



## Annual Report

### Fiscal 2019

July 1, 2018 — June 30, 2019

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Tom Dunlap Conservation Specialist

Sheila Jaruseski Office Coordinator

Robyn Goad Urban Conservationist

Bob Winters Turf Love Program Tech

#### Colonial

##### Soil & Water Conservation District

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#### Message from the Chair

In January 2020, the District will seat a Board with more new Members than re-elected. Retiring Members have brought the District far in the last several years and it will be upon the new Board, Staff, and Partners to carry forward the record of conservation and education progress.

Looking back 5 years, the District is on a path of growth to fulfill its conservation and education missions. During that period of time, the District has grown from one full-time and one part-time staff to now housing 5 staff members and bringing on board the 6th staffer in early FY 2020. In addition, the District has seen increases in agricultural cost-share funding to record levels, and has gone from a limited number of small grants to multiple large grants. Kudos to our Staff, Directors and Partners in creating this success.

Looking forward 5 years is not so easy, but there are features worthy of consideration: the 2025 clean up deadline for the Chesapeake Bay Initiative which is driving increased Cost-Share funding in at least the next few years, increased grants and interest in filling “gaps” in stormwater pollution reduction programming, and, the evolution of incorporating technology into conservation practices, to name but a few.

On behalf of the directors and staff of the Colonial Soil and Water Conservation District, I am pleased to offer this annual report of the organization’s activities for fiscal year 2019.

~ Charles

*The Commonwealth of Virginia supports the Colonial SWCD through financial and administrative assistance provided by the Virginia Soil & Water Conservation Board and the Department of Conservation and Recreation.*

## Agricultural Programs

### Financial & Technical Assistance to Farmers & Landowners

#### FY 2019 VACS Program

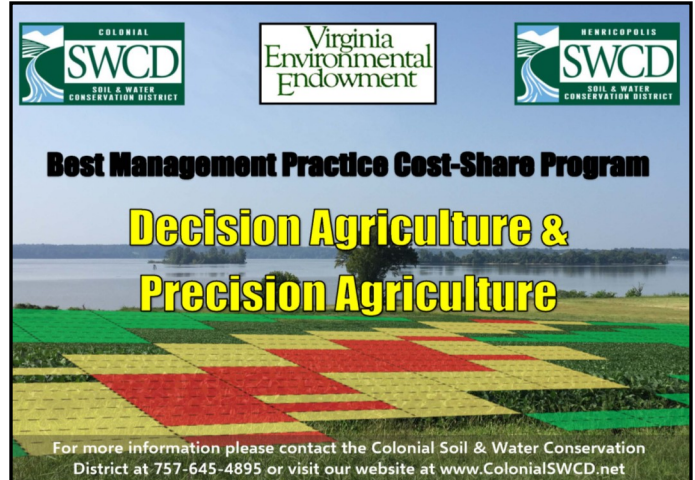
The Virginia Agricultural Cost Share Program (VACS) is a conservation initiative that provides assistance to agricultural producers for the installation and implementation of BMPs. The aim of the program is to reduce the amount of pollutants such as phosphorus, nitrogen, and sediment that enters local waters from agricultural fields.

Annually, Soil and Water Conservation Districts across the state administer the program that is overseen and funded by the commonwealth. The Colonial District received \$300,000 in VACS funding for FY 2019. Funds were allocated based upon applications received and ranked against environmental criteria established in spring 2018.

This year's program offered financial incentives, which include cost share payments and state tax credits, on a total of 79 individual practices. Despite such a broad offering, most of the practices implemented locally can be grouped together into just a few categories. The table below describes how monies were distributed in the program year ended June 30, 2019.

