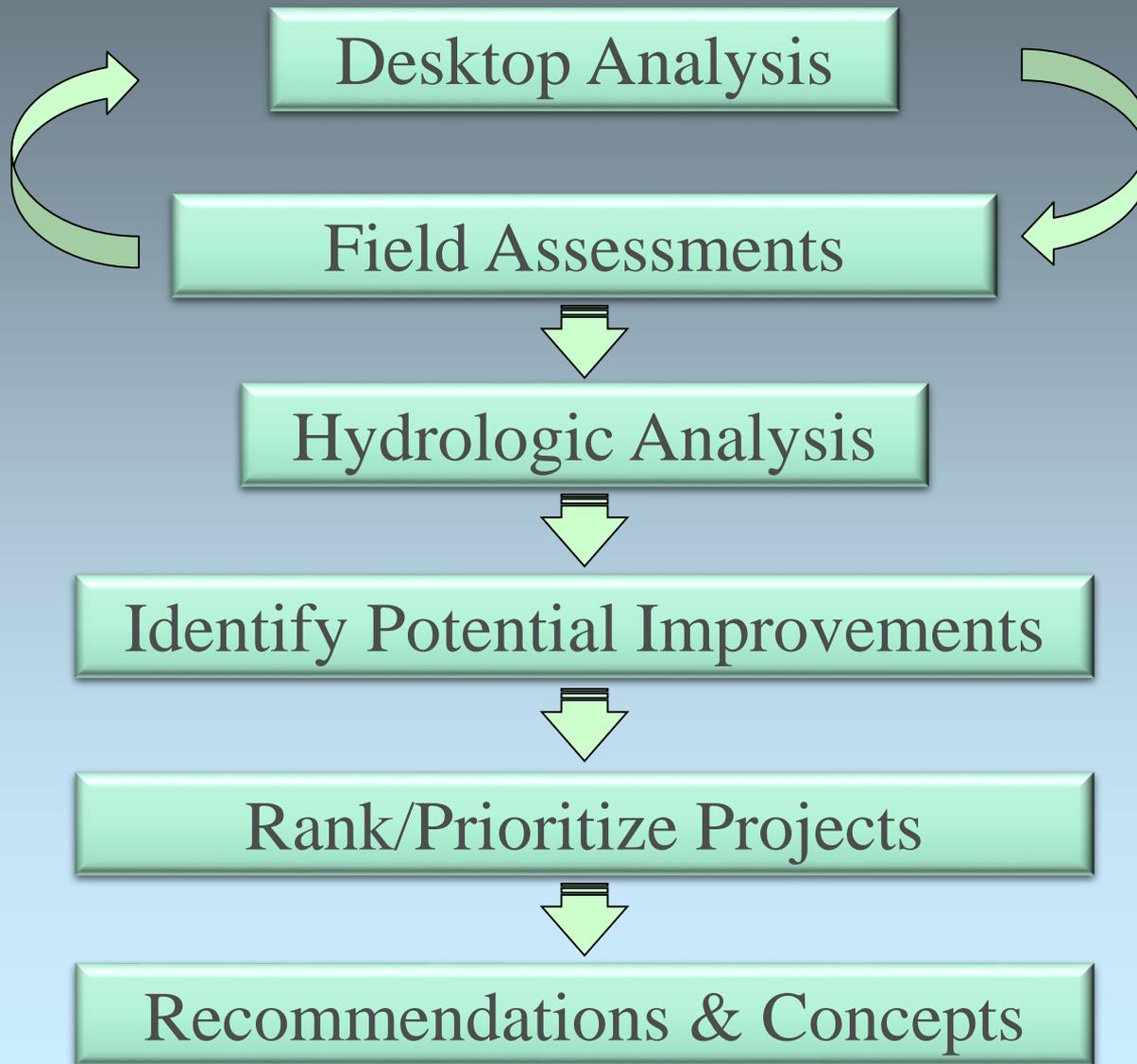


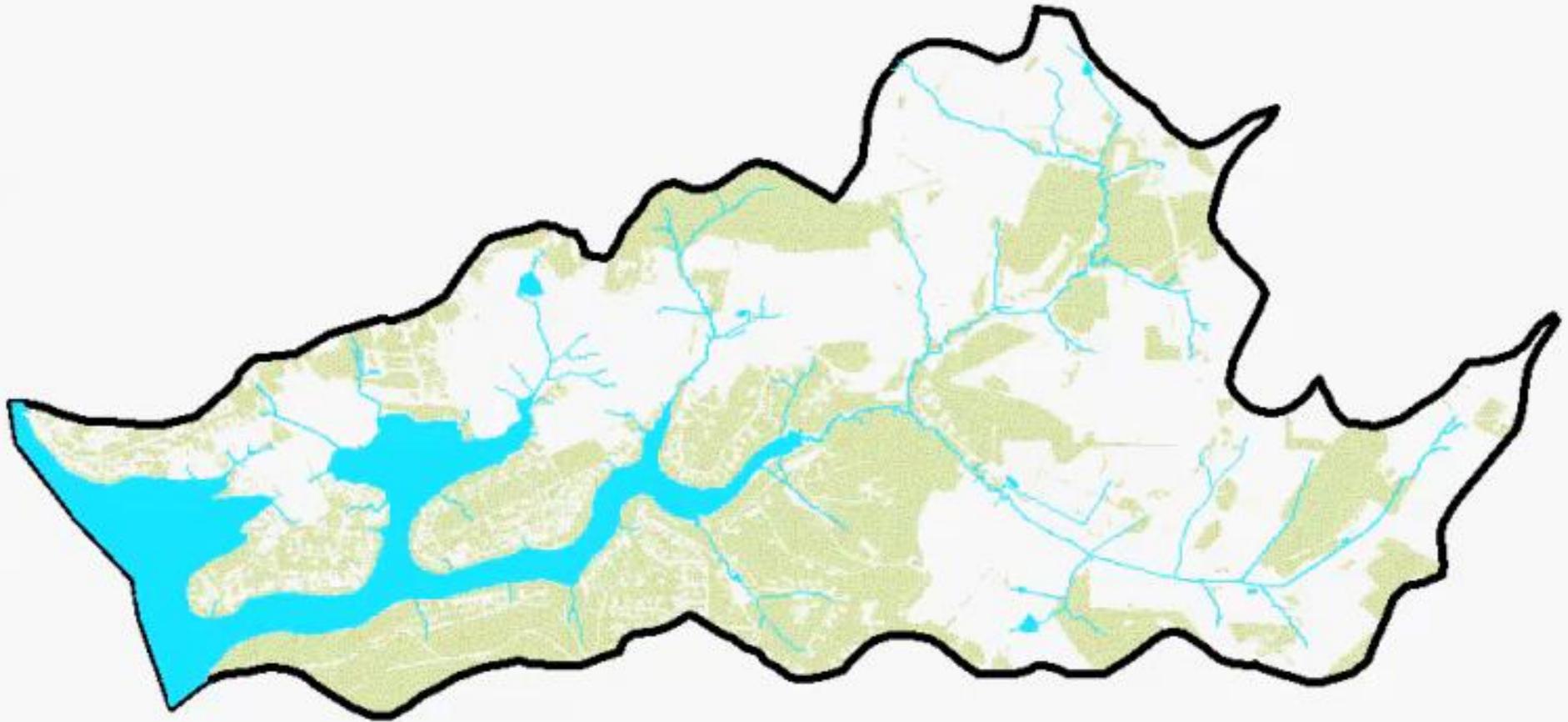
North Glade Run Stormwater Assessment Process



