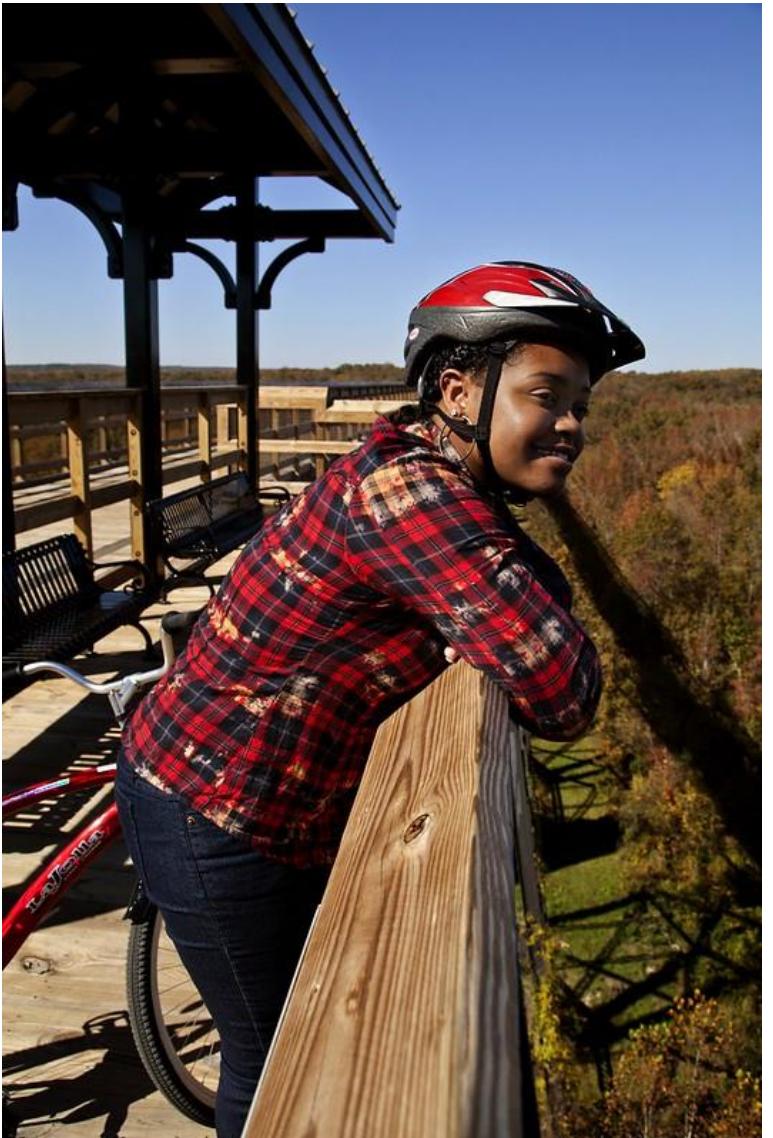


State Trail Advisory Committee

Meeting

April 26, 2023





Meeting Purpose

This committee was established to assist DCR in developing and implementing a statewide system of attractive, sustainable, connected, and enduring trails for the perpetual use and enjoyment of citizens.



Agenda

8:30 a.m.	Welcome	10:15	Navigating Water Regulations
8:45	State Trails Office and Plan	11:00	Virginia Trails Alliance Update
9:15	Sustainable Materials for Trail Construction	11:05	DCR Grants Update
9:30	Sensory Trails Panel	11:15	Next steps
10:00	Break	11:20	Topics for next meeting
		11:30	Adjourn





STATE TRAILS OFFICE UPDATES

| statetrailsoffice@vdot.virginia.gov

April 26, 2023

State Trails Office Staff

Planning Lead: Wood Hudson

Email: wood.hudson@vdot.virginia.gov



Locality and Funding Lead: Dr. Torsha Bhattacharya

Email: Torsha.Bhattacharya@vdot.virginia.gov



State Trails Office Updates

- Stakeholder outreach and engagement
- Statewide Strategic Trails Plan
- Trails Clearinghouse/Resource Hub

Stakeholder Outreach and Engagement

- <https://publicinput.com/stp>
- Identify key stakeholders
- Engage diverse audiences
- Collaborate with DCR and STAC
- Online and in-person engagement opportunities throughout the process



Statewide Strategic Trails Plan

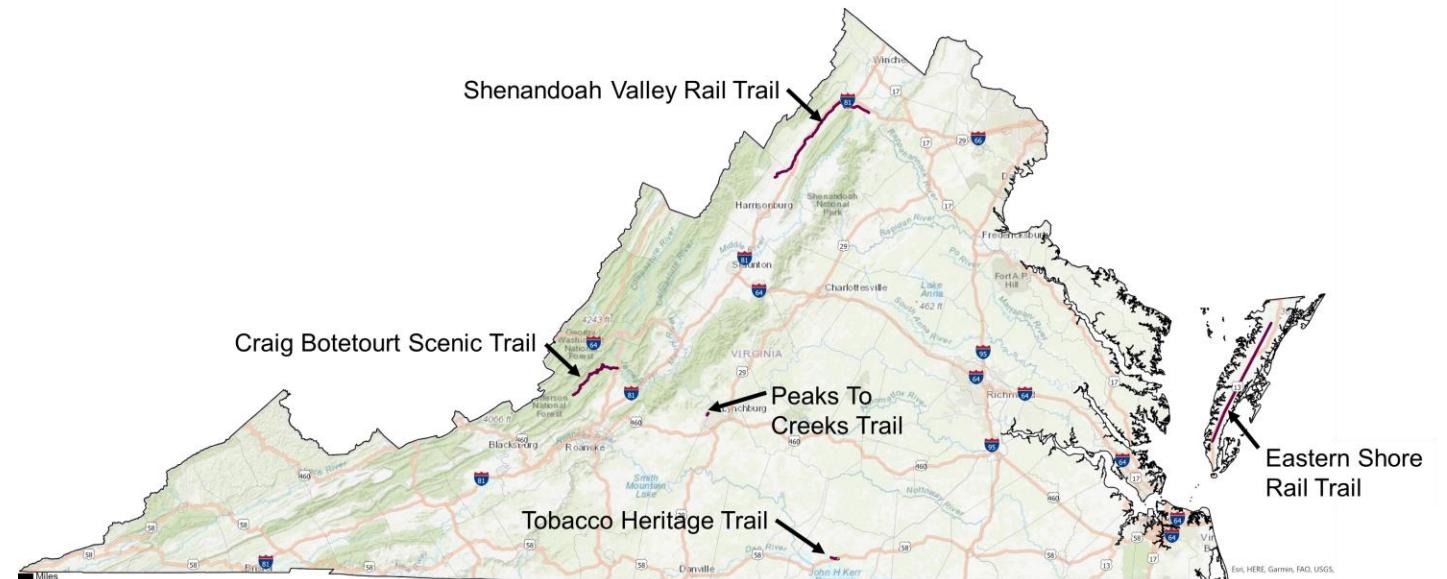
- Complimentary to Virginia Outdoors Plan, VTRANS, Statewide Bike/Ped Plan
- Identify scope of work
- Develop best practices
- Identify
 - Existing trails
 - Trail gaps
 - Options for future trail investments/funding sources
- Provide policy recommendation for equitable and geographically diverse trail development

Trails Clearinghouse/Resource Hub

- A go-to resource site for access to Virginia trails related information
- Develop the State Trails Office website
- Collect data on existing and planned trails/trail networks across the state
- Standardize trail attributes
- Spatialize trails data and develop an interactive mapping interface

Priority Trails

- **Craig Botetourt Scenic Trail**
- **Eastern Shore Rail Trail**
- **Peeks to Creeks Trail**
- **Shenandoah Valley Rail Trail**
- **Tobacco Heritage Trail**



Next Steps

- **Launch State Trails Office Website**
- **Stakeholder and Public Outreach on Statewide Strategic Trails Plan**
- **Data gathering to inform the Trails Clearinghouse/Resource Hub**

Sustainable Materials for Trail Construction

State Trails Advisory Committee
April 26, 2023

alta

Why Sustainable Trail Design?

Why go above and beyond traditional practices in trail design and material use?

Why Use Sustainable Trail Materials?

Benefits Everyone

Help Advance
Technologies & Cost
Effectiveness

Access to
Federal Funds

- CO₂** Carbon Reduction
-  Heat Island Reduction
-  Improved Water Quality
-  Waste Reduction
-  Habitat



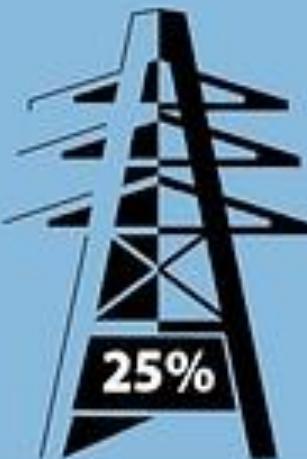
Greenways & Active Transportation: A Part of Carbon Reduction

U.S. Greenhouse Gas Emissions in 2019*

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2019*



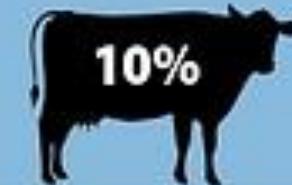
Transportation



Electricity Generation



Industry



Agriculture



Commercial



Residential



45.6% of US vehicle trips are 3 miles or less—
equivalent to a 15-minute bike ride.