FY 2019 VACS Program Colonial SWCD		
BMP Type	Acres Benefitted	Dollars Spent
Nutrient Management Plans	13,871	\$26,224
Nutrient Management Techniques	732	\$4,682
Cropland Retirement	50	\$12,548
Cover Crops	6,300	\$254,677

#### Precision Agriculture Grant Project



The CSWCD received a grant award from the Virginia Environmental Endowment (VEE) in 2019 to accelerate implementation of practices aimed at reducing agricultural pollution including precision and decision agricultural management techniques in the James River watershed. The two year project will span the boundaries of the Colonial and Henricopolis (Henrico County) Soil and Water Conservation Districts and will target the 28,436 acres of cropland, estimated by the James River Water Quality Improvement Program, to be along the north bank of the James.

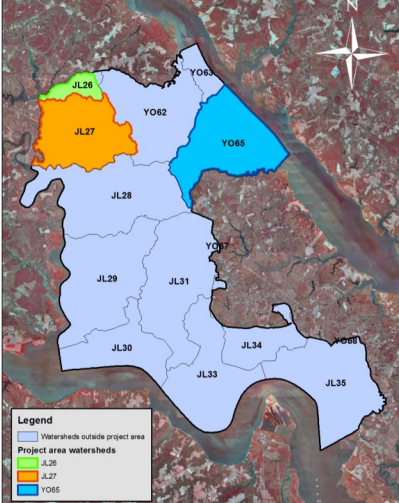
Project partners will offer technical assistance to farmers to help transition into innovative conservation practices, as well as provide \$450,000 in financial assistance over the two year term to implement a defined suite of practices and techniques including variable rate fertilizer and lime applications, intensive soil sampling for nutrients and pH, electrical conductivity and organic matter soil mapping, variable rate seeding based on in-field management zones, use of nitrogen leaching inhibitors, and multiple nitrogen applications made with irrigation systems.

## Agricultural Programs

### Technical Assistance to Local Governments

#### James City County Horse Project

The Colonial SWCD was awarded a contract in FY 2019 to conduct an equine census in select watersheds of James City County.



*Left: Phase 1 of the horse census targeted three sub-watersheds located in the northern portion of James City County.*

*Phase 2 of the project will seek to gather horse populations in the rest of the county.*

The survey was conducted on nearly 2,350 individual tax parcels in the Diascund Creek/Mill Creek (JL27), Diascund Creek/Diascund Creek Reservoir (JL26), and York River/Skimino Creek (YO65) watersheds and found that 102 of those parcels contained horses or horse infrastructure such as barns, horse trailers, or fenced paddocks. Based on the results, the survey team believes there are between 700-750 horses in the county on a semi-permanent basis.

Since horses generate approximately 50 lbs of manure per day, and can easily damage pasture forage species by over grazing and heavy traffic, conservation partners are anxious to identify opportunities to improve on-farm manure management, enhance pasture quality, and increase the usage of heavy use areas as turn-out area when pastures are saturated, frozen, or not suitable for animal traffic.

#### Chesapeake Bay Preservation Act

The Chesapeake Bay Preservation Act was authorized by the Virginia General Assembly in 1988. The Act required localities east of I-95 to implement land use regulations to protect sensitive lands, particularly lands near waterways. The Act predominantly targets land development, but also contains provisions for agricultural and silvicultural (forest) land uses.

In FY 2019, the Colonial SWCD contracted with three of its localities to conduct assessments on agricultural lands, as directed by the Act. The goal of the assessments is to validate the effectiveness of riparian buffers that protect receiving streams from unintended consequences of conducting agricultural operations up slope. When necessary, ag land assessments can lead to the development of a conservation plan, which details additional measures that need to be implemented to protect soil and water resources.

The District is uniquely qualified to conduct such assessments due to staff's technical trainings and the financial incentives that can be leveraged to improve agricultural lands or riparian buffers offered through the VACS Program.

