



DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

H2O Summit
9 November 2024

20 Years of Water Quality Monitoring

In Montgomery County



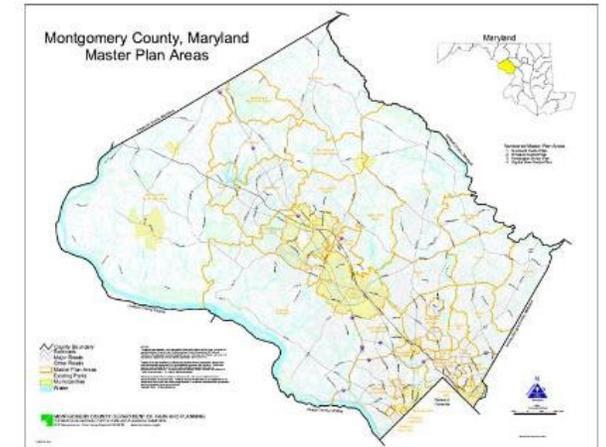
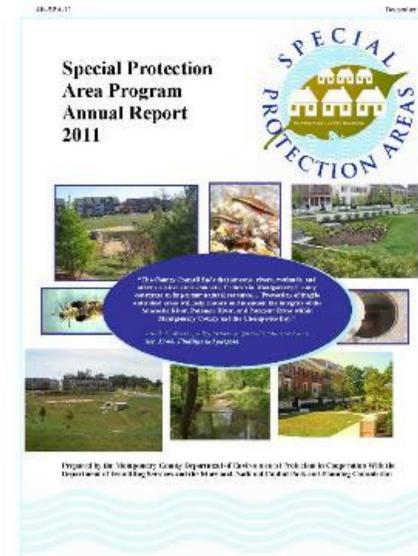
Overview

- Monitoring Overview
 - Biological Monitoring
 - Habitat Monitoring/Geomorphology Monitoring
- Special Protection Area (SPA) Monitoring
- USGS Monitoring
- Stream Restoration Verification & Monitoring



Why We Monitor

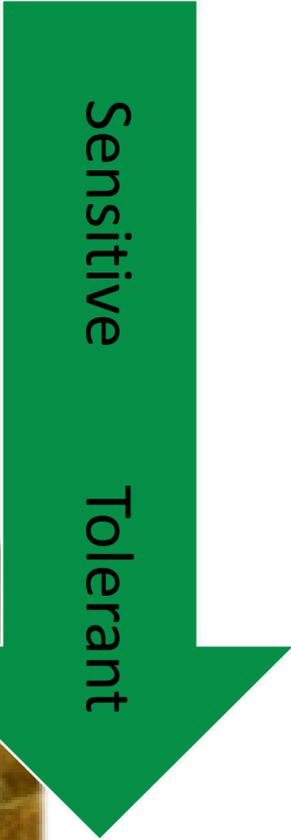
- DEP Programs
 - MS4/NPDES Program
 - Baseline Conditions
 - SPAs
 - Stream Restoration
 - Special Projects
 - Water Quality Incidents



