

**Source Water  
Protection Plan  
Town of Pilot Mountain**  
PWS ID # 02-86-025



**Surry County, NC**

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## **Acknowledgements**

This Plan has been developed in cooperation with the Ecosystem Enhancement Program (EEP), which was established in 2003 as a result of a three-party memorandum of agreement between the NC Department of Environment and Natural Resources, the Army Corps of Engineers, and the NC Department of Transportation. The mission of the Ecosystem Enhancement Program is to "restore, enhance, preserve and protect the functions associated with wetlands, streams and riparian areas, including but not limited to those necessary for the restoration, maintenance and protection of water quality and riparian habitats throughout North Carolina." NCRWA wishes to thank the Project Coordinator for the opportunity to participate in the project and for the assembled Stakeholder Committee, all of whom are listed in the Planning Team Section.

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## Introduction

Source water is untreated water from lakes, streams, reservoirs, or ground water that is used as a drinking water supply. Source water quality can be threatened by many everyday activities and land uses, ranging from industrial wastes to chemicals applied to lawns. Source Water Protection (SWP) is the process of identifying and managing potential sources of contamination that may impact a drinking water supply. The ultimate goal of SWP is to prevent contaminants from entering a source of public drinking water.

The North Carolina Drinking Water Protection Program (DWPP) is a voluntary program designed to support local efforts to protect public drinking water sources. The DWPP is administered by the Public Water Supply (PWS) Section of the North Carolina Department of Environment and Natural Resources (DENR). A key feature of the DWPP is that each PWS system develops its own local SWP plan based on local conditions and priorities. The DWPP affords PWS systems a broad range of options for protecting their water supplies. The DWPP also provides information about funding and other resources available to support such local protection efforts. The DWPP encompasses both surface water and groundwater sources of drinking water. Communities are encouraged to establish source water protection plans which include the following:

Step 1. Obtaining a copy of the Source Water Assessment Program (SWAP) Report: The 1996 amendments to the Safe Drinking Water Act provided federal support and required states to conduct assessments of all public water systems. A source water assessment is a qualitative evaluation of the potential of a drinking water source to become contaminated by the identified potential contaminant sources (PCSs) within the delineated area. The PWS Section completed assessments for approximately 10,000 public water supply sources in the state of North Carolina. A copy of the Town of Pilot Mountain's SWAP may be found on the PWS website <http://www.deh.enr.state.nc.us/pws/>.

Step 2. Forming a local Source Water Protection Team: The SWP Team will develop and implement the local SWP plan.

Step 3. Conducting a Potential Contaminant Source Inventory: Identification of potential contamination sources within the source water protection area.

Step 4. Developing Management Strategies: The goal of management is to minimize the potential for contamination to enter the drinking water supply. Management strategies may take the form of regulatory strategies (such as zoning or use permits) and/or non-regulatory strategies (such as education or household hazardous waste collection). The local SWP Team must decide what methods are appropriate for their PWS system.

Step 5. Developing a Contingency Plan: Develop an emergency contingency plan for alternative water supply sources in the event supply becomes contaminated and emergency response planning for incidents that may impact water quality.

Step 6. Developing a Schedule for Implementing and Updating the Local SWP Plan: Develop an implementation and maintenance schedule for the local SWP plan.

Step 7. Submitting the Local SWP Plan to the PWS Section: Submit the completed local SWP plan to the PWS Section for review and approval.

A copy of this plan should be forwarded to the PWS Section for their review and recommendations. The PWS Section will provide the final approval for SWP Plans. Plans should be submitted to:

Drinking Water Protection Program Coordinator  
Public Water Supply Section  
1634 Mail Service Center  
Raleigh, North Carolina 27699-1634  
Phone 919-715-0827  
Fax 919-715-4374

North Carolina's Ecosystem Enhancement Program (EEP) mitigates for unavoidable impacts to the State's streams and wetlands to compensate for those streams and wetlands lost or damaged in impacts from transportation and development. EEP chooses to implement compensatory mitigation projects using a watershed planning approach that involves stakeholder input, monitoring, fieldwork, and data analysis. This information is used to identify, assess, and prioritize projects that will provide EEP with the best opportunities to successfully protect and improve stream and wetland functions. Because the Source Water Protection Planning process and EEP's mitigation process employ stakeholder input, research, and identifying and prioritizing issues of concern within the watershed area, the two processes were combined to utilize the available resources to influence each other's output and to complete both objectives – a Local Watershed Plan (LWP) and a local Source Water Protection Plan.

Work on this project began in 2008 with an initial watershed area of approximately 235 square miles. The project was restarted in 2011 with a LWP focus area of approximately 50 square miles which includes part of Stokes County. The nine 14-digit hydrologic units (HUs) comprising the initial (2008) study area for this Local Watershed Planning (LWP) effort were selected on the basis of several factors, including: the presence of impaired stream reaches and degraded habitat; the opportunity to partner with Surry Soil and Water Conservation District (SWCD) and other key stakeholders; the presence of good candidate sites for stream restoration in rural catchments; prior designation of three of the HUs as EEP Targeted Local Watersheds (TLWs); and the presence of existing (non-EEP) projects in the local watersheds.

This LWP effort was originally scoped as a 12-month 'fast track' to help meet EEP compensatory mitigation goals within the upper Yadkin Cataloging Unit (CU 03040101) and to assist local stakeholders seeking to implement non-mitigation projects (e.g., storm water BMPs) within high-priority subwatersheds.

A LWP identifies opportunities to protect and restore streams and wetlands. Watersheds were selected based on a number of criteria and factors that include:

- Opportunity to restore streams and wetland;
- Willingness of local resource professionals to protect and restore environmental resources;
- Presence of drinking water intake for Pilot Mountain; and
- Impaired biological conditions in Toms Creek.