NGR Stormwater Assessment Process



NGR Community Development



NGR Watershed Characterization

Land Use

Watershed = 4,370 Acres

Impervious = 3.3 %

Wooded = 40.4 %

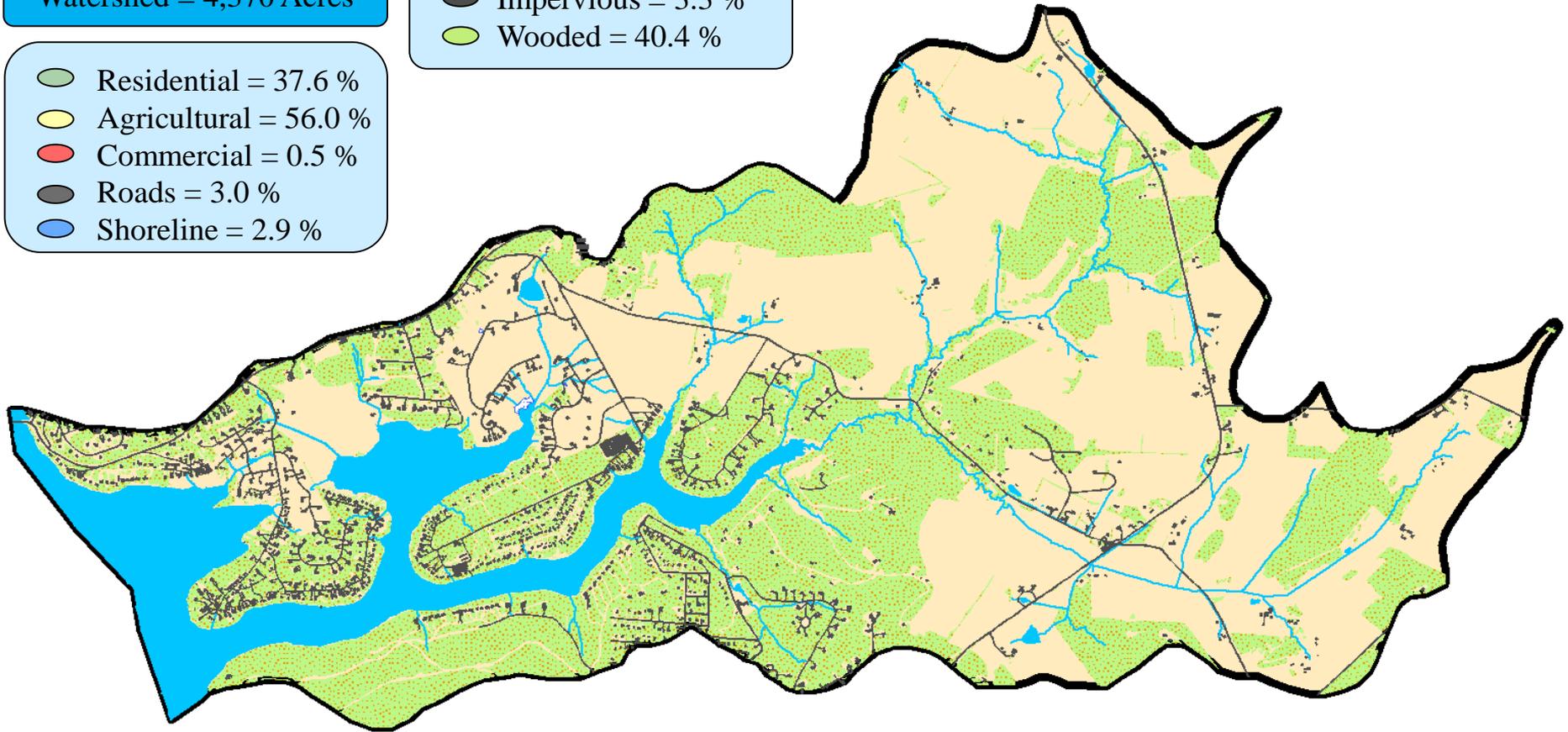
Residential = 37.6 %