What We Do



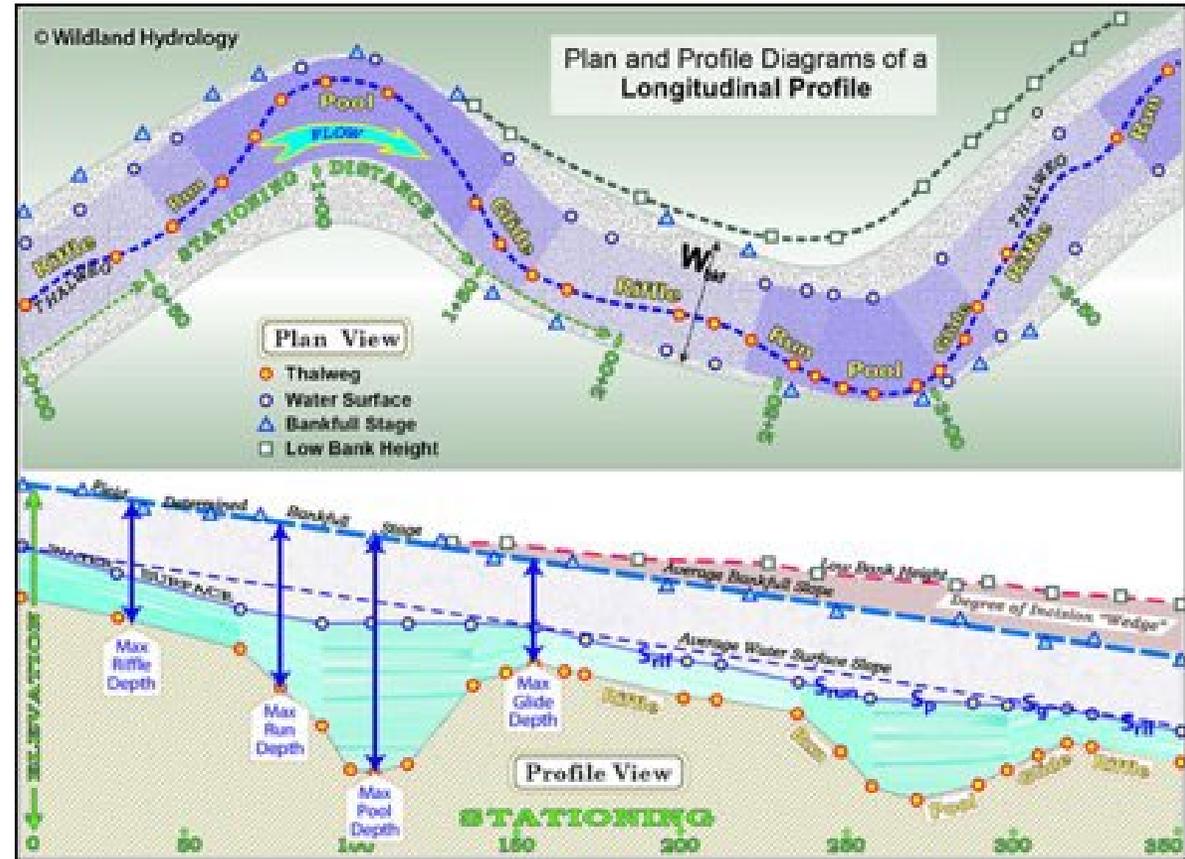
Fish Sampling



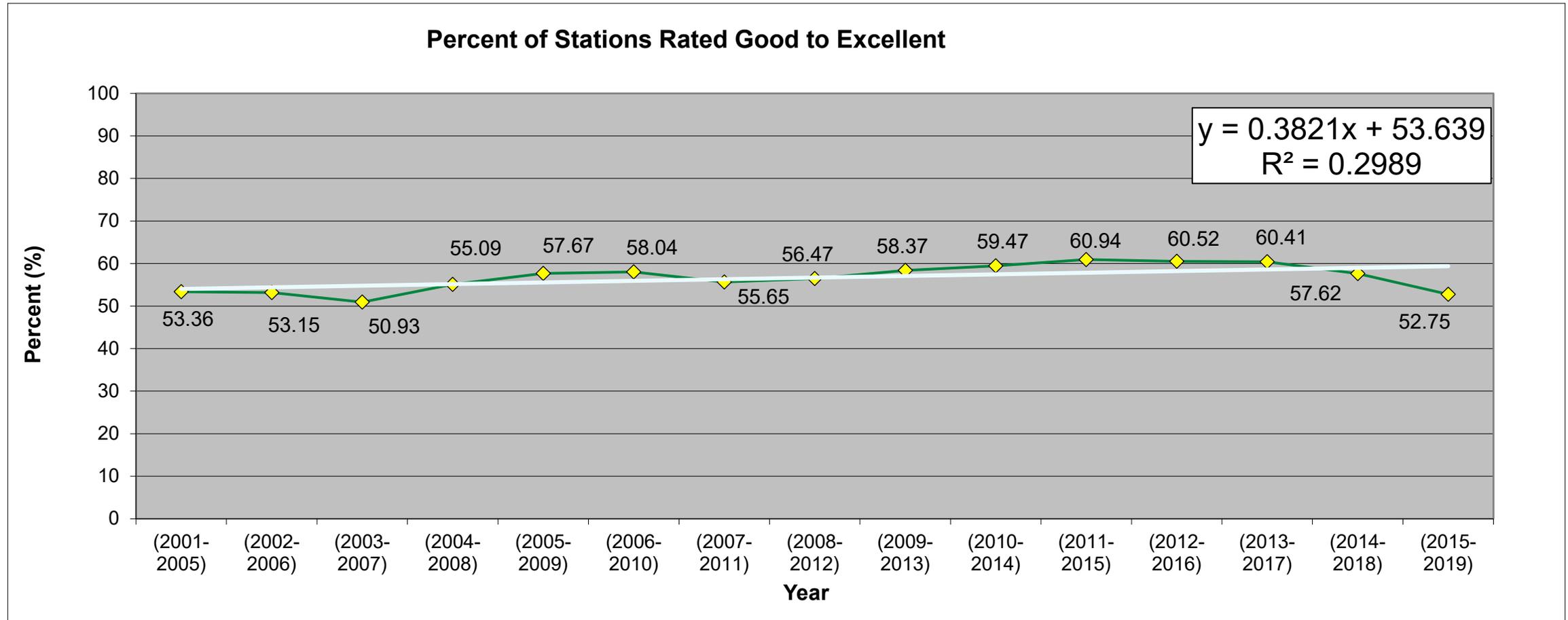
Geomorphology

Fluvial Geomorphology

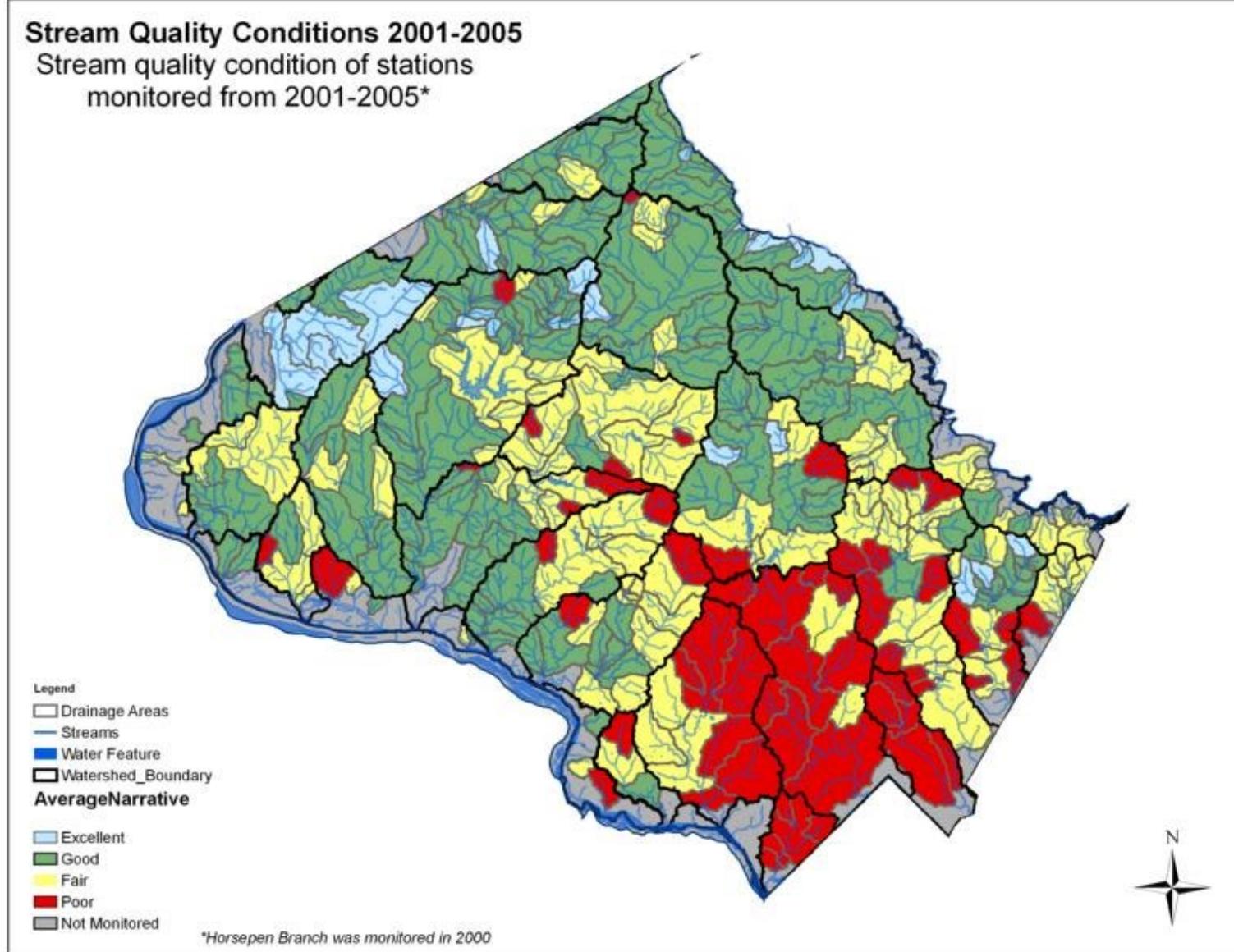
The study of the form and function of **streams** and the interaction between **streams** and the landscape around them.



