The Use of Watershed-Based Tools and Resources for Compensatory Mitigation

North Carolina's Experience

Ecosystem Enhancement PROGRAM

Requested Issues to Address

- How restoration priorities are linked to regulatory processes
- Challenges and opportunities presented by this

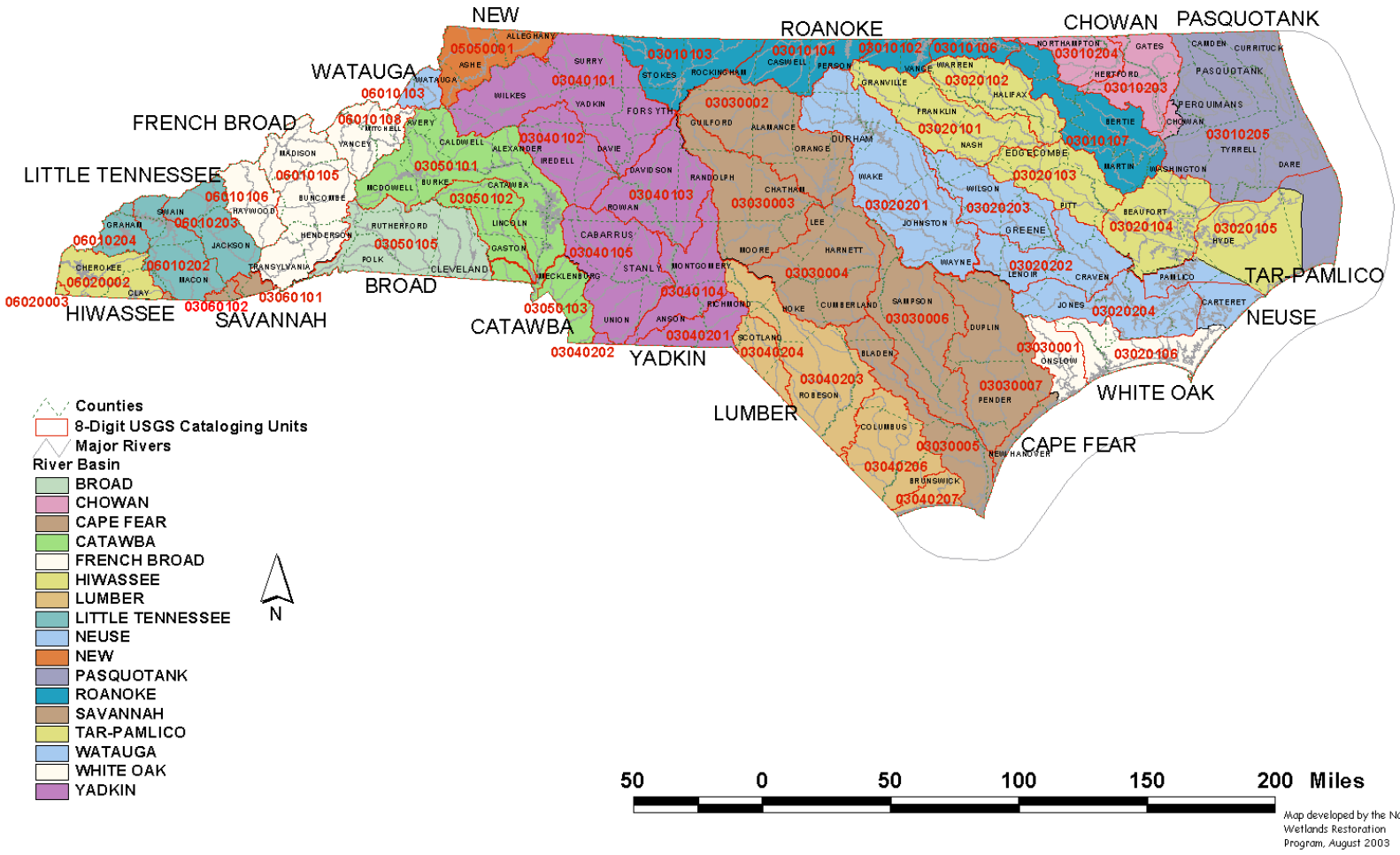
Local Watershed Planning as Tool for Identification of Restoration Priorities

- How watersheds are chosen for LWPlanning
- Primary LWP Components
- How Restoration Priorities Derived

