

# Developing Priority Areas for Sources of Drinking Water

Salt Summit 5  
22 January 2025

Designating the Patuxent Reservoirs Watershed as  
a *Special Salt Management Area*

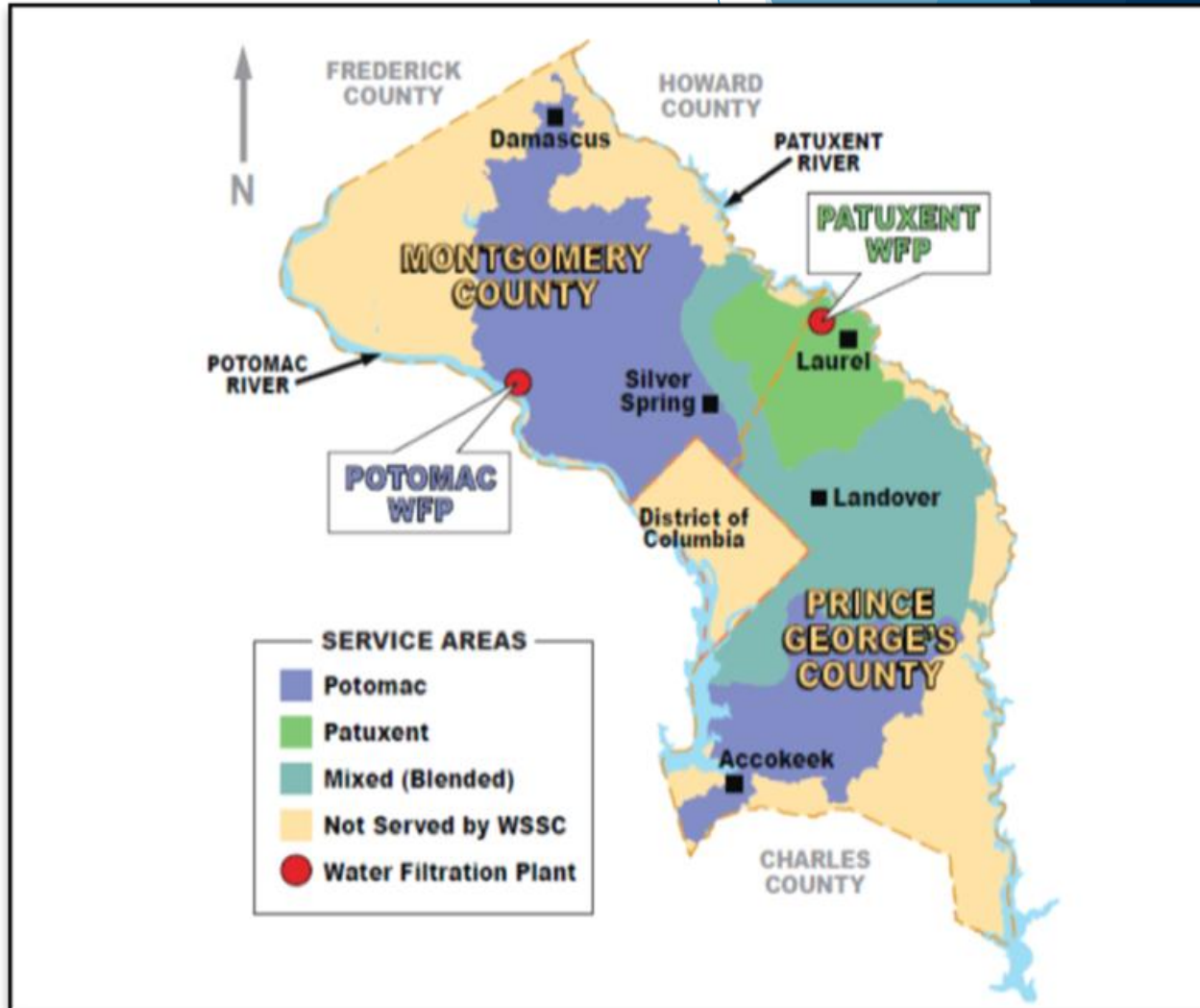
*Mark Symborski, Montgomery County Planning Department*  
*Steve Nelson, WSSC Water*