Stream Conditions Over Time



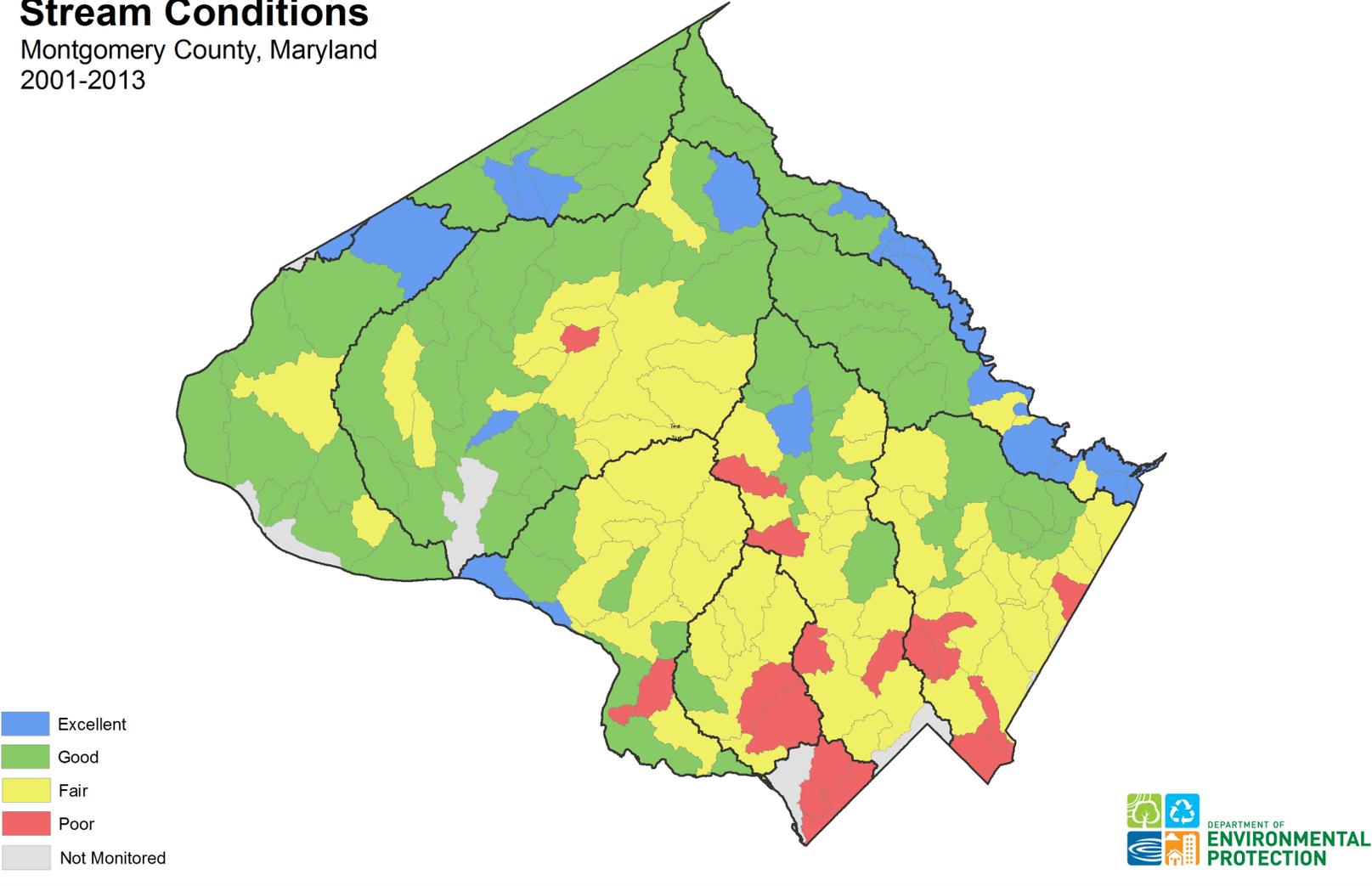
Stream Conditions – Round 2



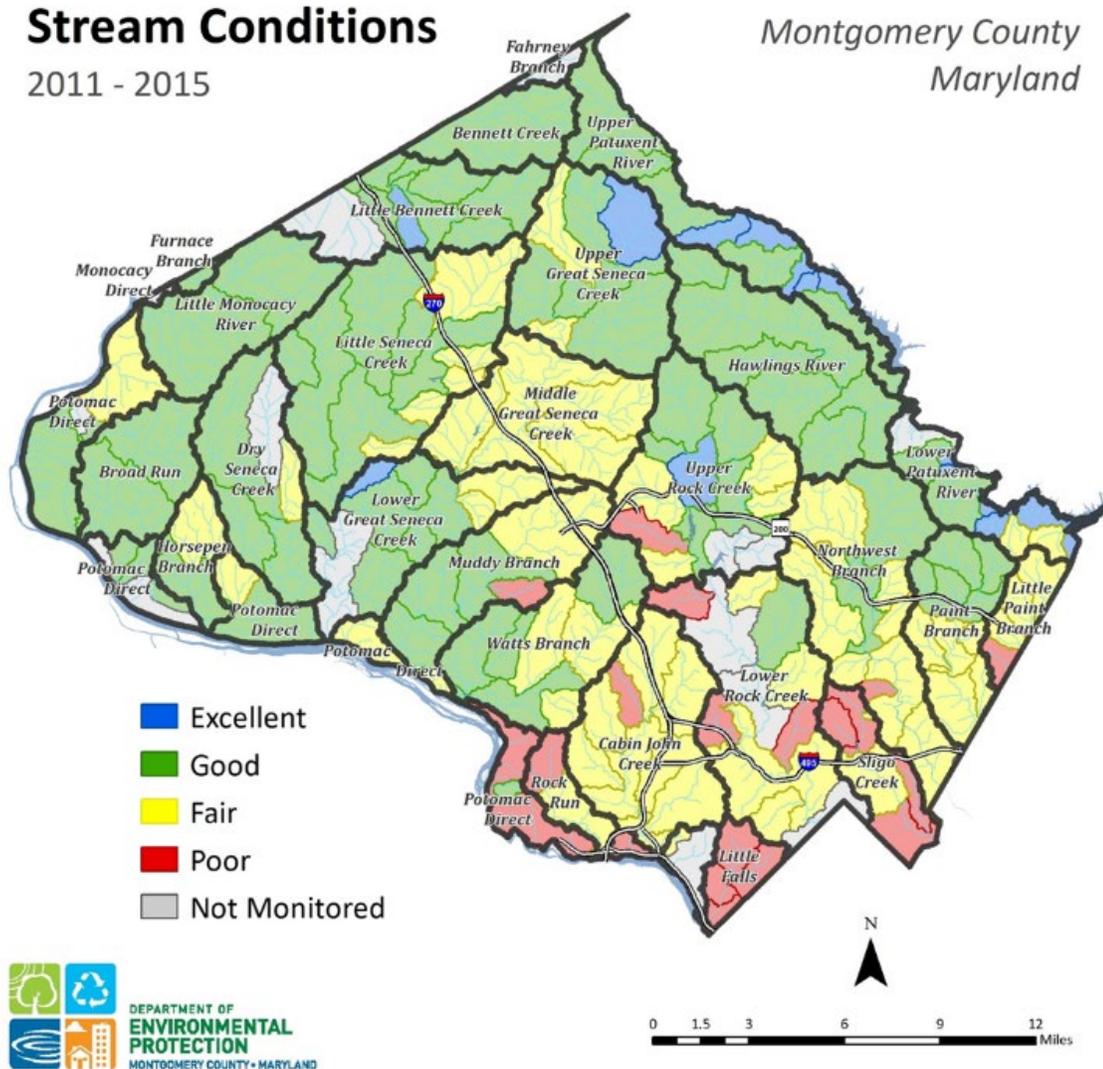
Stream Conditions – Round 3

Stream Conditions

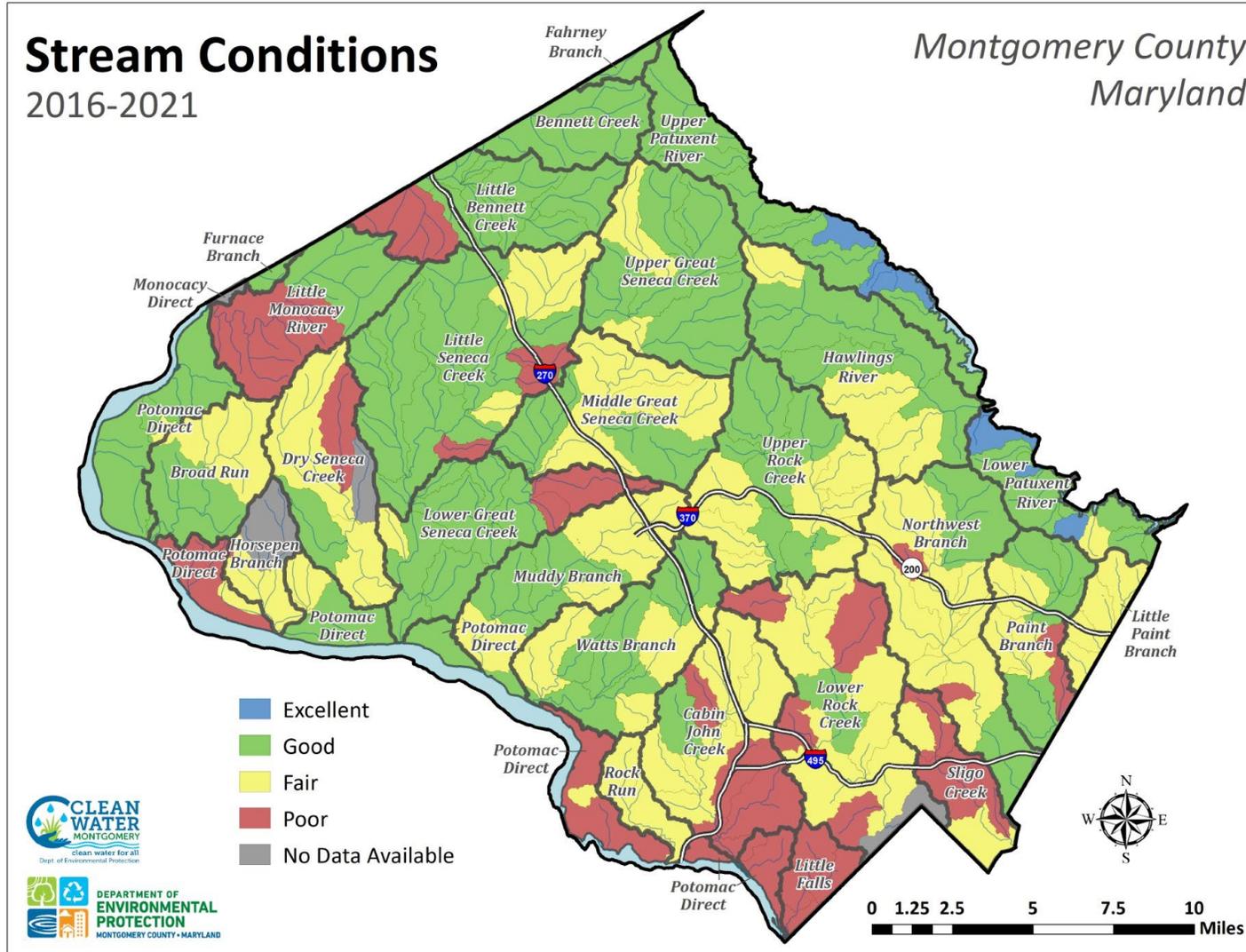