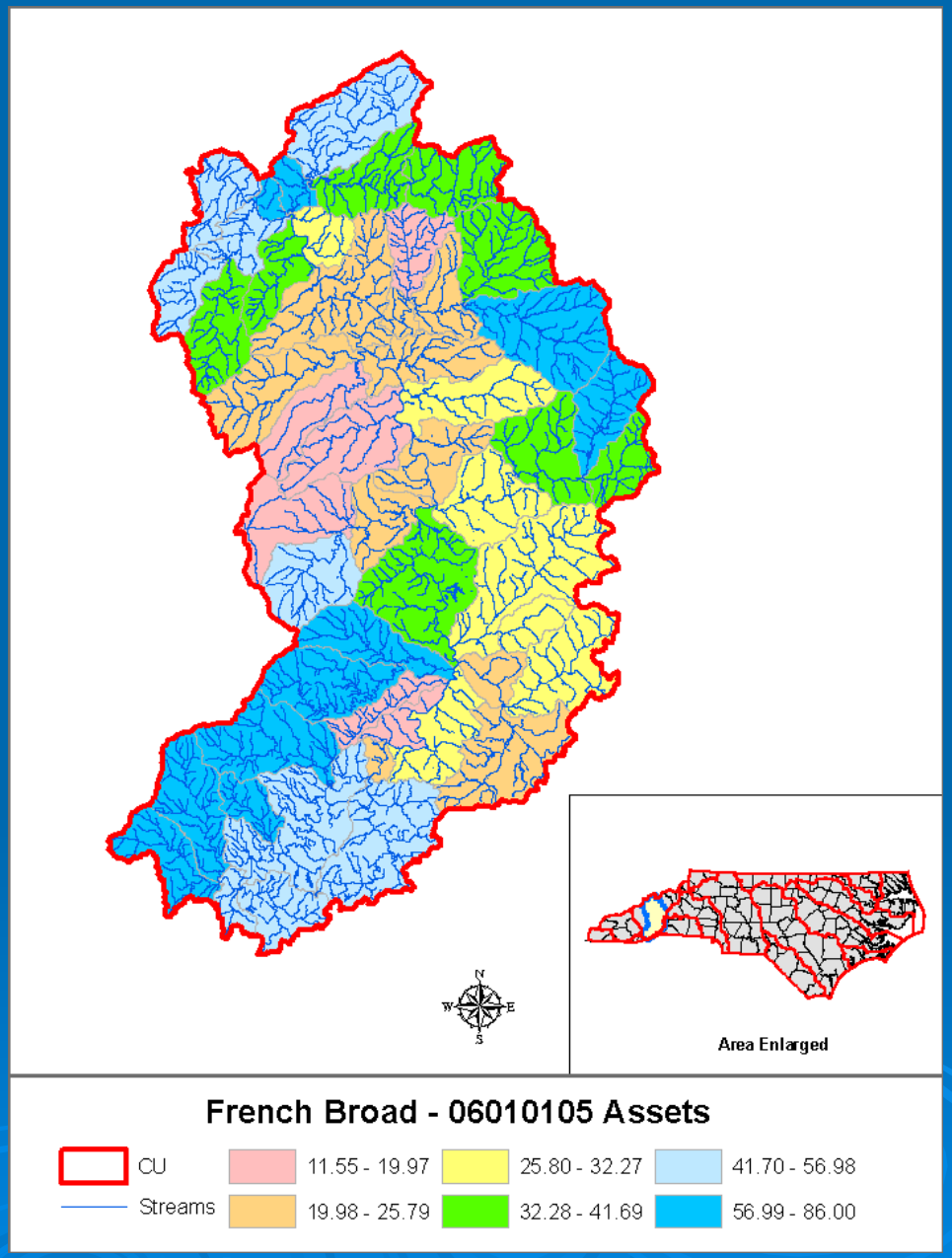
Choosing Watersheds for Intensive Planning

- Evaluate projected NCDOT impacts for all 8-digit CUs in the state
- Of those CUs with significant future impacts, which ones are appropriate for LWPlanning
- Apply screening methodology to CUs selected for LWPlanning (based on GIS assessment of 14-digit hucs and RP input)

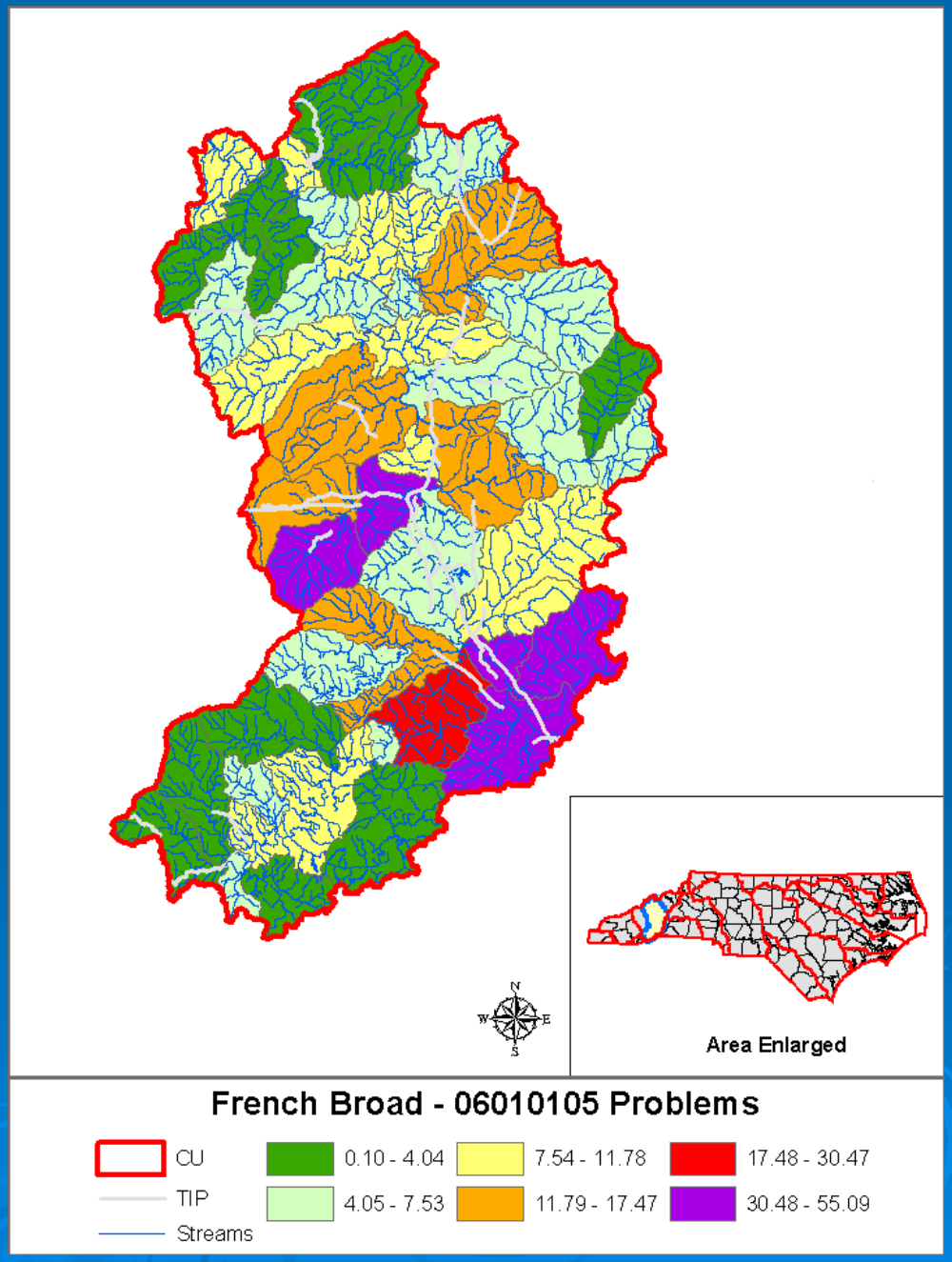
USGS 8-DIGIT CATALOGING UNITS- NORTH CAROLINA