Agricultural = 56.0 %

Commercial = 0.5 %

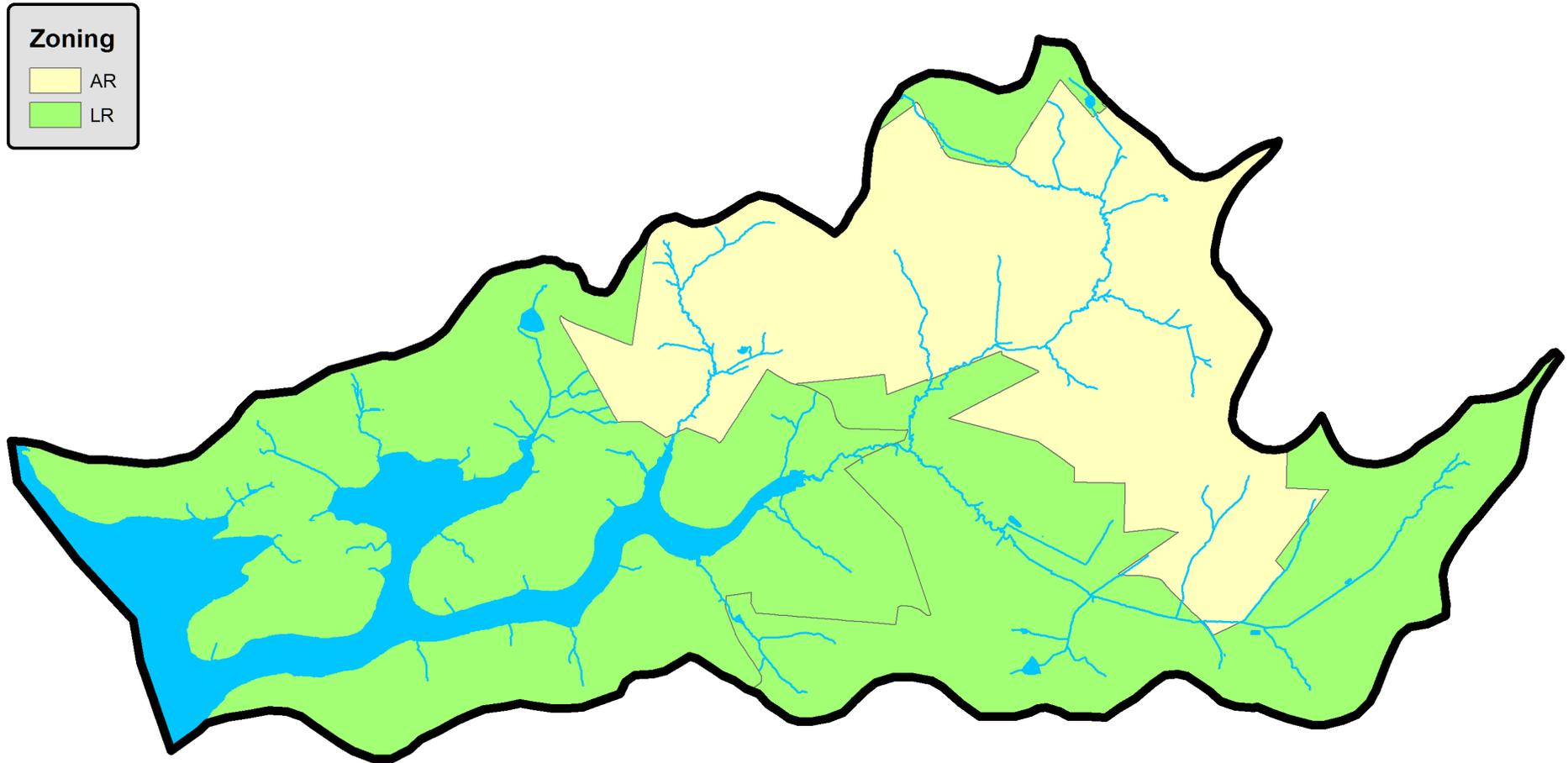
Roads = 3.0 %

Shoreline = 2.9 %



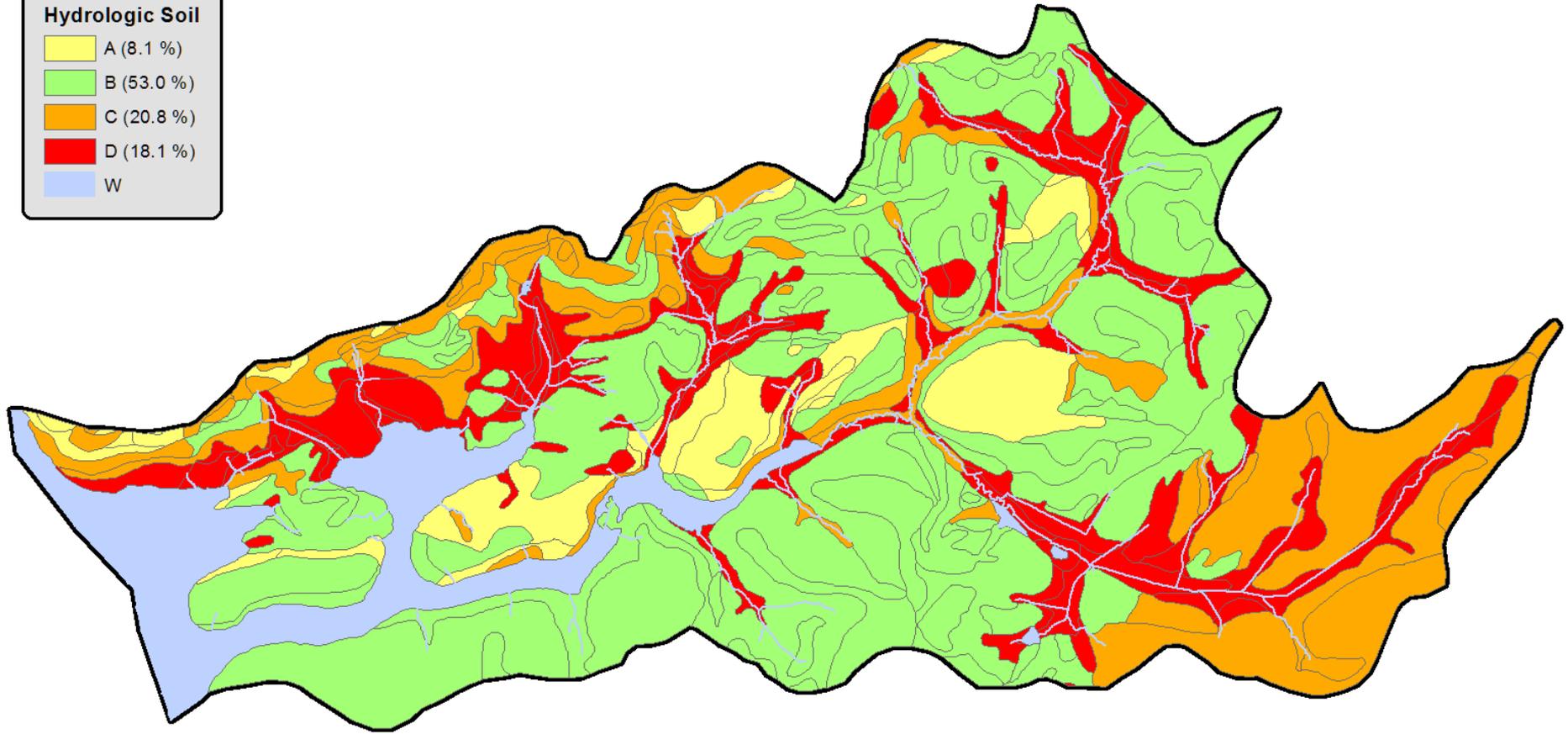
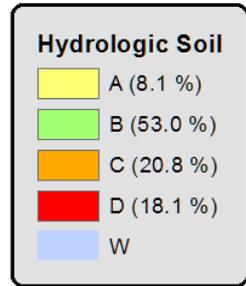
NGR Watershed Characterization