Montgomery County, Maryland
2001-2013



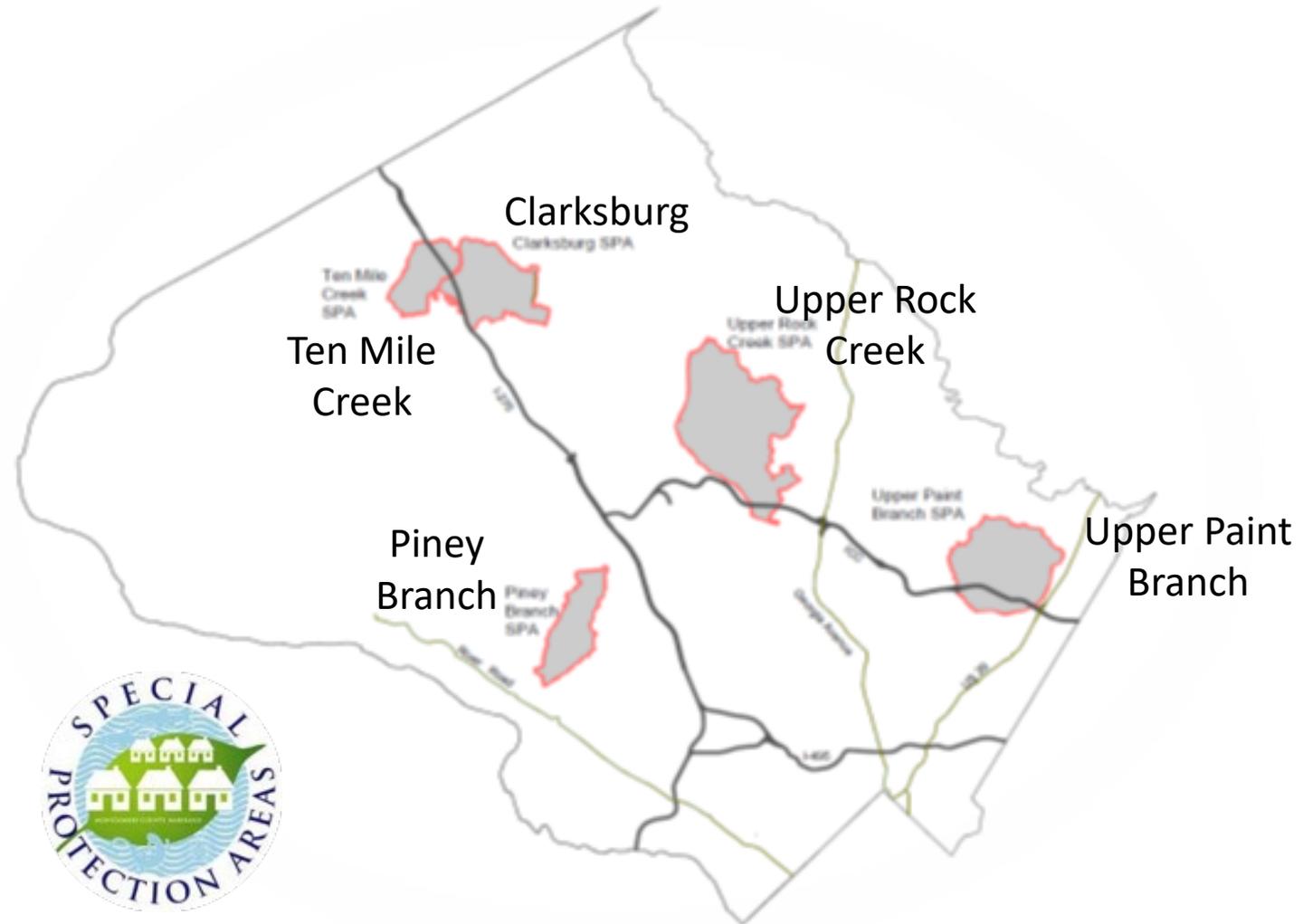
Stream Conditions – Round 4



Stream Conditions – Round 5

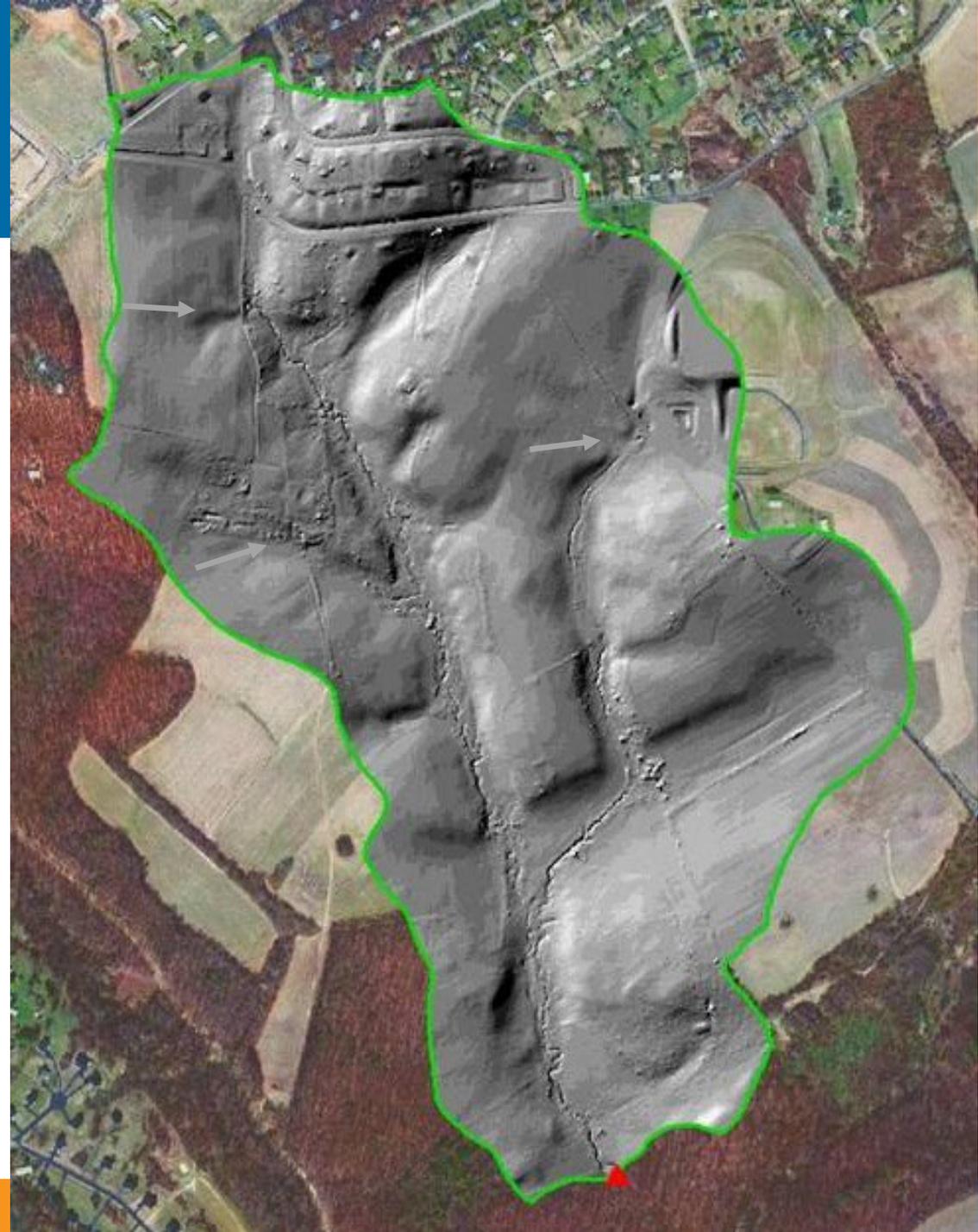


Special Protection Areas (SPAs)



