Virginia Association of Counties

ACHIEVEMENT AWARDS

SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2021.** Please include this submission form with the electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact Gage Harter.

PROGRAM INFORMATION

County: Fairfax County

Program Title: Eco Video Series

Program Category: Communication

CONTACT INFORMATION

Name: Danielle Wynne

Title: Ecologist IV

Department: Dept. of Public Works, Stormwater Planning

Telephone: (703) 400 - 4785 **Website:**

Email: danielle.wynne@fairfaxcounty.gov

SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Rachel Flynn

Title: Deputy County Executive

Signature:

FAIRFAX COUNTY ROUTING SLIP
DEPARTMENT OF PUBLIC WORKS & ENVIRONMENTAL SERVICES

To:	Rachel Flynn, Deputy County Executive	Take necessary action Approval or signature Comment Prepare reply Discuss with me Coordination For your information See remarks below	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Via:	John Kellas, Acting Director, DPWES		
From:	Eleanor Ku Codding, Deputy Director, Department of Public Works and Environmental Services (DPWES), Stormwater and Wastewater Division	**Date:** 6/16/21	

Remarks: IQ 321956

Subject: Please return signed copy/original to DPWES Director's office.

Thank you,

Rona Courtney
Administrative Assistant V
Director's Office, DPWES

County of Fairfax, Virginia

MEMORANDUM

DATE: JUN 17 2021

TO: Rachel Flynn, Deputy County Executive

VIA: John Kellas, Acting Director
Department of Public Works and Environmental Services

VIA: Eleanor Ku Codding, Deputy Director
Department of Public Works and Environmental Services
Stormwater and Wastewater Division

FROM: Craig A. Carinci, Director
Department of Public Works and Environmental Services
Stormwater Planning Division

SUBJECT: Virginia Association of Counties Achievement Awards Submission Form

Please sign and return the attached Virginia Association of Counties Achievement Award (VACAA) nomination form for Stormwater's Educational, Collaborative Online Eco video series. The videos provide Fairfax County Public Schools with educational and interactive programming material on freshwater science that also are related to Standards of Learning requirements.

Attachments: VACCA Nomination Form

Department of Public Works and Environmental Services
Stormwater Planning Division
12000 Government Center Parkway, Suite 449
Fairfax, VA 22035-0052
Phone: 703-324-5500, TTY 711, Fax: 703-802-5955
www.fairfaxcounty.gov/publicworks

Program Title: **ECO Video Series – Educational, Collaborative Online videos produced by Local Ecologists**

Program Category: **Communications**

Executive Summary:

If a picture is worth a thousand words, then a video is worth many, many more. Videos provide an opportunity to supplement traditional indoor classwork with experiences that students may not be able to have in-person due to the constraints of distance, time, or funding. The Educational, Collaborative Online (ECO) video series produced by Fairfax County freshwater ecologists in the Watershed Education and Outreach (WEO) section has become an invaluable and inclusive tool that connects students and teachers to their local environment, regardless of access to in-person, outdoor education experiences. During over a year of virtual schooling, when educators have had to greatly modify their traditional in-classroom programs, these videos have become our most requested item by Fairfax County Public Schools (FCPS). With a school population of more than 188,000 students, videos provide an opportunity for ecologists to reach more students virtually than previously possible in person. Prerecorded videos allow students and teachers to work at their own pace, enhancing accessibility to these products, while other videos allow for real-time, interactive labs and other guided virtual programming. The connection between the local school system and local scientists created through these videos ultimately engages and inspires the next generation of scientists.

State the problem, challenge or situation faced by the locality and how the program fulfilled the awards criteria (innovation, partnering or collaboration and a model for other localities). Tell how the program was carried out, including financing and staffing, and the program's results.