Zoning



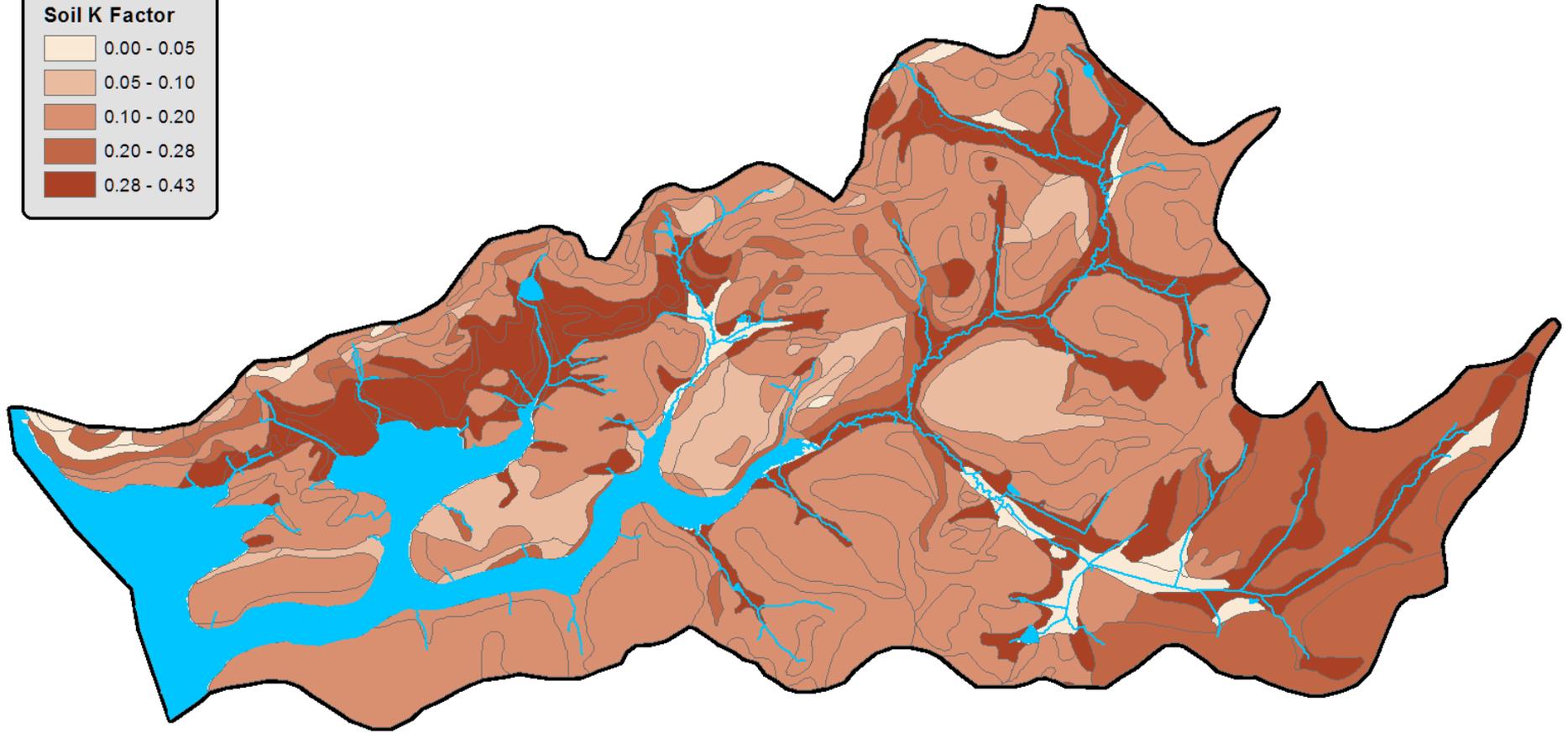
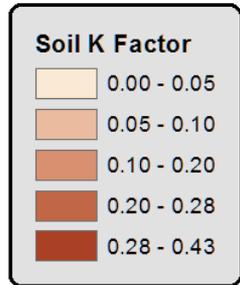
NGR Watershed Characterization

Soil Type



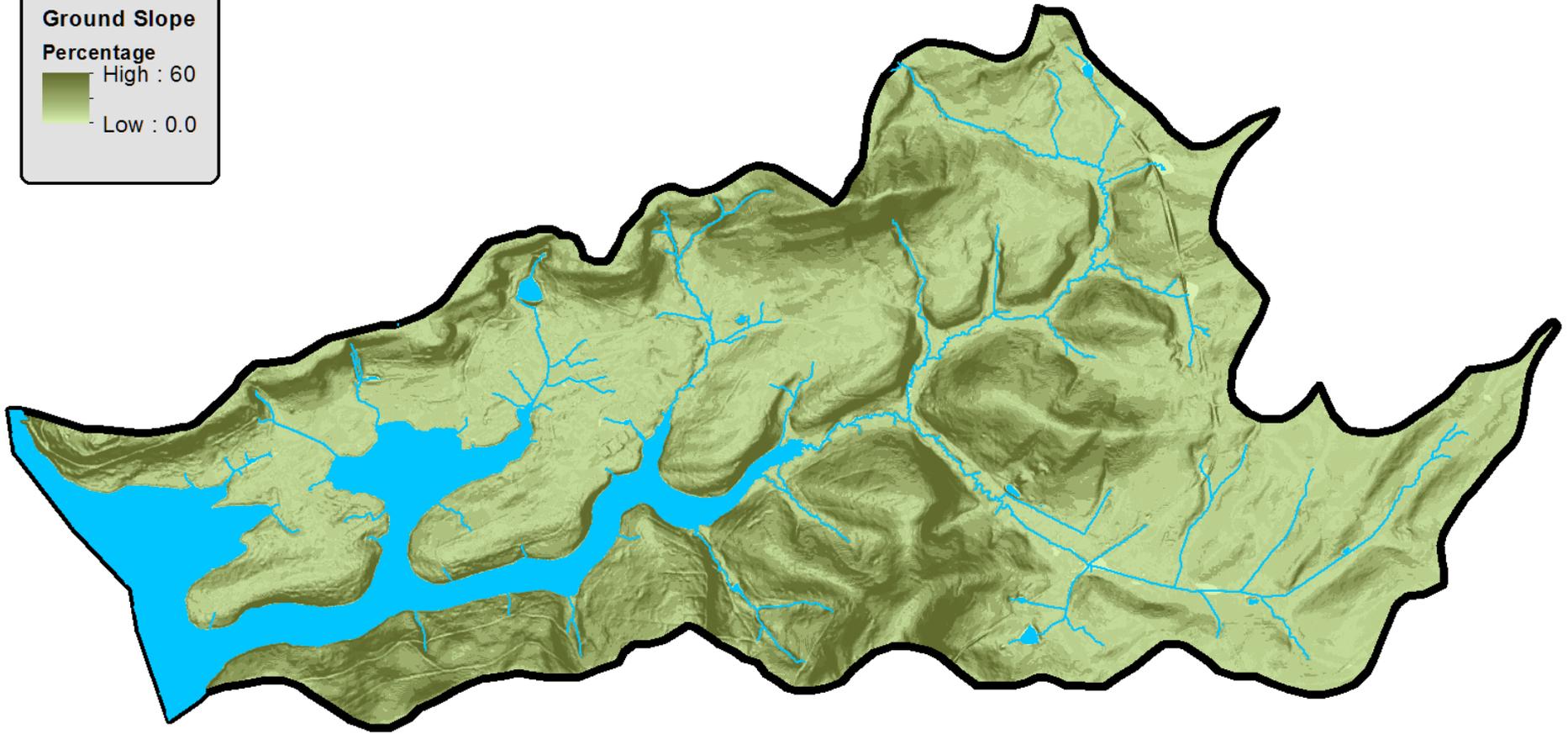
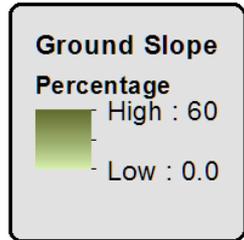
NGR Watershed Characterization

