

Watershed Assessment

An introduction to the watershed planning process and current work – Fall 2024



DEP Mission:

To enhance the quality of life in our community by protecting and improving Montgomery County's air, water, and land in a sustainable, innovative, inclusive, and industry-leading way while fostering smart growth, a thriving more sustainable economy and healthy communities.





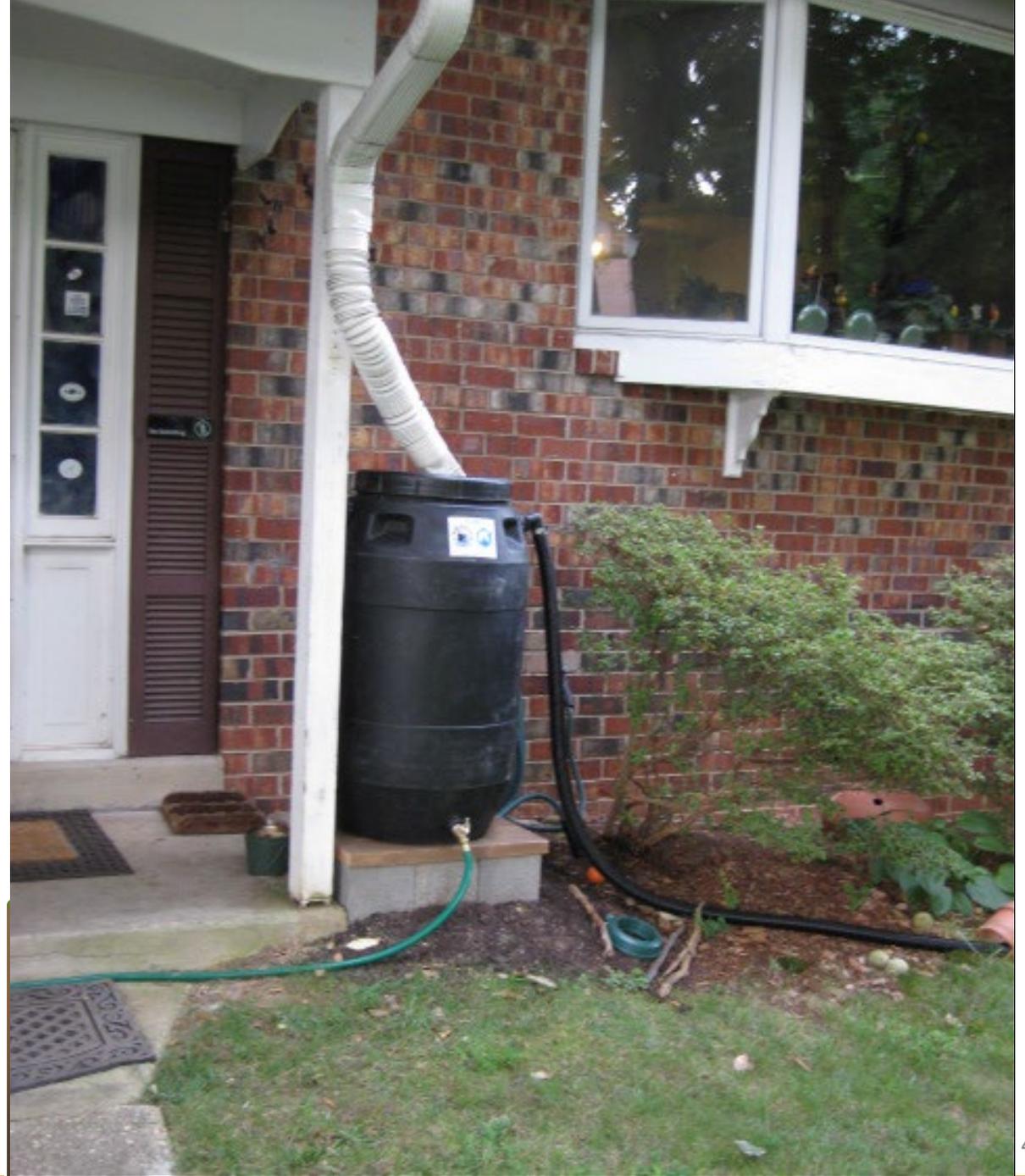
Watershed Assessment Vision:

Protect and improve water quality and watershed health in Montgomery County. Set measurable goals, collect data to support decision making, and assess progress toward those goals.



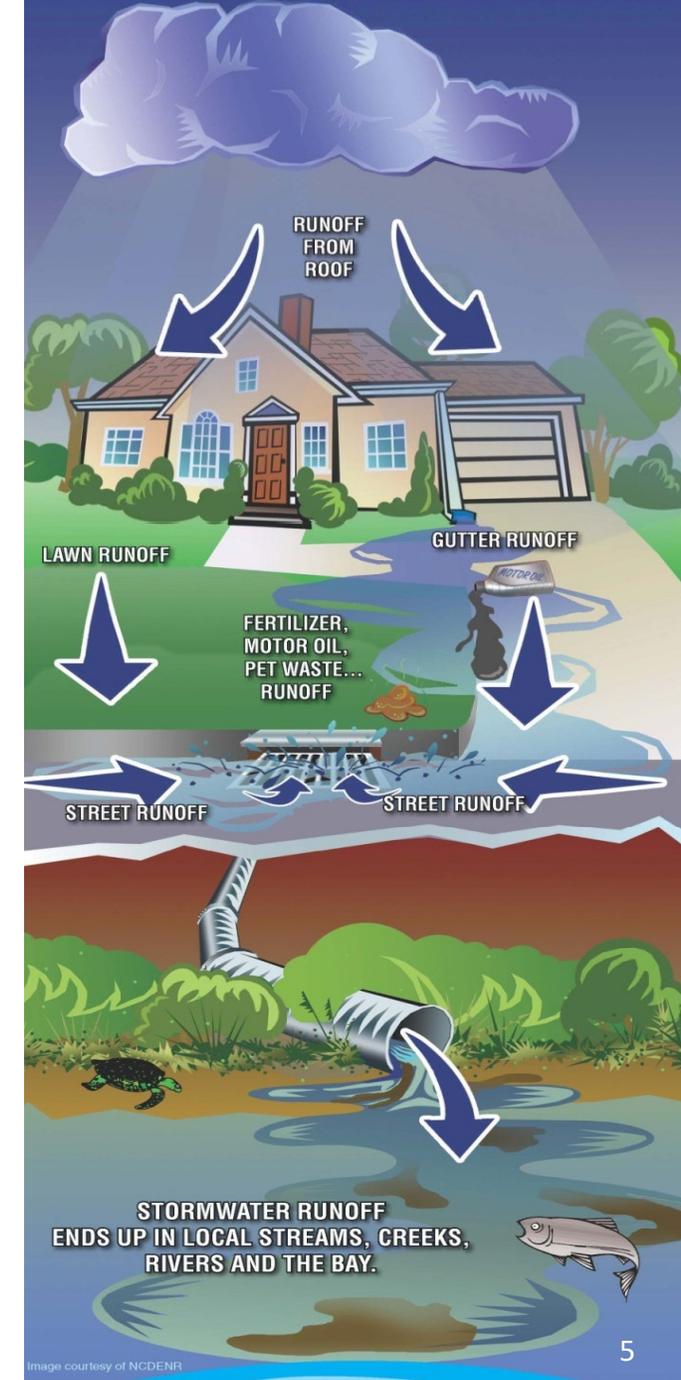
What is a watershed?

