961	39.50 %	36,515	8,001,024	13.02 %	921994
2020	150,881	17.00 %	21,920	8,744,273	9.29 %	743249
2030	181,428	20.25 %	30,547	9,546,958	9.18 %	802685
2040	208,845	15.11 %	27,417	10,201,530	6.86 %	654572

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

Did you know...

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

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

www.VirginiaWorks.com

United States™
Census
2010

Population Projections by Age and Gender

	2020		2030		2040	
	Female	Male	Female	Male	Female	Male
Under 5 years	4,847	5,087	5,817	6,106	6,376	6,692
5 to 9 years	5,424	5,549	6,648	6,800	7,424	7,594
10 to 14 years	5,640	5,785	6,660	6,831	7,816	8,017
15 to 19 years	5,144	5,522	5,828	6,257	6,984	7,498
20 to 24 years	4,038	5,336	4,301	5,684	4,967	6,563
25 to 29 years	4,903	5,722	5,038	5,880	5,582	6,514
30 to 34 years	5,713	5,541	6,447	6,253	6,715	6,512
35 to 39 years	5,677	5,350	7,673	7,231	7,710	7,266
40 to 44 years	5,149	4,678	7,727	7,021	8,526	7,746
45 to 49 years	4,906	4,722	6,321	6,084	8,353	8,040
50 to 54 years	5,068	5,247	4,721	4,887	6,927	7,171
55 to 59 years	5,123	5,107	4,212	4,199	5,307	5,290
60 to 64 years	3,905	3,862	4,242	4,196	3,864	3,821
65 to 69 years	3,322	3,033	4,793	4,375	3,994	3,646
70 to 74 years	2,661	2,384	3,825	3,426	4,180	3,744
75 to 79 years	1,827	1,447	3,148	2,493	4,494	3,559
80 to 84 years	997	735	2,189	1,614	3,126	2,304
85 years and over	984	442	1,725	775	3,122	1,403
	75,328	75,549	91,315	90,112	105,467	103,380
	150,877		181,427		208,847	

Source: Weldon Cooper Center for Public Service.

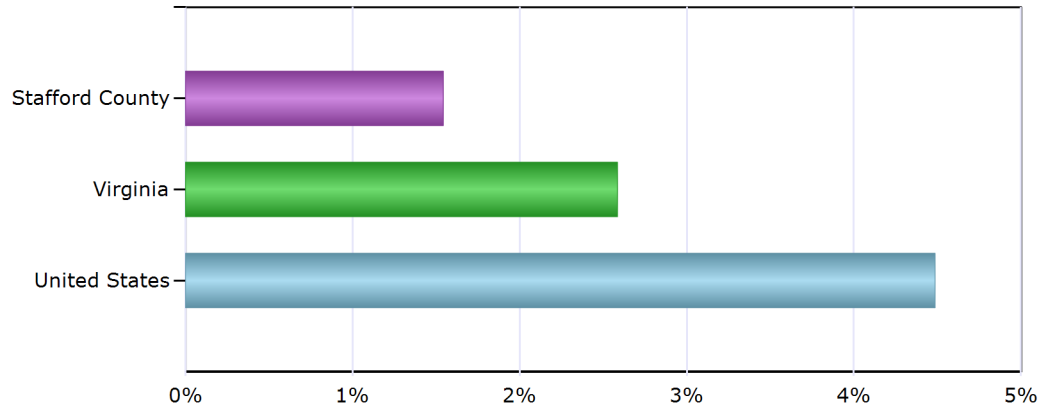
Population Projections by Race/Ethnicity

	2020	2030	2040
Total			
Total Population	150,881	181,428	208,845
Race			
White	92,958	102,615	106,288
Black or African American	26,509	32,396	37,081
Asian	5,725	9,436	14,405
Other	5,545	5,772	5,730
Ethnicity			
Hispanic or Latino (of any race)	20,144	31,210	45,340

Source: Weldon Cooper Center for Public Service.

English Language Skills

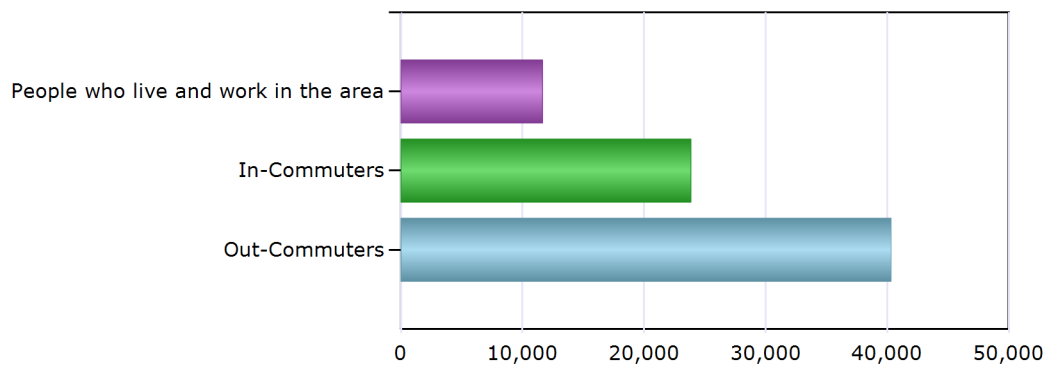
(Age 5 and over that speak English less than well)



	Total	Speak English less than well	Percent
Stafford County	130,637	2,015	1.54%
Virginia	7,800,044	201,628	2.58%
United States	298,691,202	13,400,003	4.49%

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

Commuting Patterns



Commuting Patterns	
People who live and work in the area	11,648
In-Commuters	23,848
Out-Commuters	40,319
Net In-Commuters (In-Commuters minus Out-Commuters)	-16,471

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

Top 10 Places Residents are Commuting To

Area	Workers
Fairfax County, VA	8,973
Prince William County, VA	5,988
Fredericksburg city, VA	3,645
Spotsylvania County, VA	3,637
District of Colu, DC	3,398
Arlington County, VA	1,506
Alexandria city, VA	1,222
Loudoun County, VA	1,171
Henrico County, VA	688
Prince George's County, MD	647

Top 10 Places Workers are Commuting From

Area	Workers
Spotsylvania County, VA	6,592
Prince William County, VA	2,828
Fredericksburg city, VA	1,507
Fairfax County, VA	1,319
Caroline County, VA	989
King George County, VA	855
Loudoun County, VA	750
Virginia Beach city, VA	596
Orange County, VA	557
Fauquier County, VA	546

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

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

<http://lehd.ces.census.gov>

III. Economic Profile

Overview

The Economic Profile of Stafford County consists primarily of data produced by Virginia Works, U.S. Census Bureau, and the Bureau of Labor Statistics.



Related Terms and Definitions

Average Weekly Wage

Computed as average quarterly wages divided by 13.

Consumer Price Index (CPI)

The Consumer Price Index measures the average change over time in the prices paid by urban consumers for a representative market basket of consumer goods and services.

Local Employment Dynamics (LED)

The Local Employment Dynamics Program at the Census Bureau, together with its state partners, provides employment information at the county, city, and Workforce Investment Area level. This information tracks workers in different industries by age and gender and provides statistics on job creation, separation, turnover, and wages.

Quarterly Census of Employment & Wages (QCEW)

A federal/state cooperative program that collects and compiles employment and wage data for workers covered by state unemployment insurance (UI) laws and the federal civilian workers covered by Unemployment Compensation for Federal Employees (UCFE). These data are maintained at the state in micro and macro levels and also sent to BLS quarterly.

Unemployment Insurance (UI)

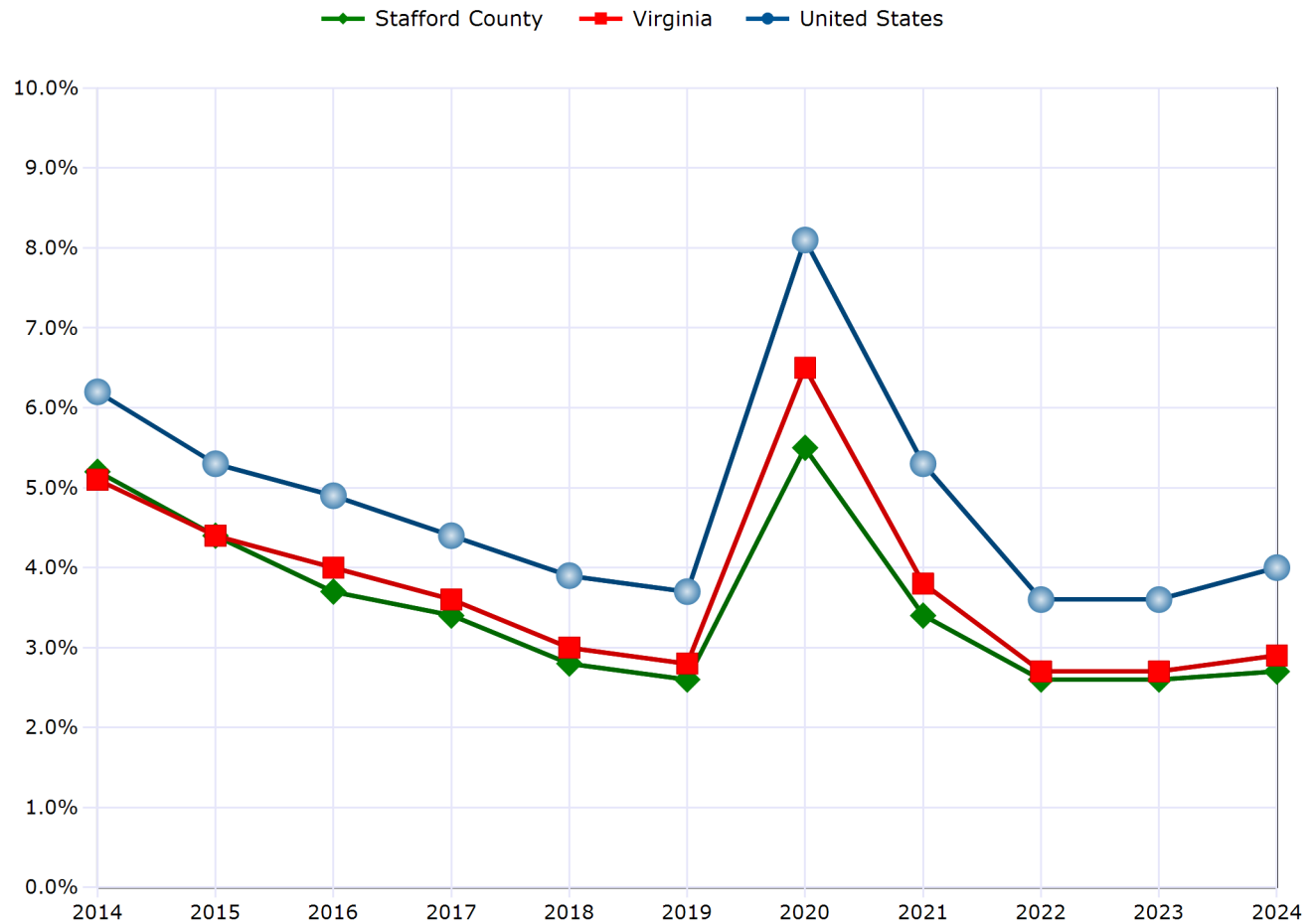
Unemployment insurance is a program for the accumulation of funds paid by employers to be used for the payment of unemployment insurance to workers during periods of unemployment which are beyond the workers' control. Unemployment insurance replaces a part of the worker's wage loss if he becomes eligible for payments.

Unemployment Rate

The number of unemployed people as a percentage of the labor force.

Unemployment Rates

Trends

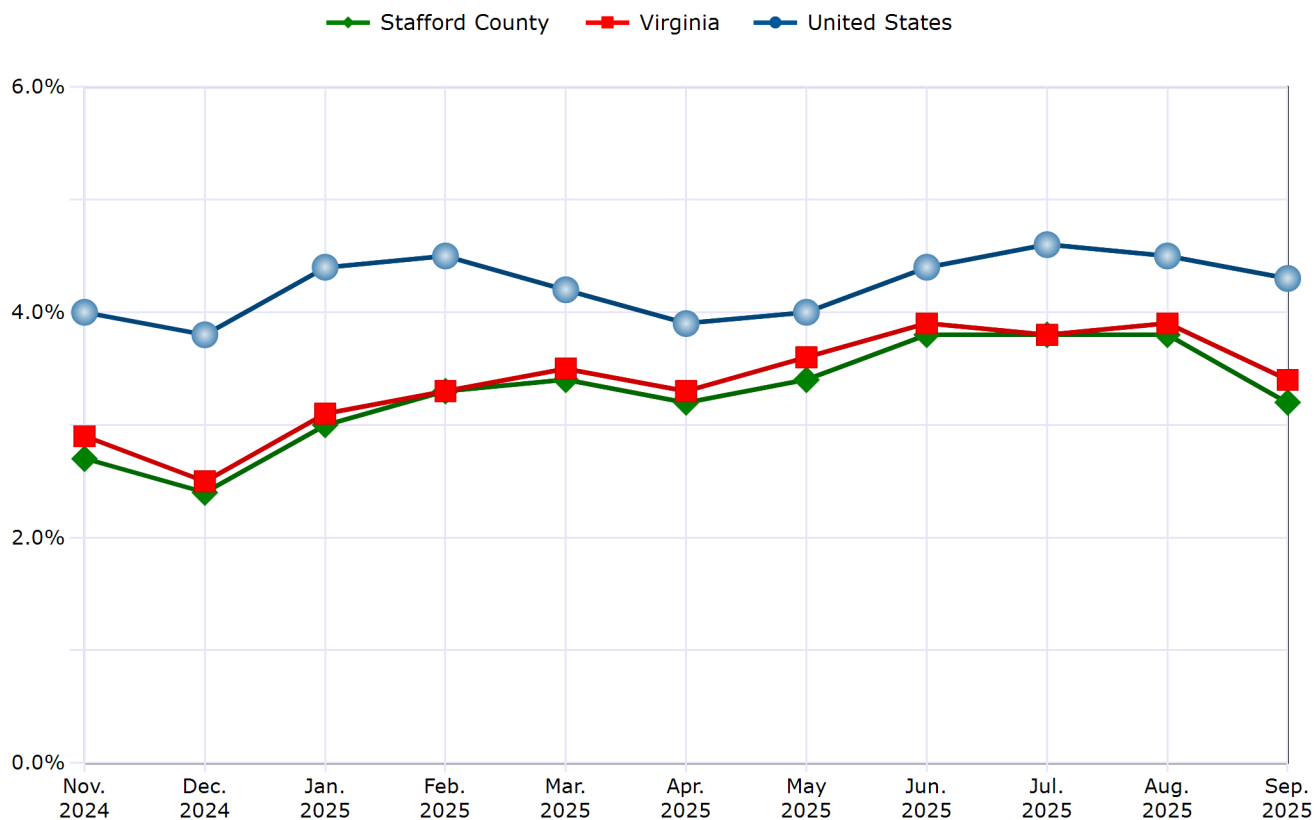


	Stafford County	Virginia	United States
2014	5.2%	5.1%	6.2%
2015	4.4%	4.4%	5.3%
2016	3.7%	4.0%	4.9%
2017	3.4%	3.6%	4.4%
2018	2.8%	3.0%	3.9%
2019	2.6%	2.8%	3.7%
2020	5.5%	6.5%	8.1%
2021	3.4%	3.8%	5.3%
2022	2.6%	2.7%	3.6%
2023	2.6%	2.7%	3.6%
2024	2.7%	2.9%	4.0%

Source: Virginia Works, Economic Information & Analytics,
Local Area Unemployment Statistics.

Unemployment Rates

Past 12 Months



	Stafford County	Virginia	United States
Nov. 2024	2.7%	2.9%	4.0%
Dec. 2024	2.4%	2.5%	3.8%
Jan. 2025	3.0%	3.1%	4.4%
Feb. 2025	3.3%	3.3%	4.5%
Mar. 2025	3.4%	3.5%	4.2%
Apr. 2025	3.2%	3.3%	3.9%
May 2025	3.4%	3.6%	4.0%
Jun. 2025	3.8%	3.9%	4.4%
Jul. 2025	3.8%	3.8%	4.6%
Aug. 2025	3.8%	3.9%	4.5%
Sep. 2025	3.2%	3.4%	4.3%

Source: Virginia Works, Economic Information & Analytics,
Local Area Unemployment Statistics.

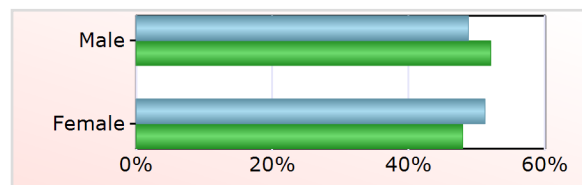
Characteristics of the Insured Unemployed

Total number of claimants: 453

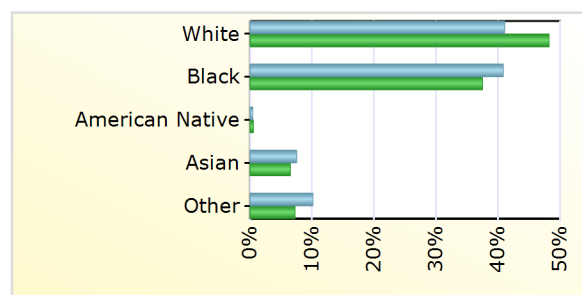
Stafford County - (453 claimants)

Virginia - (28,243 claimants)

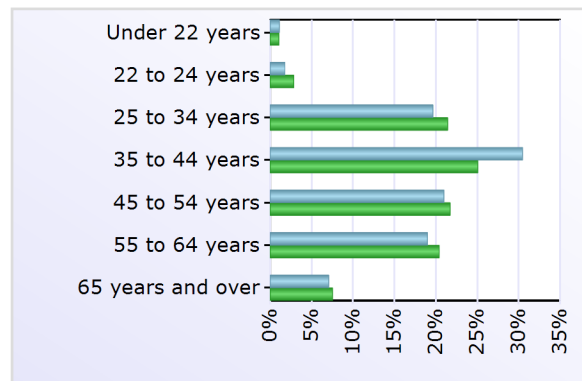
Gender	Stafford County	Virginia
Male	221	14,701
Female	232	13,542
Unspecified		



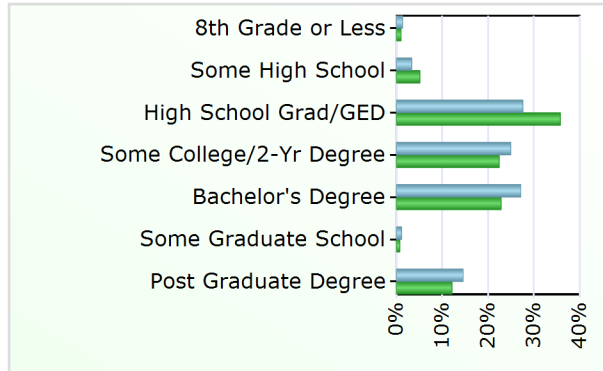
Race	Stafford County	Virginia
White	186	13,624
Black	185	10,594
American Native	2	146
Asian	34	1,832
Other	46	2,047



Age	Stafford County	Virginia
Under 22 years	5	294
22 to 24 years	8	801
25 to 34 years	89	6,051
35 to 44 years	138	7,078
45 to 54 years	95	6,136
55 to 64 years	86	5,761
65 years and over	32	2,122
Unknown		



Education	Stafford County	Virginia
8th Grade or Less	6	278
Some High School	15	1,442
High School Grad/GED	125	10,103
Some College/2-Yr Degree	113	6,336
Bachelor's Degree	123	6,452
Some Graduate School	5	208
Post Graduate Degree	66	3,424
Unknown		

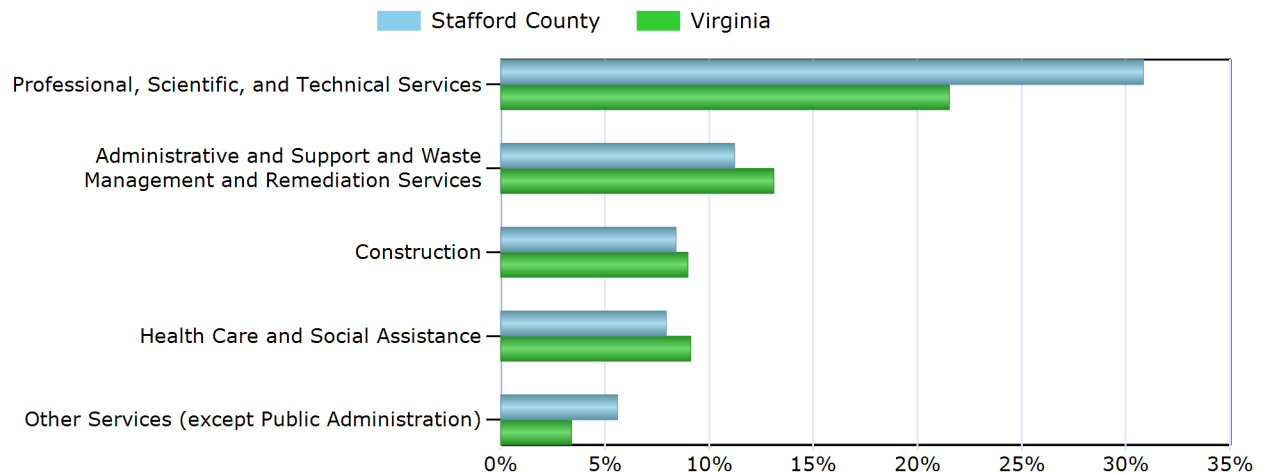


Source: Virginia Works, Economic Information & Analytics, Characteristics of the Insured Unemployed, February 2026.

Characteristics of the Insured Unemployed

Top 5 Industries With Largest Number of Claimants in Stafford County

(excludes unclassified)



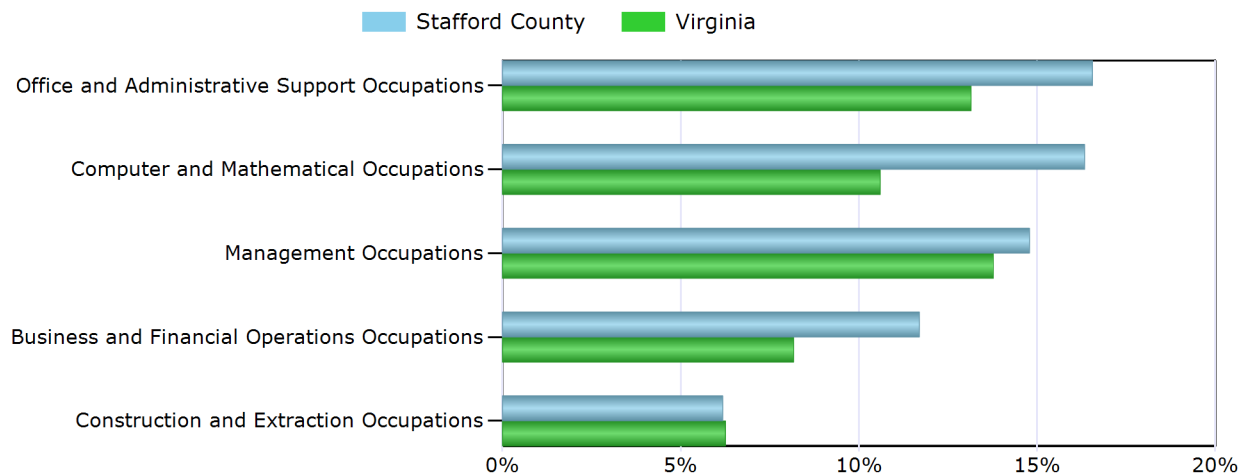
Industry	Stafford County	Virginia
Professional, Scientific, and Technical Services	132	5,213
Unclassified	56	2,691
Administrative and Support and Waste Management and Remediation Services	48	3,173
Construction	36	2,174
Health Care and Social Assistance	34	2,206
Other Services (except Public Administration)	24	821
Finance and Insurance	23	1,193
Wholesale Trade	15	842
Accommodation and Food Services	12	1,475
Information	10	739
Retail Trade	8	905
Educational Services	7	536
Real Estate and Rental and Leasing	6	510
Transportation and Warehousing	5	566
Arts, Entertainment, and Recreation	5	313
Management of Companies and Enterprises	4	289
Utilities	2	34
Agriculture, Forestry, Fishing and Hunting	1	119
Mining, Quarrying, and Oil and Gas Extraction		62
Manufacturing		358

Source: Virginia Works, Economic Information & Analytics, Characteristics of the Insured Unemployed, February 2026.

Characteristics of the Insured Unemployed

Top 5 Occupation Groups With Largest Number of Claimants in Stafford County

(excludes unknown occupations)

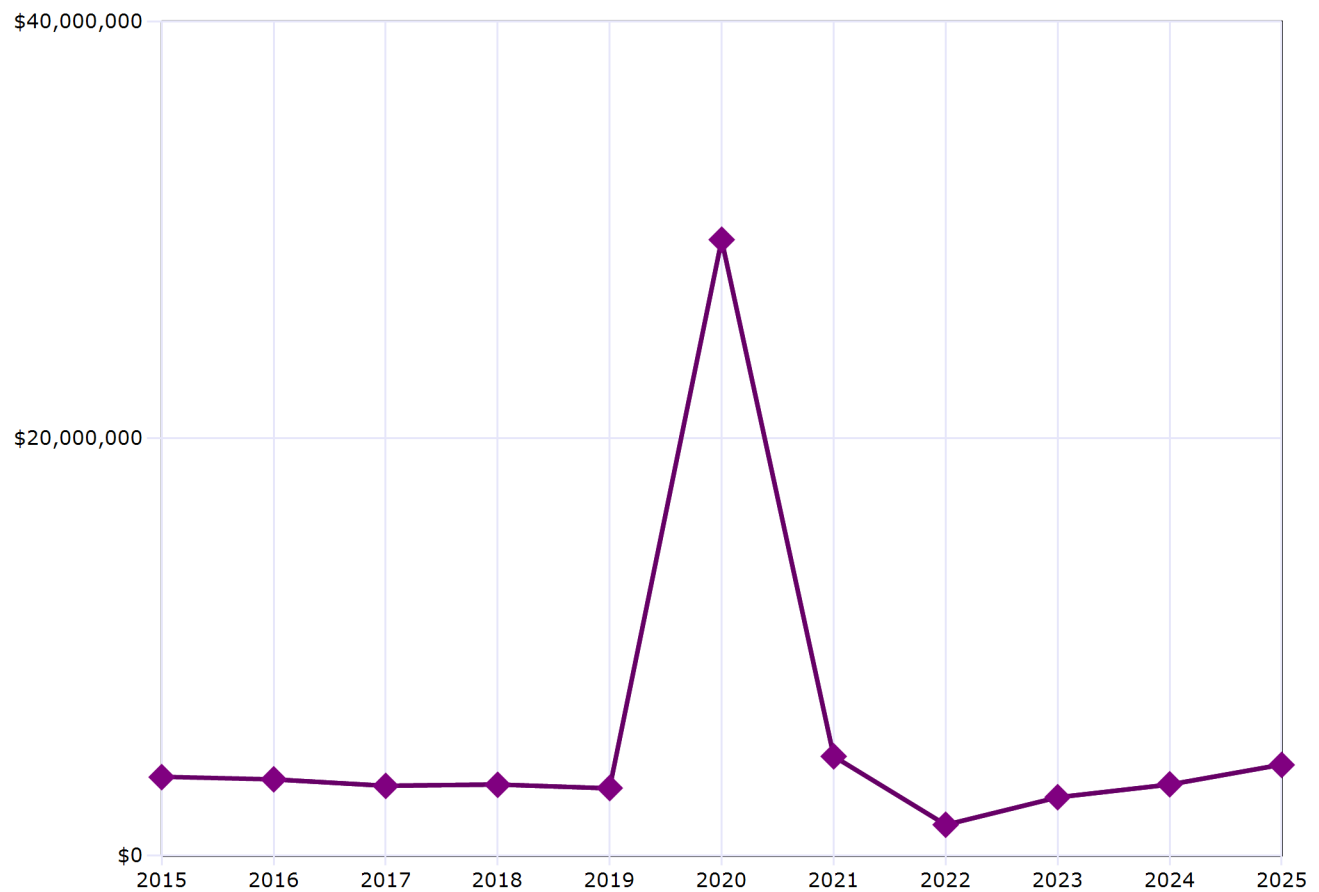


Occupation	Stafford County	Virginia
Office and Administrative Support Occupations	75	3,714
Computer and Mathematical Occupations	74	2,994
Management Occupations	67	3,891
Business and Financial Operations Occupations	53	2,308
Construction and Extraction Occupations	28	1,767
Transportation and Material Moving Occupations	25	1,809
Sales and Related Occupations	23	1,671
Healthcare Support Occupations	17	774
Arts, Design, Entertainment, Sports, and Media Occupations	16	1,039
Installation, Maintenance, and Repair Occupations	15	822
Architecture and Engineering Occupations	12	720
Food Preparation and Serving Related Occupations	9	1,149
Building and Grounds Cleaning and Maintenance Occupations	6	788
Life, Physical, and Social Science Occupations	5	356
Education, Training, and Library Occupations	5	393
Healthcare Practitioners and Technical Occupations	5	556
Protective Service Occupations	5	397
Personal Care and Service Occupations	5	386
Production Occupations	4	1,998
Community and Social Service Occupations	2	327
Legal Occupations	2	193
Farming, Fishing, and Forestry Occupations		128
Military Specific Occupations		63
Unknown Occupation Code		

*Source: Virginia Works, Economic Information & Analytics,
Characteristics of the Insured Unemployed, February 2026.*

Unemployment Insurance Payments

Trends

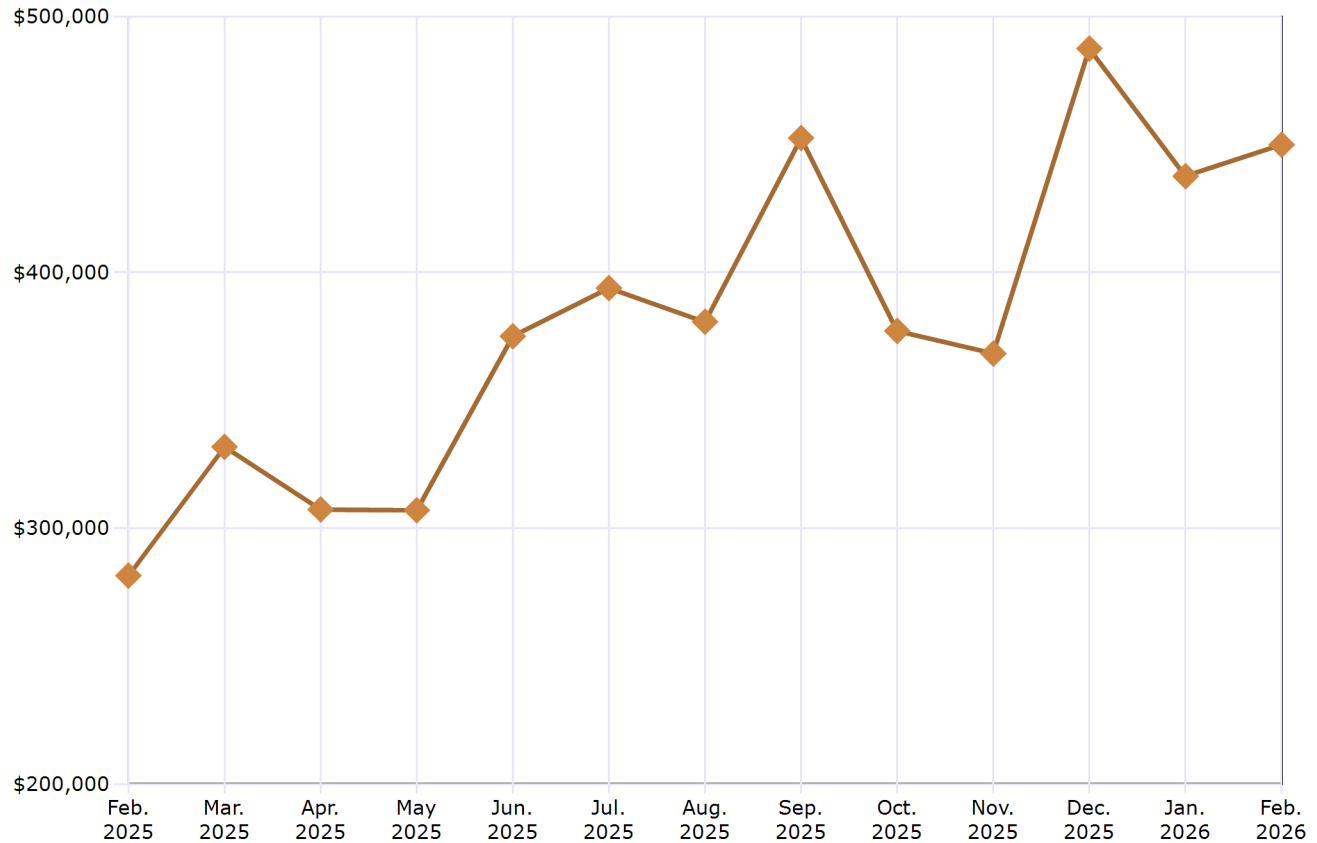


	Stafford County		Virginia	
	Weeks Paid	Amount Paid	Weeks Paid	Amount Paid
2015	11,997	\$3,764,032	1,198,476	\$351,290,100
2016	11,421	\$3,657,985	1,263,292	\$379,622,081
2017	10,681	\$3,344,553	1,114,650	\$336,664,624
2018	10,406	\$3,396,924	941,154	\$286,468,017
2019	9,784	\$3,240,101	867,371	\$269,014,541
2020	113,196	\$29,532,770	8,600,869	\$2,279,487,650
2021	16,016	\$4,760,173	1,601,885	\$458,078,646
2022	4,246	\$1,482,047	485,275	\$154,636,752
2023	8,054	\$2,801,404	685,711	\$232,048,074
2024	9,722	\$3,421,557	821,464	\$281,948,022
2025	12,223	\$4,351,517	958,475	\$336,260,202

Source: Virginia Employment Commission, Economic Information & Analytics, Unemployment Insurance Program.

Unemployment Insurance Payments

Past 12 Months



	Stafford County		Virginia	
	Weeks Paid	Amount Paid	Weeks Paid	Amount Paid
Feb. 2025	797	\$281,505	67,208	\$23,330,065
Mar. 2025	933	\$331,841	80,917	\$28,182,251
Apr. 2025	876	\$307,374	71,831	\$25,077,568
May 2025	878	\$307,049	74,874	\$26,230,081
Jun. 2025	1,043	\$375,051	90,500	\$31,564,327
Jul. 2025	1,085	\$393,884	88,280	\$30,838,363
Aug. 2025	1,076	\$380,719	85,310	\$29,930,805
Sep. 2025	1,264	\$452,537	91,400	\$32,455,220
Oct. 2025	1,063	\$377,139	77,985	\$27,634,073
Nov. 2025	1,037	\$368,284	70,847	\$25,162,669
Dec. 2025	1,349	\$487,482	90,198	\$31,953,758
Jan. 2026	1,216	\$437,600	82,981	\$29,321,778
Feb. 2026	1,235	\$449,903	81,372	\$29,629,263

Source: Virginia Works,
Unemployment Insurance Program.

Employers by Size of Establishment

	Stafford County	Virginia
0 to 4 employees	2,088	207,876
5 to 9 employees	449	41,114
10 to 19 employees	396	30,733
20 to 49 employees	276	22,801
50 to 99 employees	80	7,586
100 to 249 employees	38	4,170
250 to 499 employees	8	1,098
500 to 999 employees	***	371
1000 and over employees	***	279
	3,343	316,028

Employment by Size of Establishment

	Stafford County	Virginia
0 to 4 employees	2,770	264,518
5 to 9 employees	3,020	273,771
10 to 19 employees	5,355	417,792
20 to 49 employees	8,089	684,503
50 to 99 employees	5,602	521,848
100 to 249 employees	5,468	618,496
250 to 499 employees	2,713	377,264
500 to 999 employees	***	254,429
1000 and over employees	***	731,112
	51,359	4,143,733

Note: Asterisks (***) indicate non-disclosable data.

'Zero; no employment' typically represents new startup firms or sole-proprietorships.

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

50 Largest Employers

- | | |
|--|--|
| 1. Stafford County Schools | 26. Minnieland Private Day School |
| 2. U.S. Department of Defense | 27. Publix Nc Employee Services, LLC |
| 3. GEICO, Government Employees Insurance | 28. Administaff |
| 4. Amazon Fulfillment Services Inc. | 29. Chesapeake Medical Staffing, INC |
| 5. U.S. Federal Bureau of Investigation | 30. Unlimited Care 4 Corporation |
| 6. Amazon Logistics, Inc | 31. Pohanka Honda of Fredericksburg |
| 7. County of Stafford | 32. VDOT |
| 8. Brothers Rc Llc | 33. Postal Service |
| 9. Wal Mart | 34. Alexandria Insights Inc |
| 10. McLane Mid Atlantic | 35. ECC Enterprises Holding Company |
| 11. Mary Washington Hospital | 36. The Home Depot |
| 12. WaWa | 37. Oreilly Auto Parts |
| 13. Giant Food | 38. Rappahannock Area Community Services Board |
| 14. Rappahannock Regional Jail | 39. Carter Machinery Company |
| 15. YMCA | 40. Sheehy Toyota of Fredericksburg |
| 16. Lowes' Home Centers, Inc. | 41. Jeff Rouse Swim and Sport Center |
| 17. Vincam Total Source Michigan | 42. M & M Auto Parts Inc |
| 18. Federal Express | 43. Falls Run Nursing and Rehab |
| 19. Mantech Advanced Systems Inc | 44. Mlt Systems LLC |
| 20. Weis Markets | 45. Davis Defense Group Inc. |
| 21. McDonald's | 46. Global Healthcare Agency, Llc |
| 22. Simventions Inc | 47. Yinzer Logistics, Llc |
| 23. Target Corp | 48. Professional Building Maintenance |
| 24. Cox Automotive Corporate | 49. Panera Bread |
| 25. Hilldrup Transfer and Storage, Inc. | 50. U.S. Department of Commerce |

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

Did you know...

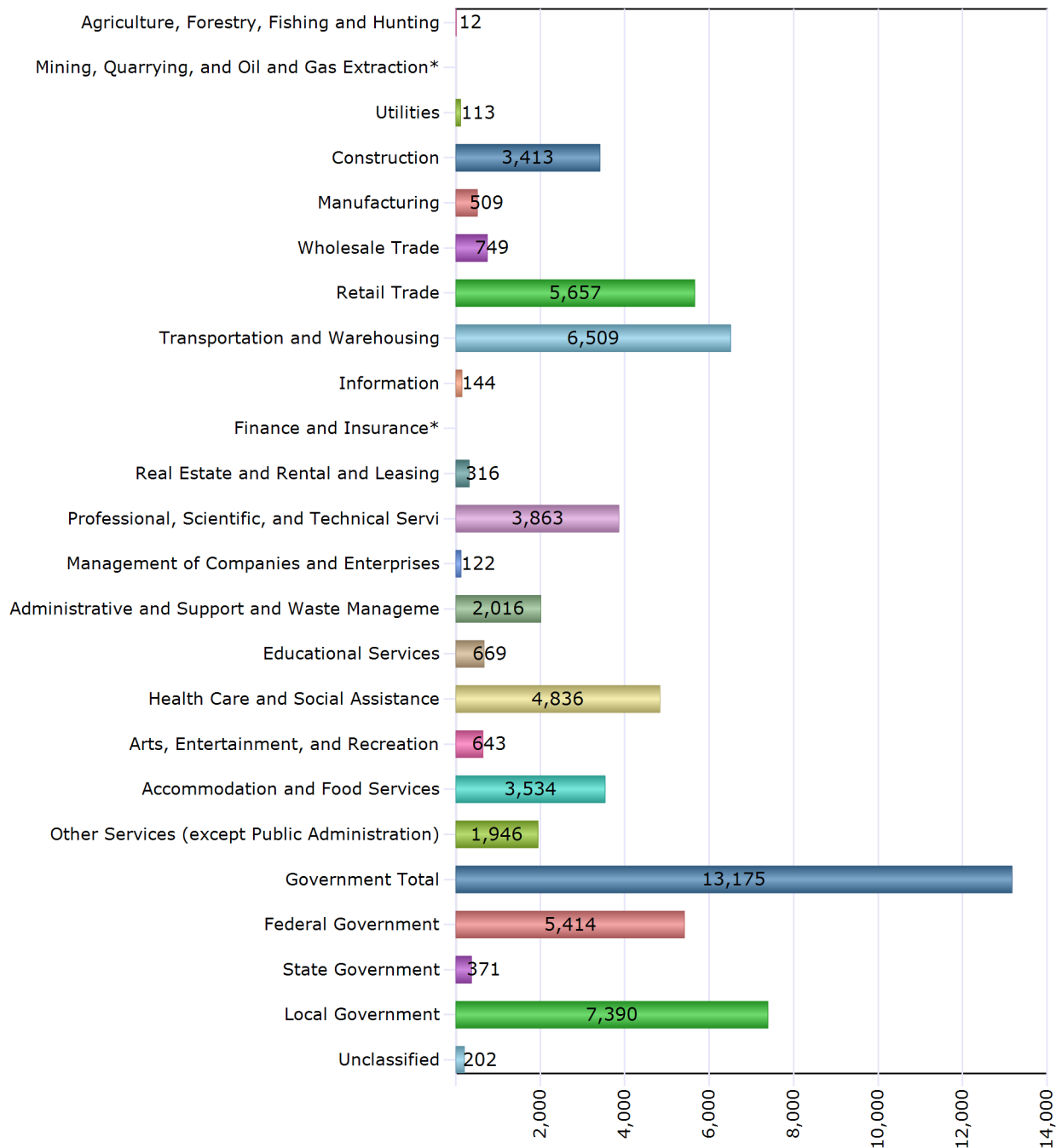
you can search over 300,000 employer listings on our website provided by Infogroup? This easy-to-use feature lets you search for employers by keyword, industry, sales volume, size range, and more!