**Mode shift for short trips can significantly reduce
GHG emissions.**



Sustainable Trail Design Materials

Trail Surface



Environmental Design



Trail Amenities



Trail Surface



Epave:
Reduces Heat Island Effect



**Permeable/Recycled
or Renewable**



Permeable Pavers

Trail Surface



Recycled Decking

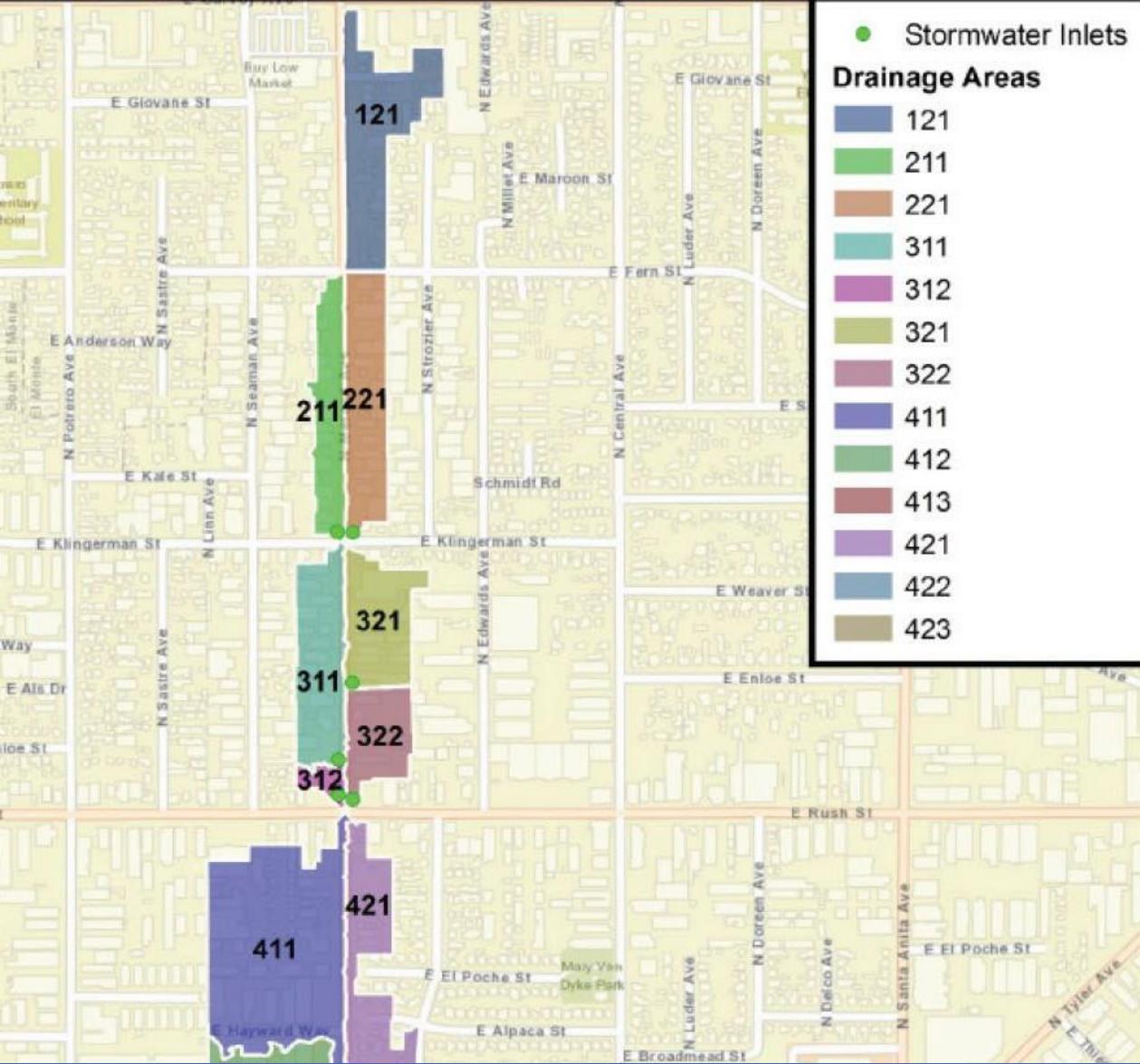
CO₂

Locally Sourced
Products/Regenerative Materials

Trail Surface



Readapted Streets



Readapted Streets



Environmental Design

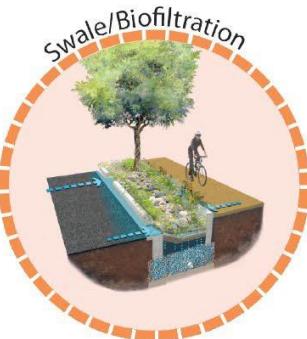


Stormwater management and treatment can be one of the greatest sustainable aspects of a trail

VEGETATION INFILTRATION TRENCH



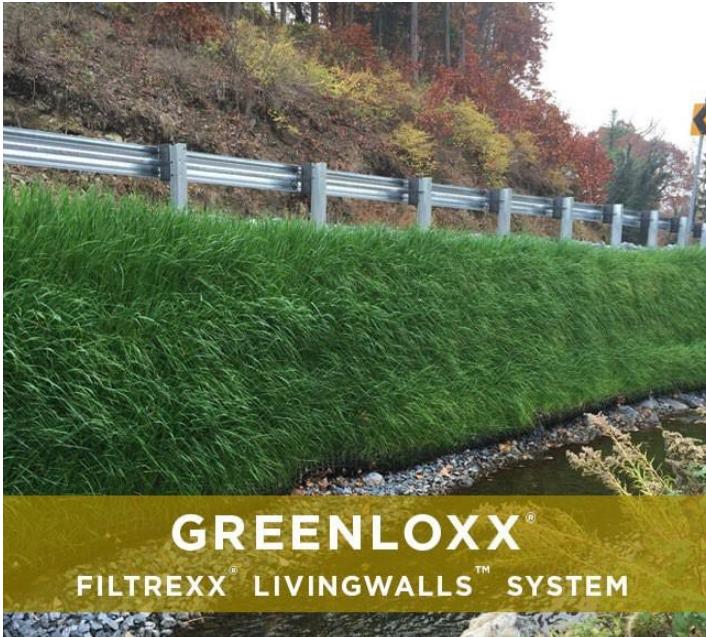
BIO SWALE



Environmental Design



Capture & Treat
Water On-Site



Bank Stabilization



Habitat

Trail Amenities: Recycled Materials



ZICLA®



100% Recycled plastic post consumption

Recycled Materials/Recycled Streetscapes



Recycled Materials for Trailside Amenities



Upcycling/Adaptive Reuse On-site

Trail Amenities: Solar & Electric at Mobility Hubs



A wide-angle photograph of a natural landscape. In the foreground, there's a body of water, possibly a lake or a large pond, with some low-lying vegetation at the very edge. The middle ground is dominated by a dense forest of tall evergreen trees. Behind the forest, several hills rise, covered in similar greenery. In the far background, larger mountain peaks are visible under a sky filled with scattered, white clouds.

Thank You!

Sensory Trails

REACHING NEW TRAIL USERS





SKY MEADOWS STATE PARK SENSORY EXPLORERS' TRAIL



Sky
Meadows
State Park
straddles
Fauquier
and Clark
Counties
in Northern
Virginia



Sky Meadows offers 10.5 miles of equestrian trails, 22 miles of hiking trails, 9 miles of bike trails, and Appalachian Trail access.



SCIENCE



HISTORY



CHALLENGE OF TRANSLATION



SENSORY OPPORTUNITIES



NAVIGATION

LITERATURE RESEARCH, VISITS TO OTHER TRAILS



CATOCTIN CREEK NATURE
CENTER MIDDLEBURG, MD



GEORGE WASHINGTON NATIONAL
FOREST LIONS TAIL TRAIL

SKY MEADOWS – TRAIL REVIEWS



OTHER TRAIL USERS



SLOPE AND
INFRASTRUCTURE

THE TRAIL LOCATION



TRAIL LOCATION



DECIDING ON TRAIL FOCUS

VMN AREAS OF STUDY

RESEARCH INTERESTS

EDUCATION
OPPORTUNITIES



TRAIL COMPONENTS

- ❖ 0.3 TENTHS OF A MILE TRAIL
- ❖ SPECIALLY DESIGNED NAVIGABLE TRAIL FOR BLIND AND VISUALLY IMPAIRED
- ❖ SIGNS WITH BRAILLE LINKAGE TO AUDIO TOUR
- ❖ AUDIO TOUR FOR THE BLIND WHICH ALSO PROVIDED AN ENHANCED LEARNING OPPORTUNITY FOR ALL VISITORS TO THE TRAIL
- ❖ WEBSITE LINKAGES FOR FURTHER LEARN MORE OPTIONS
- ❖ HANDS-ON EXHIBITS



© Marie & Milan Majarov

PARTNERSHIPS

- ❖ VMN
- ❖ SKY MEADOWS STATE PARK
- ❖ FRIENDS OF SKY MEADOWS
- ❖ LIONS CLUB
- ❖ NATIONAL FEDERATION OF THE BLIND



**The Friends of Sky
Meadows State Park**



FINDING THE MONEY

GRANTS:

NORTHERN PIEDMONT COMMUNITY FOUNDATION
NOW AND FOREVER FUND

PATHWAYS FOUNDATION

REI

DONATIONS:

REVOKABLE LIVING TRUST

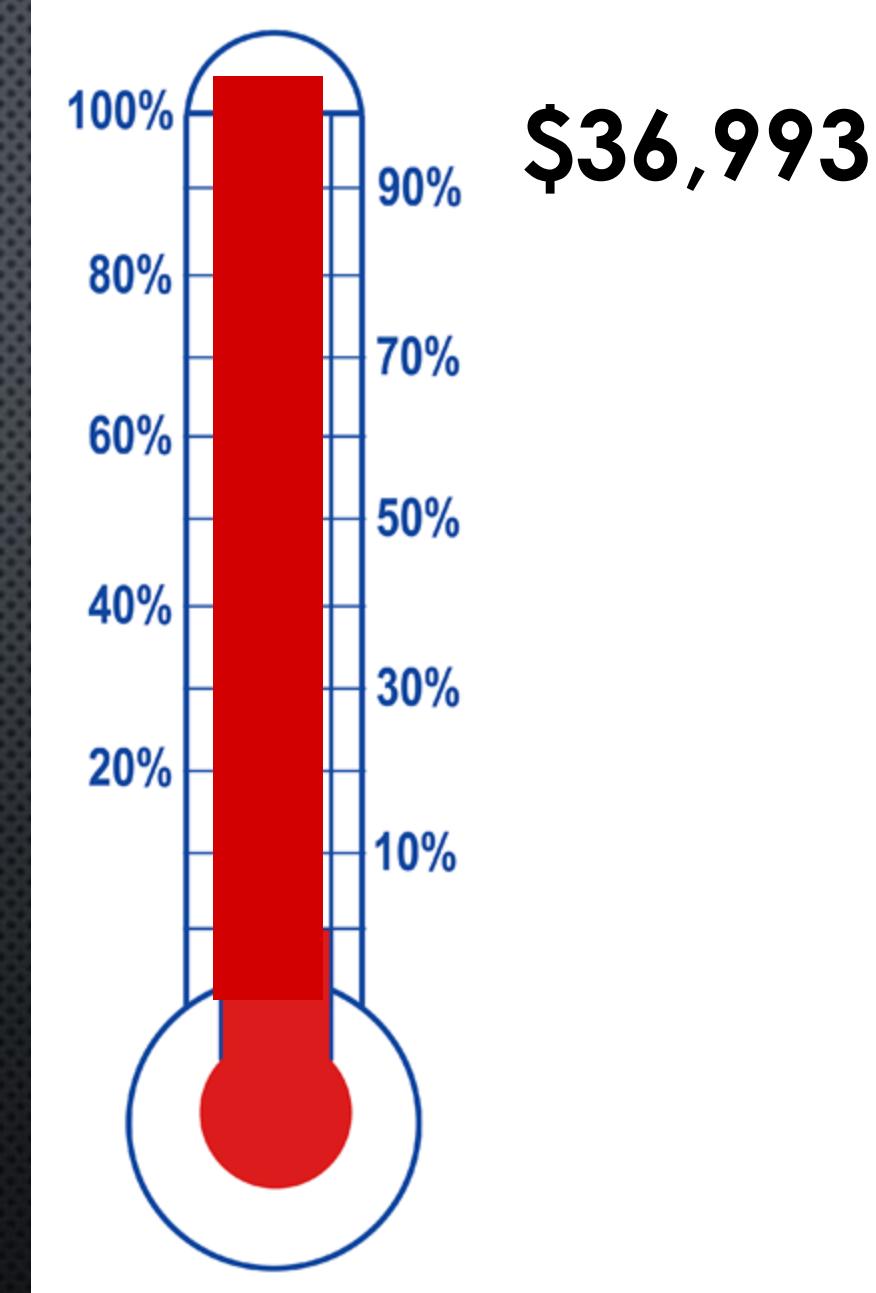
WARRENTON GARDEN CLUB

NATIONAL FEDERATION OF THE BLIND

GO-FUND-ME PAGE

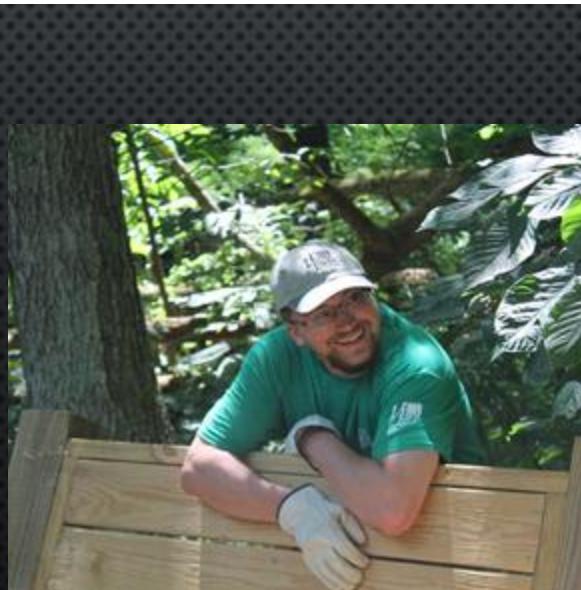
CLARKE COUNTY LIONS CLUB

INDIVIDUALS DONORS



VOLUNTEERS

- ❖ 50+ VMN VOLUNTEERS
- ❖ PARK VOLUNTEERS
- ❖ EAGLE SCOUT PROJECTS
- ❖ YCC
- ❖ SCOUT TROOP SUPPORT FOR INVASIVE PULLS
- ❖ TEACHER VOLUNTEER WHO DESIGN ED AND PRODUCED OBLIGATE SPECIES MODELS FOR THE VERNAL POOL EXHIBIT



