

# Carroll County Government Bureau of Resource Management

**Janet O'Meara**

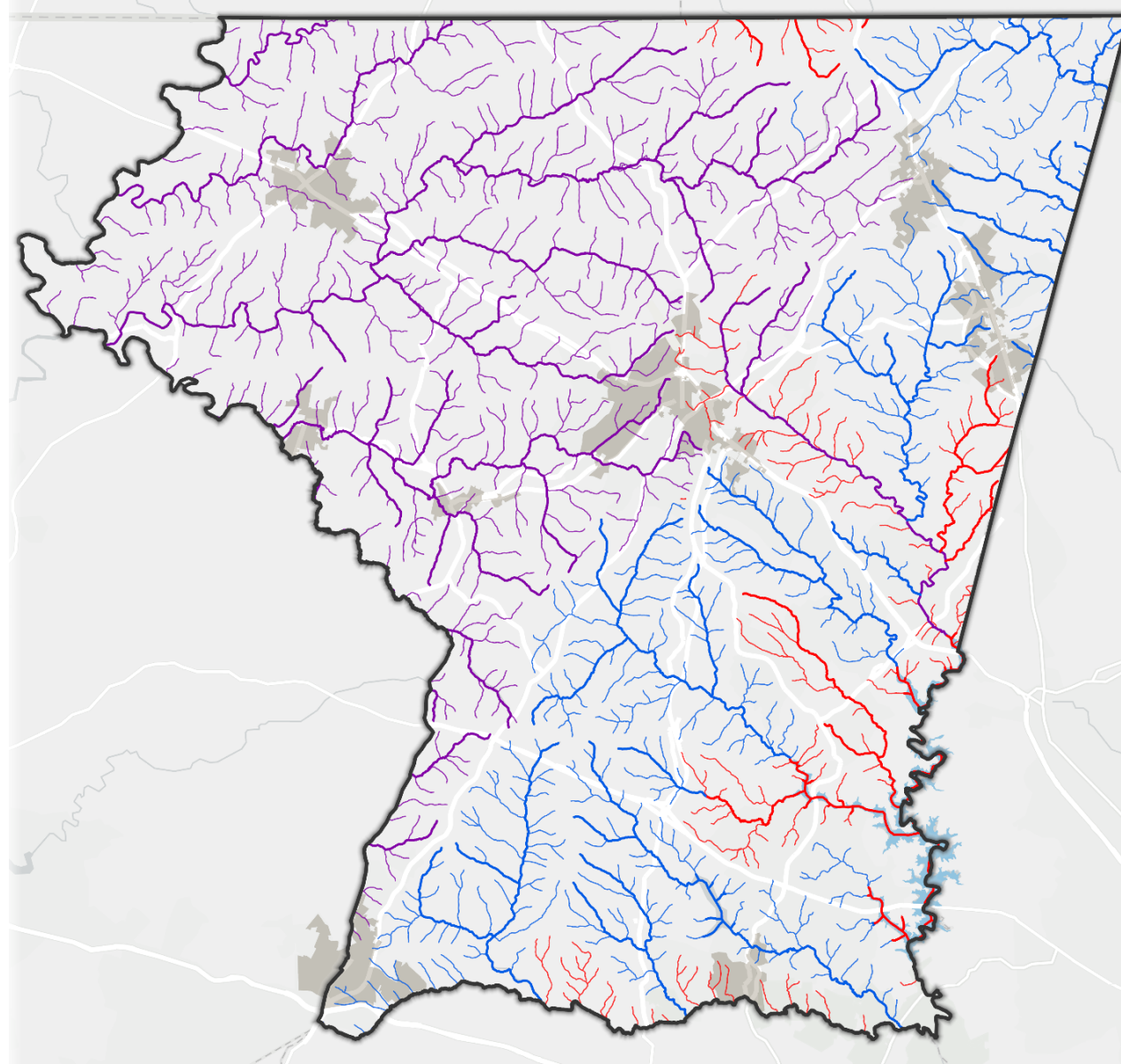
*Bureau Chief*



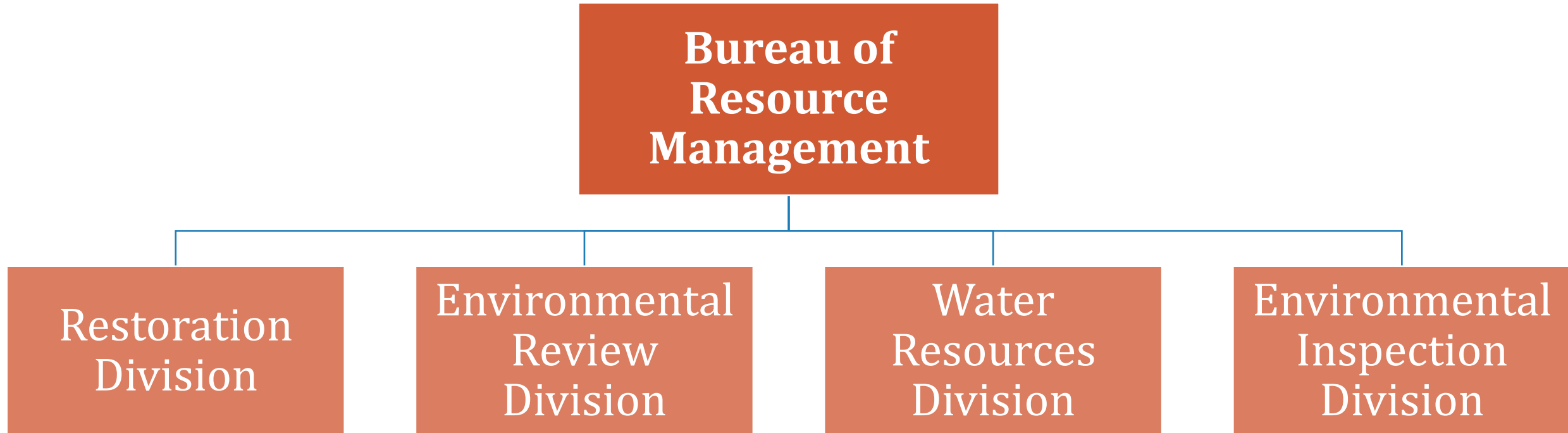
*STAC Brook Trout Workshop  
June 3, 2025*

# Stream Designated Uses – Carroll County

- Use Class I
- Use Class III
- Use Class IV



# Department of Planning and Land Management





# Carroll County MS4 Permit

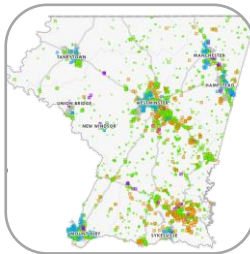
*Co-Permittees: Carroll County, Westminster, Taneytown, Union Bridge,  
New Windsor, Mount Airy, Sykesville, Manchester, and Hampstead*



Restoration



Monitoring & Assessment



Stormdrain Data Management

# Restoration



**Restore 1,217 acres of impervious surfaces**

*Ultimate goal: to restore impaired waterways locally and regionally*



# Structural Restoration Projects



**Shiloh MS – 26 Impervious Acres Treated**



**Elderwood/Oklahoma –  
81 Impervious Acres Treated**

Driving programmatic goal is **impervious area treatment**.

**Project selection and prioritization comes from:**

- Aging infrastructure or maintenance needs at existing facilities
- Stream Corridor Assessments identifying degraded areas
- GIS-level analyses of opportunities for retrofit of existing facilities and new facility construction
- Dam safety hazard classification for existing facilities
- Watershed-level studies (e.g. CWP)
- Local TMDL attainment progress

# Structural Restoration Projects

## Overlap of structural stormwater management & Brook Trout:

- Overall improvement of water quality (TN/TP/TSS)
- Management of hydrology (stream/habitat stabilization)
- Thermal mitigation
  - Programmatic refinement of large-scale surface sand filters
  - Recent addition of submerged gravel wetlands
  - Installation of innovative designs and monitoring outcomes (more in Monitoring slides)