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

www.VirginiaWorks.com

Employment by Industry

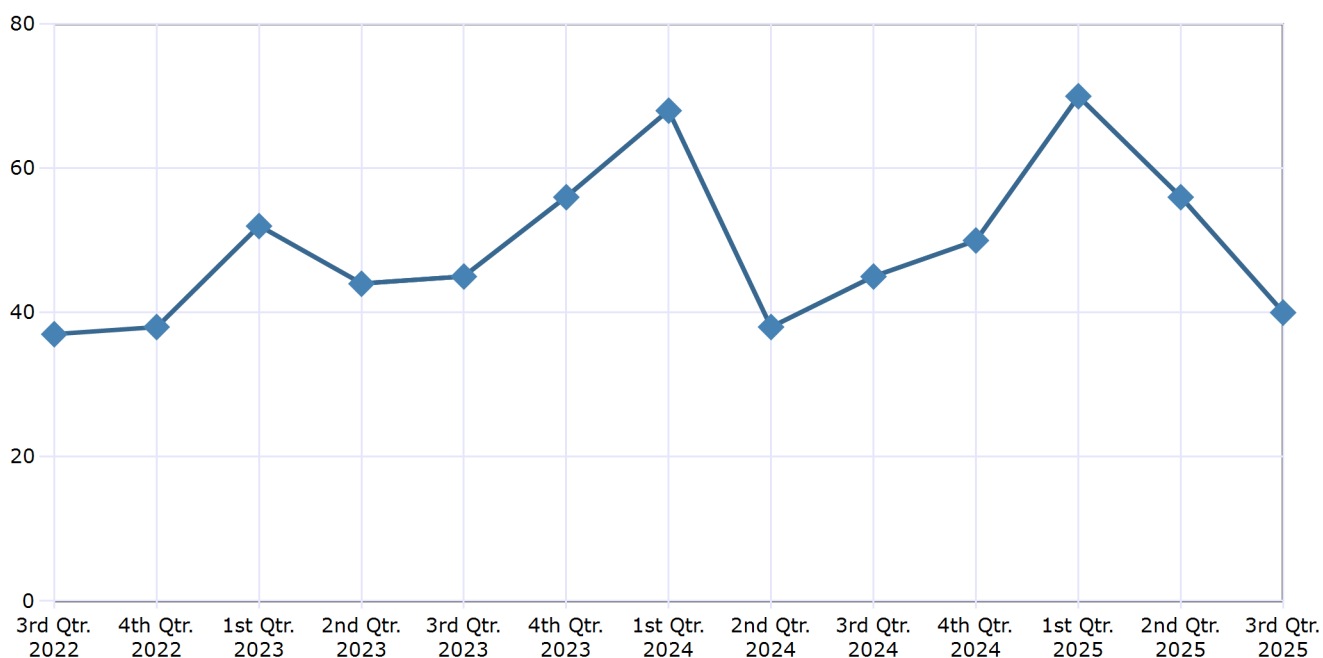


Total: 51,359

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

Source: Virginia Works, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

New Startup Firms



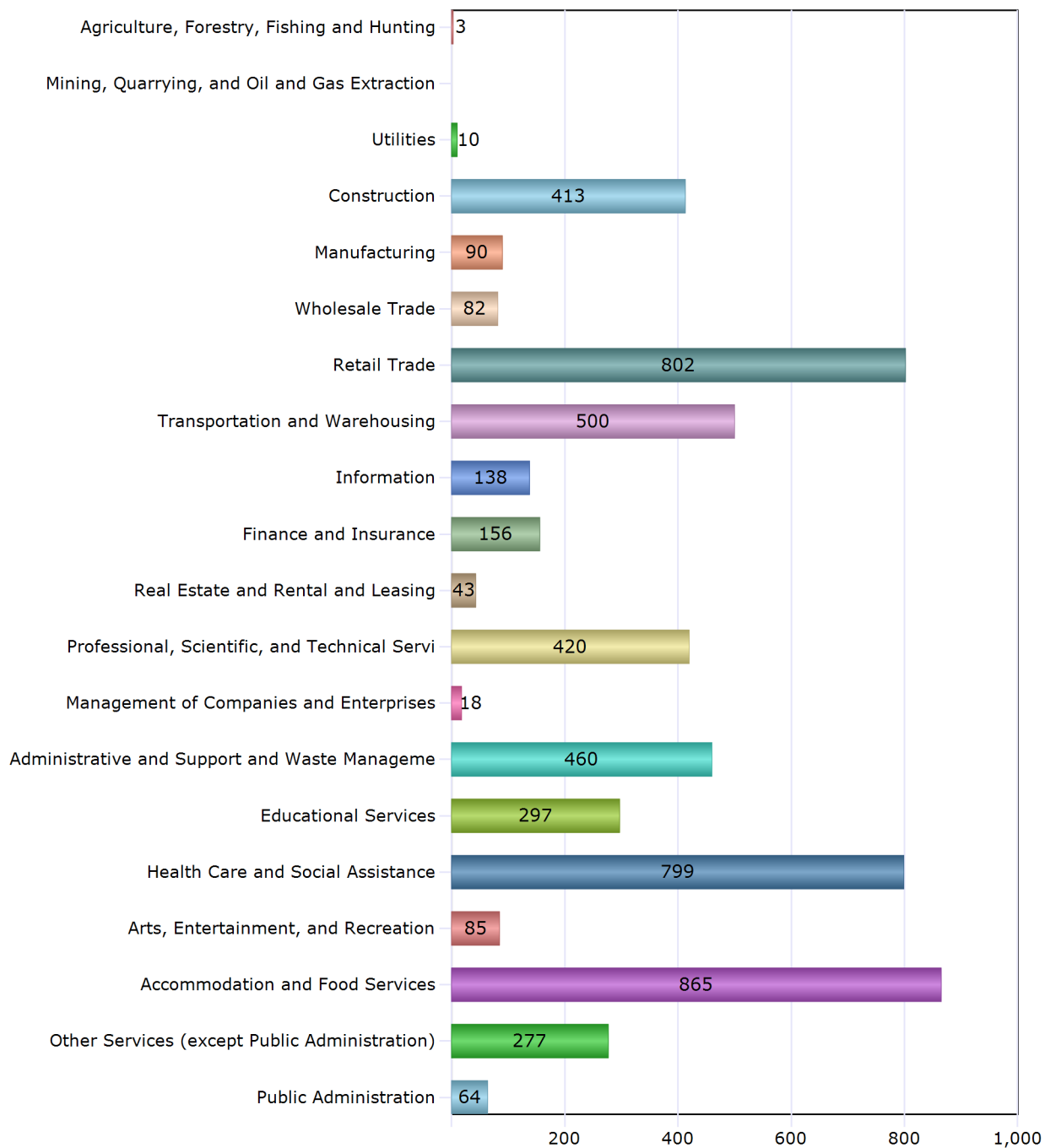
	Stafford County	Virginia
3rd Qtr. 2022	37	4,839
4th Qtr. 2022	38	4,162
1st Qtr. 2023	52	5,320
2nd Qtr. 2023	44	4,835
3rd Qtr. 2023	45	4,472
4th Qtr. 2023	56	4,454
1st Qtr. 2024	68	5,789
2nd Qtr. 2024	38	4,468
3rd Qtr. 2024	45	4,555
4th Qtr. 2024	50	4,203
1st Qtr. 2025	70	5,093
2nd Qtr. 2025	56	4,378
3rd Qtr. 2025	40	4,278

Note: The following criteria was used to define new startup firms:

- 1.) Setup and liability date both occurred during 3rd Quarter (July, August, September) 2025
- 2.) Establishment had no predecessor UI Account Number
- 3.) Private Ownership
- 4.) Average employment is less than 250
- 5.) For multi-unit establishments, the parent company must also meet the above criteria.

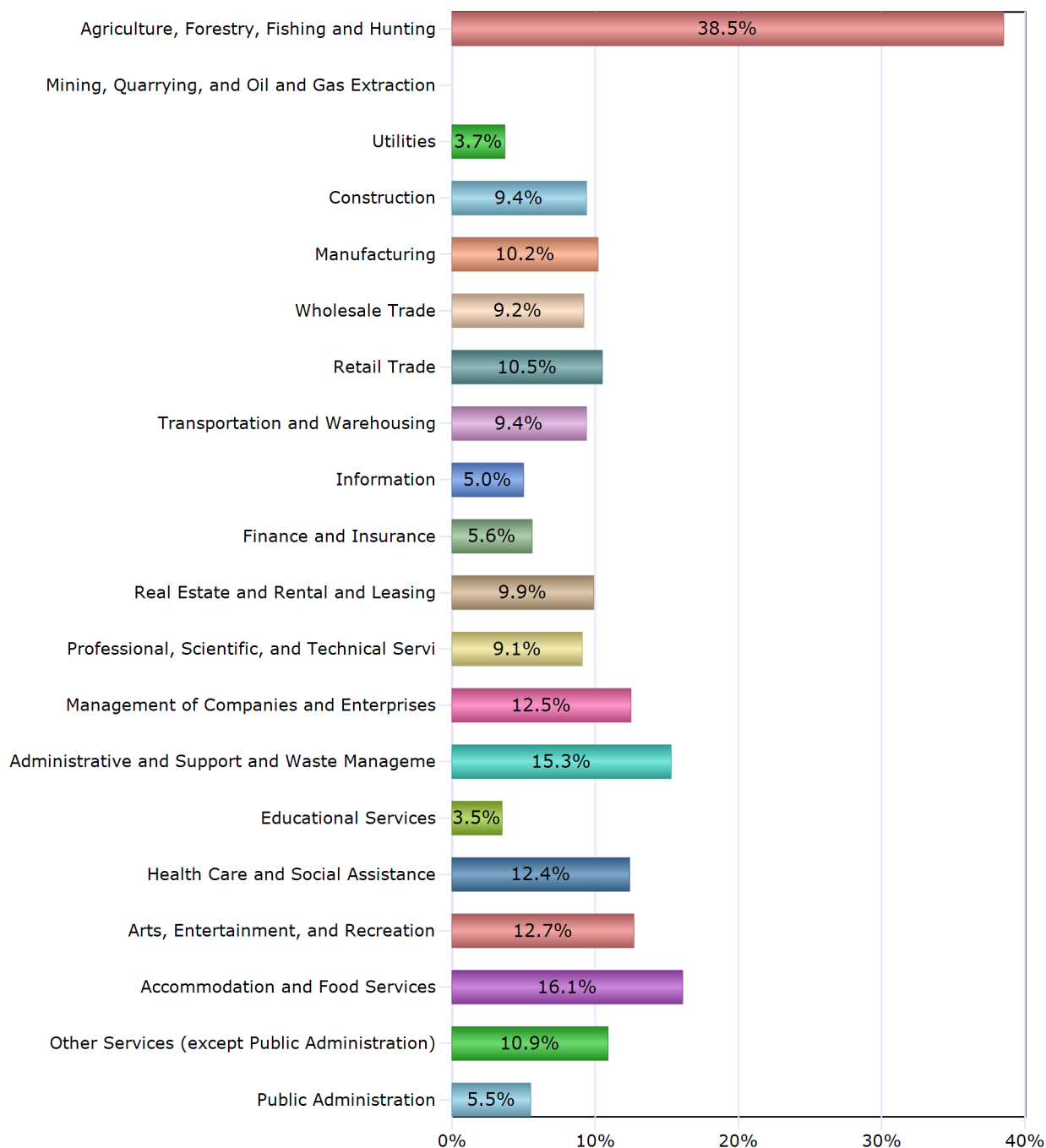
Source: Virginia Works, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

New Hires by Industry

**Total: 5,522**

Source: U.S. Census Bureau,
Local Employment Dynamics (LED) Program, 1st Quarter (January, February, March) 2024, all ownerships.

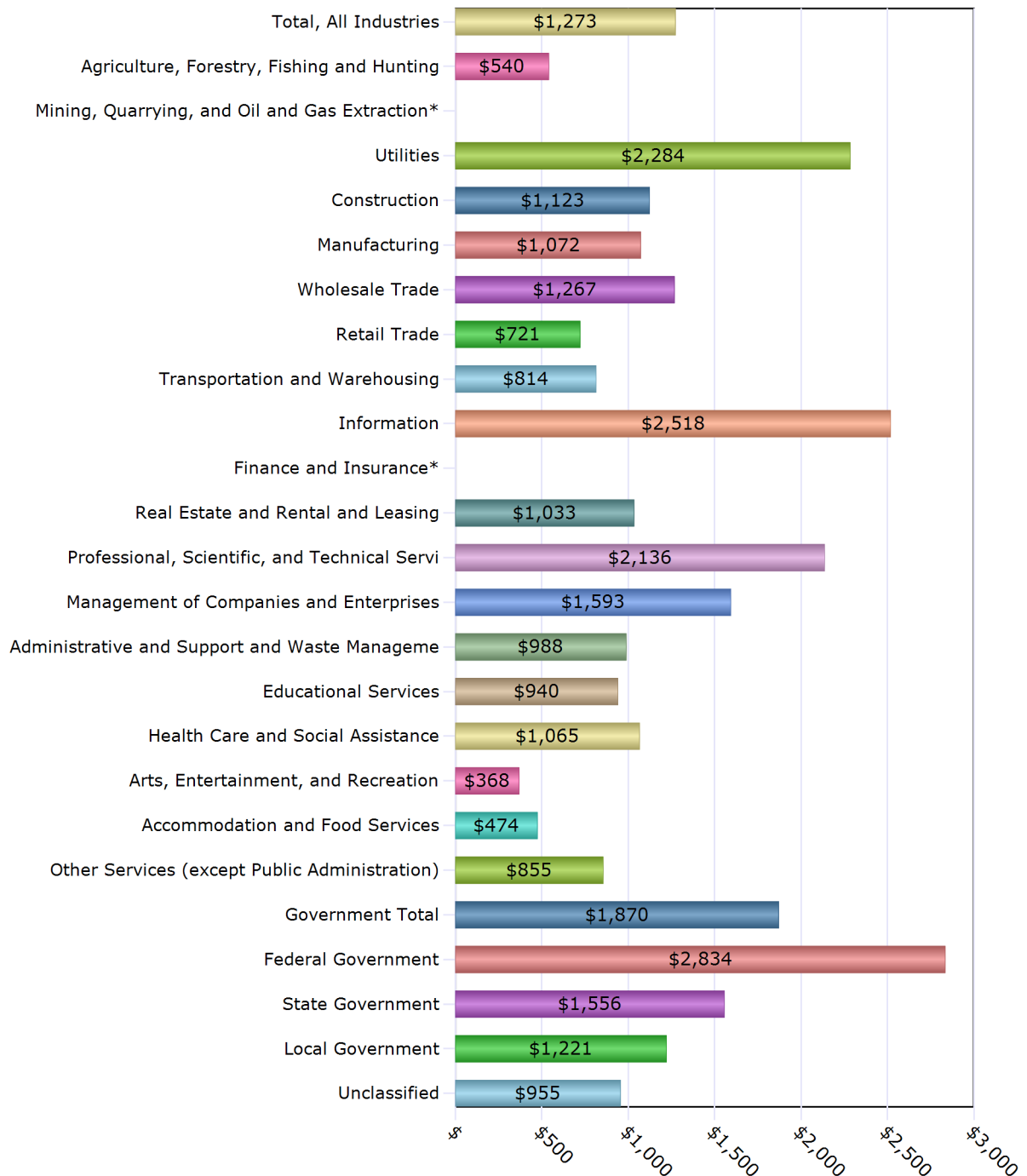
Turnover by Industry



Average: 11.0%

Source: U.S. Census Bureau,
Local Employment Dynamics (LED) Program, 4th Quarter (October, November, December) 2023, all ownerships.

Average Weekly Wage by Industry



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

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

Age of Workers by Industry

	14–18	19–21	22–24	25–34	35–44	45–54	55–64	65+
Total, All Industries	1,519	2,193	2,352	8,428	8,877	7,841	6,315	2,833
Agriculture, Forestry, Fishing and Hunting						3	3	
Mining, Quarrying, and Oil and Gas Extraction								
Utilities	2	7	12	78	82	51	46	12
Construction	43	102	129	493	625	600	511	317
Manufacturing	22	18	29	134	135	132	145	65
Wholesale Trade	4	23	32	157	210	175	136	105
Retail Trade	401	696	483	1,122	1,006	803	748	420
Transportation and Warehousing	11	92	239	589	488	413	361	121
Information		4	12	117	168	160	91	57
Finance and Insurance		28	96	845	876	605	329	76
Real Estate and Rental and Leasing	57	24	20	68	63	83	87	50
Professional, Scientific, and Technical Services	19	66	179	951	1,027	932	816	291
Management of Companies and Enterprises	10	7	6	23	26	21	17	7
Administrative and Support and Waste Management	21	92	125	509	566	570	451	232
Educational Services	47	108	201	935	1,289	1,286	927	294
Health Care and Social Assistance	56	223	292	1,005	1,044	858	712	268
Arts, Entertainment, and Recreation	51	36	35	126	92	84	60	29
Accommodation and Food Services	660	474	252	593	513	413	310	247
Other Services (except Public Administration)	90	151	122	358	361	379	336	173
Public Administration	20	41	84	318	300	269	219	64

Source: U.S. Census Bureau,
Local Employment Dynamics (LED) Program, 1st Quarter (January, February, March) 2024, all ownerships.

What is LED?

Developed by the U.S. Census Bureau, the Local Employment Dynamics (LED) program merges Virginia's Unemployment Compensation wage and employer records with Census demographic data. Read more about LED on the following website:

<http://lehd.did.census.gov/led/>



Industry Employment and Projections

Long Term (Period= 32)

	Employment			Percent	
	Estimated 2022	Projected 2032	Change	Total	Annual
Total, All Industries	187,370	198,338	10,968	5.85%	.57%
Total Self-Employed and Unpaid Family Workers	13,095	13,143	48	.37%	.04%
Agriculture, Forestry, Fishing and Hunting	***	***	***		***
Mining	***	***	***		***
Mining, Quarrying, and Oil and Gas Extraction	***	***	***		***
Utilities	***	***	***		***
Construction	8,420	8,814	394	4.68%	.46%
Manufacturing	8,564	8,594	30	.35%	.04%
Wholesale Trade	4,128	4,676	548	13.28%	1.25%
Retail Trade	22,600	22,289	-311	-1.38%	-.14%
Transportation and Warehousing	***	***	***		***
Information	1,589	1,635	46	2.89%	.29%
Finance and Insurance	6,319	6,828	509	8.06%	.78%
Real Estate and Rental and Leasing	1,987	2,039	52	2.62%	.26%
Professional, Scientific, and Technical Services	12,560	13,526	966	7.69%	.74%
Management of Companies and Enterprises	2,535	2,924	389	15.35%	1.44%
Administrative and Support and Waste Management and Remediation Services	7,537	7,451	-86	-1.14%	-.11%
Educational Services	17,139	17,523	384	2.24%	.22%
Health Care and Social Assistance	20,065	24,253	4,188	20.87%	1.91%
Arts, Entertainment, and Recreation	2,417	2,597	180	7.45%	.72%
Accommodation and Food Services	16,341	17,427	1,086	6.65%	.65%
Other Services (except Public Administration)	6,283	6,471	188	2.99%	.3%
Unclassified	22,551	24,408	1,857	8.23%	.79%

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Bay Consortium Region (LWDA XIII). No data available for Stafford County.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032.

Industry Employment and Projections

Short Term (Period= 47)

	Employment			Percent	
	Estimated 2025	Projected 2027	Change	Total	Annual
Total, All Industries	4,319,847	4,382,412	62,565	1.45%	.72%
Total Self-Employed and Unpaid Family Workers	253,078	255,333	2,255	.89%	.44%
Agriculture, Forestry, Fishing and Hunting	3,857	3,873	16	.41%	.21%
Mining	5,372	5,497	125	2.33%	1.16%
Mining, Quarrying, and Oil and Gas Extraction	5,372	5,497	125	2.33%	1.16%
Utilities	11,712	11,910	198	1.69%	.84%
Construction	219,547	226,921	7,374	3.36%	1.67%
Manufacturing	238,058	234,873	-3,185	-1.34%	-.67%
Wholesale Trade	112,712	113,135	423	.38%	.19%
Retail Trade	386,855	387,938	1,083	.28%	.14%
Transportation and Warehousing	159,919	165,200	5,281	3.3%	1.64%
Information	68,110	67,939	-171	-.25%	-.13%
Finance and Insurance	145,064	147,146	2,082	1.44%	.72%
Real Estate and Rental and Leasing	60,150	61,801	1,651	2.74%	1.36%
Professional, Scientific, and Technical Services	469,676	484,434	14,758	3.14%	1.56%
Management of Companies and Enterprises	90,454	93,301	2,847	3.15%	1.56%
Administrative and Support and Waste Management and Remediation Services	242,667	243,735	1,068	.44%	.22%
Educational Services	390,264	397,202	6,938	1.78%	.89%
Health Care and Social Assistance	520,156	541,236	21,080	4.05%	2.01%
Arts, Entertainment, and Recreation	60,709	60,321	-388	-.64%	-.32%
Accommodation and Food Services	338,240	338,976	736	.22%	.11%
Other Services (except Public Administration)	135,059	137,865	2,806	2.08%	1.03%
Unclassified	408,188	403,776	-4,412	-1.08%	-.54%

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

Source: Virginia Works, Economic Information & Analytics,
Short Term Industry and Occupational Projections, 2025-2027.

Occupation Employment and Projections

Long Term (Period= 32)

	Employment			Openings		
	Estimated 2022	Projected 2032	% Change	Replace -ments	Growth	Total
Total, All Occupations	187,370	198,338	5.85%	213,434	10,968	224,402
Management Occupations	14,084	14,726	4.56%	12,035	642	12,677
Business and Financial Operations Occupations	13,096	14,251	8.82%	10,879	1,155	12,034
Computer and Mathematical Occupations	8,652	9,946	14.96%	5,440	1,294	6,734
Architecture and Engineering Occupations	4,750	4,982	4.88%	3,097	232	3,329
Life, Physical, and Social Science Occupations	1,867	2,007	7.5%	1,472	140	1,612
Community and Social Service Occupations	2,475	2,891	16.81%	2,223	416	2,639
Legal Occupations	941	967	2.76%	688	26	714
Education, Training, and Library Occupations	11,801	12,317	4.37%	10,253	516	10,769
Arts, Design, Entertainment, Sports, and Media Occupations	2,017	2,144	6.3%	2,076	127	2,203
Healthcare Practitioners and Technical Occupations	9,036	10,373	14.8%	5,306	1,337	6,643
Healthcare Support Occupations	7,191	9,402	30.75%	11,903	2,211	14,114
Protective Service Occupations	4,543	4,781	5.24%	5,263	238	5,501
Food Preparation and Serving Related Occupations	15,514	16,496	6.33%	30,468	982	31,450
Building and Grounds Cleaning and Maintenance Occupations	6,007	5,919	-1.47%	7,949	-88	7,861
Personal Care and Service Occupations	4,743	5,289	11.51%	8,490	546	9,036
Sales and Related Occupations	18,776	18,615	-.86%	25,142	-161	24,981
Office and Administrative Support Occupations	19,798	19,474	-1.64%	22,263	-324	21,939
Farming, Fishing, and Forestry Occupations	4,928	4,882	-.93%	7,150	-46	7,104
Construction and Extraction Occupations	7,868	8,293	5.4%	6,798	425	7,223
Installation, Maintenance, and Repair Occupations	7,806	7,976	2.18%	6,862	170	7,032
Production Occupations	5,795	5,659	-2.35%	6,456	-136	6,320
Transportation and Material Moving Occupations	15,682	16,948	8.07%	21,221	1,266	22,487

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Bay Consortium Region (LWDA XIII). No data available for Stafford County.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032.

Occupation Employment and Projections

Short Term (Period= 47)

	Employment			Openings		
	Estimated 2025	Projected 2027	% Change	Replace -ments	Growth	Total
Total, All Occupations	4,319,847	4,382,412	1.45%	920,875	62,565	983,440
Management Occupations	305,043	309,283	1.39%	45,412	4,240	49,652
Business and Financial Operations Occupations	416,396	422,295	1.42%	65,996	5,899	71,895
Computer and Mathematical Occupations	243,901	251,582	3.15%	28,466	7,681	36,147
Architecture and Engineering Occupations	74,632	75,477	1.13%	9,876	845	10,721
Life, Physical, and Social Science Occupations	49,909	50,777	1.74%	8,029	868	8,897
Community and Social Service Occupations	64,908	67,075	3.34%	10,838	2,167	13,005
Legal Occupations	39,357	39,476	.3%	4,981	119	5,100
Education, Training, and Library Occupations	257,764	262,907	2%	46,232	5,143	51,375
Arts, Design, Entertainment, Sports, and Media Occupations	72,619	73,359	1.02%	14,083	740	14,823
Healthcare Practitioners and Technical Occupations	236,818	243,569	2.85%	26,634	6,751	33,385
Healthcare Support Occupations	164,502	172,170	4.66%	48,123	7,668	55,791
Protective Service Occupations	111,007	112,088	.97%	27,276	1,081	28,357
Food Preparation and Serving Related Occupations	322,749	322,901	.05%	122,895	152	123,047
Building and Grounds Cleaning and Maintenance Occupations	145,224	148,976	2.58%	39,337	3,752	43,089
Personal Care and Service Occupations	115,912	119,345	2.96%	39,994	3,433	43,427
Sales and Related Occupations	425,112	426,079	.23%	108,828	967	109,795
Office and Administrative Support Occupations	429,812	429,076	-.17%	97,116	-736	96,380
Farming, Fishing, and Forestry Occupations	5,543	5,476	-1.21%	1,583	-67	1,516
Construction and Extraction Occupations	196,719	201,956	2.66%	33,885	5,237	39,122
Installation, Maintenance, and Repair Occupations	168,321	170,948	1.56%	29,479	2,627	32,106
Production Occupations	168,073	165,494	-1.53%	35,766	-2,579	33,187
Transportation and Material Moving Occupations	305,526	312,103	2.15%	76,046	6,577	82,623

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Virginia Statewide. No data available for Stafford County.

Source: Virginia Works, Economic Information & Analytics,
Short Term Industry and Occupational Projections, 2025-2027.

Growth Occupations

	Employment			Openings			Average Annual Salary
	Estimated 2022	Projected 2032	% Change	Replace-ments	Growth	Total	
Nurse Practitioners	281	499	77.58%	173	218	391	\$128,660
Physician Assistants	229	344	50.22%	141	115	256	\$146,990
Veterinary Assistants and Laboratory Animal Caretakers	201	294	46.27%	478	93	571	\$38,920
Veterinarians	162	234	44.44%	64	72	136	\$136,550
Physical Therapist Assistants	143	199	39.16%	231	56	287	\$68,640
Medical and Health Services Managers	362	496	37.02%	296	134	430	\$139,960
Medical Assistants	795	1,050	32.08%	1,174	255	1,429	\$43,640
Cooks, Restaurant	1,755	2,216	26.27%	2,973	461	3,434	\$38,950
Speech-Language Pathologists	180	227	26.11%	107	47	154	\$91,510
Physical Therapists	302	378	25.17%	131	76	207	\$103,850
Massage Therapists	101	125	23.76%	151	24	175	\$68,800
Operations Research Analysts	283	343	21.2%	188	60	248	\$138,140
Preschool Teachers, Except Special Education	590	705	19.49%	678	115	793	\$41,320
Logisticians	427	509	19.2%	369	82	451	\$110,620
Medical Secretaries	570	676	18.6%	645	106	751	\$46,540
Social and Community Service Managers	119	141	18.49%	100	22	122	\$91,420
Social and Human Service Assistants	470	556	18.3%	519	86	605	\$45,340
Financial Managers	455	536	17.8%	330	81	411	\$172,720
Personal Financial Advisors	138	161	16.67%	92	23	115	\$130,550
Dental Assistants	380	441	16.05%	562	61	623	\$50,420

Note: Asterisks (***) indicate non-disclosable data.

Projections and OES wage data are for Bay Consortium Region (LWDA XIII). No data available for Stafford County.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032
Occupational Employment Statistics (OES) Survey, 2024.

Declining Occupations

	Employment			Openings		
	Estimated 2022	Projected 2032	% Change	Replace-ments	Growth	Total
Executive Secretaries and Executive Administrative Assistants	234	192	-17.95%	216	-42	174
Welders, Cutters, Solderers, and Brazers	220	183	-16.82%	194	-37	157
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,626	1,460	-10.21%	1,710	-166	1,544
Cooks, Fast Food	798	724	-9.27%	1,139	-74	1,065
Tellers	392	357	-8.93%	380	-35	345
Shipping, Receiving, and Traffic Clerks	661	614	-7.11%	643	-47	596
Parts Salespersons	522	485	-7.09%	585	-37	548
Cashiers	5,375	5,001	-6.96%	10,018	-374	9,644
Automotive Service Technicians and Mechanics	1,492	1,399	-6.23%	1,217	-93	1,124
Chief Executives	423	397	-6.15%	269	-26	243
Tire Repairers and Changers	112	106	-5.36%	120	-6	114
First-Line Supervisors of Retail Sales Workers	2,472	2,360	-4.53%	2,367	-112	2,255
Office and Administrative Support Workers, All Other	223	213	-4.48%	228	-10	218
Bookkeeping, Accounting, and Auditing Clerks	1,684	1,611	-4.33%	1,908	-73	1,835
Office Clerks, General	3,177	3,043	-4.22%	3,707	-134	3,573
Helpers--Production Workers	587	565	-3.75%	897	-22	875
Customer Service Representatives	2,826	2,730	-3.4%	3,732	-96	3,636
Helpers--Electricians	142	138	-2.82%	154	-4	150
Telecommunications Equipment Installers and Repairers, Except Line Installers	142	138	-2.82%	141	-4	137
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	3,637	3,535	-2.8%	5,278	-102	5,176

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Bay Consortium Region (LWDA XIII). No data available for Stafford County.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032.

Consumer Price Index (CPI)

All Urban Consumers (CPI-U)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.	% chg
2014	233.916	234.781	236.293	237.072	237.900	238.343	238.250	237.852	238.031	237.433	236.151	234.812	236.736	1.6
2015	233.707	234.722	236.119	236.599	237.805	238.638	238.654	238.316	237.945	237.838	237.336	236.525	237.017	0.1
2016	236.916	237.111	238.132	239.261	240.229	241.018	240.628	240.849	241.428	241.729	241.353	241.432	240.007	1.3
2017	242.839	243.603	243.801	244.524	244.733	244.955	244.786	245.519	246.819	246.663	246.669	246.524	245.120	2.1
2018	247.867	248.991	249.554	250.546	251.588	251.989	252.006	252.146	252.439	252.885	252.038	251.233	251.107	2.4
2019	251.712	252.776	254.202	255.548	256.092	256.143	256.571	256.558	256.759	257.346	257.208	256.974	255.657	1.8
2020	257.971	258.678	258.115	256.389	256.394	257.797	259.101	259.918	260.280	260.388	260.229	260.474	258.811	1.2
2021	261.582	263.014	264.877	267.054	269.195	271.696	273.003	273.567	274.310	276.589	277.948	278.802	270.970	4.7
2022	281.148	283.716	287.504	289.109	292.296	296.311	296.276	296.171	296.808	298.012	297.711	296.797	292.655	8.0
2023	299.170	300.840	301.836	303.363	304.127	305.109	305.691	307.026	307.789	307.671	307.051	306.746	304.702	4.1
2024	308.417	310.326	312.332	313.548	314.069	314.175	314.540	314.796	315.301	315.664	315.493	315.605	313.689	2.9

Urban Wage Earners and Clerical Workers (CPI-W)

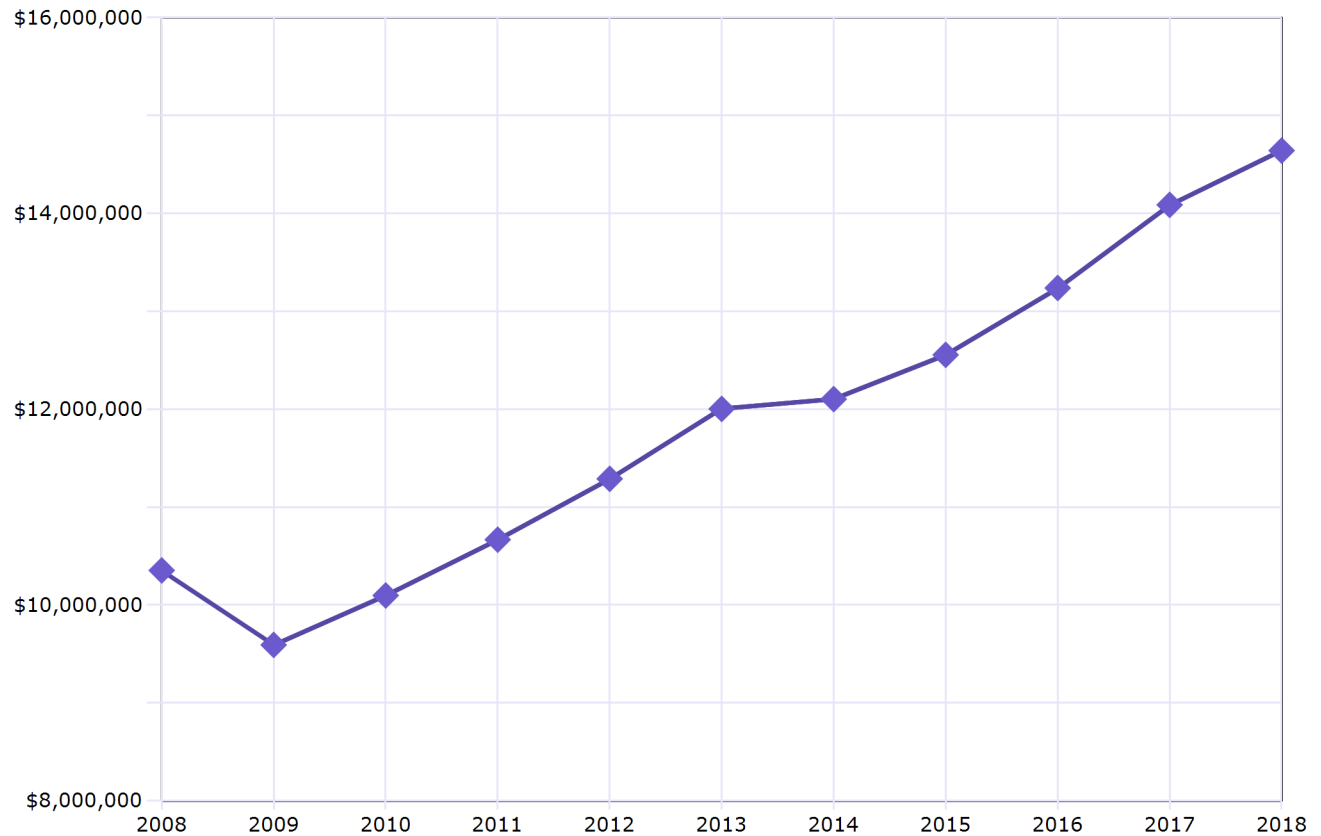
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.	% chg
2014	230.040	230.871	232.560	233.443	234.216	234.702	234.525	234.030	234.170	233.229	231.551	229.909	232.771	1.5
2015	228.294	229.421	231.055	231.520	232.908	233.804	233.806	233.366	232.661	232.373	231.721	230.791	231.810	-0.4
2016	231.061	230.972	232.209	233.438	234.436	235.289	234.771	234.904	235.495	235.732	235.215	235.390	234.076	1.0
2017	236.854	237.477	237.656	238.432	238.609	238.813	238.617	239.448	240.939	240.573	240.666	240.526	239.051	2.1
2018	241.919	242.988	243.463	244.607	245.770	246.196	246.155	246.336	246.565	247.038	245.933	244.786	245.146	2.5
2019	245.133	246.218	247.768	249.332	249.871	249.747	250.236	250.112	250.251	250.894	250.644	250.452	249.222	1.7
2020	251.361	251.935	251.375	249.515	249.521	251.054	252.636	253.597	254.004	254.076	253.826	254.081	252.248	1.2
2021	255.296	256.843	258.935	261.237	263.612	266.412	267.789	268.387	269.086	271.552	273.042	273.925	265.510	5.3
2022	276.296	278.943	283.176	284.575	288.022	292.542	292.219	291.629	291.854	293.003	292.495	291.051	287.984	8.5
2023	293.565	295.057	296.021	297.730	298.382	299.394	299.899	301.551	302.257	302.071	301.224	300.728	298.990	3.8
2024	302.201	304.284	306.502	307.811	308.163	308.054	308.501	308.640	309.046	309.358	308.998	309.067	307.552	2.9

Note: CPI data is for the United States only. No data available for Stafford County.

The CPI-U includes expenditures by urban wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees and others not in the labor force. The CPI-W only includes expenditures by those in hourly wage earning or clerical jobs.

*Source: Bureau of Labor Statistics,
Consumer Price Indexes (CPI) Program.*

Local Option Sales Tax

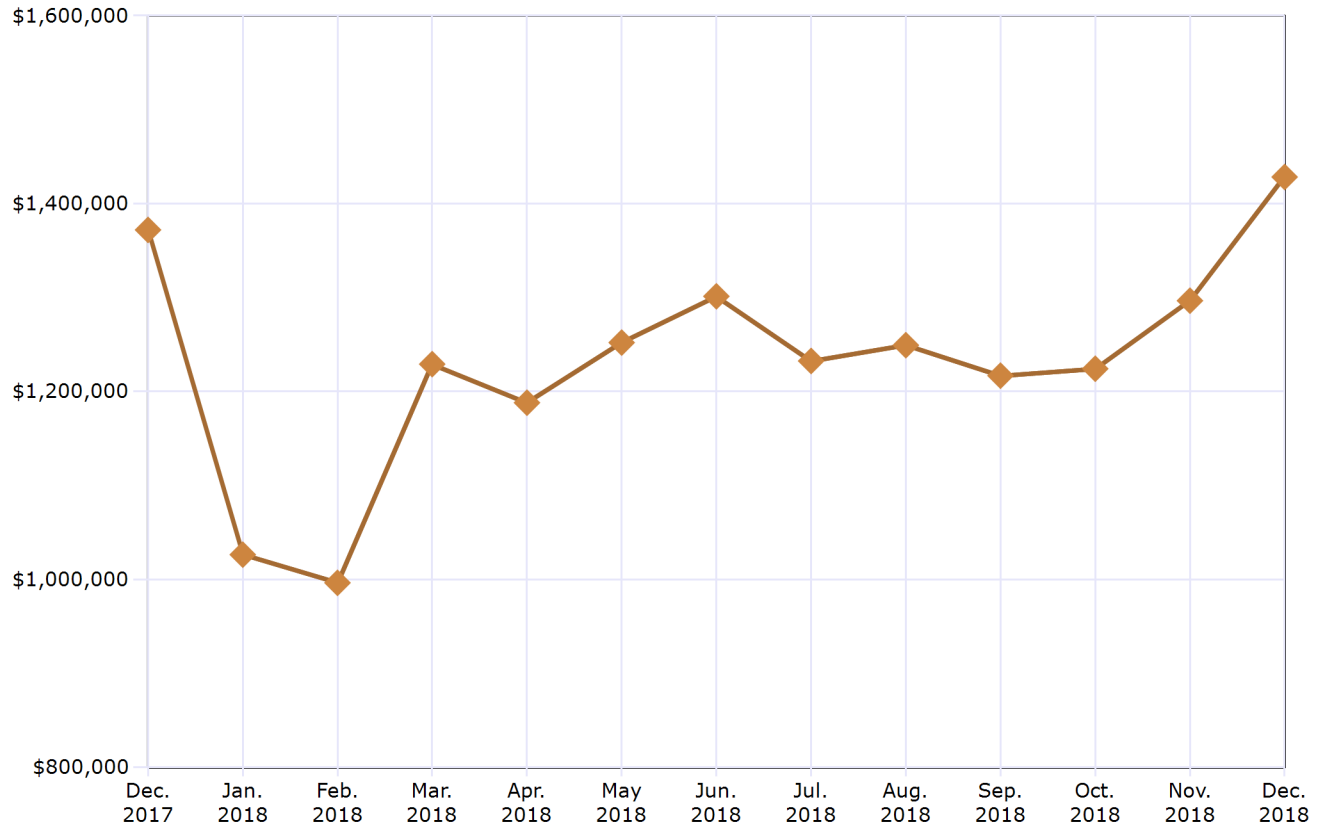
Trends

	Stafford County	Virginia
2008	\$10,353,197	\$1,032,815,078
2009	\$9,592,148	\$979,594,664
2010	\$10,097,045	\$992,820,512
2011	\$10,667,196	\$1,035,981,229
2012	\$11,288,831	\$1,080,663,042
2013	\$12,003,184	\$1,093,292,668
2014	\$12,103,472	\$1,131,194,860
2015	\$12,555,055	\$1,179,611,271
2016	\$13,238,321	\$1,202,257,995
2017	\$14,087,664	\$1,232,981,515
2018	\$14,642,137	\$1,282,022,261

Note: This data is based on Virginia sales tax revenues deposited, rather than the actual taxable sales figures as reported on a dealer's return.