BUILDING THE TRAIL

LAYING OUT THE TRAIL

CLEARING INVASIVES

PLANTING NATIVES FOR
POLLINATORS





GRADING AND GRAVEL



BOARDWALKS, DECK, 6 BENCHES AND THE KIOSK



HANDS ON EXHIBITS



TRAIL BY THE NUMBERS

- ❖ TOTAL OF 2,600 HOURS OF VOLUNTEER TIME
- ❖ CORE WOODWORKING CREW 13 INCLUDING 4 COMMUNITY MEMBERS AND A TEAM FROM HABITAT FOR HUMANITY. MORE THAN 1,100 HOURS OF VOLUNTEER VMN AND COMMUNITY LABOR ON THE BOARDWALKS, DECKS, KIOSK AND BENCHES
- ❖ 251 FEET OF BRIDGES, BOARDWALKS, AND DECKS
- ❖ KIOSK AND 6 BENCHES
- ❖ 11,500 SCREWS
- ~1.3 LINEAR MILES OF WOOD



FINISHED TRAIL



GRAND OPENING CELEBRATION

AUGUST 18, 2019



YEARLY PROGRAMS

- ❖ VERNAL POOL ADVENTURES
- ❖ A BIRD'S WORLD WALKS
- ❖ SEASONAL TREE-MENDOUS TREE HIKES
- ❖ SEASONAL HABITAT DETECTIVE WALKS FOR CHILDREN
- ❖ WORDS FROM THE WILD – CONTEMPLATIVE WALKS
- ❖ NATIVE WILD-FLOWER ID AND INVASIVES WALK
- ❖ A WALK THROUGH GEOLOGIC TIME



RESEARCH

- ❖ AMPHIBIANS AND VERNAL POOLS
- ❖ INVASIVE CONTROL

INTO THE FUTURE:

THERE IS NEVER AN END TO TRAIL WORK AND MAINTENANCE.

- REPRINTING TRAIL GUIDES
- INVASIVE MANAGEMENT
- WALKING THE TRAIL TO CLEAR IT AFTER A STORM OR LEAF FALL
- TRAIL MAINTENANCE



WORDS FROM SHERRI MITCHELL, OF THE PENOBCOT TRIBE:

EVERY LIVING THING HAS ITS OWN CREATION SONG, ITS OWN LANGUAGE, AND ITS OWN STORY. IN ORDER TO LIVE HARMONIOUSLY WITH THE REST OF CREATION, WE MUST BE WILLING TO LISTEN TO AND RESPECT ALL OF THE HARMONIES THAT ARE MOVING AROUND US. . . .

IT IS THE INTERWOVEN SUBSTANCE OF THESE FLOATING RHYTHMS THAT HOLDS US IN DELICATE BALANCE WITH ALL LIFE. . . . WHEN WE MERGE OUR INTERNAL RHYTHMS WITH THE RHYTHMS OF CREATION, WE DEVELOP GRACE IN OUR MOVEMENT, AND WITHOUT THOUGHT OR EFFORT WE . . . SLIDE INTO THE PERFECTLY CHOREOGRAPHED DANCE OF LIFE.

WORDS OF RALPH WALDO EMERSON:

OUR LIFE IS AN APPRENTICESHIP TO THE TRUTH THAT AROUND EVERY CIRCLE
ANOTHER CAN BE DRAWN; THAT THERE IS NO END IN NATURE, BUT EVERY
END IS A BEGINNING, AND UNDER EVERY DEEP A LOWER DEEP OPENS.

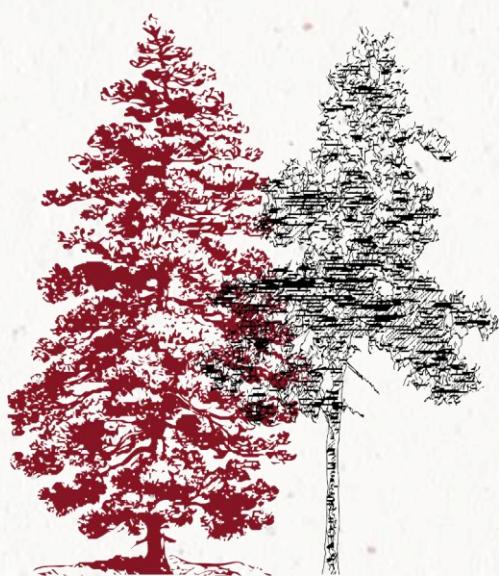
WORDS OF ALBERT EINSTEIN:

A HUMAN BEING IS A PART OF THE WHOLE CALLED BY US UNIVERSE, A PART LIMITED IN TIME AND SPACE. WE EXPERIENCE OURSELVES, OUR THOUGHTS AND FEELINGS AS SOMETHING SEPARATED FROM THE REST, A KIND OF OPTICAL DELUSION OF CONSCIOUSNESS. THIS DELUSION IS A KIND OF PRISON FOR US, RESTRICTING US TO OUR PERSONAL DESIRES AND TO AFFECTION FOR A FEW PERSONS NEAREST TO US. OUR TASK MUST BE TO FREE OURSELVES FROM THIS PRISON BY WIDENING OUR CIRCLE OF COMPASSION TO EMBRACE ALL LIVING CREATURES AND THE WHOLE OF NATURE IN ITS BEAUTY.



SENSORY TRAIL AT PULASKI COUNTY HIGH SCHOOL

Carley Pavan-Ballard



WHAT WE WILL COVER TODAY

Part 1- What it is
and why it started

Part 2- How to
implement it

Part 3- Projects
explained



WHAT IS THE SENSORY TRAIL?

Outdoor
Educational
Space

Accessible to ALL

Student-led and
Co-curricular





OUTDOOR EDUCATIONAL SPACE



- Educational and Sensory Exhibits
 - A learning environment for Pulaski County High School teachers to use (outdoor classroom)
 - Open to the public when school is closed
 - Community Garden
 - Field trip destination
- 

WHY THE SENSORY TRAIL PROJECT STARTED

- COVID-19/Virtual learning
- Students in-person learning once or twice a week
- Hands-on work vs. computer/paper and notes
- Accessibility challenges for several students.
- A school with goals for inclusion but not meeting them.

Fall 2020



HOW TO IMPLEMENT ENGAGEMENT



STUDENT-LED

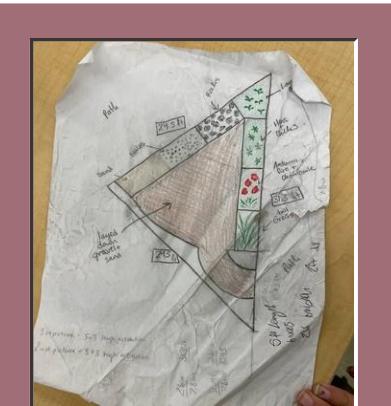
Explain the need for an educational space for all and invite Special Education teachers and peers with different abilities into the conversation. Students learn and listen to their peers.

Brainstorming as a class to solve problems will create unique and creative solutions and projects

INVESTMENT

The more a project is "owned" by a student, the more invested they will be

Do it for the Resume! Skills, Skills, and more Skills!



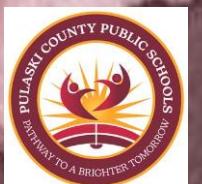


FUNDING

Grants

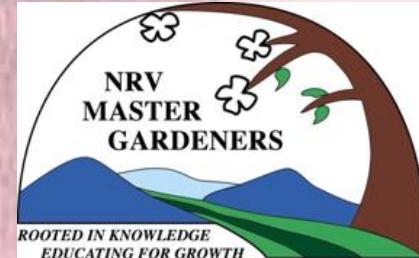
Donations

Community
Support

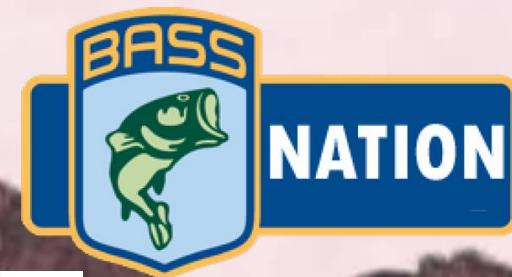


Virginia Master
Naturalists

FUNDING THE PROJECT



VIRGINIA
AGRICULTURAL EDUCATION



Pulaski County, VIRGINIA
Vision ★ Pride ★ Excellence



Virginia
Association for Parks



Co-Curricular



Group Projects

All parts of the Sensory

Trail have been student-led. I guide them and help them come up with ideas. I start the research to help

point them in the right direction then have them work in groups to solve the problem or create something for a purpose.

They do more research and come up with ideas then have to present their findings and get the class's and instructor's approval.