A ***watershed*** is an area from which the water above and below ground drains to the same place.



What are water quality issues and how does it impact us?

Stormwater pollution happens when rainwater runs over surfaces like roads, rooftops, and lawns. This causes water quality impacts as the rainwater picking up dirt, chemicals, and other harmful substances along the way draining into our streams. Heavy rainfall also causes water quantity issues resulting in stream erosion further impacting water quality and infrastructure and property damages.



Program Drivers

Federal, State, and Local regulatory requirements and programmatic initiatives:



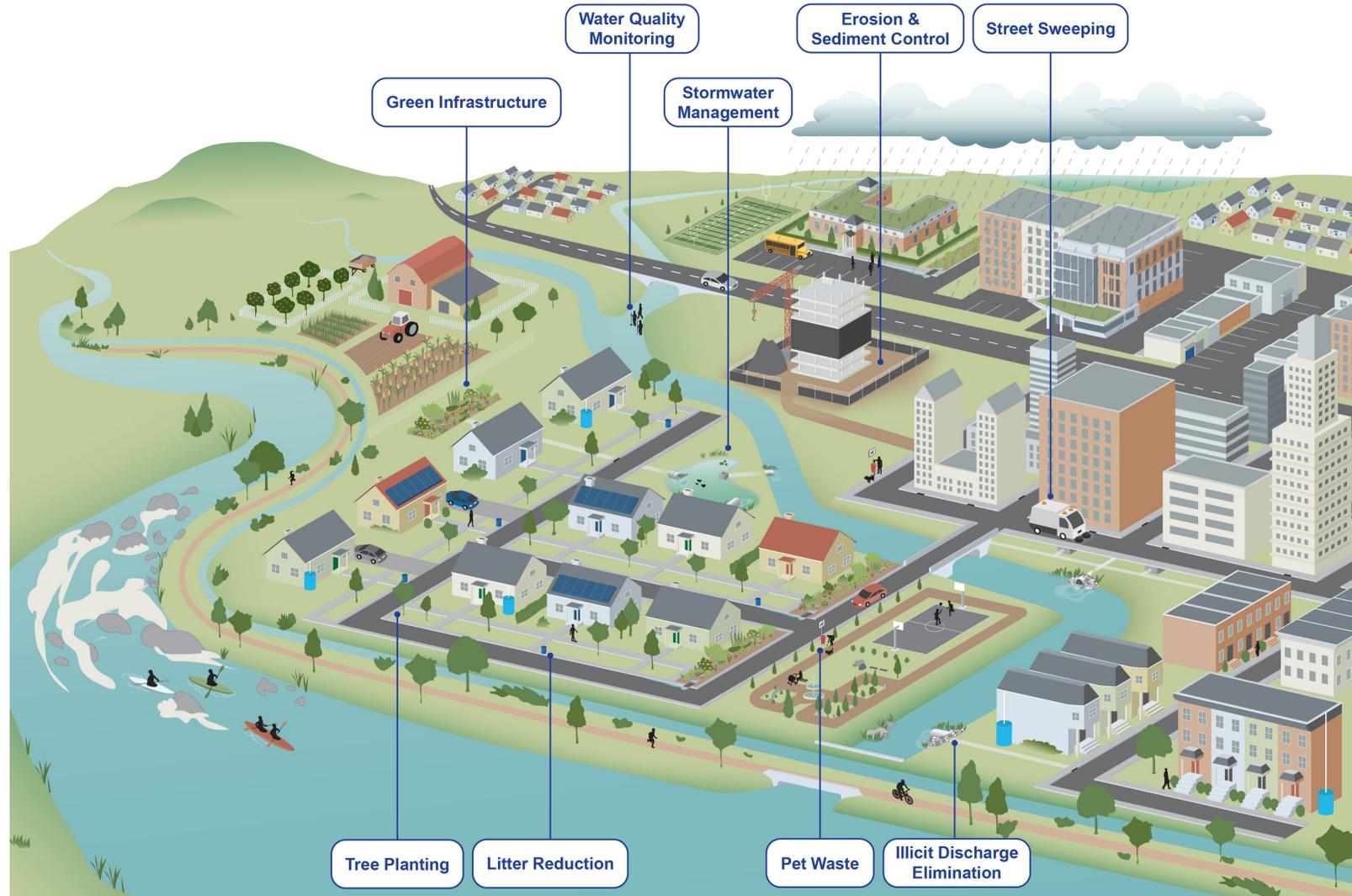
Maryland
Department of
the Environment

National Pollutant Discharge
Elimination System (NPDES)
Municipal Separate Storm
Sewer System (MS4) Permit



- Special Protection Area (SPA)
- No Net Loss of Forest Initiative
- Racial equity and social justice
- Montgomery County Climate Action Plan
- Montgomery County Comprehensive Flood Management Plan

Municipal Separate Storm Sewer System (MS4)

