



# Middle & Upper James Riparian Consortium

## Urban Buffer - Key Issues Report

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### Executive Summary

In May 2021, the Upper & Middle James Riparian Consortium (Consortium), held one meeting with Planning District Commissions (PDCs) in the Upper and Middle James, and two Urban Buffer Roundtables including one with Middle James stakeholders and one with Upper James stakeholders. The Consortium held a follow-up Urban Buffer Roundtable on September 1st, 2021 where key action steps were identified across these themes. These actions were then ranked in priority by the Consortium Steering Committee. The intent of this exercise was to explore urban issues in greater depth. Riparian buffers in towns, cities, transportation corridors, and other developed areas across the Upper and Middle James Watershed share common challenges and opportunities. However, there are some key differences as well. The Middle James Watershed, for example, has a higher population of diverse stakeholders and contains more developed areas. The Upper James Watershed is more rural where most developed areas are small towns, and does not have as many organizations and groups to help secure funding and volunteer support. This Key Issues Report takes the ideas and feedback uncovered through these Roundtables and highlights top identified opportunities and challenges across 3 primary themes:

1. Rails, Trails, and Parks: Buffer Corridors that Connect our Communities
2. Policy and Local Ordinances: Structures to Restore and Protect our Riparian Buffers
3. HOAs, Golf Courses, and Small Parcels: The Non-Traditional Buffer

To see detailed meeting summaries from the 2021 PDC and Urban Roundtables, visit these links:

[Link to March 24 Planning District Commission Meeting](#)

[Link to May 12 Middle James Meeting](#)

[Link to May 20 Upper James Meeting](#)

[Link to September 1 Urban Buffer Follow-Up Meeting](#)

## Theme 1- Rails, Trails, and Parks: Buffer Corridors that Connect our Communities

### Opportunities:

- Greenways and Parks: James River Park System and other greenways along our waterways showcase the benefits of trees for recreation and water quality. These are also great spaces for education through signage and events. Localities should integrate riparian buffers into planning for greenways to build on multifunctionality- education, access, recreation, economic development, and conservation.
- Railroads and Transportation Corridors: Building partnerships are important since much of the land along rivers is owned by railroads. Outreach to CSX and Norfolk Southern Railroads to better understand opportunities would be valuable. Opportunities that correspond to transportation corridors such as Main Street programs may offer a forum for implementing green infrastructure which can mitigate flooding hazards and address urban heat island issues, but also boost tourism and local aesthetics. There are potential policy connections given the current federal infrastructure bill.
- Community Engagement: Urban areas have more people who may be able to volunteer on projects. Engage volunteer groups such as churches, civic groups, and use the population density as an asset. This builds awareness and ownership. Leverage messaging around the human health (mental and physical) benefit of buffers and outdoor recreation. Trees and water are good for you!
- Triage Maintenance Approach: Proper maintenance looks like education for localities around maintenance, planning for maintenance from the beginning of a project, built in funding support for local staff to maintain buffers, as well as engaging volunteer efforts in stewardship. Create collaborations to deal with invasive species and share examples of Maintenance Agreements. In addition, develop maintenance guidelines that allow buffers to function as a park and address safety concerns, yet still have functional ecological features. Showcase a successful rail, trail, or public park buffer project.

### Challenges:

- Railroads: Large land area along waterways owned by railroad companies that are lacking forest buffers. There is a great need for advocacy around this and would require Consortium-scale support.
- Lots of Stakeholders: The number of stakeholders in developed areas can slow progress for near-term results, but engaging all stakeholders is essential for making riparian buffers work within an urban fabric.
- Safety and Aesthetics: Where private land borders public land, people are concerned about access onto their personal property. There can be a fear of urban forests and there is often a demand for “park-like” spaces that are heavily manicured with lawn mowed to the water's edge. Historically, towns and cities have tended to ignore and turn away from creeks and rivers.
- Forest Health and Stewardship: Many existing riparian buffers are composed of invasive species, or are otherwise not a healthy ecosystem. Funding is usually not available for these kinds of restoration and maintenance projects for existing buffers or newly planted ones. High turnover of locality and city staff can also make proper maintenance difficult.

**Active Consortium Efforts:** The Knowledge Network Team will be offering another round of their Buffer Certificate Training, as well as an Urban Buffer Design Workshop and Charette in October 2021. The Implementation Team is addressing maintenance needs from the start through the James River Buffer Program that includes 3 years of establishment support. They are also developing a James River Stewardship Program to launch in 2022 to assist partners with maintenance on existing buffer projects. The Targeting & Outreach Team are developing outreach materials for partners to use at outreach events. The Planning Team will continue incorporating site tours with partners to highlight projects including one on September 1 to see Scottsville riverfront planning efforts.