Estimates are designed and a timeline is set. I then secure the project's funds and help the students shop for the items needed. Students then carry out the

LOOK AT THE LEARNING

Leadership

Team Work

Hands-on

Budgeting and estimates

Marketing

Native/Invasive Plant Species

Garden/Grass Management

Wildlife/habitat Protection

Ecology

Landscape Design

Plant Identification

Woodworking

List of competencies covered

FISHERIES AND WILDLIFE

1,2,6,14, 5, 16,17,18,19,22,23, 24, 31,32, 33,34,35, 36, 38, 39, 41, 42, 43,45, 47,48, 49, 52,53, 54, 55, 59, 60, 62. 64. 66. 67. 104

HORTICULTURE

1,2,6,8,13,14,15,18,19,20,21,22,24,25,26,27,28,33,37, 40,41,42,43,44,45,46

FLORICULTURE

1,2,6,9,10,11,12,13,14,16,17,18,19,20,21,28,30

FLORICULTURE

1,2,6,9,10,11,12,13,14,16,17,18,19,20,21,28,30

APPLIED AGRICULTURE CONCEPTS

1,2,8,15,16,17,19,20,30,31,32,33,34,35,36,37,38,43, 4,45,46,47,48,49,52,53,54,55,56,57,58,59,103,104, 105,109, 110,



ACCESSIBLE TO ALL



Path

- Wheelchair accessible
 - Causeway Path (donated by Salem Stone Corp)
- Guide-rope (funded by Virginia Outdoors Foundation)
- QR stands and braille (Co-curricular)

Education/Sensory

- Educational Exhibits with multiple interactions
- Wayside
 - QR
 - Hands-on
 - Enhancing the Senses within each designated garden space

Nature

- Raised Garden beds
- Wheelchair-accessible garden beds
- Plant ID Signs
- Certified Pollinator Garden

HOW DID WE DO IT

Accessibility Guidebook
for Outdoor Recreation
and Trails

Student-led projects

Students and professionals from the Life-Centered Education Course volunteered their time to work with us and educate on the different abilities and what they want/need from this space

Finding solutions to the many hazards or accessibility challenges

Reaching out to professional businesses/organizations or other courses for help



Causeway



Wheelchair Accessible Garden Bed



PROJECTS EXPLAINED

Lists of all the steps for large projects and where we purchased the materials

- Pathway
 - causeway- Forrest Attwood, Salem Stone
 - guide-rope- VODF, ADA book,rope.com, knotadrop.com, lowes
- Wheelchair-accessible raised garden bed
- Cylipso chimes
- Picnic Table
- Vacker Signs
- trashcans
- QR Code Stand and how to make a QR
- Co-curricular projects explained

PATHWAY

- Measuring and mapping out the area, education on how to pick a pathway for a trail from Virginia Outdoors Foundation
- Designing on paper, using a scale ruler
- Education for building pathway from Forrest Atwood Western Resource Manager, Dept. of Conservation & Recreation, Virginia State Parks. Salem Stone Donation for three styles of rock
- Setter Construction grading and laying gravel
- Tampping

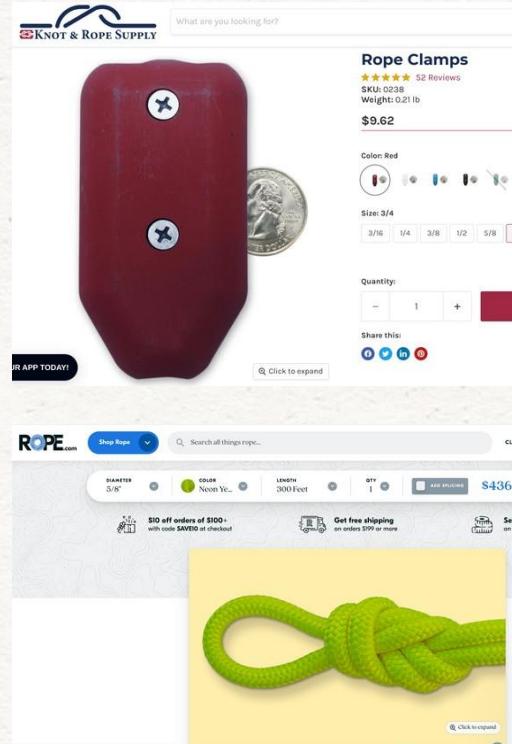


SALEM
STONE
CORP
CRUSHED
STONE



GUIDE-ROPE

- Funded by the Virginia Outdoors Foundation Get Outdoors Grant
- Researched styles of railings and discussed which style was best for our needs.
- Students researched materials and shopped for multiple options.
- We sought help from people with visual and mobility impairments and professionals that work with people who have these different abilities.
- Students measured out and did the math to figure out how many materials were needed and then worked with businesses to start a purchase by working with a budget and creating an estimate.
- Rope.com
- Knotandropes.com
- Lowes



WHEELCHAIR-ACCESSIBLE RAISED *GARDEN BED *



- Searched for a table we could purchase- nothing!
- The students did their own research, talked to peers that are wheelchair-bound, and worked with professionals to understand that for some people, there are even more limitations to consider when designing this table.
 - ADA book
- Shopped online for products that would work, and created a budget and estimate.
- Tons of problem-solving during the creation of the first table.
- Studied the first table and made improvements.



Calypso Chimes

- Located in the Sound Garden
- Funded by Virginia Outdoors Foundation)
- SchoolScapes.com

The screenshot shows the SchoolScapes website with a green header. The main content area features a large image of children playing with the Calypso Chimes. Below the image, the title "Calypso Chimes – Diatonic Tuning" is displayed. A detailed description follows, mentioning the eight chimes in C4-C5 tuning, their anodized aluminum finish, and how they are individually mounted to a stainless steel post. Installation options like "Concrete into the ground" are listed. At the bottom, there's a "QUANTITY" input field.



Picnic Table

- Wheelchair accessible
- Funded by Virginia Outdoors Foundation
- Pilotrock.com

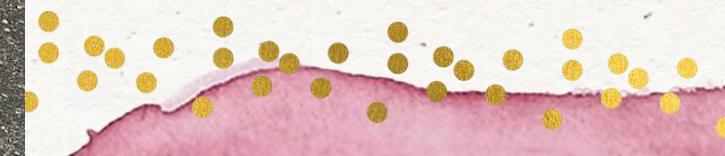
The screenshot shows the Pilot Rock website with a yellow header. The main content area is titled "UT Series Side Accessible Picnic Table - Using Lumber". It features a product image of a wooden picnic table with a wheelchair accessible side. Configuration choices are shown in dropdown menus: "FRAME FINISH" (Hot Dip Galvanized Steel, Powder Coated, Gray A), "MATERIAL & LENGTH CHOICES" (TREATED DINE & B-Side Access (CA)), and a quantity selector set to 1. A "SEARCH" bar is visible at the top right.



Trash Cans

- Guide-rope (funded by Virginia Outdoors Foundation)
- Trashcansunlimited.com

The screenshot shows the TRASHCANS UNLIMITED website with a blue header. The main content area features a product image of a green trash can with a lid. Product details include "10 Gallon Landscape Series Perforated Covered Trash Can WR-10R CVR (3 Color Choices)". A price comparison shows it was \$699.00 and is now \$166.58 (savings of \$532.42). A "Write a Review" button is present. The sidebar includes a "SHOP BY CATEGORY" menu with links to various trash can types and accessories.



VACKER SIGNS

POLLINATOR GARDEN

Did you know...

The flowering plants in the garden provide pollinators with food, a place for to rest, nest, and even overwinter. A pollinator is an animal that fertilizes plants by moving pollen from one flower to another.

Pollinators are critical to our world. Without them, many plants and foods would not exist. In fact, pollinators are critical in the reproduction of 30% of major food crops.

Unfortunately, pollinators are under threat due to loss of habitat, invasive species, and pesticides.

Natural Allies

Flowering plants and pollinators depend on each other for survival. The pollinator gets nectar and the plant gets pollinated. A plant's color, shape, scent, and bloom time attract pollinators that are just right, making for a naturally symbiotic relationship, where both benefit.

What kinds of pollinators have you seen?

Pollinators come in all shapes and sizes – they can be birds, bees, wasps, ants, flies, mosquitoes, butterflies, moths, bats, and beetles.



Bumble Bees



Mosquitoes



Butterflies



Wasps



Moths



Hummingbirds



Honey Bees



Beetles



NATIVE PLANTS

What is a native plant?

Native plants are usually described as those that have been growing in a place for a very long time, sometimes longer than people have been there! These plants fit well into the diversity of their ecosystems, and help their communities stay strong and supported. Many animals have evolved to depend on these long standing plant neighbors, so much so that their lives depend on it. Without native plants, many insects, birds, and other creatures cannot survive in their current habitat.



Can you spot these plants?



Purple Coneflower



Common Milkweed



Black-eyed Susan



New England Aster



Butterfly-weed



Prairie Blazing Star

Funded by
New River Valley
Master Gardeners Association

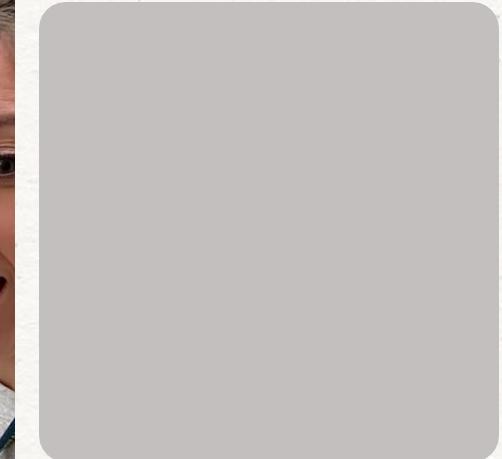


QR CODE STAND

Provides access to information in any venue, and enables people who are differently abled to read what they cannot hear, or to hear what they cannot see.



Native Plants QR for Video



NATIVE PLANTS

What is a native plant?

Native plants are usually described as those that have been growing in a place for a very long time, sometimes longer than people have been there! These plants fit well into the diversity of their ecosystems, and help their communities stay strong and supported. Many animals have evolved to depend on these long standing plant neighbors, so much so that their lives depend on it. Without native plants, many insects, birds, and other creatures cannot survive in their current habitat.

Funded by
New River Valley
Master Gardeners Association



CO-CURRICULAR PROJECTS

- Carpentry - Built the Keyosk that serves as the welcome and informational sign.
 - assisted in setting posts, attaching guide-rope, and building raised garden beds.
- TV Media- Assisting in the production of all videos and audio
- Makers Lab- Engraving QR codes into the wood for QR Code Stands and Plant ID Tags
- Welding- Built two chairs for the Sensory Trail and assisted in building the QR Code Stand
- Life-Centered Education- Assisted in the design of the trail and educated us on different abilities and impairments. Tested out every part of the trail and gave feedback.
- Teachers for Tomorrow- Soil exhibit
- Science Department- Biomes exhibit
- Art Department- Ecosystems exhibit, painting other projects to enhance the senses.
- Robotics- 3D printing elements to add to exhibits, online graphic map of the trail, braille code

Many other teachers have brought their students out to volunteer their time to spread mulch and plant plants.