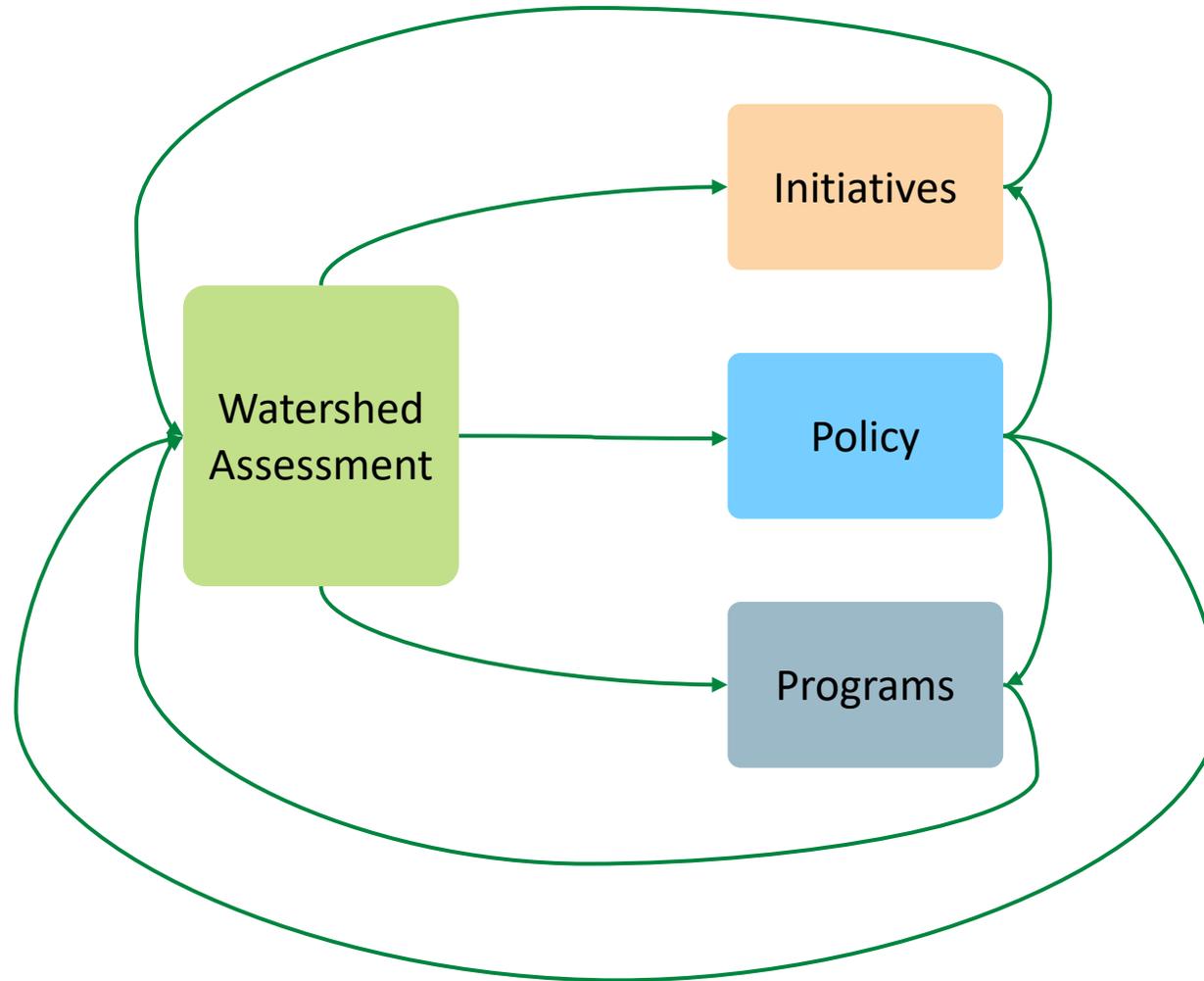


What is a watershed assessment?

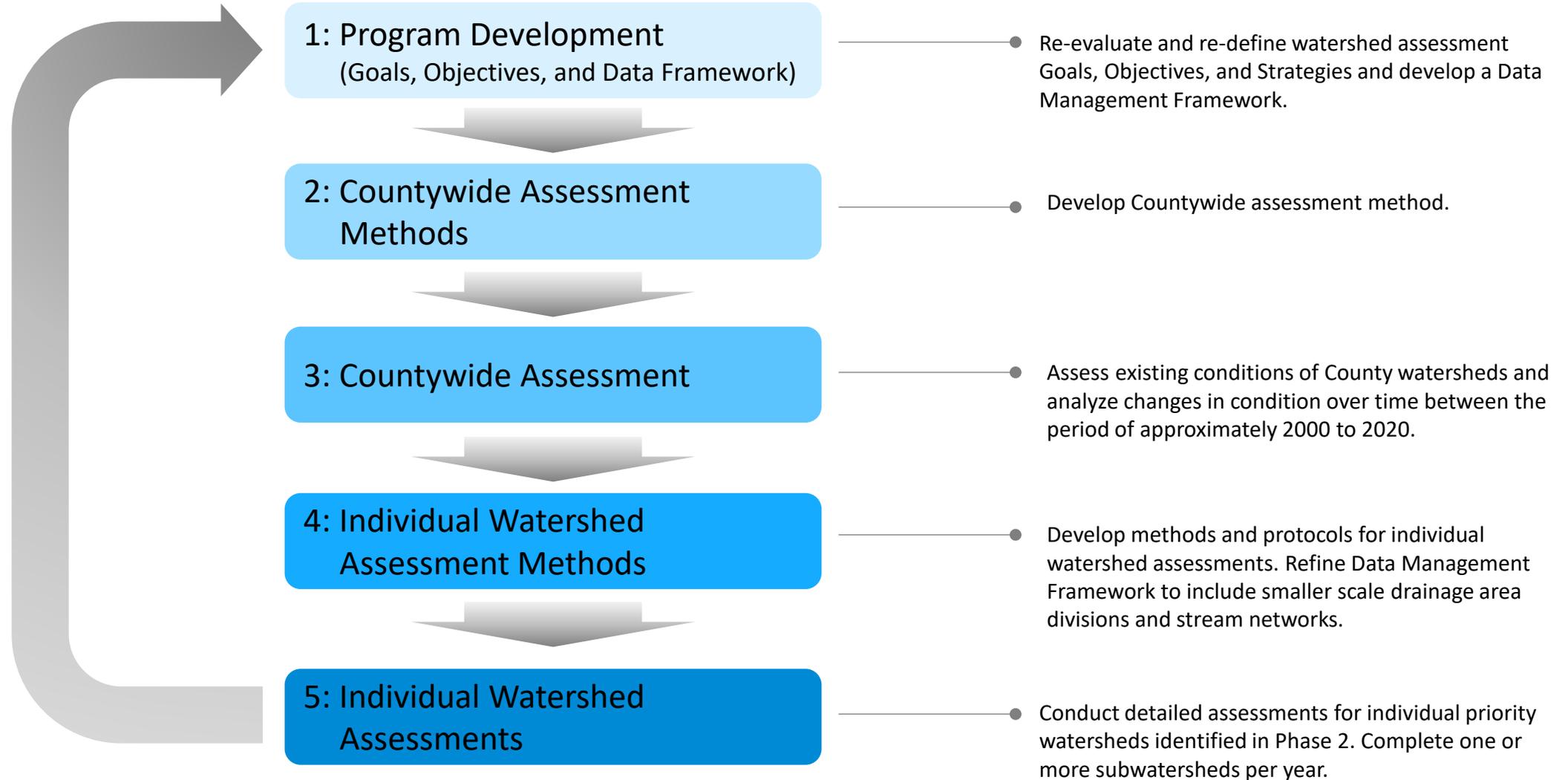
Watershed assessments are like health checkups. Using available information including stream monitoring data (like blood work) to determine the overall condition of the watershed. Where possible, make correlations and provide programmatic recommendations to achieve target goals.