# Outline

- ▶ Background information
  - ▶ Water supply and watershed description
  - ▶ Patuxent Reservoirs Watershed Protection Group
  - ▶ Timely idea in conjunction with Salt Management Plan development for MS4 NPDES Stormwater Permits
- ▶ Describe the process of **how** the Patuxent Reservoirs Watershed Protection Group requested the designation of the Patuxent Reservoirs Watershed as a Special Salt Management Area

# Patuxent Reservoirs Water Supply

- ▶ Two reservoirs make up this supply along the Patuxent River
  - ▶ Triadelphia Reservoir (upriver; surface area = 809 acres)
  - ▶ T. Howard Duckett (aka Rocky Gorge) Reservoir (downriver; surface area = 622 acres; intake location for Patuxent Water Plant)
- ▶ Water supply for about 30% of WSSC Water's 1.9+ million customers



# Patuxent Reservoirs Watershed (PRW)

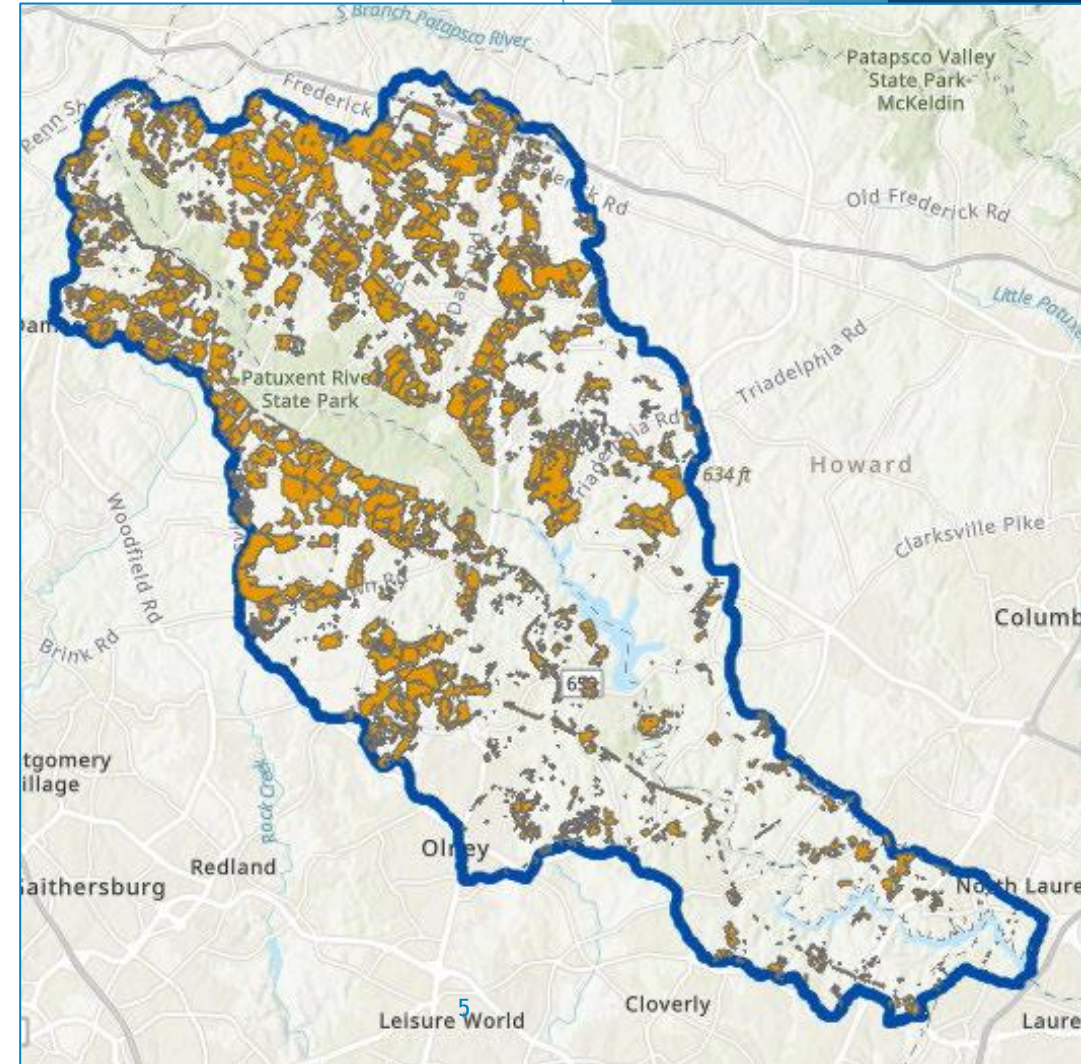
- ▶ PRW contained within Howard, Montgomery and Prince George's counties
- ▶ 132 square mile watershed comprised mainly of lower density residential, agricultural and forest land uses/cover
  - ▶ WSSC Water only owns/manages about 6% of the PRW
- ▶ Land uses/land cover
  - ▶ 22% Agriculture
  - ▶ 43% Forested
  - ▶ About 35% Residential
  - ▶ Small % remaining for commercial and industrial uses and road network