Source: Virginia Department of Taxation, Revenue Forecasting.

Local Option Sales Tax

Past 12 Months

	Stafford County	Virginia
Dec. 2017	\$1,372,035	\$123,193,863
Jan. 2018	\$1,026,480	\$90,794,207
Feb. 2018	\$996,502	\$90,576,093
Mar. 2018	\$1,229,200	\$107,834,402
Apr. 2018	\$1,188,168	\$102,372,977
May 2018	\$1,252,117	\$110,211,496
Jun. 2018	\$1,301,382	\$112,529,037
Jul. 2018	\$1,232,574	\$107,211,401
Aug. 2018	\$1,249,363	\$109,428,585
Sep. 2018	\$1,216,948	\$105,468,340
Oct. 2018	\$1,224,340	\$107,742,243
Nov. 2018	\$1,296,717	\$112,348,128
Dec. 2018	\$1,428,346	\$125,505,352

Note: This data is based on Virginia sales tax revenues deposited, rather than the actual taxable sales figures as reported on a dealer's return.

*Source: Virginia Department of Taxation,
Revenue Forecasting.*

IV. Education Profile

Overview

The Education Profile for Stafford County provides an assortment of data collected from the United States Census Bureau and the National Center for Education Statistics (NCES).



Related Terms and Definitions

Associate's degree

An award that normally requires at least two but less than four years of full-time equivalent college work.

Bachelor's degree

An award that normally requires at least four but not more than five years of full-time equivalent college-level work.

Post-baccalaureate certificate

An award that requires completion of an organized program of study equivalent to 18 semester credit hours beyond the bachelor's. It is designed for persons who have completed a bachelor's degree, but do not meet the requirements of a master's degree.

Master's degree

An award that requires the successful completion of a program of study of at least the full-time equivalent of one but not more than two academic years of work beyond the bachelor's degree.

Post-master's certificate

An award that requires completion of an organized program of study equivalent to 24 semester credit hours beyond the master's degree, but does not meet the requirements of academic degrees at the doctor's level.

Doctor's degree

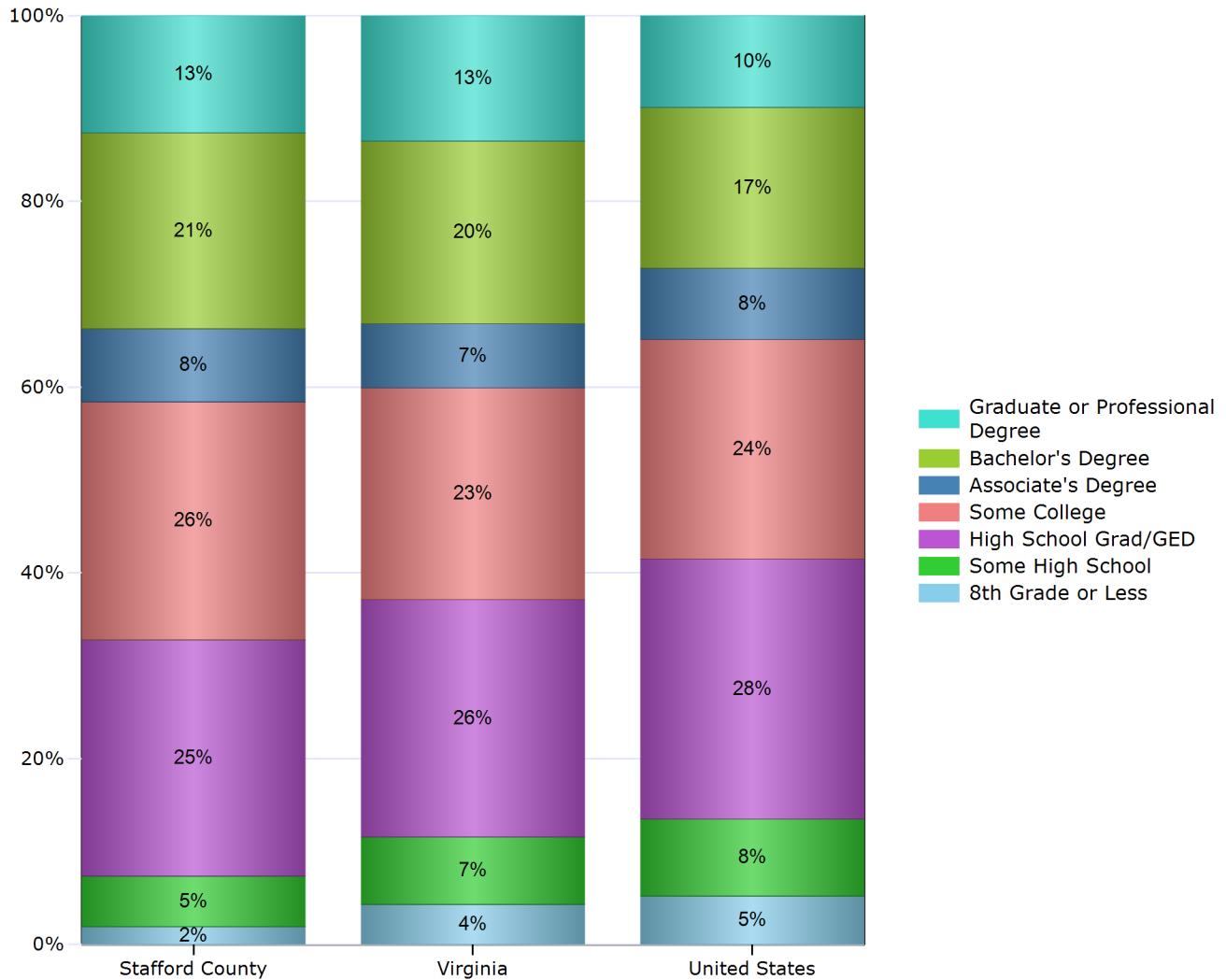
The highest award a student can earn for graduate study.

First-professional degree

An award that requires completion of a program that meets all of the following criteria: (1) completion of the academic requirements to begin practice in the profession; (2) at least two years of college work prior to entering the program; and (3) a total of at least six academic years of college work to complete the degree program, including prior required college work plus the length of the professional program itself.

Educational Attainment

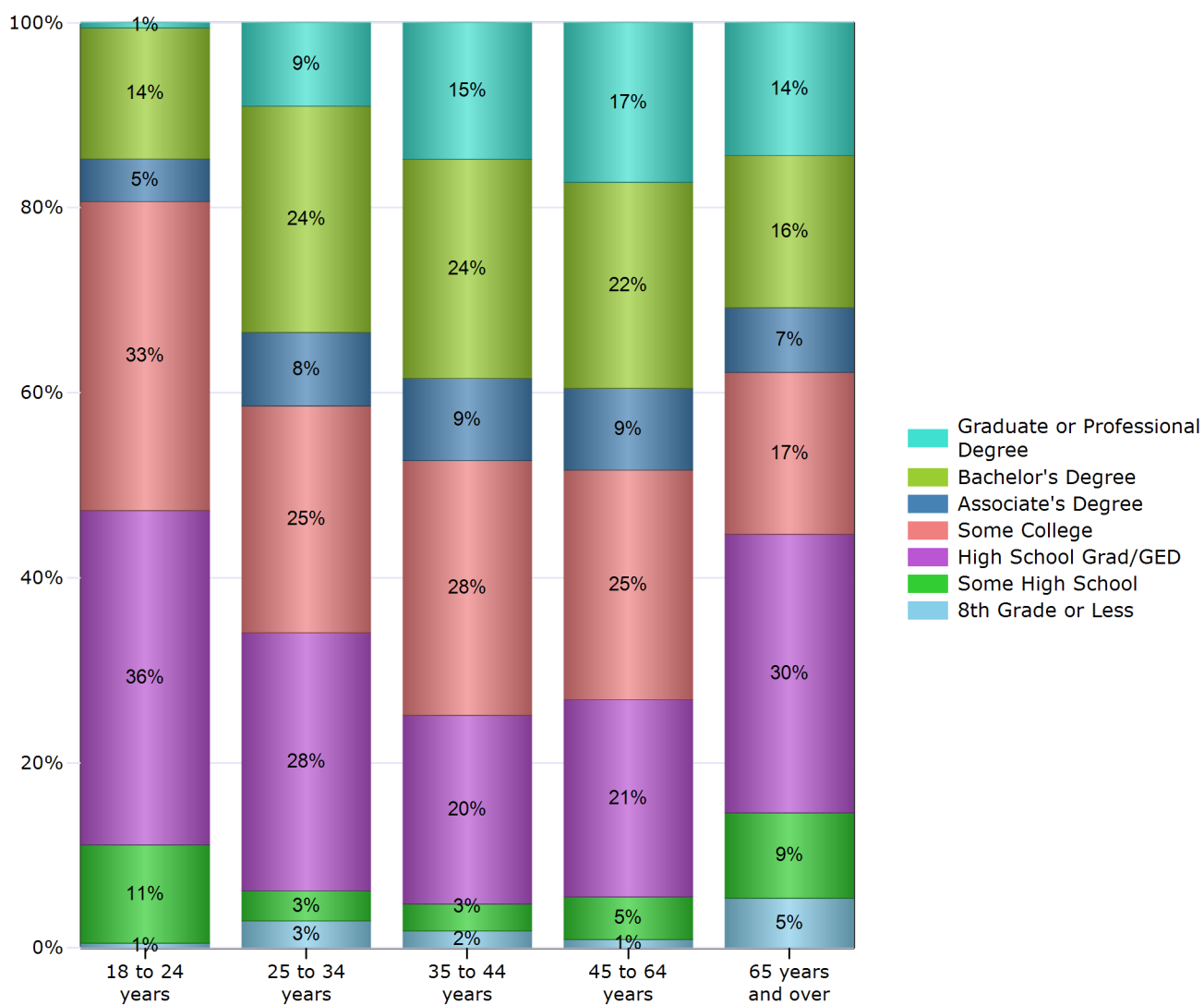
(Population 18 years and over)



	Stafford County	Virginia	United States
8th Grade or Less	1,912	275,329	12,639,425
Some High School	5,433	464,075	20,093,117
High School Grad/GED	25,418	1,633,105	68,044,371
Some College	25,586	1,457,887	57,431,237
Associate's Degree	7,870	440,219	18,586,866
Bachelor's Degree	21,072	1,258,661	42,027,629
Graduate or Professional Degree	12,596	862,686	24,008,551
	99,887	6,391,962	242,831,196

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Educational Attainment by Age

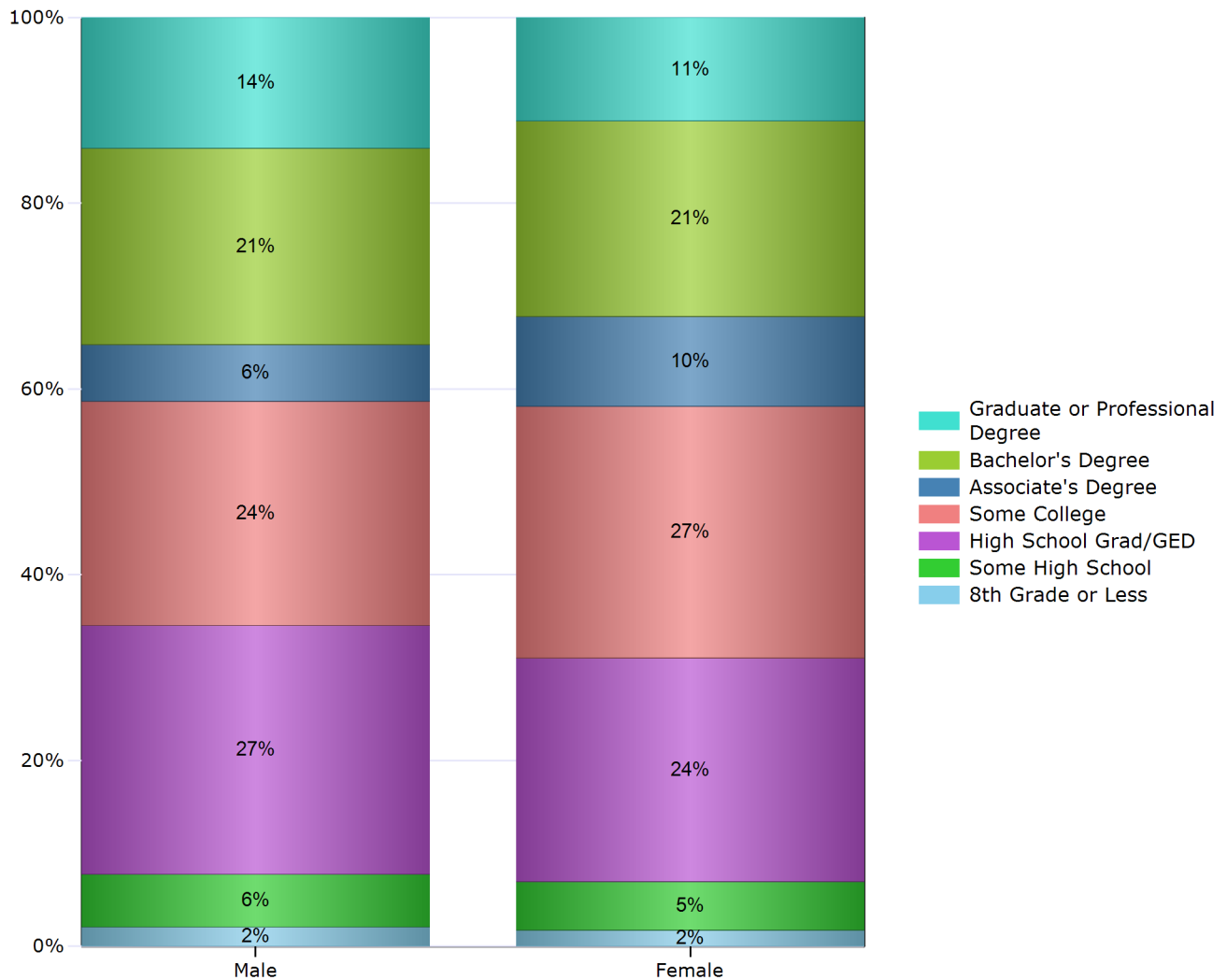


	18 - 24	25 - 34	35 - 44	45 - 64	65+	Total
8th Grade or Less	71	519	351	334	637	1,912
Some High School	1,498	579	559	1,703	1,094	5,433
High School Grad/GED	5,093	4,966	3,915	7,871	3,573	25,418
Some College	4,706	4,362	5,277	9,168	2,073	25,586
Associate's Degree	649	1,416	1,708	3,267	830	7,870
Bachelor's Degree	1,995	4,354	4,543	8,228	1,952	21,072
Graduate or Professional Degree	80	1,605	2,834	6,375	1,702	12,596
	14,092	17,801	19,187	36,946	11,861	99,887

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Educational Attainment by Gender

(Population 18 years and over)

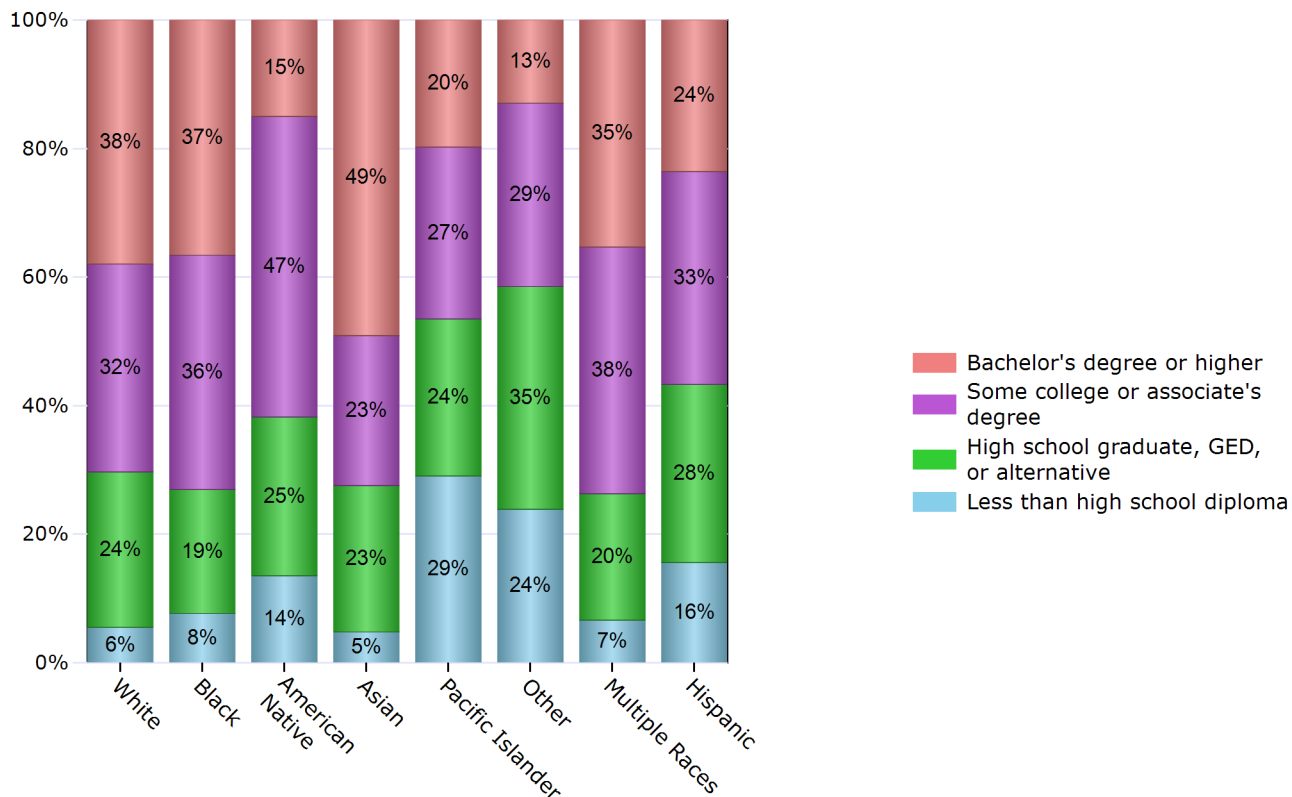


	Male	Female	Total
8th Grade or Less	1,046	866	1,912
Some High School	2,844	2,589	5,433
High School Grad/GED	13,457	11,961	25,418
Some College	12,125	13,461	25,586
Associate's Degree	3,065	4,805	7,870
Bachelor's Degree	10,620	10,452	21,072
Graduate or Professional Degree	7,063	5,533	12,596
	50,220	49,667	99,887

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Educational Attainment by Race/Ethnicity

(Population 25 years and over)



	Less than high school diploma	High school grad, GED, or alternative	Some college or associate's degree	Bachelor's degree or higher	Total
Race					
White	3,450	15,151	20,264	23,776	62,641
Black or African American	1,098	2,761	5,219	5,237	14,315
American Indian or Alaska Native	46	84	159	51	340
Asian	134	638	653	1,374	2,799
Native Hawaiian/Pacific Islander	25	21	23	17	86
Other	901	1,308	1,077	488	3,774
Multiple Races	122	362	706	650	1,840
Ethnicity					
Not Hispanic or Latino (of any race)	0	0	0	0	0
Hispanic or Latino (of any race)	1,187	2,112	2,523	1,795	7,617
	6,963	22,437	30,624	33,388	93,412

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Graduate Data Trends

Stafford County

	Cert. <1 yr.	Cert. 1-2 yrs.	Assoc.	Cert. 2-4 yrs.	BA	Cert. Post-BA	MA	Cert. Post-MA	Ph.D.	1st Prof.
2006	69	16								
2007	109	13								
2008										
2009	75	40								
2010	200	64	10	43						
2011	99	43	16	44						
2012										
2013										
2016										

Note: This table only reflects degrees completed from institutions within Stafford County

Virginia Statewide

	Cert. <1 yr.	Cert. 1-2 yrs.	Assoc.	Cert. 2-4 yrs.	BA	Cert. Post-BA	MA	Cert. Post-MA	Ph.D.	1st Prof.
2006	4,213	4,298	14,431	102	39,247	608	12,429	225	1,440	2,490
2007	4,478	3,686	15,519	116	40,381	650	12,781	252	1,516	2,626
2008	5,197	3,813	16,207	134	39,160	725	13,802	334	1,080	2,168
2009	6,259	4,587	17,179	85	40,233	756	15,445	300	925	2,064
2010	7,648	8,158	21,014	374	45,361	915	18,889	601	2,100	2,598
2011	6,972	12,557	24,306	473	49,109	1,055	20,697	727	2,329	2,658
2012	8,825	12,801	26,199	620	53,051	1,215	21,516	686	2,095	3,298
2013	8,153	12,179	25,854	484	54,778	1,067	22,782	706	2,230	2,963
2016	8,643	11,912	25,125	608	61,852	2,032	24,717	640	2,328	2,931

Source: U.S. Department of Education,
Institute of Education Sciences (IES).

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Training Providers

University of Mary Washington

1301 College Ave

Fredericksburg, VA 22401

Phone: (540) 654-1000

<http://www.umw.edu>

Number of 2016 graduates: 1,271

Career Training Solutions

10304 Spotsylvania Ave, Suite 400

Fredericksburg, VA 22408

Phone: (540) 373-2200 ext. 221

<http://www.evcc.edu>

Number of 2016 graduates: 119

Eastern Shore Community College

29300 Lankford Hwy

Melfa, VA 23410

Phone: (757) 789-1789

<http://www.es.vccs.edu>

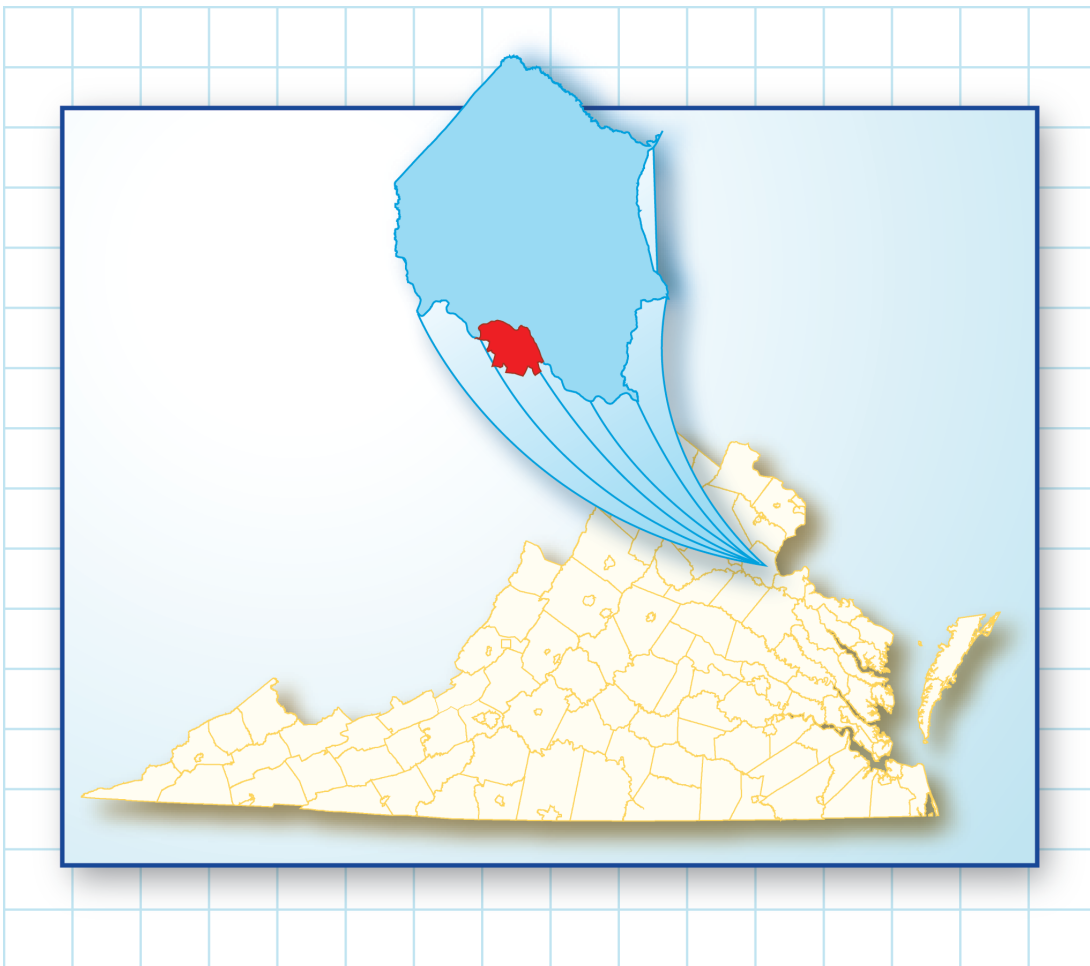
Number of 2016 graduates: 114

*Source: U.S. Department of Education,
Institute of Education Sciences (IES), 2016.*

Virginia

COMMUNITY PROFILE

Fredericksburg city



Virginia Works
Economic Information & Analytics Division

6606 West Broad Street , Richmond, Virginia 23230
Tel: (804) 786-7496 Email: LMI@virginiaworks.gov
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Last updated: 4/1/2026 1:59:06 AM

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I. Introduction

This report provides a community profile of Fredericksburg city. It is intended to complement the information found in our Virginia Workforce Connection application, which can be accessed online at:

www.virginiaworks.com

The report is divided into three major sections. The first contains a profile of regional demographic characteristics and trends, the second supplies similar information for the regional economy, and the third provides a profile of regional education characteristics.

II. Demographic Profile

Overview

This Demographic Profile provides an in-depth analysis of the population in Fredericksburg city. Most of the data is produced by the U.S. Census Bureau, and includes demographic characteristics such as age, race/ethnicity, and gender.



Related Terms and Definitions

Ability to speak English

For people who speak a language other than English at home, the response represents the person's own perception of his or her ability to speak English. Because census questionnaires are usually completed by one household member, the responses may represent the perception of another household member.

Age

The age classification is based on the age of the person in complete years as of April 1, 2010. The age of the person usually was derived from their date of birth information. Their reported age was used only when date of birth information was unavailable.

Gender

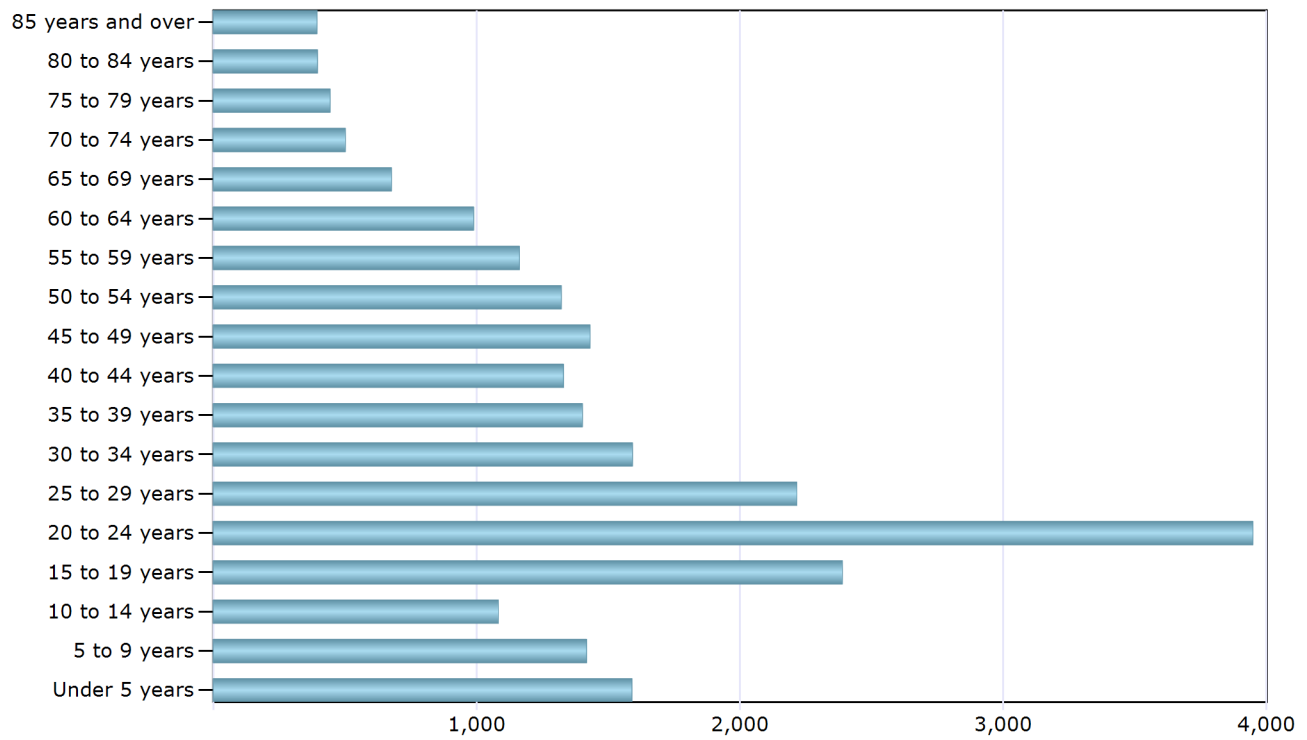
The data on gender were derived from answers to a question that was asked of all people. Individuals were asked to mark either "male" or "female" to indicate their gender. For most cases in which gender was not reported, it was determined by the appropriate entry from the person's given (i.e., first) name and household relationship. Otherwise, gender was imputed according to the relationship to the householder and the age of the person.

Race

The concept of race as used by the Census Bureau reflects self-identification by people according to the race or races with which they most closely identify. The categories are sociopolitical constructs and should not be interpreted as being scientific or anthropological in nature. Furthermore, the race categories include both racial and national-origin groups.

Please note: In the past, our population by race/ethnicity data has always excluded the Hispanic ethnicity from each race category. Starting in January 2013, each race category now includes all ethnicities.

Population by Age



	Fredericksburg city	Virginia	United States
Under 5 years	1,590	509,625	20,201,362
5 to 9 years	1,418	511,849	20,348,657
10 to 14 years	1,083	511,246	20,677,194
15 to 19 years	2,389	550,965	22,040,343
20 to 24 years	3,948	572,091	21,585,999
25 to 29 years	2,216	564,342	21,101,849
30 to 34 years	1,592	526,077	19,962,099
35 to 39 years	1,402	540,063	20,179,642
40 to 44 years	1,330	568,865	20,890,964
45 to 49 years	1,431	621,155	22,708,591
50 to 54 years	1,322	592,845	22,298,125
55 to 59 years	1,163	512,595	19,664,805
60 to 64 years	989	442,369	16,817,924
65 to 69 years	677	320,302	12,435,263
70 to 74 years	502	229,502	9,278,166
75 to 79 years	444	173,929	7,317,795
80 to 84 years	396	130,801	5,743,327
85 years and over	394	122,403	5,493,433
	24,286	8,001,024	308,745,538

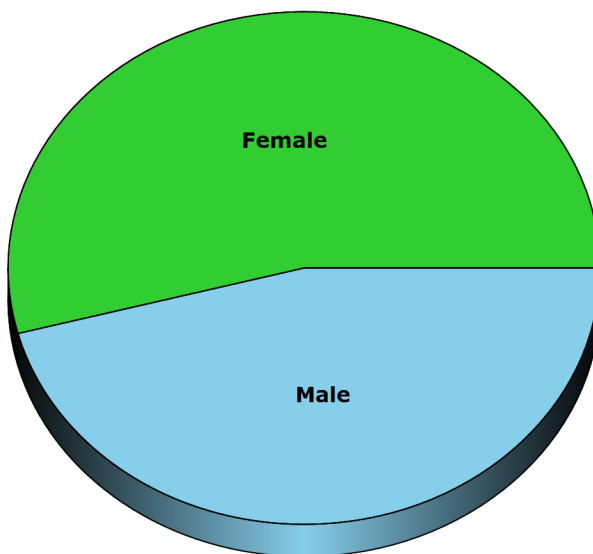
Source: 2010 Census.

Population by Race/Ethnicity

	Fredericksburg city	Virginia	United States
Total			
Total Population	24,286	8,001,024	308,745,538
Race			
White	15,596	5,486,852	223,553,265
Black or African American	5,498	1,551,399	38,929,319
American Indian or Alaska Native	100	29,225	2,932,248
Asian	689	439,890	14,674,252
Native Hawaiian/Pacific Islander	17	5,980	540,013
Other	1,437	254,278	19,107,368
Multiple Races	949	233,400	9,009,073
Ethnicity			
Not Hispanic or Latino (of any race)	21,679	7,369,199	258,267,944
Hispanic or Latino (of any race)	2,607	631,825	50,477,594

Source: 2010 Census.

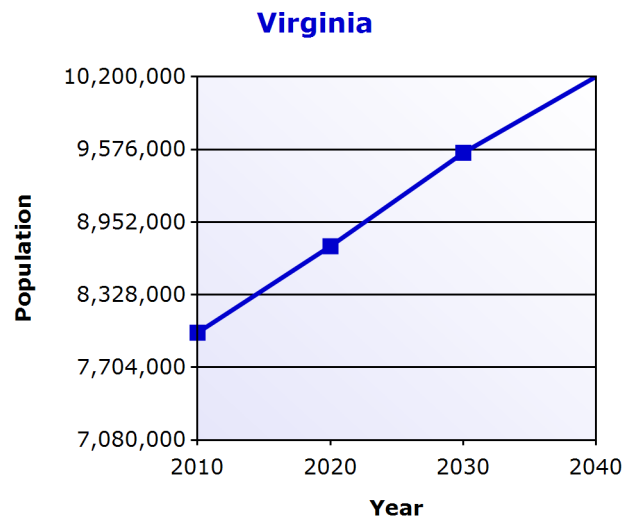
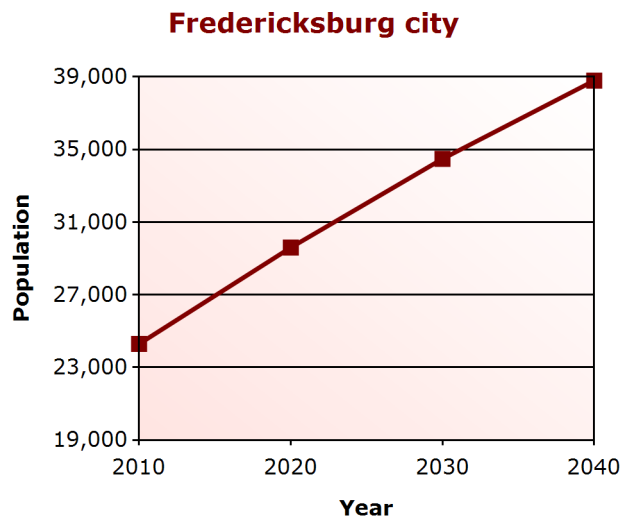
Population by Gender



	Fredericksburg city	Virginia	United States
Male	11,144	3,925,983	151,781,326
Female	13,142	4,075,041	156,964,212
	24,286	8,001,024	308,745,538

Source: 2010 Census.

Population Change



	Fredericksburg city	Percent change	Number Change	Virginia	Percent change	Number Change
2000	19,279			7,079,030		
2010	24,286	25.97 %	5,007	8,001,024	13.02 %	921994
2020	29,596	21.86 %	5,310	8,744,273	9.29 %	743249
2030	34,481	16.51 %	4,885	9,546,958	9.18 %	802685
2040	38,790	12.50 %	4,309	10,201,530	6.86 %	654572

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

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www.VirginiaWorks.com

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Census
2010

Population Projections by Age and Gender

	2020		2030		2040	
	Female	Male	Female	Male	Female	Male
Under 5 years	979	981	1,143	1,146	1,303	1,306
5 to 9 years	812	857	974	1,028	1,085	1,145
10 to 14 years	677	769	776	882	880	1,000
15 to 19 years	2,039	1,360	2,232	1,489	2,599	1,734
20 to 24 years	2,744	1,922	3,407	2,386	3,793	2,656
25 to 29 years	1,254	1,127	1,659	1,491	1,764	1,586
30 to 34 years	1,011	983	1,111	1,081	1,340	1,303
35 to 39 years	957	990	956	989	1,228	1,271
40 to 44 years	761	727	887	847	946	905
45 to 49 years	791	766	1,021	989	990	959
50 to 54 years	739	689	769	717	870	811
55 to 59 years	783	670	792	677	993	849
60 to 64 years	614	560	616	563	623	569
65 to 69 years	553	440	692	550	709	564
70 to 74 years	465	349	556	417	562	421
75 to 79 years	300	208	435	302	539	374
80 to 84 years	235	95	375	151	445	180
85 years and over	286	103	276	99	359	129
	16,000	13,596	18,677	15,804	21,028	17,762
	29,596		34,481		38,790	

Source: Weldon Cooper Center for Public Service.

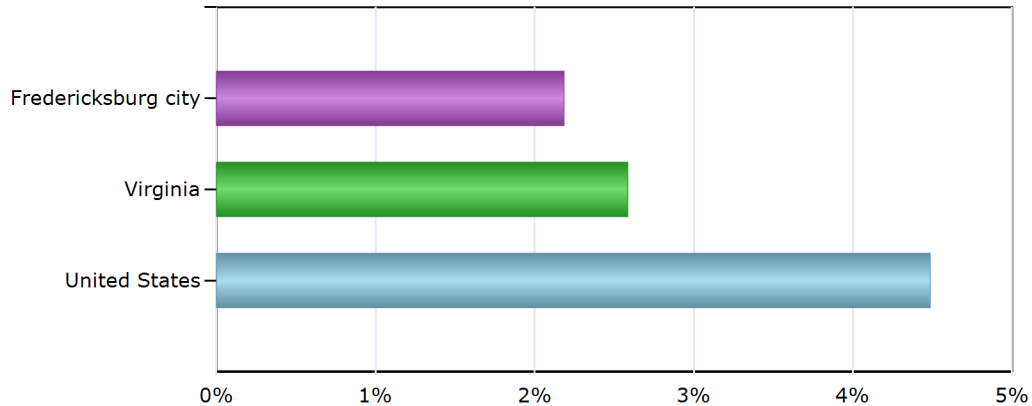
Population Projections by Race/Ethnicity

	2020	2030	2040
Total			
Total Population	29,596	34,481	38,790
Race			
White	14,873	15,352	14,996
Black or African American	7,431	8,364	8,827
Asian	1,188	1,883	2,791
Other	1,173	1,156	1,069
Ethnicity			
Hispanic or Latino (of any race)	4,931	7,727	11,108

Source: Weldon Cooper Center for Public Service.