Soil Erodibility



NGR Watershed Characterization

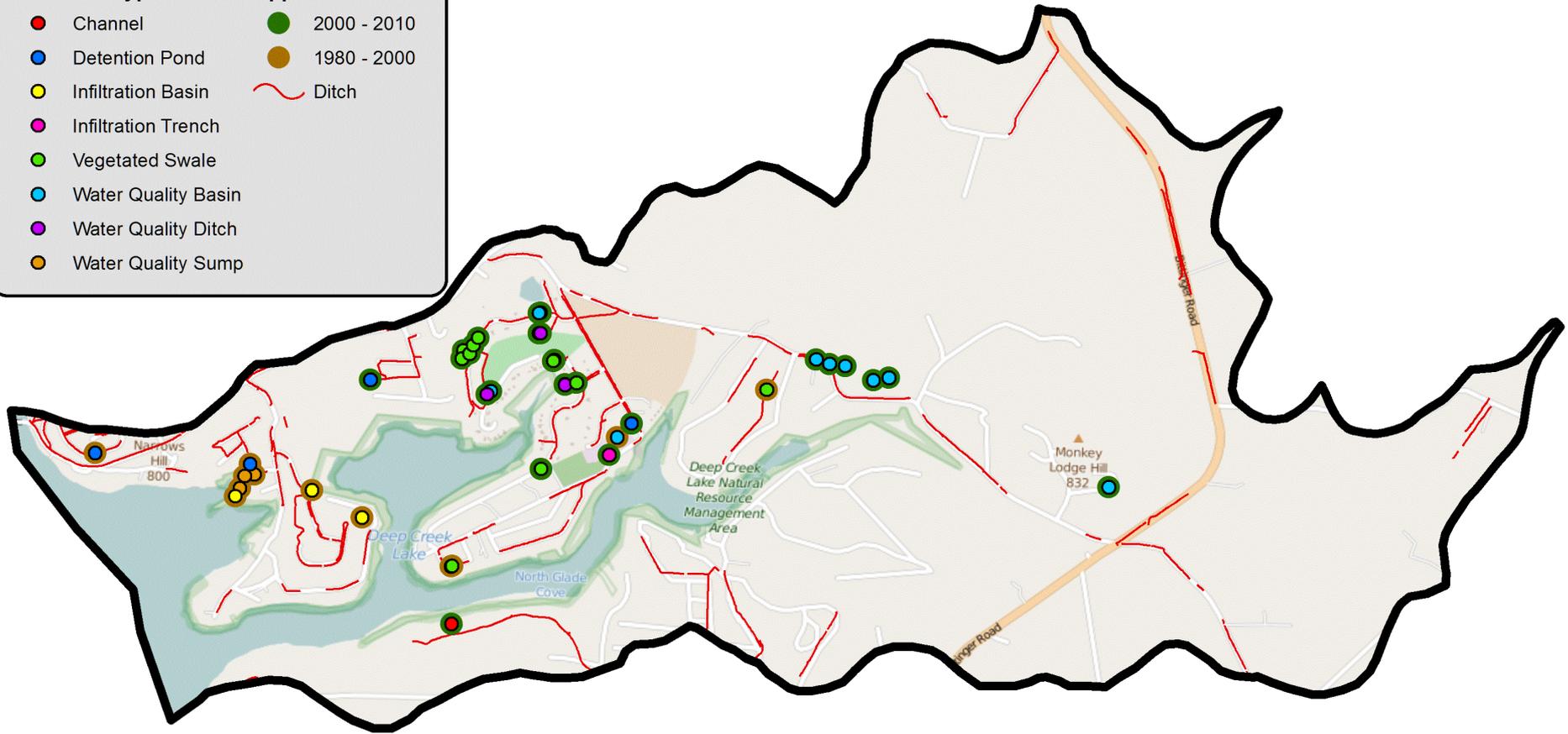
Terrain



NGR Watershed Characterization

Storm Water Management

Structure Type	Approved Permit
● Channel	● 2000 - 2010
● Detention Pond	● 1980 - 2000
● Infiltration Basin	— Ditch
● Infiltration Trench	
● Vegetated Swale	
● Water Quality Basin	
● Water Quality Ditch	
● Water Quality Sump	