Toms Creek has a drainage area of 38.4 mi<sup>2</sup> and is classified as water supply (WS-II), meaning waters used as a source of water supply for drinking, culinary, or food processing purposes where a WS-I (most protected) classification is not feasible. WS-II waters are generally in

predominantly undeveloped watersheds. Toms Creek has a supplemental classification of High Quality Waters (HQW) upstream of the water intake for the Town of Pilot Mountain and is Class C downstream of the Town's intake, meaning it should support aquatic life propagation and protection along with secondary recreation.

EEP's primary LWP goals are to identify major watershed stressors and work with local stakeholders and resource professionals to develop consensus recommendations for improving watershed conditions (water quality, habitat and hydrology functions). The final products of EEP LWP efforts includes a Project Atlas of mitigation opportunities and a Watershed Management Plan.

## The Source Water Assessment Program Report – Town of Pilot Mountain

A Source Water Assessment Program (SWAP) Report has been developed for the Pilot Mountain water system by the NC Public Water Supply Section. Surface water sources can be threatened by many PCSs, including permitted wastewater discharges, urban storm water runoff, or other types of non-point source contamination such as runoff produced by agricultural activities and land clearing for development. A source water assessment is a qualitative evaluation of the potential of a drinking water source to become contaminated by the identified PCSs within the delineated area. A SWAP Report consists of an assessment area delineation, a potential contaminant source inventory and map, a susceptibility rating, maps, tables, and figures for the surface water source, and a detailed description of North Carolina's SWAP approach. The Town of Pilot Mountain's main surface water source is Toms Creek and in their SWAP Report it was assigned a qualitative susceptibility rating of moderate, based on a contaminant rating of lower and an inherent vulnerability rating of higher as can be seen in the table below. This rating process is described in detail in Sections 3 and 6 of the SWAP Report.

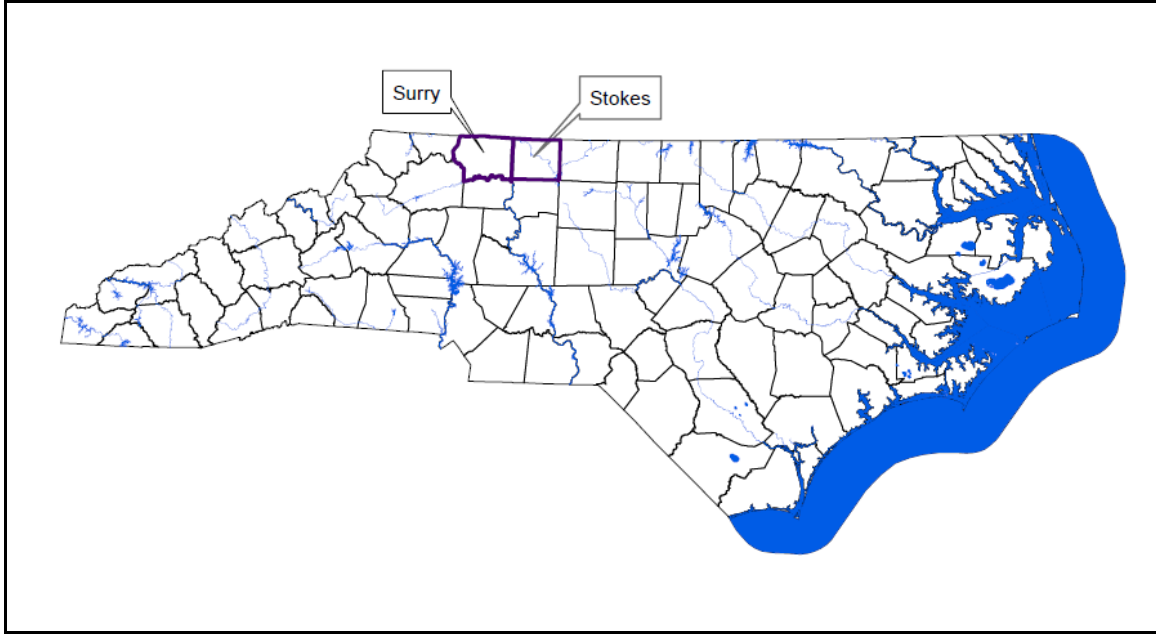
Source Name	Inherent Vulnerability Rating	Contaminant Rating	Susceptibility Rating
TOMS CREEK	Higher	Lower	Moderate

Figure 1. SWAP Results Summary

Source Name	Watershed Classification	Source Location
TOMS CREEK	WS-II	Direct Stream