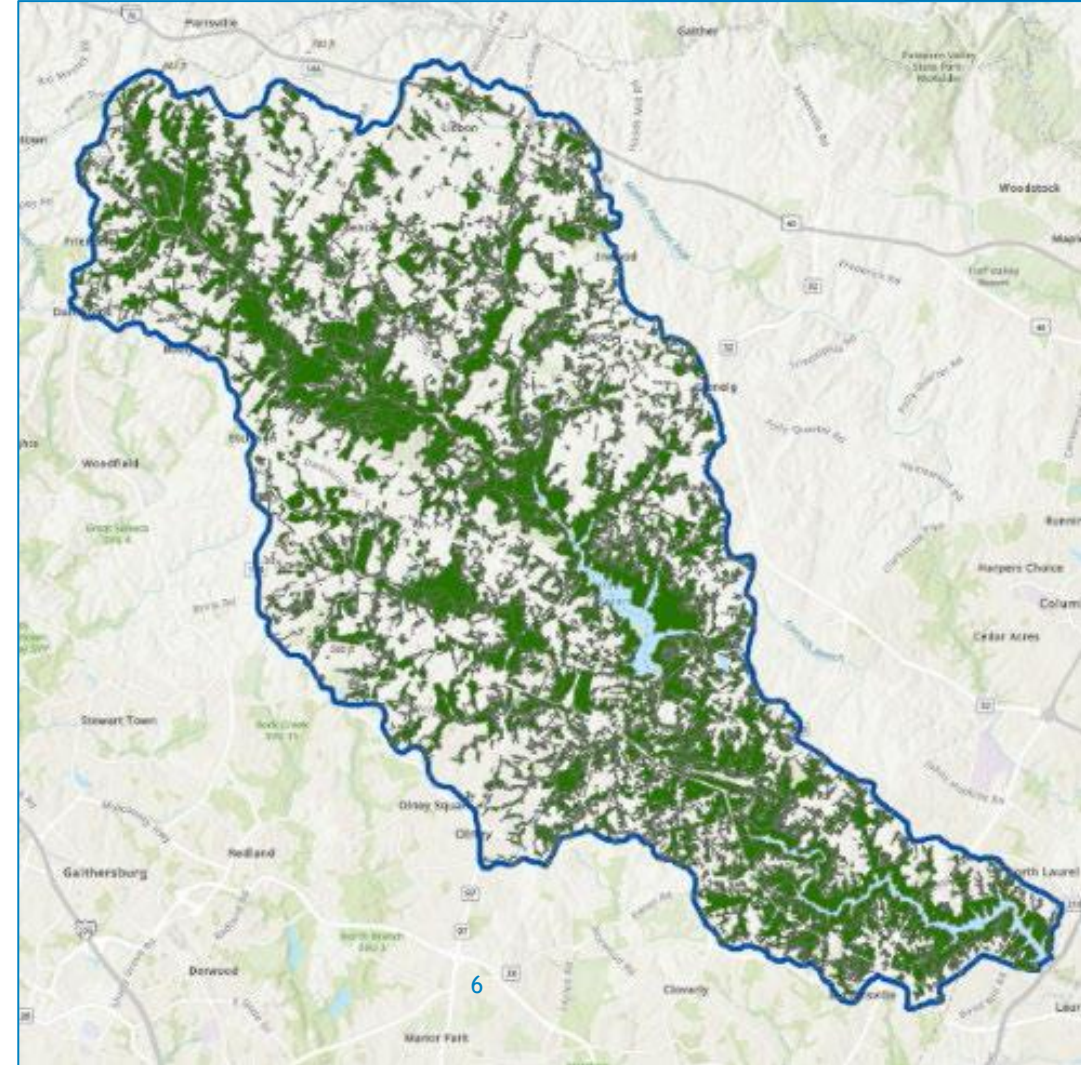
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