

Montgomery County Planning Department
M-NCPPC
MontgomeryPlanning.org



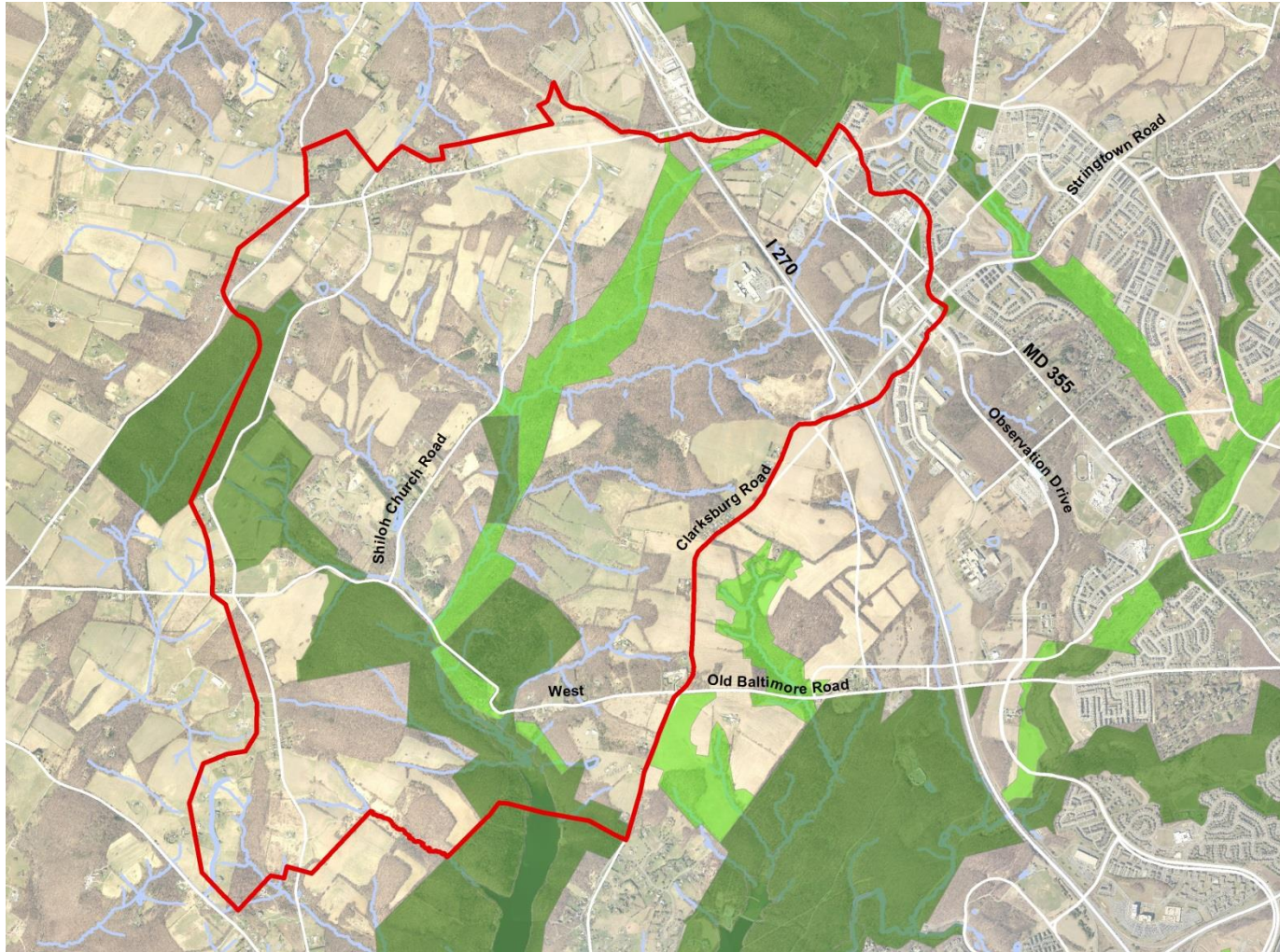
Clarksburg Limited Master Plan
Presentation to the
Joint County Council Committee Meeting
January 17, 2014