Break

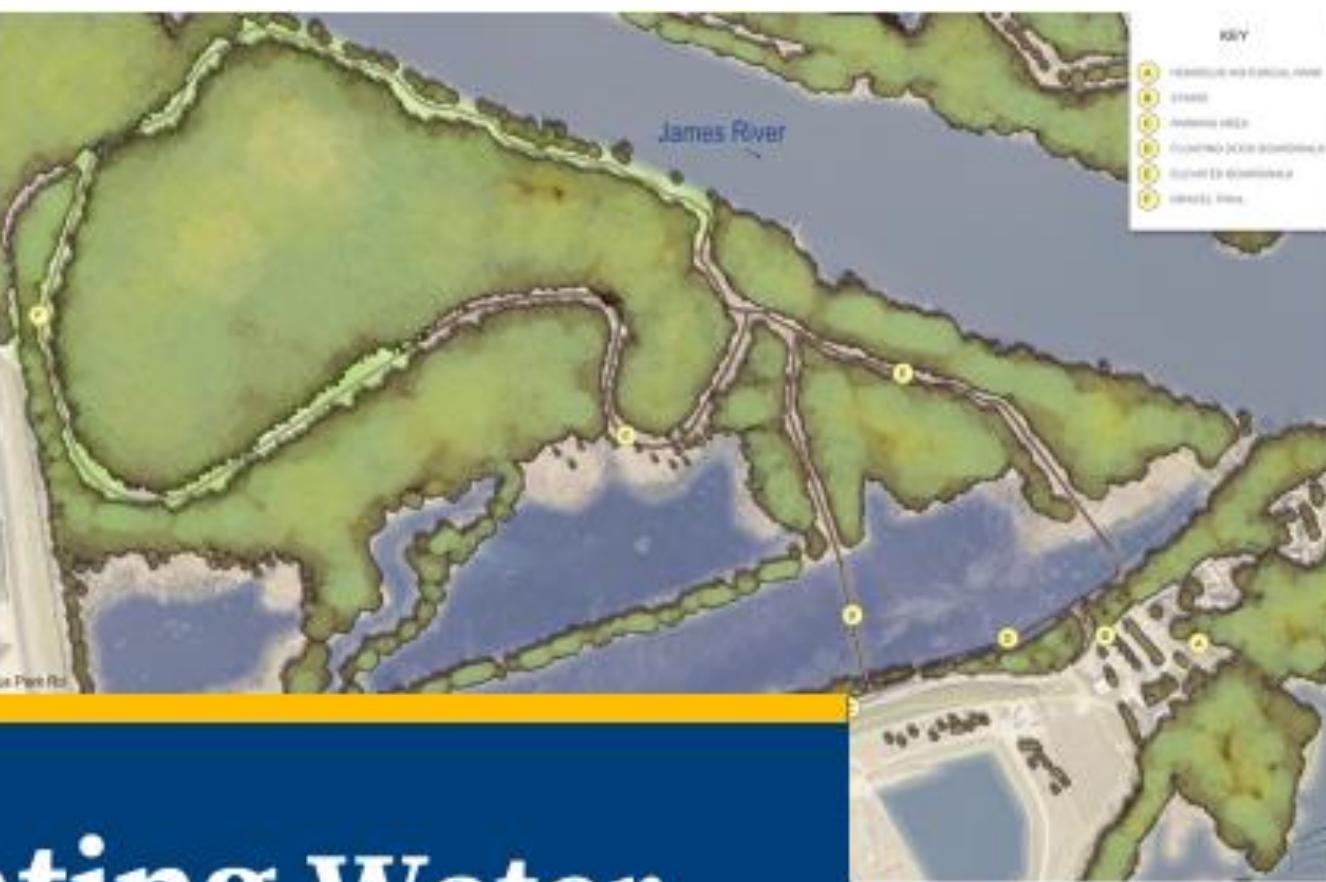
A photograph of a man and his dog floating on an inner tube in a river. The man is lying on his back, looking up at the sky, while his dog lies next to him. The river is filled with large, smooth stones. In the background, there is a dense forest and a cloudy sky.

Navigating Water Regulations

**Chris Gensic,
Parks and
Trails Planner
City of
Charlottesville**







Navigating Water Regulations

Olivia Langford, PE

Austin
Brockenbrough
ENGINEERING + CONSULTING

Agenda

- Introduction
- Case Study 1 – James River Conservation Area Trail
- Case Study 2 – Relic River Trail

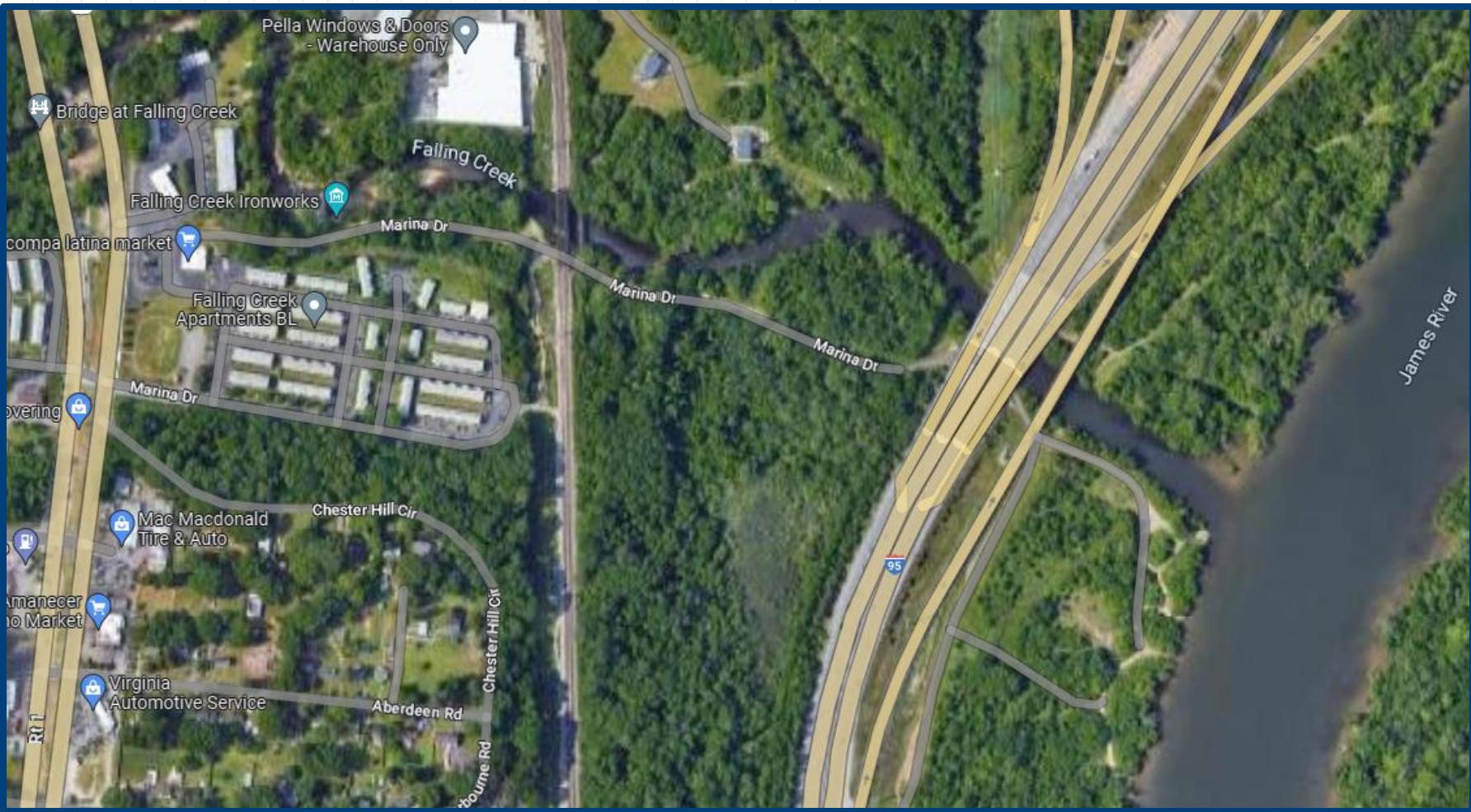




Olivia Langford, PE

Project Manager - Site

- BS in Biosystems Engineering from Clemson University
- 10 years experience at Austin Brockenbrough & Associates
- Primary Clients:
 - Chesterfield County Parks & Recreation
 - Chesterfield County Utilities
 - VA Department of Wildlife Resources
- Experience in:
 - Layout
 - Grading
 - Utilities
 - Erosion & Sediment Control
 - Stormwater Management



James River Conservation Area





James River Conservation Area

Project Information:

- 2,500 LF of Paved Shared Use Trail and 800 LF of Stone Shared Use Trail
- Recreational Trails Program (RTP) funded
- Engineering Services:
 - Civil Engineering Design
 - Geotechnical Borings
 - Wetland Delineation
 - WOUS Flagging
 - RPA Determination
 - Phase 1 Archeological -> Categorical Exclusion

James River Conservation Area

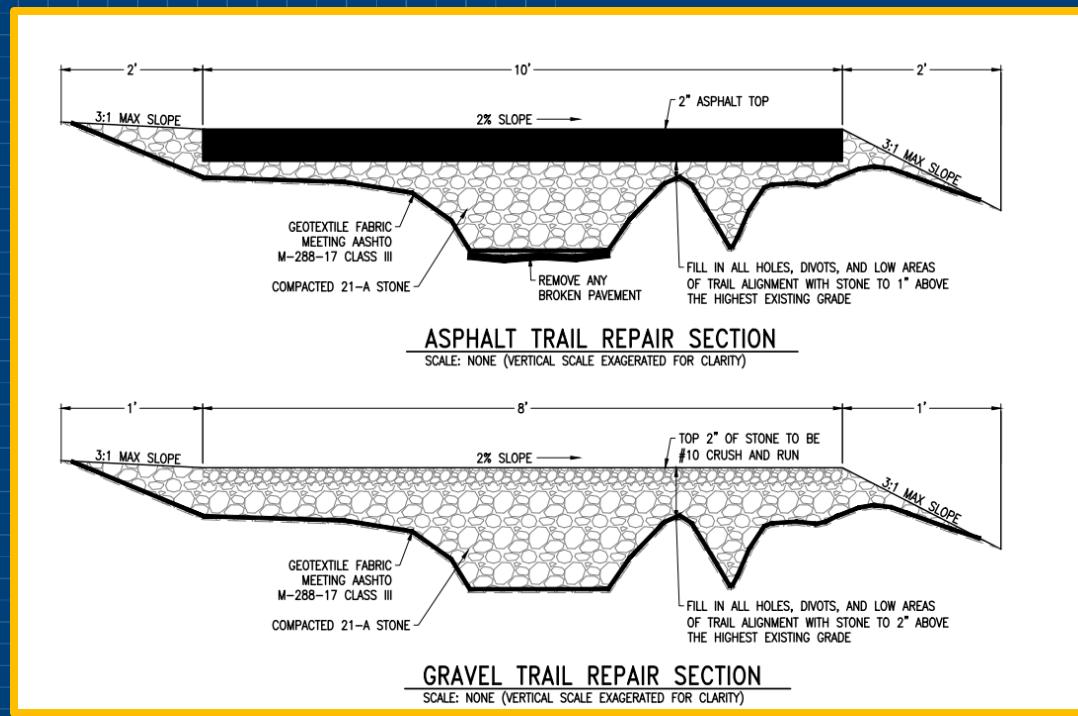
Maintenance Determination

- Reduced Civil Engineering fee by 45%
- Expedited design to construction schedule
- Eliminated Chesterfield County Site Plan Approval, Erosion and Sediment Control Plans, and Stormwater Management Plan
- Reduced design package from 23 sheets to 7 sheets



The Virginia Stormwater Management Act, Virginia State Law 62.1-44.15:34 – Regulated activities; submission and approval of a permit application; security for performance; exemptions states in Section C that *Notwithstanding any other provisions of this article, the following activities are exempt, unless otherwise required by federal law:*