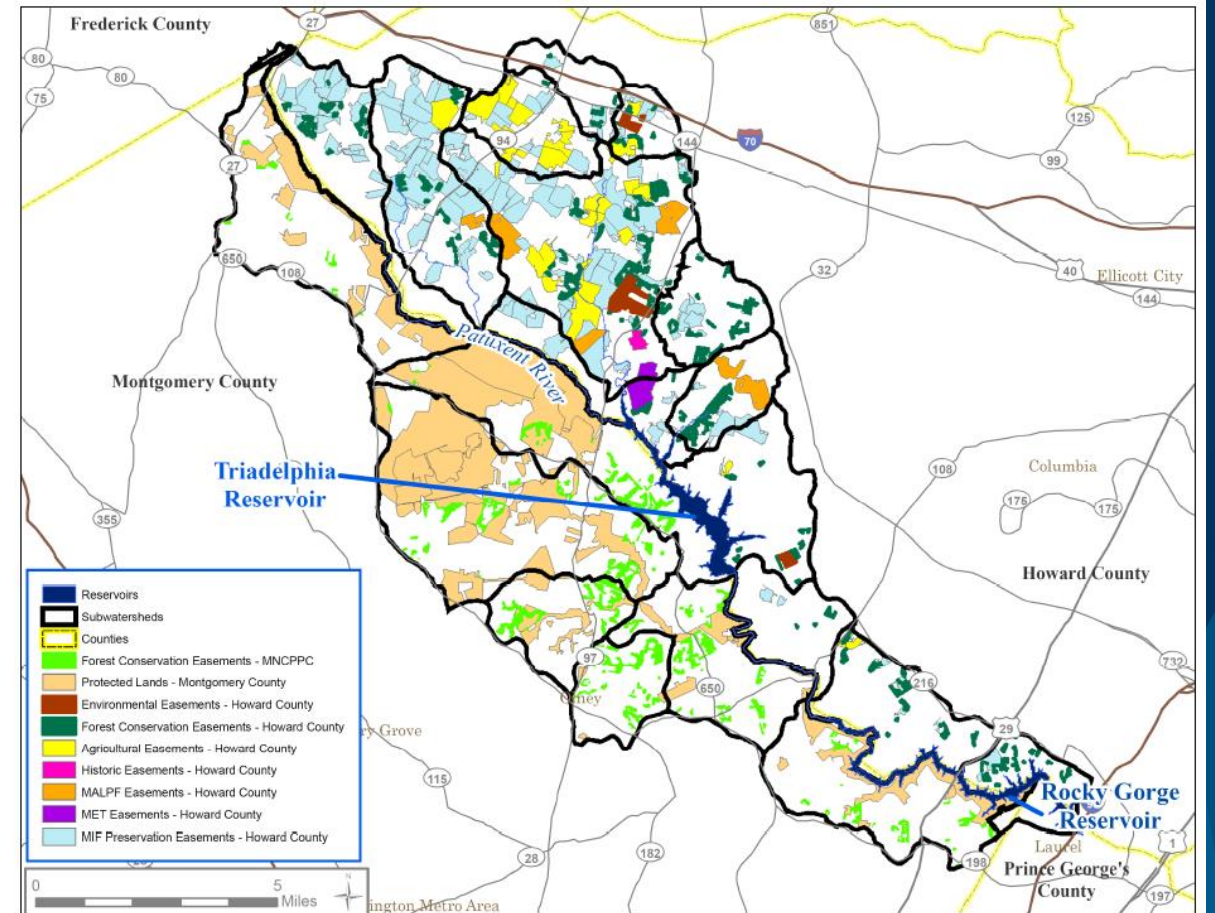
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# Patuxent Reservoirs Watershed (PRW)