Schedule

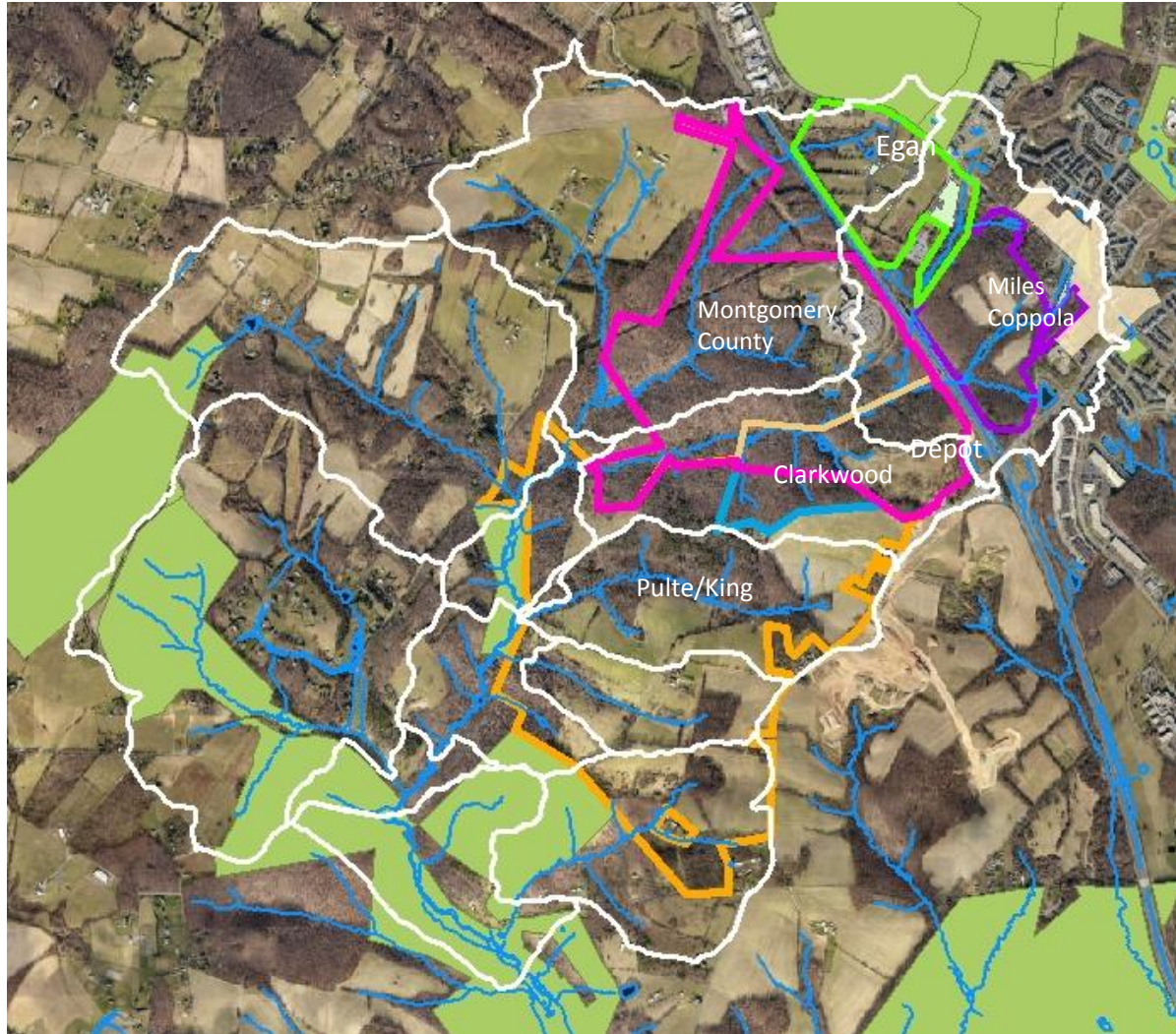
- Worksession 1 January 13, 2013
- Worksession 2 January 17, 2013
 - Planning Staff background on master plan protection of sensitive watersheds
 - Agency experts on water quality, imperviousness and groundwater
- Worksession 3 January 21, 2013
 - Reservoir protection
 - Water and Sewer service
- Worksession 4 January 24, 2013
 - Economic Analysis
 - Land Use Options
 - Transportation Analysis
- Worksession 5 January 29, 2013
 - Land Use and Zoning Recommendations



Orientation



Properties Analyzed



Sub Watersheds



Environmental Analysis Conclusions

Measures Needed to Reduce Impacts to Ten Mile Creek

- Minimize disturbance of natural resources
- Reduce development in high quality, sensitive subwatersheds
 - Reduce impacts to upland forested areas and steep slopes.
 - Preserve existing conditions in high quality headwater subwatersheds LSTM110 (King Spring) and LSTM111
 - In LSTM 202, reduce the extent of development on County-owned property to retain existing forest
- If development occurs in LSTM110 and LSTM111, apply reduced limits of disturbance
- Focus and prioritize development within subwatersheds already impacted
- Establish buffers around ephemeral streams not currently regulated



Environmental Analysis Conclusions

Measures Needed to Reduce Impacts to Ten Mile Creek

- Minimize impacts to natural resources associated with new infrastructure (MD 355 Bypass and sanitary sewer extension)
- Employ site planning techniques as the first measure of Environmental Site Design
 - prioritize preservation and protection of natural resources
 - conserve natural drainage patterns
 - minimize impervious areas
 - cluster of development
 - limit soil disturbance, mass grading and compaction
- Design outfalls to reduce impacts associated with large flows



Development of Land Use Recommendations

- Further reductions in potential imperviousness required significant changes to the plan's visions
- Focused on reducing the footprint in key subwatersheds
- Used an imperviousness cap east of I-270 to limit the impact of the CR and R200 zones
- Used the RNC zone west of I-270 to achieve more clustering and a larger amount of protected open space, while maintaining the potential for single family housing resource
- Limited imperviousness further on County properties
- Prepared a series of environmental recommendations to supplement the Special Protection Area requirements