Figure 2. Surface Water Source Information

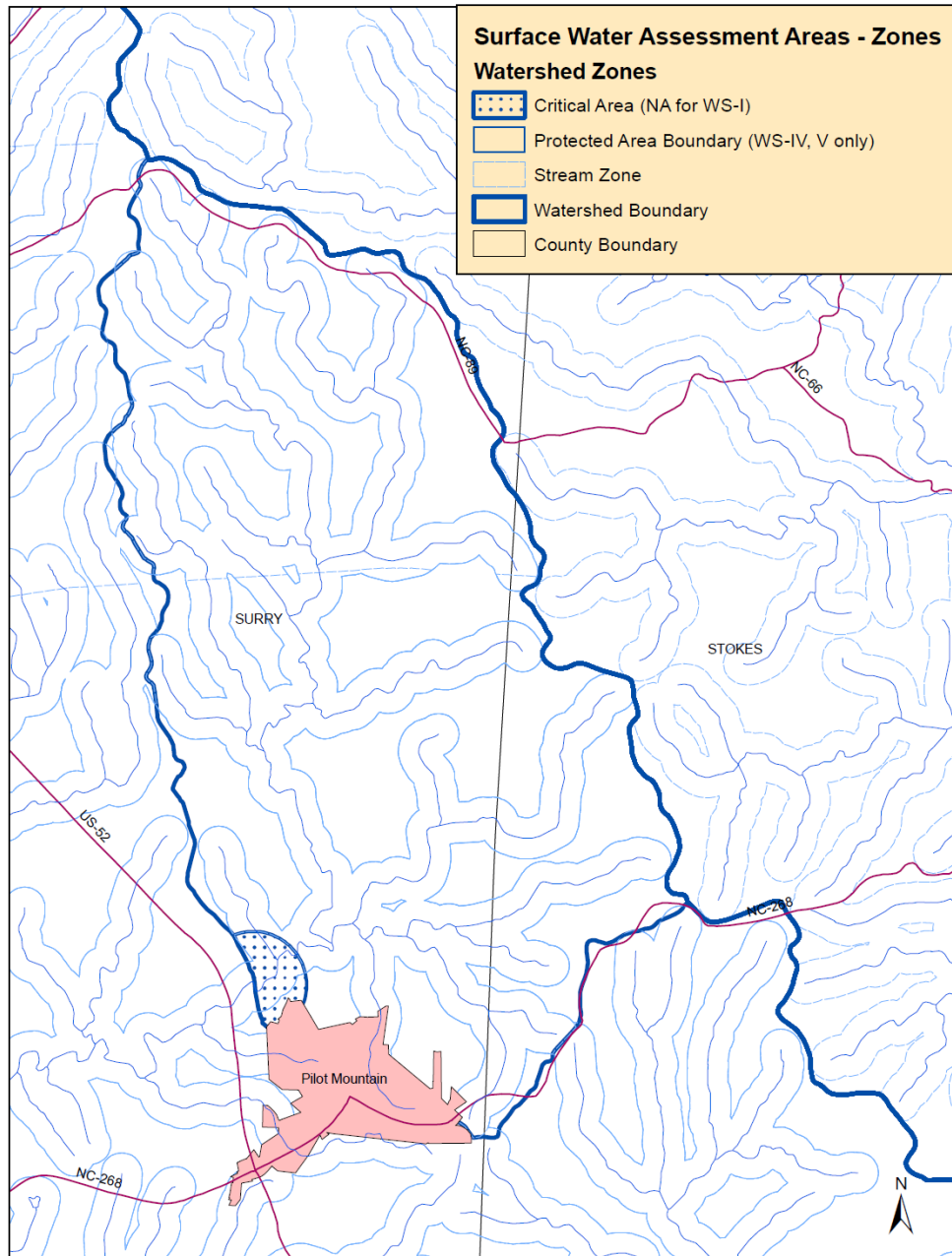
The Town of Pilot Mountain operates one surface water treatment facility drawing water from Toms Creek. The facility was last upgraded in 2003. There are approximately 30 miles of distribution lines in the system, and the system has the capacity to store 800,000 gallons of water. The system serves a population of approximately 2,500 people. The water treatment plant (WTP) only operates three and one half days per week and provides an average of 750,000 gallons per day to its citizens. The plant is permitted to withdraw 1.6 MGD. The Town also operates a wastewater treatment plant that has approximately 868 connections.



**Figure 3. Surry and Stokes County within North Carolina**

Tom's Creek and the Drinking Water Protection Area of concern occupy portions of both Surry and Stokes County. The map in **Figure 3** shows the location of those counties within North Carolina. A more detailed map of the area is shown in **Figure 4**.





**Figure 4. Surface Water Assessment Zone for the Town of Pilot Mountain taken from the 2010 Source Water Assessment Program Report**