- ▶ Salt-related stats:
  - ▶ About 84% of road miles within PRW managed by county agencies
  - ▶ 16% managed by MD DOT/SHA
  - ▶ Almost 2x more road miles in Montgomery Co. than in Howard Co.



# Patuxent Reservoirs Watershed Protection Group

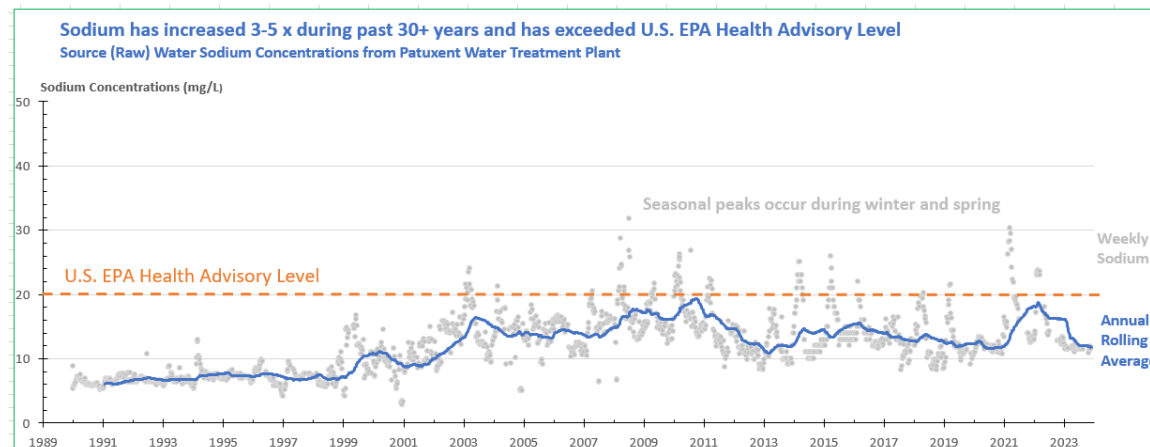
- ▶ Source Water Collaborative formed in 1996
  - ▶ Seven signatories to partnership Agreement
  - ▶ Comprised of a Policy Board and Technical Advisory Committee (TAC)
  - ▶ Policy Board considers strategies and funding to address present or anticipated problems and work activities for the coming year
  - ▶ The TAC advises the Board on issues that may affect the reservoirs and their watershed





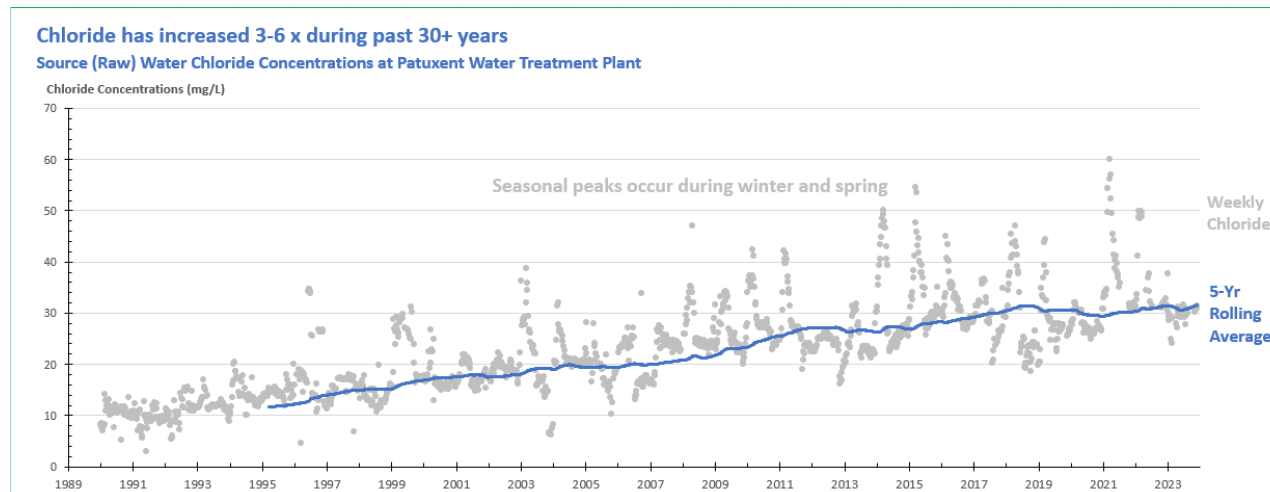
# Patuxent Reservoirs Watershed Special Salt Management Area Designations in Salt Management Plans