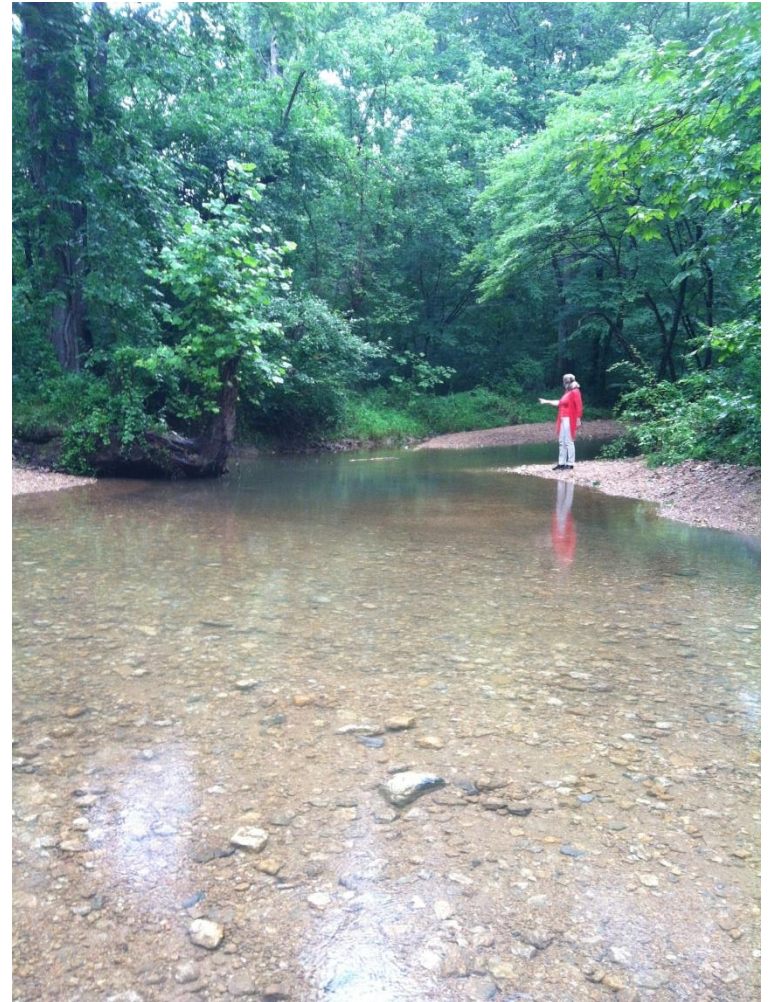
Rationale for Recommendations

- East Side of I-270
 - 1994 Master Plan Vision for Town Center, knowing the sensitivity of environmental resources in Ten Mile Creek
 - Stream conditions in LSTM206
 - Need for Bypass and associated grading
 - Likelihood that any development would require significant grading
 - Potential for sewer service to help the Historic District
- West Side of I-270
 - 1994 Master Plan vision for single-family housing and stream protection
 - Much more sensitive stream conditions
 - Presence of high quality headwater tributaries
 - Lowest density zone that gives guarantee of open space, reduced roadway, sewer service and flexibility of lot sizes to accommodate conditions



Environmental Recommendations

- Retain the Special Protection Area for the Stage 4 area of Ten Mile Creek
- Require at least 175-foot wide buffers on both sides of streams
- Maintain 50 feet buffer for “zero order” or ephemeral streams
- All off-site forest planting required for development in Ten Mile Creek should occur within the Ten Mile Creek watershed as a first priority.
- Provide stormwater retrofits for any expansion or modification of I-270
- Establish a forest banking program for extra credit



Environmental Recommendations

- Environmental Site Design (ESD)
 - As a first step, apply appropriate ESD site planning techniques within proposed development areas to maximize environmental benefits



Environmental Recommendations

- SPA Water Quality Plans already require:
 - Avoiding overflow discharges onto steep slopes
 - Managing discharges from stormwater outfalls
 - Minimizing environmental buffer impacts
 - Minimizing disturbance of forested areas
- We would add requirements to:
 - Minimize direct impacts associated with new infrastructure
 - Minimize grading
 - De-compact and amend soils beyond current requirements