English Language Skills

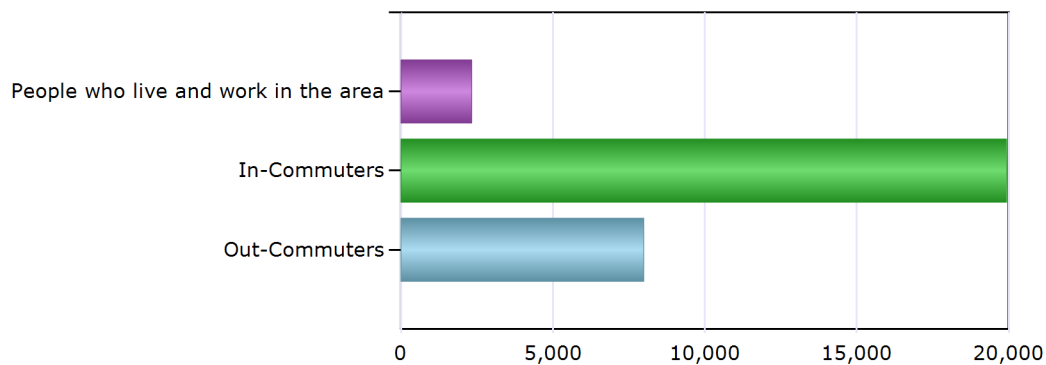
(Age 5 and over that speak English less than well)



	Total	Speak English less than well	Percent
Fredericksburg city	25,859	565	2.18%
Virginia	7,800,044	201,628	2.58%
United States	298,691,202	13,400,003	4.49%

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

Commuting Patterns



Commuting Patterns	
People who live and work in the area	2,326
In-Commuters	19,925
Out-Commuters	7,989
Net In-Commuters (In-Commuters minus Out-Commuters)	11,936

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

Top 10 Places Residents are Commuting To

Area	Workers
Stafford County, VA	1,507
Spotsylvania County, VA	1,495
Fairfax County, VA	995
Prince William County, VA	653
District of Colu, DC	349
Loudoun County, VA	251
Henrico County, VA	201
Arlington County, VA	192
Alexandria city, VA	153
King George County, VA	139

Top 10 Places Workers are Commuting From

Area	Workers
Spotsylvania County, VA	6,962
Stafford County, VA	3,645
Caroline County, VA	859
Prince William County, VA	730
Fairfax County, VA	728
King George County, VA	618
Loudoun County, VA	513
Orange County, VA	512
Henrico County, VA	294
Fauquier County, VA	289

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

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

<http://lehd.ces.census.gov>

III. Economic Profile

Overview

The Economic Profile of Fredericksburg city consists primarily of data produced by Virginia Works, U.S. Census Bureau, and the Bureau of Labor Statistics.



Related Terms and Definitions

Average Weekly Wage

Computed as average quarterly wages divided by 13.

Consumer Price Index (CPI)

The Consumer Price Index measures the average change over time in the prices paid by urban consumers for a representative market basket of consumer goods and services.

Local Employment Dynamics (LED)

The Local Employment Dynamics Program at the Census Bureau, together with its state partners, provides employment information at the county, city, and Workforce Investment Area level. This information tracks workers in different industries by age and gender and provides statistics on job creation, separation, turnover, and wages.

Quarterly Census of Employment & Wages (QCEW)

A federal/state cooperative program that collects and compiles employment and wage data for workers covered by state unemployment insurance (UI) laws and the federal civilian workers covered by Unemployment Compensation for Federal Employees (UCFE). These data are maintained at the state in micro and macro levels and also sent to BLS quarterly.

Unemployment Insurance (UI)

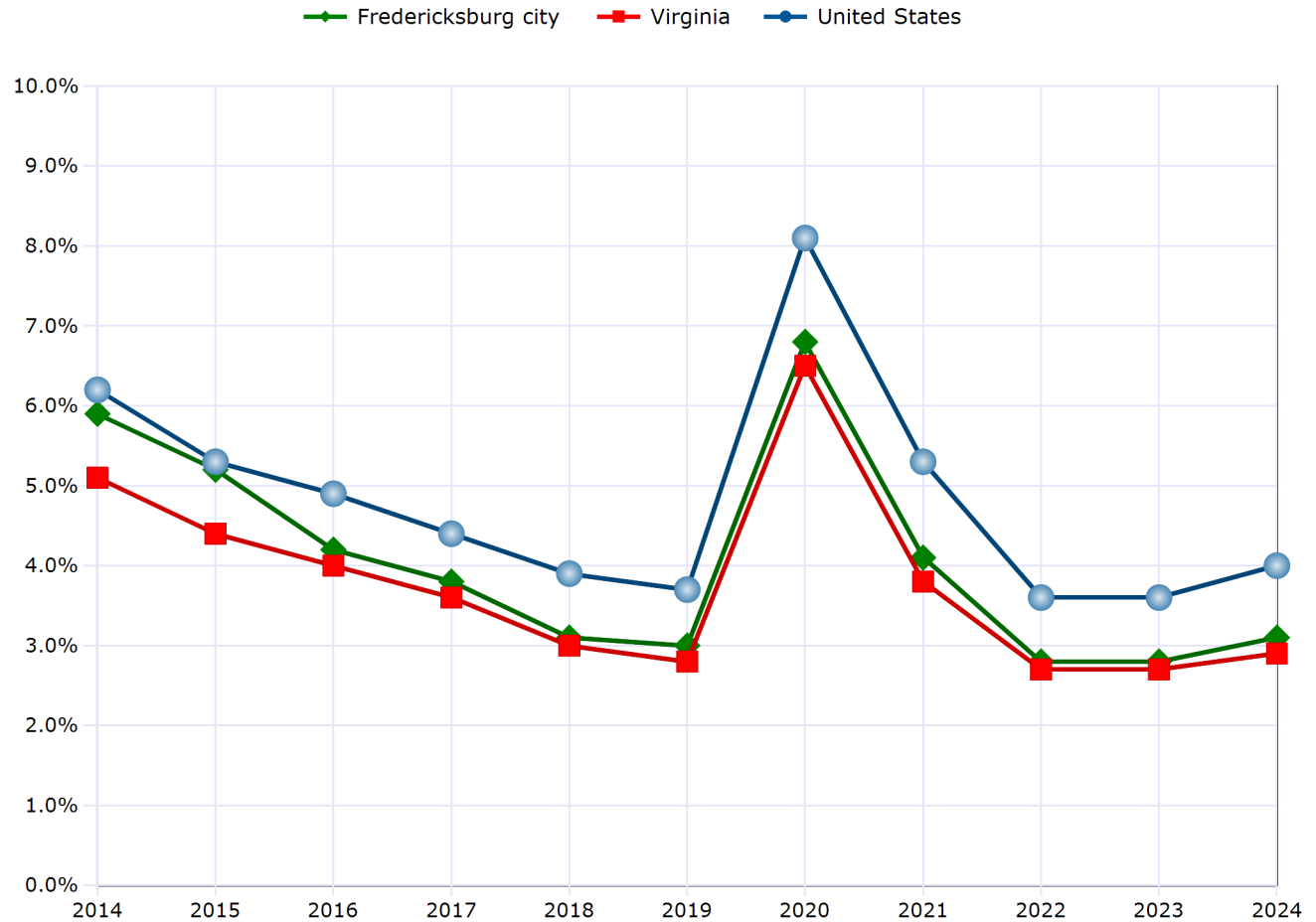
Unemployment insurance is a program for the accumulation of funds paid by employers to be used for the payment of unemployment insurance to workers during periods of unemployment which are beyond the workers' control. Unemployment insurance replaces a part of the worker's wage loss if he becomes eligible for payments.

Unemployment Rate

The number of unemployed people as a percentage of the labor force.

Unemployment Rates

Trends

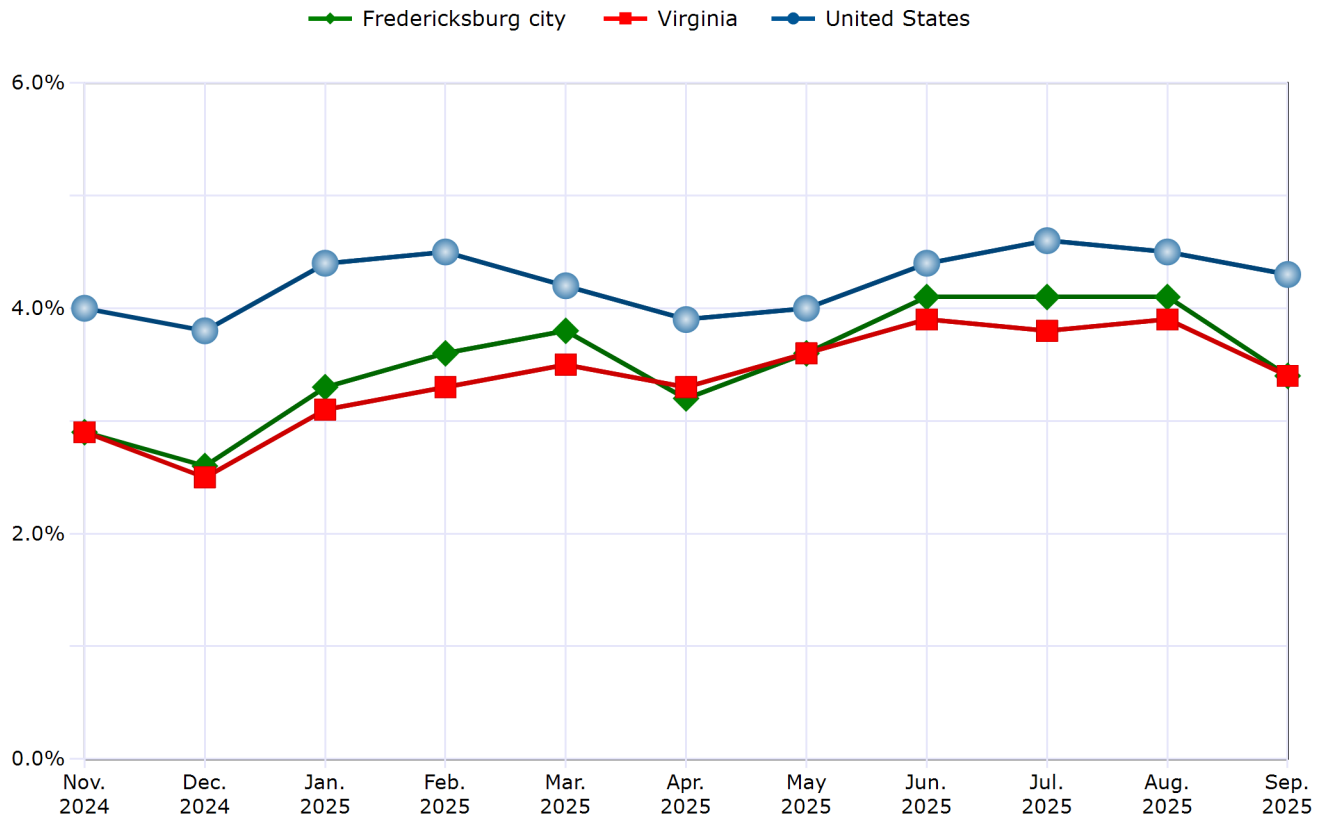


	Fredericksburg city	Virginia	United States
2014	5.9%	5.1%	6.2%
2015	5.2%	4.4%	5.3%
2016	4.2%	4.0%	4.9%
2017	3.8%	3.6%	4.4%
2018	3.1%	3.0%	3.9%
2019	3.0%	2.8%	3.7%
2020	6.8%	6.5%	8.1%
2021	4.1%	3.8%	5.3%
2022	2.8%	2.7%	3.6%
2023	2.8%	2.7%	3.6%
2024	3.1%	2.9%	4.0%

Source: Virginia Works, Economic Information & Analytics,
Local Area Unemployment Statistics.

Unemployment Rates

Past 12 Months



	Fredericksburg city	Virginia	United States
Nov. 2024	2.9%	2.9%	4.0%
Dec. 2024	2.6%	2.5%	3.8%
Jan. 2025	3.3%	3.1%	4.4%
Feb. 2025	3.6%	3.3%	4.5%
Mar. 2025	3.8%	3.5%	4.2%
Apr. 2025	3.2%	3.3%	3.9%
May 2025	3.6%	3.6%	4.0%
Jun. 2025	4.1%	3.9%	4.4%
Jul. 2025	4.1%	3.8%	4.6%
Aug. 2025	4.1%	3.9%	4.5%
Sep. 2025	3.4%	3.4%	4.3%

Source: Virginia Works, Economic Information & Analytics,
Local Area Unemployment Statistics.

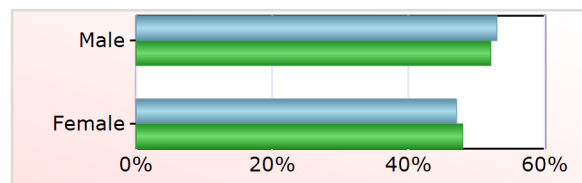
Characteristics of the Insured Unemployed

Total number of claimants: 219

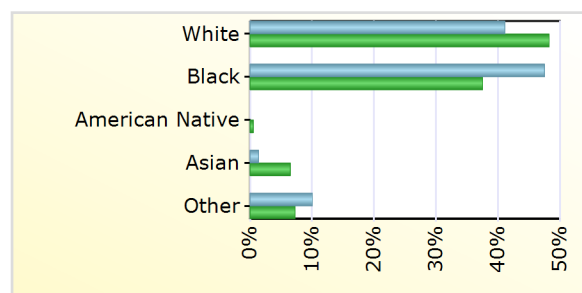
Fredericksburg city - (219 claimants)

Virginia - (28,243 claimants)

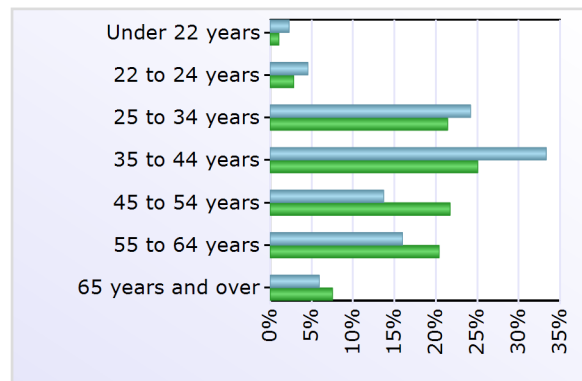
Gender	Fredericksburg city	Virginia
Male	116	14,701
Female	103	13,542
Unspecified		



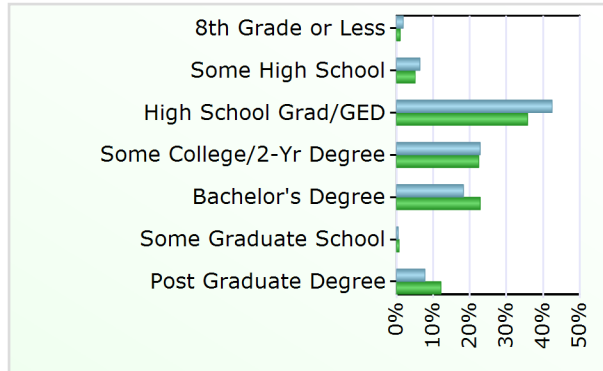
Race	Fredericksburg city	Virginia
White	90	13,624
Black	104	10,594
American Native		146
Asian	3	1,832
Other	22	2,047



Age	Fredericksburg city	Virginia
Under 22 years	5	294
22 to 24 years	10	801
25 to 34 years	53	6,051
35 to 44 years	73	7,078
45 to 54 years	30	6,136
55 to 64 years	35	5,761
65 years and over	13	2,122
Unknown		



Education	Fredericksburg city	Virginia
8th Grade or Less	4	278
Some High School	14	1,442
High School Grad/GED	93	10,103
Some College/2-Yr Degree	50	6,336
Bachelor's Degree	40	6,452
Some Graduate School	1	208
Post Graduate Degree	17	3,424
Unknown		

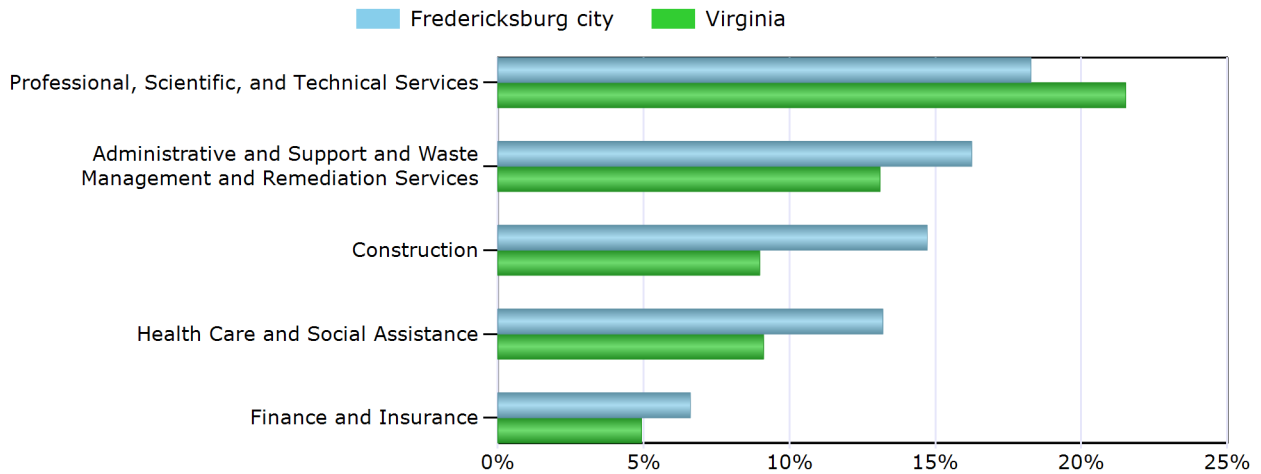


Source: Virginia Works, Economic Information & Analytics, Characteristics of the Insured Unemployed, February 2026.

Characteristics of the Insured Unemployed

Top 5 Industries With Largest Number of Claimants in Fredericksburg city

(excludes unclassified)



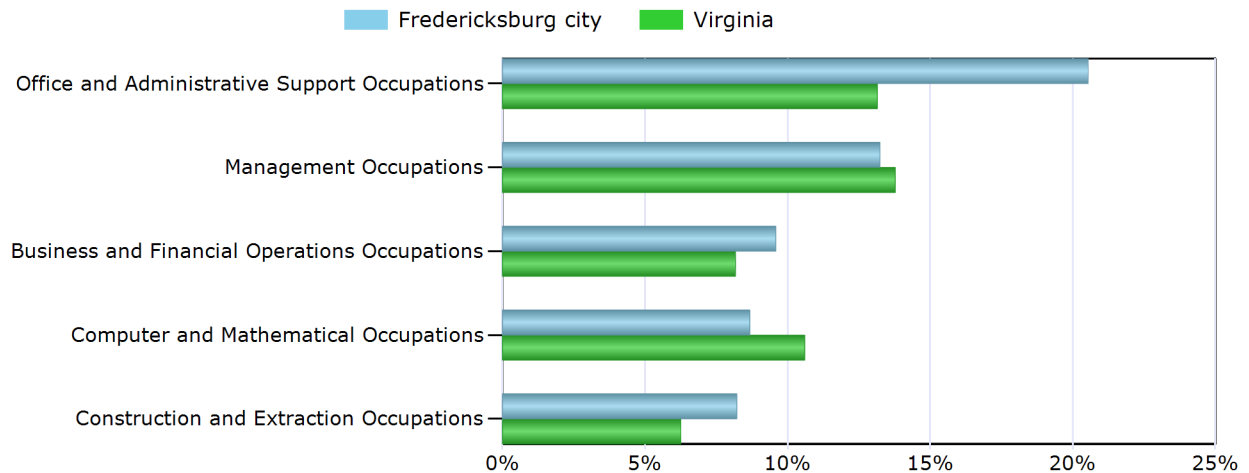
Industry	Fredericksburg city	Virginia
Professional, Scientific, and Technical Services	36	5,213
Administrative and Support and Waste Management and Remediation Services	32	3,173
Construction	29	2,174
Health Care and Social Assistance	26	2,206
Unclassified	19	2,691
Finance and Insurance	13	1,193
Accommodation and Food Services	10	1,475
Other Services (except Public Administration)	9	821
Management of Companies and Enterprises	6	289
Retail Trade	5	905
Educational Services	4	536
Transportation and Warehousing	2	566
Information	2	739
Arts, Entertainment, and Recreation	2	313
Wholesale Trade	1	842
Real Estate and Rental and Leasing	1	510
Agriculture, Forestry, Fishing and Hunting		119
Mining, Quarrying, and Oil and Gas Extraction		62
Utilities		34
Manufacturing		358

Source: Virginia Works, Economic Information & Analytics, Characteristics of the Insured Unemployed, February 2026.

Characteristics of the Insured Unemployed

Top 5 Occupation Groups With Largest Number of Claimants in Fredericksburg city

(excludes unknown occupations)

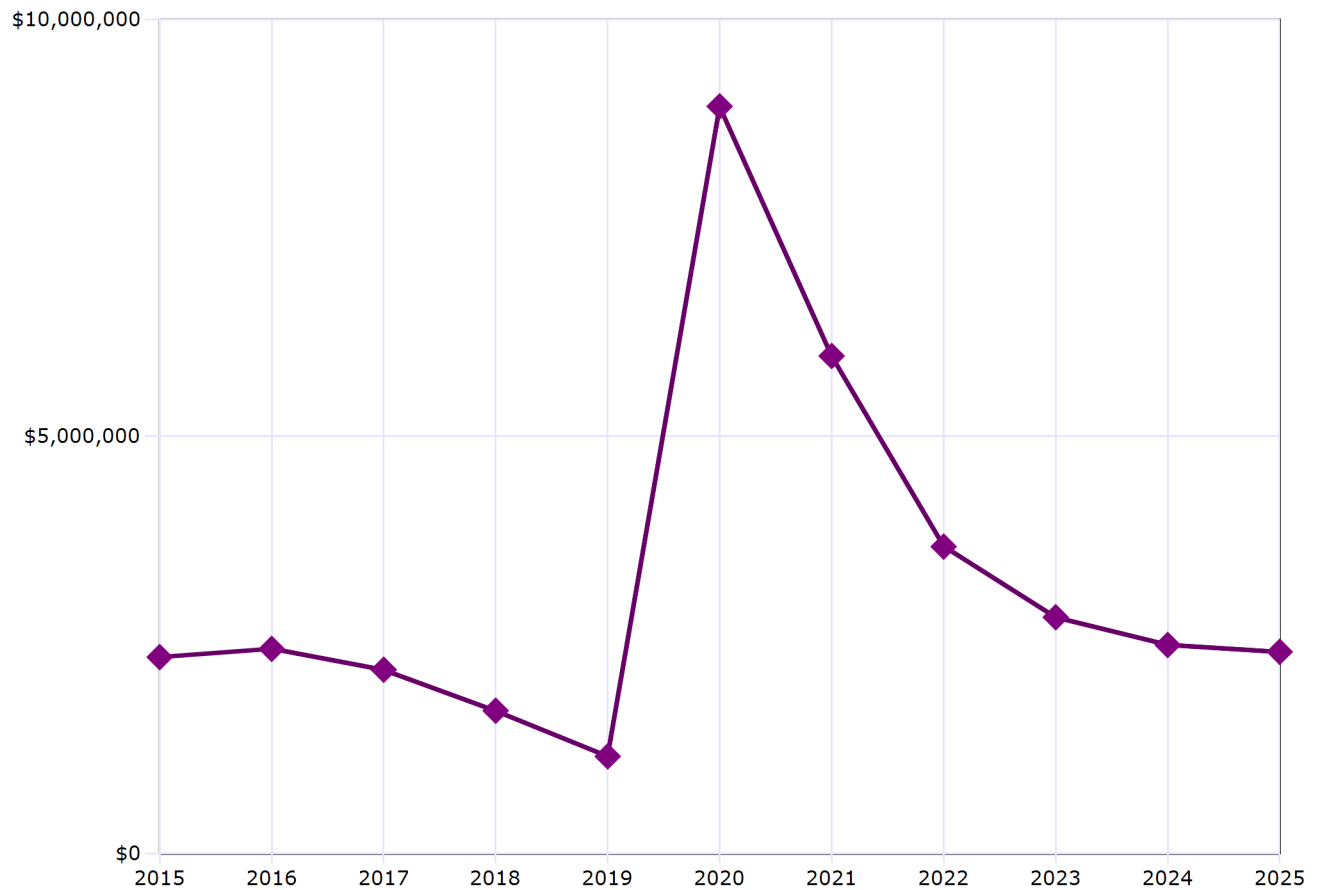


Occupation	Fredericksburg city	Virginia
Office and Administrative Support Occupations	45	3,714
Management Occupations	29	3,891
Business and Financial Operations Occupations	21	2,308
Computer and Mathematical Occupations	19	2,994
Construction and Extraction Occupations	18	1,767
Transportation and Material Moving Occupations	16	1,809
Sales and Related Occupations	13	1,671
Healthcare Support Occupations	10	774
Food Preparation and Serving Related Occupations	9	1,149
Building and Grounds Cleaning and Maintenance Occupations	7	788
Healthcare Practitioners and Technical Occupations	6	556
Installation, Maintenance, and Repair Occupations	6	822
Arts, Design, Entertainment, Sports, and Media Occupations	5	1,039
Personal Care and Service Occupations	3	386
Architecture and Engineering Occupations	2	720
Education, Training, and Library Occupations	2	393
Protective Service Occupations	2	397
Production Occupations	2	1,998
Life, Physical, and Social Science Occupations	1	356
Community and Social Service Occupations	1	327
Legal Occupations	1	193
Military Specific Occupations	1	63
Farming, Fishing, and Forestry Occupations		128
Unknown Occupation Code		

*Source: Virginia Works, Economic Information & Analytics,
Characteristics of the Insured Unemployed, February 2026.*

Unemployment Insurance Payments

Trends

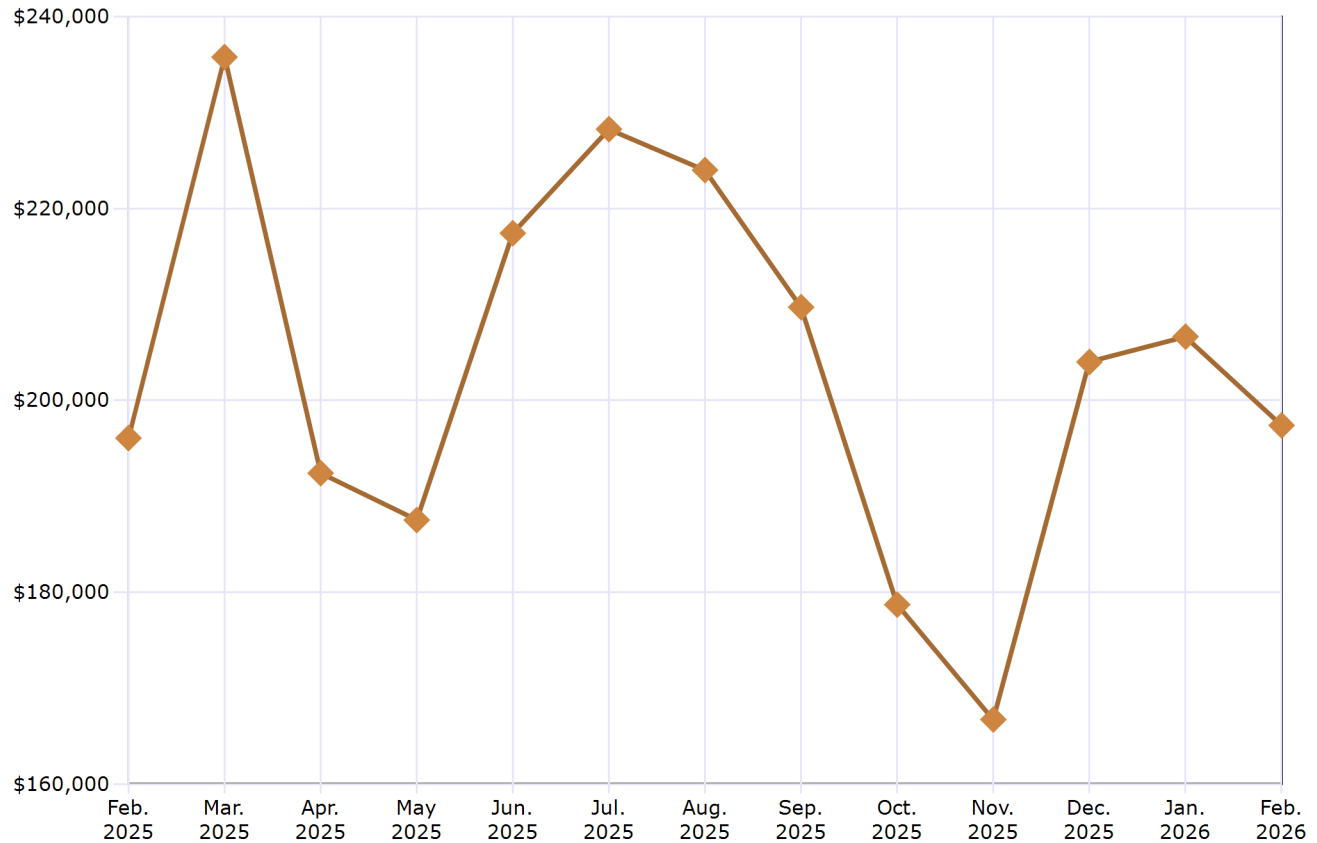


	Fredericksburg city		Virginia	
	Weeks Paid	Amount Paid	Weeks Paid	Amount Paid
2015	8,335	\$2,355,846	1,198,476	\$351,290,100
2016	8,504	\$2,454,350	1,263,292	\$379,622,081
2017	7,565	\$2,204,769	1,114,650	\$336,664,624
2018	5,670	\$1,713,241	941,154	\$286,468,017
2019	4,038	\$1,165,787	867,371	\$269,014,541
2020	36,551	\$8,957,622	8,600,869	\$2,279,487,650
2021	21,521	\$5,965,333	1,601,885	\$458,078,646
2022	12,038	\$3,680,008	485,275	\$154,636,752
2023	8,753	\$2,833,735	685,711	\$232,048,074
2024	7,509	\$2,501,121	821,464	\$281,948,022
2025	6,968	\$2,419,523	958,475	\$336,260,202

Source: Virginia Employment Commission, Economic Information & Analytics, Unemployment Insurance Program.

Unemployment Insurance Payments

Past 12 Months



	Fredericksburg city		Virginia	
	Weeks Paid	Amount Paid	Weeks Paid	Amount Paid
Feb. 2025	571	\$196,068	67,208	\$23,330,065
Mar. 2025	671	\$235,777	80,917	\$28,182,251
Apr. 2025	566	\$192,412	71,831	\$25,077,568
May 2025	542	\$187,525	74,874	\$26,230,081
Jun. 2025	641	\$217,425	90,500	\$31,564,327
Jul. 2025	664	\$228,265	88,280	\$30,838,363
Aug. 2025	644	\$224,000	85,310	\$29,930,805
Sep. 2025	589	\$209,711	91,400	\$32,455,220
Oct. 2025	500	\$178,710	77,985	\$27,634,073
Nov. 2025	466	\$166,739	70,847	\$25,162,669
Dec. 2025	587	\$204,000	90,198	\$31,953,758
Jan. 2026	603	\$206,639	82,981	\$29,321,778
Feb. 2026	555	\$197,394	81,372	\$29,629,263

Source: Virginia Works,
Unemployment Insurance Program.

Employers by Size of Establishment

	Fredericksburg city	Virginia
0 to 4 employees	897	207,876
5 to 9 employees	292	41,114
10 to 19 employees	272	30,733
20 to 49 employees	179	22,801
50 to 99 employees	53	7,586
100 to 249 employees	23	4,170
250 to 499 employees	3	1,098
500 to 999 employees	***	371
1000 and over employees	***	279
	1,724	316,028

Employment by Size of Establishment

	Fredericksburg city	Virginia
0 to 4 employees	1,432	264,518
5 to 9 employees	1,973	273,771
10 to 19 employees	3,715	417,792
20 to 49 employees	5,424	684,503
50 to 99 employees	3,639	521,848
100 to 249 employees	3,335	618,496
250 to 499 employees	1,285	377,264
500 to 999 employees	***	254,429
1000 and over employees	***	731,112
	25,013	4,143,733

Note: Asterisks (***) indicate non-disclosable data.

'Zero; no employment' typically represents new startup firms or sole-proprietorships.

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

50 Largest Employers

- | | |
|---|---|
| 1. Mary Washington Hospital | 26. Red Lobster & The Olive Garden |
| 2. University of Mary Washington | 27. Silver Diner Development Inc |
| 3. City of Fredericksburg | 28. WaWa |
| 4. Fredericksburg City Public Schools | 29. Cracker Barrel Old Country Store |
| 5. Wal Mart | 30. Resilience Counseling And Social |
| 6. Wegmans Store #07 | 31. Sodexo |
| 7. Rappahannock Area Community Services Board | 32. U.S. Department of the Treasury |
| 8. Compass Counseling Services | 33. U.S. Department of Defense |
| 9. Rehab Hospital of Fredericksburg | 34. U.S. Department of Homeland Defense |
| 10. Ensemble Rcm Llc | 35. Sedona Taphouse |
| 11. U.S. Department of Veterans Affairs | 36. BJ's Restaurants and Brewhouse |
| 12. OS Restaurant Services, Inc. | 37. ECC Enterprises Holding Company |
| 13. Fredericksburg Senior Car Inc | 38. Legacy Engineering, P.c. |
| 14. Obsidian Solutions Group | 39. Armg, Llc |
| 15. Postal Service | 40. Brocks Riverside Grill |
| 16. Great Hill Solutions LLC | 41. U.S. Department of Agriculture |
| 17. Lowes' Home Centers, Inc. | 42. Professional Sports Catering |
| 18. The Home Depot | 43. 132 Degrees LLC |
| 19. U.S. Department of Commerce | 44. Panera Bread |
| 20. Morrison Management Specialists | 45. PBS of America Inc. |
| 21. Target Corp | 46. Chick-Fil-A At Central Park |
| 22. Fun Land Opco LLC | 47. Oracle Heart & Vascular Inc |
| 23. VDOT | 48. Giant Food |
| 24. Potomac Nationals | 49. Mercedes-Benz Of Fredericksburg |
| 25. Morrison Crothall Support | 50. American Residential |

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

Did you know...

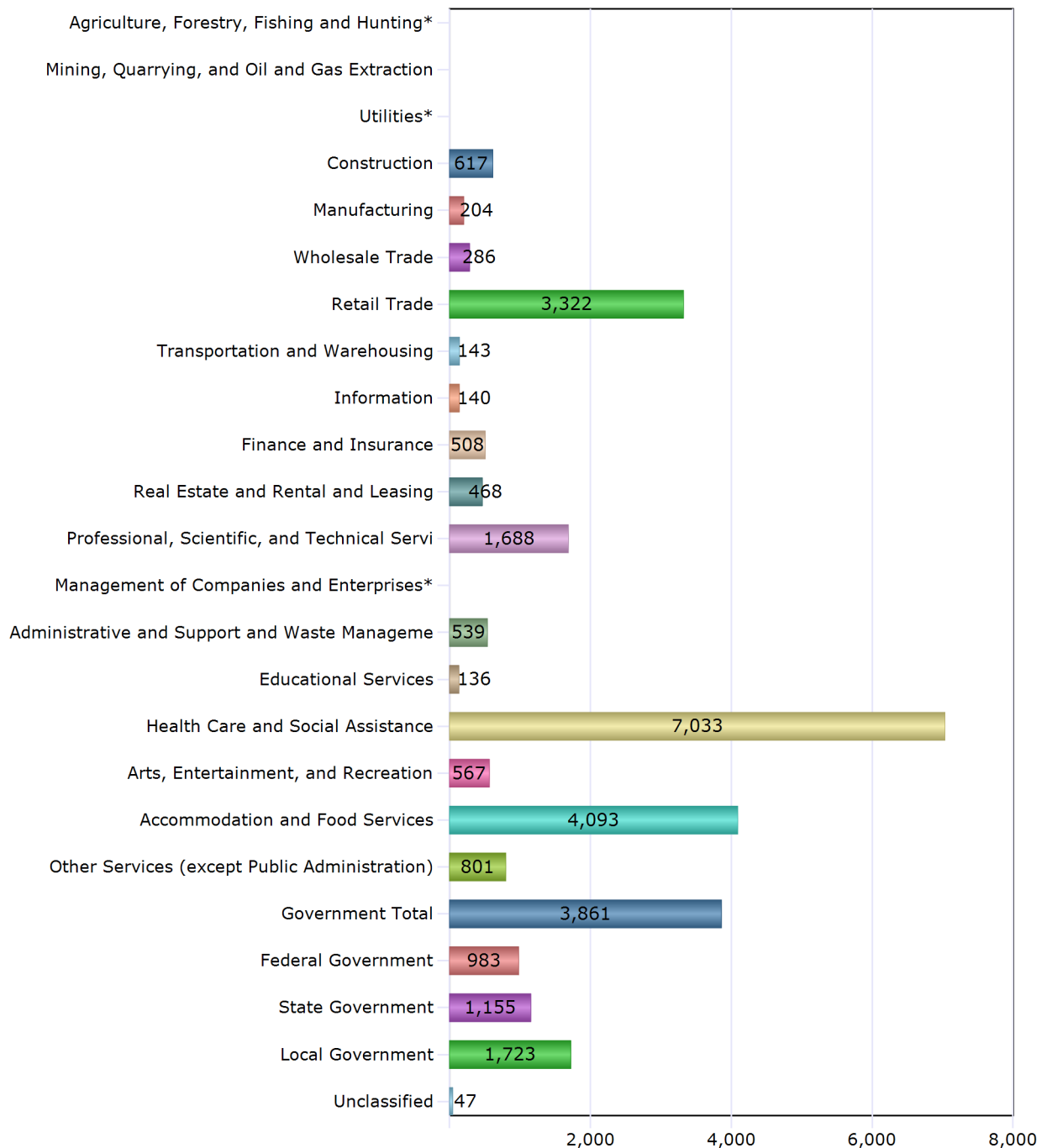
you can search over 300,000 employer listings on our website provided by Infogroup? This easy-to-use feature lets you search for employers by keyword, industry, sales volume, size range, and more!