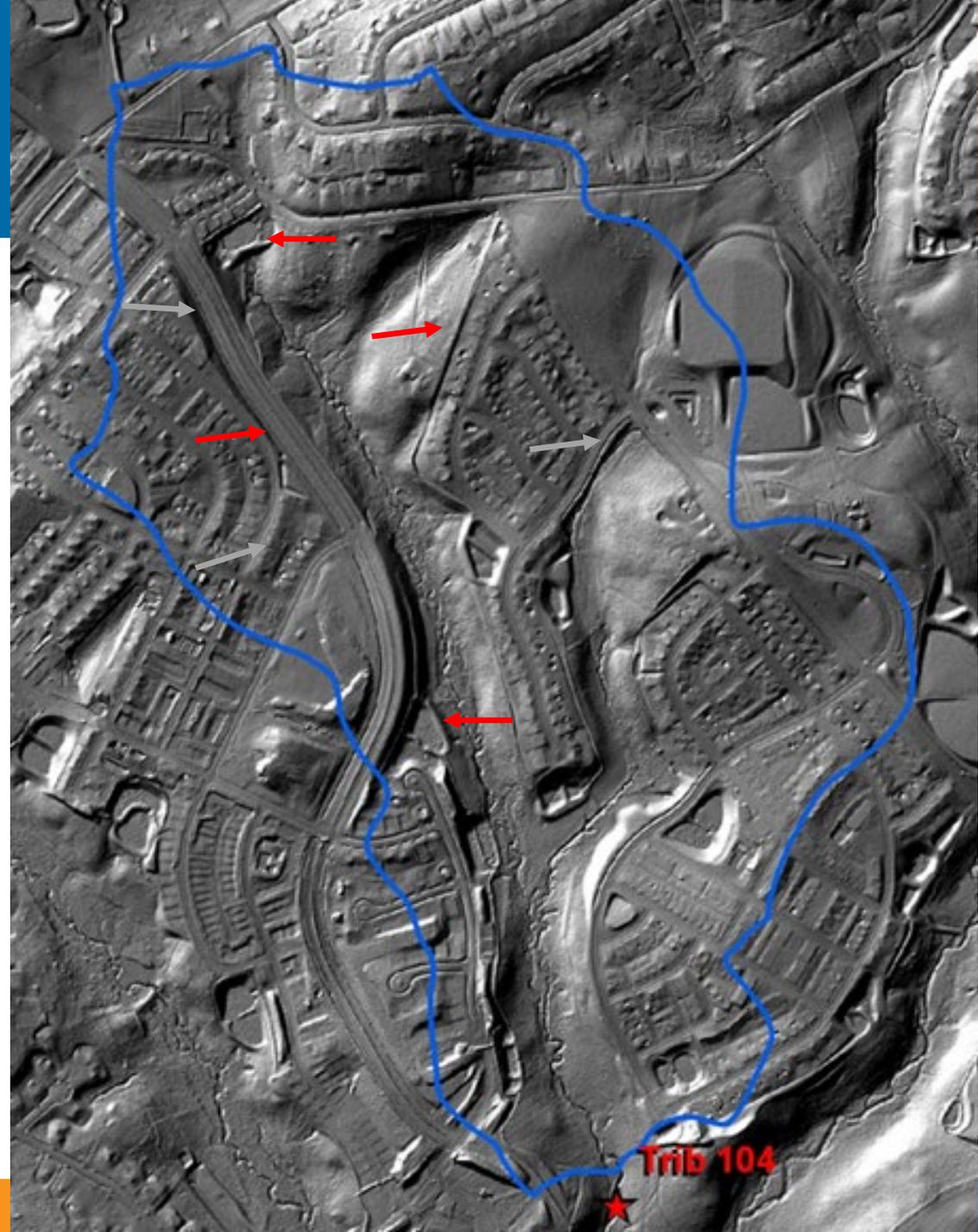
Development and Watersheds

Clarksburg
2002

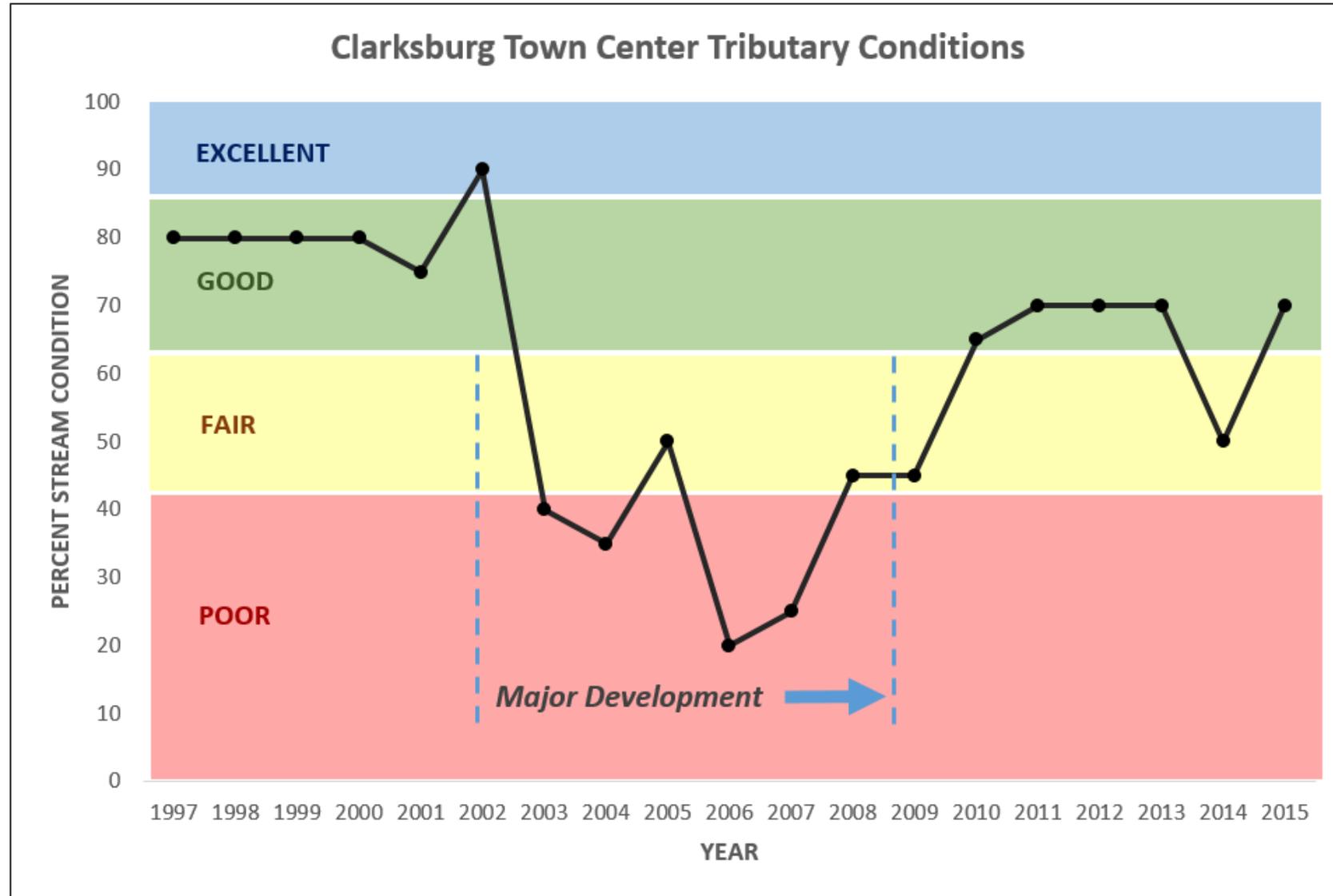


Development and Watersheds

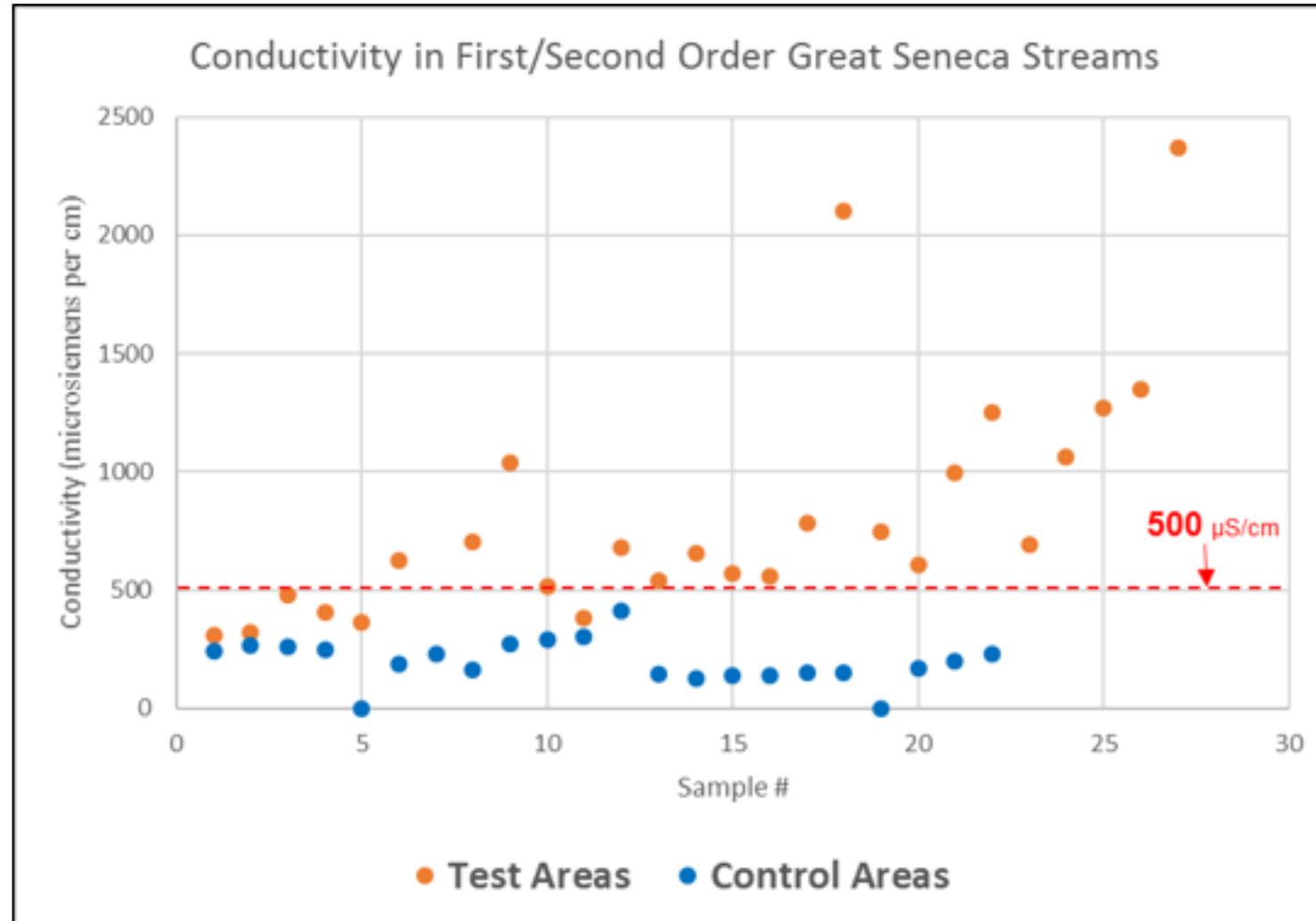
Clarksburg 2007



Clarksburg Stream Conditions Trend

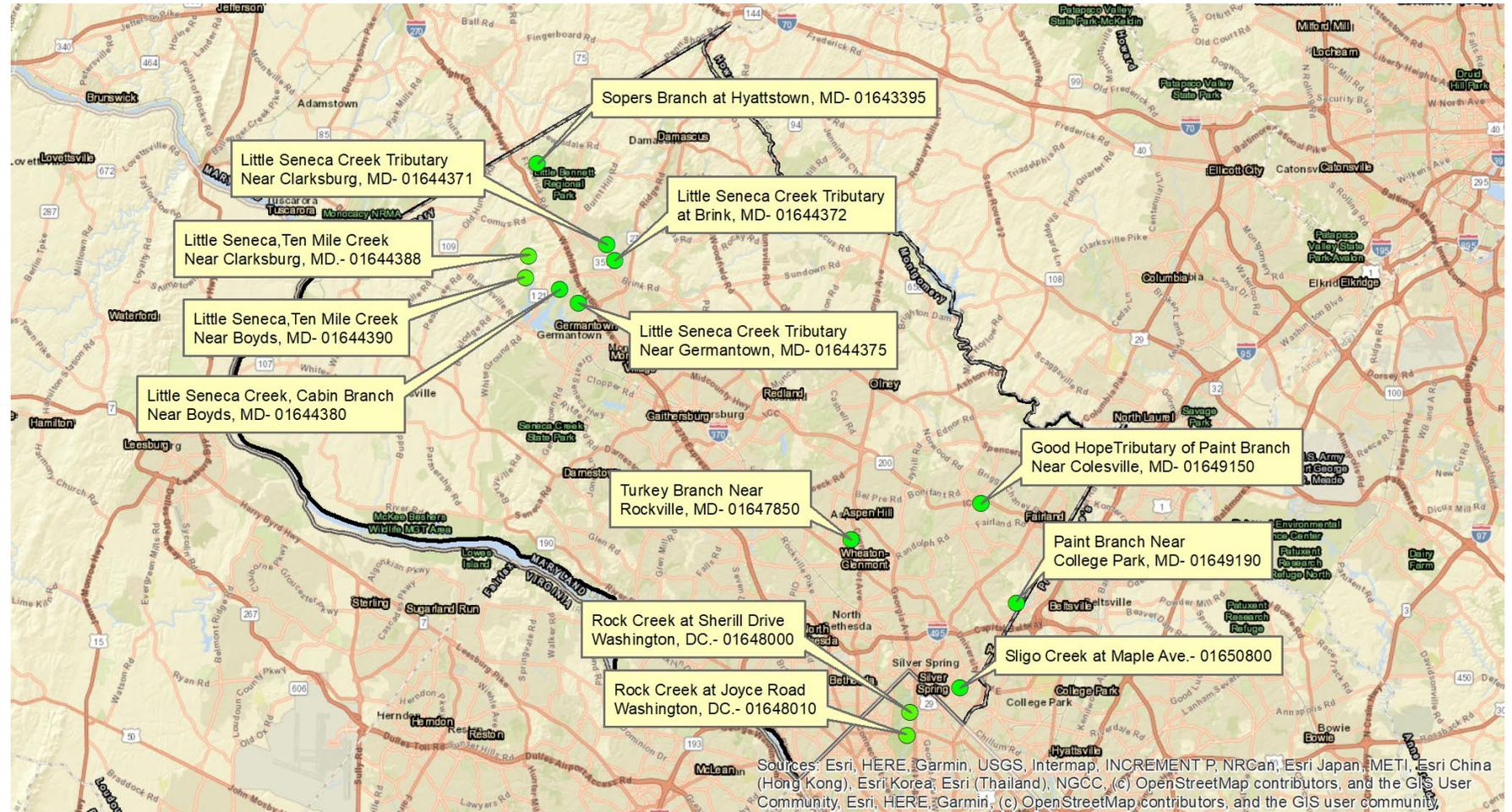


Conductivity and Stream Health