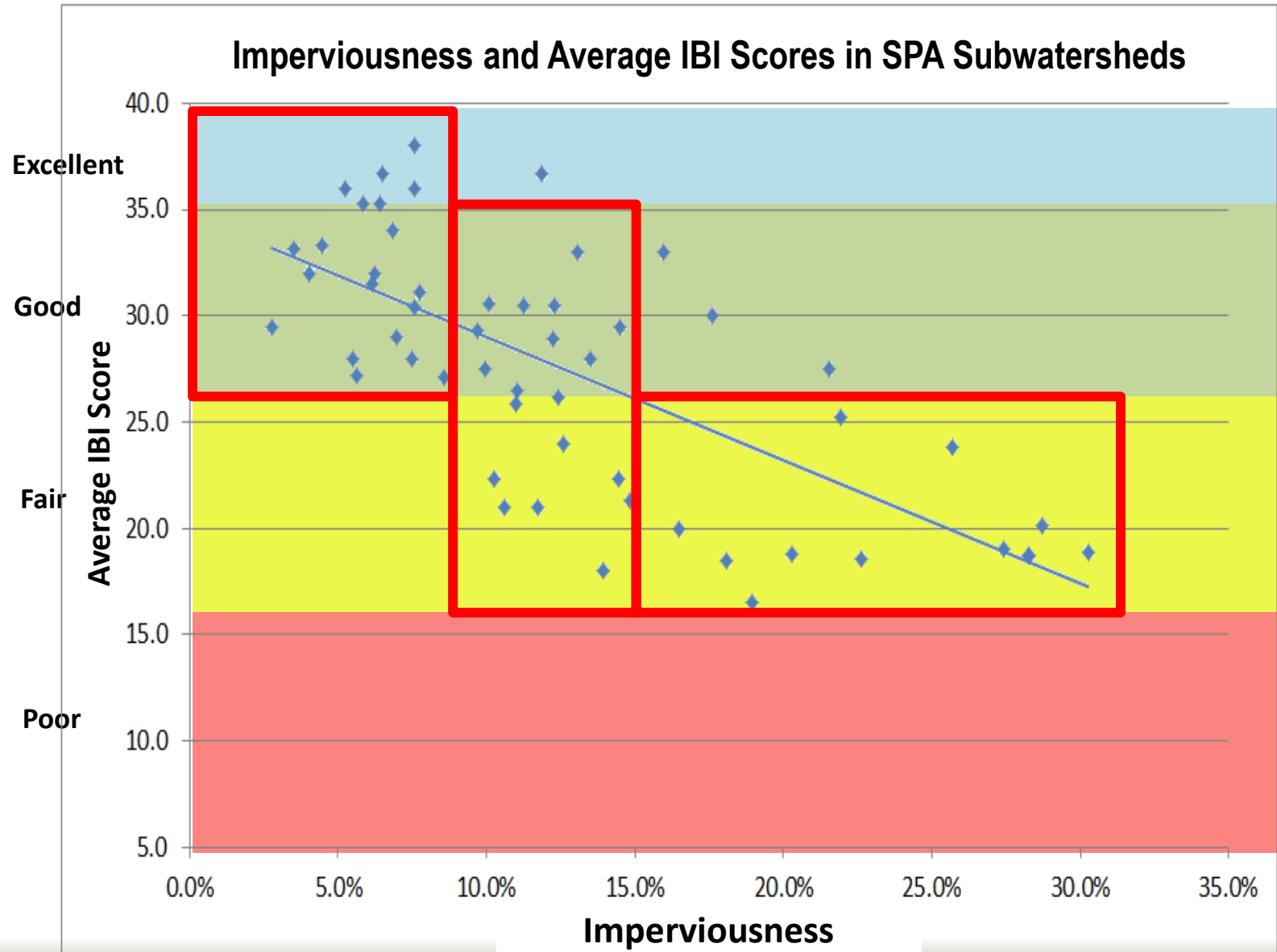


Environmental Recommendations

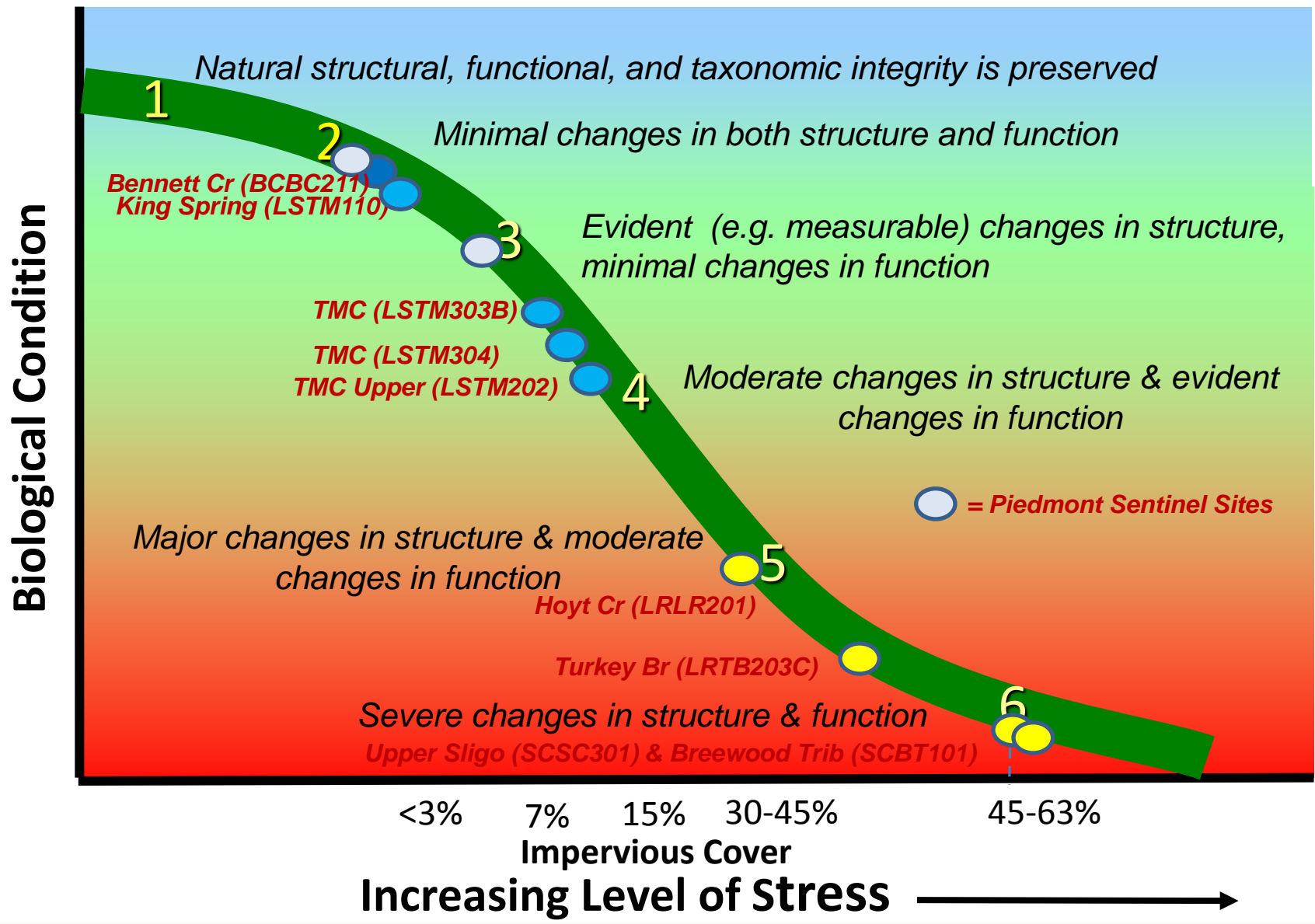
New development should

- Cluster development with smaller building footprints on smaller lots with shorter driveways
- Place houses near the front of a building envelope, and provide shared driveways
- Design narrower streets with limited sidewalks
- Preserve land with a high infiltration capacity to be used for storm water infiltration or natural recharge area
- Restore streams and wetlands adversely affected by existing uses