## Top Action Ideas for Theme 1:

1. Share key info about buffer programs and training for localities, as well as urban opportunities/challenges
2. Coordinate action among stakeholder, government, and the railroad.
3. Develop buffer guidelines for narrow areas, including how to address key sensitive, urban natural areas.
4. Shared resource templates for river towns to help coordinate urban buffer design and ordinance creation and adoption,
5. Create informational signage templates to share and create signage where needed for sites.
6. Educational program to inform about Scenic River designation and its relation to protection of buffers.
7. Materials for localities to foster partnership building with successful examples and key info to enable collaboration.

## Theme 2- Policy and Local Ordinances: Structures to Restore and Protect our Riparian Buffers

### Opportunities:

- Upstream Impacts on Streambanks: There is an opportunity for localities to address upstream green infrastructure and infiltration to mitigate impacts downstream, particularly in subwatersheds areas where extreme streambank erosion is occurring.
- Tools to Support Decision Making and Coordination: A more streamlined decision-making process for municipal governments and private landowners is also necessary, with tools such as a flow chart that simplifies decision making for localities. The Consortium Streamside Program Report Tool and Coordination Tool could be improved to address urban needs. The Consortium should look into how PDCs or local governments can help with reporting for small organizations that are installing buffers.
- Ordinance and Buffer Document Updates: Identify cities, municipalities, and other urban areas that have effective, up-to-date ordinances that can serve as models for other localities. Identify conflicts in ordinances and encourage protection of buffers. Ensure buffer related manuals that are used for planning and that are referenced by localities are up to date, such as the [Riparian Buffers Modification and Mitigation Manual](#), which was last updated in 2006. Nurture coordination and sharing of ideas between municipal departments.
- Education for Local Officials, Staff, and Developers: There is a huge need for education and coordination of local government staff (planners, grounds maintenance, arborists, etc.), decision-makers, and developers. The Consortium could identify key areas for education such as the benefits of buffers, recognition programs like Tree City USA, proper tree planting and maintenance, funding programs, environmental site design practices to protect buffers, and incorporating these ideas into comprehensive planning efforts.

### Challenges:

- Stream Restoration: In urban landscapes, the stream restoration practice is sometimes used by localities to achieve credit towards their water quality goals. However, this is not always the best solution for eroding banks and can cause more harm than good. In some cases, the real issues are coming from upstream, where these challenges need to be addressed first in order to decrease the quantity of stormwater flowing to these streams during storm events.
- Outdated Ordinances: Many ordinances are decades old and are in need of updates. Localities often build off of other locality ordinances without knowing if they are truly good examples. Some ordinances and policies are conflicting and there is a need to identify the problem spots. Overall, there is a lack of model ordinances or programs to create, restore, and protect urban riparian areas. This is an opportunity for Consortium action.

- **Reporting Issues:** Smaller grassroots or citizen groups may be installing buffers in urban areas, but are not reporting to DEQ because they aren't aware they should, don't know how to report, and/or have administrative bandwidth.
- **Lacking Protection:** The Chesapeake Bay Act does not extend beyond west of I-95 in the Middle and Upper James Watershed, so buffers are lacking protection from development. In some cases, localities have adopted policies to protect buffers, but it is not common.
- **Department Silos:** Even within a particular city or municipality different departments often work in isolation and do not always coordinate even when they could. Having more coordination and sharing of ideas would be helpful especially in working to update local ordinances together, and from localities and counties to learn from each other.

**Active Consortium Efforts:** The Planning Team will be conducting stakeholder interviews and developing a Key Issues Report around Streambank Stabilization issues in 2022. The Implementation Team also has secured funding to address streambank stabilization on select projects. The Targeting + Outreach Team is developing an Education Module for Local Government, which should be complete by December 2021. To better understand hurdles around partners reporting buffers to DEQ, a presentation and workshop will be held at the 2021 James Buffer Summit on October 27th, 2021. The Consortium worked with Chesapeake Conservancy to develop a Streamside Program Report Tool and Coordination Tool to aid decision making and awareness of assistance programs. These are updated at least twice a year based on feedback from Consortium members.

### Top Action Ideas for Theme 2:

1. Educate elected local officials about the benefits of having riparian ordinances and natural resource protection policies.
2. Bolster programs that provide buffer cost assistance; grant programs to review or create locality ordinances.
3. Conduct buffer-specific ordinance and policy review of communities in the watershed; provide technical assistance.
4. Start a catalog of model ordinances and creative strategies.
5. Create a punch list example for local governments and maintenance guides for proper tree planting care.