The Problem or Need for the Program

Every student should have the opportunity to connect to their local streams and environment. However, with Fairfax County, VA being the 10th largest public school system in the nation with 188,000 students, it can be difficult to engage everyone in meaningful, environmental education experiences. In addition, many schools do not have the ability to fund field trips due to financial constraints, or may not have safe access to a stream within walking distance. The recent long-term closure of public schools has only exacerbated the need for accessible and engaging environmental education tools and programming. For many years, the school system has expressed the need for a tool that makes meaningful, outdoor education experiences accessible while also addressing Virginia Standards of Learning (SOL). Environmental, locally-based videos are our response to this need. Videos can virtually take students to their neighborhood streams or across the county to visit different watersheds, introduce them to various interactive labs, and allow them to meet local scientists, regardless of access to in-person, outdoor education experiences. These videos help connect students to our local ecosystems, the Chesapeake Bay, and beyond.

Description of the Program

Fairfax County Watershed Education and Outreach's mission is to inspire environmental stewardship in students. Teaching these future leaders of Fairfax County about the health of our watershed can increase their connection to the local environment and help reduce the negative impact on water locally. In addition to inspiring students to protect our environment, our main goal is to get students outside. However, with school requirements, location, and financial constraints, it is often not feasible to bring students to a stream or even bring elements of a stream to them. Additionally, it is impossible for WEO staff to reach all 188,000 students every year. However, despite over a year of virtual

schooling, videos have allowed us to create authentic and accessible connections to the local environment for more students than we ever could in person.

The free Educational, Collaborative, Online (ECO) video series includes watershed education videos on various subjects directly or indirectly related to Virginia SOL science requirements. Connecting these videos to standards creates supplementary tools that can be used by students and teachers independently at their own pace or in the virtual or in-person classroom, with or without the aid of county ecologists. Many of these videos are provided in the appropriate grade and unit curriculum documents given to teachers by the county curriculum writers.

Videos grab students' attention and engage them in ways that written materials or static images never will. Our first video, *Introducing Fairfax County's Freshwater Ecologists,* was developed in 2018 with the help of our local network, Channel 16. This video introduces freshwater ecology, explains what ecologists do, and shows viewers how staff monitor streams by looking at water chemistry, geomorphology, and benthic macroinvertebrate and fish diversity. Overall, this video provides a real-world example of local monitoring activities by introducing students to a science career, and is officially part of the FCPS 6th grade science curriculum.

Figure 1- Fish collection scene from Introducing Fairfax County's Freshwater Ecologists

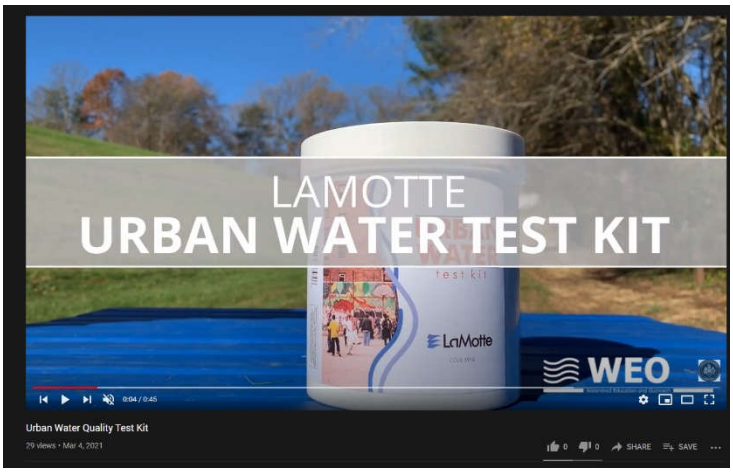

Figure 2 Introductory Video for Urban Water Quality Test Kit

In 2020, we developed a demonstration series for the LaMotte Urban Water Quality Test Kit, which FCPS purchased for their 9th grade Environmental Science classes. This is only the second year Fairfax County has offered this class and thus there are very few preexisting tools to aid in teaching this curriculum. Environmental Science is primarily utilized for freshman who are at-risk and/or otherwise need additional support before taking Biology (the typical 9th grade science class). These classes are generally ESOL and special needs focused, though there are also some general education classes as well. To make these kits accessible and inclusive, WEO staff created an FCPS-requested series of "how to" videos that provide teachers and students with detailed, visual instructions on how to use the kit. WEO created an "unboxing" video, taking out each item and identifying them to the viewer. Each water chemistry parameter test was run and results were shown and interpreted. The series is provided in a playlist, as opposed to one continuous video, to make viewing easier. This series can be used for both teachers who are new to teaching environmental science or to the kit, and for students to feel more comfortable with running through a test themselves.