What is a watershed assessment?

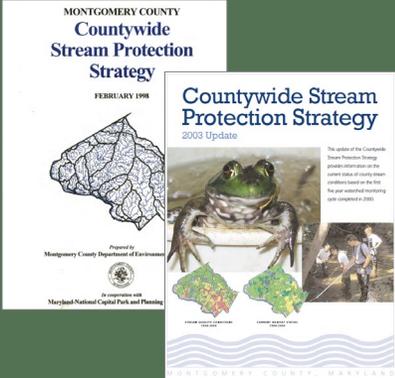


Phase 1: Program Schedule / Cycle



Phase 1: Program Review and Update (and MS4 Permits)

**1998 / 2003
Countywide Stream
Protection Strategy**



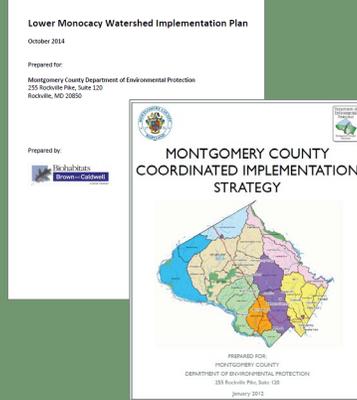
1996 MS4 Permit

- No impervious surface restoration (ISR) Goal
- Conduct specific watershed assessments (Little Falls, Sligo Creek,...)

2001 MS4 Permit

- Conduct Countywide assessment and implementation planning
- 10% ISR Goal

**2012
Countywide Coordinated
Implementation Strategy**



2010 MS4 Permit

- Watershed Assessment (new section in permit)
- Tie restoration opportunities to Waste Load Allocation (WLAs)
- 20% ISR Goal

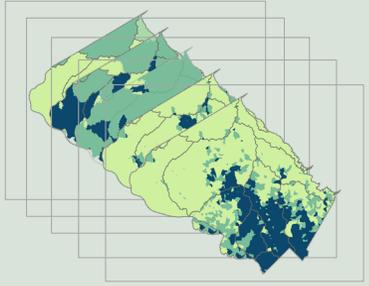
**2018 / 2019
Restoration Suitability Mapping
& Demographic Index**



2021 MS4 Permit

- Maximum Extent Practicable (MEP) Analysis
- Countywide Total Maximum Daily Load (TMDL) Implementation Plan & Annual Progress Update
- ~10% ISR Goal

**Current
Watershed Trend Analysis
Countywide Assessment**



Next MS4 Permit

- Environmental Justice
- Green Infrastructure
- Temperature impact
- Est. 10% ISR Goal

Phase 1: Goals

Water Quality Protection & Improvement

Reduce levels of pollution in streams and groundwater, including factors such as nutrients, sediment, bacteria, temperature, salt, and toxics.

Living Resources

Maintain and increase the abundance, diversity, and health of the County's native wildlife and plant life.

Land Cover / Land Use

Reduce levels of pollution in streams and groundwater, including factors such as nutrients, sediment, bacteria, temperature, salt, and toxics.

Racial Equity Social Justice

Consistent with DEP's Racial Equity Vision Statement, DEP's watershed assessments will apply a racial equity lens when setting policies, projects, and programs related to DEP's Mission, ensuring the inclusion of diverse groups, especially frontline/underrepresented communities.

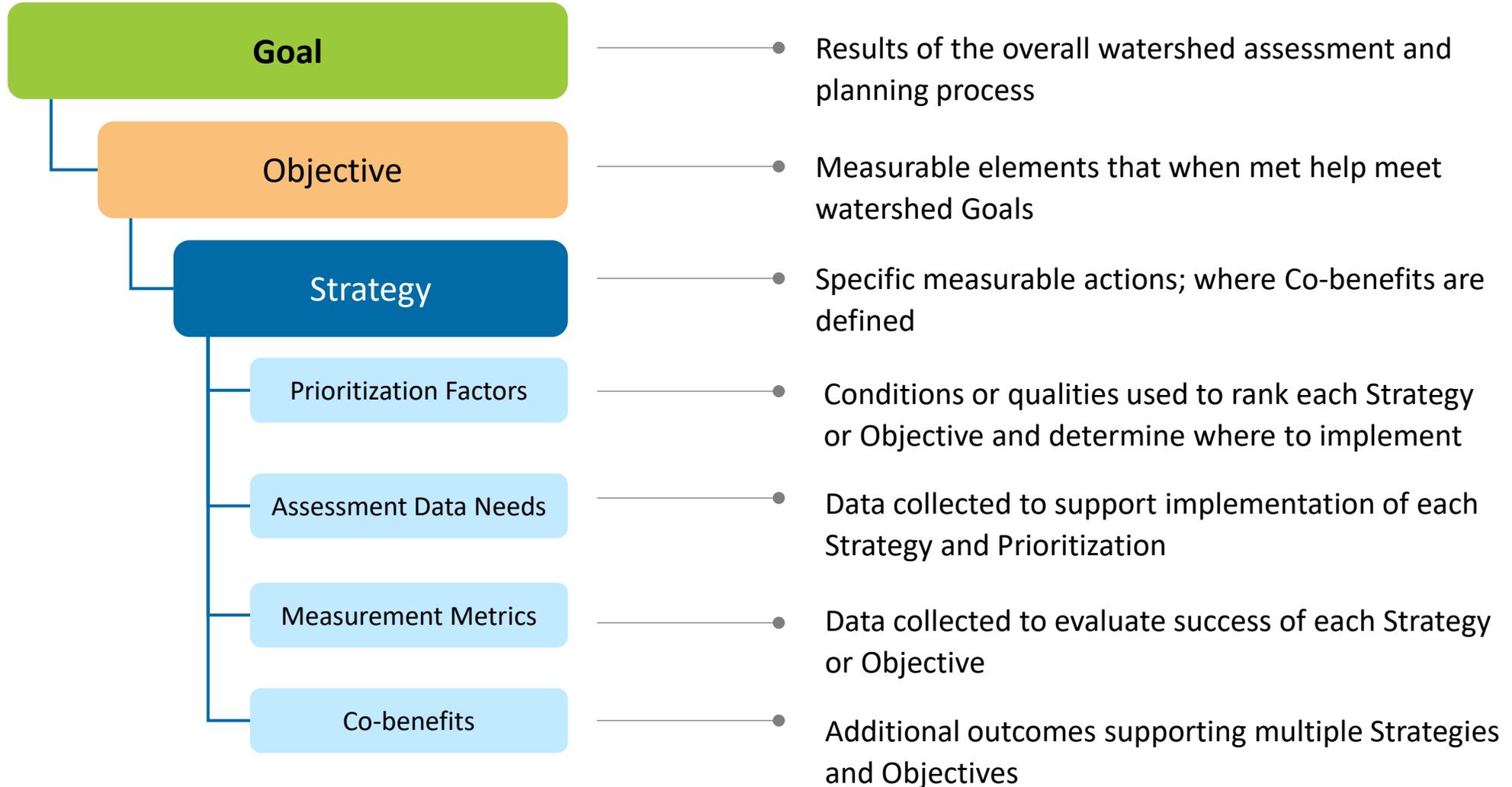
Climate Change Mitigation and Resilience