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

www.VirginiaWorks.com

Employment by Industry

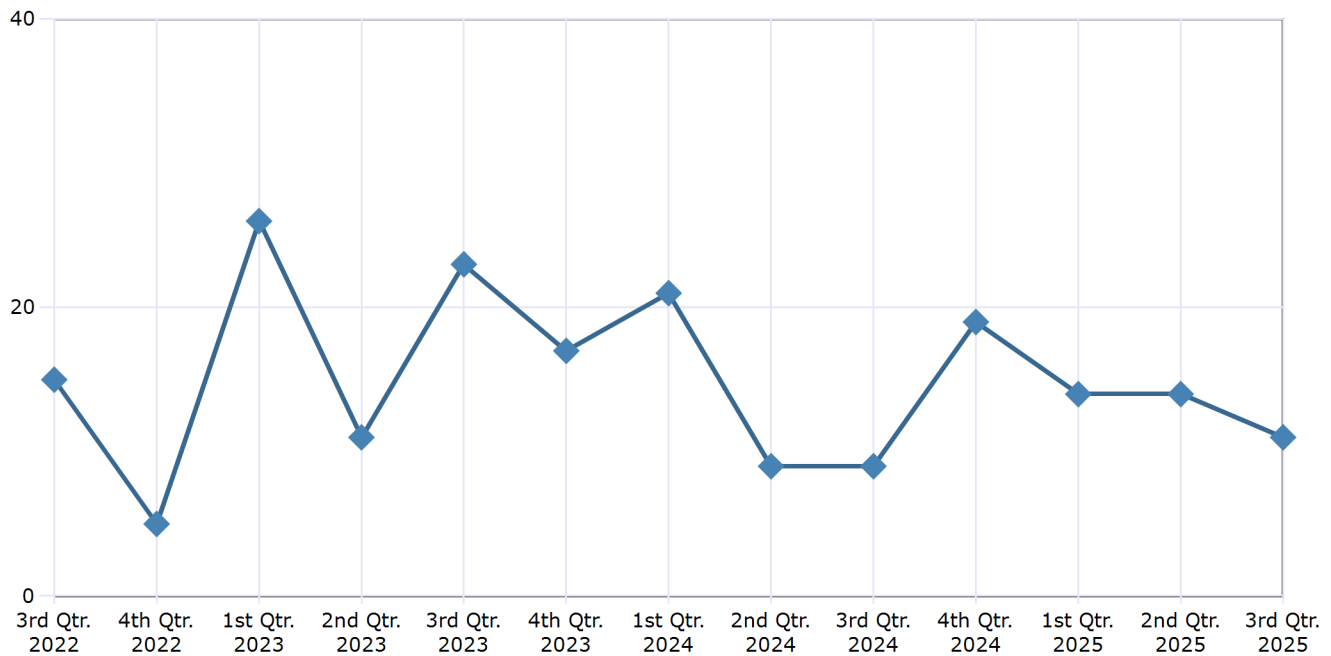


Total: 25,013

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

Source: Virginia Works, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

New Startup Firms



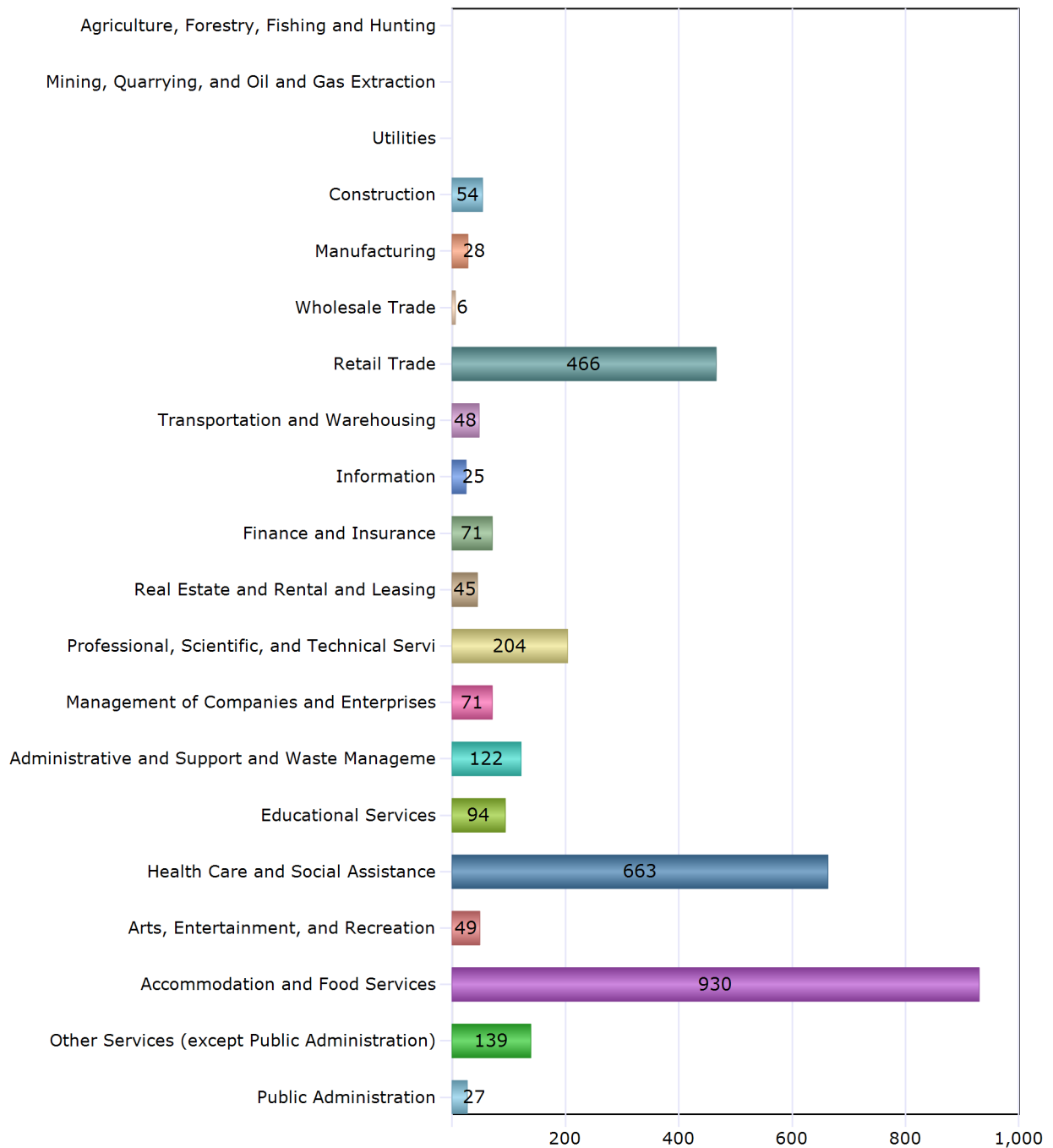
	Fredericksburg city	Virginia
3rd Qtr. 2022	15	4,839
4th Qtr. 2022	5	4,162
1st Qtr. 2023	26	5,320
2nd Qtr. 2023	11	4,835
3rd Qtr. 2023	23	4,472
4th Qtr. 2023	17	4,454
1st Qtr. 2024	21	5,789
2nd Qtr. 2024	9	4,468
3rd Qtr. 2024	9	4,555
4th Qtr. 2024	19	4,203
1st Qtr. 2025	14	5,093
2nd Qtr. 2025	14	4,378
3rd Qtr. 2025	11	4,278

Note: The following criteria was used to define new startup firms:

- 1.) Setup and liability date both occurred during 3rd Quarter (July, August, September) 2025
- 2.) Establishment had no predecessor UI Account Number
- 3.) Private Ownership
- 4.) Average employment is less than 250
- 5.) For multi-unit establishments, the parent company must also meet the above criteria.

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

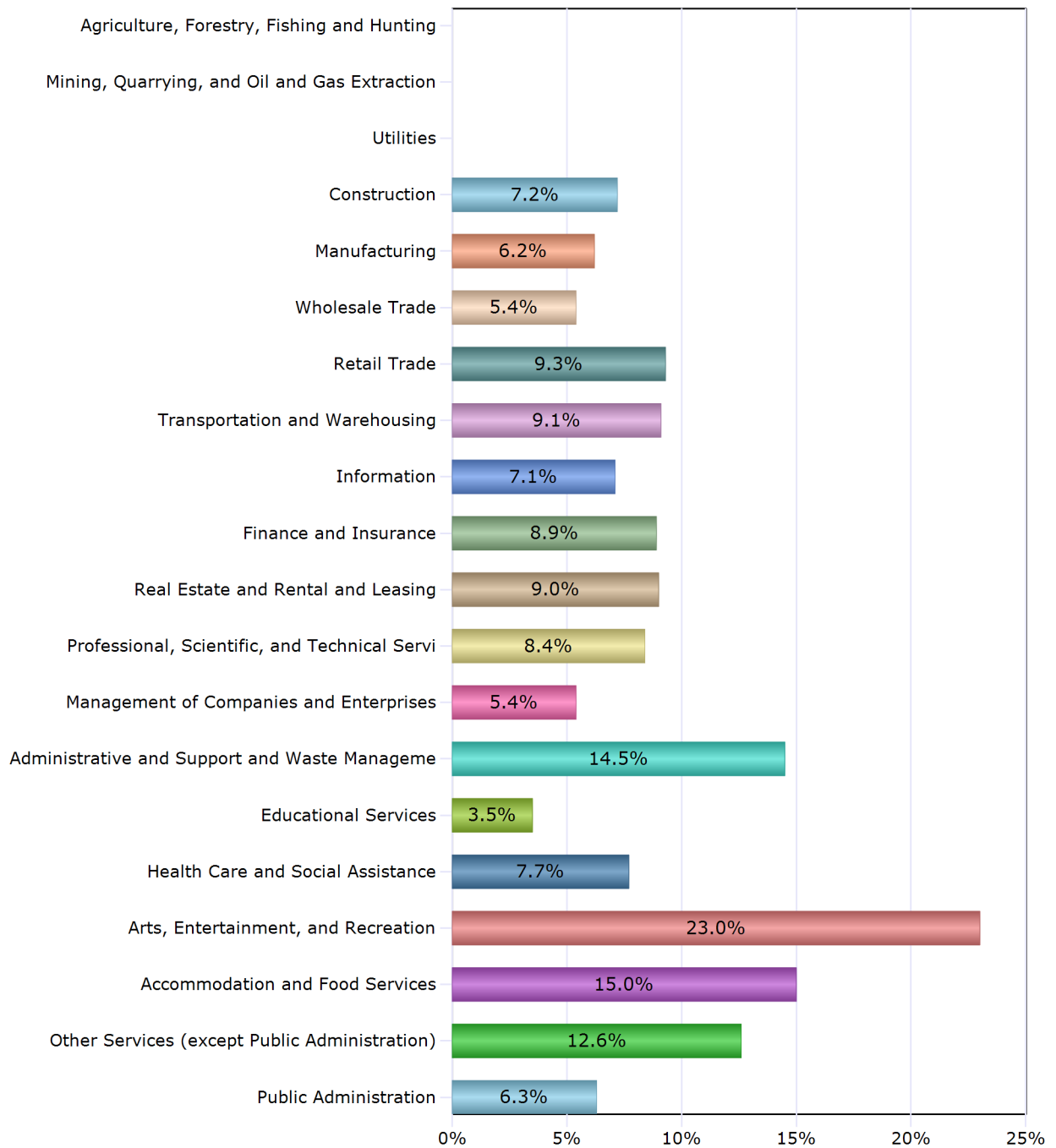
New Hires by Industry



Total: 3,042

Source: U.S. Census Bureau,
Local Employment Dynamics (LED) Program, 1st Quarter (January, February, March) 2024, all ownerships.

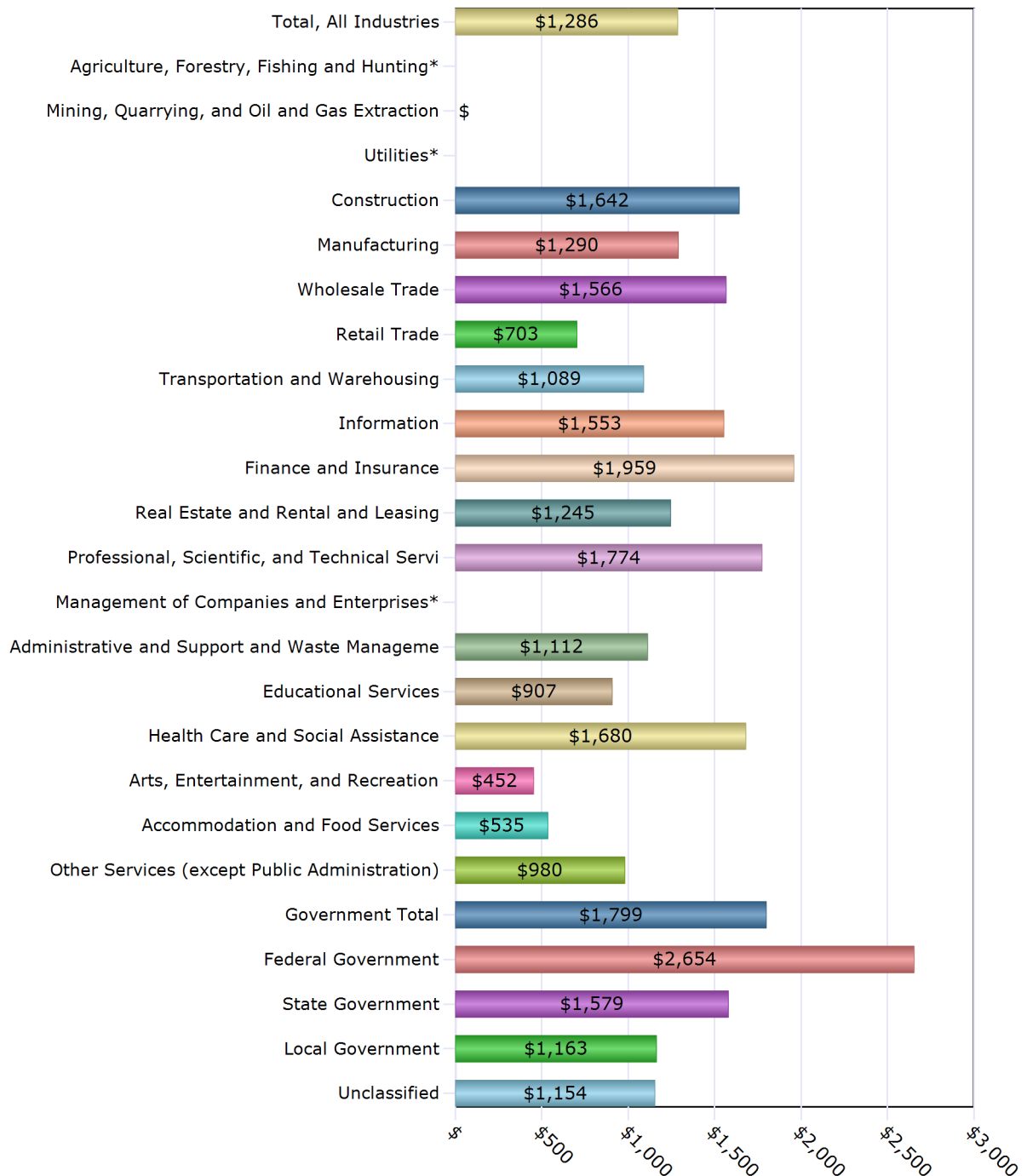
Turnover by Industry



Average: 9.3%

Source: U.S. Census Bureau,
Local Employment Dynamics (LED) Program, 4th Quarter (October, November, December) 2023, all ownerships.

Average Weekly Wage by Industry



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

Source: Virginia Works, Economic Information & Analytics,
Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2025.

Age of Workers by Industry

	14–18	19–21	22–24	25–34	35–44	45–54	55–64	65+
Total, All Industries	916	1,458	1,527	4,931	4,988	4,510	3,817	1,772
Agriculture, Forestry, Fishing and Hunting								
Mining, Quarrying, and Oil and Gas Extraction								
Utilities				6	7	5	6	4
Construction	3	22	28	117	126	142	122	53
Manufacturing	3	13	9	34	52	51	50	29
Wholesale Trade		2	2	27	25	35	40	25
Retail Trade	242	442	321	761	605	556	554	328
Transportation and Warehousing	6	7	23	65	86	63	42	23
Information	6	13	15	48	41	51	55	37
Finance and Insurance		7	18	104	123	122	104	38
Real Estate and Rental and Leasing	7	6	16	89	96	102	80	30
Professional, Scientific, and Technical Services	11	26	76	422	393	357	279	121
Management of Companies and Enterprises		28	52	252	314	262	217	58
Administrative and Support and Waste Management	5	16	42	114	109	109	121	48
Educational Services	6	18	64	242	371	425	370	229
Health Care and Social Assistance	27	171	316	1,437	1,617	1,404	1,097	353
Arts, Entertainment, and Recreation	82	56	51	89	63	45	48	29
Accommodation and Food Services	483	560	395	846	657	516	389	240
Other Services (except Public Administration)	21	58	74	179	174	145	119	59
Public Administration		9	23	97	129	119	120	66

Source: U.S. Census Bureau,
Local Employment Dynamics (LED) Program, 1st Quarter (January, February, March) 2024, all ownerships.

What is LED?

Developed by the U.S. Census Bureau, the Local Employment Dynamics (LED) program merges Virginia's Unemployment Compensation wage and employer records with Census demographic data. Read more about LED on the following website:

<http://lehd.did.census.gov/led/>



Industry Employment and Projections

Long Term (Period= 32)

	Employment			Percent	
	Estimated 2022	Projected 2032	Change	Total	Annual
Total, All Industries	187,370	198,338	10,968	5.85%	.57%
Total Self-Employed and Unpaid Family Workers	13,095	13,143	48	.37%	.04%
Agriculture, Forestry, Fishing and Hunting	***	***	***		***
Mining	***	***	***		***
Mining, Quarrying, and Oil and Gas Extraction	***	***	***		***
Utilities	***	***	***		***
Construction	8,420	8,814	394	4.68%	.46%
Manufacturing	8,564	8,594	30	.35%	.04%
Wholesale Trade	4,128	4,676	548	13.28%	1.25%
Retail Trade	22,600	22,289	-311	-1.38%	-.14%
Transportation and Warehousing	***	***	***		***
Information	1,589	1,635	46	2.89%	.29%
Finance and Insurance	6,319	6,828	509	8.06%	.78%
Real Estate and Rental and Leasing	1,987	2,039	52	2.62%	.26%
Professional, Scientific, and Technical Services	12,560	13,526	966	7.69%	.74%
Management of Companies and Enterprises	2,535	2,924	389	15.35%	1.44%
Administrative and Support and Waste Management and Remediation Services	7,537	7,451	-86	-1.14%	-.11%
Educational Services	17,139	17,523	384	2.24%	.22%
Health Care and Social Assistance	20,065	24,253	4,188	20.87%	1.91%
Arts, Entertainment, and Recreation	2,417	2,597	180	7.45%	.72%
Accommodation and Food Services	16,341	17,427	1,086	6.65%	.65%
Other Services (except Public Administration)	6,283	6,471	188	2.99%	.3%
Unclassified	22,551	24,408	1,857	8.23%	.79%

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Bay Consortium Region (LWDA XIII). No data available for Fredericksburg city.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032.

Industry Employment and Projections

Short Term (Period= 47)

	Employment			Percent	
	Estimated 2025	Projected 2027	Change	Total	Annual
Total, All Industries	4,319,847	4,382,412	62,565	1.45%	.72%
Total Self-Employed and Unpaid Family Workers	253,078	255,333	2,255	.89%	.44%
Agriculture, Forestry, Fishing and Hunting	3,857	3,873	16	.41%	.21%
Mining	5,372	5,497	125	2.33%	1.16%
Mining, Quarrying, and Oil and Gas Extraction	5,372	5,497	125	2.33%	1.16%
Utilities	11,712	11,910	198	1.69%	.84%
Construction	219,547	226,921	7,374	3.36%	1.67%
Manufacturing	238,058	234,873	-3,185	-1.34%	-.67%
Wholesale Trade	112,712	113,135	423	.38%	.19%
Retail Trade	386,855	387,938	1,083	.28%	.14%
Transportation and Warehousing	159,919	165,200	5,281	3.3%	1.64%
Information	68,110	67,939	-171	-.25%	-.13%
Finance and Insurance	145,064	147,146	2,082	1.44%	.72%
Real Estate and Rental and Leasing	60,150	61,801	1,651	2.74%	1.36%
Professional, Scientific, and Technical Services	469,676	484,434	14,758	3.14%	1.56%
Management of Companies and Enterprises	90,454	93,301	2,847	3.15%	1.56%
Administrative and Support and Waste Management and Remediation Services	242,667	243,735	1,068	.44%	.22%
Educational Services	390,264	397,202	6,938	1.78%	.89%
Health Care and Social Assistance	520,156	541,236	21,080	4.05%	2.01%
Arts, Entertainment, and Recreation	60,709	60,321	-388	-.64%	-.32%
Accommodation and Food Services	338,240	338,976	736	.22%	.11%
Other Services (except Public Administration)	135,059	137,865	2,806	2.08%	1.03%
Unclassified	408,188	403,776	-4,412	-1.08%	-.54%

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Virginia Statewide. No data available for Fredericksburg city.

Source: Virginia Works, Economic Information & Analytics,
Short Term Industry and Occupational Projections, 2025-2027.

Occupation Employment and Projections

Long Term (Period= 32)

	Employment			Openings		
	Estimated 2022	Projected 2032	% Change	Replace -ments	Growth	Total
Total, All Occupations	187,370	198,338	5.85%	213,434	10,968	224,402
Management Occupations	14,084	14,726	4.56%	12,035	642	12,677
Business and Financial Operations Occupations	13,096	14,251	8.82%	10,879	1,155	12,034
Computer and Mathematical Occupations	8,652	9,946	14.96%	5,440	1,294	6,734
Architecture and Engineering Occupations	4,750	4,982	4.88%	3,097	232	3,329
Life, Physical, and Social Science Occupations	1,867	2,007	7.5%	1,472	140	1,612
Community and Social Service Occupations	2,475	2,891	16.81%	2,223	416	2,639
Legal Occupations	941	967	2.76%	688	26	714
Education, Training, and Library Occupations	11,801	12,317	4.37%	10,253	516	10,769
Arts, Design, Entertainment, Sports, and Media Occupations	2,017	2,144	6.3%	2,076	127	2,203
Healthcare Practitioners and Technical Occupations	9,036	10,373	14.8%	5,306	1,337	6,643
Healthcare Support Occupations	7,191	9,402	30.75%	11,903	2,211	14,114
Protective Service Occupations	4,543	4,781	5.24%	5,263	238	5,501
Food Preparation and Serving Related Occupations	15,514	16,496	6.33%	30,468	982	31,450
Building and Grounds Cleaning and Maintenance Occupations	6,007	5,919	-1.47%	7,949	-88	7,861
Personal Care and Service Occupations	4,743	5,289	11.51%	8,490	546	9,036
Sales and Related Occupations	18,776	18,615	-.86%	25,142	-161	24,981
Office and Administrative Support Occupations	19,798	19,474	-1.64%	22,263	-324	21,939
Farming, Fishing, and Forestry Occupations	4,928	4,882	-.93%	7,150	-46	7,104
Construction and Extraction Occupations	7,868	8,293	5.4%	6,798	425	7,223
Installation, Maintenance, and Repair Occupations	7,806	7,976	2.18%	6,862	170	7,032
Production Occupations	5,795	5,659	-2.35%	6,456	-136	6,320
Transportation and Material Moving Occupations	15,682	16,948	8.07%	21,221	1,266	22,487

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Bay Consortium Region (LWDA XIII). No data available for Fredericksburg city.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032.

Occupation Employment and Projections

Short Term (Period= 47)

	Employment			Openings		
	Estimated 2025	Projected 2027	% Change	Replace -ments	Growth	Total
Total, All Occupations	4,319,847	4,382,412	1.45%	920,875	62,565	983,440
Management Occupations	305,043	309,283	1.39%	45,412	4,240	49,652
Business and Financial Operations Occupations	416,396	422,295	1.42%	65,996	5,899	71,895
Computer and Mathematical Occupations	243,901	251,582	3.15%	28,466	7,681	36,147
Architecture and Engineering Occupations	74,632	75,477	1.13%	9,876	845	10,721
Life, Physical, and Social Science Occupations	49,909	50,777	1.74%	8,029	868	8,897
Community and Social Service Occupations	64,908	67,075	3.34%	10,838	2,167	13,005
Legal Occupations	39,357	39,476	.3%	4,981	119	5,100
Education, Training, and Library Occupations	257,764	262,907	2%	46,232	5,143	51,375
Arts, Design, Entertainment, Sports, and Media Occupations	72,619	73,359	1.02%	14,083	740	14,823
Healthcare Practitioners and Technical Occupations	236,818	243,569	2.85%	26,634	6,751	33,385
Healthcare Support Occupations	164,502	172,170	4.66%	48,123	7,668	55,791
Protective Service Occupations	111,007	112,088	.97%	27,276	1,081	28,357
Food Preparation and Serving Related Occupations	322,749	322,901	.05%	122,895	152	123,047
Building and Grounds Cleaning and Maintenance Occupations	145,224	148,976	2.58%	39,337	3,752	43,089
Personal Care and Service Occupations	115,912	119,345	2.96%	39,994	3,433	43,427
Sales and Related Occupations	425,112	426,079	.23%	108,828	967	109,795
Office and Administrative Support Occupations	429,812	429,076	-.17%	97,116	-736	96,380
Farming, Fishing, and Forestry Occupations	5,543	5,476	-1.21%	1,583	-67	1,516
Construction and Extraction Occupations	196,719	201,956	2.66%	33,885	5,237	39,122
Installation, Maintenance, and Repair Occupations	168,321	170,948	1.56%	29,479	2,627	32,106
Production Occupations	168,073	165,494	-1.53%	35,766	-2,579	33,187
Transportation and Material Moving Occupations	305,526	312,103	2.15%	76,046	6,577	82,623

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Virginia Statewide. No data available for Fredericksburg city.

Source: Virginia Works, Economic Information & Analytics,
Short Term Industry and Occupational Projections, 2025-2027.

Growth Occupations

	Employment			Openings			Average Annual Salary
	Estimated 2022	Projected 2032	% Change	Replace-ments	Growth	Total	
Nurse Practitioners	281	499	77.58%	173	218	391	\$128,660
Physician Assistants	229	344	50.22%	141	115	256	\$146,990
Veterinary Assistants and Laboratory Animal Caretakers	201	294	46.27%	478	93	571	\$38,920
Veterinarians	162	234	44.44%	64	72	136	\$136,550
Physical Therapist Assistants	143	199	39.16%	231	56	287	\$68,640
Medical and Health Services Managers	362	496	37.02%	296	134	430	\$139,960
Medical Assistants	795	1,050	32.08%	1,174	255	1,429	\$43,640
Cooks, Restaurant	1,755	2,216	26.27%	2,973	461	3,434	\$38,950
Speech-Language Pathologists	180	227	26.11%	107	47	154	\$91,510
Physical Therapists	302	378	25.17%	131	76	207	\$103,850
Massage Therapists	101	125	23.76%	151	24	175	\$68,800
Operations Research Analysts	283	343	21.2%	188	60	248	\$138,140
Preschool Teachers, Except Special Education	590	705	19.49%	678	115	793	\$41,320
Logisticians	427	509	19.2%	369	82	451	\$110,620
Medical Secretaries	570	676	18.6%	645	106	751	\$46,540
Social and Community Service Managers	119	141	18.49%	100	22	122	\$91,420
Social and Human Service Assistants	470	556	18.3%	519	86	605	\$45,340
Financial Managers	455	536	17.8%	330	81	411	\$172,720
Personal Financial Advisors	138	161	16.67%	92	23	115	\$130,550
Dental Assistants	380	441	16.05%	562	61	623	\$50,420

Note: Asterisks (***) indicate non-disclosable data.

Projections and OES wage data are for Bay Consortium Region (LWDA XIII). No data available for Fredericksburg city.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032
Occupational Employment Statistics (OES) Survey, 2024.

Declining Occupations

	Employment			Openings		
	Estimated 2022	Projected 2032	% Change	Replace-ments	Growth	Total
Executive Secretaries and Executive Administrative Assistants	234	192	-17.95%	216	-42	174
Welders, Cutters, Solderers, and Brazers	220	183	-16.82%	194	-37	157
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,626	1,460	-10.21%	1,710	-166	1,544
Cooks, Fast Food	798	724	-9.27%	1,139	-74	1,065
Tellers	392	357	-8.93%	380	-35	345
Shipping, Receiving, and Traffic Clerks	661	614	-7.11%	643	-47	596
Parts Salespersons	522	485	-7.09%	585	-37	548
Cashiers	5,375	5,001	-6.96%	10,018	-374	9,644
Automotive Service Technicians and Mechanics	1,492	1,399	-6.23%	1,217	-93	1,124
Chief Executives	423	397	-6.15%	269	-26	243
Tire Repairers and Changers	112	106	-5.36%	120	-6	114
First-Line Supervisors of Retail Sales Workers	2,472	2,360	-4.53%	2,367	-112	2,255
Office and Administrative Support Workers, All Other	223	213	-4.48%	228	-10	218
Bookkeeping, Accounting, and Auditing Clerks	1,684	1,611	-4.33%	1,908	-73	1,835
Office Clerks, General	3,177	3,043	-4.22%	3,707	-134	3,573
Helpers--Production Workers	587	565	-3.75%	897	-22	875
Customer Service Representatives	2,826	2,730	-3.4%	3,732	-96	3,636
Helpers--Electricians	142	138	-2.82%	154	-4	150
Telecommunications Equipment Installers and Repairers, Except Line Installers	142	138	-2.82%	141	-4	137
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	3,637	3,535	-2.8%	5,278	-102	5,176

Note: Asterisks (***) indicate non-disclosable data.

Projections data is for Bay Consortium Region (LWDA XIII). No data available for Fredericksburg city.

Source: Virginia Works, Economic Information & Analytics,
Long Term Industry and Occupational Projections, 2022-2032.

Consumer Price Index (CPI)

All Urban Consumers (CPI-U)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.	% chg
2014	233.916	234.781	236.293	237.072	237.900	238.343	238.250	237.852	238.031	237.433	236.151	234.812	236.736	1.6
2015	233.707	234.722	236.119	236.599	237.805	238.638	238.654	238.316	237.945	237.838	237.336	236.525	237.017	0.1
2016	236.916	237.111	238.132	239.261	240.229	241.018	240.628	240.849	241.428	241.729	241.353	241.432	240.007	1.3
2017	242.839	243.603	243.801	244.524	244.733	244.955	244.786	245.519	246.819	246.663	246.669	246.524	245.120	2.1
2018	247.867	248.991	249.554	250.546	251.588	251.989	252.006	252.146	252.439	252.885	252.038	251.233	251.107	2.4
2019	251.712	252.776	254.202	255.548	256.092	256.143	256.571	256.558	256.759	257.346	257.208	256.974	255.657	1.8
2020	257.971	258.678	258.115	256.389	256.394	257.797	259.101	259.918	260.280	260.388	260.229	260.474	258.811	1.2
2021	261.582	263.014	264.877	267.054	269.195	271.696	273.003	273.567	274.310	276.589	277.948	278.802	270.970	4.7
2022	281.148	283.716	287.504	289.109	292.296	296.311	296.276	296.171	296.808	298.012	297.711	296.797	292.655	8.0
2023	299.170	300.840	301.836	303.363	304.127	305.109	305.691	307.026	307.789	307.671	307.051	306.746	304.702	4.1
2024	308.417	310.326	312.332	313.548	314.069	314.175	314.540	314.796	315.301	315.664	315.493	315.605	313.689	2.9

Urban Wage Earners and Clerical Workers (CPI-W)

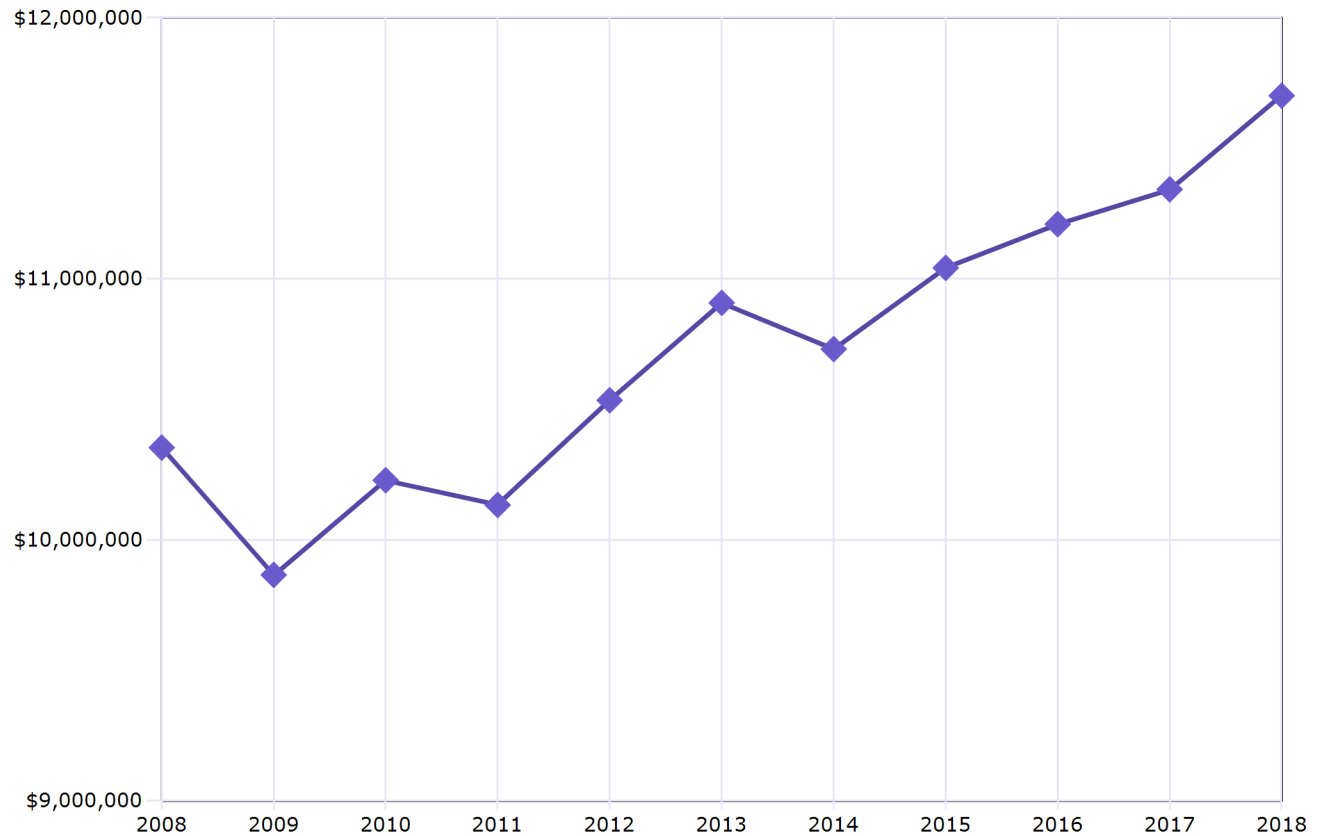
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.	% chg
2014	230.040	230.871	232.560	233.443	234.216	234.702	234.525	234.030	234.170	233.229	231.551	229.909	232.771	1.5
2015	228.294	229.421	231.055	231.520	232.908	233.804	233.806	233.366	232.661	232.373	231.721	230.791	231.810	-0.4
2016	231.061	230.972	232.209	233.438	234.436	235.289	234.771	234.904	235.495	235.732	235.215	235.390	234.076	1.0
2017	236.854	237.477	237.656	238.432	238.609	238.813	238.617	239.448	240.939	240.573	240.666	240.526	239.051	2.1
2018	241.919	242.988	243.463	244.607	245.770	246.196	246.155	246.336	246.565	247.038	245.933	244.786	245.146	2.5
2019	245.133	246.218	247.768	249.332	249.871	249.747	250.236	250.112	250.251	250.894	250.644	250.452	249.222	1.7
2020	251.361	251.935	251.375	249.515	249.521	251.054	252.636	253.597	254.004	254.076	253.826	254.081	252.248	1.2
2021	255.296	256.843	258.935	261.237	263.612	266.412	267.789	268.387	269.086	271.552	273.042	273.925	265.510	5.3
2022	276.296	278.943	283.176	284.575	288.022	292.542	292.219	291.629	291.854	293.003	292.495	291.051	287.984	8.5
2023	293.565	295.057	296.021	297.730	298.382	299.394	299.899	301.551	302.257	302.071	301.224	300.728	298.990	3.8
2024	302.201	304.284	306.502	307.811	308.163	308.054	308.501	308.640	309.046	309.358	308.998	309.067	307.552	2.9

Note: CPI data is for the United States only. No data available for Fredericksburg city.

The CPI-U includes expenditures by urban wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees and others not in the labor force. The CPI-W only includes expenditures by those in hourly wage earning or clerical jobs.

Source: Bureau of Labor Statistics,
Consumer Price Indexes (CPI) Program.

Local Option Sales Tax

Trends

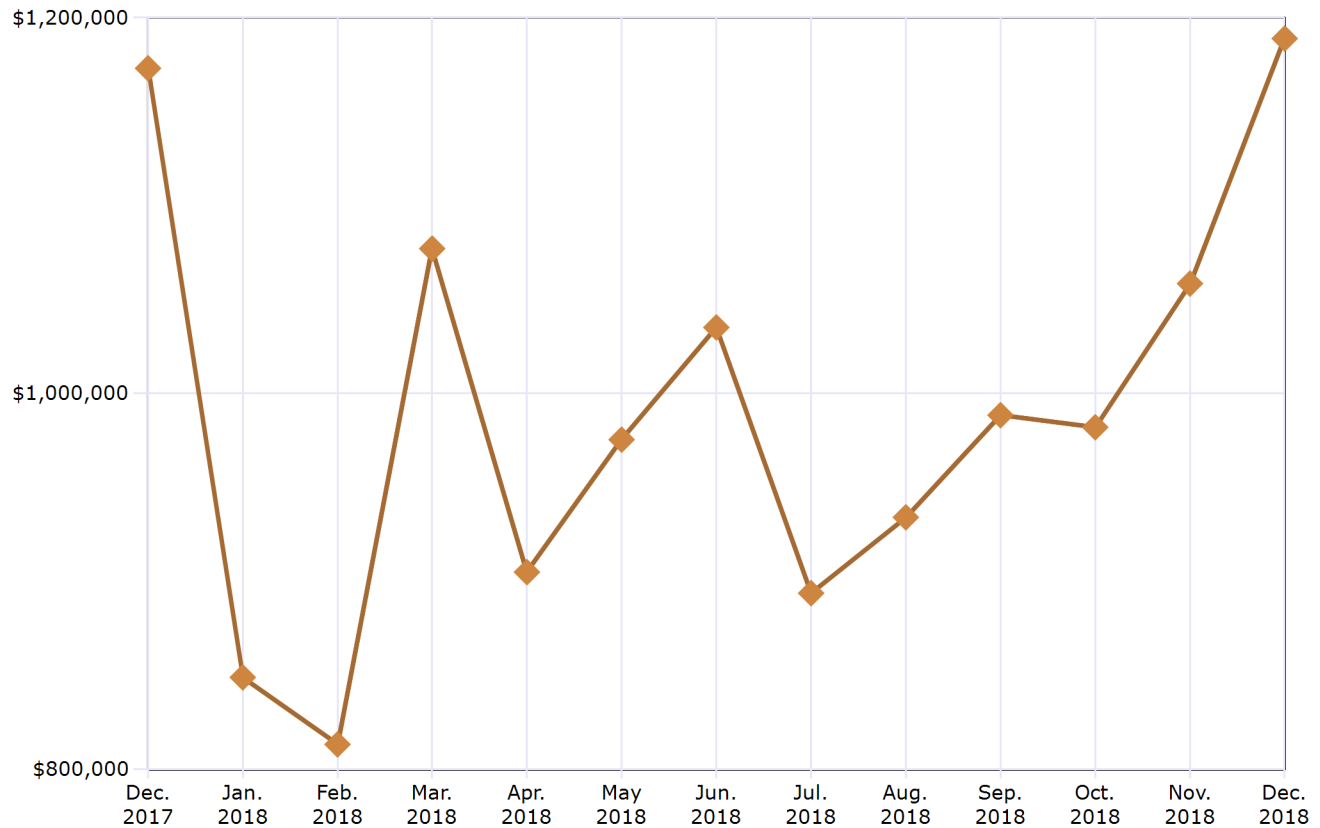
	Fredericksburg city	Virginia
2008	\$10,352,891	\$1,032,815,078
2009	\$9,865,220	\$979,594,664
2010	\$10,227,955	\$992,820,512
2011	\$10,132,924	\$1,035,981,229
2012	\$10,534,314	\$1,080,663,042
2013	\$10,907,313	\$1,093,292,668
2014	\$10,730,363	\$1,131,194,860
2015	\$11,041,358	\$1,179,611,271
2016	\$11,208,927	\$1,202,257,995
2017	\$11,342,262	\$1,232,981,515
2018	\$11,701,156	\$1,282,022,261

Note: This data is based on Virginia sales tax revenues deposited, rather than the actual taxable sales figures as reported on a dealer's return.

*Source: Virginia Department of Taxation,
Revenue Forecasting.*

Local Option Sales Tax

Past 12 Months



	Fredericksburg city	Virginia
Dec. 2017	\$1,173,080	\$123,193,863
Jan. 2018	\$849,014	\$90,794,207
Feb. 2018	\$813,338	\$90,576,093
Mar. 2018	\$1,077,138	\$107,834,402
Apr. 2018	\$905,004	\$102,372,977
May 2018	\$975,490	\$110,211,496
Jun. 2018	\$1,035,199	\$112,529,037
Jul. 2018	\$893,788	\$107,211,401
Aug. 2018	\$934,167	\$109,428,585
Sep. 2018	\$988,493	\$105,468,340
Oct. 2018	\$982,096	\$107,742,243
Nov. 2018	\$1,058,518	\$112,348,128
Dec. 2018	\$1,188,911	\$125,505,352

Note: This data is based on Virginia sales tax revenues deposited, rather than the actual taxable sales figures as reported on a dealer's return.

Source: Virginia Department of Taxation, Revenue Forecasting.

IV. Education Profile

Overview

The Education Profile for Fredericksburg city provides an assortment of data collected from the United States Census Bureau and the National Center for Education Statistics (NCES).



Related Terms and Definitions

Associate's degree

An award that normally requires at least two but less than four years of full-time equivalent college work.

Bachelor's degree

An award that normally requires at least four but not more than five years of full-time equivalent college-level work.

Post-baccalaureate certificate

An award that requires completion of an organized program of study equivalent to 18 semester credit hours beyond the bachelor's. It is designed for persons who have completed a bachelor's degree, but do not meet the requirements of a master's degree.

Master's degree

An award that requires the successful completion of a program of study of at least the full-time equivalent of one but not more than two academic years of work beyond the bachelor's degree.

Post-master's certificate

An award that requires completion of an organized program of study equivalent to 24 semester credit hours beyond the master's degree, but does not meet the requirements of academic degrees at the doctor's level.

