

Richland Creek Watershed Based Plan

Name of Project: Richland Creek Watershed Restoration

Lead Organization:

The Middle Nolichucky Watershed Alliance, 311 Tusculum Blvd., Second Floor, Suite D, Greeneville, TN37745 will be the Lead Organization. The person who will sign the contract is Wilhelmina Williams, Board Chairman. The Project Manager will be Paul Hayden, Director of the Alliance. The office phone number is 423-525-4652. Paul Hayden can also be contacted by cell phone at 423-552-0774 or via email at pehaydentn@yahoo.com.

Watershed Identification:

The Richland Creek watershed is made up of five named streams as listed in the table below. The watershed lies within the Town of Greeneville and Greene County. The location of the watershed is illustrated in Figure 1 of this plan.

Causes and Sources of Nonpoint Source Pollution in the Watershed:

<i>Waterbody ID</i>	<i>Impacted Waterbody</i>	<i>County</i>	<i>Miles/Acres Impaired</i>	<i>CAUSE/TMDL Priority</i>	<i>Pollutant Source</i>	<i>Comments</i>
TN06010108102-0200	Simpson Creek	Greene	1.87	Loss off biological integrity due to siltation, Habitat loss	Pasture Grazing	Stream is a Category 5.
TN06010108102-0300	Tipton Creek	Greene	1.60	Loss of biological integrity due to siltation, Habitat loss	Pasture Grazing	Stream is a Category 5.
TN06010108102-0300	East Fork Richland Creek	Greene	4.96	Habitat loss due to alteration in stream side or littoral vegetative cover	Pasture Grazing	Stream is a category 5.
TN06010108102-0100	Unnamed Tributary to Richland Creek	Greene	4.05	Loss of biological integrity due to siltation, Habitat loss	Pasture Grazing	Stream is a category 5.
TN06010108102-2000	Richland Creek	Greene	8.51	Nutrients Loss of biological integrity due to siltation, Habitat loss, Escherichia coli	Pasture Grazing Discharges from MS4 area	Stream is a category 5.

Although pasture grazing and unlimited livestock access to the streams in this watershed are major problems, flash flooding resulting from stormwater runoff of impervious surfaces within the Town of Greeneville also is a major contributor to the siltation problems. The stormwater problem is increased by the lack of adequate retention and detention facilities down stream from the impervious surfaces. Part of the overall plan for this restoration plan will be to reduce the flooding in the watershed and therefore reduce the volume of water in these streams after a storm event. With flood abatement, bank erosion will decrease and reduce siltation in the streams.