Relative Comparison of Assets within Watersheds of one 8-digit CU



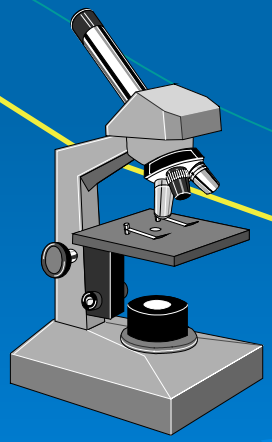
Relative Comparison of Problems within Watersheds of one 8-digit CU



4 Key Ingredients of a successful Local Watershed Plan

Technical Assessment: Consultant Services

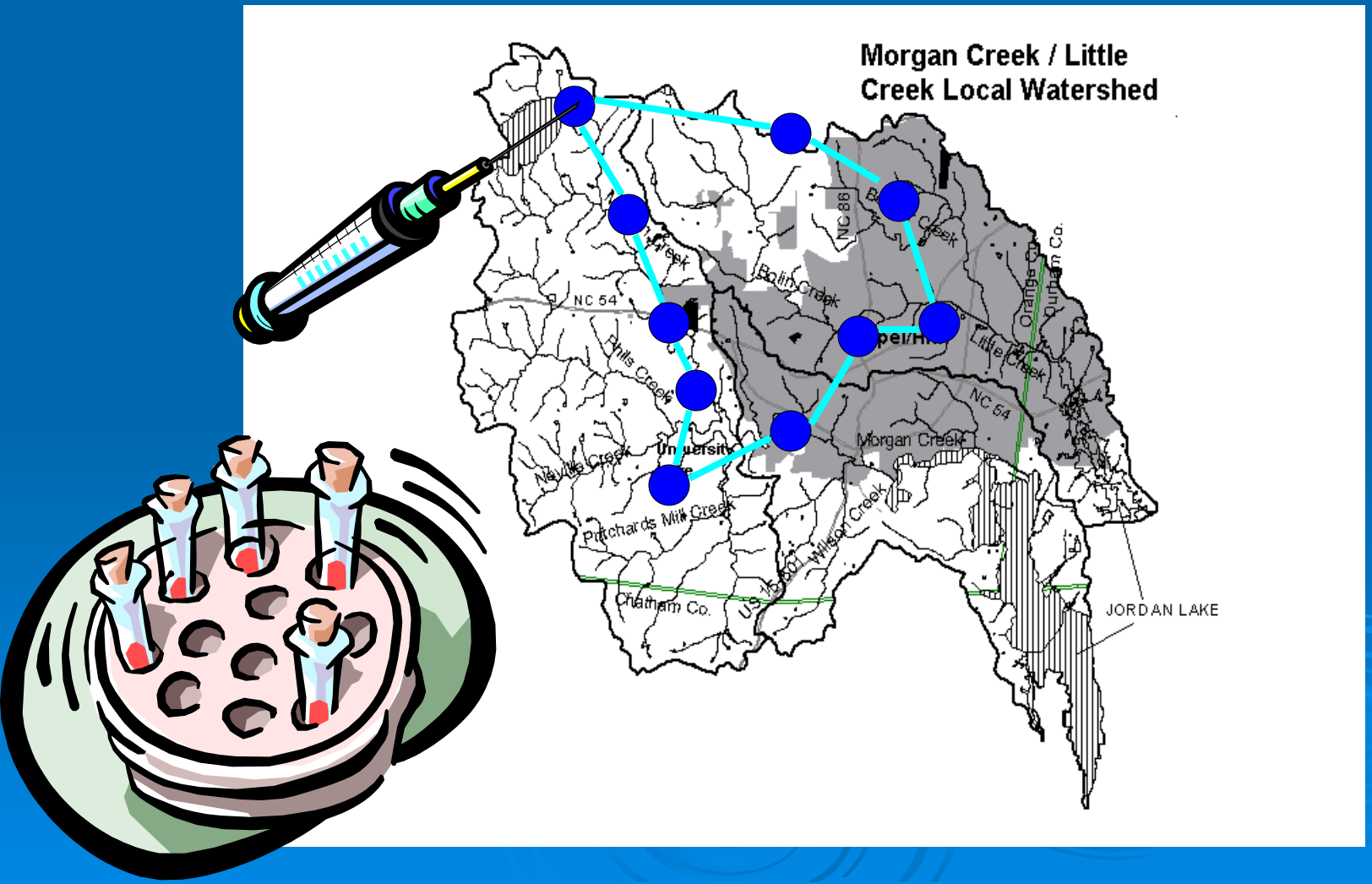
Local Stakeholders & Resource Professionals