Doctor's degree

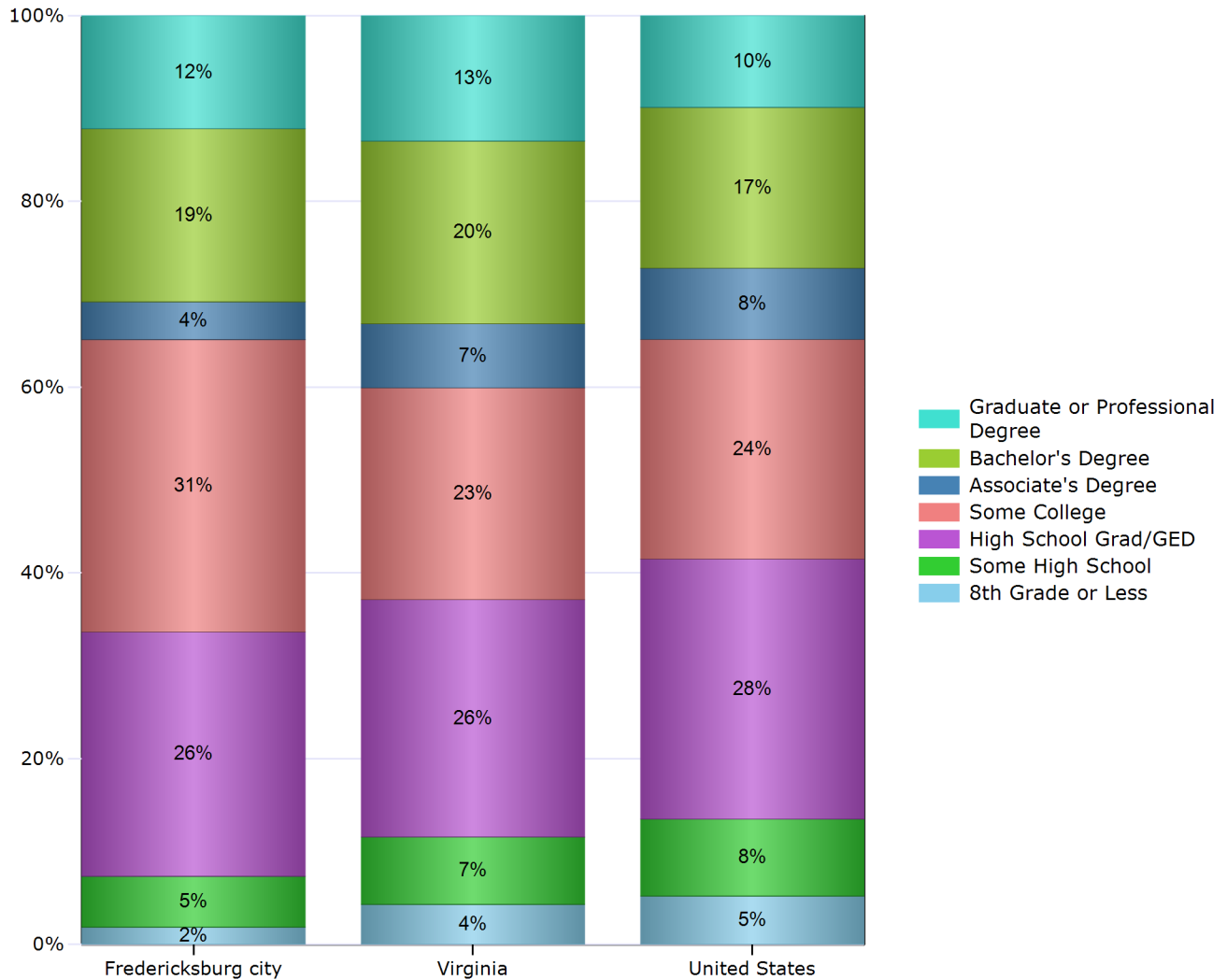
The highest award a student can earn for graduate study.

First-professional degree

An award that requires completion of a program that meets all of the following criteria: (1) completion of the academic requirements to begin practice in the profession; (2) at least two years of college work prior to entering the program; and (3) a total of at least six academic years of college work to complete the degree program, including prior required college work plus the length of the professional program itself.

Educational Attainment

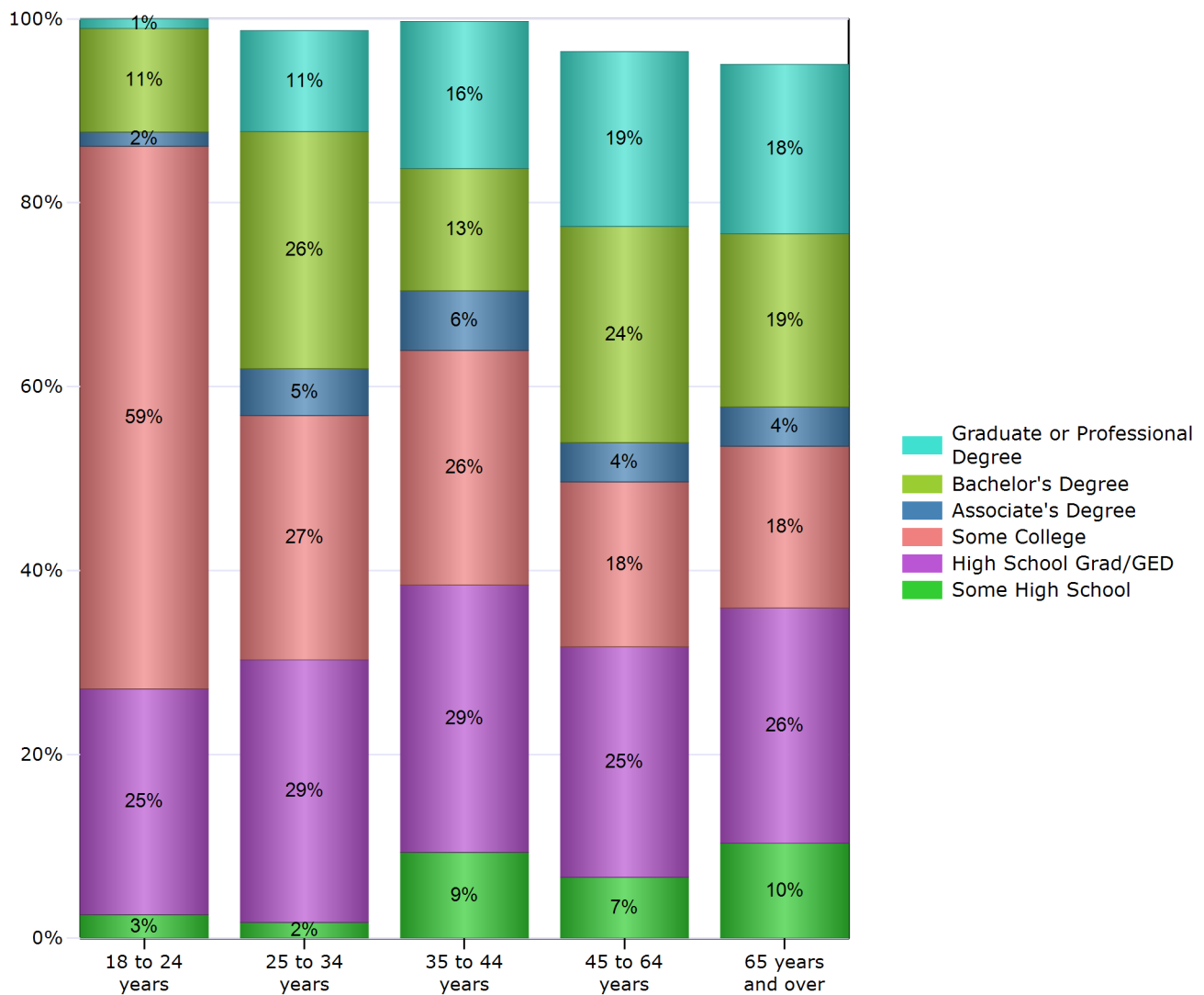
(Population 18 years and over)



	Fredericksburg city	Virginia	United States
8th Grade or Less	405	275,329	12,639,425
Some High School	1,189	464,075	20,093,117
High School Grad/GED	5,716	1,633,105	68,044,371
Some College	6,839	1,457,887	57,431,237
Associate's Degree	881	440,219	18,586,866
Bachelor's Degree	4,047	1,258,661	42,027,629
Graduate or Professional Degree	2,648	862,686	24,008,551
	21,725	6,391,962	242,831,196

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Educational Attainment by Age

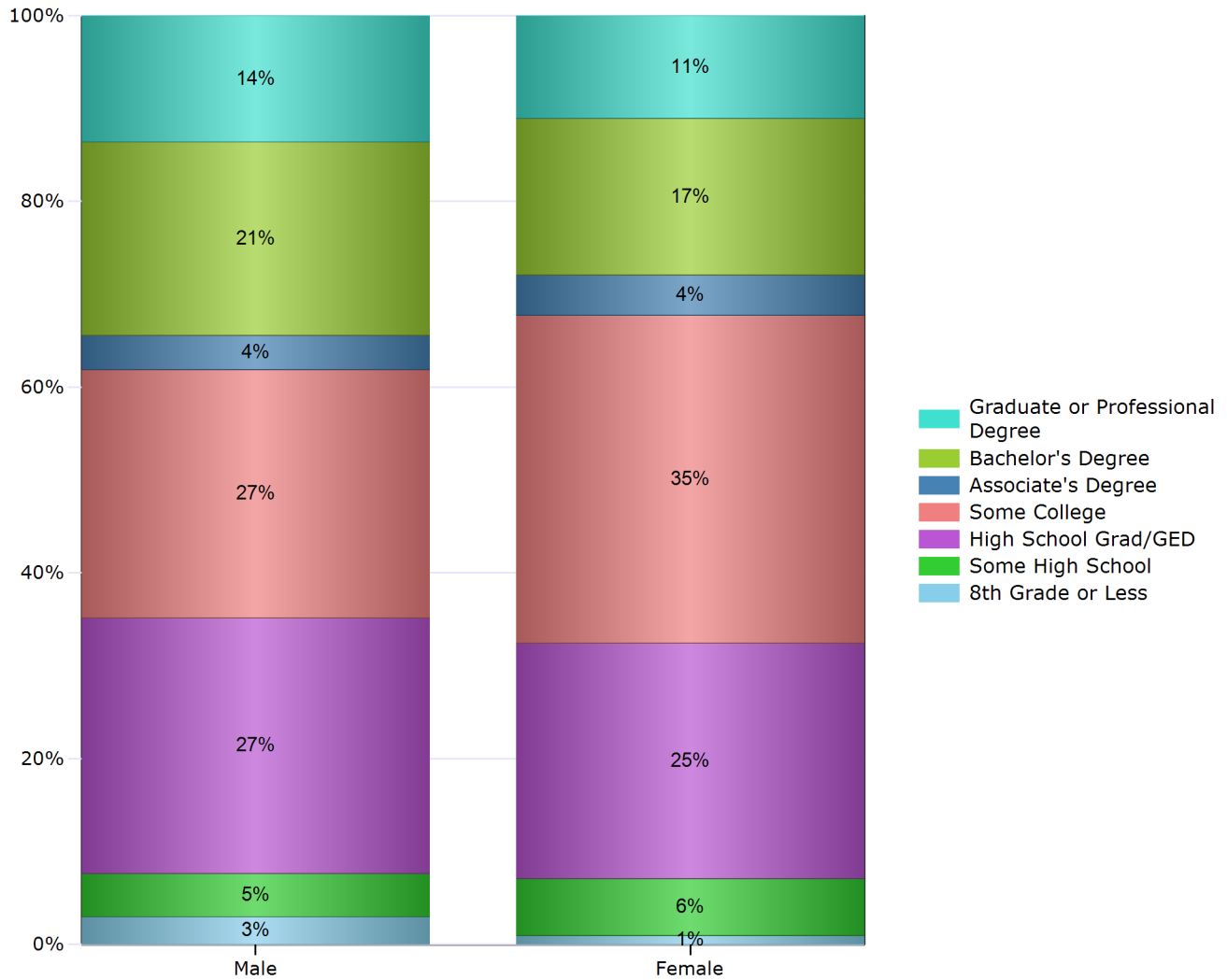


	18 - 24	25 - 34	35 - 44	45 - 64	65+	Total
8th Grade or Less		56	9	200	140	405
Some High School	145	75	306	371	292	1,189
High School Grad/GED	1,391	1,245	952	1,403	725	5,716
Some College	3,342	1,159	836	1,004	498	6,839
Associate's Degree	87	222	212	239	121	881
Bachelor's Degree	638	1,124	436	1,316	533	4,047
Graduate or Professional Degree	59	479	524	1,064	522	2,648
	5,662	4,360	3,275	5,597	2,831	21,725

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Educational Attainment by Gender

(Population 18 years and over)

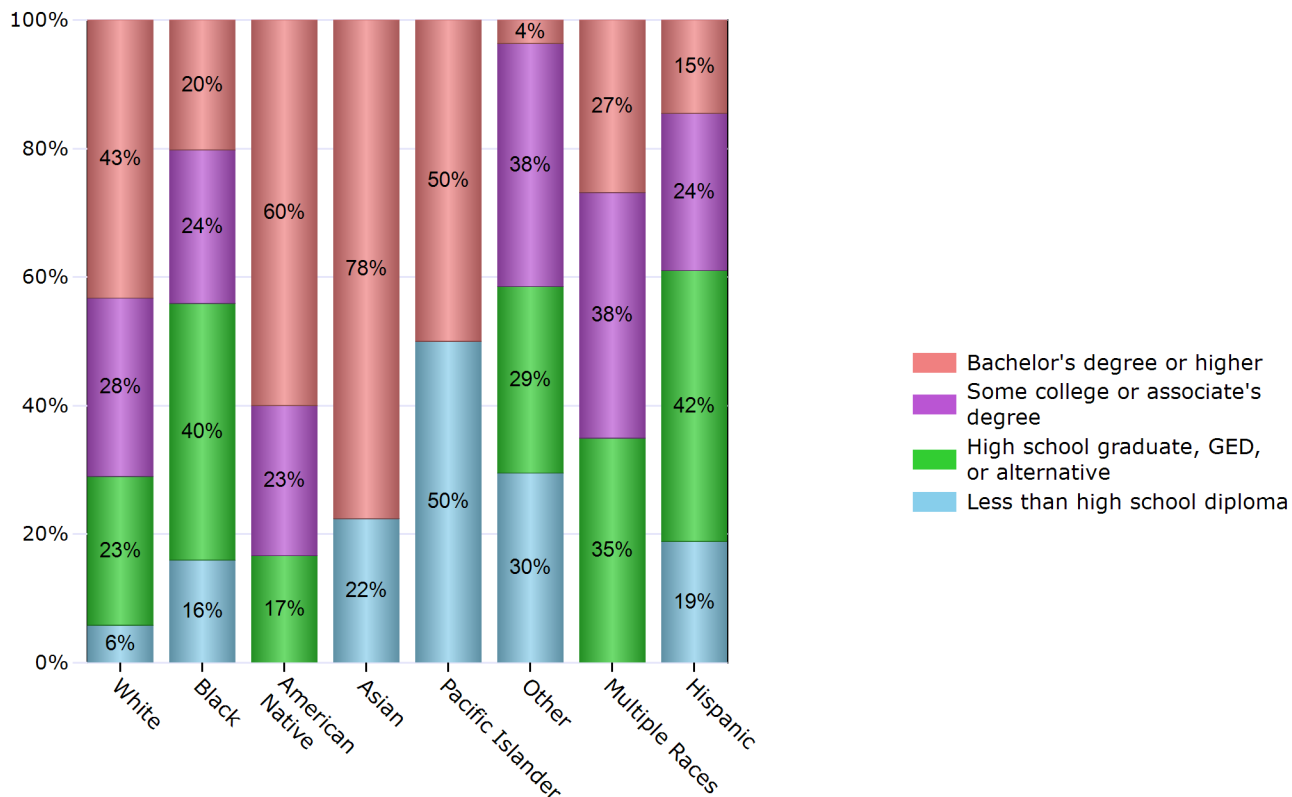


	Male	Female	Total
8th Grade or Less	289	116	405
Some High School	452	737	1,189
High School Grad/GED	2,666	3,050	5,716
Some College	2,593	4,246	6,839
Associate's Degree	358	523	881
Bachelor's Degree	2,019	2,028	4,047
Graduate or Professional Degree	1,318	1,330	2,648
	9,695	12,030	21,725

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Educational Attainment by Race/Ethnicity

(Population 25 years and over)



	Less than high school diploma	High school grad, GED, or alternative	Some college or associate's degree	Bachelor's degree or higher	Total
Race					
White	644	2,559	3,063	4,779	11,045
Black or African American	588	1,470	878	744	3,680
American Indian or Alaska Native	0	5	7	18	30
Asian	87	0	0	301	388
Native Hawaiian/Pacific Islander	9	0	0	9	18
Other	121	119	155	15	410
Multiple Races	0	172	188	132	492
Ethnicity					
Not Hispanic or Latino (of any race)	0	0	0	0	0
Hispanic or Latino (of any race)	304	679	394	234	1,611
	1,753	5,004	4,685	6,232	17,674

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Graduate Data Trends

Fredericksburg city

	Cert. <1 yr.	Cert. 1-2 yrs.	Assoc.	Cert. 2-4 yrs.	BA	Cert. Post-BA	MA	Cert. Post-MA	Ph.D.	1st Prof.
2006		3			1032	5	186			
2007		0			1063	0	234	4		
2008										
2009	1				928	16	204			
2010	8				961	32	247			
2011	12				1046	24	255			
2012	14				963	11	232			
2013	11				1026	5	246			
2016	24				1085	1	161			

Note: This table only reflects degrees completed from institutions within Fredericksburg city

Virginia Statewide

	Cert. <1 yr.	Cert. 1-2 yrs.	Assoc.	Cert. 2-4 yrs.	BA	Cert. Post-BA	MA	Cert. Post-MA	Ph.D.	1st Prof.
2006	4,213	4,298	14,431	102	39,247	608	12,429	225	1,440	2,490
2007	4,478	3,686	15,519	116	40,381	650	12,781	252	1,516	2,626
2008	5,197	3,813	16,207	134	39,160	725	13,802	334	1,080	2,168
2009	6,259	4,587	17,179	85	40,233	756	15,445	300	925	2,064
2010	7,648	8,158	21,014	374	45,361	915	18,889	601	2,100	2,598
2011	6,972	12,557	24,306	473	49,109	1,055	20,697	727	2,329	2,658
2012	8,825	12,801	26,199	620	53,051	1,215	21,516	686	2,095	3,298
2013	8,153	12,179	25,854	484	54,778	1,067	22,782	706	2,230	2,963
2016	8,643	11,912	25,125	608	61,852	2,032	24,717	640	2,328	2,931

Source: U.S. Department of Education,
Institute of Education Sciences (IES).

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you can search over 2,300 school listings online
provided by the U.S. Department of Education?

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

www.VirginiaWorks.com



Training Providers

University of Mary Washington

1301 College Ave

Fredericksburg, VA 22401

Phone: (540) 654-1000

<http://www.umw.edu>

Number of 2016 graduates: 1,271

Career Training Solutions

10304 Spotsylvania Ave, Suite 400

Fredericksburg, VA 22408

Phone: (540) 373-2200 ext. 221

<http://www.evcc.edu>

Number of 2016 graduates: 119

Eastern Shore Community College

29300 Lankford Hwy

Melfa, VA 23410

Phone: (757) 789-1789

<http://www.es.vccs.edu>

Number of 2016 graduates: 114

*Source: U.S. Department of Education,
Institute of Education Sciences (IES), 2016.*

APPENDIX M-3
STAFFORD COMPREHENSIVE PLAN
(GRAPHICS)

1.1 Background

Stafford County is located approximately 40 miles south of Washington, D.C., and sixty miles north of Richmond, Virginia. The County covers 277 square miles of generally level to rolling land, with elevations ranging from sea level to 425 feet. The County is bordered by Prince William County on the north, Fauquier County and Culpeper County on the west, Spotsylvania County, Caroline County and the City of Fredericksburg below the Rappahannock River to the south, and the Potomac River and King George County on the east.

Established in 1664, Stafford County has a rich history from pre-colonial days to the industrialization of the nineteenth century. The County has important associations with major



Stafford County in Regional Context

events and people in our nation's history. This history is documented by the County's bountiful archaeological and architectural remains.

Stafford remained mostly a rural community until the construction of Interstate 95 during the late 1960s. Since that time, the County has experienced a growth rate that, for a period of time, ranked it among the fastest growing jurisdictions in the nation.

The County's proximity to major industrial and commercial markets, combined with its high percentage of vacant land, is attractive for residential, commercial, and industrial development. Since Stafford County is located within commuting distance of major

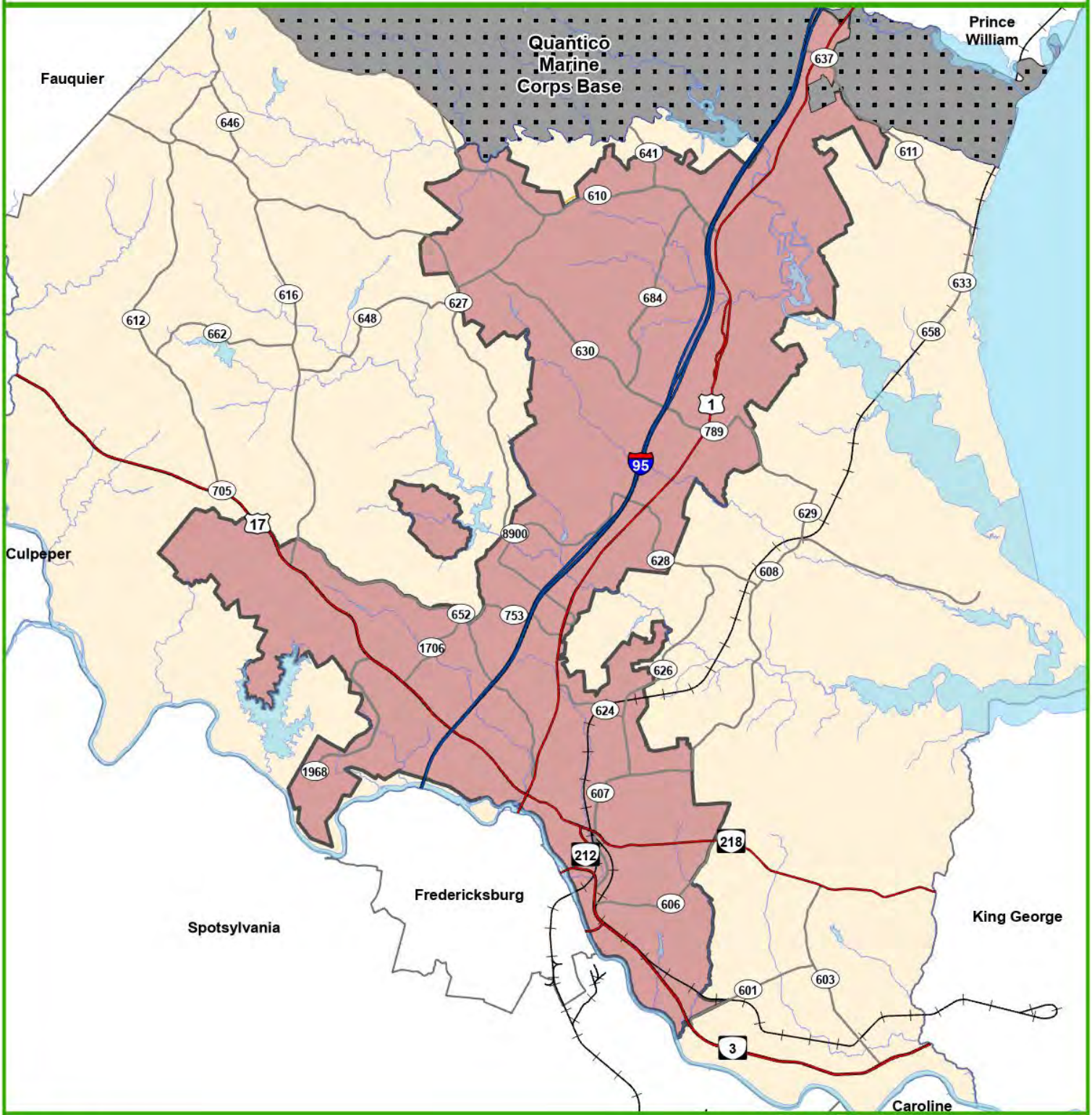
employment centers to the north and south, it continues to be an attractive location for new development. While the rate of growth has slowed in recent years, residential and commercial development is still occurring to meet the demand for housing and services in this region.

1.2 Purpose of the Plan

The purpose of the Comprehensive Plan is to guide the physical development of Stafford County. The Comprehensive Plan:

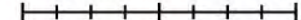
- Documents local characteristics and trends regarding resident population composition, land use, the natural environment, economic development and service provision;

FIGURE 3.1
Urban Services Areas
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 17, 2024



Legend :

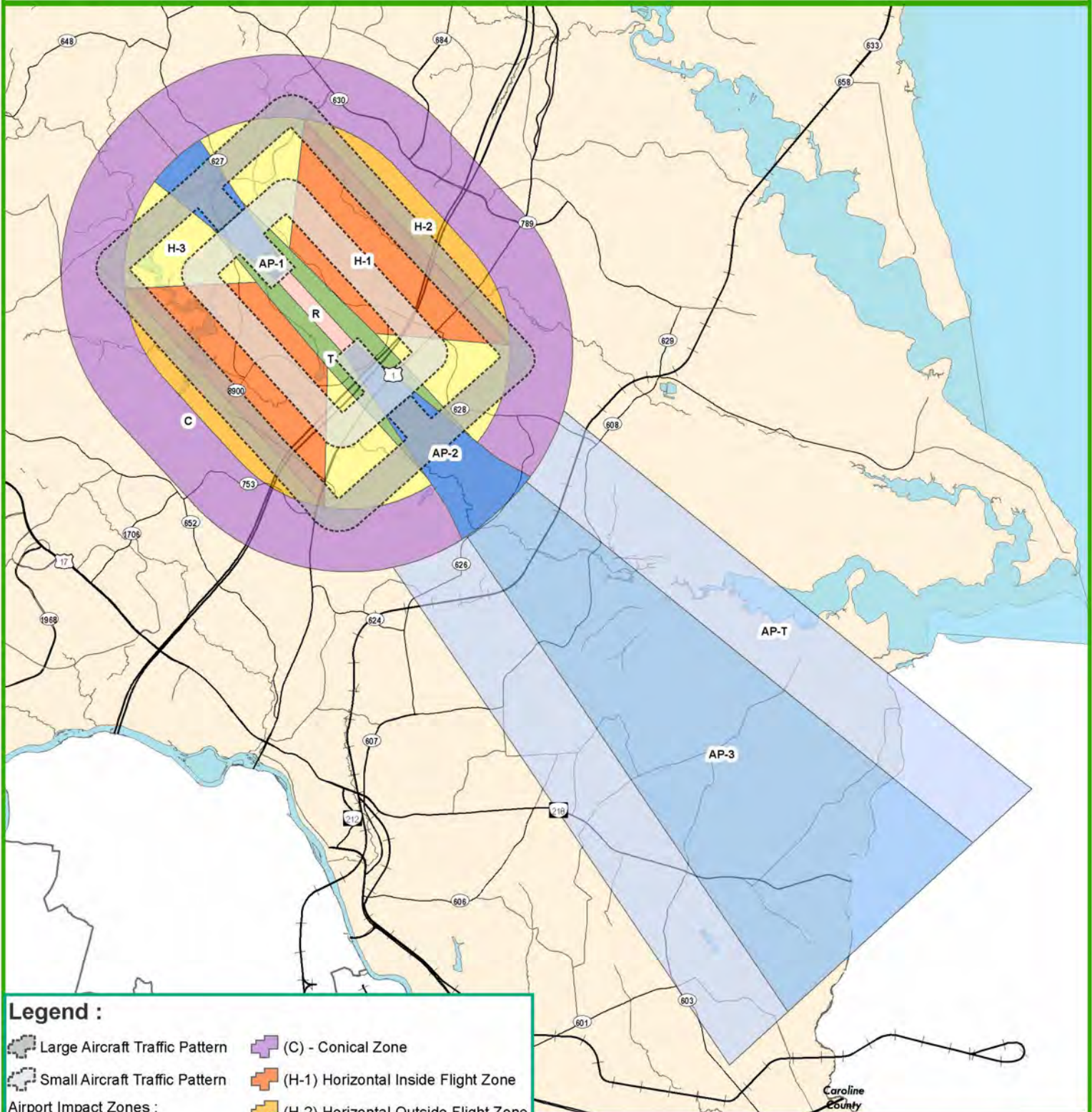
 Urban Services Area

0 4,500 9,000 18,000 Feet


Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.



FIGURE 3.8
Airport Land Use
Compatibility Zones
 Stafford County Comprehensive Plan
 Stafford County, Virginia
 September 8, 2021



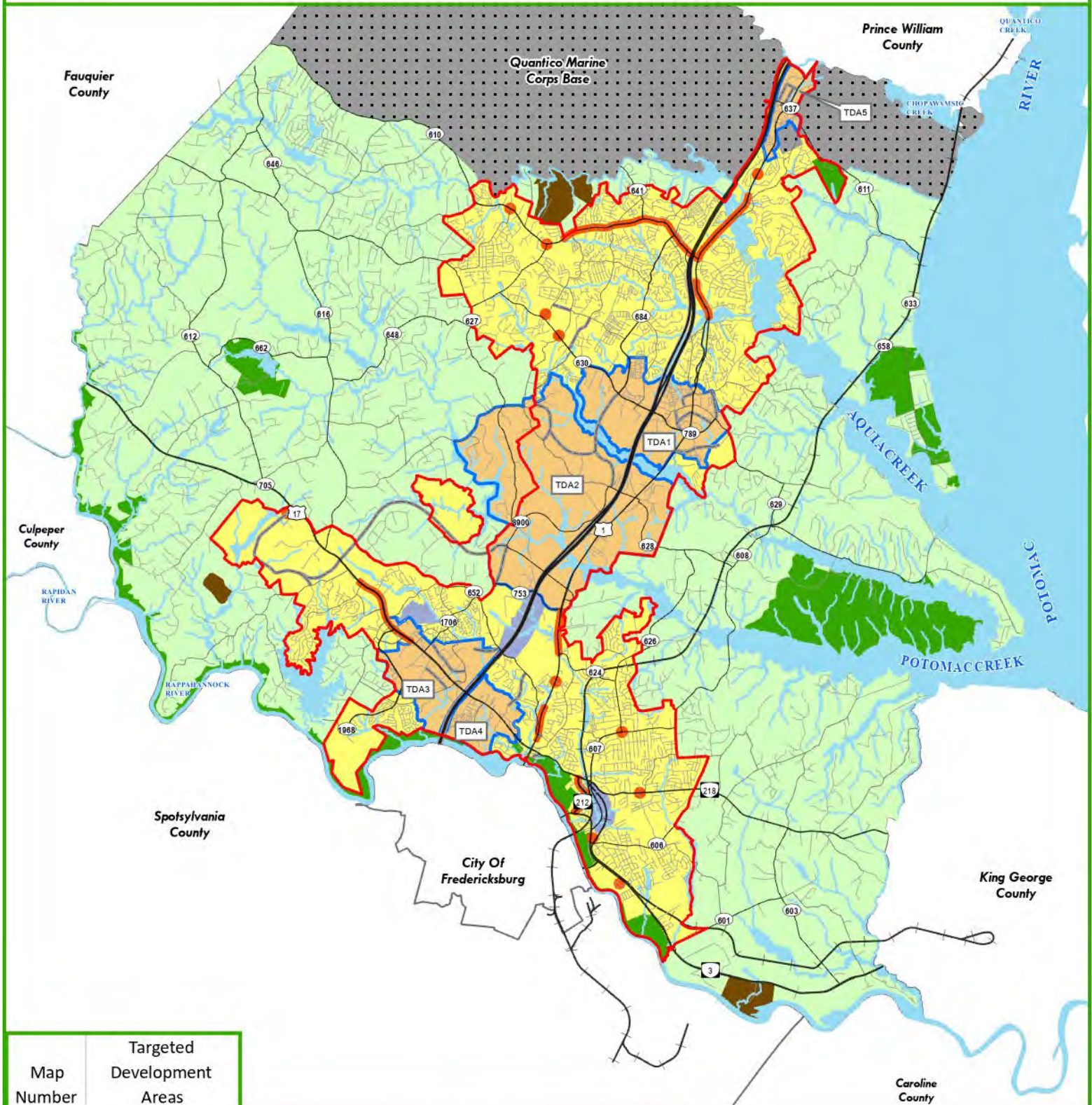
Legend :

- | | |
|--------------------------------|--------------------------------------|
| Large Aircraft Traffic Pattern | (C) - Conical Zone |
| Small Aircraft Traffic Pattern | (H-1) Horizontal Inside Flight Zone |
| Airport Impact Zones : | |
| (AP-1) Approach - Final | (H-2) Horizontal Outside Flight Zone |
| (AP-2) Approach - Mid | (H-3) Horizontal Turning Zone |
| (AP-3) Approach - Outer | (R) Runway |
| (AP-T) Approach - Transitional | (T) Transitional |

0 5,000 10,000 20,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.

FIGURE 3.9
Future Land Use
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 17, 2024



Map Number	Targeted Development Areas
TDA1	Courthouse
TDA2	Central Stafford
TDA3	Berea
TDA4	Falmouth Gateway
TDA5	Boswell's Corner

Legend:

Urban Services Area	Future Land Use	Resource Protection
Railroads	Targeted Development Areas	Parks
Proposed New Roads	Suburban	
Commercial Node	Business and Industry	
Commercial Corridors	Agricultural/Rural	
Targeted Development Areas	Mining	
	Federal	

0 5,000 10,000 20,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.

Table 3.4 Land Use Map Growth Projections

INSIDE THE URBAN SERVICES AREA					
SUBURBAN					
Sub-Area	Net Acreage	Residential Units			Projected Non-Residential Square Footage (5)
		Existing	Projected (1)	Total	
North	13,567	18,674	2,501	21,175	1,500,000
South	13,774	13,355	3,715	17,070	2,000,000
Staffordshire	617	-	336	336	-
Sub-Total	27,958	32,029	6,552	38,581	3,500,000
PLANNING AREAS (2)					
Courthouse	2,580	1,255	3,750	5,005	5,000,000
Central Stafford	5,311	224	1,750	1,974	12,075,000
Warrenton Road	2,587	772	3,300	4,072	4,750,000
Leeland Town Station	328	151	780	931	123,660
Brooke Station	212	26	240	266	40,000
Boswells Corner	621	518	-	518	1,000,000
Aquia Town Center	75	2	-	2	-
Historic Falmouth Village	146	63	-	63	-
Sub-Total	11,860	3,011	9,820	12,831	22,988,660
BUSINESS/INDUSTRY					
Central Stafford Corridor	341	27	-	27	700,000
Stafford Industrial Park	165	-	-	-	250,000
Cool Spring Road	169	6	-	6	250,000
Sub-Total	675	33	-	33	1,200,000
OTHER					
Resource Protection Area	4,570	357	-	357	-
Park	532	7	-	7	-
Total	5,102	364	-	364	-
INSIDE THE URBAN SERVICES AREA TOTALS					
	Acreage	Residential Units			Projected Non-Residential Square Footage
		Existing	Projected (3)	Total	
Total	45,595	35,437	16,372	51,809	27,688,660

OUTSIDE THE URBAN SERVICES AREA					
AGRICULTURAL/RURAL AREA					
Sub-Area	Net Acreage	Residential Units			Projected Non-Residential Square Footage (5)
		Existing	Projected (1)	Total	
All Agricultural/Rural Areas	75,487	9,647	4,168	13,815	250,000
Total	75,487	9,647	4,168	13,815	250,000
PLANNING AREAS (2)					
Central Stafford	1,431	169	-	169	
The Marine District	337	38	-	38	
Potomac Landing	2	-	-		
Old Banks Recreation	5	-	-		
Rappahannock Recreation	373	1	-	1	
Widewater	1,453	103	-	103	
Sub-Total	3,601	311		311	
OTHER					
Resource Protection Area	17,855	99	-	99	
Mining	1,014	5	-	5	
Park	4,734	-	-	-	
Federal	32,221	-	-	-	
Total	55,824	104	-	104	
OUTSIDE THE URBAN SERVICES AREA TOTALS					
	Acreage	Residential Units			Residential Square Footage
		Existing	Projected (3)	Total	
Total	134,912	10,062	4,168	14,230	250,000
COUNTYWIDE PROJECTIONS					
	Acreage	Residential Units			Projected Non-Residential Square Footage
		Existing	Projected (3)	Total	
Inside the USA	45,595	35,437	16,372	51,809	27,688,660
Outside the USA	134,912	10,062	4,168	14,230	250,000
Total	180,507	45,499	20,540	66,039	27,938,660



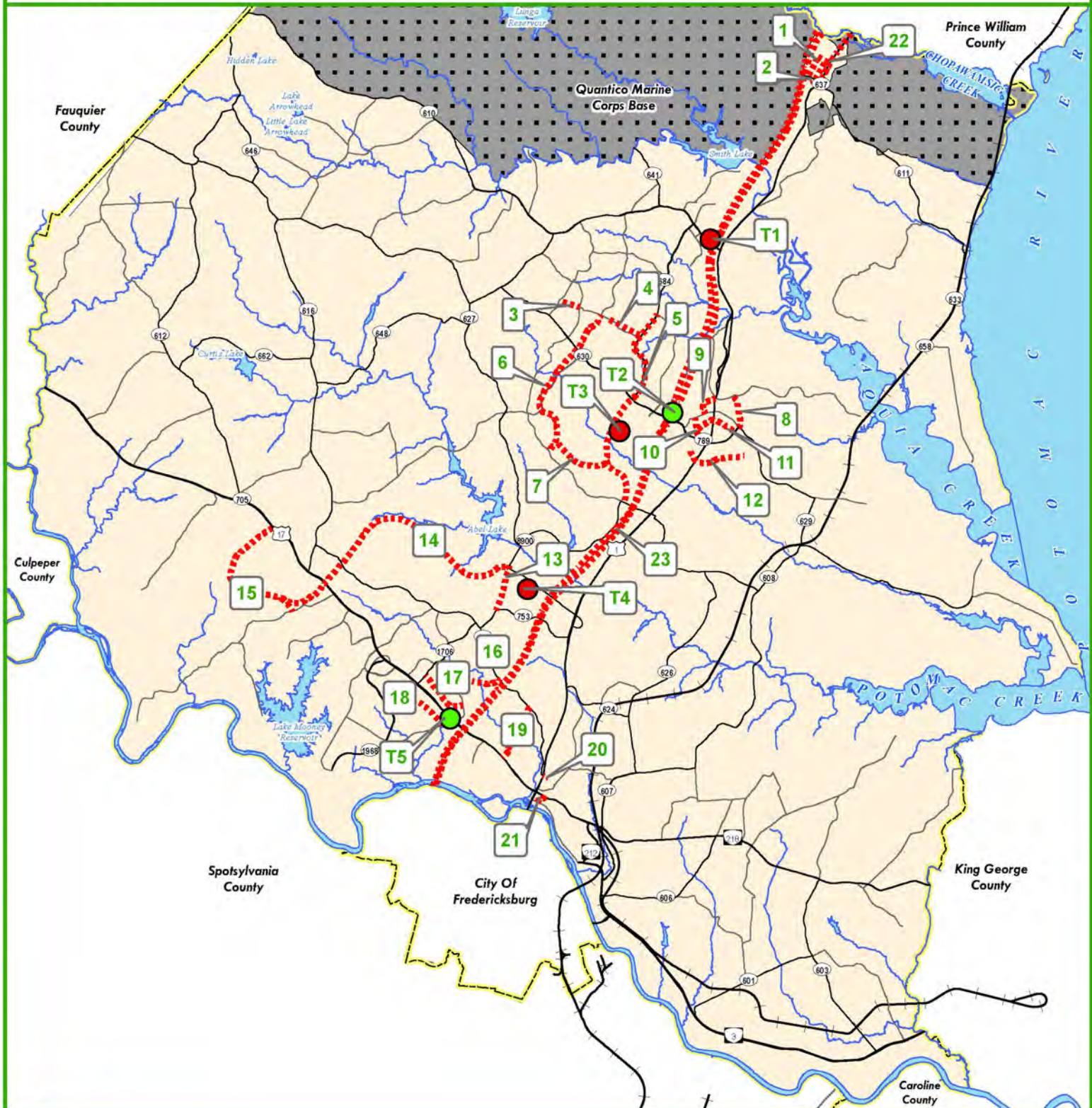
FIGURE 4.2

Targeted Development Area Improvements

Stafford County Comprehensive Plan

Stafford County, Virginia

September 8, 2021

**Legend**

- New Transit / Park & Ride Facility
- Improvement to Existing Facility
- New Road Segments

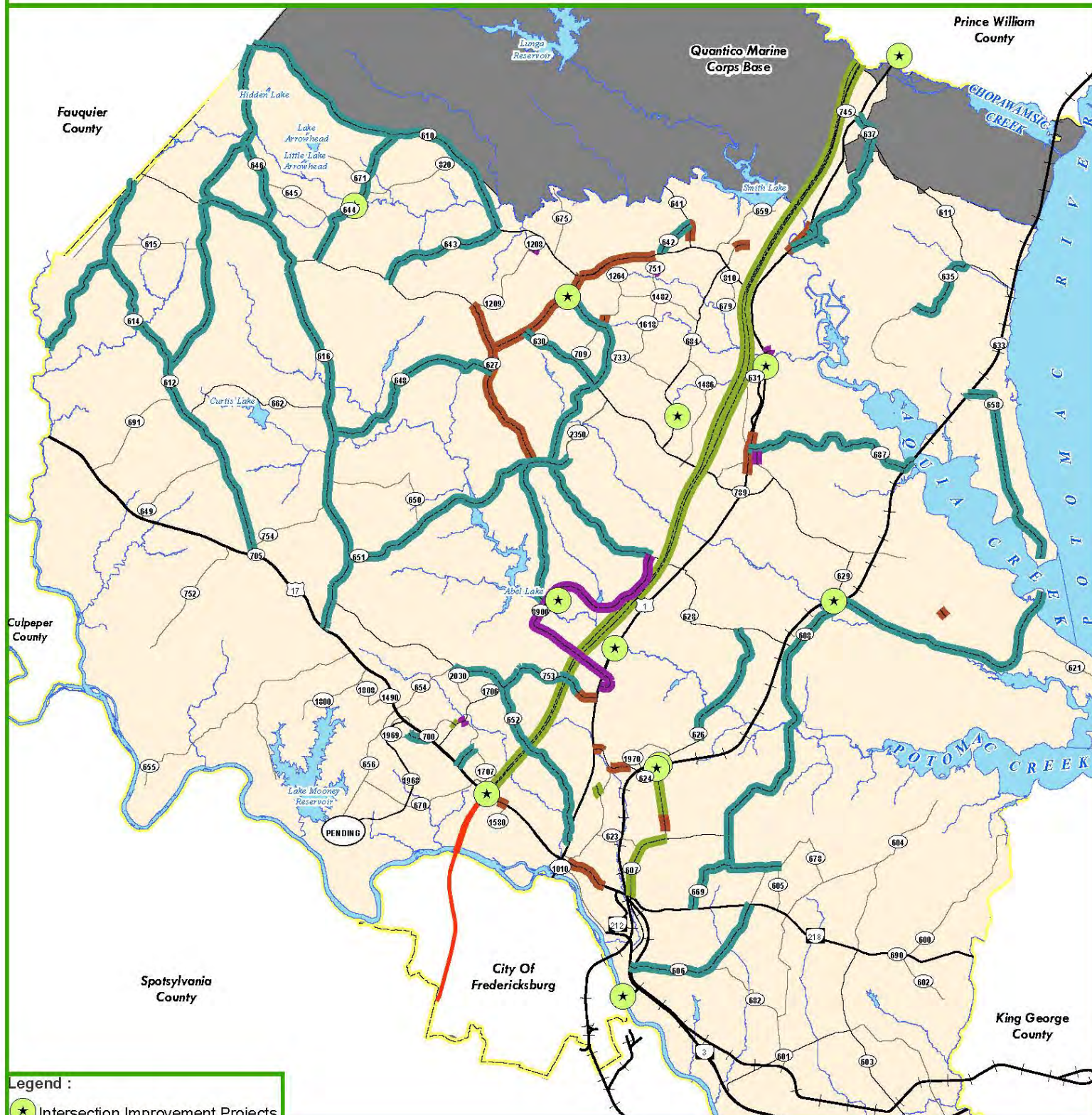
0 5,000 10,000 20,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.