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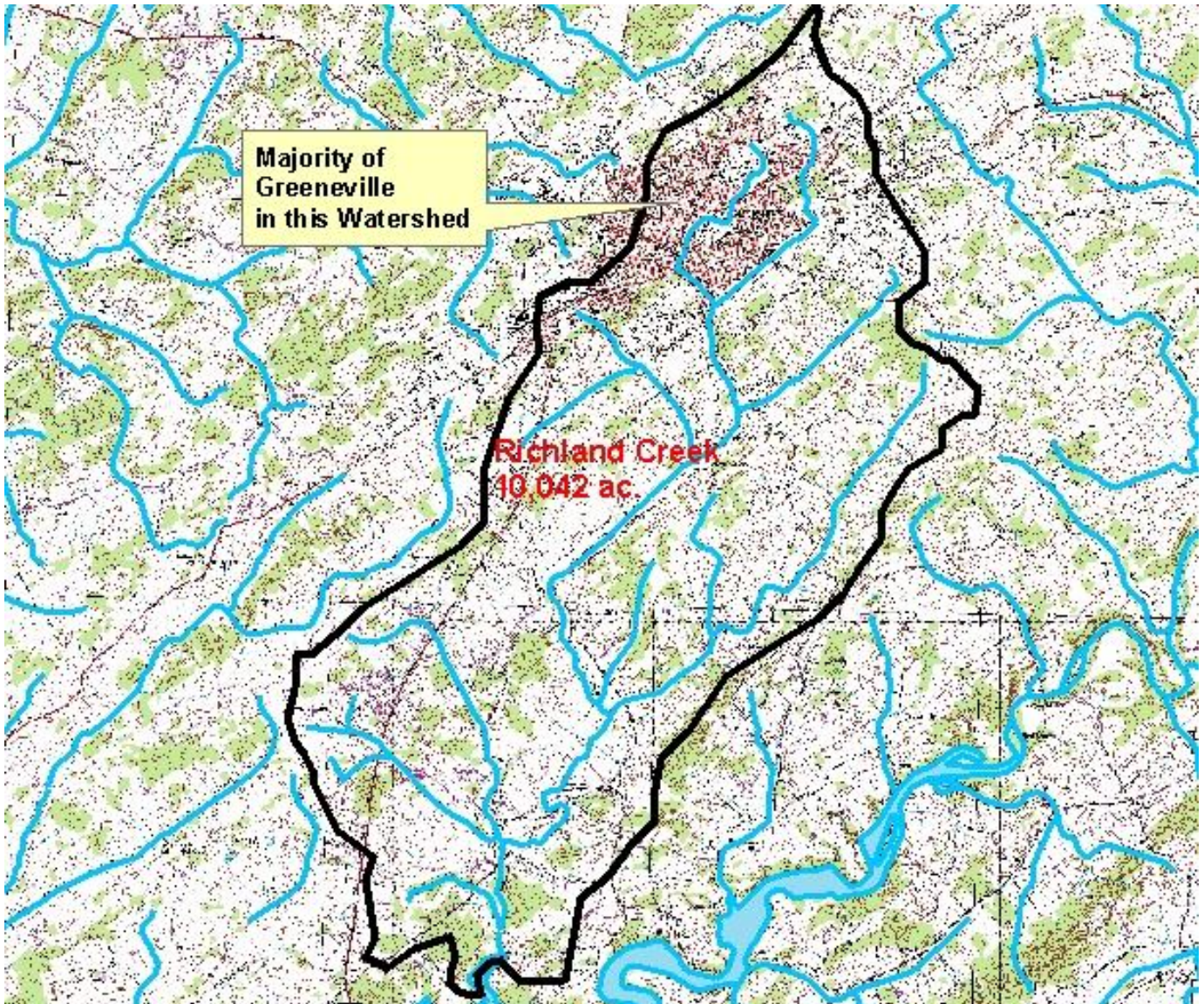


Figure 1. Richland Creek Watershed

Land use within the watershed is mostly industrial and residential in the upper reaches and agricultural in the lower portion of the watershed. See Figure 2 for land uses.