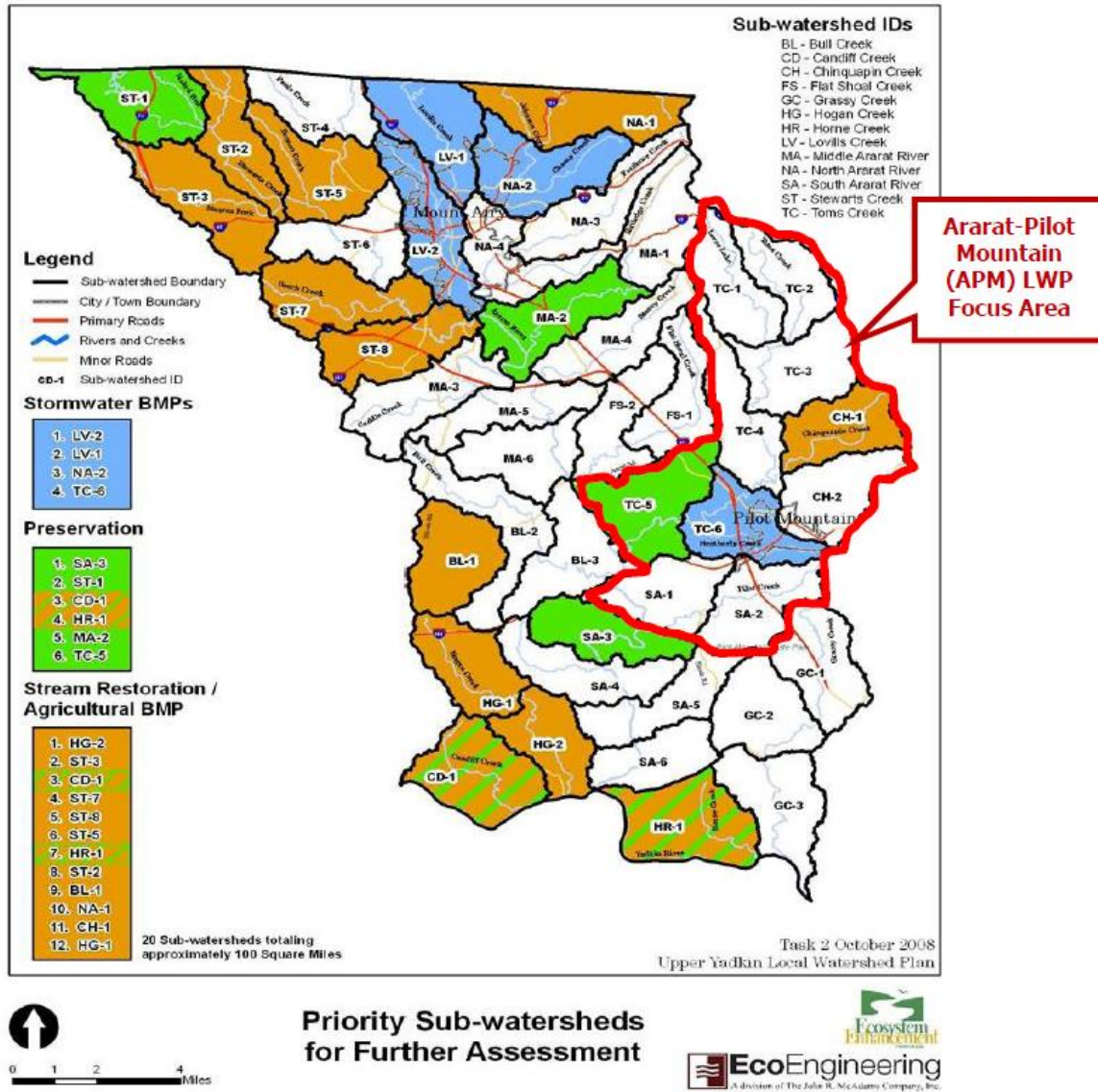


Figure 5. Local Watershed Plan taken from EEP factsheet

Figure 5 shows the broad area bordered in red covered by the LWP that was conducted by the EEP. This DWPP focuses on the smaller area shown in Figure 4.

## Local Regulatory Protection

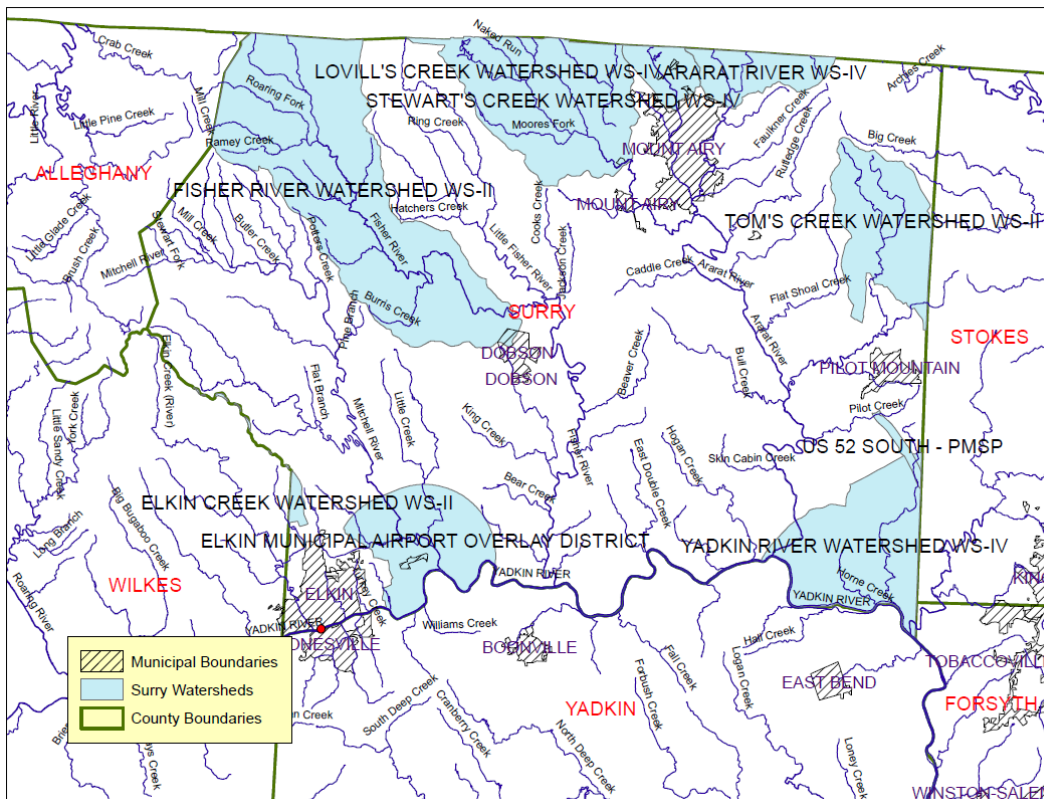
### Surry County Section 2. Watershed Overlay District. (from Zoning Ordinance)

The Watershed Overlay District is hereby established to identify on the Zoning Map those areas of the County that are subject to the Watershed Protection Ordinance. Any parcel or lot that falls within a Watershed Overlay District, shall be required to adhere to the requirements of the Watershed Protection Ordinance, as amended.