FIGURE 4.3 Road Improvement Program Projects Stafford County Comprehensive Plan Stafford County, Virginia

September 8, 2021



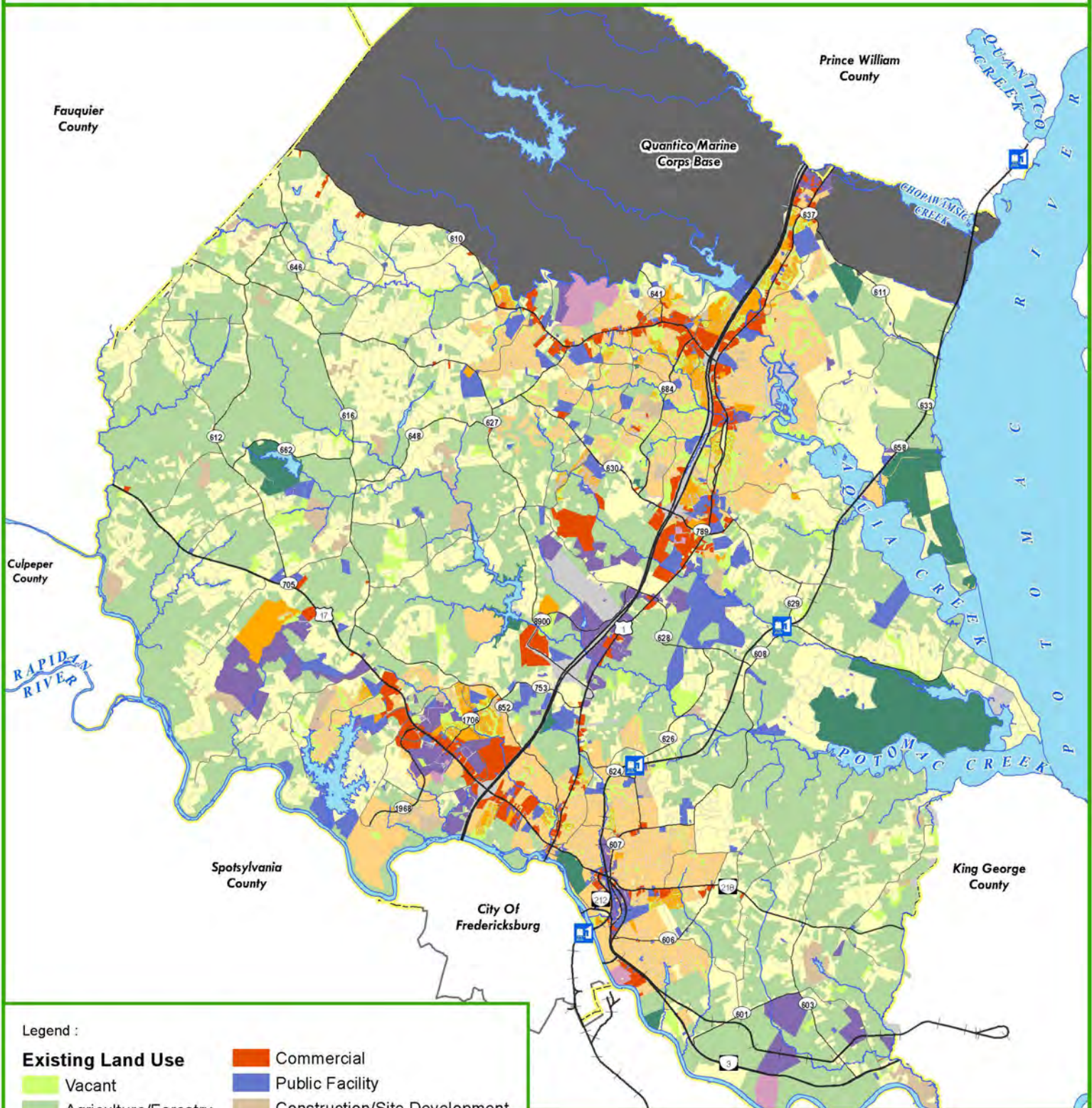
- Legend :**
- ★ Intersection Improvement Projects
 - 2019 Transportation Bond
 - FAMPO CLRP
 - FY22 Capital Improvement Program
 - VDOT SYIP

0 4,500 9,000 18,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.



FIGURE 6.1
Existing Land Use
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 8, 2021



Legend :

Existing Land Use

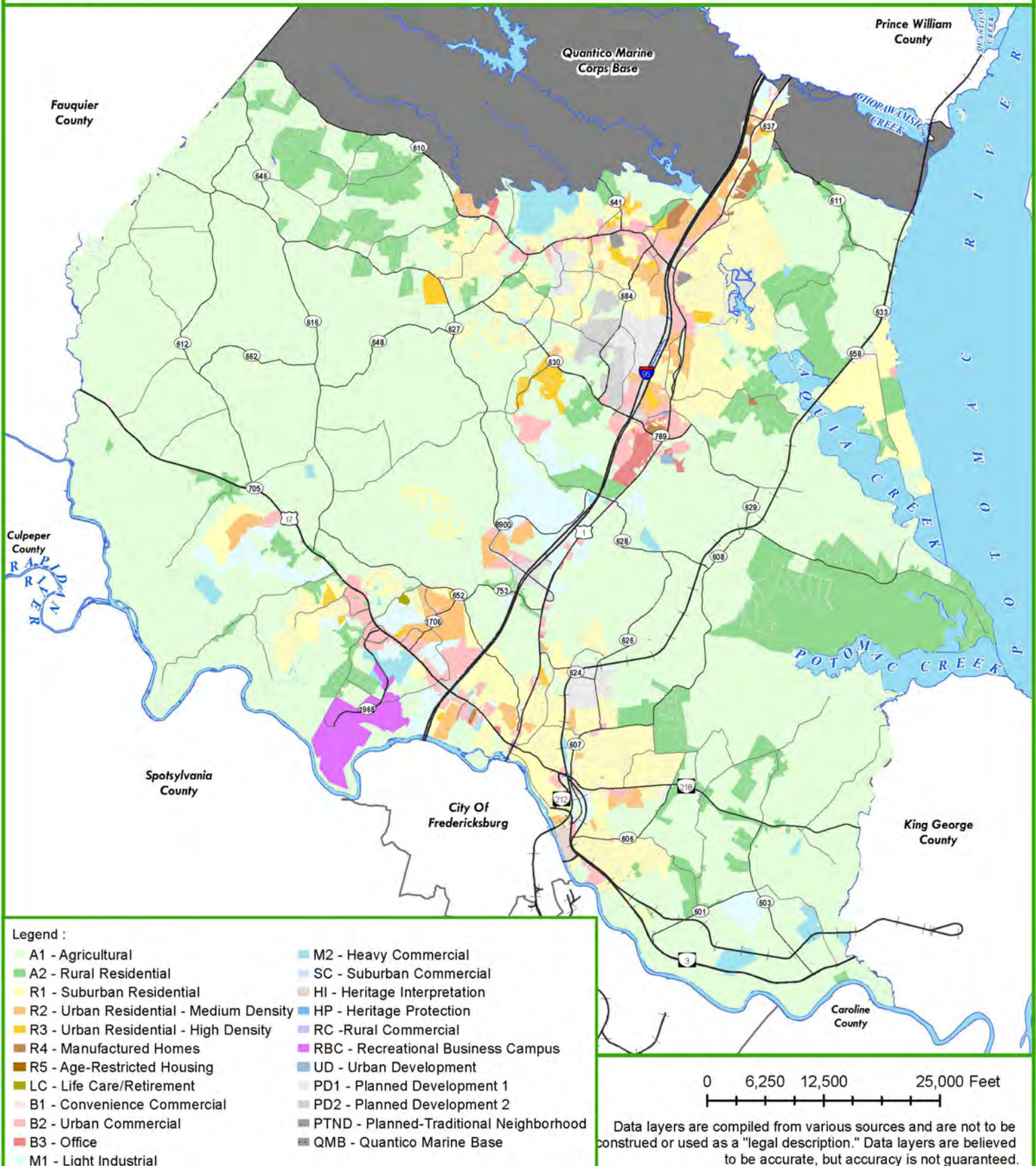
Vacant	Commercial
Agriculture/Forestry	Public Facility
Parks_Rec	Construction/Site Development
Rural Residential	Industrial Manufacturing
Suburban Residential	Mining and Extraction
Urban Residential	Transportation/Utilities
	Military

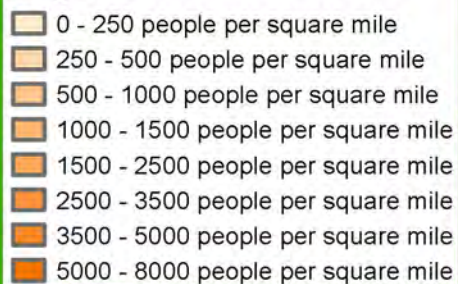
0 6,500 13,000 26,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.



FIGURE 6.2
Zoning
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 8, 2021

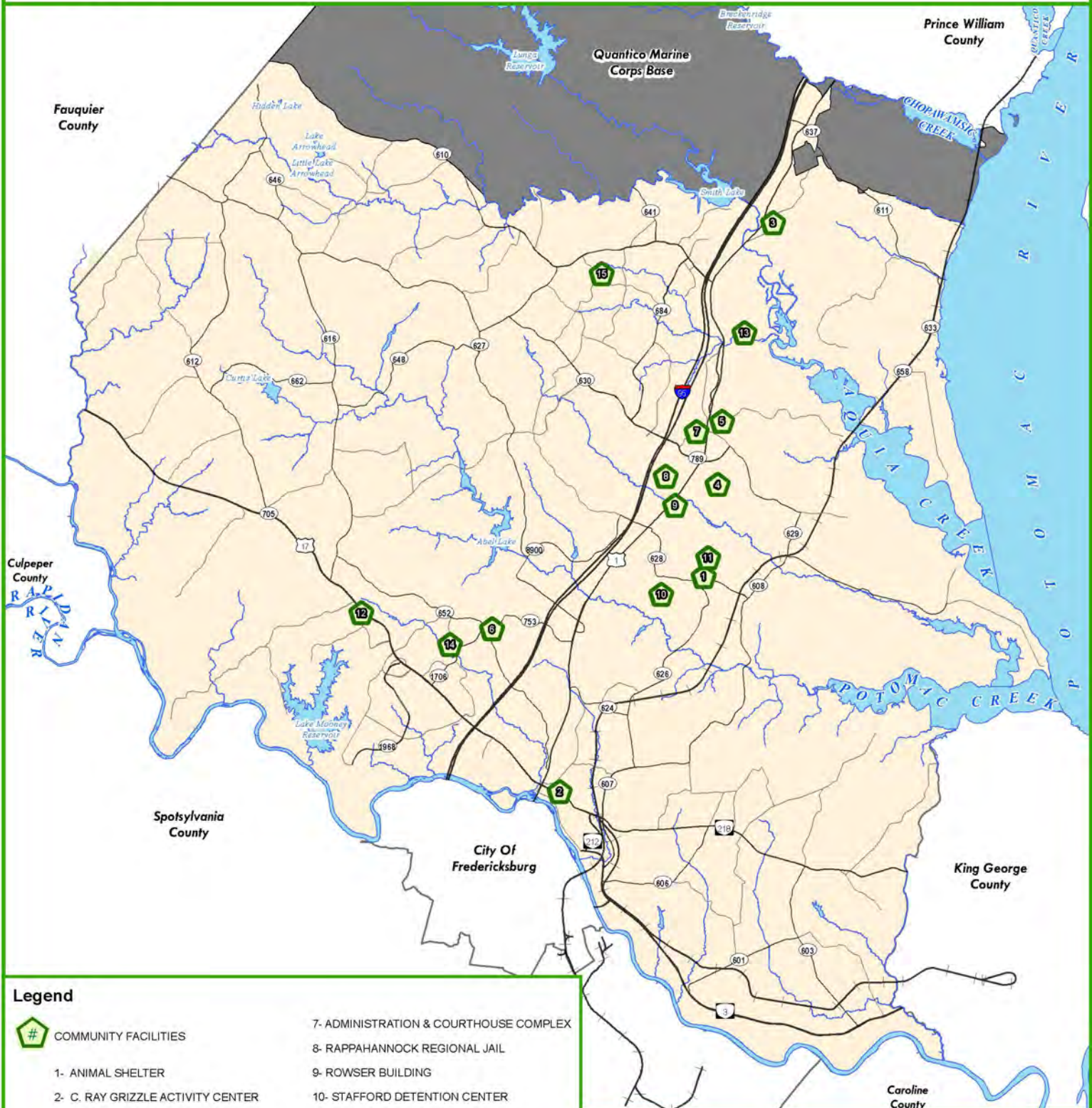




W:\users\gis\Olivia\Planning\ComprehensivePlan\CompPlan2021Revisions\Chapter6.3 PopulationDensity.mxd



FIGURE 6.6
Community Facilities
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 8, 2021



Legend



COMMUNITY FACILITIES

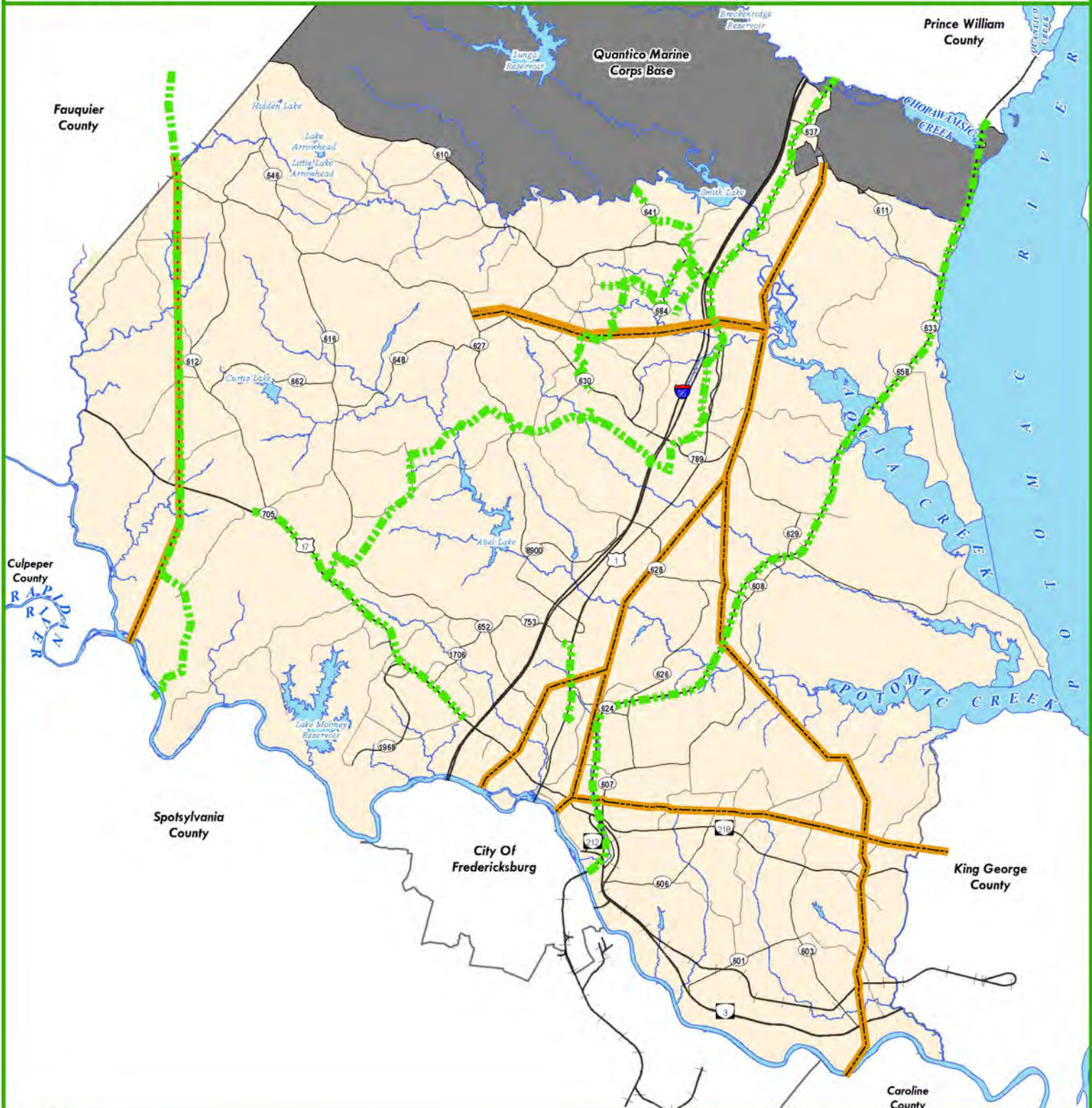
- | | |
|-----------------------------------|--|
| 1- ANIMAL SHELTER | 7- ADMINISTRATION & COURTHOUSE COMPLEX |
| 2- C. RAY GRIZZLE ACTIVITY CENTER | 8- RAPPAHANNOCK REGIONAL JAIL |
| 3- CARL LEWIS COMMUNITY CENTER | 9- ROWSER BUILDING |
| 4- STAFFORD HOSPITAL CENTER | 10- STAFFORD DETENTION CENTER |
| 5- COURTHOUSE COMMUNITY CENTER | 11- STAFFORD REGIONAL LANDFILL |
| 6- ENON COMMUNITY CENTER | 12- UNIV OF MARY WASH GRAD CAMPUS |
| | 13- UTILITIES FIELD OPERATIONS |
| | 14- HOWELL MEMORIAL LIBRARY |
| | 15- PORTER MEMORIAL LIBRARY |

0 6,250 12,500 25,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.



FIGURE 6.8
Major Electric and Gas Lines
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 8, 2021



Legend

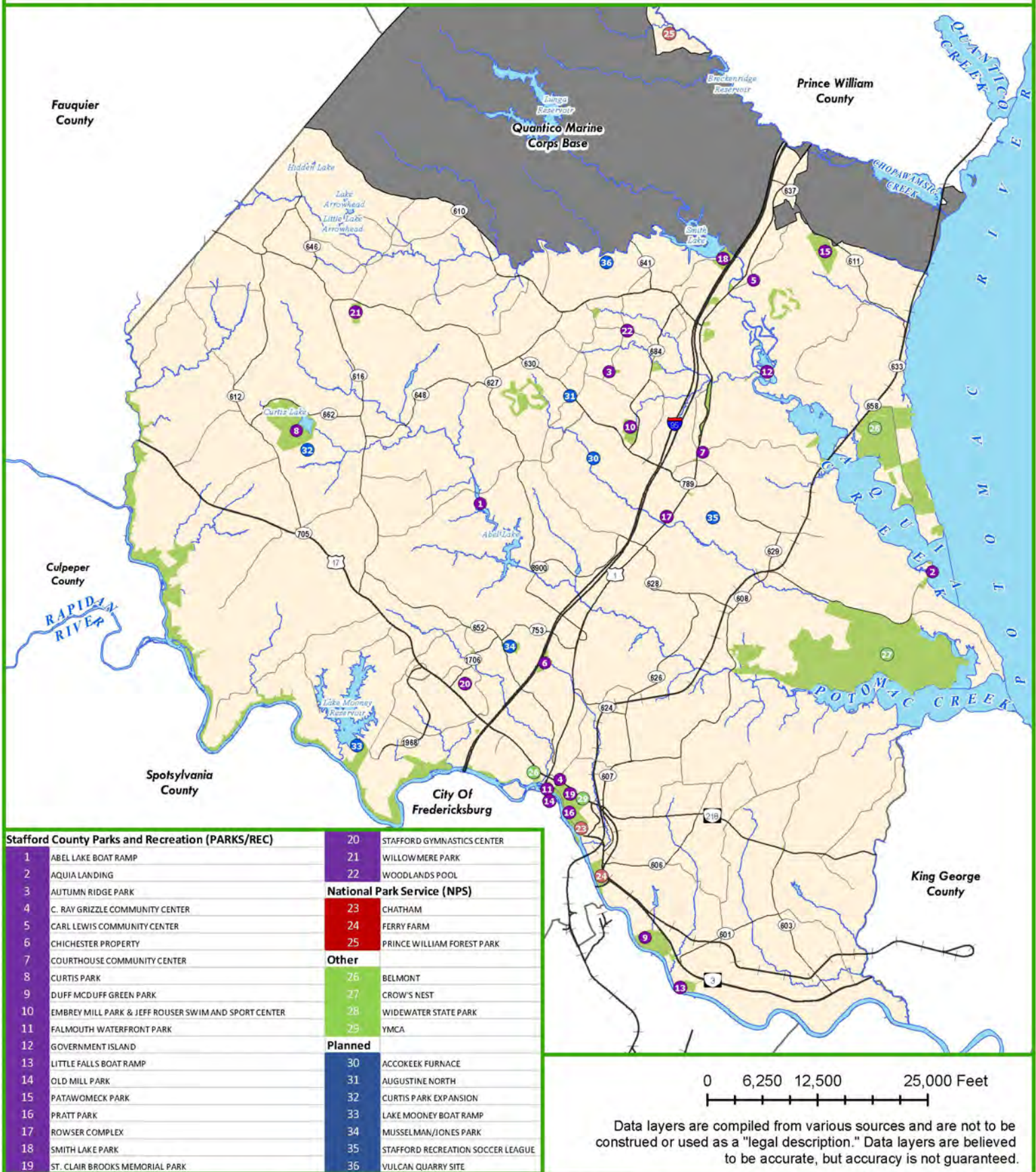
- Gas Pipelines
- Approximate Dominion Power Easement

0 6,250 12,500 25,000 Feet

Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.



FIGURE 6.9
Parks & Recreational Facilities
Stafford County Comprehensive Plan
Stafford County, Virginia
 September 8, 2021



APPENDIX M-4
FREDERICKSBURG COMPREHENSIVE PLAN
(GRAPHICS)

Welcome to FXBG Forward!

This comprehensive plan is a long-range policy document designed to guide the City of Fredericksburg towards the future that stakeholders imagine.

This plan is unique among comprehensive plans for several reasons. First, a reader familiar with Fredericksburg's previous plans (or with comprehensive plans in general) will notice how succinct this plan is. Rather than creating a list of all tasks and all subjects that residents and stakeholders care about, this plan focuses on priorities and tasks that can be reasonably be accomplished during the planning period. While most of the recommendations are related to the physical fabric of the city (buildings and horizontal infrastructure), some policies and strategies focus on non-physical aspects of the city.

This paring down and simplification is deliberate and key to the ability of the comprehensive plan to be:

1. Reflective of the city as a whole
2. Used by a wide variety of Fredericksburg stakeholders – not just City officials!
 - Non-profit organizations applying for a grant.
 - Developers trying to figure out where best to build or what to build on a given parcel.
 - People thinking about moving here, or debating whether to stay here, for example, after graduating from University of Mary Washington or a local high school or when they retire.

3. Implementable and trackable

- It includes an action plan that defines near-term steps for implementing the plan.
- It lives on a website for ease of access and to facilitate interactive features where people can follow along and provide feedback.
- It provides a clear set of directives for staff to facilitate the types of stewardship and development envisioned in the plan.

4. Complementary to sector-specific plans and strategies created and used by public agencies, including City Council's Strategic Plan, the City's Economic Development Strategic Plan, the Fredericksburg Schools strategic plan, the Parks and Recreation Plan, transportation master plans, regional plans, etc. The comprehensive plan helps structure the relationship among these plans and their policies and strategies, cutting across sectors; the sector-specific plans provide more detail on shorter-term and more programmatic interventions.

Second, this plan is unique because the City's government, supported by residents and other stakeholders, has done a great deal of planning for different neighborhoods and districts in the form of Small Area Plans (SAPs). Beginning in 2017 and continuing as of this writing in 2025, SAPs have been completed for seven out of ten Planning Areas in Fredericksburg, with one SAP in process and two more on the horizon.

A great deal of thought has been put into the future that each of these areas will grow into. The SAPs address and set parameters for economic vitality, land use mix, access and transportation, scale of construction, and enhancement of the natural environment. Each of these SAPs has been the subject of extensive public input and has been approved by City Council. This citywide comprehensive plan builds on the small area plans, incorporating them into a citywide framework.

The Plan focuses on systems in recognition of the fundamental connection between the physical environment, community services, economic opportunity, and the health and well-being of Fredericksburg’s residents. Like a body’s vascular or nervous system, urban systems are the connecting tissue that extend throughout the city and bring the different neighborhoods and districts together, helping Fredericksburg function as a whole organism. The systems can draw inspiration from the city’s core urban DNA, which gave rise to Fredericksburg’s downtown. The systems covered by this comprehensive plan include Walkable Centers, mobility, social and cultural systems, economics, and the natural environment. The quality of these systems, derived from the planning in this document, directly impacts public health.

This plan, rather than changing the land use recommendations from the Small Area Plans, focuses on what brings all those areas together into a thriving city: how heritage and cultural resources undergird the city’s vibrancy and built form; the way people and goods flow from place to place; how neighborhoods are at once unique functioning places and exist as part of the city as a whole; the evolution of a vibrant local economy that benefits

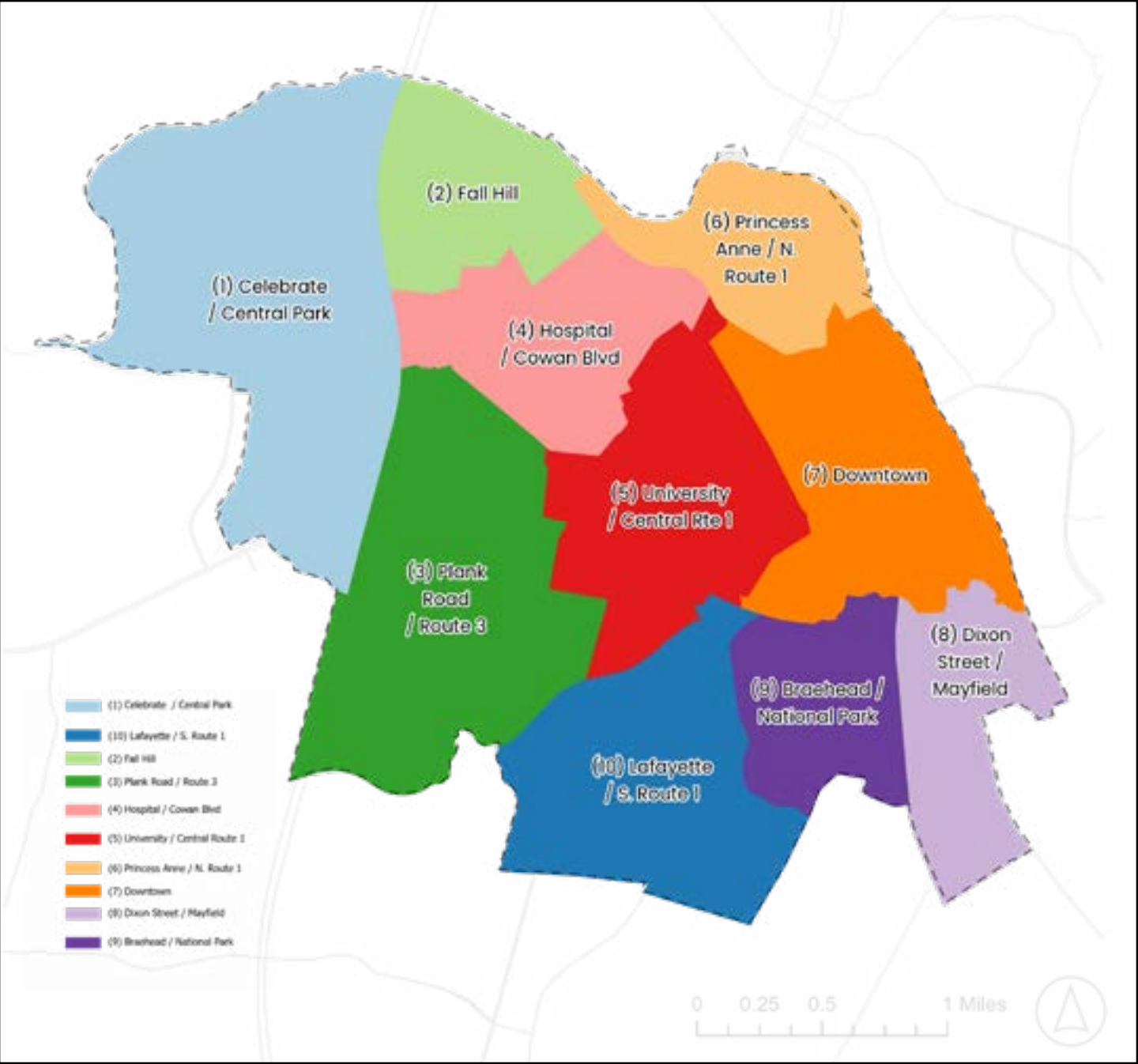
all residents; how housing for all residents, existing and new, can be created and maintained; and how vibrant open spaces can open the door to healthy lifestyles, a healthy natural environment, and dynamic community life. This comprehensive plan consists of the vision statement, goals, chapters on citywide systems (Urban Design and Community Fabric, Mobility, Public Open Space, Housing, Historic Preservation, Public Facilities and Services, Economic Development, and Environment), that are included as part of this core document. The Small Area Plans also form an integral part of the comprehensive plan, are incorporated by reference into this document and are located in the document’s appendix.

The plan also provides the overarching policy framework for sector-specific citywide plans such as transportation plans, open space plans, park master plans, historic preservation plans, local economic development strategies, etc. It is intended that those sector-specific plans will be conceived and will serve their purpose under the umbrella of the comprehensive plan, even as they pursue their specific goals and objectives.

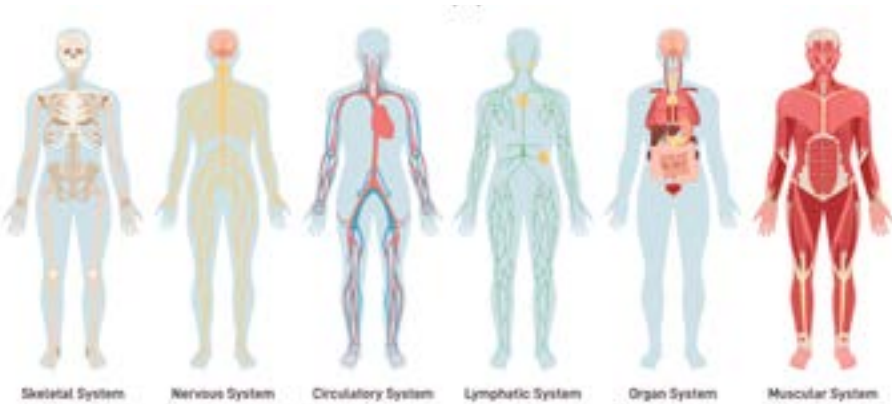
The tools for implementation of this comprehensive plan include the City’s Capital Improvement Plan, Transportation Improvement Plan, zoning code (including form-based code), and other development regulations in effect.

This comprehensive plan, like all others in Virginia, is required and given authority by the General Assembly in accordance with Article 15.2, Chapter 22, Section 2223 et seq.

Small Area Plan Areas



Map 1: Small Area Plan Areas



Fredericksburg supports a more walkable, vibrant, and resilient urban environment where neighborhoods maintain their unique identities while contributing to the city's overall development. The following sections detail how Walkable Centers, corridors, and open spaces function as key components of this interconnected citywide system. The City employs a form-based code within its SAPs to regulate development, ensuring that new growth aligns with the city's historic character, walkability, and urban design principles. These codes emphasize the physical form of buildings and public spaces rather than just land use, fostering cohesive, pedestrian-friendly environments tailored to each district's unique context. While the SAPs provide localized frameworks for specific neighborhoods and corridors, this comprehensive plan integrates them into a unified, citywide vision, ensuring consistency across all areas. By weaving together these individual plans, the comprehensive plan creates a holistic guiding document that reinforces connectivity, balances growth with preservation, and shapes a more cohesive, well-designed urban fabric.

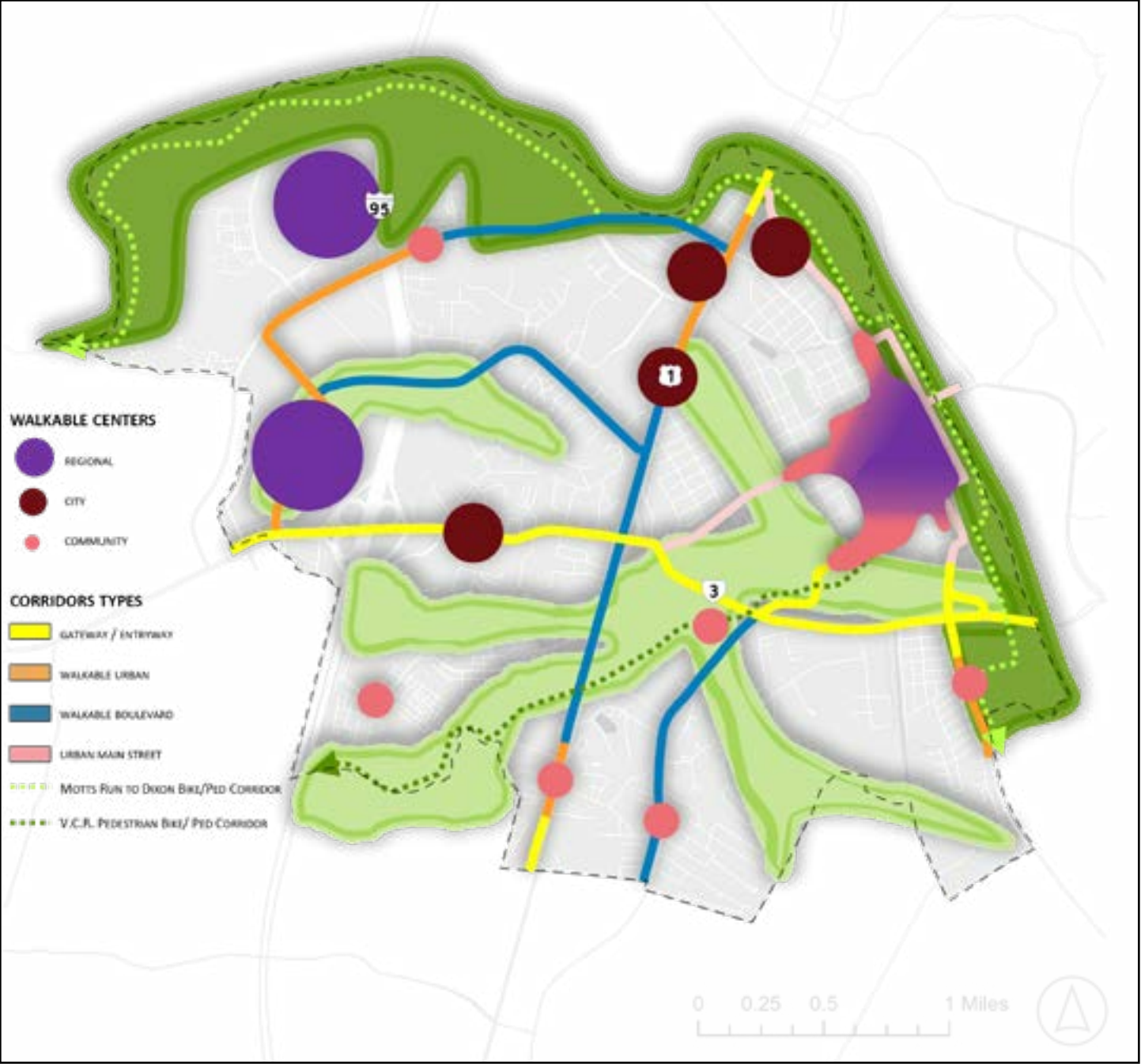
**Walkable Centers in
Fredericksburg: Enhancing
Community and
Connectivity**

Fredericksburg's Walkable Centers encompass a mix of neighborhoods, commercial hubs, and institutional spaces that balance historical preservation with modern urban design and accessibility. Each center has its own characteristics and challenges, addressed through initiatives outlined in the city's Small Area Plans. These centers are grouped into three categories—regional, citywide, and

community centers—based on their size, function, and role within the community. All the Walkable Centers will provide essential services and amenities that contribute to the quality of life for nearby residents, people coming from across town, or visitors from the metropolitan area and beyond. Consistent strategies for mobility, open space, and housing guide their growth, ensuring alignment with small area plans while supporting the city's broader urban design framework. These strategies aim to foster pedestrian-friendly, walkable, and mixed-use environments that reflect the goals of balanced development and connectivity.

The following strategies establish a cohesive and interconnected framework across different scales and intensities, allowing each Walkable Center to play a vital role within its neighborhood while contributing to Fredericksburg's overall character and growth. Map 2 is a diagrammatic key. It illustrates relationships between Walkable Centers, mobility corridors, and open space networks that will be further described at a systems level in the following sections with an eye towards the steps necessary to continue to foster a connected, vibrant, and sustainable urban environment. These systems are described in even more detail within each Small Area Plan.