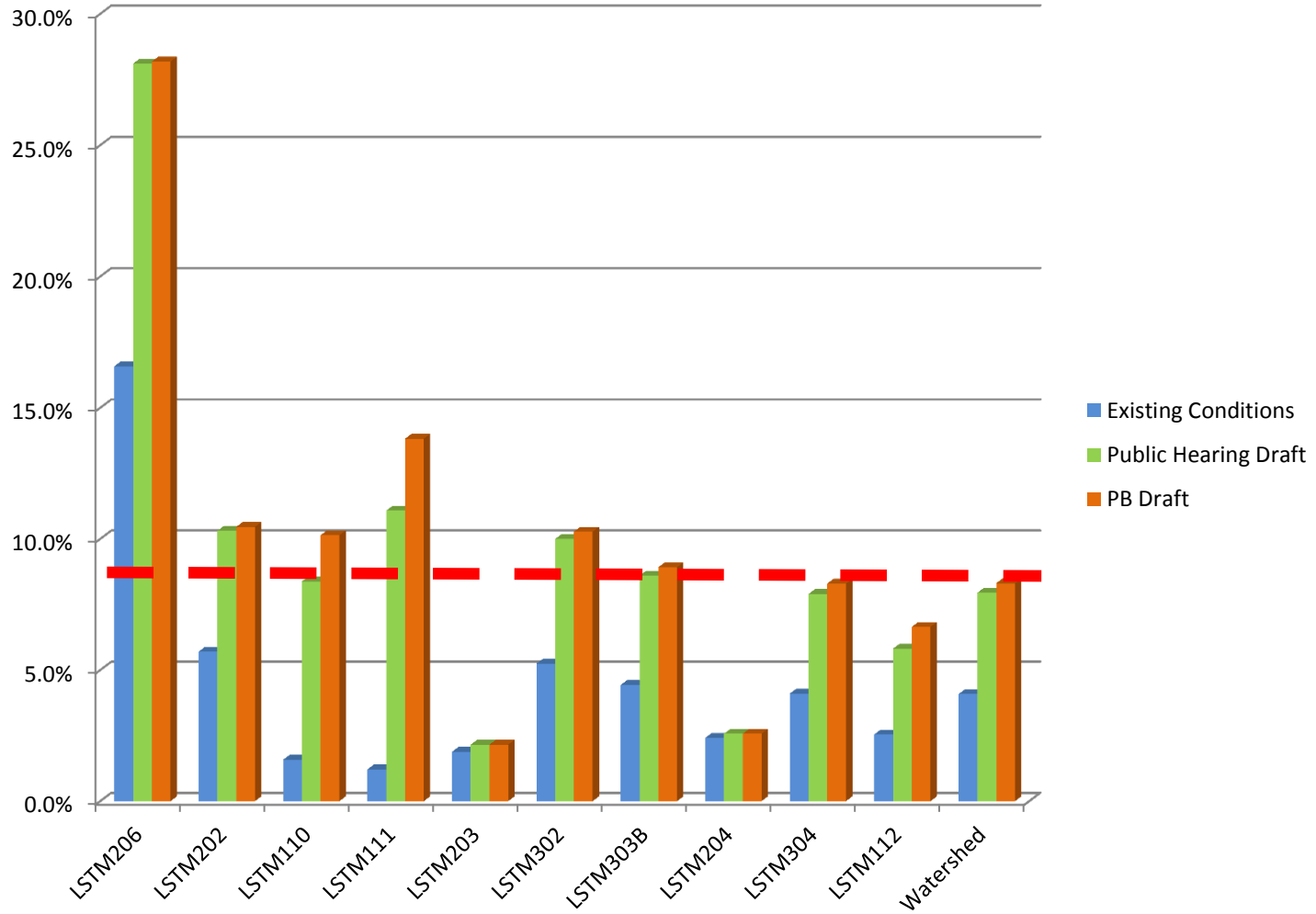




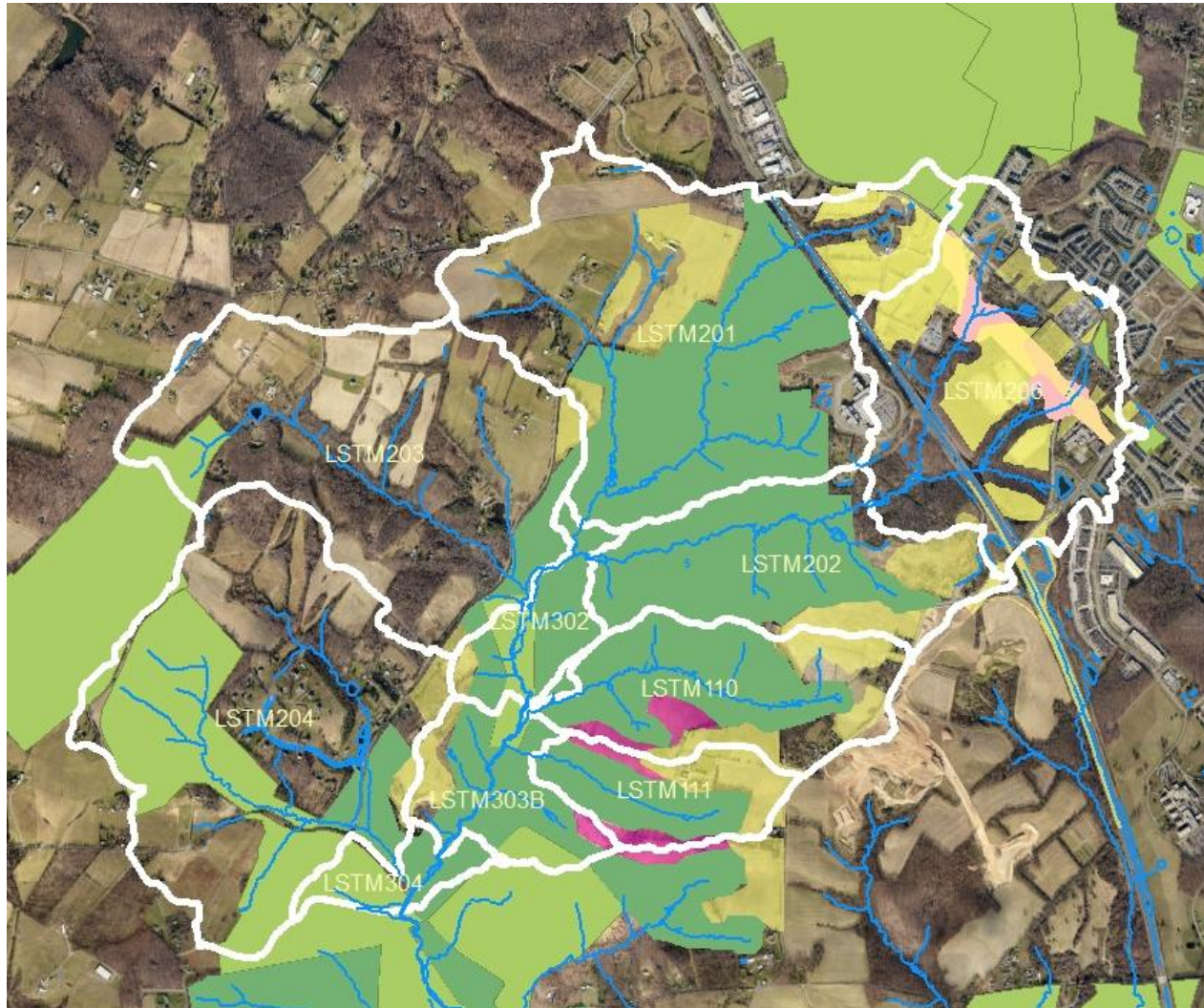
Biological Condition Gradient: Benthic Macroinvertebrates



Impervious Percent by Subwatershed



Differences in Limits of Disturbance



Setting Differing Levels of Density and Imperviousness

- Principles of land use planning are based on organizing particular ranges of uses and intensities in a way that promotes community well being, efficient transportation and proximity to important commercial and civic functions
- Special Protection Area standards and imperviousness limits are placed on uses that have a wide range of permitted intensities that may exceed the maximum level of imperviousness considered appropriate to maintain stream health.
- Different levels have been placed on different properties to achieve an overall watershed level of imperviousness