Reduce greenhouse gas emissions, increase carbon sequestration, and adapt to a changing climate.

Erosion and Flood Resilience

Prevent and mitigate erosion as well as fluvial and pluvial flooding.

Phase 1: Goals & Objectives



Phase 1: Stakeholder Engagement



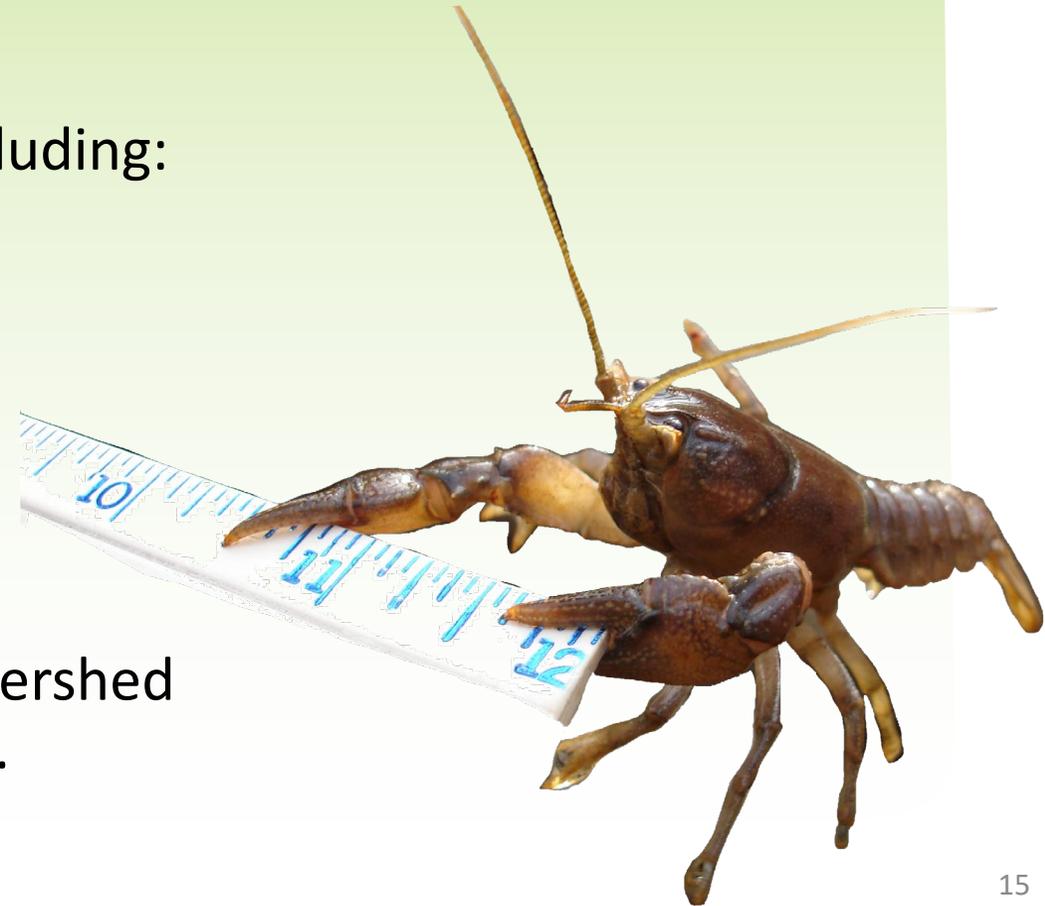
STORMWATER PARTNERS NETWORK



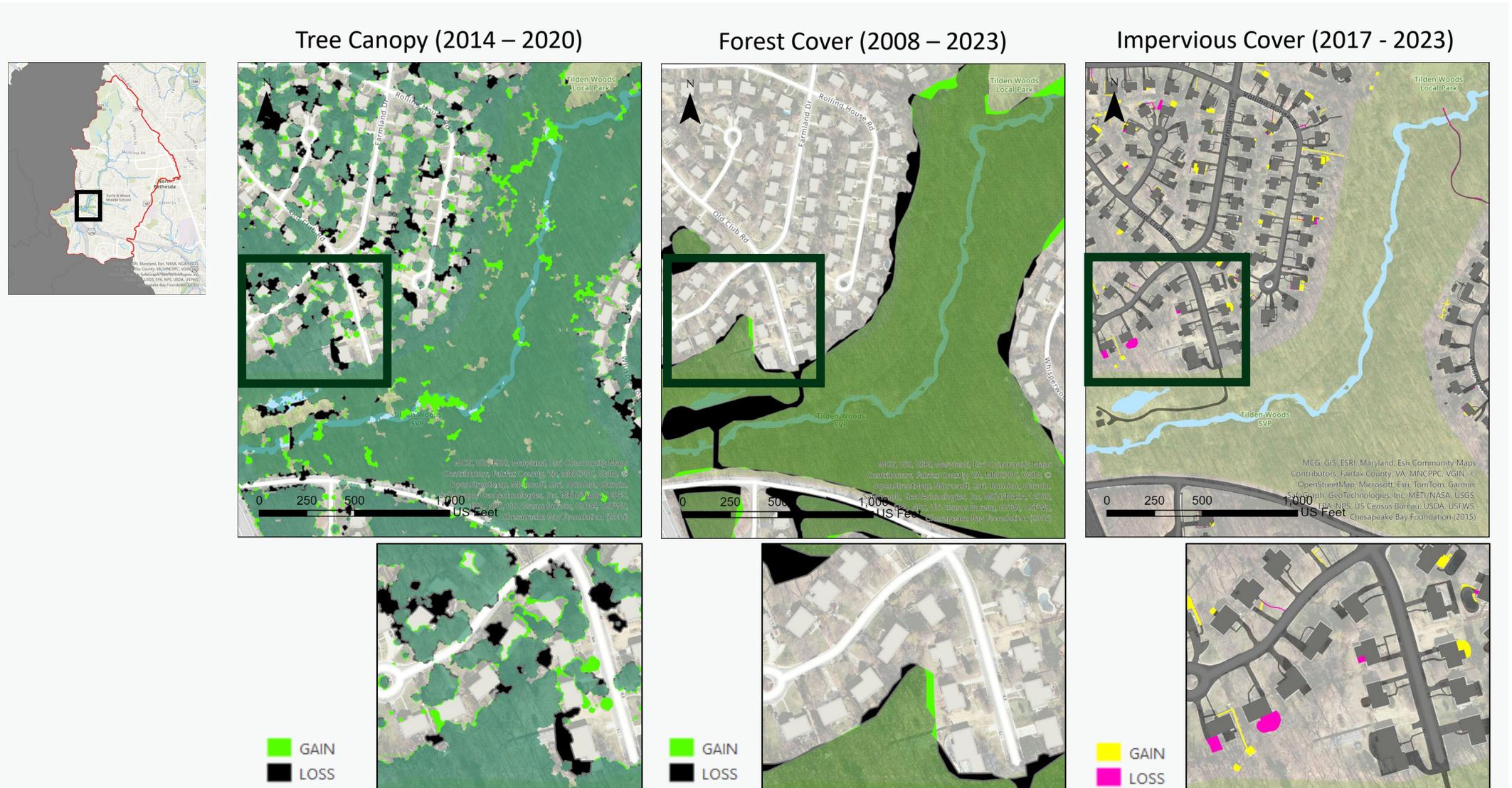
Phase 2 & 3: Countywide Assessment Method & Assessment

Current