**FY 2019 CBPA Ag Land Assessments**

Locality	# of Ag Land Assessments	# of Assessments Leading to a Conservation Plan
Charles City	21	1
James City	22	2
New Kent	24	10



## FY 2019 ANNUAL REPORT

## Educational Programs

## Youth and Adult Outreach

## Solar Powered Irrigation Project at York River Academy



The CSWCD partnered with York River Academy (YRA) in FY 2019 to provide technical and financial resources for the installation of a solar powered irrigation system to provide water to the school's greenhouse.

YRA is a charter school operated by the York County School Division on the campus of Yorktown Middle School. At YRA, instructional activities are student-centered with teachers using collaborative approaches and blended instruction that prepare students for success in the classroom and the world of work.



Through grant funds targeted at urban agriculture, the Colonial SWCD provided \$2,000 to the school to purchase solar panels and other materials, as well as technical support and engineering to set up the irrigation system. CSWCD Director Charlie Morse, who took a lead role in the project said, "the rain water captured off of the school's roof, combined with a solar powered pump, provides a 100% sustainable system to meet the greenhouse's water needs", reducing the demand of potable water resources.

**Top:** Students connect a downspout to a cistern, which will hold rainwater for later use.

**Above:** Students finish installing a solar panel which will run the pump to transfer the water.

**Right:** Student plumbs cistern to the greenhouse

**Far Right:** Students wire and test electrical current provided by the solar panels to run the pump to move irrigation water from the cistern to the greenhouse.



## Environmental Walking Tour Installed at Warhill Sports Complex



The District was awarded \$5,000 from the Chesapeake Bay Restoration Fund in fall 2018 to install an environmental walking tour at the Williamsburg Community Growers site. This walking tour highlights several environmental features on-site, including a natural and constructed wetland, sustainable agriculture techniques used in the community garden, a pollinator habitat, and a nearby restored stream. The District teamed up with students from Jamestown High School's Envirothon team who helped create the posters inside each sign.

## Educational Programs

### Envirothon

The Jamestown High School Envirothon Team finished third in last year's NCF Envirothon, the international version of Virginia's Dominion Energy Envirothon, that pits teams of high school aged students against each other to test their knowledge of environmental topics including soils, wildlife, aquatics, forestry, and a rotating topic that challenges teams to offer solutions to a current and relatable conservation topic.

This year, the Jamestown team, with 4 of its 5 "starters" returning, took the first step of improving upon last year's success by winning the state competition, held at the University of Mary Washington on May 19-20, for the second consecutive year. The win enabled the team to travel to Raleigh, North Carolina in late July to compete, once again, at the international level.

Team members admitted that their third place finish last year was a bit of a surprise. However, after finishing in the top three in 2018, the 2019 team was highly motivated to capitalize on their momentum. The team met throughout the summer studying materials relevant to their North Carolina testing site and learning more about integrating technology into the world's food production system, which was the special topic the team would develop their oral presentation around.

The team's efforts paid off as Jamestown High School Envirothon Team was crowned champion of the 2019 NCF Envirothon, beating out 52 other teams from the U.S., Canada, and China.

The Colonial SWCD is very proud to partner with the Jamestown Envirothon Team by providing financial, technical, and administrative support.



The Jamestown Envirothon Team is awarded first place at the 2019 Dominion Energy Envirothon. Pictured above, left to right, are Lindsey Norfolk of Dominion Energy, Jamestown HS Envirothon Team members Joseph Kang, Audrey Root, Anna Song, Rachel Smith, Lisa Small, Sophia Liu, and Bonnie Mahl of the Virginia Association of Soil and Water Conservation Districts.



The Jamestown Envirothon Team receives a \$15,000 prize for winning the 2019 NCF Envirothon in Raleigh, NC. Pictured above, left to right, are Bill Gill and Alyssa Hamill of Smithfield Foods, Jamestown HS Envirothon Team members Joseph Kang, Rachel Smith, Anna Song, Audrey Root, Lisa Small, and Gene Smith, Executive Committee member of the NCF.