# Tree Plantings



## Goal: Reestablish forested corridors along streams

- Voluntary initiative to help landowners obtain trees to address inadequate streamside buffers and establish/reestablish forested areas
- Grant-assisted at no cost to the landowner
- Approximately 252 acres planted since 2013
- Mix of private properties and County/municipal land
- Provides restoration credit for the MS4 program





# Stream Restorations

Impervious Acre crediting for MS4 Program



# Monitoring and Assessment

## Chemical, Physical, & Biological



## BMP Effectiveness Monitoring

- Loch Raven Watershed
- Continuous physical (flow, temp, pH, D.O., conductivity)
- Chemical, biological, and geomorphological

## TMDL Watershed Assessment

- County-wide macroinvertebrate sampling
- Targeted bacteria trend monitoring (6 of 9 watersheds)
- Targeted chloride monitoring (headwaters of Liberty Reservoir)



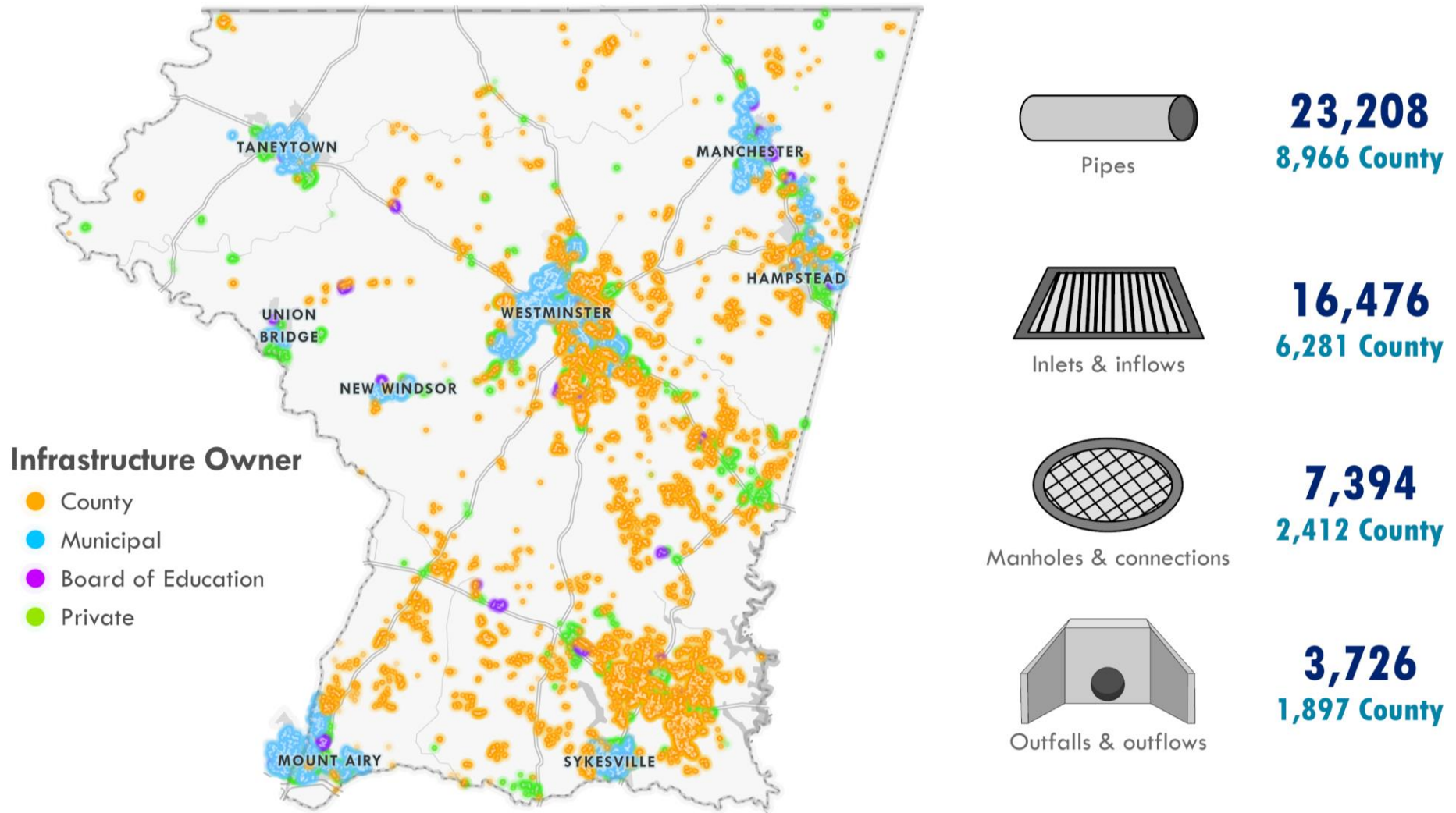
# Monitoring and Assessment

## Innovative Stormwater Designs and Monitoring:

- Surface sand filter thermal reduction (inflow vs. discharge)
- Wet pond gravel lens for thermal mitigation (surface vs. discharge)
- Wet pond into submerged gravel wetland prior to discharge (surface vs. discharge)
- Stream self-stabilization downstream of structural facilities

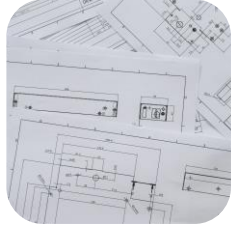


# Stormdrain Infrastructure Data Management





# Environmental Codes



Stormwater Management



Water Resources



Floodplains



Forest Conservation

# Environmental Codes: Stormwater Management

## Chapter 151

- Ensures compliance with state and local stormwater regulations during the development process
- Review process ensures that stormwater controls are appropriately designed for the stream Use Class to which they drain