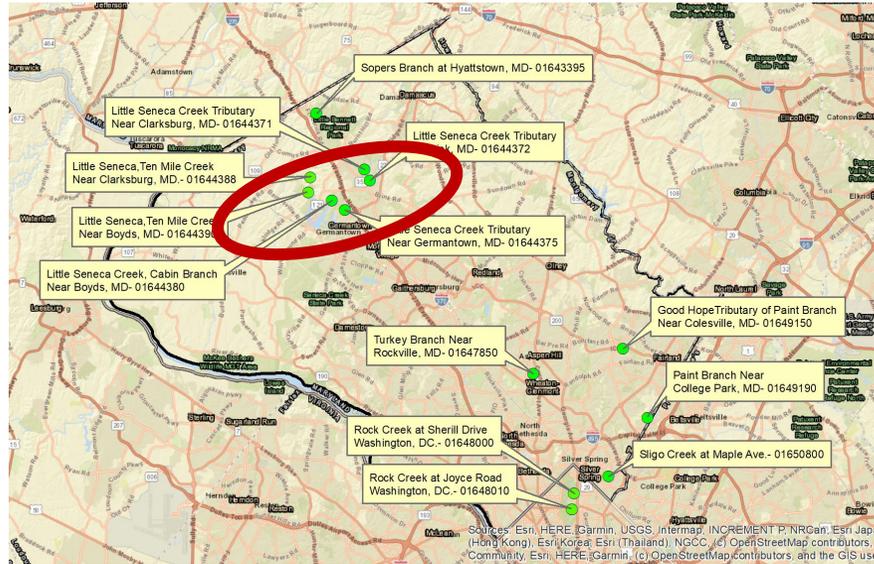


USGS Monitoring

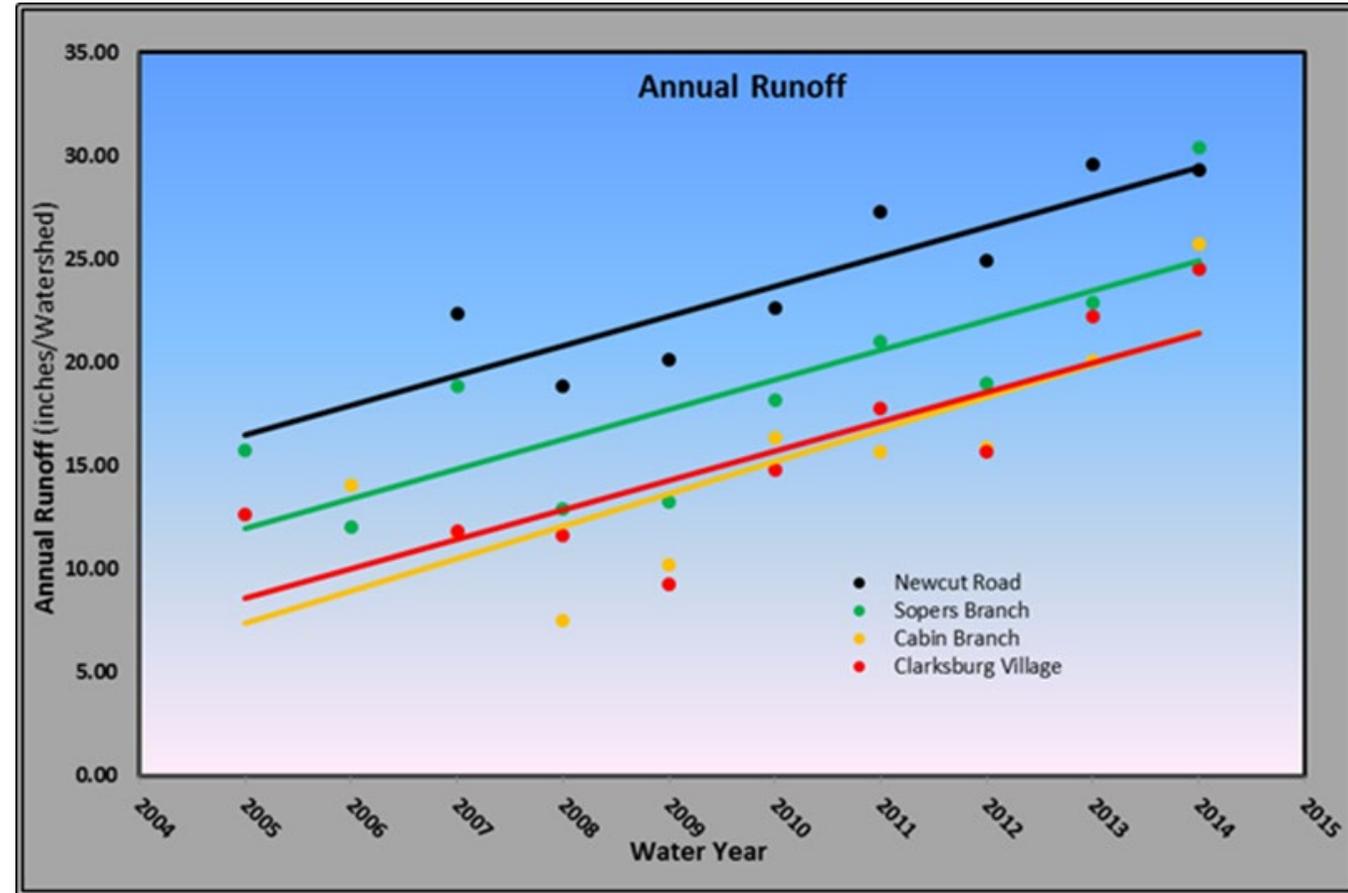
Flow and
select
chemistry
monitoring
around the
county



Stream Discharge



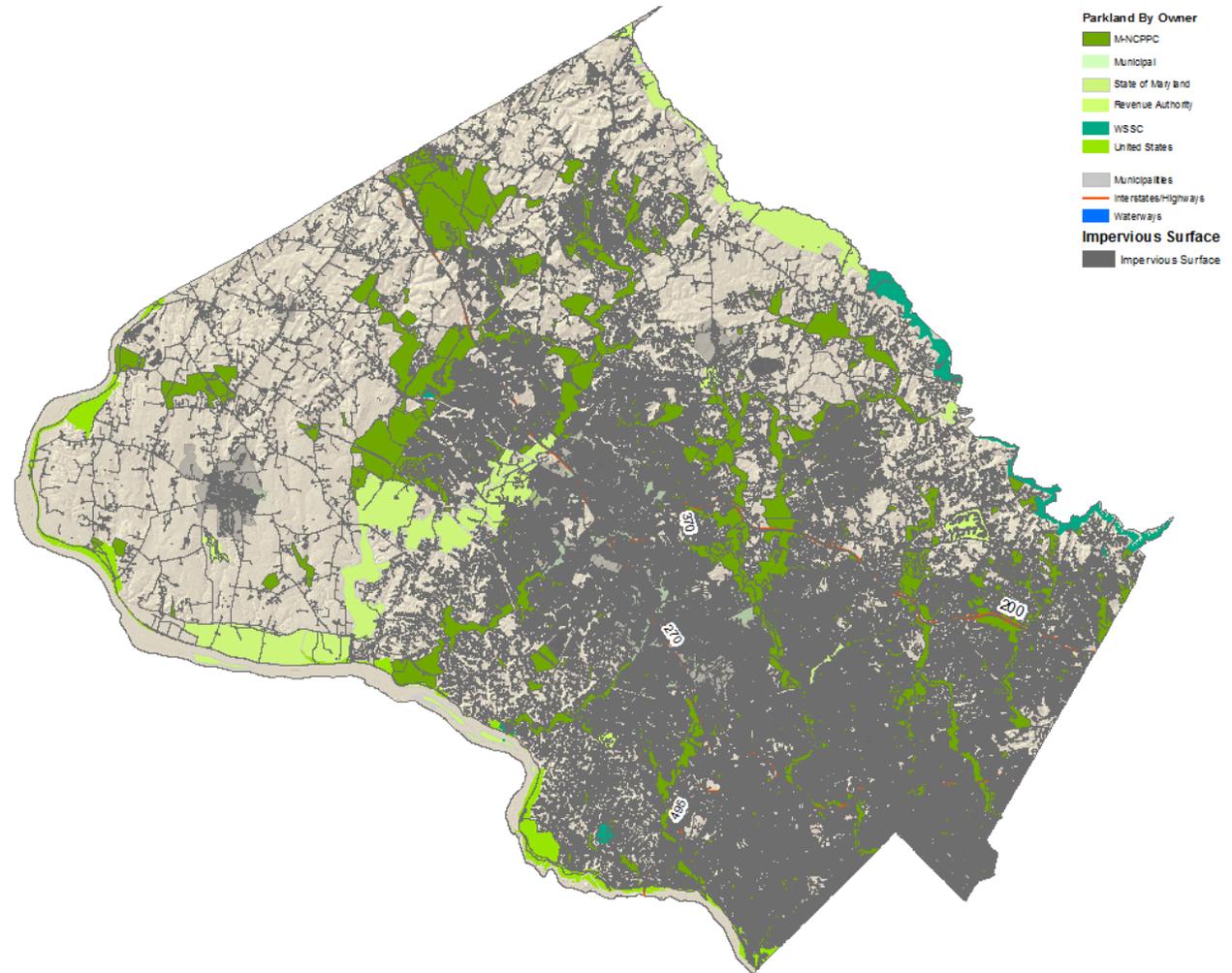
Annual stream discharge is continuing to increase across the northern part of the county