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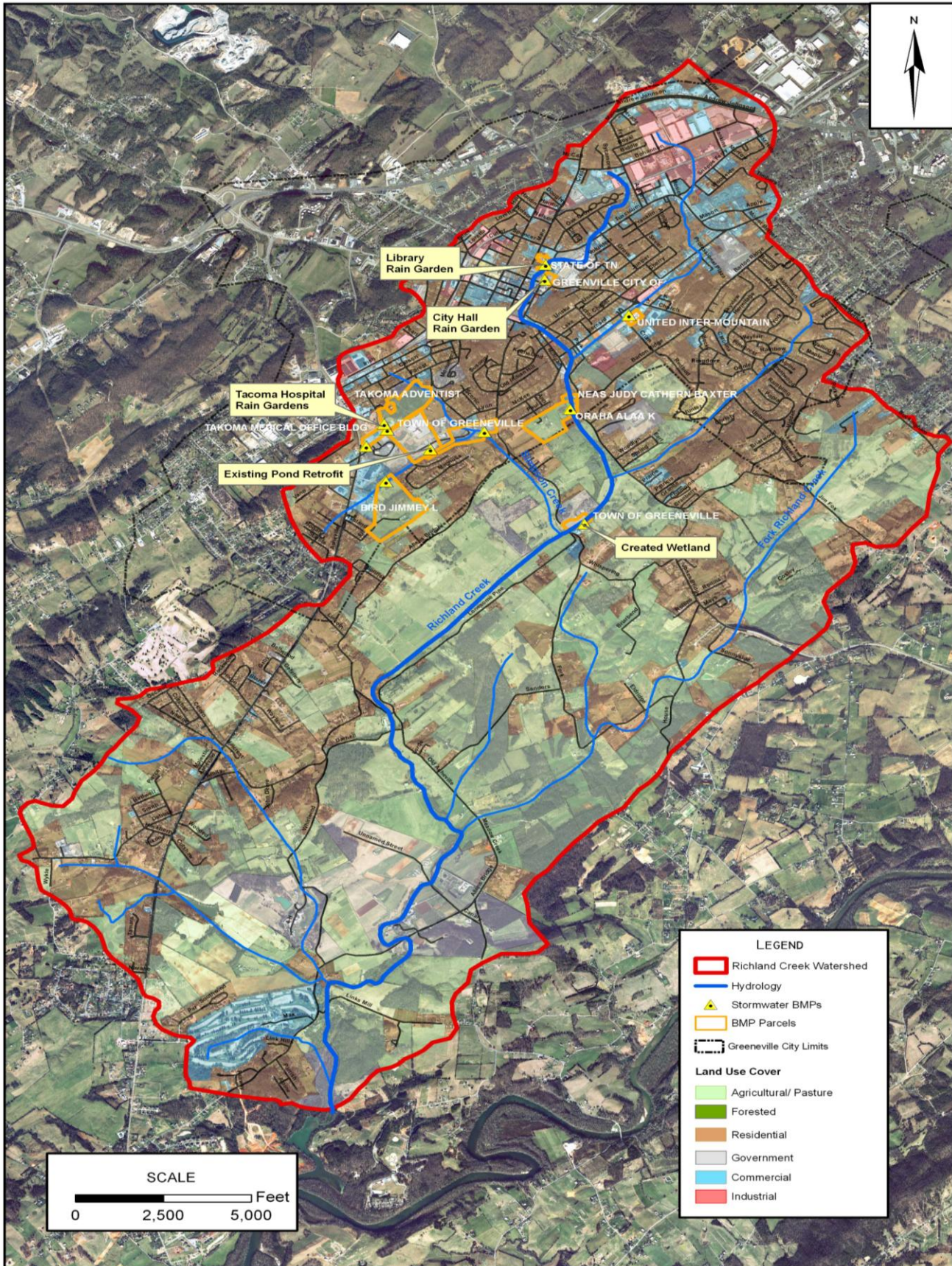


Figure 2 Watershed Land Uses

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BMP List, Educational Activities and Budget

BMP Name	Quantity		Cost/ Unit	Budget Estimate
Design and Install Retention Ponds	4	ea	\$42,000.00	\$168,000.00
Rain Gardens	20	ea	\$4,000.00	\$80,000.00
Exclusion Fencing (21 mi of stream)	44352	ft	\$2.00	\$88,704.00
Riparian Re-establishment	61	ac	\$1000.00	\$61,000.00
Creek Accesses for livestock water	15	ea	\$3,200.00	\$48,000.00
Creek Crossings for livestock	6	ea	\$3,800.00	\$22,800.00
Water Troughs and HUAs	22	ea	\$2,000.00	\$44,000.00
Pipeline	8800	ft	\$2.00	\$17,600.00
Feed Pad HUAs	8	ea	\$4,000.00	\$32,000.00
Stream Bank Repair	8650	ft	\$20.00	\$173,000.00
Pumping Station (for water system)	4	ea	\$2,900.00	\$11,600.00
Subcontract for Engineering Services	5 yrs		\$36,500.00	\$182,500.00
Subcontract for Project Management	5 yrs		\$30,000.00	\$150,000.00
			TOTAL	\$1,079,204.00

