



Project ID & Status	Project Setting & Background	Project Timeline																
Project Name/Number: Spring Valley EEP ID: 354 Project Type: Stream Restoration Current Status: 5 Years of Monitoring complete	Physiographic Region: Piedmont County: Guilford Basin: Cape Fear Drainage Area: 0.86 Impervious cover: >25% USGS Hydro Unit: 03030002 NCDWQ Subbasin: 16-11-14-2 Thermal Regime: Warm Trout Water: No Designer: Kimley-Horn	<table border="1"> <thead> <tr> <th>Milestone</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Construction Completed</td> <td>2004</td> </tr> <tr> <td>Monitoring Year-1</td> <td>2004</td> </tr> <tr> <td>Post-storm remediation</td> <td>Feb 2005</td> </tr> <tr> <td>Monitoring Year-2</td> <td>Dec 2005</td> </tr> <tr> <td>Monitoring Year-3</td> <td>Dec 2006</td> </tr> <tr> <td>Monitoring Year-4</td> <td>Nov 2007</td> </tr> <tr> <td>Monitoring Year-5</td> <td>Nov 2008</td> </tr> </tbody> </table>	Milestone	Date	Construction Completed	2004	Monitoring Year-1	2004	Post-storm remediation	Feb 2005	Monitoring Year-2	Dec 2005	Monitoring Year-3	Dec 2006	Monitoring Year-4	Nov 2007	Monitoring Year-5	Nov 2008
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Table 1. Spring Valley Project Restoration Components and Mitigation Assets

Stream			Asset Data									
	Drainage/Hydrology Component	Restoration Component	Asset Map #	Approach	Level	Ratio	Ratio	Multip	Feet	SMU	Acres	WMU
	Upper extent at Glenhaven Road to former pedestrian bridge	Segment 1 10+00 to 14+93	1	P2/P3	EI	1.50	0.67	493	329	-	-	
	Former pedestrian bridge to restricted buffer zone	Segment 2 14+93 to 19+00	2	P1	R	1.00	1.00	407	407	-	-	
	Restricted buffer zone to just below lower bridge	Segment 3 (19+00 to 21+50)	3	P1	EI	2.00	0.50	250	125	-	-	
	Just below lower bridge to bottom of project	Segment 4 21+50 to 24+09	4	P1	R	1.00	1.00	259	259	-	-	

Asset Summary

Level	Feet	SMU	Acres	WMU
R	666	666		
E				
EI	743	454		
EII				
C				
P				
	1409	1120		

The project is being proposed for closeout and encompasses with 1409 feet of stream yielding 1120 stream mitigation units.

Project Background and Summary

The **Spring Valley** mitigation site was developed by the NCDOT within the city limits of Greensboro in Guilford county. The project is located on Piedmont Creek, a tributary in the South Buffalo creek watershed in the Cape Fear River Basin and consists of 1,409 linear feet of stream restoration spanning 2 design reaches. Construction was completed in early 2004, with some structural remediation in February 2005. The project also included planting of a forested riparian buffer where utility and municipal restrictions permitted. A sewer easements and recreational line of site requirements for public safety considerations restricted plantings particularly in the middle 300–400 feet on stream left. The upper segment was a straightened, incising E channel with bank erosion and significant modification to the valley slopes and the floodplain. Combined with existing constraints restoration to a relic condition was not a plausible and therefore a C/B step pool type channel was proposed, which was appropriate to the valley slope and type with dimensional improvement to the W/D and bank height ratios. The downstream segment was a mixture of incised E and G segments with the entire reach progressing towards a G. This reach was restored to an E/C type channel with commensurate changes to pattern and profile.

Goals and Objectives

1. Increase long-term stability of the project reach.
2. Create a more functional riparian ecological community where urban and municipal constraints permit.
3. A source for educational opportunities.

Success Criteria—As per the associated permit, the monitoring will be photo and visually based to determine whether the channel has remained stable and the ste of the riparian zone.

Morphological	Hydrological	Vegetation
Visual observation of channel stability -Modest change in W/D ratio (limited bank erosion proportions) -Maintenance of grade -General Maintenance of structural integrity and associated Habitat features.	-2 bankfull events	- Visual/photo within urban/municipal constraints