- Assessment of overall County-wide watershed conditions and trends including:
 - Climate / Temperature
 - Land Use / Land Cover
 - Racial Equity & Social Justice
 - Forest Cover
- Utilize recent research:
USGS Channel Openness
- Identify focus areas for a holistic watershed restoration and protection approach.



Phase 2 & 3: Tree Canopy – Forest Cover – Impervious Cover

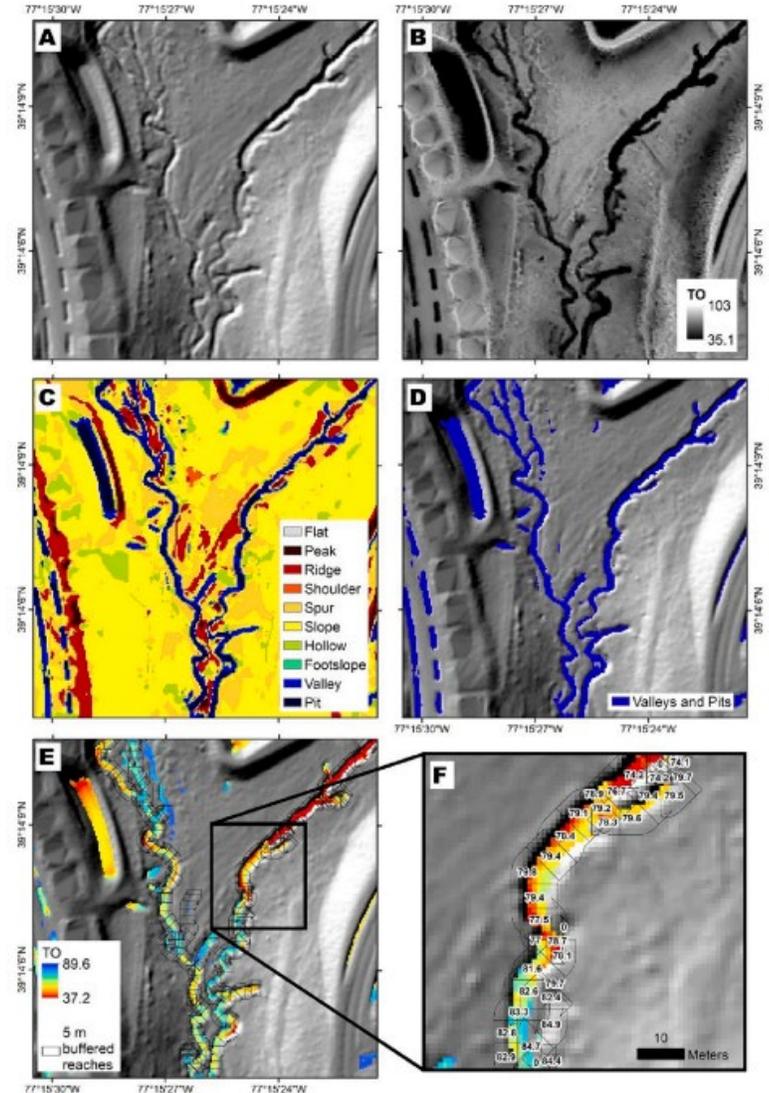
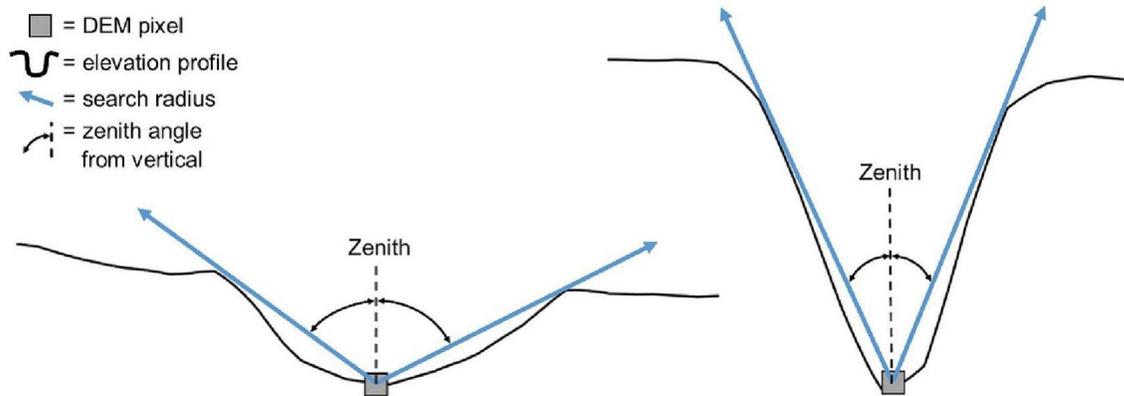


