



## Annual Report

### Fiscal 2021

July 1, 2020 — June 30, 2021

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Charles Carter, Chair	Charles City
Robert Lund, Jr., Vice Chair	James City
Robert Jeremiah, Treasurer	New Kent
Pam Mason, Secretary	York
Fred Browning	Charles City
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Philip Thomson	New Kent
Megan Tierney	VCE Appointment
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#### Staff

Tom Dunlap	Conservation Specialist II
Liz Callan	Urban Agriculture Tech
Robyn Woolsey	Urban Conservationist
Sheila Jaruseski	Office Coordinator
Jim Wallace	District Manager
Bob Winters	Turf Love Program Tech
Tabea Zimmermann	Conservation Specialist I

#### Colonial Soil & Water Conservation District

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#### Message from the Chair

State funding for agricultural conservation is at an all-time high and can be correlated to the looming 2025 water quality targets, established by EPA, to clean up the Chesapeake Bay.

The support of the General Assembly to enhance conservation efforts has not been exclusively dedicated to the agricultural sector. The Virginia Conservation Assistance Program (VCAP), a cost share program targeted toward non-agricultural stormwater practices, has received \$1.5 million since first being state funded in 2020. Although funding for VCAP is not nearly sufficient to satisfy the demand for the program, the General Assembly sent a clear message of support by committing financial resources to conservation efforts when income projections were uncertain due to the COVID-19 pandemic.

The role and mission of Virginia's Soil and Water Conservation Districts to be leaders of local conservation efforts extends far beyond program development and funding from the Commonwealth. Continued local funding, community support, and creativity from all sectors will be crucial to achieving the EPA's 2025 water quality goals. Everyone has a role to play and I'm confident the directors and staff of the Colonial SWCD will continue to be creative in bringing new conservation initiatives to our constituents.

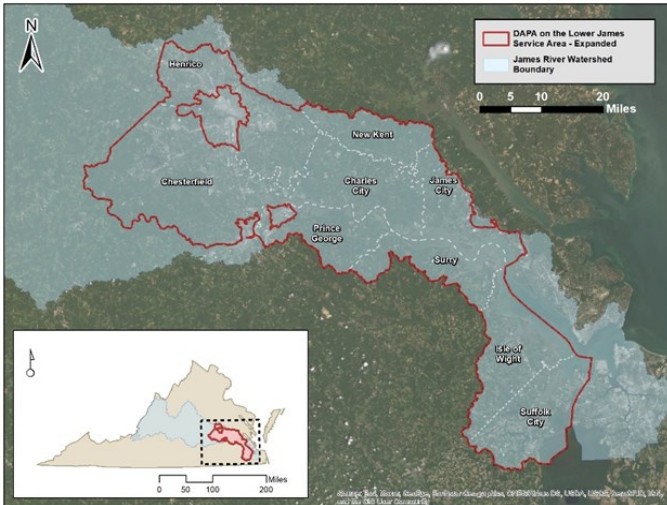
We are pleased to provide this annual report of our accomplishments in FY 2021. We are grateful for the support of our local, state, federal, and private partners in conservation.

~ 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

### Decision Agriculture & Precision Agriculture Grant



*The footprint of the DAPA grant project includes portions of 4 SWCDs stretching along the James River from Richmond almost to the river's mouth.*

Since 2019, the Colonial SWCD has been administering a privately funded cost-share initiative for farmers in the James River watershed to promote the use of precision agriculture management techniques. Over the last year, the *Decision Agriculture & Precision Agriculture (DAPA) on the Lower James* project expanded into regions of the James River SWCD and Peanut SWCD, increasing the footprint of our project (pictured above). We are in the process of winding down our project now and have had the wonderful opportunity to work with growers in four Soil & Water Districts through this initiative. We are very happy with the progress that has been made.

In 2021, the project has helped farmers use precision agriculture techniques on over 19,000 acres of row crop farmland, and we are still working towards the verification of 34,000 additional acres of practices! Many of these management practices include in-field productivity zone creation and management, the variable application of fertilizer, and the use of farm field management software for record-keeping and in-season field monitoring.

The use of these practices should help farmers meet their yield goals at the same time as targeting fertilizer and other inputs towards areas of their operation that are best suited to utilize them and

ideally keep them on site. Other additional benefits for operators can include cost savings in product and time, ease of record-keeping, and cost management along with profitability assessments.