Educational Event	Quantity		Cost/ Unit	Budget Estimate
Fifth Grade Watershed Training	15	ea	\$75.00	\$1,125.00
FFA High School BMP Training	20	ea	\$150.00	\$3,000.00
Tusculum College Stream Monitoring	15	ea	\$40.00	\$600.00
Farm Tour of BMPs (Adults)	5	ea	\$425.00	\$2,125.00
Mailings and Brochures	6	ea	\$275.00	\$1,650.00
Stream Cleanup	5	ea	\$300.00	\$1,500.00
			TOTAL	\$10,000.00

Total Budget for BMPs and Education	\$1,089,204.00
Travel, Supplies etc.	6,250.00
Total Program	\$1,095,454.00

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In order to involve the maximum number of landowners in the watershed in this restoration, a Watershed Group for Richland Creek will be organized as a subset of the Middle Nolichucky Watershed Alliance which is involved with all the streams in Greene County. This sub-group will meet on a quarterly basis and be used to set priorities and help determine the direction of the overall watershed restoration. In addition to the landowners in this watershed, members of the Town of Greeneville and Greene County Governments will be encouraged to participate. The long range goal is to achieve sufficient improvement in the water quality of Richland Creek and its tributaries to have it removed from the 303d stream list.

Throughout the duration of the project, field days will be held annually to make landowners aware of the types of BMPs that are available and what the cost-share process could mean to their profitability.

Timeline, Tasks, and Assessment of Progress

The tasks and budget proposed in this plan are intended to be completed over a 5 year period. The following table details the intended completion process after the contract start date for this effort.

Task or Event	CONTRACT YEARS				
	1	2	3	4	5
Design and Install Retention Ponds (ea)	2	2			
Rain Gardens (ea)	6	6	4	4	
Exclusion Fencing (ft)		8300	13296	13296	9460
Riparian Re-establishment (ac)		14	14	14	19
Creek Accesses for livestock water (ea)		2	4	5	4
Creek Crossings for livestock (ea)		1	2	2	1
Water Troughs and HUAs (ea)	2	4	6	5	5
Pipeline (ft)	800	1600	2400	2000	2000
Feed Pad HUAs (ea)		1	2	2	3
Stream Bank Repair (ft)		2000	2000	2000	2650
Pumping Station (for water system) (ea)	1		2	1	
Fifth Grade Watershed Training (ea)	3	3	3	3	3
FFA High School BMP Training (ea)	4	4	4	4	4
Tusculum College Stream Monitoring (ea)	3	3	3	3	3
Farm Tour of BMPs (Adults) (ea)	1	1	1	1	1
Mailings and Brochures (ea)	2	1	1	1	1
Stream Cleanup (ea)	1	1	1	1	1

Progress toward these milestones will be measured on a monthly basis and adjustments will be made to keep the overall progress moving toward a completion of all planned activities before the conclusion of the contract. A detailed master schedule will be created for each contract year to reflect the particular

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landowner or other participants involved on a monthly basis so that slippages will be easily identified and corrected.

Monitoring and Documenting Success

Work associated with this plan will be conducted in an orderly fashion working first in the head waters and the tributaries of Richland Creek. The stream miles will be divided to allow easy monitoring by TDEC and the volunteers associated with the Tusculum College Environmental Department. When each BMP or set of BMPs is installed, these monitoring functions will be notified so they can concentrate on the area down stream from the work completed. All work accomplished by the volunteers will be coordinated with TDEC for their evaluation and further monitoring. Detailed records will be maintained of changes in all monitoring data.

Frequent contact will be maintained with the Johnson City TDEC Water Quality group for the purpose of obtaining monitoring data and ensuring all permits are obtained by land owners before any work on the area of the stream is started.

The main proof of success will be measured by the successful removal of any stream segments from the 303d list. All improvements in water quality noted in the monitoring process will be reported in each of the annual reports provided during this project.