Phase 2 & 3: Tree Canopy – Forest Cover – Impervious Cover

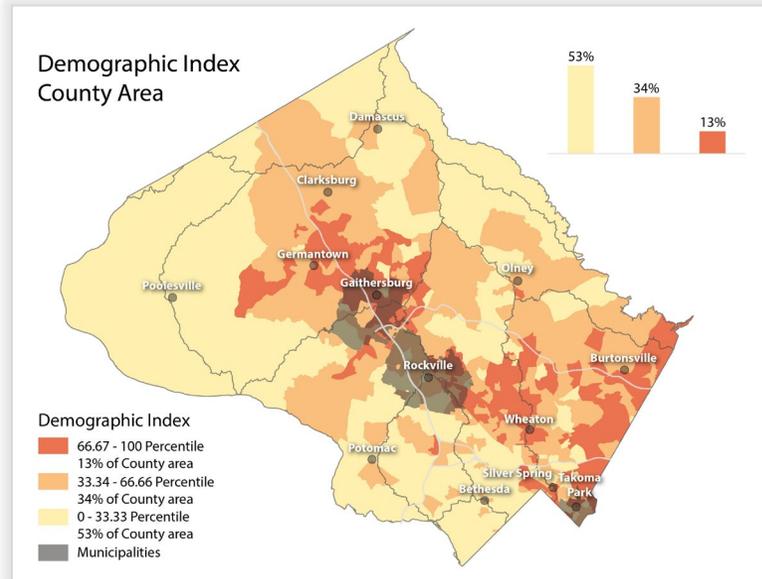


Phase 2 & 3: DEM Differencing and Channel Openness

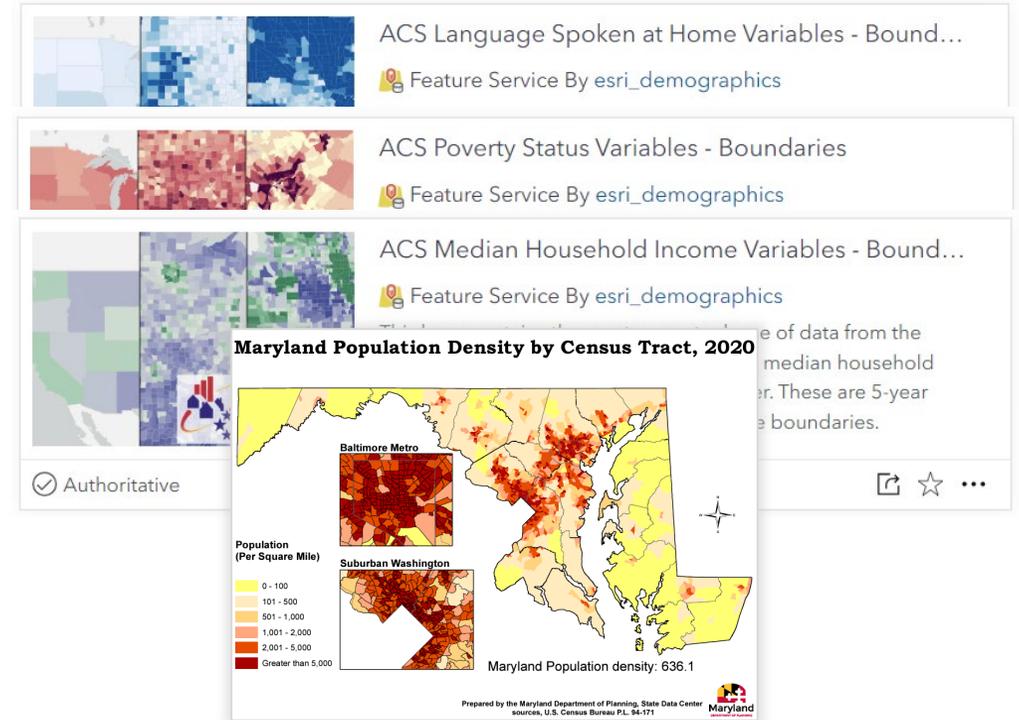
- USGS Study published in 2024: **Remotely mapping gullying and incision in Maryland Piedmont headwater streams using repeat airborne lidar** - Marina J. Metes, Andrew J. Miller, Matthew E. Baker, Kristina G. Hopkins, Daniel K. Jones
 - Topographic openness derived from 1-m lidar to predict incision and change in incision over time.



Phase 2 & 3: Racial Equity and Social Justice



Determining areas of focus based on demographic data and criteria.



Assess change within Montgomery County and try to determine how communities experience change over time.

Get Involved: Water Protection & Water Quality Concerns



Report water quality concerns in your community using the online survey.

<https://arcg.is/OKCHPi>



English-US

Water Protection and Quality Concerns

Please use this form to report water quality concerns in your community, such as stream erosion, flooding, trash, lack of trees, and more. The information you provide will help identify potential restoration projects, including the installation of stormwater management systems and other related practices.

This survey is intended for planning purposes. If you need immediate assistance, please report the issue through MC311. Thank you!