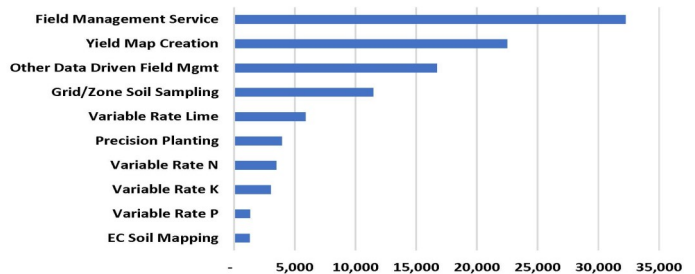


*Above: A soil electrical conductivity (EC) mapping implement arrives on the farm.*

The primary goal of the project was to defray the costs of trying new technologies and managements, while also providing support and third-party recommendations. While precision agriculture can seem overwhelming for some, and too expensive for many there are achievable advancements for nearly all row-crop farm operations in the coastal plain. Although the DAPA program is winding down, district staff expect to see some or all of this style of BMP endorsed by conservation partners in the coming years.

This project has been made possible through financial support from the Virginia Environmental Endowment through their James River Water Quality Improvement Program. We have been aided in accomplishing our project goals with the support of the Henrico, James River, and Peanut Soil & Water Conservation Districts, technical service providers throughout Virginia and North Carolina, and last but not least our farmer participants.

**Verified Acres of Implemented DAPA BMPs Since 2019**





## Agricultural Programs

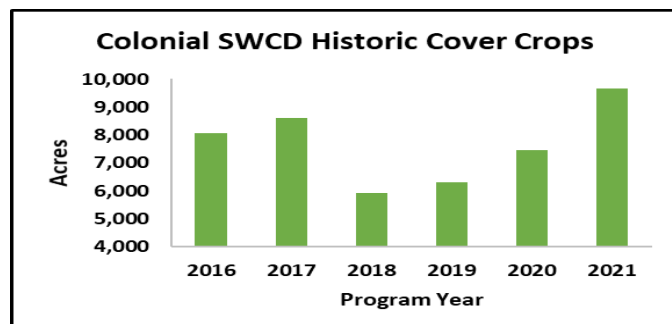
### Virginia Agricultural Cost Share Program (VACS)

The Virginia Agricultural Cost Share program (VACS) is a state-funded conservation initiative that provides financial assistance to agricultural producers for installing and implementing Best Management Practices (BMPs). Soil and Water Conservation Districts across the state administer the program and provide technical assistance to farmers and landowners. The Colonial SWCD allocated \$559,060 to 38 participants during the 2021 program year. The tables below provide a breakdown of how funds were distributed across localities and BMP type.

FY 2021 VACS Program Fund Distribution by Conservation Practice		
BMP Type	Acres Benefitted	Dollars Spent
Nutrient Management Plans	24,520	\$49,040
Nutrient Management Practices	4,802	\$28,603
Cropland Conversion	13.6	\$1,563
Cover Crops	9,668	\$479,854

FY 2021 VACS Program Fund Distribution by Locality			
Charles City	James City	New Kent	York
\$262,274	\$32,314	\$263,687	\$153

Farmers in the Colonial District planted a record 9,668 acres into cover crop practices this program year. A combination of favorable weather conditions and increased cost-share rates incentivized farmers to plant small grain, legume, specialty, and harvestable cover crops which absorb excess nutrients and prevent soil erosion during winter months.



Pictured above, a rye cover crop planted by no-till drill after harvesting a corn cash crop. Rye serves as an excellent “scavenger” and will take up excess nitrogen not used by the cash crop, preventing it from leaching through the soil or washing away and polluting nearby bodies of water. Pictured below is a mixed cover crop including crimson clover and forage/tillage radish, which serves multiple purposes: clover fixes nitrogen into the soil while the radishes grow deep into the soil helping to aerate and break it up. Cover crop species are chosen by farmers to match their management goals and field conditions.



Every acre of cover crop and other VACS practices help Virginia move closer to meeting the nutrient and sediment reductions, required by the EPA, to clean up the Chesapeake Bay. The current deadline to meet the EPA’s water quality goals is 2025.

## Outreach & Education Programs

### Shoreline Evaluation Program

Colonial SWCD staff and Virginia Cooperative Extension (VCE) Master Gardener Water Steward volunteers spent several months preparing and training for implementation of the Shoreline Evaluation Program (SEP) in fiscal year 2022. SEP's objective is providing educational and technical assistance by meeting with shoreline property owners while assessing current or potential threats to the property and identifying opportunities to help improve water quality through better property management.