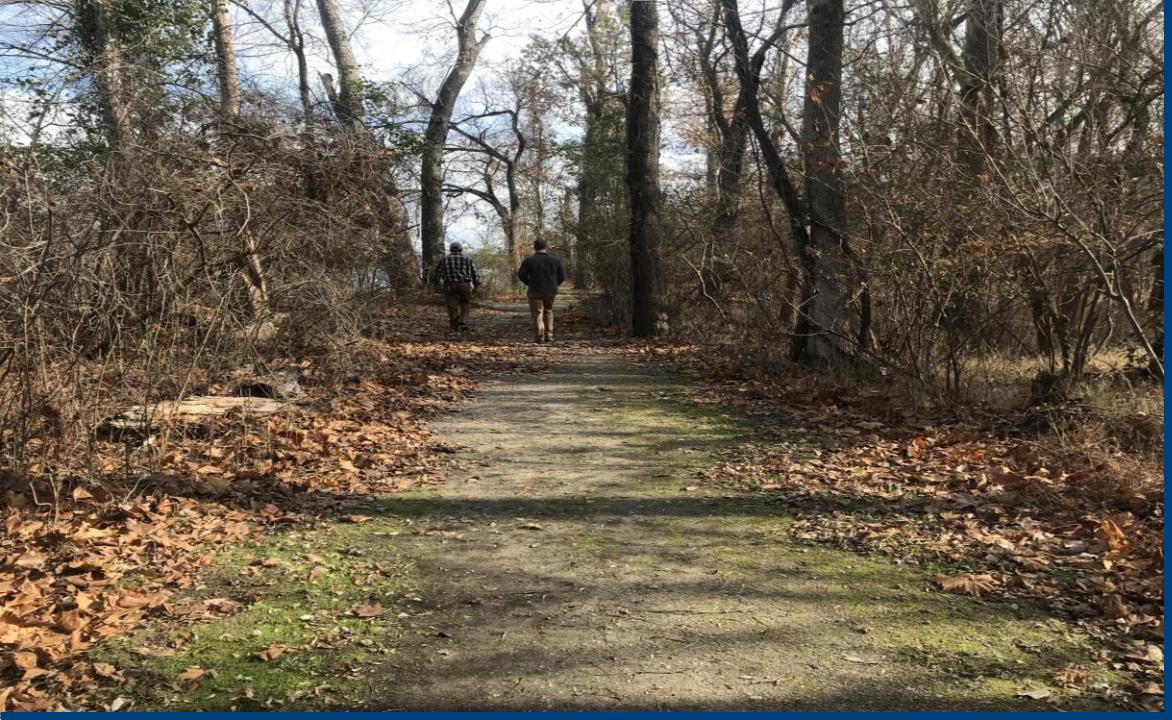
Item 7 of Section C States: Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original construction of the project. The paving of an existing road with a compacted or impervious surface and reestablishment of existing associated ditches and shoulders shall be deemed routine maintenance if performed in accordance with this subsection;





Relic River Trail





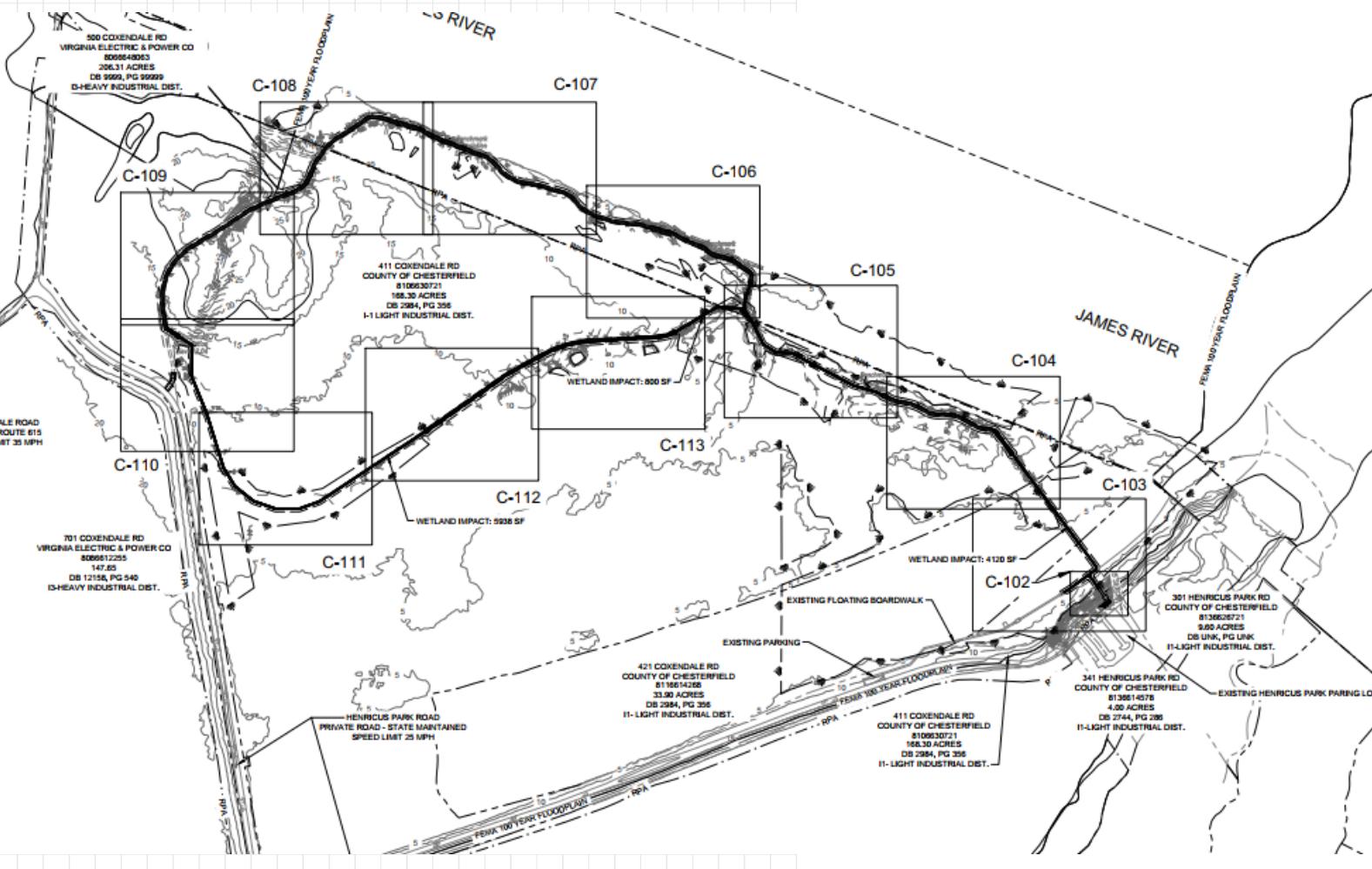
Relic River Trail

Project Information:

- 5,065 LF of Stone Trail, 3,283 feet of Elevated Boardwalk and 322 LF of Floating Boardwalk
- Dominion Energy funded
- Engineering Services:
 - Civil Engineering Design
 - Geotechnical Borings
 - Wetland Delineation
 - Threatened & Endangered Species
 - WOUS Flagging
 - RPA Determination
 - Phase 1 Archeological survey
 - Water Quality Impact Assessment
 - Joint Permit Application
 - Net Rise Certification

Relic River Trail Permitting

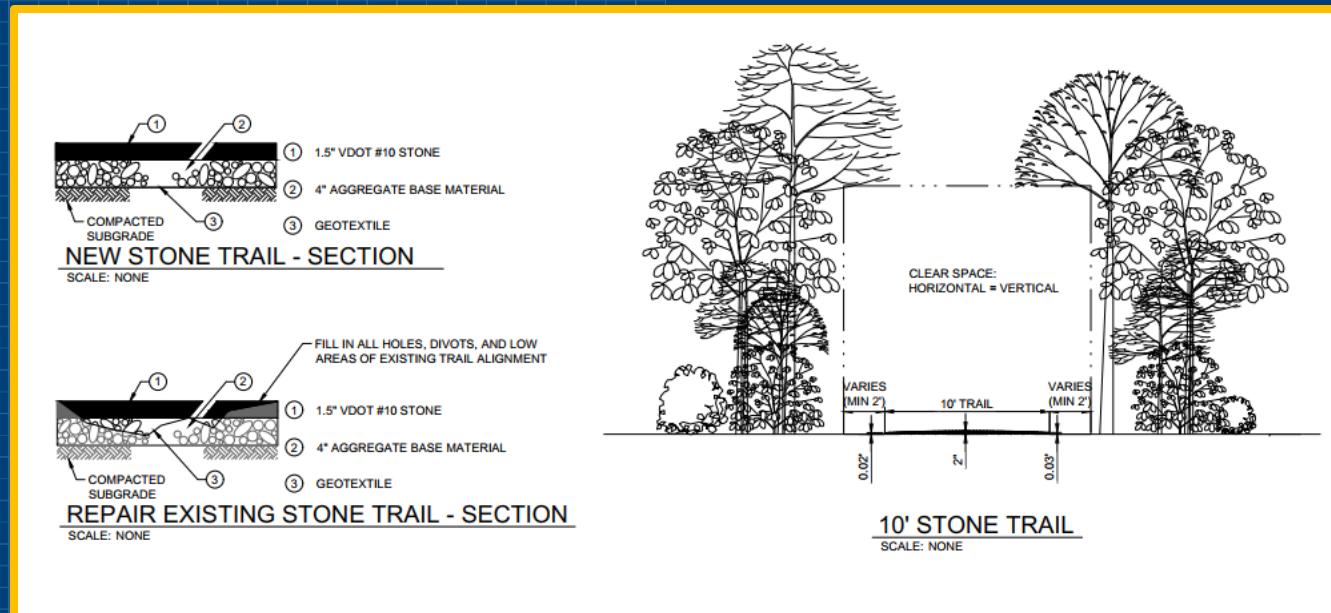
- Erosion and Sediment Control
- Stormwater Management – Quantity and Quality
- Wetland Delineation
- Threatened & Endangered Species
- WOUS Flagging
- RPA Determination
- Phase 1 Archeological survey
- Water Quality Impact Assessment
- Joint Permit Application
- Net Rise Certification



Stormwater Measures:

- Disturbance of 2.52 acres
- Water Quality:
 - Existing: 98% Forested, 2% Impervious
 - Proposed: 95% Forested, 3% Impervious, 1% Managed Turf
 - Total Phosphorus Load Reduction Required: 11.98 lbs/yr
 - The TP load reduction required of -11.98 lbs./yr. will be exceeded by maintained forested land. Therefore, the site exceeds the water quality criteria of 9VAC25-870-63 and no improvements are needed.

- Water Quantity:
 - A 100-foot-long section of trail, 2% of trail length, was analyzed for 10% of the runoff volume for the 10-year storm. The velocity of the 10-year storm was non erosive. The site exceeds requirements for channel protection.
 - The site area meets the water quantity criteria of 9VAC25-870-66D by using sheet flow for channel protection. It also meets the water quantity criteria of 9VAC25-870-66D by sheet flow for flood protection discharged to a flood plain.





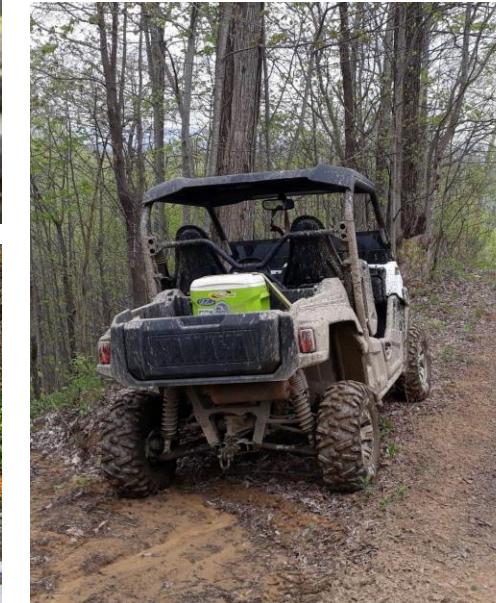
Navigating Water Laws & Regulations

FOR THOSE UNDER DEQ AUTHORITY.....

Kelly R. Miller
Stormwater & Watershed Planning Manager
DEQ-Southwest Regional Office



Beautiful Trails in Southwest



Land-disturbance

DEFINITIONS

"Land-disturbing activity" means any man-made change to the land surface that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the Commonwealth, including, but not limited to, clearing, grading, excavating, transporting, and filling of land, except that the term shall not include.....12 exemptions

9VAC25-840-10 (Erosion & Sediment Control Regulation)

"Land disturbance" or "land-disturbing activity" means a manmade change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34 of the Code of Virginia.