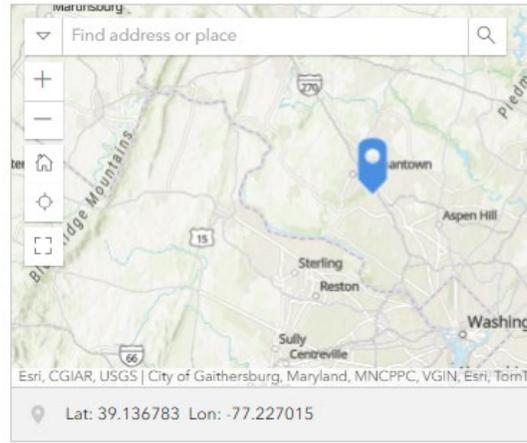
This survey is currently open until December 31st, 2024.

Photos

1 Drop image here or select image (number of files allowed: 1 - 5)

Location of water quality concern*

Indicate the location of water quality issues.



marisburg

Find address or place

Antown

Aspen Hill

Sterling

Reston

Sully

Centreville

Washington

Esri, CGIAR, USGS | City of Gaithersburg, Maryland, MNCPPC, VGIN, Esri, TomTom

Lat: 39.136783 Lon: -77.227015

English-US

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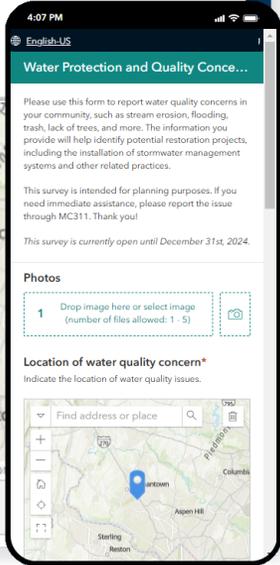
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Thank you!

Montgomery County Agencies & Departments

- Department of Environmental Protection (DEP) Watershed Restoration Division
- DEP Energy, Climate and Compliance Division
- DEP Intergovernmental Affairs Division
- DEP Strategic Services Division
- DEP Director's Office
- Department of Transportation (DOT) Division of Transportation Engineering
- DOT Division of Highway Services
- Department of Permitting Services
- Office of Emergency Management and Homeland Security (OEMHS) Operations Division
- OEHMS Administration and Finance Division
- OEHMS Planning Division
- Office of Racial Equity and Social Justice
- Maryland National Capital Park and Planning Commission (M-NCPPC) Montgomery Parks
- M-NCPPC Montgomery Planning

Maryland State and Regional Agencies

- Maryland Department of the Environment
- Maryland Department of Natural Resources (MDNR) Fishing and Boating Services
- MDNR Chesapeake and Coastal Services
- MDNR Aquatic Resources
- MDNR Wildlife and Heritage Services
- Maryland Department of Transportation State Highway Administration
- Washington Suburban Sanitary Commission

Public Watershed Groups and Committees

- Water Quality Advisory Group
- Climate Action Plan Coalition
- Stormwater Partners Network
- Nature Forward
- Friends of Sligo Creek
- Eyes of Paint Branch
- Little Falls Watershed Alliance
- Seneca Creek Watershed Partners
- Friends of Cabin John Creek
- Sierra Club, Montgomery County Group



Contact

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Montgomery County
Department of Environmental Protection

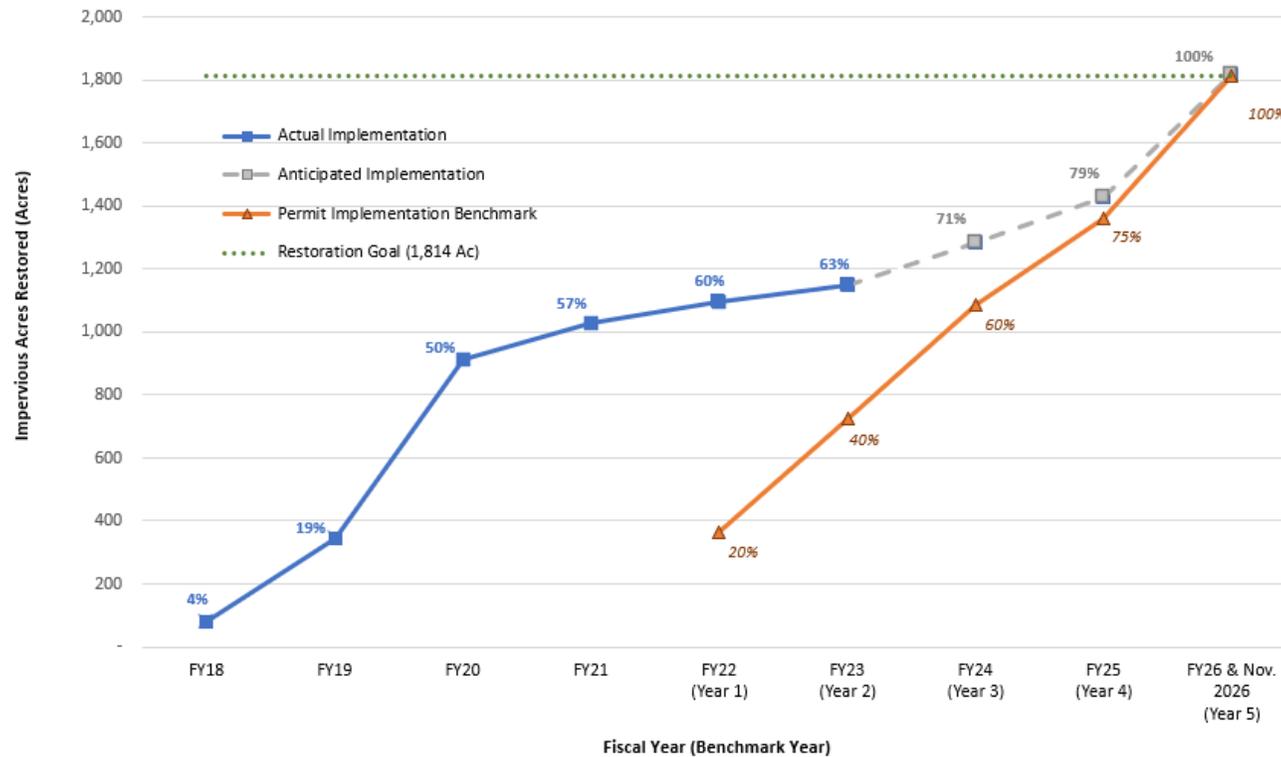
Ho-Ching.Fong@montgomerycountymd.gov



MS4 Update

Restoration Progress

FY23 Existing and Expected Progress of Meeting the 2021 Permit Restoration Goal



FY24 Reporting

Good Housekeeping Plan



Salt Management Plan