- Identify hot spots, flooding areas, etc. and adjust requirements as needed



# Environmental Codes: Water Resource Management

## **Chapter 154**

*Protect the quality and quantity of ground and surface water resources in Carroll County*

1. Standards for review of development activities
2. Requirements for protection of existing and future water resources

### **Water Resource Easements**

- Protection of streams, ponds, and wetlands through forested and non-forested easements
- Variable-width buffer
- Deed of Easement restricts activities such as soil disturbance, storing or dumping of materials, and mowing
- Inspected every 3 years or in response to complaints

# Environmental Codes: Floodplain Management

## Chapter 153

*To protect human life and health, minimize property damage, encourage appropriate construction practices to minimize future damage, and to protect water supply, sanitary sewage disposal, and natural drainage.*

### Floodplain Easements

- Preserves the natural vegetation
- Prevents alteration of floodplains and setbacks where floodplains are delineated
- Based on floodplain width, stream buffer, or 100 ft from the top of the streambank on any mapped FEMA stream, whichever is largest
- Deed of Easement restricts activities such as soil disturbance, storing or dumping of materials, and mowing
- Inspected every 3 years or in response to complaints



# Environmental Codes: Forest Conservation

## Chapter 150

*Protect forests and trees in developing areas and sensitive areas identified during the local planning or comprehensive land use plan adoption process.*

- Prior to approval of any subdivision of land or development  $\geq 40,000$  ft<sup>2</sup> submit a FSD & FCP
- Forest banking program as a mitigation alternative