Due to virtual schooling, we have also been asked for a way to virtually present our award-winning Stream Crime Investigation lab. The lab exercise teaches students about how local scientists track down pollution sources in our waterways and prevent additional pollution events from happening in the future. To address this need, we filmed all the water chemistry tests at home and integrated them into a presentation so that students could see reactions, write down observations, and use those observations

to identify the contaminants in unknown water samples just as they would do in an in-person lab. These short videos have allowed us to get back into the classroom (at least virtually) and continue to work with students.

Other videos cover topics such as: biodiversity, water chemistry, erosion, and stream insects.

Students can play these videos as many times as needed since online videos offer the flexibility to pause, rewind, or skip throughout the video to encourage class discussions or review particular areas. All the videos offer closed captioning so students that are hearing impaired, ESOL, or who learn better with text rather than audio can read the subtitles if they chose. Video-learning allows students to learn at their own pace and view material repeatedly.

These examples are just the beginning of our ECO video series. WEO is reaching out to other local partners, like the Fairfax County Park Authority, to work collaboratively on future video projects to ensure that our messaging is not conflicting between agencies and to reduce the amount of repeat content being developed. WEO staff has also presented tips and tricks for video production during the February 2021 Communicators Team Meeting where non-traditional educators from across Northern Virginia come together to collaborate with other non-traditional educators. At this time, most of the videos that WEO has produced can be found on the Fairfax County Government YouTube page (www.youtube.com/user/fairfaxcountygov) under the Playlist section for "Watershed Education and Outreach" and "Stream Crime Investigation". This channel is managed by Fairfax County's Office of Public Affairs. WEO looks forward to working with them to further promote educational videos to our residents.

Advancing Diversity, Equity and Inclusion

Out of the 198 schools in Fairfax County, 42 schools have been identified in 2020-2021 for Title 1 grant funding. WEO prioritizes Title 1 schools for in person educational opportunities; however, it is still impossible for staff to personally speak with all students in Title 1 schools each year, especially when school is virtual. The free ECO Video series provides accessible, meaningful, and locally produced programs for these at-risk students.

We have also learned from local special education teachers that having these videos available on the county YouTube channel is beneficial to visual learners, special education students, ESOL students, and the hearing impaired. The online video format allows for a slower introduction to new topics and the ability to replay videos as many times as needed to make material more understandable. In-classroom (whether virtual or in-person) program videos can also be introduced days in advance to better prepare students and reduce anxiety during the programs. In addition, YouTube includes closed captioning for all videos, which provides additional learning support to all students.

The Cost of the Program

The cost of video production is nominal once equipment such as tripods, microphones, and lighting are purchased. Videos were filmed using smart phones and the other equipment was purchased from Amazon.com. The most expensive equipment purchase was for an external microphone at $159—all other items were under $100. We also paid a monthly fee for a low-cost, cloud-based video editing software.

The biggest cost of the program is the staff time it takes to produce a video. This includes script writing, vetting content, shooting new footage, recording additional audio, and editing and

uploading files. As with any new project, there is a learning curve involved but we have found this new media offers us many opportunities and feel that time invested into producing videos is time well spent. Ultimately, videos are very inexpensive to produce and provide a wide range of benefits for the viewer. They also allow the creator to send their message or goal to a new and expanded audience.

The Results/Success of the Program

Non-traditional educational program success can be measured in many ways but is often challenging to quantify. Due to restrictions by our local public school system, surveys of students are not permitted by outside groups. We can, however, use video "views" to quantify how our videos are being utilized by students and teachers. That being said, videos may be watched individually by all students in the classroom (i.e. 30 views) or may be shown by the teacher to all 30 students (1 view), so a highly viewed video is not necessarily more effective than a video with fewer views. A video that is directly incorporated into curriculum, such as the "Introducing Fairfax County's Freshwater Ecologists" video used for the 6th grade water unit, has received more views (4,744 views as of 6/7/2021) than videos that are focused on smaller cohorts.