Project Vicinity Map

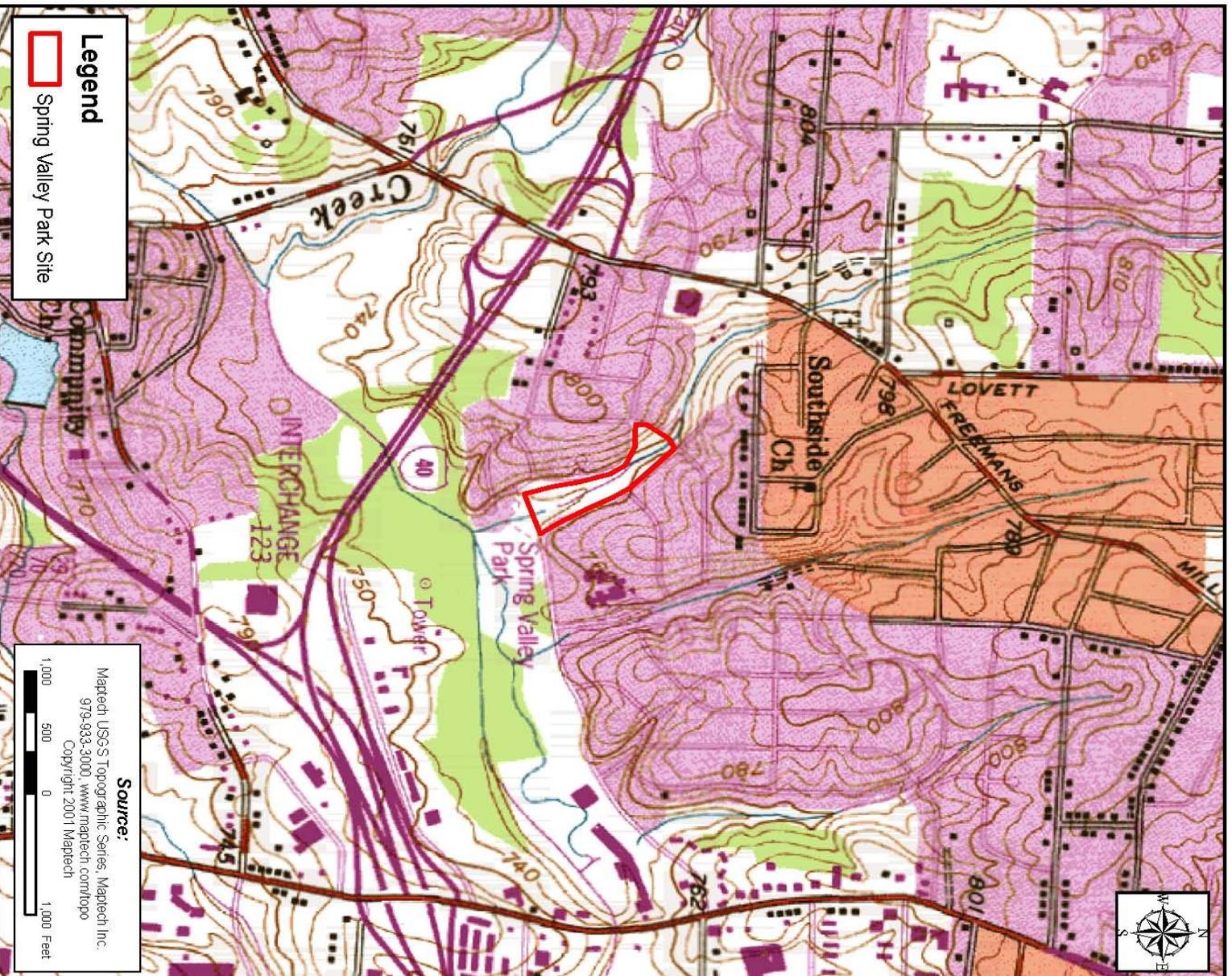


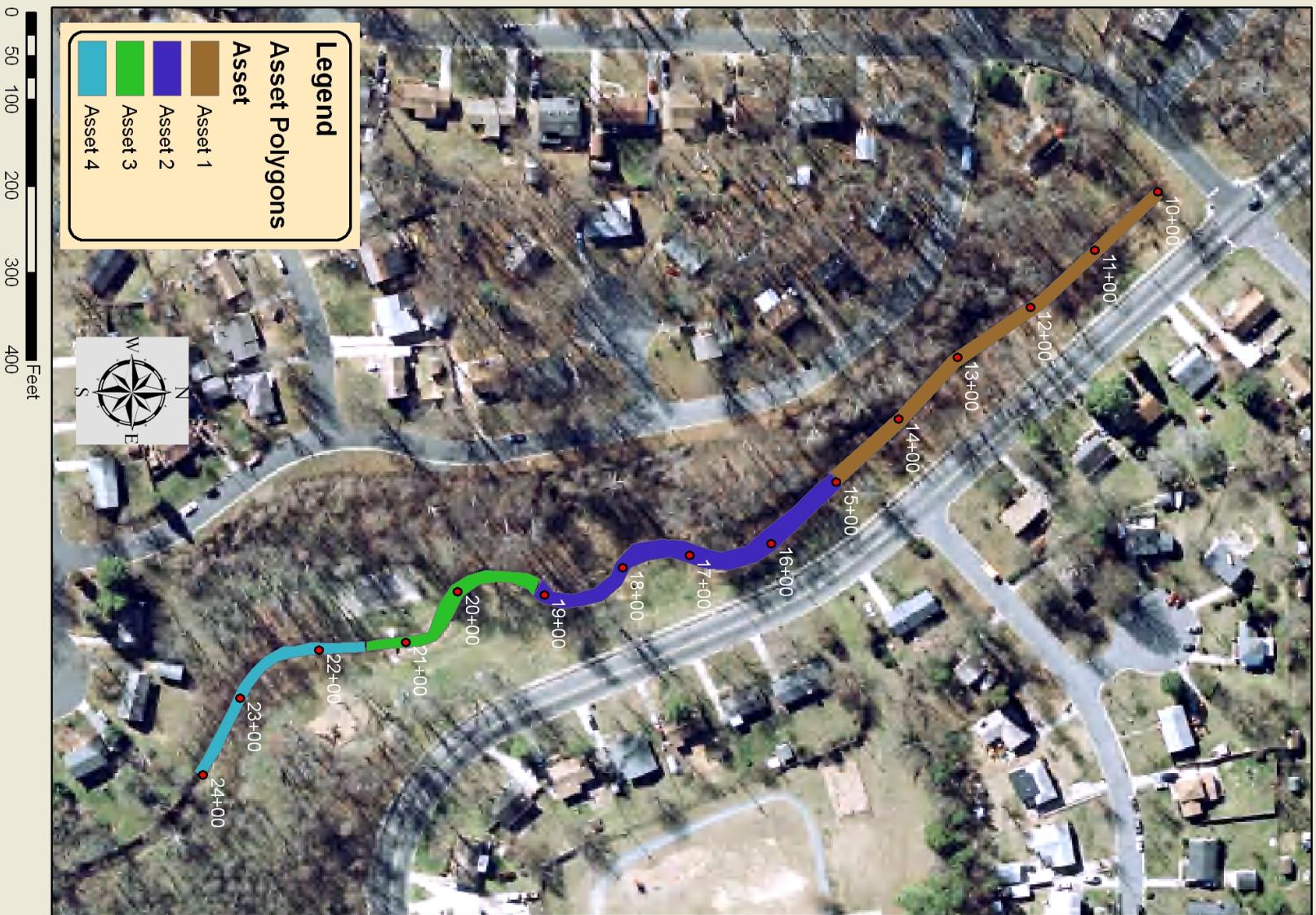
FIGURE 01
VICINITY MAP

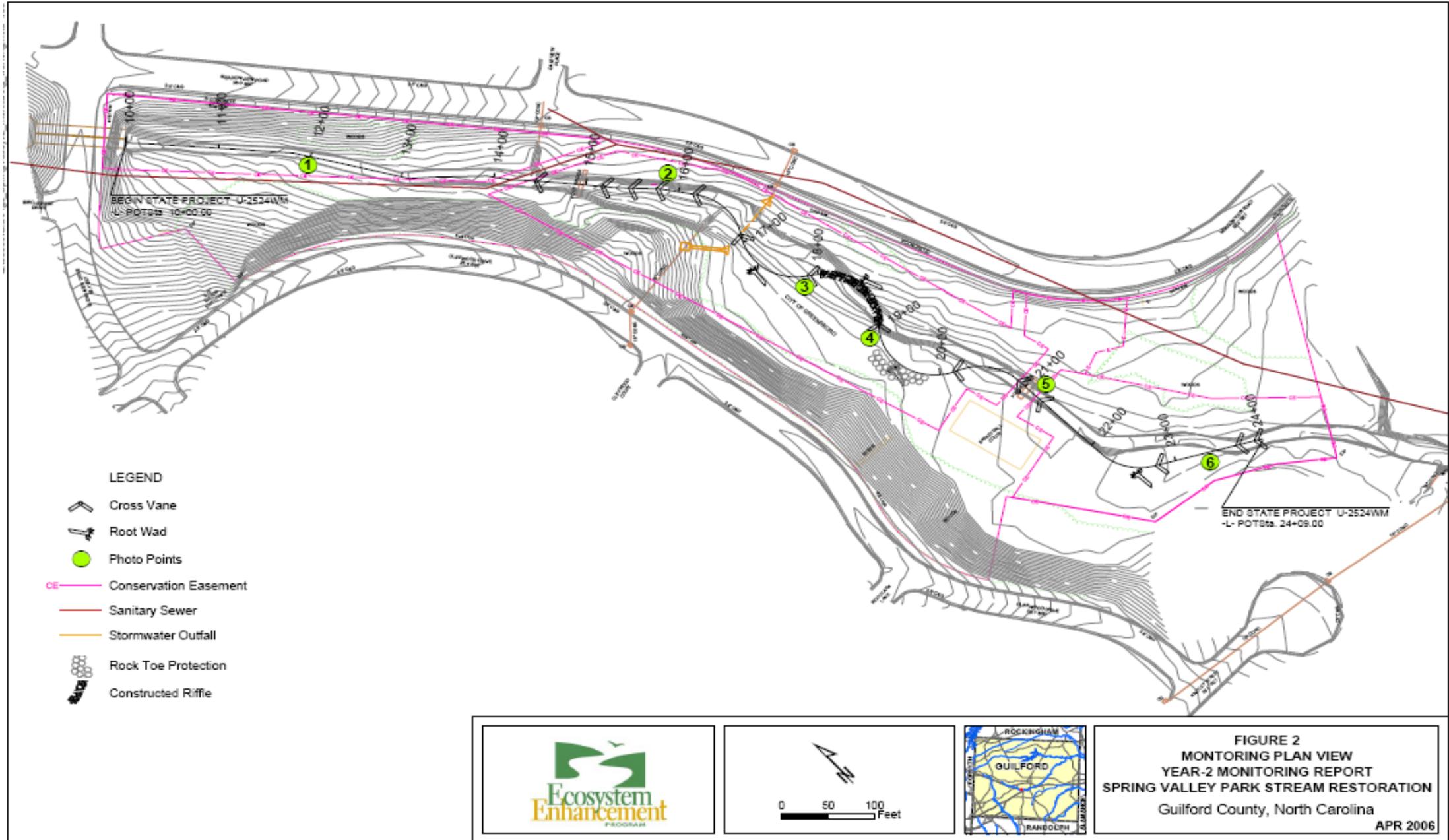
Spring Valley Park Stream Restoration Site
Greensboro, North Carolina
Guilford County



To access the site, take exit 218B (Freeman Mill Road) off of I-40 near Greensboro. Travel north on Freeman Mill Road and turn right onto Meadowview Road or Coliseum Road, which will feed you back to Meadowview road in the event Meadowview is missed. Once on Meadowview road the signs for Spring Valley Park should be evident and the park will be on the right ~ 1/4 mile.

Spring Valley - Stream Segment Asset Map





Pre-Construction Site Conditions (Aug 2000)



Pre-Construction Site Conditions (Aug 2000)



Post-Construction Site Conditions– 2004 Photos



Post-Construction Site Conditions– 2008 Station Photos (MY-5)



Photo Point 1 – Facing upstream. Sta. 13+00



Photo Point 2 – Facing upstream. Sta. 16+10



Photo Point 3 – Facing upstream. Sta. 18+40