Watershed Water Quality Monitoring

Team Coordinator / Local Partner to assist with local involvement & implementation

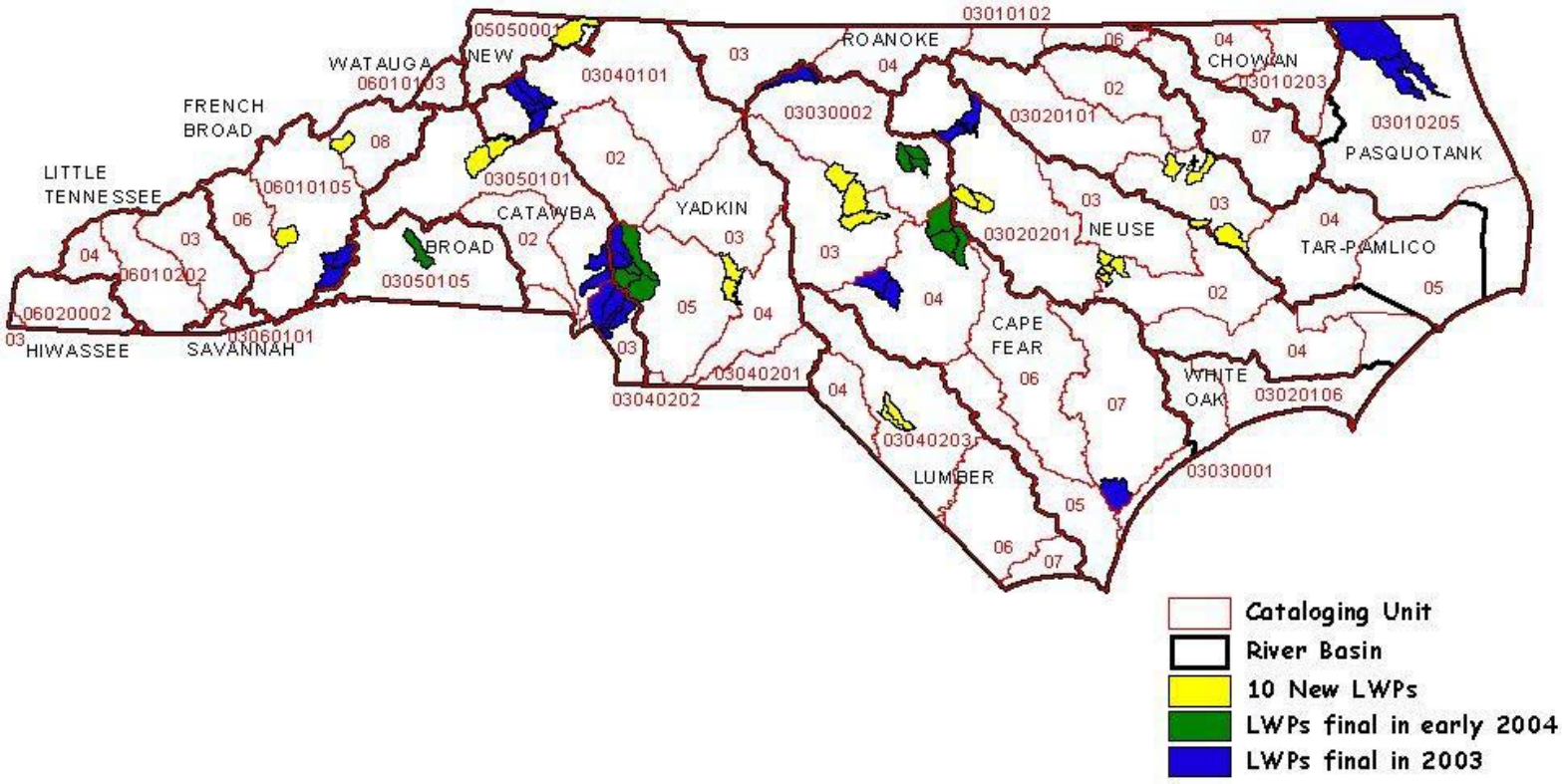
Shots of the "Right Medicine" based on prescribed recommendations:



Comprehensive Solution ID

- Local watershed planning goes beyond identifying watershed solutions that can be implemented by EEP
- Recommendations based on particular needs of specific watersheds
- EEP projects are more effective when combined with other types of efforts (BMPs, local land use management, etc.)
- Partnerships are key

EEP Local Watershed Planning Areas



Prioritization of Projects

- Technical Data Regarding Environmental Benefit to Watershed
- Stakeholder Input
- Feasibility