As we continue to work with the Office of Public Affairs, we are developing the following analytics through YouTube:

- Date Added: Date video was uploaded,
- Views: the number of times a video was viewed, and
- Likes/Dislikes: both core metrics

Using these metrics, we can identify our highest-ranking videos. As an example, the metrics for the "Introducing Fairfax County's Freshwater Ecologists" would be:

- Date Added: July 2, 2018
- Views: 4,744 as of June 6, 2021
- Likes/Dislikes: 27 likes/1 dislike

Videos allow us to meet our education objectives in ways that traditional written or static image materials do not. In the ECO video series, students can learn from field experts, witness up close scientific procedures and reactions, and get up-close and personal with their local environment without leaving the virtual world. As we continue to work with FCPS curriculum writers, we will expand our series of videos to keep them relevant to our students' needs.

The following quotes from FCPS staff really validate the importance and effectiveness of these videos:

"One of the challenges with curriculum about the environment is the inability to have students directly experience the concepts they are studying. Embedding videos created by local ecologists into our curriculum has helped to make environmental topics come alive for our students. The ecologists bring their passion into students' classrooms and inspire students to imagine new careers for themselves when they get older." – Jill Curry, FCPS Elementary School Science Specialist

"The Fairfax County Stormwater team has been instrumental in connecting FCPS students to real world environmental issues by developing engaging videos that correspond with curriculum units for students in both elementary and secondary classrooms. Using the local watershed as the setting in the videos allows students to experience what is happening in their own community, drawing real student to environment connections." – Donna Volkmann, FCPS Education Specialist, Get2Green

Worthiness of Award

Locally developed, environmental education videos are a low-cost option to help scientists create environmental stewards by connecting students to their local environment. Through this continued partnership, students benefit from subject matter experts providing real world connections to state SOL requirements. Videos also allow us to reach many more students virtually than could ever be reached in-person. They bring the outside world into the classroom, providing opportunities for students who are not able to access traditional outdoor learning programs. Specifically, videos provide an equal opportunity platform where students can receive high quality, SOL-focused, locally-based, environmental education opportunities. Videos foster the connection between our local school system and local scientists, allowing us to create new and innovative programs that engage and inspire the next generation of scientists.

Brief Overview

The Educational, Collaborative Online (ECO) video series produced by Fairfax County freshwater ecologists in the Watershed Education and Outreach (WEO) section has become an invaluable and inclusive tool that connects students and teachers to their local environment, regardless of access to in-person, outdoor education experiences. As the 10th largest school system in the country with a heavy

focus on preparing students for standards of learning tests, it is simply logistically and financially impossible for every student to experience their local streams and watershed firsthand. The recent long-term closure of public schools has only exacerbated the need for accessible and engaging environmental education tools and programming. For many years, the school system has expressed the need for a tool that makes meaningful, outdoor education experiences accessible while also addressing teaching requirements. Environmental, locally-based videos are our response to this need.

Videos provide an opportunity to supplement traditional indoor classwork with experiences that students may not be able to have in-person due to the constraints of distance, time, or funding. Videos can virtually take students to their neighborhood streams or across the county to visit different watersheds, introduce them to various interactive labs, and allow them to meet local scientists, regardless of access to in-person, outdoor education experiences. These videos help connect students to our local ecosystems, the Chesapeake Bay, and beyond. Prerecorded videos also allow students and teachers to work at their own pace, enhancing accessibility to these products, while other videos allow for real-time, guided virtual programming. In addition, videos focus on various subjects directly or indirectly related to Virginia science requirements and many of these videos are provided in the appropriate grade and unit curriculum documents given to teachers. The connection between the local school system and local scientists created through these videos ultimately engages and inspires the next generation of scientists.

Teaching these future leaders of Fairfax County about the health of our watershed can increase their connection to the local environment and help reduce the negative impact on water locally. The ECO video series is also easily transferable to other jurisdictions across the country to assist with environmental awareness and foster environmental stewards.