NGR Watershed Assessment SWM Conversion Prioritization

Pond Condition: Check all that apply

Riser: Good Condition Damaged

Describe Damage: _____

Embankment No problems Trees on Embankment Erosion
 Holes in embankment

Vegetation Wetland vegetation Trees Base soil erosion
Pond bottom

Fence/gate Fence in good condition Fence needs repair No Fence
 Gate locked Gate unlocked No Gate

Conversion Potential:

Pond field type conducive to conversion: Yes No

Pond is on line: Yes No

Ease of access: Easy Moderate Difficult

Flow routing: Short Flow Path Long Flow Path



- **Water quality improvement**
- **Drainage area**
- **Groundwater recharge**
- **Stream channel protection**
- **Site issues (access, land ownership, utilities)**
- **Facility issues (cost, maintenance, amount of land disturbed)**
- **Permitting**
- **Public support**

NGR Watershed Assessment Hot Spot Investigation (HSI)



- **Agriculture**
- **Transportation**
- **Residential**



NGR Watershed Assessment Hot Spot Investigation (HSI)



Follow-up Action:

- Refer for immediate enforcement
- Suggest follow-up on-site inspection
- Test for illicit discharge
- Include in future education effort
- Check to see if hotspot is an NPDES non-filer
- Onsite non-residential retrofit
- Pervious area restoration; complete PAA sheet and record
Unique Site ID here: _____
- Schedule a review of storm water pollution prevention plan

Notes:

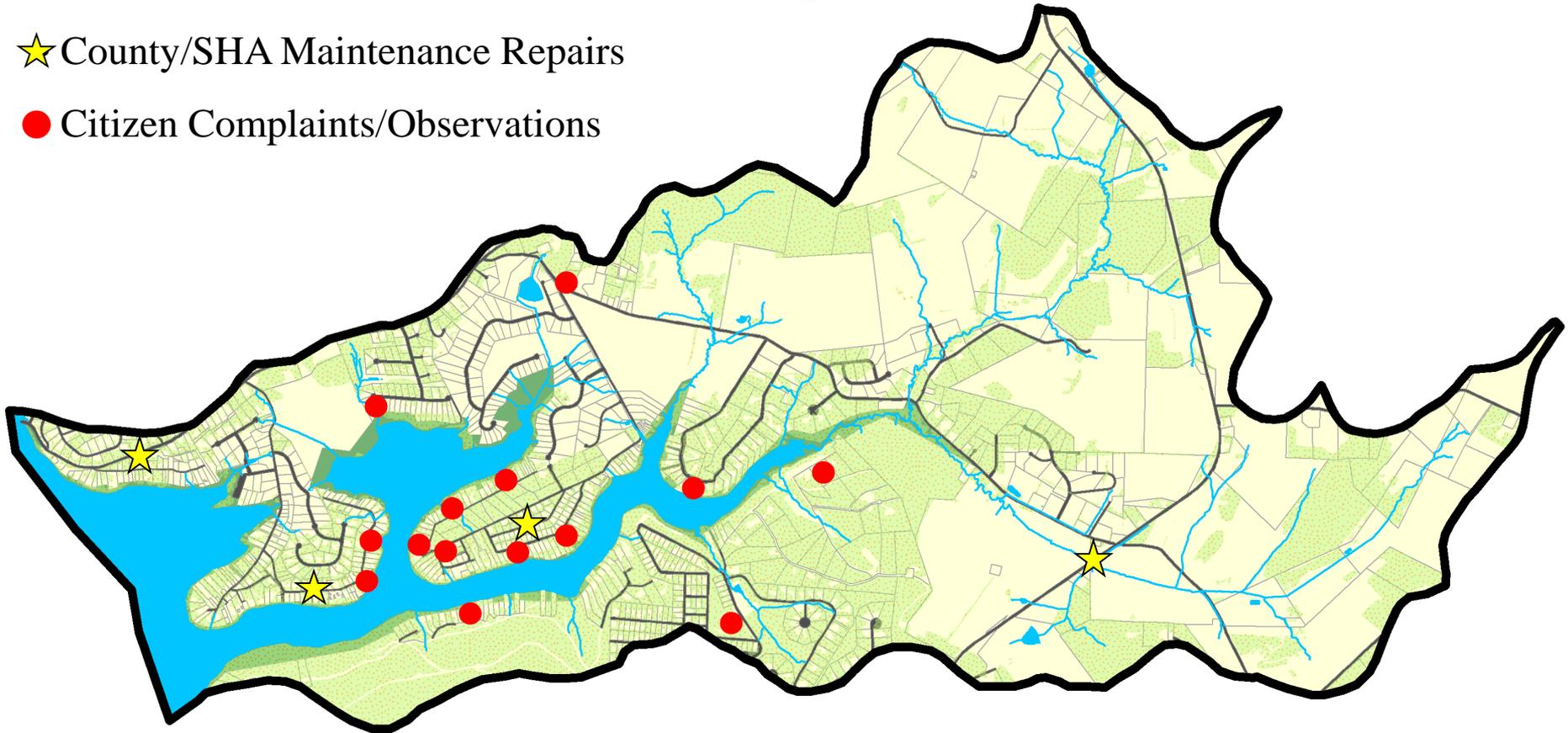


NGR Water Quality Improvement Opportunities

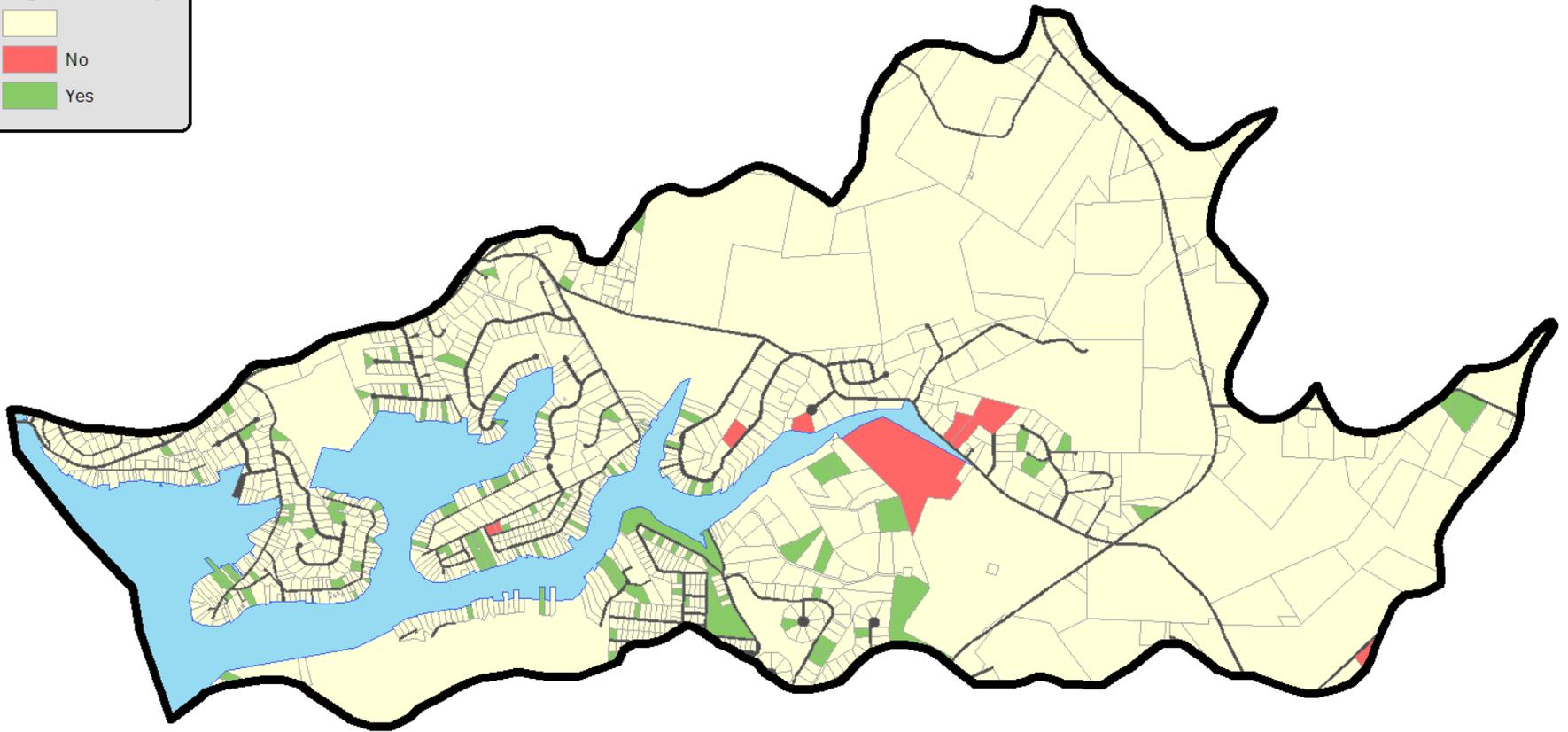
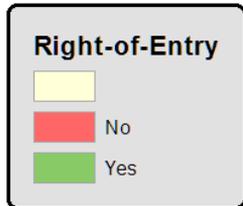
Known Pollutant Sources and High Maintenance Areas

★ County/SHA Maintenance Repairs

● Citizen Complaints/Observations



NGR Watershed Assessment Private Property Right-of-Entry



NGR Water Quality Improvement Opportunities

Recommended Actions

- Preservation Options
 - Grass Channels
 - Check Dams
 - Rain Gardens



NGR Water Quality Improvement Opportunities

Recommended Actions

- Restoration Options
 - Bio-Swales
 - Bio-Filters



BIORETENTION IN OPEN AREA

Runoff drains into the bioretention planting from the surrounding area (sidewalks, roadways, or grass). The size and shape can fit the available space.



BIOSWALE

Runoff flows directly into a bioswale which is located adjacent to the street. A bioswale will follow the slope of the street and may have check dams to make the grade step down.

Summary

- Steep areas without adequate drainage channels are likely causing the most erosion.
- Non-vegetated land with high erodibility and poor infiltration have the highest risk factor.
- Hot Spots adjacent waterways are a top priority.
- Group action in communities and neighborhoods and individual action at home are needed to assist the program.



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