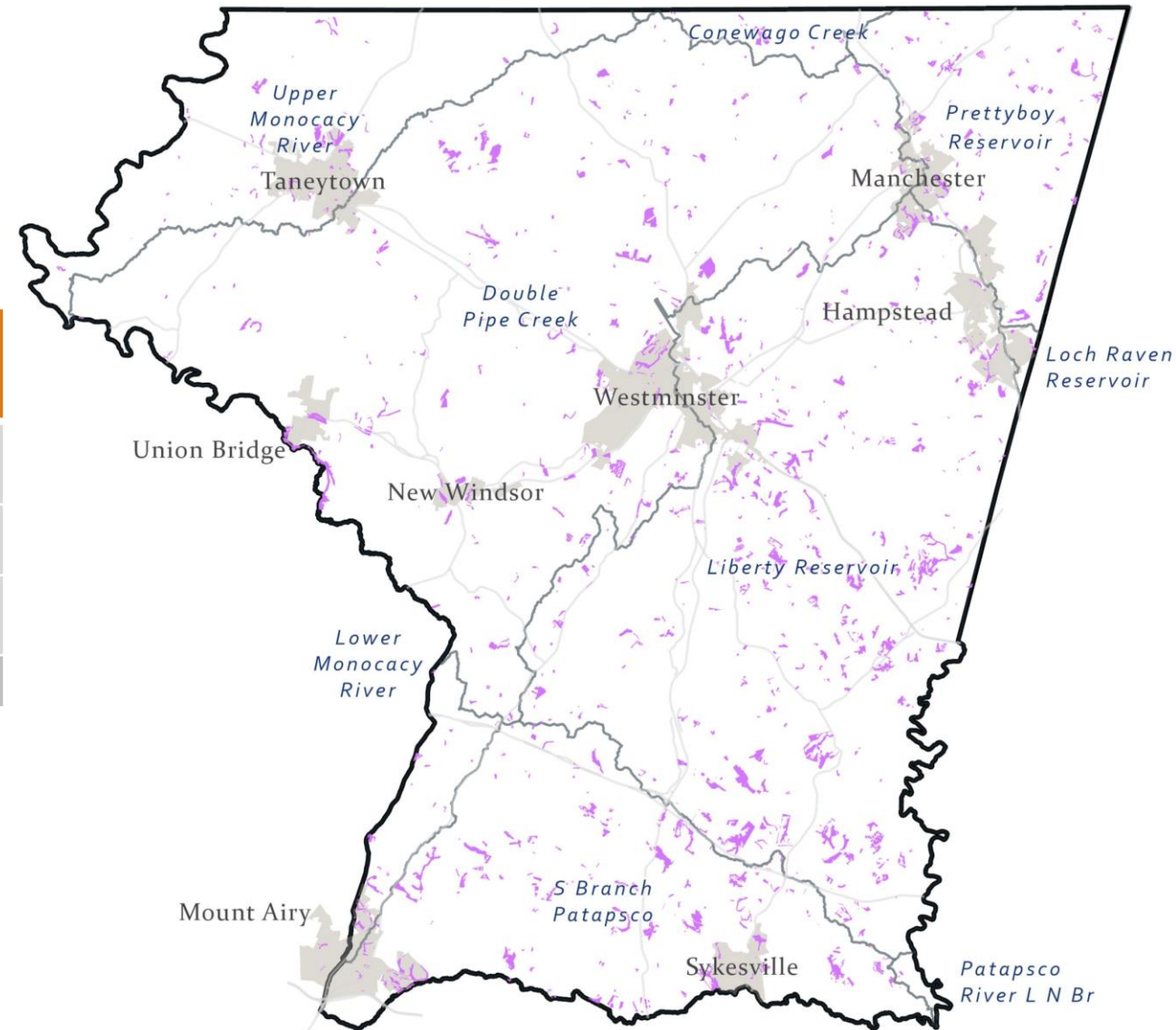
## Forest Conservation Easements

- Long-term protection for all retention, reforestation, afforestation, off-site reserve, and forest bank areas.
- Easement recorded during the development process to protect the forested area
- Inspected every 3 years or in response to complaints

# Environmental Easements

Easement Type	Acres Preserved
Water Resource	2,282
Floodplain	895
Forest Conservation	4,797
Total	7,974

*Approximately 172 miles  
of streams*





## Additional Organizations in Carroll County



**Carroll County  
Agricultural Preservation**  
*>80,000 acres preserved*



**Carroll County  
Soil Conservation District**  
*Agricultural Best Management Practices*





An abstract background featuring layered, wavy mountain ranges in various shades of blue, from light sky blue to deep navy blue. The peaks are soft and painterly, creating a sense of depth and atmosphere. The word "Questions?" is centered over the middle of the image in a bold, orange-red font.

**Questions?**