Site assessments will include a visual inspection of the shoreline for signs of erosion or soil loss, invasive species, lack of vegetation, etc. If the property includes a managed turfgrass lawn, a soil sample will be taken, enabling the development of a nutrient management plan for the landowner. After the site visit, a written report detailing the results of the assessment and any suggestions for shoreline improvement will be provided back to the landowner. Funds to cover the startup costs for the SEP were awarded by the Chesapeake Bay Restoration Fund's license plate grant program in early 2021.



*Above: With over 1,000 miles of shoreline in the Colonial SWCD service area, many stretches of tidal shore are eroding at a fast pace.*

Several partners have been instrumental in providing training and helping to prepare Colonial SWCD staff and Water Steward volunteers for completing site visits and writing final reports for each program participant. These partners include the Virginia Institute of Marine Science (VIMS) and the VCE

Northern Neck Master Gardeners, who started the SEP almost 10 years ago. Karen Duhring, VIMS Marine Scientist, has provided three trainings via Zoom, which covered general shoreline characteristics, signs and causes of shoreline erosion, and an introduction to several online tools that will be helpful in preparing for site visits.

Pam Mason, VIMS Senior Research Scientist and Director on the Colonial SWCD Board, also led a training field trip to a shoreline along the Colonial Parkway (pictured below) to begin identifying and assessing some of the topics covered in Karen Duhring's Zoom lectures. Leaders from the Northern Neck Master Gardeners also traveled to Williamsburg to provide a presentation about how they implement their program and provided tips on how to implement our own successful program. Trainings will continue throughout the beginning of fiscal year 2022 with a goal of launching the program on October 1, 2021.

*Below: Pam Mason gives trainees tips on how to identify marsh plant species along the York River and Colonial Parkway.*



In 2021, new regulations were adopted that require living shorelines as the default shoreline protection and stabilization practice. Bulkheads and revetments will only be allowed if the best available science can determine that living shorelines are not a viable option. The Colonial SWCD offers several incentive programs to offset costs associated with the design and installation of living shorelines.



## Outreach & Education Programs

### Williamsburg Community Growers

This fiscal year, Colonial SWCD continued to grow and strengthen its partnership with Williamsburg Community Growers (WCG), a nonprofit organization with a mission to educate citizens about the value of producing and consuming healthy, locally grown produce; provide gardening space for individuals and organizations; promote healthy lifestyles for the community; and demonstrate and promote sustainable conservation practices.



*Above: Despite the pandemic, the Colonial SWCD's Urban Agriculture Technician (far right) was still able to work with volunteers. The produce seen here was provided to several families that participated in WCG's first pilot community supported agriculture (CSA) program.*

Colonial SWCD's Urban Agriculture Technician, funded by a 2020 grant award from the National Association of Conservation Districts, served as the WCG Farm Manager and ensured that the teaching farm was well maintained and productive. Colonial SWCD's Urban Conservationist also supports WCG by serving as the Secretary and Education Team Lead for the nonprofit. During the summer of 2021, the Urban Conservationist also assisted with weekly harvesting efforts that provided produce to the Grove Christian Outreach Center and St. Olaf Church, which was then distributed to clients at their food pantries.

#### Pounds of Produce Grown at WCG and Donated to Local Food Pantries

2018	2019	2020	2021
600	1,200	2,550	3,780

### Dominion Envirothon



*Above pictured in the front row are Jamestown High School Envirothon team members L to Right: Sebastian Cordero-Muniz, Neera Naran, Sarah Harris, and Samantha Brown. Not pictured is team member Kate Long. Back Row: Rebecca Elton, Coach, Sheila Jaruskeski, CSWCD and Bonnie Mahl, VASWCD state Envirothon coordinator. Not pictured are coaches Amanda Mullane and Charlie Dubay.*

The Envirothon is a natural resource based competition for high school age students that tests the knowledge and skill of 5 member teams in categories of wildlife, forestry, soils, aquatics, and a current environmental issue. Envirothon competitions are generally held at local, regional, state, and international levels, with winning teams advancing to the next level.

The Jamestown High School Envirothon team represented the Colonial SWCD at this year's state level Dominion Energy Envirothon. The Jamestown High School team is comprised of all new members, whose hard work and dedication served them well as they placed first in the Area III and Area VI, combined regional competition and advanced to the state competition, where they placed 3<sup>rd</sup> overall.