The following Watersheds (which include their critical and protected areas, as well as the balance of the watershed areas) in Surry County are included in the Watershed Overlay District:

- Fisher River WS - II
- Elkin Creek WS - II
- Tom's Creek WS - II
- Stewart's Creek WS - IV
- Lovill's Creek WS - IV
- Ararat River WS - V
- Yadkin River - King WS - IV

The Watershed Classifications are shown in **Figure 6**



**Figure 6**

The entire ordinance including the Water Supply Watershed Protection Section can be found at [http://www.co.surry.nc.us/document\\_center/Planning/ZoningOrdinance.pdf](http://www.co.surry.nc.us/document_center/Planning/ZoningOrdinance.pdf)

### **Surry County**

Surry County has enacted a Soil Erosion and Sedimentation Control Ordinance whose purpose is to regulate certain land-disturbing activities of over an acre to control accelerated erosion and sedimentation in order to prevent the pollution of water and other damage to lakes, watercourses, and other public and private property by sedimentation; and establishing procedures through which these purposes can be fulfilled. Adopted April 2003

### **Stokes County**

The Watersheds Overlay Districts are established to impose higher development standards around or upstream from drinking water supplies than generally imposed on land uses in the planning area. The intent is to maintain current development patterns in order to prevent the risks of pollution from more intense land uses (urbanization). The classifications of watersheds are based on current or expected land development patterns. A W-S II will have a predominantly undeveloped land-use pattern and a W-S IV will have a moderate to high land-use intensity pattern, or be a part of a larger watershed. Because the risk of pollution is directly related to the proximity to the water supply, development standards are higher in the critical area than in the balance of the watershed. The ordinance can be found at <http://www.co.stokes.nc.us/plan/zoningordinance.pdf>

## Town of Pilot Mountain’s Source Water Protection Committee

The following agencies provided input into the EEP Local Watershed Plan:

**Stakeholder Team** – Former NC Division of Water Quality, Surry SWCD, Surry Natural Resources Conservation Service, Surry Co. Planning, Stokes County SWCD, Town of Pilot Mountain, Piedmont Land Conservancy, NC Wildlife Resources Commission (WRC), NC Clean Water Management Trust Fund , NC Div. of Parks (Pilot Mountain State Park), Pilot View RC&D, Resource Institute, Inc., Piedmont-Triad Regional Council, NC PWS Section

Those who served on the Drinking Water Protection Subgroup and provided the Source Water Protection Planning recommendations are below in **Table 1**. Not all participants were present for both sessions.

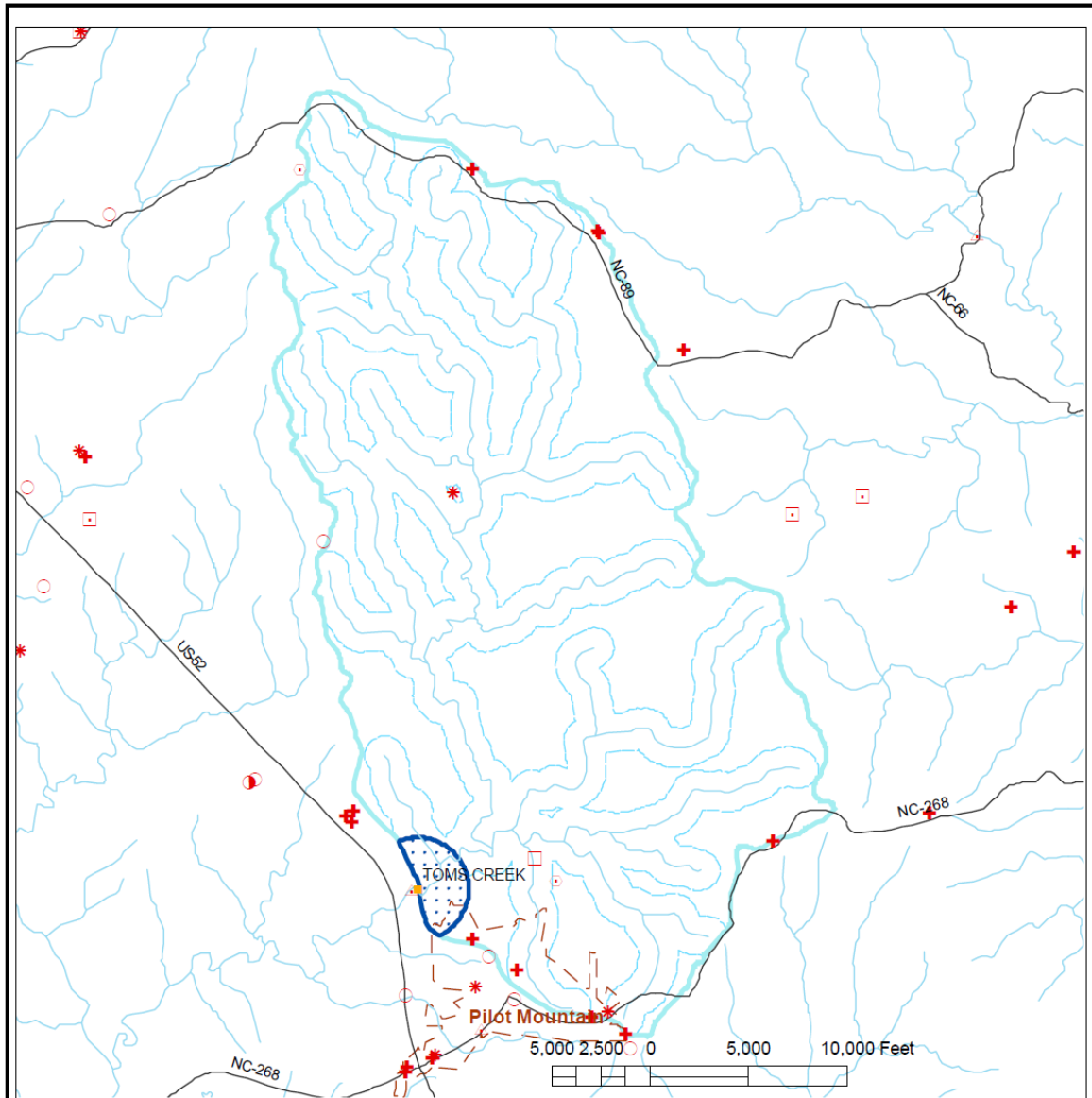
**Table 1.**

<b>Name</b>	<b>Organization</b>
Jay Frick	Enforcement and Protection Branch Head, NC PWS Section, DENR
Rebecca Sadosky, PhD	Drinking Water Protection Program Coordinator, PWS Section, DENR
Lisa Edwards, P.E.	Regional Engineer, PWS Section, DENR, Winston-Salem Regional Office
Cliff Whitfield	PWSS, DENR, PWS Section, DENR, Winston-Salem Regional Office
Cy Stober	Water Resources Manager, Piedmont Triad Regional Council
Jeff Horton	Property Specialist, NC EEP
Kent Scott	Plant Supervisor, City of Mount Airy
Ron Holt	Public Works, Town of Pilot Mountain
John Martin	Town of Pilot Mountain Water Treatment Plant
Tom Smith	SWCD, Stokes County
Tom Yocum	Former Division of Water Quality, DENR