Photo Point 4 – Facing upstream. Sta. 19+30



Photo Point 5 – Facing upstream. Sta. 21+10



Photo Point 6 – Facing upstream. Sta. 23+25

Hydrologic Data

Bankfull Events			
Date of Data Collection	Date of Occurrence	Method	Notes
	Dec 10, 2004	Proxy gauge	
	Jan 14, 2005	Proxy gauge	High flow, but not likely overbank
	March 28, 2005	Proxy gauge	High flow, but not likely overbank
August 21, 2006	Unknown	New Wrack	
October, 2008	Likely 08/27/08	New Wrack	Extreme rainfall associated with remnants of TS Fay

Summary

The channel has experienced some stressors with minor/modest levels of bank erosion totaling to less than 3% of the bank footage. Several structures have exhibited stress at various points in the monitoring history, but these have been relatively minor/transient and although morphological measurement was not performed, the symptomatic data of bank condition and structural maintenance of grade clearly indicate maintenance of site morphology and overall stability. Although some header sill stones may be set somewhat high, most structure are providing all three functions of grade control, bank protection and provision of pool habitat. Moreover, this state has been maintained when challenged several bankfull events over the monitoring period. The buffer appears to be exhibiting sufficient density and vigor within the confines of the urban constraints and municipal line of site safety requirements. Some supplemental planting will however be necessary moving into stewardship due to intense maintenance on the part of the city that was in conflict with conditions of the easement, particularly on stream left. The low level shrub and herbaceous material, which was supposed to be maintained between station 16+50 and the lower bridge on stream left was eliminated, except right at the top of bank in meanders. EEP will be working with the city of Greensboro to get these areas replanted. Supplemental plantings will be installed in fall of 2009 with signage to prevent any future encroachment.