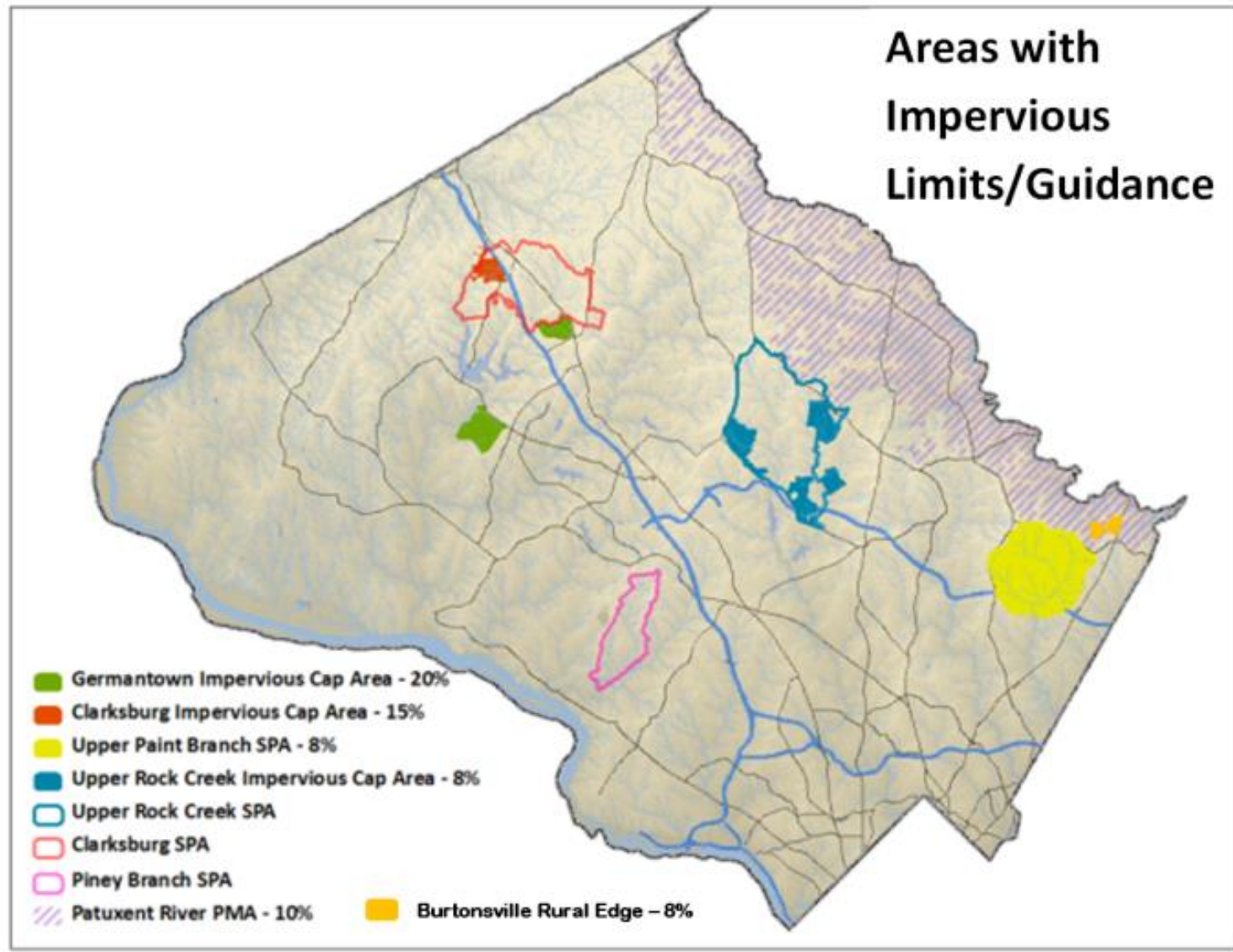


Setting Differing Levels of Density and Imperviousness

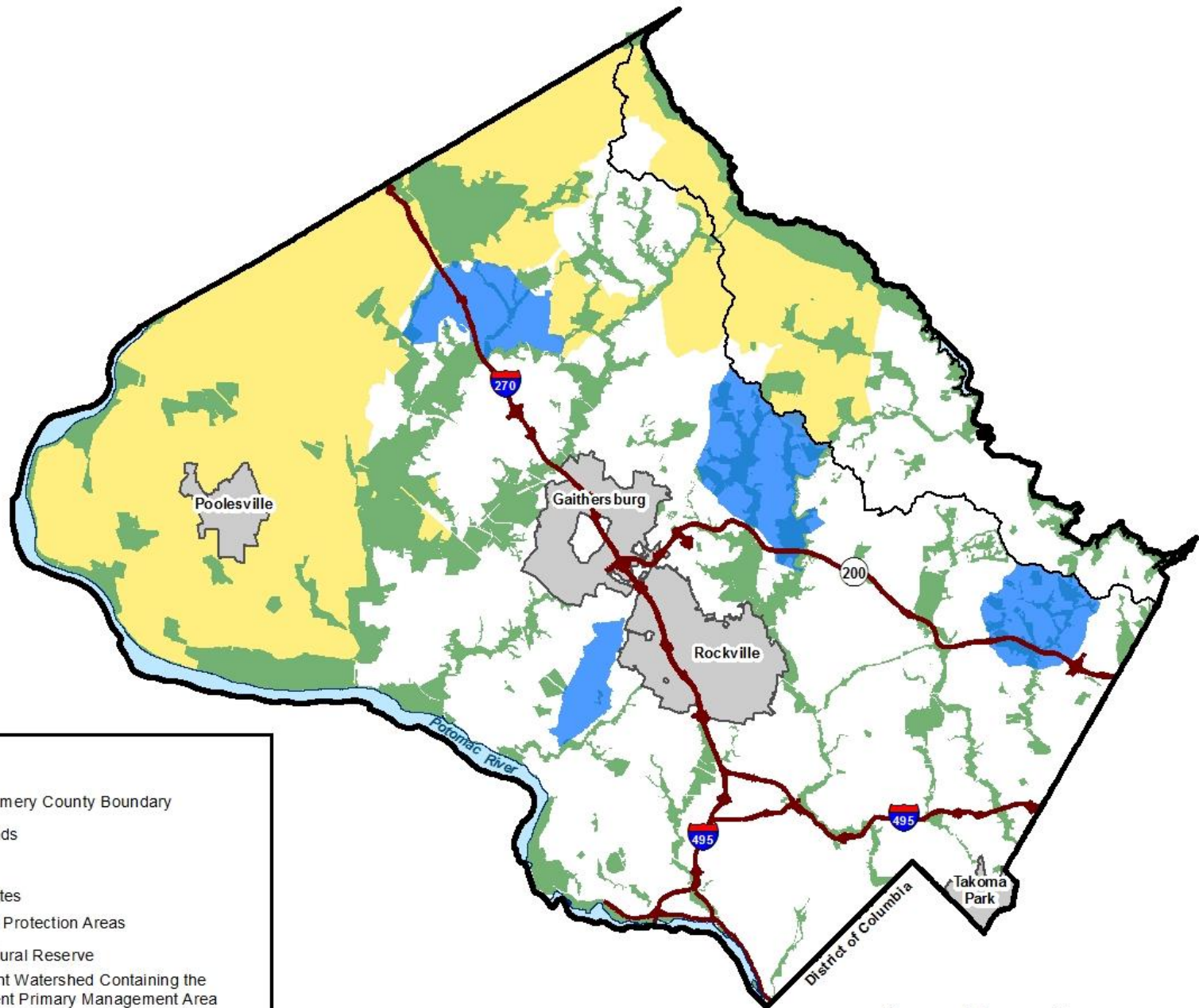
- Clarksburg employment uses in TMC per 1994 Master Plan (15%)
- Upper Rock Creek (8%)
 - Industrially- zoned properties and properties developed without sewer service are exempt from limits
 - Public uses must only minimize imperviousness
- Patuxent Primary Management Area (10%)
 - Environmental Guidelines recognize that imperviousness limits do not apply to properties that have existing zoning densities greater than RE-2
 - Council has applied an 8% cap in RC zone to limit imperviousness from non-residential uses where specified by a master plan
- Upper Paint Branch (8%), Upper Rock Creek and Patuxent
 - Imperviousness reserves (adjacent properties can be joined to reduce overall imperviousness if conservation easements are applied)