## Potential Contaminant Source Inventory and Other Concerns

Using a United States Geological Survey (USGS) Topographic Map with the Source Water Protection Area (SWPA) delineated and a list of potential contamination sources taken from the Source Water Assessment, a windshield survey was conducted of the Drinking Water Protection Area. A PCS inventory map (**Figure 7**) shows the delineated area for the surface water source and the PCSs that, if released to the environment, could reasonably be expected to be a risk or a potential for contamination to the drinking water supply. PCS identification includes those facilities or sites regulated under a state or federal regulatory program and are identified in electronic databases in the source water assessment and facilities or sites that fall into a list of example categories supplied by the US EPA which is included in the Appendix.

**Tables 2 and 3** contain additional details regarding the PCSs identified as part of the SWAP, and are taken directly from that report. **Figure 8** shows the PCSs identified in the SWAP as well as PCSs identified during a windshield survey conducted by the NCRWA.



MAP 2. DELINEATED AREA AND PCS MAP

PILOT MOUNTAIN, TOWN OF, PWS ID: 0286025, TOMS CREEK

PCS Types

- |                                 |                          |   |
|---------------------------------|--------------------------|---|
| □ Animal Operations             | ○ Septage Disposal Sites | — Roads                                   |
| △ CERCLIS Sites                 | ○ Soil Remediation Sites | — Rivers and Streams                      |
| □ RCRA Gen. / Trans. Facilities | * Solid Waste Facilities | — Major Hydrology                         |
| ○ Non Discharge Permits         | * Tier II Sites          | — Municipal Boundaries                    |
| △ NPDES Permits                 | * RCRA TSD Facilities    | — Watershed Zones                         |
| ★ National Priority List Sites  | ○ Old Landfill Sites     | ■ Critical Area (NA for WS-I)             |
| ⊕ PCB Sites                     | ★ UIC Permits            | □ Protected Area Boundary (WS-IV, V only) |
| ○ Pollution Incidents           | ⊕ UST Permits            | □ Stream Zone                             |
|                                 |                          | □ Watershed Boundary                      |

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Figure 7.

**Potential Contaminant Source Attributes  
Town of Pilot Mountain  
From SWAP**

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
FOOTHILL FORD	NCD982168445	RCRA Gen. / Trans. Facilities	H	HIGHWAY 52 COOK SCHOOL ROAD	PILOT MOUNTAIN	27041	Surry
SILK SCREEN SERVICES INC	NCR000000570	RCRA Gen. / Trans. Facilities	H	332 SHELLEY BROOK DR	PILOT MOUNTAIN	27041	SURRY
NORTH CAROLINA GRANITE CORP	1E2A336C4E7DF55185256F94004A4174	Tier II Sites	H	151 GRANITE QUARRY TRAIL	MOUNT AIRY	27030	SURRY
G&B OIL CO, INC - PILOT MOUNTAIN	A5F87C54784DBB6B8525701200624A9B	Tier II Sites	H	209 HWY 268 E	PILOT MOUNTAIN	27041	SURRY
PILOT MT. REFUSE DUMP	NONCD0000583	Old Landfill Sites	H	Unknown	PILOT MT	Unknown	SURRY
PILOT MOUNTAIN MIDDLE	0-001449	UST Sites	H	202 FRIENDS ST	PILOT MOUNTAIN	27041	SURRY
TERRY JOYCE GROCERY	0-008607	UST Sites	H	3864 NC HWY 268	PILOT MOUNTAIN	27041	STOKES
COUNTRY GROCERY	0-008609	UST Sites	H	4828 WESTFIELD ROAD	MOUNT AIRY	27030	SURRY

**Table 2.**

It is believed that NC Granite Corp. in the table above is outside the Watershed area.