Note: Different approaches to prioritization applied in different watersheds

Variety of Projects Identified within a Priority Watershed

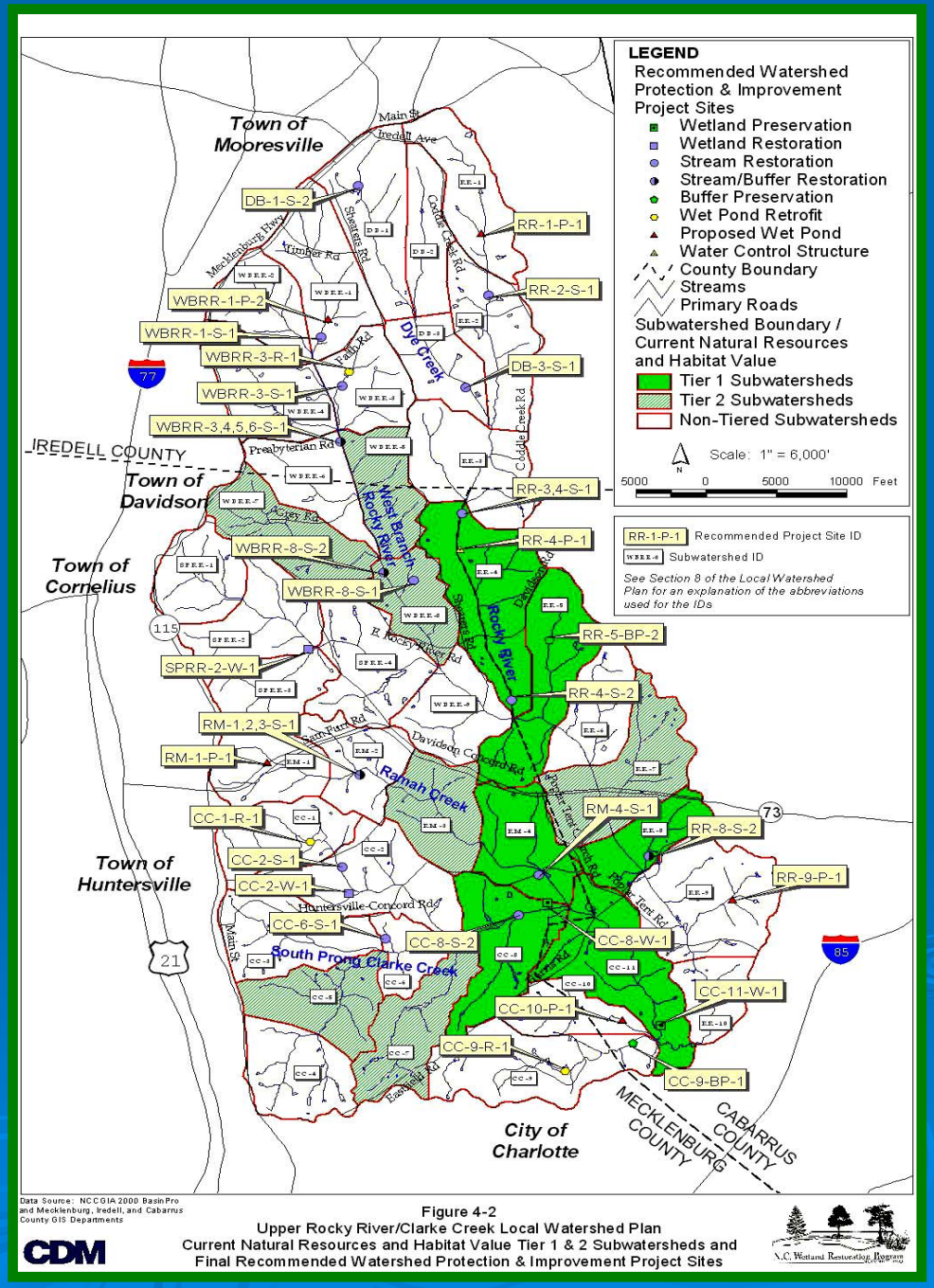
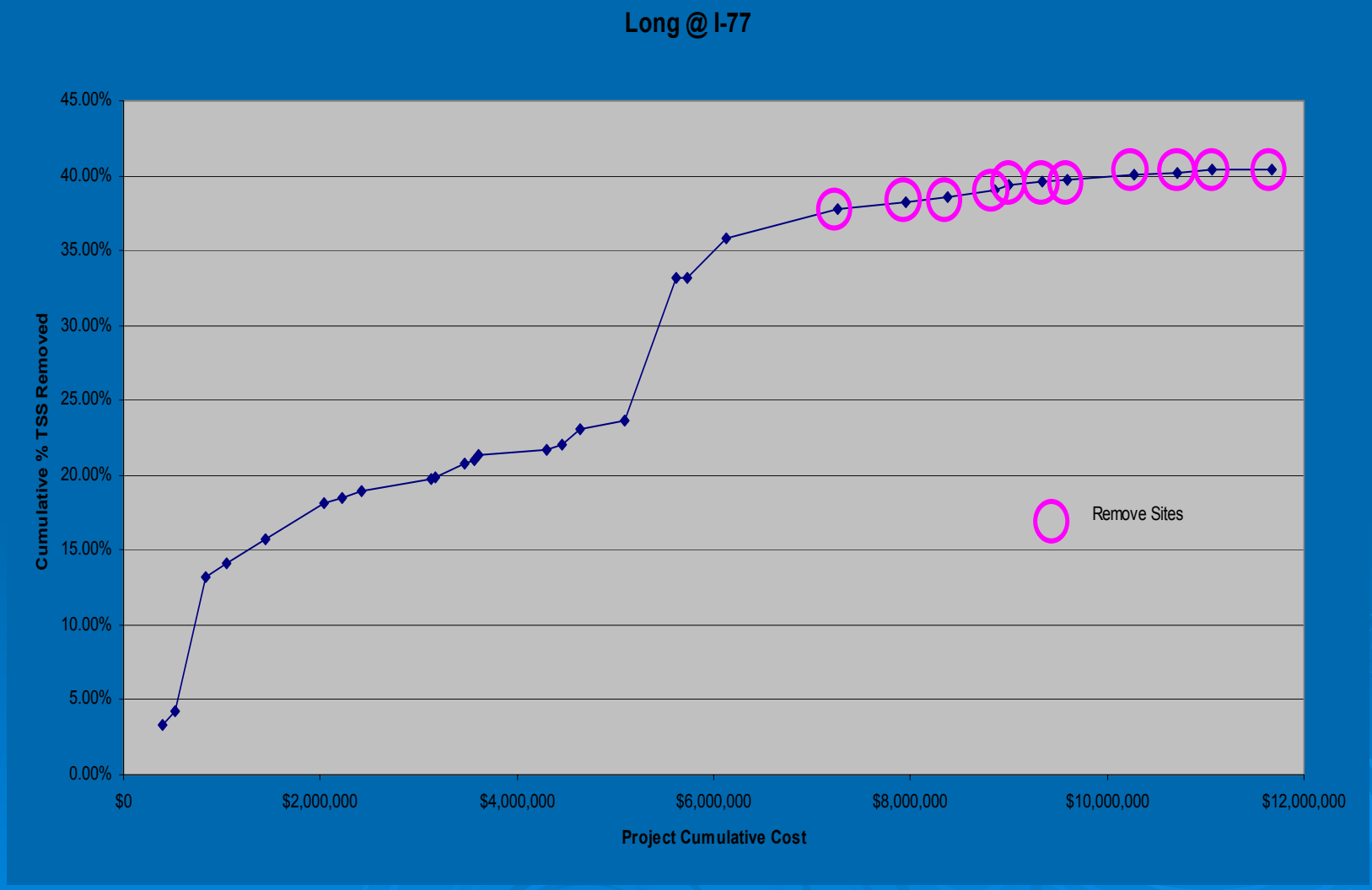