## Theme 3 - HOAs, Golf Courses, and Small Private Parcels: The Non-Traditional Buffer

### Opportunities:

- **Informed Design and Programs:** Consider public perception and create design standards that take concerns from HOAs, golf courses, college landscapes, office parks, and waterfront property owners into account. Expand design techniques and strategies to include considerations for urban buffers that need to both address safety concerns and aesthetic preference. Consider developing or adapting assistance programs to better align with these landscapes. Find successful examples of buffer projects at golf courses or HOAs to highlight. More discussions with golf course and HOA stakeholders are needed to understand barriers and how design and programming can address these.
- **Neighborhood Approach:** HOAs or neighborhoods provide an opportunity to focus outreach and consolidate parcels for a larger buffer project to be more cost effective and have greater impact. There is great value in partnering with HOAs since many of these groups have landscaping contracts and control a large area. These are great areas to target for showcasing balancing aesthetics with ecological function.
- **Social Marketing and Resources:** Shift public perception from water as risk to a beautiful asset. Social marketing campaigns can be highly effective where people are living in higher density and can model behavior for their neighbors. Look at successful outreach programming or community-based social

marketing, such as the James River Association's [River Hero Homes](#) program. Review existing public facing riparian buffer resources and guides to identify gaps and look to develop a Riparian Plant Campaign/Guide.

- **Partner with Local Groups:** Neighborhood scale projects require trusted local partners and should use local based organizations for outreach. Churches are part of the organizational structure of many communities. Consortium could target key areas to attend service events or community events, and involve youth.

### **Challenges:**

- **Small Parcels:** Smaller private parcels in urban and suburban areas make it hard for programs to be implemented and cost effective.
- **Lack of Programs:** Historically there haven't been cost assistance or support programs that respond to urban conditions and needs. Steep slopes and severely eroding stream banks without the space to correct make 35' minimum width difficult to reach.
- **Golf Courses:** There are dozens of golf courses and country clubs across the watershed, though many do not have buffers along their waterways. Owners often note conflicts of trees with course design. Many of these parcels are listed as priority in the [James River Water Quality Improvement Program Restoration Planner](#), which prioritizes based on potential for water quality improvement if a project is installed on that parcel.
- **Aesthetic Concerns:** Property owners want clear viewsheds and be able to access waterways without being impeded by trees and shrubs. There is a lack of resident education availability as to what a healthy ecosystem looks like, proper tree care, invasive species identification, and available programs. Typical buffer projects have been on large agricultural properties that require a different design approach than urban areas.
- **Lack of Educational Resources:** There are currently limited resources for landowners that give them a list of riparian plants in a format similar to the [Virginia Native Plant Guides](#) that celebrate the benefits and proper stewardship of riparian buffers. Some resources exist, but are outdated.

**Active Consortium Efforts:** As noted above under Theme 1, the Knowledge Network Team will be offering another round of their Buffer Certificate Training, as well as an Urban Buffer Design Workshop and Charette in October 2021. The Targeting & Outreach Team has begun conversations with partners to develop a Riparian Plant Guide similar to the Virginia Native Plant Campaign. The Implementation Team's James River Buffer Program is eligible for small parcels.

### **Top Ideas for Theme 3 Action:**

1. Outreach to HOAs regarding buffer education and projects, especially those with environmentally-minded members.
2. Figure out what plants or type of information to include in the Riparian Plant Guide.

## **Tools and Resources for Urban Riparian Restoration**

Meeting attendees suggested several tools, resources, and partnerships that could be useful to the Consortium which are listed below.

### **Funding and Program Opportunities**

- [Streamside Program Report Tool](#) developed for the Consortium by Chesapeake Conservancy to narrow down riparian assistance programs. Updated at least once a year.

- [Coordination Tool](#) developed for the Consortium by Chesapeake Conservancy to highlight buffer progress, catalog prioritization tools, and visually show partner work areas and contact information
- [Virginia Conservation Assistance Program](#) (VCAP)
- [James River Buffer Program](#)
- Department of Forestry- [Trees for Clean Water](#) funding is regularly available
- The National Flood Insurance Program has a program for conservation of open space that can reduce flood insurance rates- [Link here](#)

### Partnership/Collaborative Examples

- [James River Park System Invasive Task Force](#)
- The City of Richmond's [RVAH2O](#) approach
- Tennessee Urban Riparian Buffer Program: <https://www.tn.gov/agriculture/forests/urban/buffer.html>
- Sustainable Urban Forest Coalition: <https://sufc.org/about/>