## FY 2021 ANNUAL REPORT

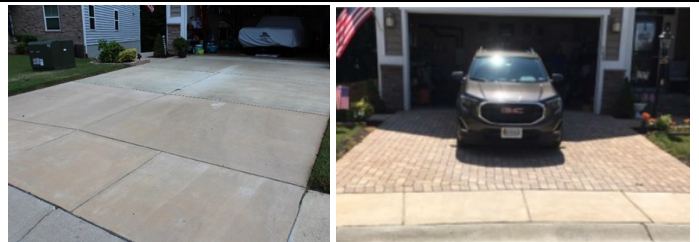
## Urban Programs

### Virginia Conservation Assistance Program

Interest in the Virginia Conservation Assistance Program (VCAP), which provides technical and financial assistance to landowners who install one of a suite of best management practices to manage stormwater on their property, continued to grow this year. This growth was consistent with trends across the state, as the demand for financial assistance exceeded the amount of available funding several times throughout the year. While the program includes 12 best management practices that are eligible for reimbursement, rain gardens, permeable pavement, and living shorelines continue to be the most popular in the Colonial SWCD service area.

VCAP Site Visits by Locality			
Locality	2021 Visits	2020 Visits	2019 Visits
James City	32	26	20
York	17	8	15
Williamsburg	2	1	4
New Kent	1	1	2
Charles City	0	1	1
<b>Total</b>	<b>52</b>	<b>37</b>	<b>42</b>

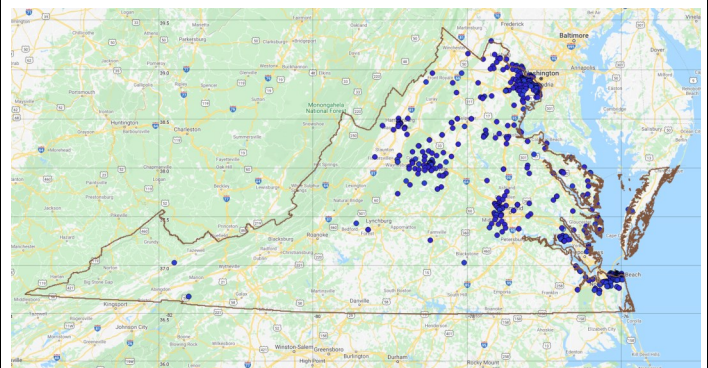
District staff completed 52 site visits, most of which took place in James City County and York County, as shown in the table above. Of these site visits, five resulted in completed applications. Two James City County landowners are installing rain gardens on their property to capture and infiltrate stormwater runoff, and three York County landowners replaced their concrete driveways with permeable pavement that will also collect and infiltrate runoff. Once all projects are complete, reimbursements for these five applications will be issued totaling \$22,193. To date, reimbursement payments totaling to \$182,685 have been made to program participants who install an approved best management practice that improves stormwater management and local water quality.



*Above: Before and after photos showing a completed permeable pavement driveway. Underneath the pavers, there's a layer of rock approximately 1 foot deep that serves as a storage reservoir for stormwater that infiltrates through the cracks between each paver.*

Statewide, VCAP is carving out a niche, especially in urban and suburbanized communities, where stormwater concerns are more prevalent. In FY 2021, over \$873,000 was spent on approximately 160 VCAP stormwater practices across the commonwealth. Although state funding for VCAP was reduced in FY 2021, the General Assembly did support the program beginning in FY 2020 and has contributed \$1.5 million since that time. Program administrators have continued to seek and find grant funds to supplement the state's contribution to satisfy program demand.

As the 2025 deadline to meet EPA's water quality goals nears, it is expected that VCAP demand will continue to increase.



*Above: Locations of VCAP practices since 2016 are plotted on a map of Virginia. Areas with high levels of implementation include Hampton Roads, Richmond, Charlottesville, and Northern Virginia. In the early years of the VCAP, program eligibility was limited to sites within the Chesapeake Bay watershed, which partially explains why other metropolitan areas outside the Chesapeake Bay watershed, such as Roanoke, have not experienced a similar level of program participation.*



## Urban Programs

### Turf Love

While the COVID-19 pandemic presented several challenges for implementing Turf Love this year, Colonial SWCD staff and Virginia Cooperative Extension Master Gardener volunteers, known as Lawn Rangers, were able to find creative solutions to allow the program to continue to operate. Social distancing measures were taken during each site visit, and face coverings were required to be worn by both the Lawn Ranger and homeowner. Despite the pandemic, Lawn Rangers were able to complete 48 site visits with homeowners in James City County. Along with these visits, nutrient management plans were completed for 91 proffered residential lots and 10 county-owned properties. These nutrient management plans, as well as the public educational events offered through Turf Love, are counted towards the goals outlined in James City County's Municipal Separate Storm Sewer System (MS4) permit.