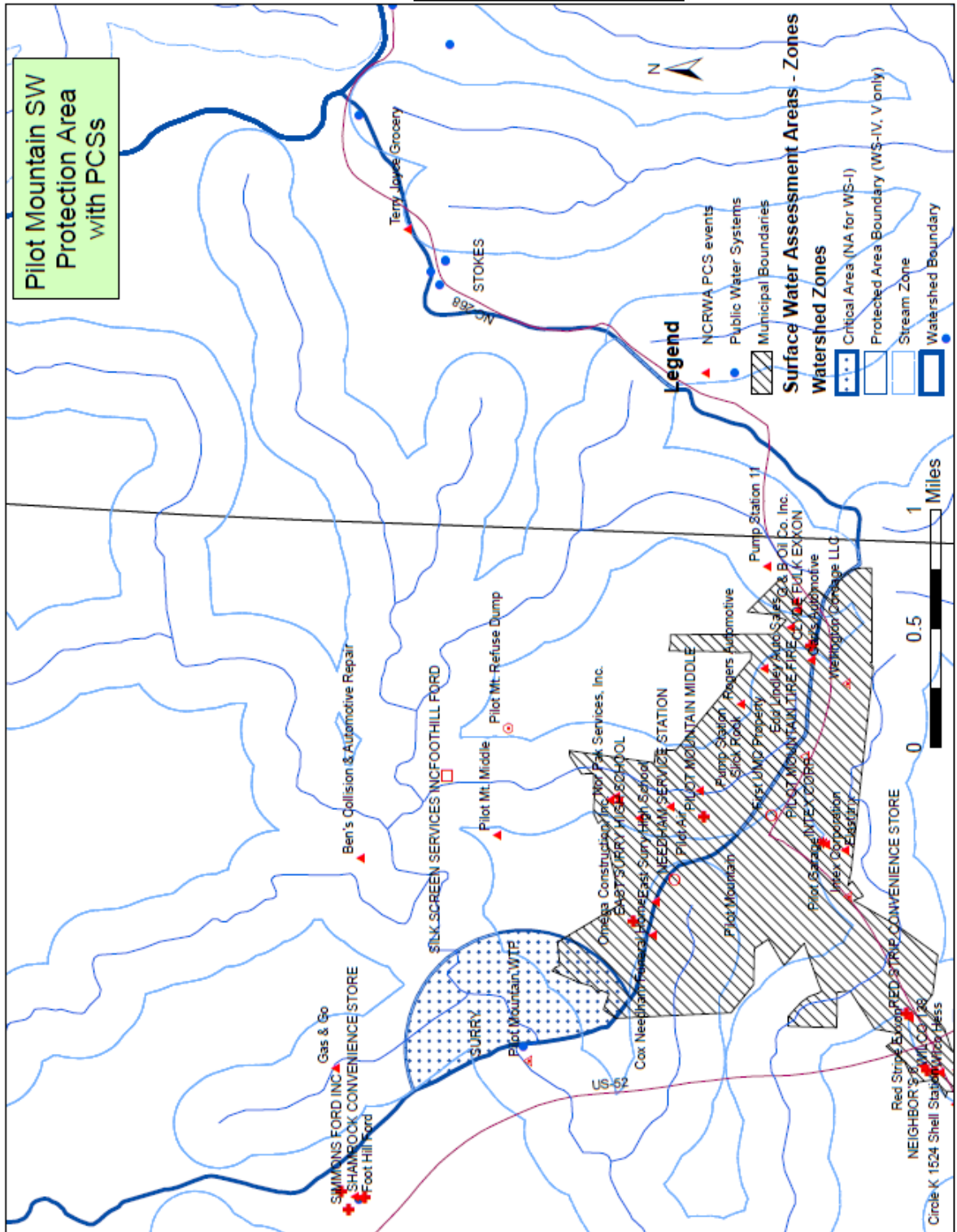
PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
EAST SURRY HIGH SCHOOL	0-009232	UST Sites	H	801 W. MAIN ST.	PILOT MOUNTAIN	27041	SURRY
CLYDE FULK EXXON	0-032755	UST Sites	H	619 EAST MAIN STREET	PILOT MOUNTAIN	27041	SURRY
KISERS GROCERY	0-036211	UST Sites	H	807 OLD US 52 BY PASS E	PINNACLE	27043	SURRY

It is believed that Kisers Grocery in the table above is outside the Watershed area.

PCS Name	PCS ID	Attribute	Value
FOOTHILL FORD	NCD982168445	Generator Class	Small Quantity Generator
FOOTHILL FORD	NCD982168445	Transporter	N
SILK SCREEN SERVICES INC	NCR000000570	Generator Class	Small Quantity Generator
SILK SCREEN SERVICES INC	NCR000000570	Transporter	N
PILOT MT. REFUSE DUMP	NONCD0000583	Number of Sites	10
PILOT MT. REFUSE DUMP	NONCD0000583	Site Size (Acres)	10
PILOT MT. REFUSE DUMP	NONCD0000583	Site Opening Date	1960
PILOT MT. REFUSE DUMP	NONCD0000583	Site Closure Date	1973

**Table 3.**

Figure 8.



## Potential Contamination Sources

**Table 4.** shows the PCSs that were identified during the inventory, listed in the order of the risk they might pose to the Town of Pilot Mountain's surface water intake. In determining this order, the PCSs' proximity to or likelihood that there is a direct pathway to the intake, quantity of contaminants on site, and potential of health risk were taken into consideration. Risk was estimated and PCSs are grouped into categories of higher, moderate and lower risk. **Figure 9** shows the Above Ground Storage Tanks (ASTs) at G & B Oil Co. Inc.

**Table 4.**

<b>PCS Site</b>	<b>Owner Contact</b>	<b>Potential Contaminant</b>	<b>Quantity</b>
<b>Higher Risk Sources</b>			
Foot Hill Ford	3220 Cook School Rd. 336-368-6100	New/used Oil Heating Oil Gasoline UST Permit # 00-0-000000195	500 gal. 10,000 gal. 12, 550 gal.
Gas & Go	Ambika Energy Inc. DBA Gas & Go PO Box 18 Pilot Mountain 336-368-2008 Permit # 0-032853	Gasoline	8,000 gal. 8,000 gal.
G & B Oil Co. Inc.	209 Hwy. 268 E	Tier II Site A5F55185256F94004A4174	
Speaking Apparel (Silkscreen Service, Inc.)	332 Shelley Brook Drive 336-368-1120	NCR000000570 RCRA Gen/Trans. Facility	
Pilot Mt. Middle	202 Friends St.	UST Permit # 0-001449 Heating Oil/Fuel	10,000 gal. removed July 1999
Pilot Mt. Refuse Dump	Indigo Lane	NONC0000583	Old Landfill Site
Ben's Collision & Automotive Repair	Grammy's Lane 336-351-2126	Solvents	Small