Figure 4-2
Upper Rocky River/Clarke Creek Local Watershed Plan
Current Natural Resources and Habitat Value Tier 1 & 2 Subwatersheds and Final Recommended Watershed Protection & Improvement Project Sites

Cost-Benefit Analysis



Evaluation of Predicted Mgt Results

	TSS, lbs	TP, lbs	Zinc, lbs
Load w/o projects	3,135,736	2,769.2	337.34
Load w/ projects	1,872,265	2,100.5	308.70
Percent reduction	40%	24%	8%

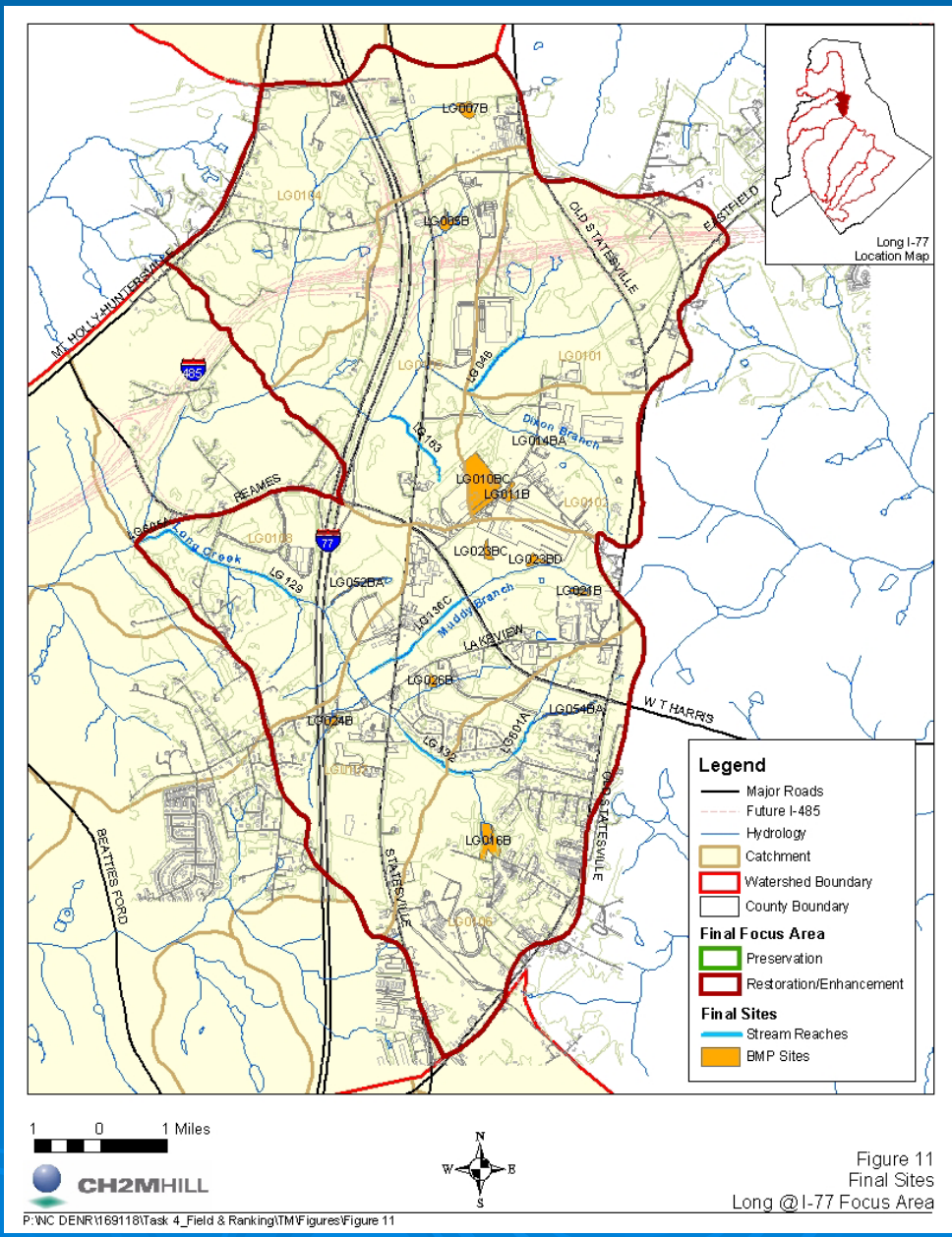
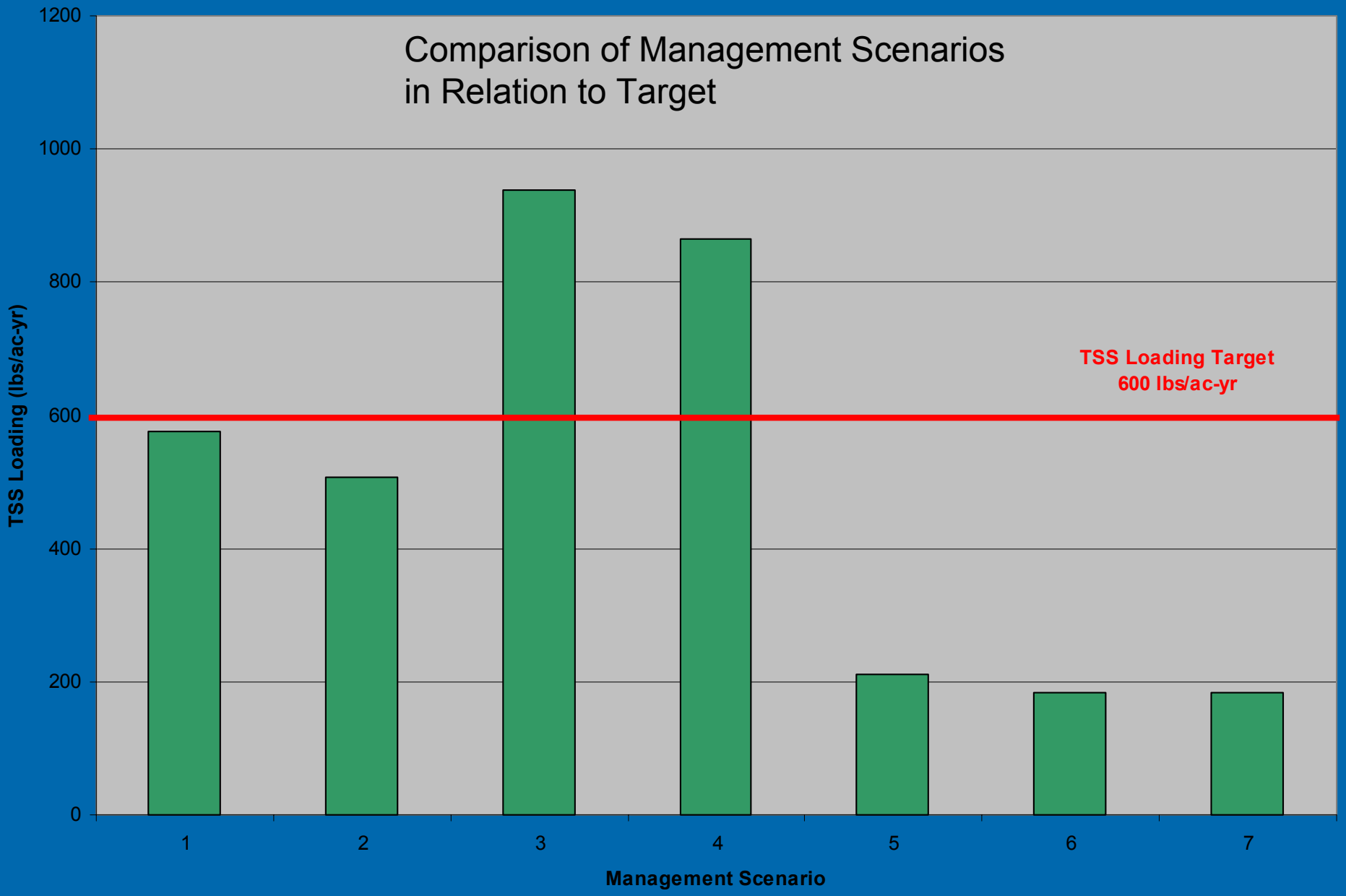