- ▶ Salt pollution adversely impacts water quality in the reservoirs and the reservoirs' watershed as well as the water distribution system
  - ▶ The U.S. EPA, through the Safe Drinking Water Act, has established a Health Advisory Level for sodium at 20 mg/L for those on sodium-restricted diets
    - ▶ Average annual sodium levels approach but do not exceed, but spikes routinely do
    - ▶ Elevated salt levels impact aquatic life, wells, soil chemistry and plant life and infrastructure



# Patuxent Reservoirs Watershed Special Salt Management Area Designations in Salt Management Plans

- ▶ Elevated chloride levels promote corrosion of cast iron water distribution pipes that can discolor water due to iron and manganese release
  - ▶ Average chloride concentrations in Rocky Gorge Reservoir have tripled since 1990, and winter spikes of chloride have increased up to six times the 1990 level



# Patuxent Reservoirs Watershed Special Salt Management Area Designations in Local Salt Management Plans

- ▶ The conventional water treatment process used by WSSC Water does not remove sodium or chloride; moreover, adding the treatment steps to remove them would be cost-prohibitive.
- ▶ **Greater emphasis is needed to minimize salt pollution from entering the streams and groundwater that supply the reservoirs to protect this regional water supply source.**



# Patuxent Reservoirs Watershed Special Salt Management Area Designations in Salt Management Plans

- ▶ One timely opportunity to protect this water supply and its watershed is to designate the Patuxent Reservoirs Watershed as a Special Salt Management Area within County Salt Management Plans
- ▶ TAC Recommendation for Policy Board Action
- ▶ Policy Board Request: Designate the Patuxent Reservoirs Watershed as a Special Salt Management Area in:
  - ▶ Phase 1 MS4 salt management plans in Howard, Montgomery, and Prince George's counties;
  - ▶ Montgomery County DOT salt management plans; and
  - ▶ WSSC-Water, Montgomery County Parks Department, and Prince George's County Department of Parks & Recreation salt application strategies and procedures

# Patuxent Reservoirs Watershed Special Salt Management Area Designations in Salt Management Plans

- ▶ TAC 2024 Special Salt Management Area Designation Request
  - ▶ Request was approved by the Policy Board in September 2024
  - ▶ Letters were sent to county and other agencies in early October
    - ▶ Feedback so far has been positive
- ▶ Potential Implementation Strategies
  - ▶ Strategies and practices beyond normal standards
  - ▶ Testing new practices and equipment
  - ▶ Salt brine pre-treatment strategies
  - ▶ Removal of excess salt after storms

# Patuxent Reservoirs Watershed Special Salt Management Area Designations in Salt Management Plans

## ▶ Next Steps

- ▶ TAC agency representatives to track implementation of the request
  - ▶ Changes to plans, strategies, and protocols
  - ▶ Conductivity in streams and reservoirs
  - ▶ Annual tributary stream salt loads modeled to track progress using regional relationships based on strong relationship between Specific Conductance and Chloride



# Questions or Comments?

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