9VAC25-870-10 (Stormwater Management Regulation)

Laws & Regulations for Land-disturbance

Land-disturbance over 10,000 ft²

- Virginia Erosion and Sediment Control Law (ESC)
- Virginia Erosion and Sediment Control Regulation

If water or wetland on site:

- Virginia Water Protection (VWP)

Land-disturbance over 1 acre

- Virginia Erosion and Sediment Control Law
- Virginia Erosion and Sediment Control Regulation
- Virginia Stormwater Management Act (VSMP)
- Virginia Stormwater Management Regulations
- Construction General Permit (CGP)

If water or wetland on site:

- Virginia Water Protection



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

SOUTHWEST REGIONAL OFFICE

355-A Deadmore Street, Abingdon, Virginia 24210

(276) 676-4800 FAX (276) 676-4899

www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

Jeffrey Hurst
Regional Director

August 22, 2019

Southwest Regional Recreation Authority
502 Front Street
Coeburn, VA 24230

Handout

Re: Applicability of Virginia Erosion and Sediment Control, Virginia Stormwater Management Program, and Virginia Water Protection, laws and regulations to recreational trail development in Southwest Virginia

Attn: Southwest Regional Recreational Authority Board of Directors and Executive Director, Shawn Lindsey

The Virginia Department of Environmental Quality's (DEQ) Office of Water Permitting and Office of Stormwater Management has engaged with the Southwest Regional Recreation Authority (SRRA) concerning the development and use of recreational trails in the Spearhead Trails system. Through our collaboration, DEQ believes we should formalize our position on a number of issues related to providing the maximum amount of environmental protection and clarifying our regulatory authority.

Erosion and Sediment Control

Per §62.1-44.15:51 et seq. and 9VAC25-840 et seq. of the Code of Virginia and the Virginia Administrative Code, erosion and sediment control planning and implementation are required for any activity meeting the definition of land-disturbance not otherwise exempted in §62.1-44.15:51.

As described in the Erosion and Sediment Control law (§62.1-44.15:51), land-disturbance is defined in part as:

"Land-disturbing activity" means any man made change to the land surface that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the Commonwealth, including, but not limited to, clearing, grading, excavating, transporting, and filling of land..."

For SRRA, this means:

1. SRRA must submit erosion and sediment control plans and obtain approval from the Virginia Erosion and Sediment Control Program (VESCP) authority, which is usually the local government, for any land-disturbing activity totaling 10,000 square feet or greater.



Typical Construction



Is this land-disturbance?

MOA with Spearhead Trails

- Compliance with all laws and regulations
- Better environmental stewardship
- ESC best management practices: DEQ, DCR, DOF, VE (DMME), & USFS
- Education and training



Take Home Message

✓ Think about the entire scope of your project

- Be sure to think about parking, facilities, break areas
- Is this a common plan of development?
- Alternate methods of compliance
- Surface covering: compacted soil vs. gravel vs. asphalt





Chesapeake Bay Preservation Act

Trails within the Resource Protection Area Buffer

State Trails Advisory Committee Meeting

April 26, 2023

Heather Mackey
Bay Act Program Coordinator
DEQ Water Division
Office of Watersheds and Local Government
Assistance Programs



Chesapeake Bay Preservation Act

“Balanced economic development and water quality protection are not mutually exclusive.”

Sec. 62.1-44.15:67

- State mandated, locally implemented
- 84 Tidewater Virginia counties, cities, towns
- Comprehensive, enforceable nonpoint source pollution prevention program
- Built using existing land use tools: ordinances and comprehensive plans
- Compliance with performance criteria for development on certain lands
- Avoids or reduces water quality impacts
- Requires mitigation for lost or damaged resources

Chesapeake Bay Preservation Areas

Resource Protection Areas (RPA)

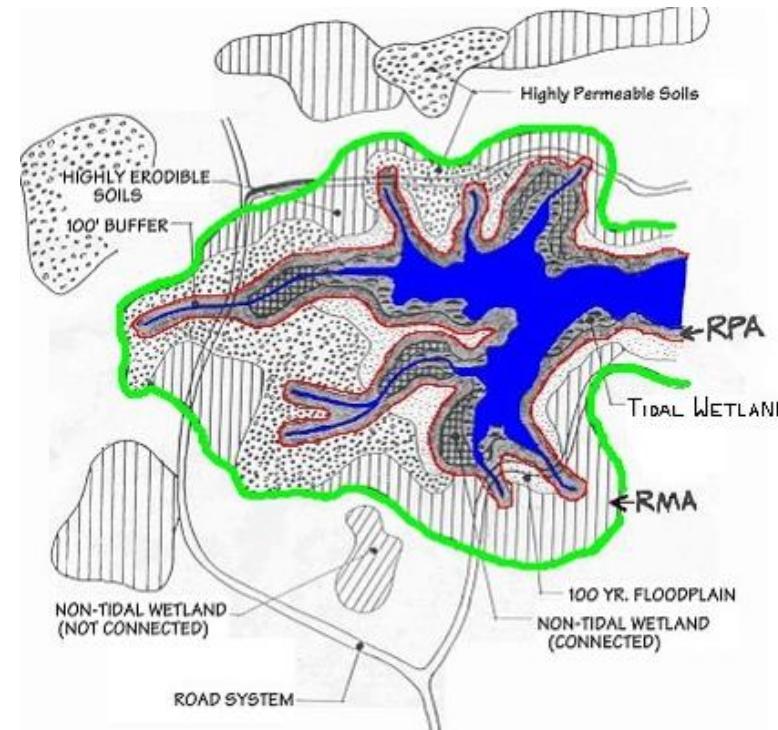
- Tidal wetlands and shores.
- Nontidal wetlands connected by surface flow and contiguous to perennial streams.
- 100' vegetated buffer adjacent to above features and perennial streams.
- Only limited activities permitted within RPA.
- Strict performance criteria for development.

Resource Management Areas (RMA)

- Contiguous to the inland boundary of the RPA.
- All uses and activities allowed by zoning are permitted.
- Land categories to be considered for inclusion in RMA: floodplains, highly erodible and permeable soils, steep slopes, nontidal wetlands not included as RPA.

Intensely Developed Areas (IDA)

- Redevelopment areas where little of the natural environment remains



RPA Development Criteria

Activities within the RPA are limited

- Permitted or “by-right” uses.
- Allowable buffer modifications.
- Administrative waivers for RPA encroachment.
- “Formal” exception approved by a local governing body.

Exempted uses within the RPA

- Passive recreation facilities, including *boardwalks, trails, and pathways*.
- Water wells and historic preservation and archaeological activities.
- Public utilities, railroads, public roads

PROVIDED:

- Review and approval by local staff.
- Compliance with erosion & sediment control and stormwater management requirements.

General Performance Criteria

Applied to all development within CBPAs

- Minimize land disturbance.
- Preserve indigenous vegetation.
- Minimize impervious surfaces.
- Project review and approval required >2,500 SF land disturbance.
- Stormwater and E&S required >2,500 SF land disturbance.
- Evidence of wetlands permits required prior to clearing and grading.
- Septic pump out every 5 years
- Agriculture and silviculture permitted to encroach into RPA with implementation of best management practices.

Riparian Buffer Manual

Passive Recreation Facilities Guidance

- The term “passive recreation facilities” implies low impact activities that require minimal disturbance to natural areas.
- Local review and approval must ensure the project qualifies for an exemption.
- Minimize land disturbance and impervious surfaces, and preserve indigenous vegetation.
- Submission of a WQIA / mitigation for land disturbance.

Trail Design Guidance

- Location and design of trails should be based on an analysis of natural features and characteristics, soils, slopes, drainageways, and vegetation.
- Ensure that the trail route is located in the least sensitive areas, and as far from RPA features as possible.
- Minimize disturbance to vegetation, ground cover, and soils within the buffer area to maintain water quality and protect streambanks and shorelines.

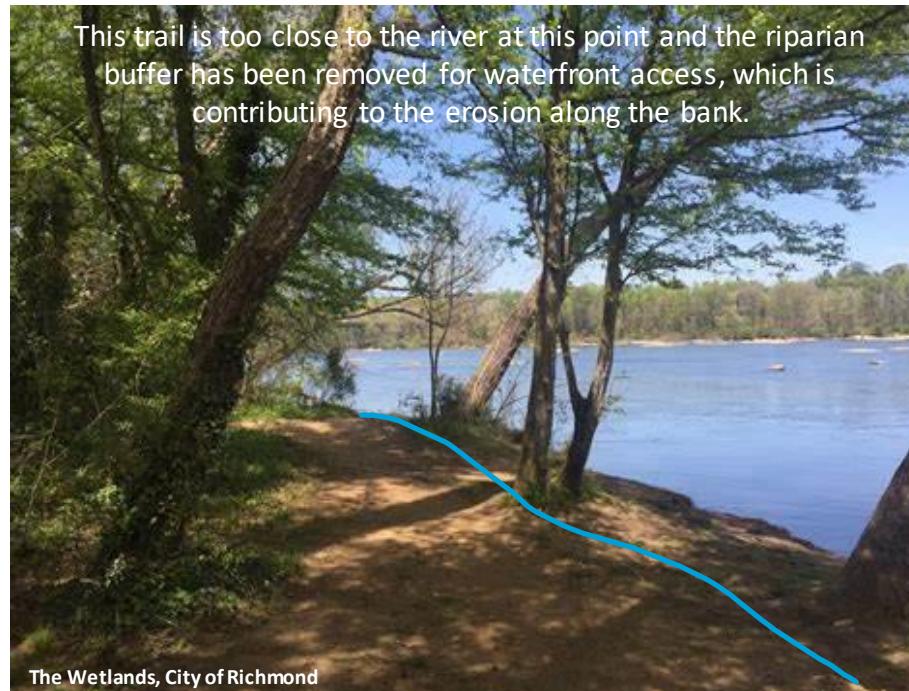
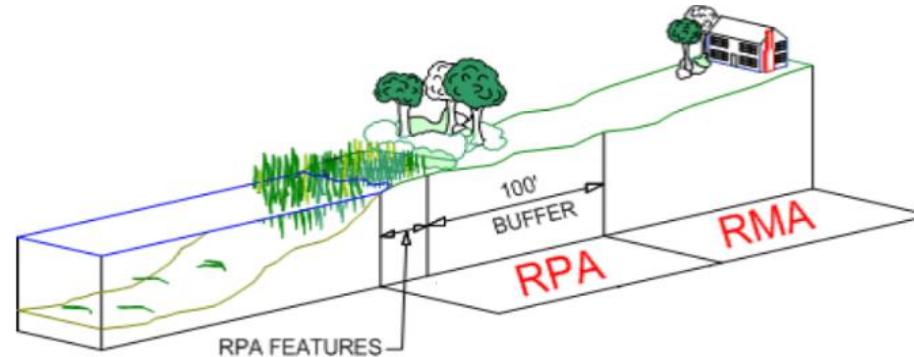


Chesterfield Government Center

Riparian Buffer Manual

Trail Design Guidance

- A variety of users and activities necessitate different types and locations of trails and pathways.
- The majority of a public trail should be outside of the RPA buffer.
- If a trail must be in the RPA, an infield survey should be conducted to confirm the best route.
- Take advantage of features that provide views in the 25-75 feet landward to minimize encroachments into the 25 feet waterward.
- Use the least destructive equipment and construction methods feasible for trail development and maintenance.