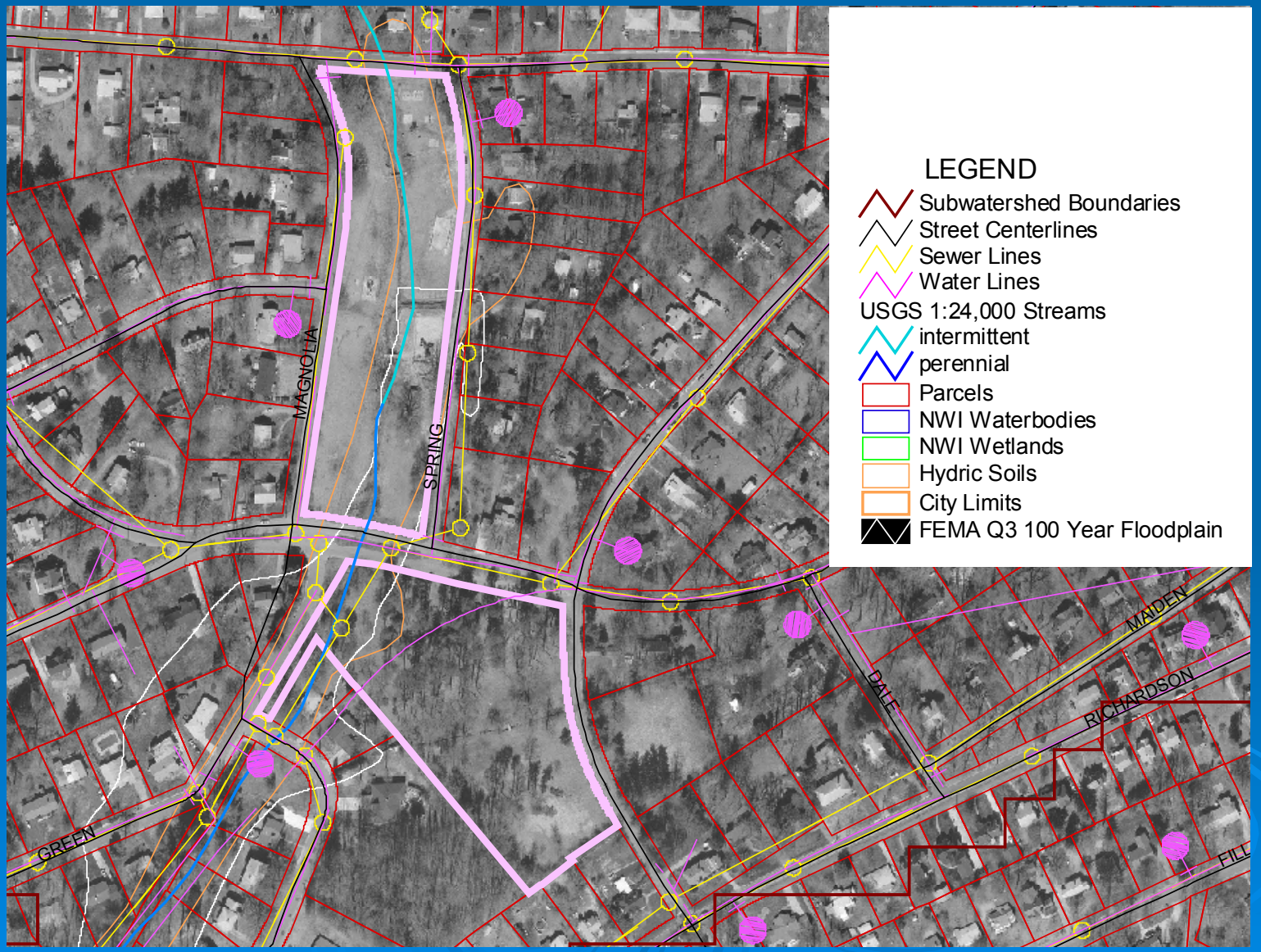
Figure 11
Final Sites
Long @ I-77 Focus Area


Comparison of Management Scenarios
in Relation to Target
TSS Loading (lbs/ac-yr)
1200
1000
800
600
400
200
0
TSS Loading Target
600 lbs/ac-yr
1
2
3
4
5
6
7
Management Scenario

Understanding Assessment Results and Developing Plan

- Collaborative effort
- Sets the stage for implementation
- Improves viability of chosen projects

Feasibility Issues

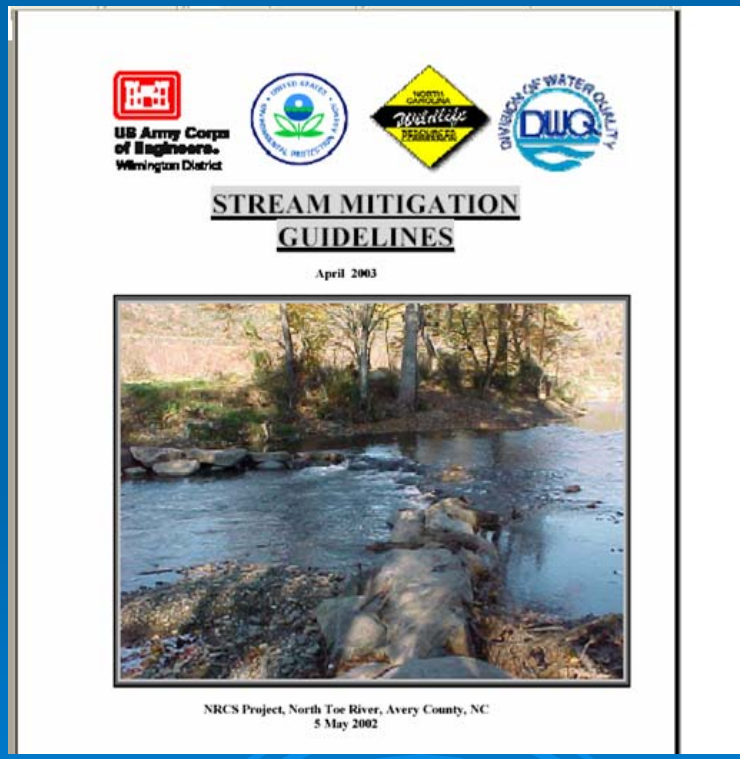


Integration of Priorities into Regulatory Context

- EEP restoration applied after avoidance and minimization
- Comply with existing criteria for traditional CM projects
- Use results of LWPs to justify implementation of alternatives

Opportunities for Implementation of Priorities for CM

- In some areas of NC, on-site/in-kind can not be accomplished
- Stream Mitigation Guidelines (USACE, EPA, NCWRC, NCDWQ) – published April 2003
- Publications documenting failure of CM and making recommendations for ways to improve it (NRC report; USACE RGL; MAP)



Barriers to Implementation of Watershed Priorities

- Resistance to change
- No net loss requirement drives restrictive policies
- Money
- Bureaucratic inertia
- Lack of methods to measure functional loss and replacement

The goal of the Clean Water Act is to …

"restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The definition of insanity is doing the same thing repeatedly and expecting different results.

Albert Einstein