Montgomery County Impervious Cover

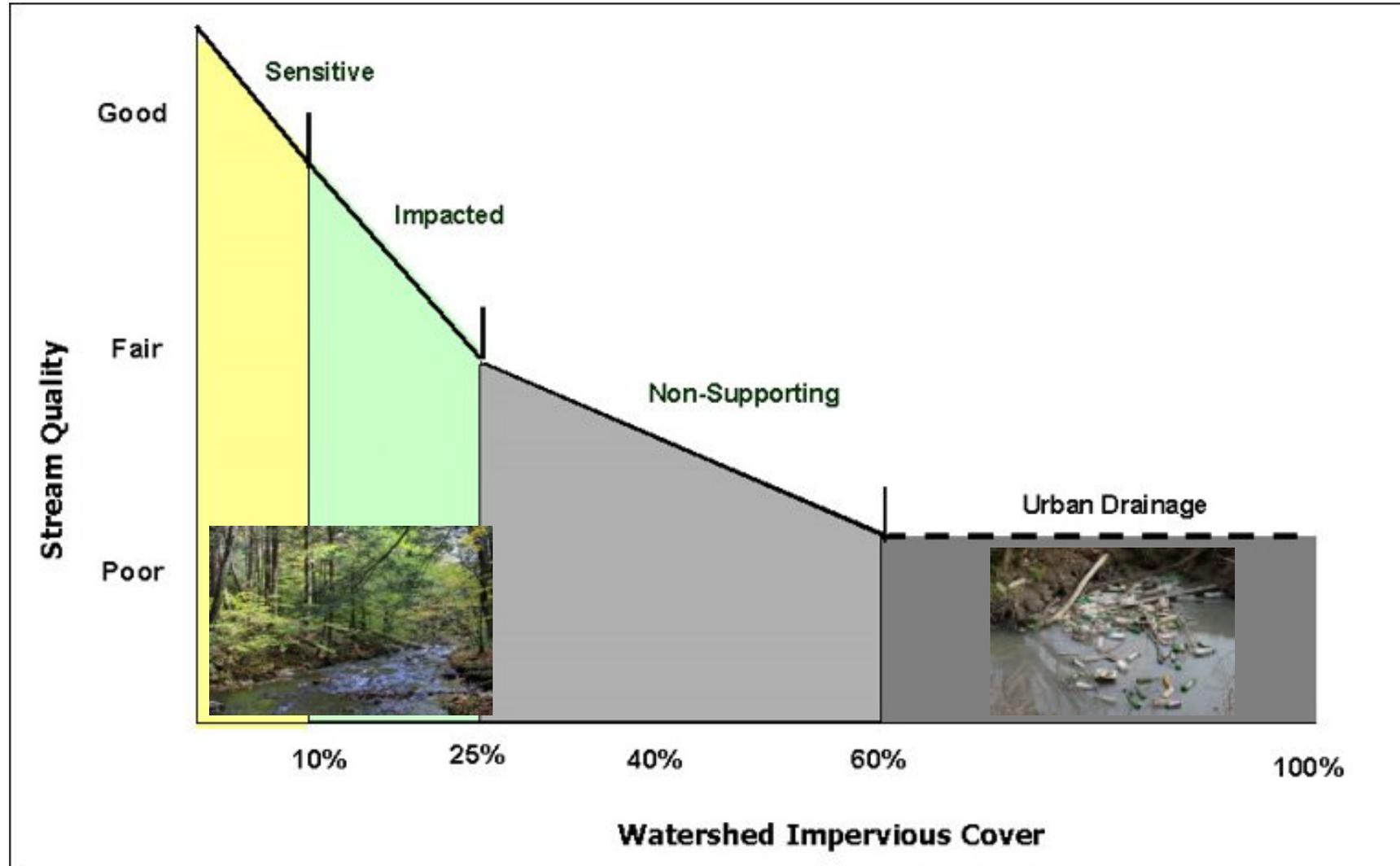
Countywide
Impervious Cover:
12.25%

- Sligo Creek Watershed is 11.1 miles²
- 32.25% Impervious
- 15% Forested



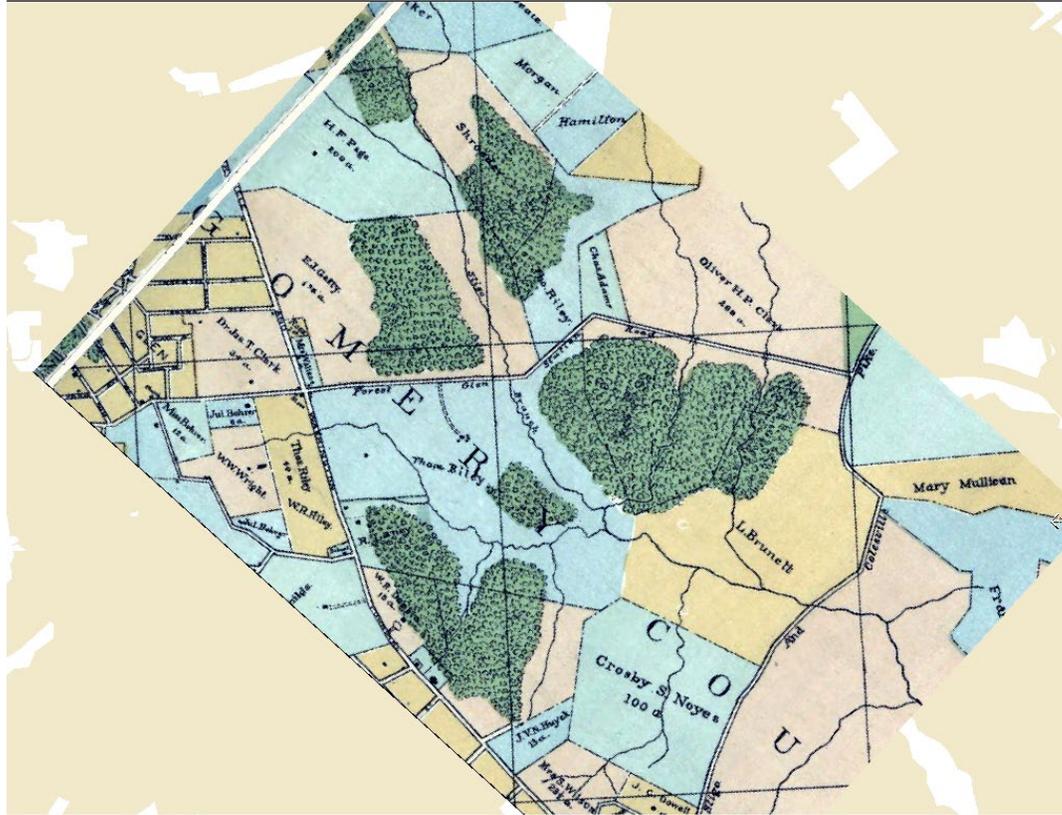
Impervious Cover Model

Impervious Cover

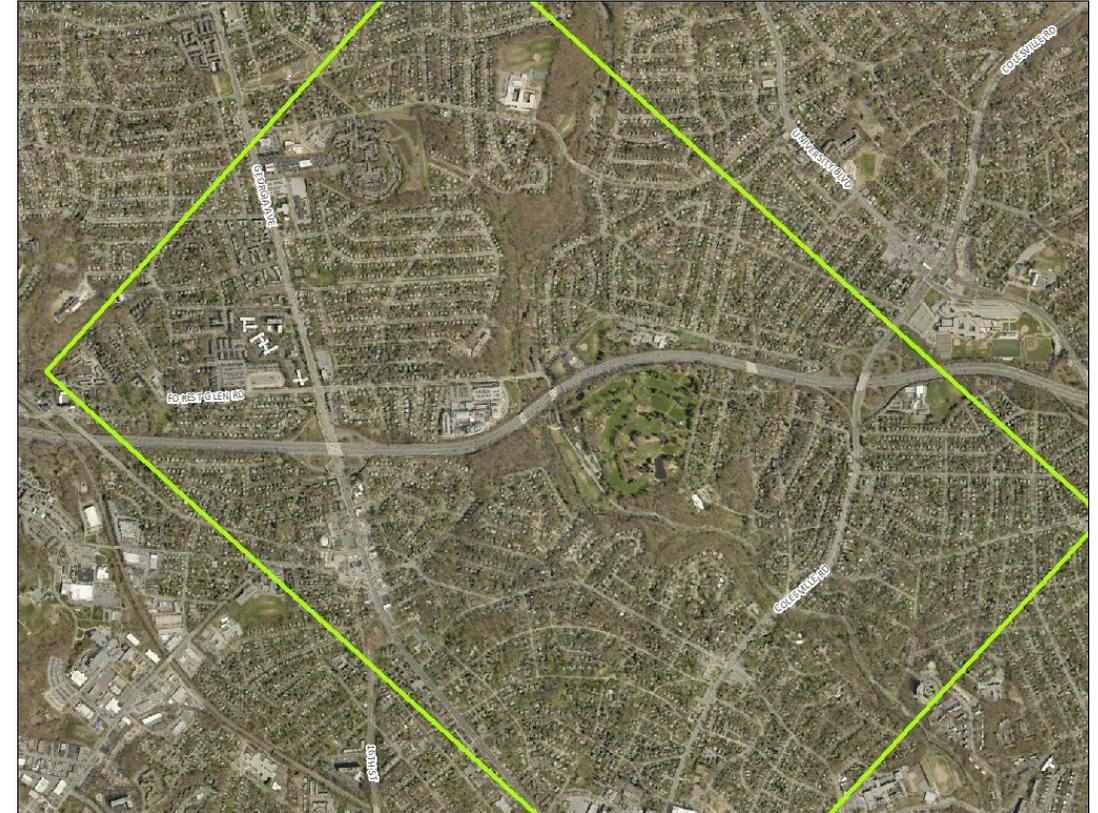


Silver Spring – Then and Now

Impervious Cover



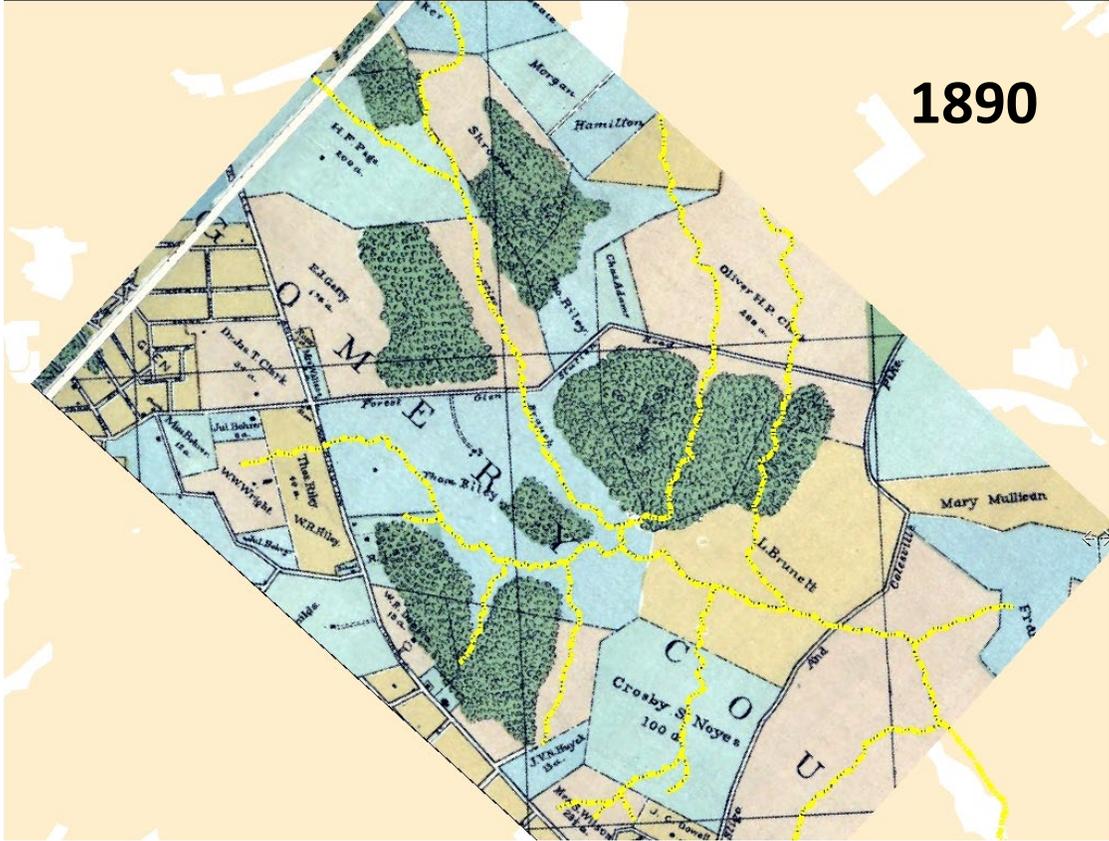
Metro Branch of B&O Railroad Real Estate Map, 1890