## Urban Programs

### Virginia Conservation Assistance Program (VCAP)

The VCAP program continued its place of prominence among the District's urban and suburban initiatives in 2019. The program, which provides technical and financial assistance to applicants for the installation of a suite of best management practices (BMPs) is in its third year of implementation in the Colonial SWCD. This year 42 VCAP site visits were conducted by District staff (*details right*). Those site visits, resulted in 6 completed applications that were awarded a total of \$56,759 to offset costs associated with the installation of BMPs to reduce the environmental impacts of stormwater.

Interest in the VCAP program has increased steadily since the program's first offering in 2017. As a result, the District's costs to implement the program are not fully covered by the program's technical assistance stipend, which is paid only after a completed practice installation is certified. To address the fiscal shortfall, District Directors are considering alternate opportunities to help offset administrative costs, which may include assessing the locality a fee to supplement funds provide by the program.

As the VCAP program matures, changes and updates are being made to BMP practice specifications, payment rates, and funding sources. One of the most notable changes planned for the FY 2020 VCAP program is the funding provided from the Commonwealth of Virginia. Historically, VCAP funding was primarily provided through federal grants. But due to the initial success of VCAP, coupled with the rollout of the 3rd phase of the Watershed Implementation Plan (WIP3), the VA General Assembly has earmarked \$1 million for the program in the coming year to target the implementation of more stormwater BMPs.

FY 2019 VCAP Site Visits by Locality	
Locality	Number of Visits
James City	20
York	15
Williamsburg	4
New Kent	2
Charles City	1

Since the program's inception, the Colonial SWCD has paid out over \$123,000 to district constituents for the installation of living shorelines, permeable pavers, rain water harvesting systems, rain gardens, and conservation landscaping practices.



**Above:** District staff inspects 263 feet of living shoreline installed along Chisman Creek in York County.

**Below:** A permeable paver project in James City County will allow stormwater to percolate through the driveway and into the soil, greatly reducing or eliminating erosion potential.



## Urban Programs

### Turf Love & Garden Love

In February 2019, the District partnered with James City County's Stormwater and Resource Protection Division and the James City County/Williamsburg chapter of the Virginia Cooperative Extension Master Gardeners to implement the Turf Love program for County residents. The District also hired Certified Nutrient Management Planner and Turf Love expert Bob Winters to continue to help execute the program.

Through this program, homeowners learn how to grow and maintain healthy turf while preventing environmental harm through over-application of fertilizers or pesticides, limiting soil erosion, and reducing water waste through responsible irrigation. This is accomplished through site visits with trained volunteer Master Gardeners, known as Lawn Rangers, who discuss important lawn care methods with the homeowner. The Lawn Rangers also measure the lawn and take a soil sample to ensure accurate nutrient recommendations.

After the soil sample results have been evaluated, the homeowner will receive a certified nutrient management plan. This plan is specific to each homeowner's lawn maintenance needs, goals, and surrounding environment; decreases the risk of environmental harm through routine lawn care; and often provides an economic benefit from reduced costs associated with over-application of nutrients and irrigation.

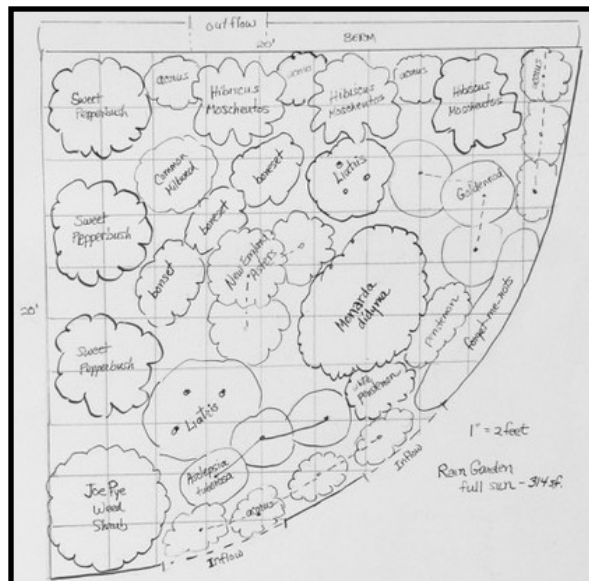
**Below:** Bob Winters collects a soil sample from the lawn of a homeowner participating in Turf Love.