Framework for Future Development



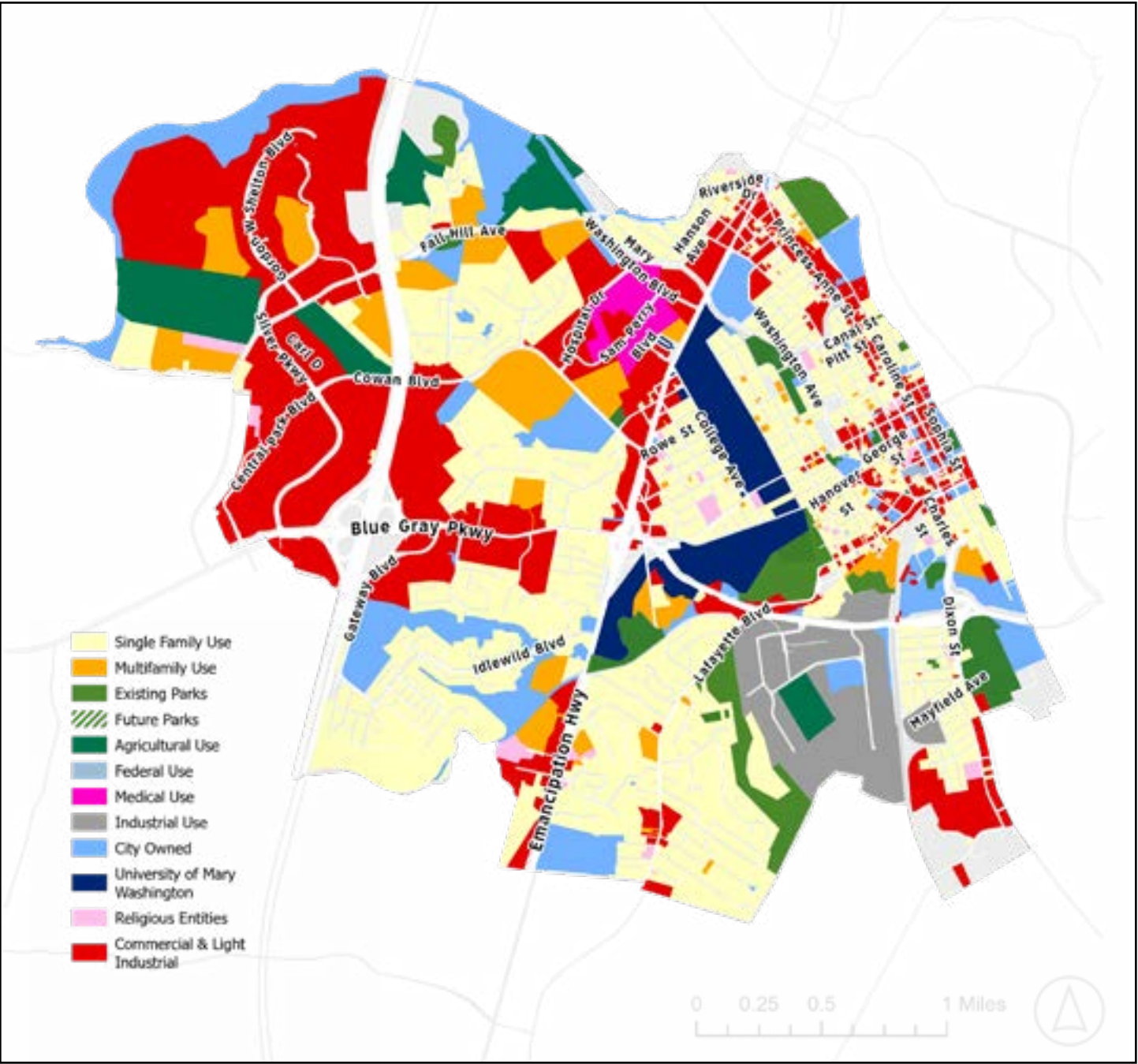
Map 2: Walkable Centers and Corridors

Implementation / Regulation / Transects

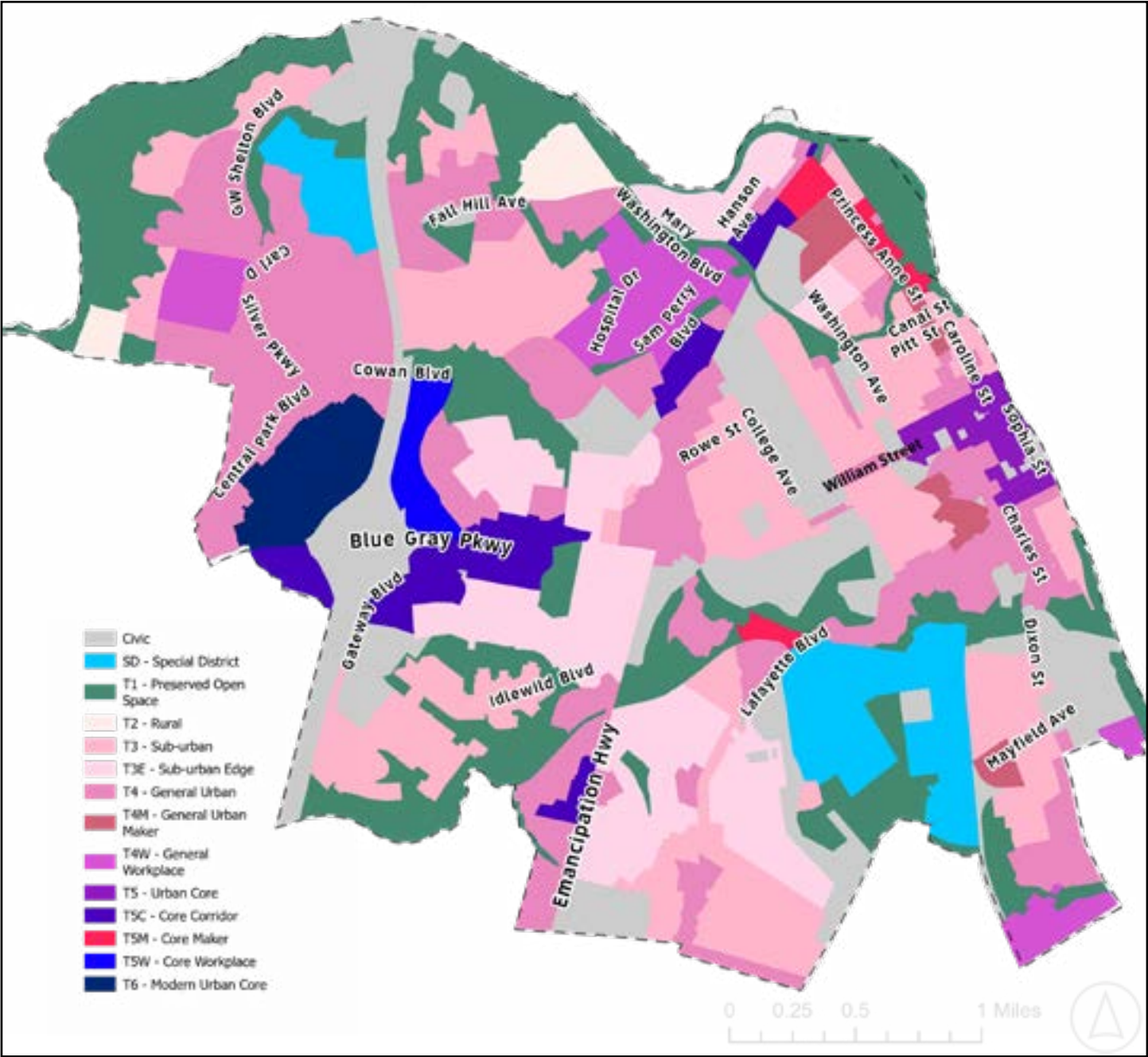
The comprehensive plan serves as a vision for the city’s future development. Implementation of this vision is guided by the City’s zoning ordinance and Form-Based Code, which uses consolidated transects to maintain consistency across development areas. By consolidating clear, form-based standards throughout the community, the plan ensures that new growth aligns with the city’s urban design goals while preserving walkability and connectivity. Making broader use of form-based standards in the future will directly support the walkability and vibrancy desired by the community.

The framework established in this chapter leads directly to objectives, policies, and strategies that guide implementation, providing a structured approach to realizing key concepts. This ensures that development, preservation, and mobility initiatives are conducted in a way that strengthens the city’s character, enhances public spaces, and fosters a more cohesive and sustainable built environment.

Existing Land Use



Future Land Use



Map 4: Future Land Use/Transects Map

Objectives

Create Walkable Centers: Enable the development of a set of mixed-use walkable centers that operate at different geographic levels (regional-, city-, and community-level centers).

Open Space Connections: Connect Walkable Centers and neighborhoods with open space networks and multi-modal, pedestrian-friendly streets.

Walkability: Build complete streets and maximize opportunities for people to adopt a walkable lifestyle.

Neighborhood Conservation: Preserve the high quality of life in existing residential neighborhoods.

Focus on Form: Allow existing neighborhoods to expand and modernize while protecting their building form, architectural detail, and tree-lined frontages.

Mobility for All: Right-size vehicular mobility and move towards freedom from car dependency.

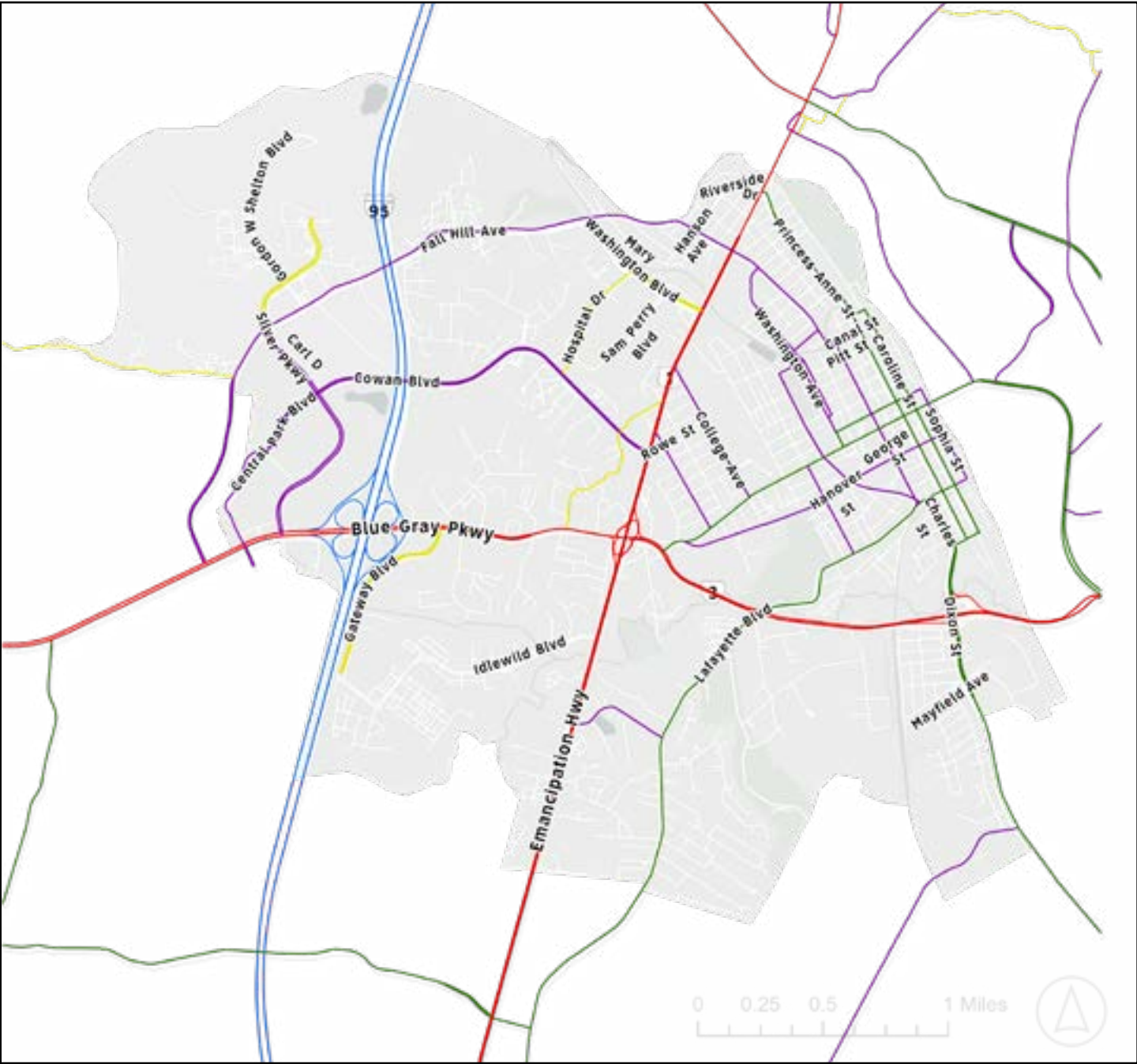
Policies and Strategies

To achieve Fredericksburg’s vision for sustainable growth and vibrant neighborhoods, we need policies that promote mixed-use Walkable Centers and redevelopment of key corridors. Mixed-use development in these centers can balance commercial, residential, and public space needs while enhancing mobility and accessibility. These centers can be tailored to serve neighborhood, citywide, and regional roles, encouraging social engagement and economic vitality. By transforming corridors into complete streets with integrated transportation options, the city can ensure seamless connectivity between neighborhoods and key destinations.

Regulatory tools such as form-based codes can guide the creation of cohesive, human-scaled urban spaces, ensuring that new developments fit within the character of surrounding neighborhoods while supporting the broader framework for citywide growth. Improvements to citywide open space, mobility and public facilities systems will be planned to support and to benefit from the emergence of the new Walkable Centers.

Policies and Strategies are continued on the next page.

Functional Classification



Map 5: Functional Classification of Major Roads

- Expressways
- Other Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Interstate Ramp
- Other Freeways and Expressways Ramp
- Other Principal Arterial Ramp
- Minor Arterial Ramp

Future Mobility Improvements



- Future Intersection Improvement or Analysis
- Proposed Interstate Changes
- Future Nature Trails
- Future Street Connections
- Future On Street Bicycle
- Future Shared Use Paths
- Future Sidewalk Improvements
- Future Street Improvements
- Bridge
- Bridge - Bicycle
- Tunnel - Bicycle

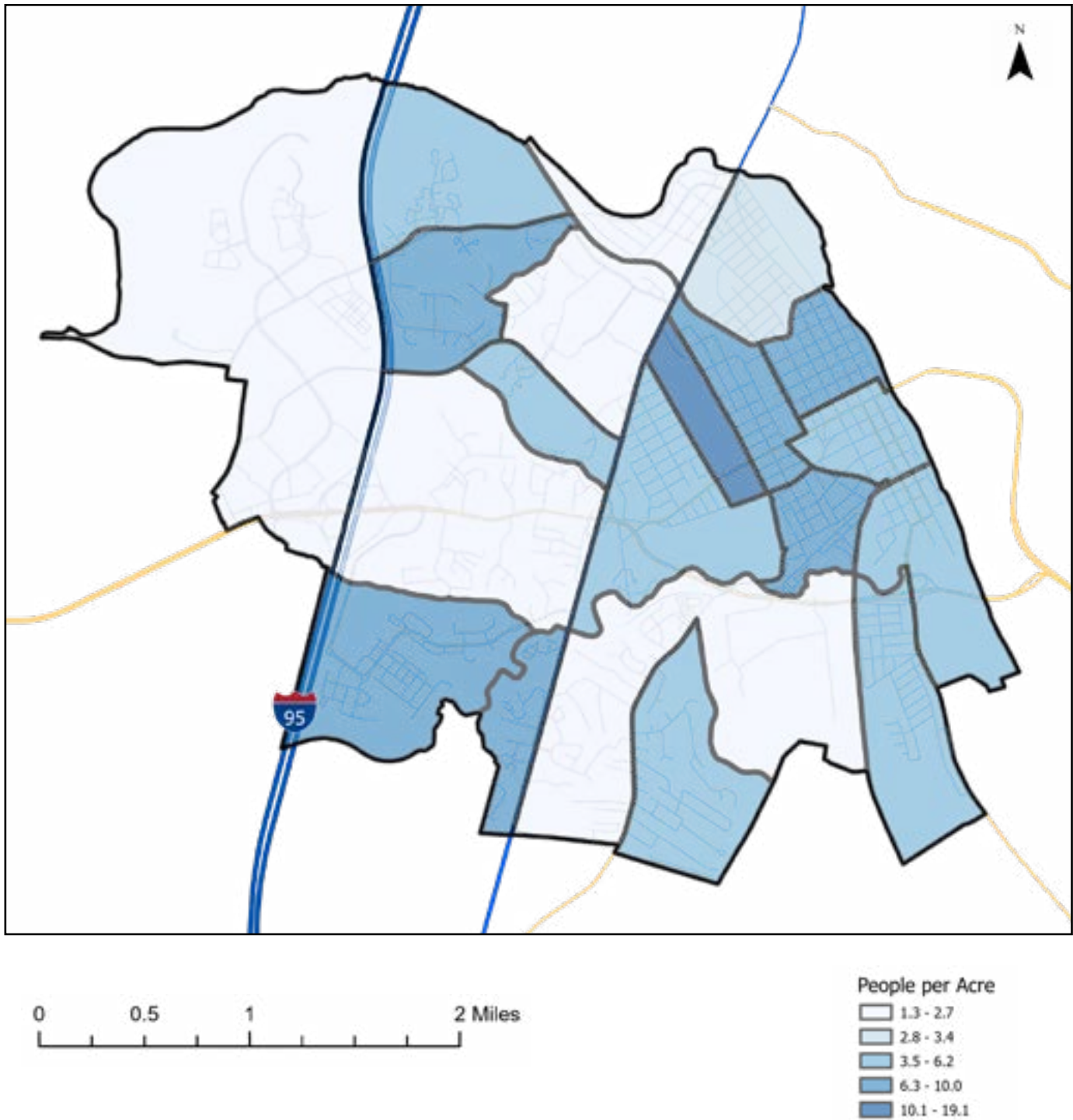
0 0.25 0.5 1 Miles

Map 6: Future Mobility Improvements

Population

The map below shows Fredericksburg’s population density per acre by Census Block Group. A Census Block Group is a geographic area that the U.S. Census Bureau uses to publish demographic data. They are generally drawn to represent areas ranging from 600 to 3,000 people.

Population Density per Acre by Census Block Group



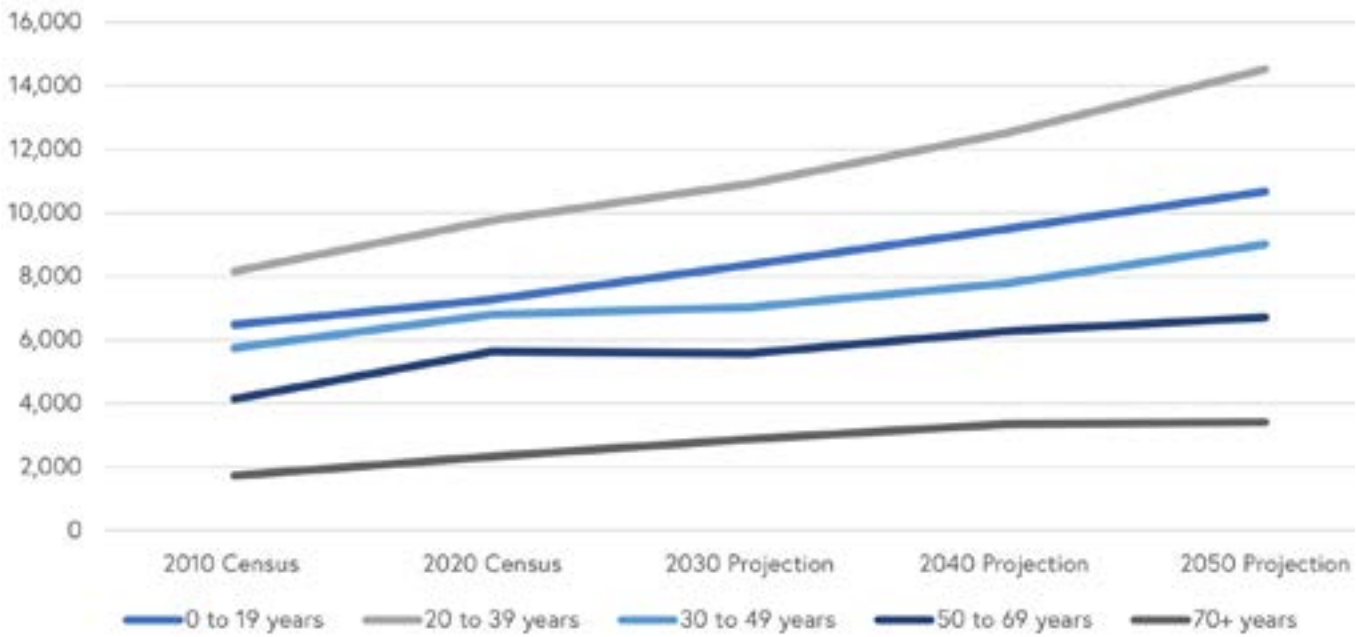
The table below shows that most of the population growth in the George Washington Region is taking place in the surrounding counties, not in the City of Fredericksburg. This reflects the ongoing expansion of suburban development down the I-95 corridor in recent decades and the availability of land for low-density development in the counties.

Regional Population, 2010-2050					
	2010	2020	2030	2040	2050
Planning District 16	318,812	382,551	431,061	494,414	565,167
Fredericksburg Population	24,286	27,982	31,224	35,051	39,402
Fredericksburg Share	7.3%	7.3%	7.2%	7.1%	7.0%

Source: Weldon Cooper Center for Public Service

The following charts present Fredericksburg population data by age cohort. The fastest growing cohort is 20-39 years of age, which corresponds to an increase in young families with children in the city. The most senior age group (>70 years) is growing this decade but is expected to flatten out by 2040. The number of people in the 50-69 year age group is projected to be constant this decade, but grow modestly after 2030.

Population Growth by Age Cohort



Source: Weldon Cooper Center for Public Service

Fredericksburg’s population is growing at 1-2% per year.

SECTION I: LAND USE PLAN GENERAL GUIDE

OVERVIEW

LAND USE PLAN AND REVITALIZATION

This Comprehensive Plan designates 10 areas for small area plans, to more effectively evaluate specific conditions and to make clear recommendations for land use within the City of Fredericksburg. In this manner, the general land use principles described in this Plan can be translated into clear policies. Most of the City’s small areas are designated as revitalization areas as defined in Virginia Code 15.2-2303.4, as having:

Significant structure age, which indicates that revitalization is necessary with structural improvement or replacement. A property may be well maintained in terms of cleanliness and security, however the physical elements of buildings (including, roofs, windows, doors, heating/ventilation/air conditioning facilities) have a functional life span and require periodic replacement.

A low percentage of vacant residential parcels, which shows that most residential development will be in the form of redevelopment/revitalization. However, vacant commercial areas are typically adjacent to existing commercial projects and have a low-intensity suburban character. This would also indicate the potential for revitalization.

Large surface parking areas on commercial land, which have revitalization opportunities for the evolution of a suburban pattern of development into a more urban, mixed-use pattern. Broad expanses of surface parking result in fragmented and inefficient development patterns that should be redeveloped so as to create complete communities that are walkable and robust.

In addition, these areas are served by mass transit, include mixed use development as an allowed land use, and are planned to allow for a commercial density of at least 3.0 Floor Area Ratio in a portion thereof.

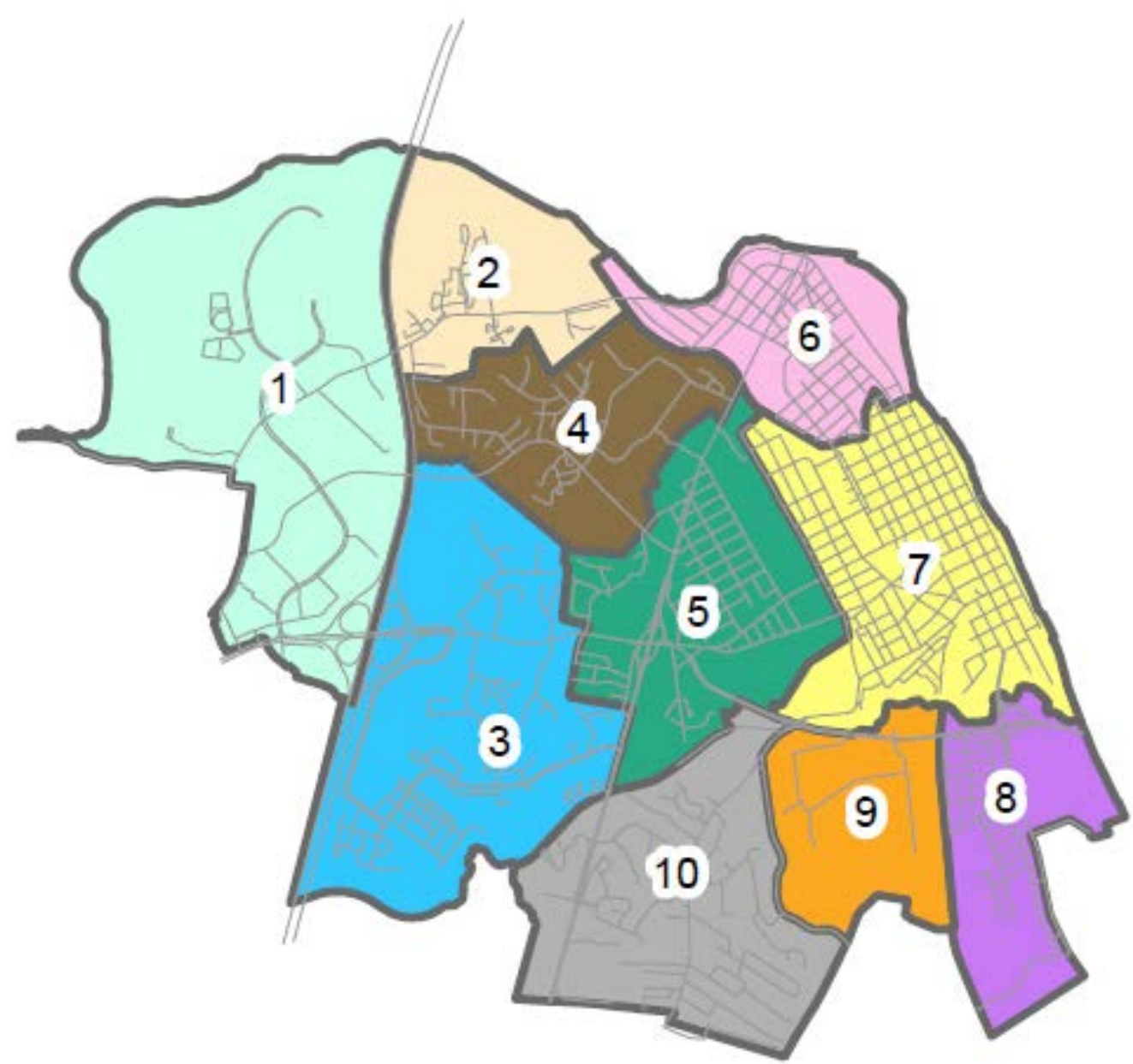
AREA PLANNING

Full-scale small area plans look in detail at the neighborhood specific issues regarding land use, access and mobility, environmental and open space resources, historic resources, and evaluates the appropriateness for revitalization. These small area plans create a thorough understanding of land use patterns, transportation, and community services. These plans help to understand community networks both within these neighborhoods and their connectivity to the City as a whole. As the small area plans are completed, the Comprehensive Plan will be updated to reflect this progress.

The schedule for this planning process is as follows with adoption of completed plans to follow:

- 2017 Area 3 - Route 3 (adopted 10.24.2017)
- 2019 Area 6 - Princess Anne Street/Route 1 (north) (adopted 2.12.2019)
- 2020 Area 7 - Downtown (adopted 9.8.2020) and Area 2 - Fall Hill Avenue (adopted 10.27.2020)
- 2022 Area 1 - Celebrate Virginia/Central Park (adopted 1.25.2022)
- 2023 Area 10 - Lafayette Boulevard/Route 1(south) (adopted 9.10.2024)
- 2025 Area 5 - University/Route 1(central) (adopted 5.13.2025)
- 2025 Area 8 - Dixon St./Mayfield
- 2026 Area 4 - Hospital/Cowan Boulevard
- 2026 Area 9 - Braehead/National Park

MAP 1 PLANNING AREAS



TRANSECTS AS PLANNING TOOL

The small area plans use the concept of “Transects” in forming policy. Transects are a framework that represents the character of our physical environment. It is based upon an organizing tool used originally by ecologists to explain the material progression of habitats from the ocean to the mountains. Within the context of human settlement, Transects are a framework that identifies a range of habitats, from the most natural to the most urban.

These categories include standards that encourage diversity. The forms and uses found within these transects overlap reflecting the gradation of human communities. Transects integrate environmental and zoning methodologies, to support both social habitats and natural ones. Transects zones help to codify similarities in the built environment and direct more seamless transitions from one zone to another.

Each segment in the transect, lends itself to the creation of zoning categories. Transects are most useful for navigating the interconnectedness of use and form. The addition of form based planning elements to the Unified Development Ordinance, UDO, will, in combination with land use zoning districts, implement the Transect designations in Fredericksburg.

TRANSECTS IN FREDERICKSBURG

On the following pages, each Transect is identified by its specific traits of Character, Building Types, Frontages, Commercial Activity, Pedestrian Activity, Building Height, and type of Public Space, as well as the most appropriate Uses within each Transect Zone. These are the elements that are most responsible for the delivery of neighborhood character and move beyond the assumption that meeting the quantitative requirements of land use and zoning are enough to deliver a healthy human environment.

The Transect ideal is calibrated specifically to Fredericksburg’s small area plans. Each Transect is defined on the following pages. Specific details concerning appropriateness, transitions, and the gradation of form should always defer to the protection and support of the neighborhoods.

As of 2020, four neighborhoods have undergone intensive small area planning efforts. As planning continues, the remainder of the City will be added to the General Land Use Map with transect designations.

DESCRIPTIVE AND PRESCRIPTIVE

The use of a Transect based land use designation is both descriptive of current development patterns and prescriptive of desired future development. Where appropriate, the Transect designation is protective of established neighborhoods with rules regarding form that preserve the character. This prevents change in development by describing and aligning with existing patterns. The Transect tool is also used to prescribe areas for desired future development and redevelopment. Transects are established to be permissive and incentivizing to this type of endeavor. Today, property within Fredericksburg is largely built, with a few notable exceptions. While describing these locally-specific Transects, the parameters are also predictive; they prescribe the size, type and character of future infill and redevelopment efforts that will occur through the process of revitalization within these areas.

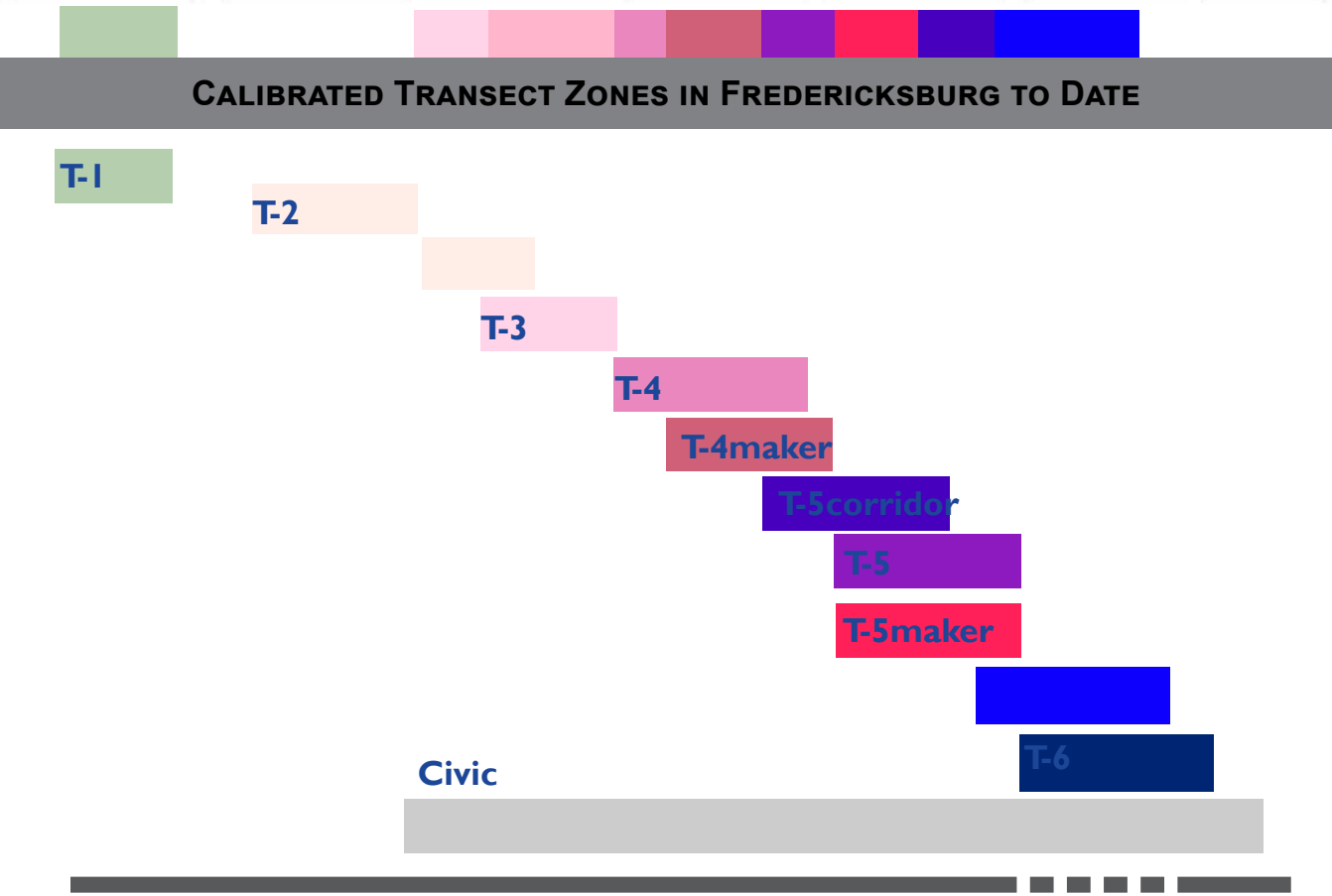
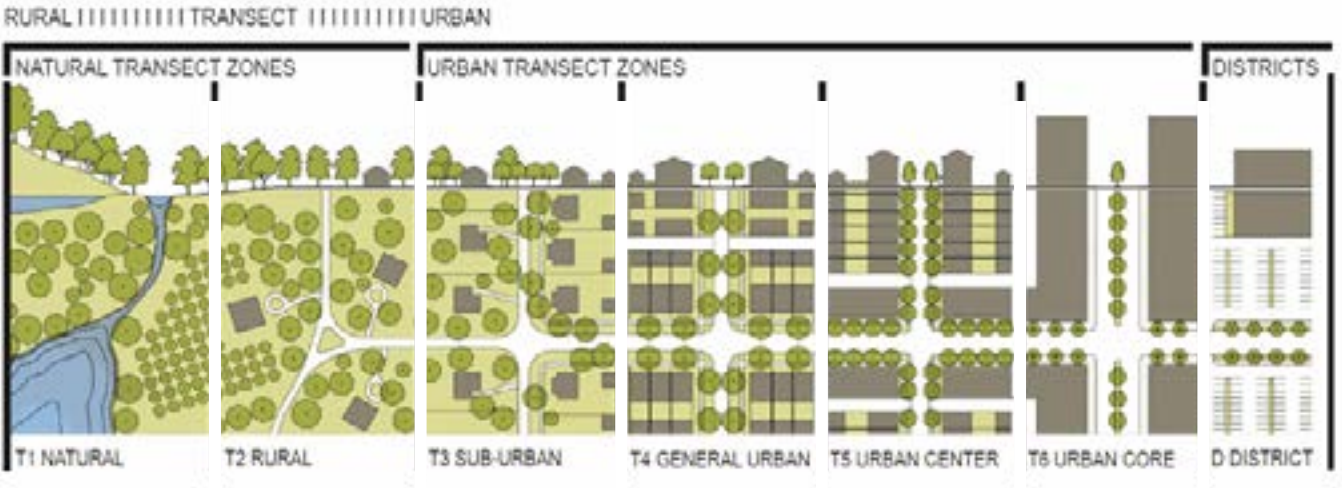
HOW TO APPLY THE TRANSECTS

The Transect Map is a depiction of the City divided into zones identified by their character, scale, and land use. Consulting this map is the “first stop” in evaluating the appropriateness of future projects. These transect designations will specifically bolster supplementary toolkits and regulations as it suits specific neighborhood revitalization opportunities. The small area plans also highlight key details of the transects form based design as it affects specific neighborhoods.

Over the next few years, the following chapter will be amended to include an in depth analysis for each of the 10 small areas within the City recognizing the opportunities for each and identifying existing historic resources, open space and environmental resources, and addressing issues relating to access and mobility.

TRANSECT ZONES

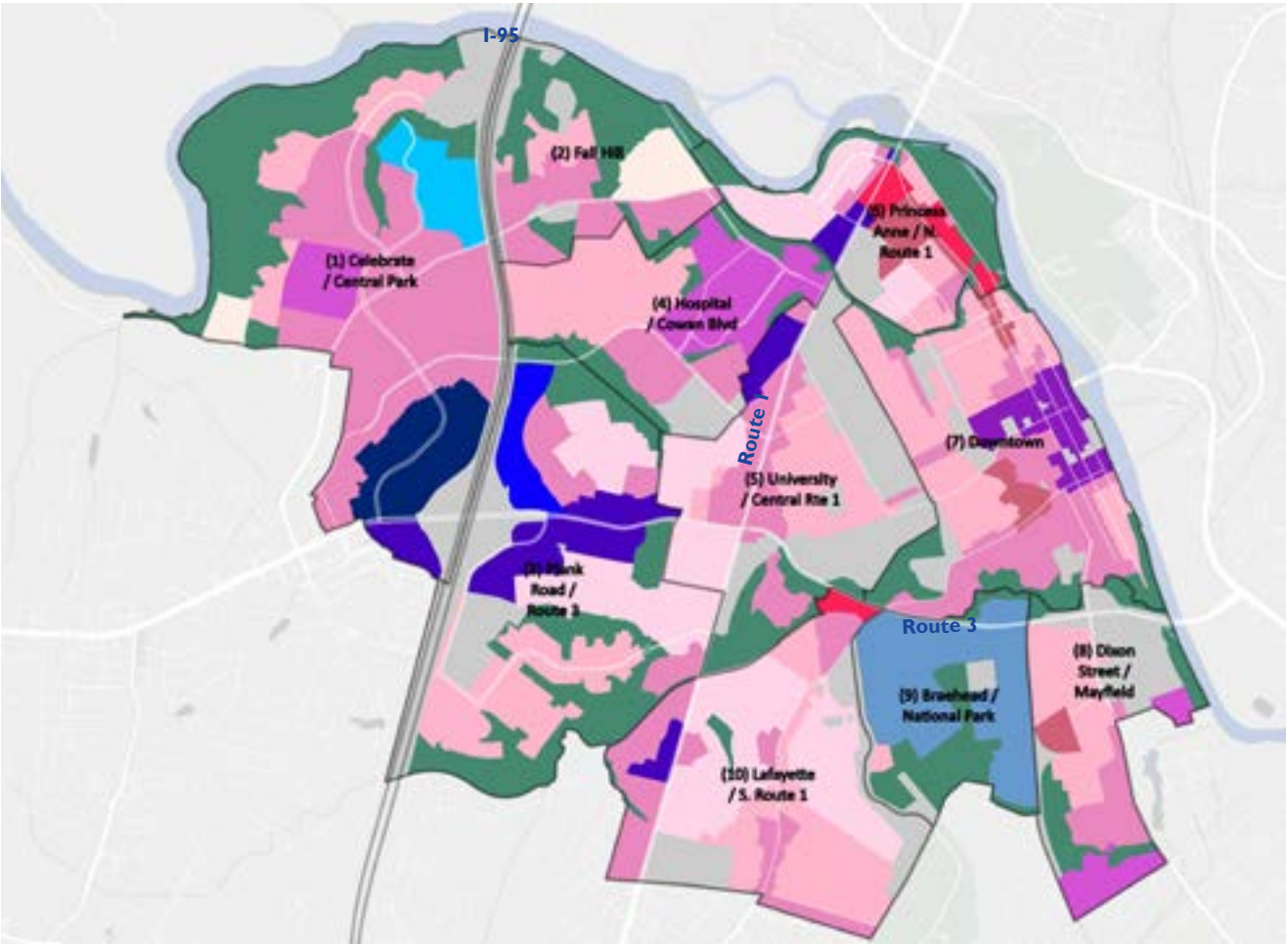
THE TRANSECT:



GENERAL LAND USE MAP KEY

Transects

T-1 - Preserved Open Space
T-2 - Rural
T-3e - Sub-Urban Edge
T-3 - Sub-Urban
T-4 - General Urban
T-4m - Maker
T-5m - Maker
T-5 - Urban Core
T-5c - Area Core
T-5w - Area Core Workplace
T-6 - Modern Urban Core
Civic
Special District - STEO
Special District - Industrial



SMALL PLAN AREAS

1. Celebrate Virginia/Central Park	(2022)
2. Fall Hill	(2020)
3. Plank Road/Route 3	(2017)
4. Hospital/Cowan Boulevard	(2026)
5. University/Route 1 (central)	(2025)
6. Princess Anne Street/Route 1 (north)	(2019)
7. Downtown	(2020)
8. Dixon Street/Mayfield	(2025)
9. Braehead/National Park	(2026)
10. Lafayette Boulevard/Route 1 (south)	(2024)