Appropriate Surfaces



Stable Surface Materials*

- Crushed rock
- Rocks w/ broken faces
- Rock mix w/ full spectrum of sieve sizes
- Hard rock
- Rock that passes thru a $\frac{1}{2}$ " screen
- Rock material compacted in 3-4" layers
- Material that is moist before it is compacted
- Material that is compacted with a vibrating plate compactor, roller or by hand tamping

*Access Board's 2004 Guide to Accessibility Standards

Larus Park



- Working the topography, rock outcrops and mature trees, trails and boardwalks weave through the forest.
- Except where constrained by park boundaries, an underpass, and topography, footpaths are a healthy distance from perennial and intermittent stream beds which are crossed with wooden bridges.



Local Implementation

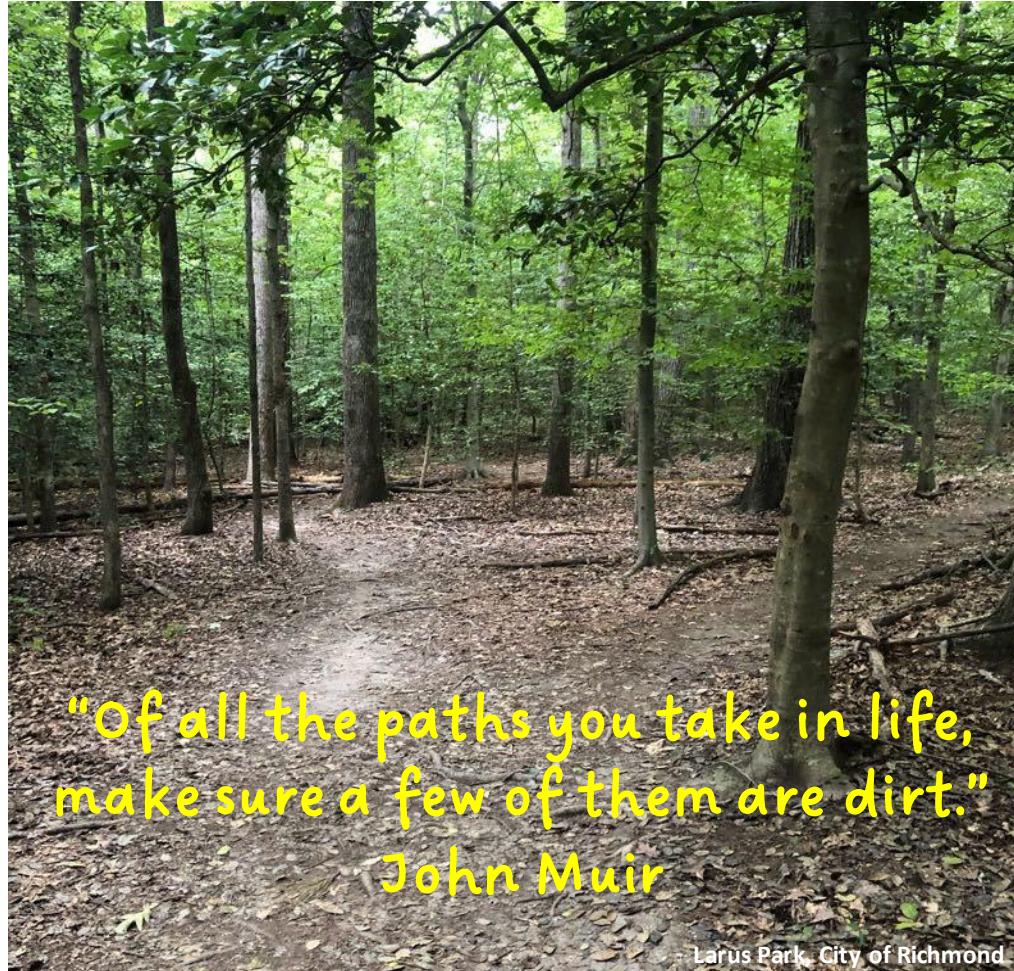
Fairfax County

- Exemptions are processed as “site amenity for passive recreation”.
- Focus of review is on the preservation of existing vegetation, minimizing land disturbance and ensuring the trail is surfaced to prevent erosion considering the use, slope and cross slope, etc.
- Approximately 330 miles of trail: 40% hard paved surface (asphalt, concrete), 20% gravel/stone dust surface, 40% natural surfaces.
- Trail width limited to 4 feet on private property.
- Much of stream valley trail system pre-dates the Bay Act.

Chesterfield County

- Buffer modification application required
- *Buffer Manual* guidance is followed for trail design requirements.
- The use of asphalt and concrete for trail surfaces is “actively discouraged” within the RPA; however, permitted where necessary for ADA requirements and when erosion is anticipated to be problematic.
- Staff works to keep trails in the landward 25 feet of the buffer area.
- Revegetation of the limits of disturbance with an approved RPA seed mix required.

Questions?



"Of all the paths you take in life,
make sure a few of them are dirt."

John Muir

- Larus Park, City of Richmond

Heather Mackey

heather.mackey@deq.virginia.gov

804-659-1005



Virginia Trails Alliance Update

2023 Recreational Grants Updates

Virginia Department of Conservation & Recreation
Division of Planning & Recreation Resources

Kellie Seaton
Recreation Grants Coordinator



2023 Grant Opportunities

- **Virginia Land Conservation Foundation (VLCF)**

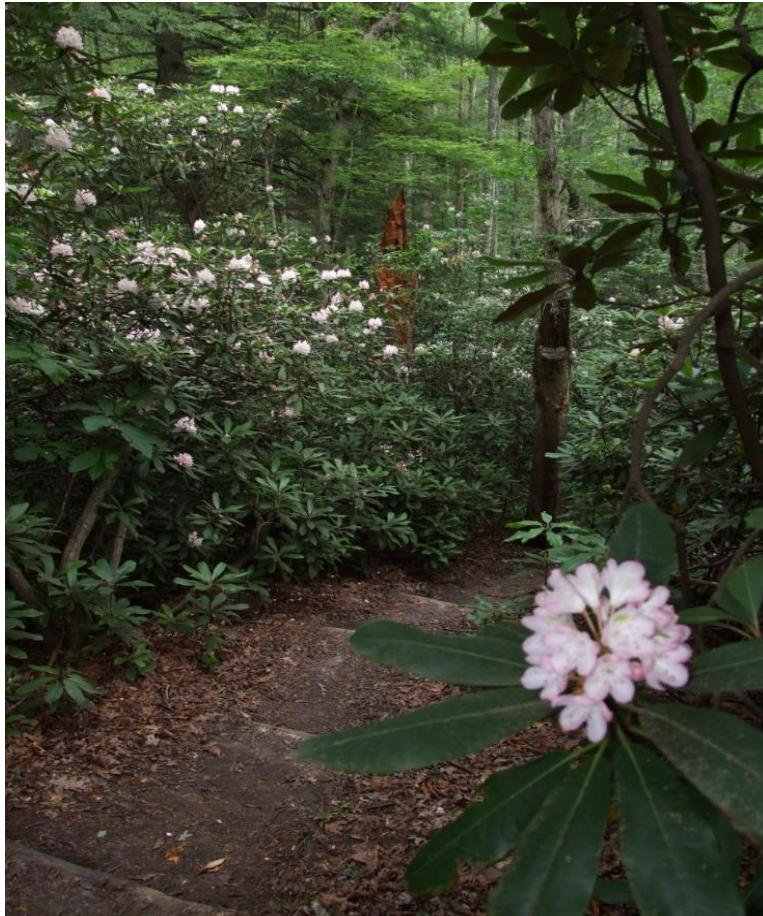
- 2023 grant round expected to be announced after May 16 board meeting.
- Funds protection of open spaces and parklands, lands of historic or cultural significance, farmlands and forests, and natural areas
- <https://www.dcr.virginia.gov/land-conservation/vlcf>
- Contact Suzan Bulbulkaya, Land Conservation Manager, at suzan.bulbulkaya@dcr.virginia.gov or 804-371-5218.

- **Recreational Trails Program (RTP)**

- 2023 applications due May 9
- This year: maintenance and restoration of existing land and water trails and trailheads
- Recorded webinar and application materials:
<https://www.dcr.virginia.gov/recreational-planning/trailfnd>

2023 RTP Grant Round: Eligible Projects

Must be on existing land and water trails



- Maintenance, restoration, rehabilitation of existing trails
- Development or rehabilitation of trailside and trailhead facilities and/or amenities
- Features that increase access for people with disabilities
- Assessment of trail conditions for accessibility and maintenance (if on-the-ground work is also included)
- And preliminary engineering (design, engineering, NEPA review, public comment period, permitting, bidding) for these projects

2023 RTP Funding Availability

\$1.4 million available divided into three categories:

Diversified - \$580,000 available (3-6 grants anticipated)

- Minimum request - \$25,000
- Maximum grant award - \$250,000

Non-motorized single use - \$435,000 available (3-6 grants)

- Minimum request - \$25,000
- Maximum grant award - \$250,000

Motorized - \$435,000 available (2-4 grants)

- Minimum request - \$25,000
- Maximum grant award - \$435,000

2023 RTP Grant Round Schedule

- **Week of March 13** – Grant round opened
- **May 9** – Applications due via email by 4pm
- **May-June** – Applications reviewed by DCR and Advisory Committee
- **Late June** – Applicants of projects recommended for funding are contacted
- **July-August** – Site inspections and preparing FHWA documents
- **September** – Project authorizations and grant agreements
(cannot begin work until these are released)

Future Grant Opportunities

- **Land and Water Conservation Fund (LWCF) – State and Local**

- Next grant round anticipated in early 2024 (after publication of VOP 2023)
- Acquisition and development of outdoor recreation sites/amenities
- From 2022 grant round (19 applications), 6 projects authorized by NPS.
 - Continuing to work towards authorizing more of those applications this year.

- **Outdoor Recreation Legacy Partnership Program (ORLP)**

- Calls for pre-applications based on NPS Notice of Funding Opportunity, to be announced
- Acquisition and development of outdoor recreation sites/amenities in underserved urban areas
- From 2022 grant round: two pre-applications submitting to or under review by NPS

- **Trail Access Grants**

- Last held in 2021 – 4 projects in progress or completed.
- Accessibility improvements to existing trails
- Awaiting donated funds to accumulate for grant round
 - Personal tax refunds: “Open Space and Conservation” option

Virginia Outdoors Plan

- 2023 VOP being compiled, expected to inform grant criteria starting in 2024
- New web-based platform

Thank you!

<https://www.dcr.virginia.gov/recreational-planning/grants>

For further information on RTP and
Trail Access grants contact:

Kellie Seaton, Recreation Grants
Coordinator

(804) 786-1119

For further information on LWCF
grants and the Virginia Outdoors Plan
contact:

Kristal McKelvey, Chief Recreation
Grants Manager
(804) 508-8896

recreationgrants@dcr.virginia.gov





Next Steps

- STAC report to General Assembly Oct. 1
- Hire DCR Environmental Program Planner
Open until filled, description at this link:
<https://www.dcr.virginia.gov/jobs?j=2023-04-11-18-51-56-297895-agq>
- VDOT State Trails Office Survey



<https://publicinput.com/stp>





Topics for next meeting

Please send your ideas to:

Jennifer Wampler, Virginia Department of Conservation and Recreation

600 East Main Street, 24th Floor
Richmond, Virginia 23219

or email

Jennifer.wampler@dcr.virginia.gov

or by fax to 804-371-7899.



[Subscribe to E-newsletter!](#)



Thank you!

Other comments and concerns?

Please send to:

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600 East Main Street, 24th Floor
Richmond, Virginia 23219

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