#### Garden Love

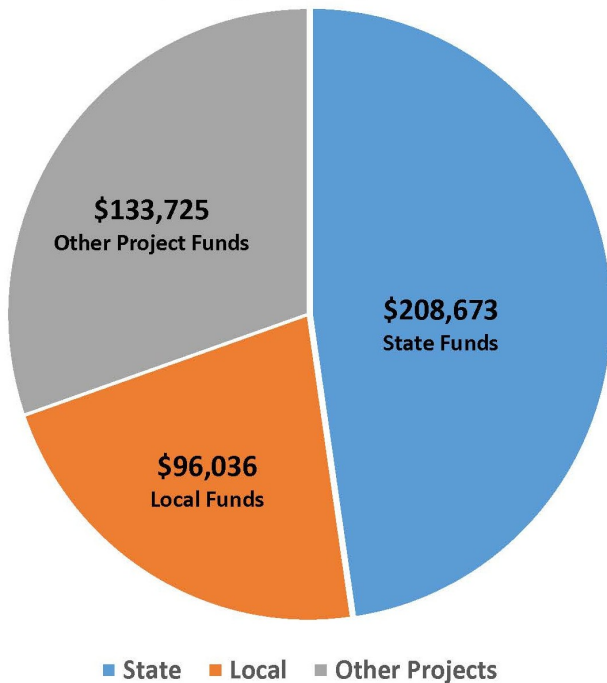
In taking on the program management responsibilities for Turf Love, the District also chose to promote the companion program Garden Love. Garden Love is also a historic program in James City County, previously operated by the VCE Master Gardeners and funded through a grant received by the County. Through this program, homeowners who installed rain gardens to manage stormwater on their property received financial support to do so.

Rain gardens are a reimbursable BMP through the VCAP program, so it made sense to combine the program parameters of Garden Love and VCAP to be able to continue to work with and reimburse homeowners who are especially interested in creating a rain garden on their property. The District is also grateful to have the assistance of Master Gardener and rain garden expert Carol Fryer, who pioneered Garden Love alongside Bob Winters when it was originally created. Carol designs beautiful, functional rain gardens for Garden Love participants. An example design is shown below.



## Colonial SWCD Operations

FY 2019  
Colonial SWCD  
Operating Income by Source



### Operating Income

The Colonial SWCD annually receives funds from myriad outlets, which may include federal, state, local, and private sources. The Commonwealth provided 47% of the District's operating income this year through two annual grants, while local government funding accounted for approximately 22% of the District's income. Local funding was up over recent trends due to specific contracts for services including the James City County Horse Census Project.

Special project or grant funding was also up for the year due to the Virginia Environmental Endowment (VEE) precision agriculture grant, the District's role in administering the Turf Love Program in James City County, and a very successful year of implementing BMPs through the Virginia Conservation Assistance Program (VCAP).

### Operating Expenses

Spending to train and retain experienced and qualified staff continued to occupy the top spot in FY 2019, accounting for 65% of operating expenses. General administrative expenses such as rent, insurance, utilities, automotive fuel and maintenance, etc, consumed over \$47,000 or 10% of operating expenses, holding nearly constant over the last two fiscal years.

Spending on special projects was up considerably relative to the past two years, comprising 24% of operating expenses. Grant projects funded by the National Association of Conservation Districts (NACD) and the Chesapeake Bay Restoration Fund were completed, while spending on the VEE grant and BMP implementation through VCAP rounded out the majority of project spending.

FY 2019  
Colonial SWCD  
Operating Expenses by Source