Montgomery County's Imperviousness Limited Areas

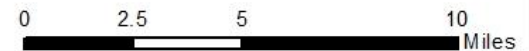


Highest Quality Montgomery County Streams

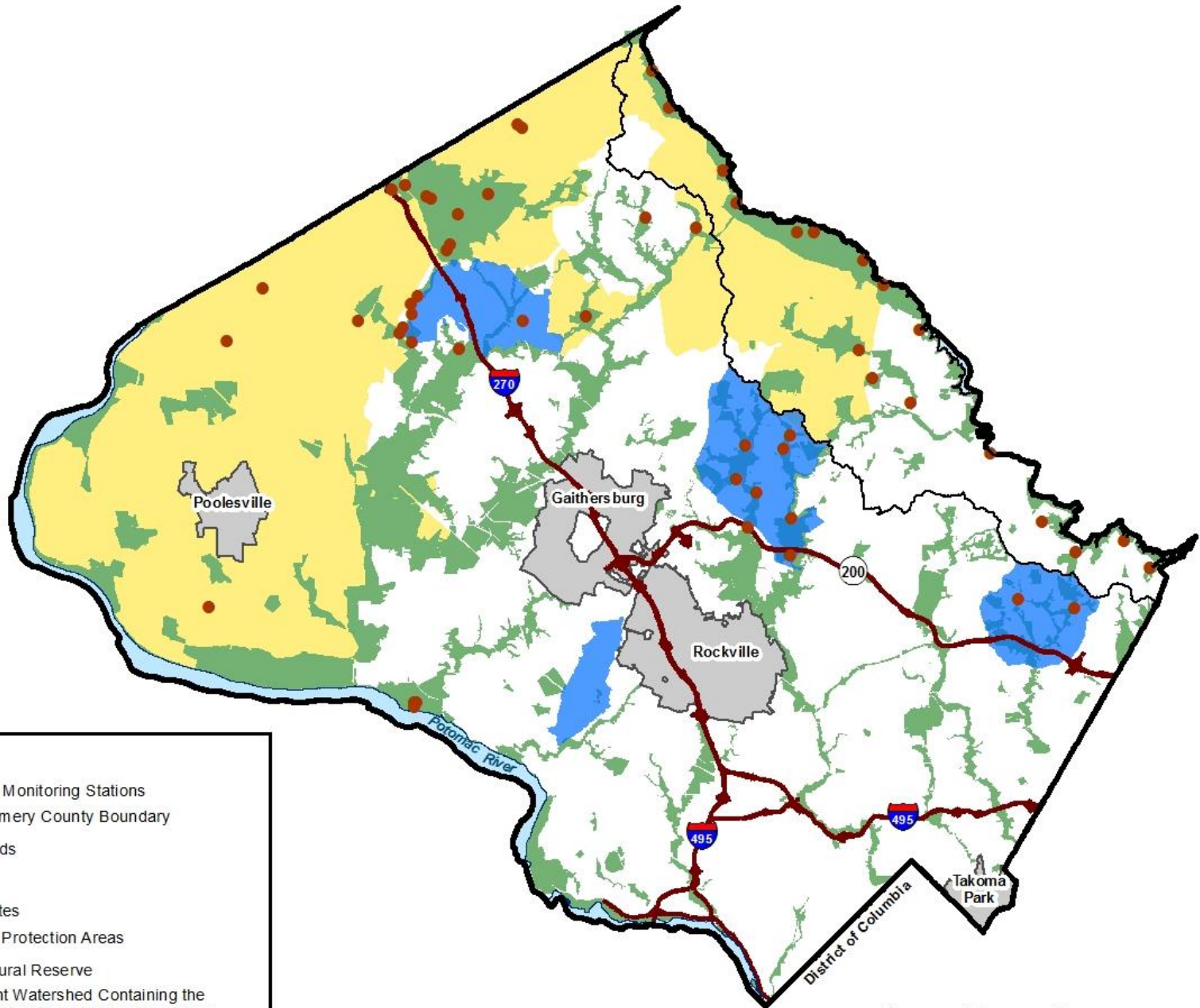


Legend

-  Montgomery County Boundary
-  Parklands
-  Towns
-  Interstates
-  Special Protection Areas
-  Agricultural Reserve
-  Patuxent Watershed Containing the Patuxent Primary Management Area



Highest Quality Montgomery County Streams



Legend

- Current Monitoring Stations
- ▭ Montgomery County Boundary
- Parklands
- Towns
- Interstates
- Special Protection Areas
- Agricultural Reserve
- ▭ Patuxent Watershed Containing the Patuxent Primary Management Area

0 2.5 5 10 Miles

Maryland Piedmont Sole Source Aquifer



Groundwater in the Maryland Piedmont Province

- Groundwater flows mimic surface water flow patterns and watersheds