### Success Story and Greenway Projects

- Norfolk Southern living shoreline project [Link](#)
- [James River Park System](#)- conservation easement and protected buffer along the James in Richmond, VA
- [Chessie Trail](#) along Maury River in Lexington, VA

### Training Opportunities

- Chesapeake Bay Landscape Professional's Urban Buffer Trainings.  
<https://certified.cblpro.org/product-category/workshops/>

### Ordinance Resources

- [Ordinance Worksheet](#)
- University of Maryland Environmental Finance Center's [Stormwater Financing Report for Lynchburg](#) compares the economic benefits of green infrastructure versus gray infrastructure
- [Virginia Tree Ordinance Database](#)
- [Making your Community Forest Friendly: A Worksheet for Review of Municipal Codes and Ordinances](#) August 2018 by Center for Watershed Protection
- Example ordinance language - Association of State Wetland Managers:
  - [https://aswm.org/pdf/lib/model\\_ordinance\\_1209.pdf](https://aswm.org/pdf/lib/model_ordinance_1209.pdf)
  - [https://www.aswm.org/pdf/lib/model\\_riparian\\_protection\\_ordinance\\_kusler\\_030916.pdf](https://www.aswm.org/pdf/lib/model_riparian_protection_ordinance_kusler_030916.pdf)
- Example ordinance language - Huron Council Model Ordinance Riparian Buffer
  - [https://www.hrwc.org/wp-content/uploads/HRWC\\_riparianbuffer\\_model\\_ordinance.pdf](https://www.hrwc.org/wp-content/uploads/HRWC_riparianbuffer_model_ordinance.pdf)
- US EPA
  - Example Ordinances: <https://www.epa.gov/nps/urban-runoff-model-ordinances-aquatic-buffers>
  - Model Ordinance:  
[https://www.epa.gov/sites/default/files/2015-12/documents/2002\\_09\\_19\\_nps\\_ordinanceuments\\_buffer\\_model\\_ordinance1.pdf](https://www.epa.gov/sites/default/files/2015-12/documents/2002_09_19_nps_ordinanceuments_buffer_model_ordinance1.pdf)
- Examples of Code and Ordinance Language for Better Site Design. James River Association, Richmond, VA:

- <https://owl.cwp.org/mdocs-posts/examples-of-code-and-ordinance-language-for-better-site-design-james-river-association-richmond-va/>
- Recommended Model Development Principles for James City County, Virginia:  
<https://owl.cwp.org/mdocs-posts/model-development-james-city-county-va/>
- Municode: <https://library.municode.com/>
- American Legal Publishing's Code Library: <https://codelibrary.amlegal.com/regions/va>
- General Code: <https://www.generalcode.com/library/#VA>
- Durham, NC Riparian Area Management Plan Update (May 2021):  
[https://www.durhamnc.gov/DocumentCenter/View/39699/RAMP\\_May2021?bidId=](https://www.durhamnc.gov/DocumentCenter/View/39699/RAMP_May2021?bidId=)

## Design and Planting Considerations

- Designing Effective Urban Stream Buffers: A Planning Guide for Urban Aquatic Buffers in the Developing Landscape. Center for Watershed Protection.  
<https://www.washingtoncountyttn.org/DocumentCenter/View/167/Part-6a--Stormwater-Practice-Designing-Effective-Urban-Stream-Buffers-PDF>
- Center of Watershed Protection's [Better Site Design Handbook](#) and associated [Better Site Design Code and Environmental Best Management Practices for Virginia's Golf Courses](#)
- [The Green Book for the Buffer: An Illustrated Guidebook for Planting at the Shoreline](#). Maryland Department of Natural Resources
- [The Challenges and Opportunities for Riverbank Restoration](#) by Reed Pugh and Miles Connors
- [Virginia Native Plant Guides](#)
- VA DOF Urban Riparian Forest Buffers resources:  
<https://dof.virginia.gov/urban-community-forestry/urban-forestry-community-assistance/plant-urban-riparian-forest-buffers/>
- Penn State Extension - Philadelphia: <https://extension.psu.edu/establishing-riparian-buffers-in-urban-areas>

## Other Resources

- [James River Water Quality Improvement Program Restoration Planner](#)
- [Riparian Buffers Modification and Mitigation Manual](#)
- [Tree City USA](#) program which recognizes communities for their increased tree canopy.
- Chesapeake Bay Program's [Local Leadership Workgroup](#) worked with Green Fin Studios for educating local elected officials. All modules are accessible as PDF's at the linked website, but of special interest for buffers is [Module 4](#) on trees.
- United States Golf Association - [Environment and Sustainability Efforts](#)
- Virginia Urban Forest Council: <https://treesvirginia.org/>