The nutrient management plans written for all program participants provide recommendations for fertilizer and lime applications based on the analysis received from soil samples taken during the site visit. These recommendations inform the participant of what kinds of fertilizers they should consider using, as well as how much to apply and when to apply them. Given the mix of warm and cool season turf species that can be grown in this area, ensuring that homeowners apply fertilizers during the appropriate growing season for their turf is crucial to limiting the amount of fertilizer that may leave the lawn and enter nearby waterways. Along with collecting a soil sample, Lawn Rangers also measure the total area of the lawn to ensure that all recommendations are as precise as possible.

Since many in-person events were no longer possible this year, Colonial SWCD staff and Lawn Rangers worked together to come up with new, innovative ways to be able to continue to share turfgrass education opportunities and promote participation in Turf Love. The first event hosted this year was a webinar focusing on how to incorporate compost into a turfgrass management routine. Adam Nichols,



turfgrass researcher with the Virginia Tech Hampton Roads Agricultural Research and Extension Center, provided a presentation on this topic and answered related questions from webinar attendees. For those who were unable to attend live, the webinar was also posted to the Colonial SWCD website and YouTube page. Colonial SWCD staff also participated in an episode of the James City County podcast, "This Week in James City County," to discuss the goals of Turf Love, why homeowners should consider participating, and how environmentally responsible lawn care can prevent pollution in the Chesapeake Bay. This episode is also widely available online. Finally, district staff worked with the James City County Video Department to film a short video about Turf Love that is played on the county's cable channel and available to watch online. In the video, district staff and Lawn Rangers demonstrate soil sampling and lawn measuring, and discuss the benefits of participating in Turf Love.

Colonial SWCD staff and Turf Love volunteers were able to participate in one in-person educational event, the Virginia Turfgrass Foundation's inaugural Run the Fairway 5k and Outdoor Living Expo. At this event, district staff and volunteers were on site to share information about Turf Love and engage with attendees to discuss opportunities to incorporate conservation efforts into their lawn care routines.



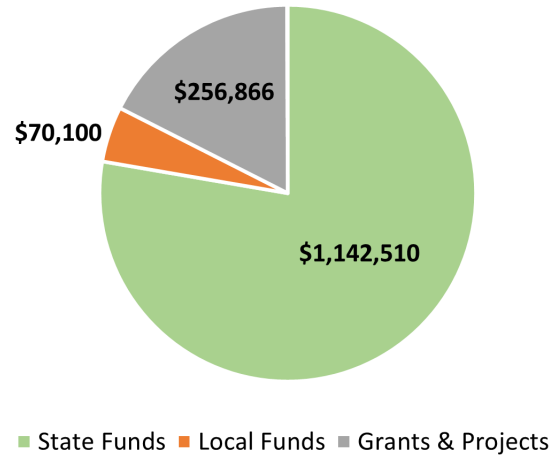
## FY 2021 ANNUAL REPORT

## Colonial SWCD Finance

### Income

Virginia's Soil and Water Conservation Districts do not have the authority to levy taxes. As a result, districts rely on grants, contributions from local governments, and fund raisers to support local conservation efforts. The Colonial SWCD receives multiple grants from the commonwealth annually to support operations and to implement the Virginia Agricultural Cost Share (VACS) Program. VACS is the primary method by which agricultural conservation practices are credited in the Chesapeake Bay Watershed Model and represents the majority of income and expenses on the district income statement. Local funds and competitive grant awards provide financial support for programs and initiatives targeting the district's constituents including responding to requests for services, Turf Love, supporting the Williamsburg Community Garden, and compliance with the Chesapeake Bay Preservation Act.

FY 2021 Income by Source



### Expenses

The past fiscal year saw a historic level of funding being directed to local farmers, landowners, and managers for the implementation of conservation practices. Two independent ag programs, VACS and the Decision Agriculture, Precision Agriculture grant provided through the Virginia Environmental Endowment's James River Water Quality Improvement Program combined with VCAP to provide incentive payments for the installation of BMPs.

Retaining a well-trained and effective staff to provide technical assistance and administer district initiatives continued to be a top priority for the district Board of Directors. The staff, comprised of 5 full time and 2 part time employees consistently fulfill their duties in a professional manner and position the district to take advantage of grant opportunities, furthering the district's strategic plan.

Other project and program expenses, which includes materials and supplies to execute grant projects and outreach efforts, along with general administrative and overhead expenses round out the expense list.

FY 2021 Expenses by Category