Montgomery County Aerial, 2015

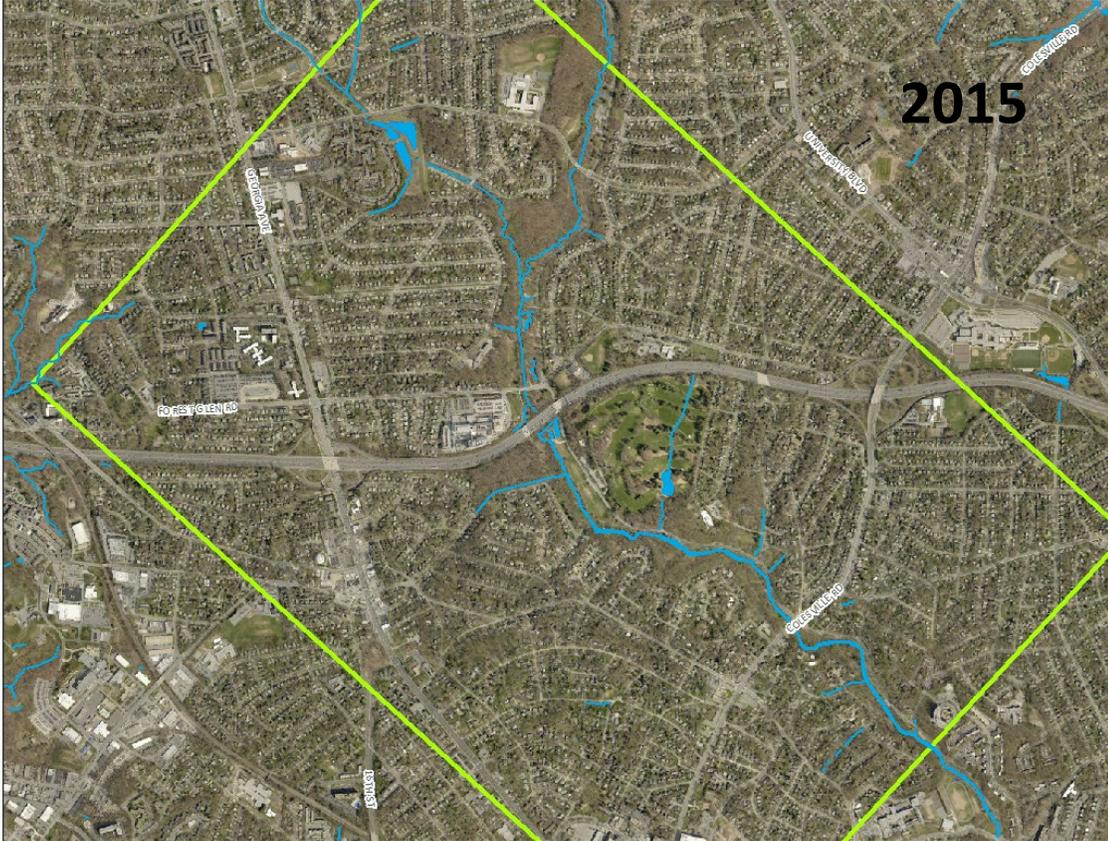
Sligo Creek – Then and Now

Impervious Cover



1890

55,467 Linear Feet of Stream



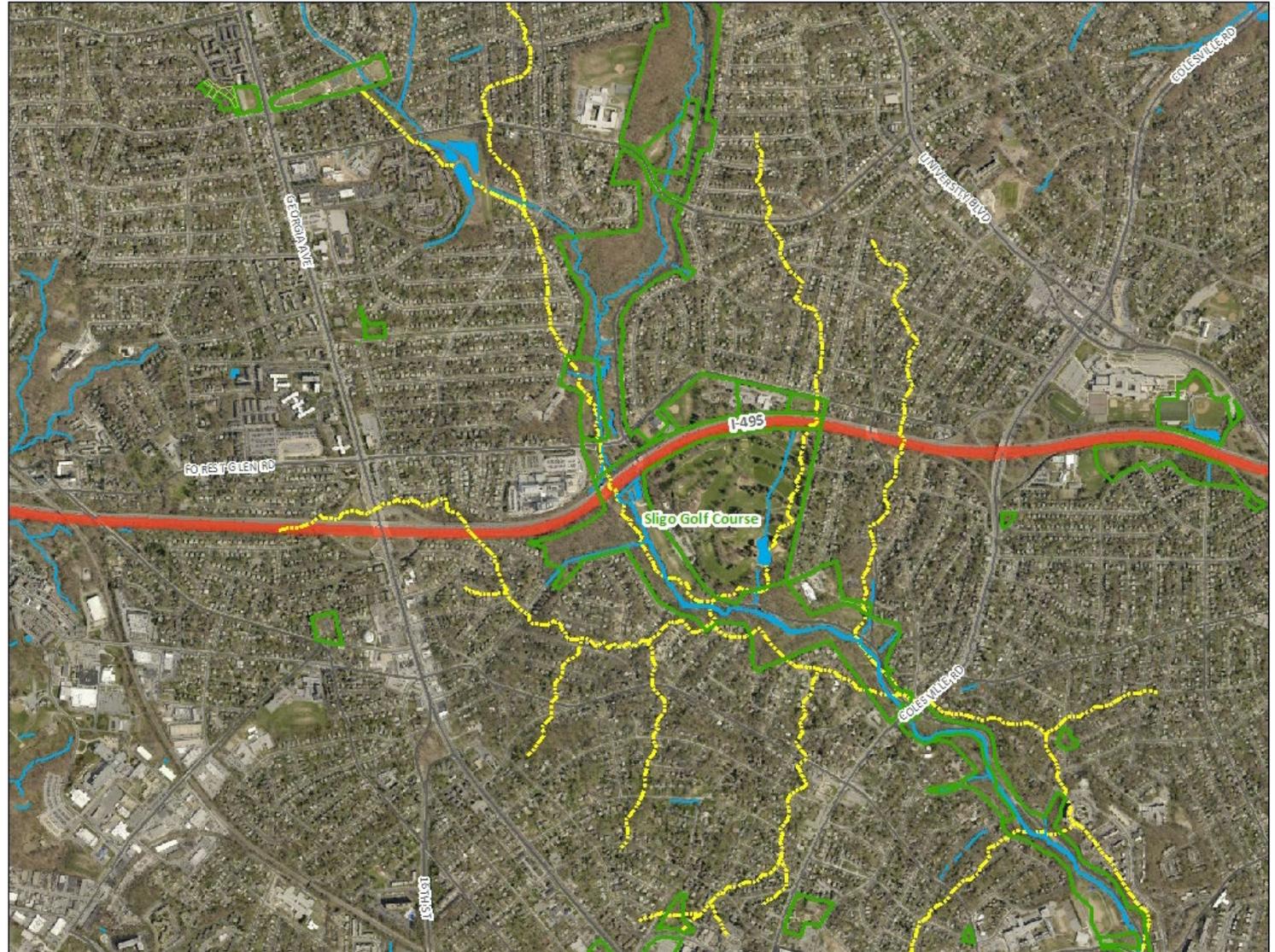
2015

14,425 Linear Feet of Stream

Sligo Creek – Then and Now

Stream Length of Sligo Creek is 26% of what it was 125 years ago:

- Increased length of piped stream
- Impaired groundwater table and infiltration
- Increased impervious surface runoff
- Loss of stream habitat
- Loss of aquatic life

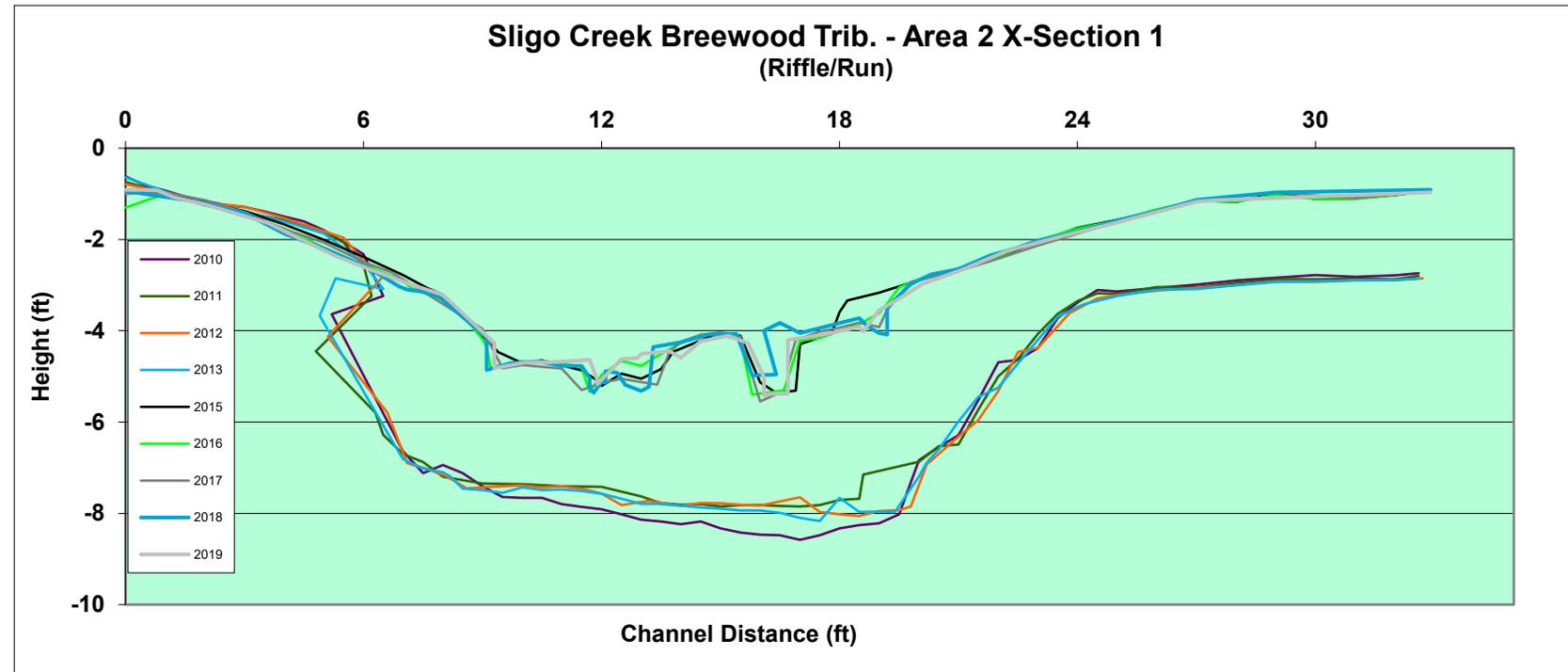


Stream Restoration Verification

- Geomorphology
 - Long Pro
 - Cross Sections
- Reforestation
- Wetlands
- Photos



Geomorphology



Stream Restoration Monitoring

- Temperature monitoring (Grovesnor Trib)
- Storm water pond monitoring (Williamsburg Run)



Thank you!

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Watershed Restoration Division

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