**Table 4.**

<b>PCS Site</b>	<b>Owner Contact</b>	<b>Potential Contaminant</b>	<b>Quantity</b>
<b>Moderate Risk Sources</b>			
Champion Printing	330 Shelley Brook Drive 336-368-5063	Solvents	Small
East Surry High School	801 W. Main St. Surry County BOE 209 N. Crutchfield St. Dobson, NC27017-8805	UST Permit # 0-00932 Heating Oil/Fuel	6,000 gal. 20,000 gal.
Omega Construction, Inc.	344 Shelley Brook Drive 336-368-5156	Mobile Tank Pesticides?	
Nor Pak Services, Inc.	347 Shelley Brook Drive 336-368-3494	Screen Printing, package distribution, embroidery	Inks
Pump Station Slick Rock	Pilot Mountain 336-368-2247 ext. 210	Sewage Spills	
Pilot Air	292 Highway 52 336-368-4081	Heating & Air Solvents	Small
Pump Station 11	Pilot Mountain 336-368-2247 ext. 210	Sewage Spills	
Blue Mountain Gas Shamrock Convenience Store	3230 Cook School Rd.	2 - Gasoline Gasoline New/used Oil UST Permit # 00-0-0000032491	10,000 gal. 6,000 gal. 1,000 gal.
Cox Needham Funeral Home	822 W. Main St, 336-368-2233	Embalming Fluid	
<b>Lower Risk Sources</b>			
Elastrix	523 S. Stephens St. 336-368-3080	Fuel AST Rubber Molding	~ 500 gal.
Howell Nelson Funeral Service	615 E 52 Bypass 336-368-1200	Crematory & Embalming fluids	?

**Table 4.**

<b>PCS Site</b>	<b>Owner Contact</b>	<b>Potential Contaminant</b>	<b>Quantity</b>
<b>Lower Risk Sources (Continued)</b>			
Edd Lindley Auto Sales	429 E Old Hwy. 52 Bypass 336-368-2573	Auto Repair	
Rogers Automotive	311 Old Hwy. 52 Bypass 336-368-2310	Auto Repair	
Carl's Automotive	600 E. Main St. 336-368-5400	Auto Repair	
Pilot Garage	507 Denny St. 336-368-1441	Auto Repair	
Food Mart Shell	703 Hwy 268E Mt. Airy OilCo. 336-368-9858	3 ASTs with containment Kerosene Gas Fuel Oil Diesel UST Permit 0-035178	2,000 gal. 8,000 gal. 10,000 gal.
Circle K 1524 Shell Station	805 Key St. 336-368-4626	2 - Gasoline Gasoline Kerosene Diesel UST Permit # 00-0-0000002211	10,000 gal. 6,000 gal. 6,000 gal. 4,000 gal.
Red Stripe Exxon	700 Key St. 336-368-5432	Gasoline  Diesel New/used Oil UST Permit # 00-0-0000008598	2 - 6,000 gal. 12,000 gal. 4,000 gal. 6,000 gal. 1,000 gal.
Wilco Hess	818 S. Key St. 336-368-9843	Gasoline	2 - 8,000 gal. 10,000 gal.
Tucker's Business Center Grocery	915 NC 268 336-368-4480	ASTs	
Shell Rapid Lube	115 Foothill Drive 336-368-8800	Auto Repair	

PCS Site	Owner Contact	Potential Contaminant	Quantity
<b>Lower Risk Sources (Continued)</b>			
Country Grocery	4828 Westfield Rd.	Old UST Site Permit # 0-008609	
Terry Joyce Grocery	3864 NC Hwy. 268	UST Permit # 0-008607 Gasoline  Kerosene	2,000 gal. 2-3,000 gal. 550 Gal.
Westfield Superette	6045 Westfield Rd.	Old UST Site	

**Table 4.** cont'd



**Figure 9.** G & B Oil Co. Inc. ASTs

## Management of the Drinking Water Assessment Area

Purpose: Outline potential recommendations that could provide protection for the drinking water for Pilot Mountain. Such recommendations should focus on strategies specific to those streams that drain into Tom's Creek and are upstream from the intake (referred to in these recommendations as "Tom's Creek watershed"). Specifically, these recommendations are most applicable to sub watersheds TC-1, TC-2, TC-3, TC-4, CH-1 and CH-2 (as depicted in Figure 5)

Background: The drinking water derived from Tom's Creek has historically been of high quality. Periodic elevated counts of fecal coliform are of concern, but these isolated events have been mitigated by the water treatment process. Therefore, Pilot Mountain is in the unique position that no immediate problems are compromising its source of raw water. The current situation suggests that a proactive, long term campaign to embrace drinking water protection may be the best strategy for Pilot Mountain.

Subgroup participants: The Source Water Protection Subgroup met during two breakout sessions. **Table 1** identifies those who participated on the Subgroup. Not all participants were present for both sessions. A proposed schedule for implementation of the following management strategies is in **Table 5**.

Consensus Recommendations:

1. *Finalize a voluntary Source Water Protection Plan.*

Representatives from the Town of Pilot Mountain should use the information below and results from the overall Ecosystem Enhancement Program effort to finalize a SWP Plan. The plan should be submitted to the state for review and approval. An approved SWP Plan will result in a legitimized document that can be used to initiate SWP activity and to attract funding for environmental projects.

2. *Pursue Agricultural BMPs, specifically regarding livestock and timber harvesting.*

Soil and Water Conservation agents from Surry and Stokes County should work cooperatively to develop and prioritize a list of livestock operations that might embrace agricultural BMPs. Attention should be extended to these operations, especially to educate and promote funding programs (e.g., Environmental Quality Incentives Program [EQIP] and NC Agriculture Cost Share Program). Exclusion of livestock from streams in the Tom's Creek watershed is of primary importance since this has potential to reduce stream bank erosion and fecal contamination.

Timber harvesting has increased recently and this trend will likely continue. Outreach efforts should be extended to those landowners considering timber harvesting. It would be beneficial to recruit knowledgeable professionals from the NC Extension Service and/or the Forestry Service to outline BMPs specific to timber harvesting. The issue of stream buffer preservation should be included in these discussions.

3. *Conduct definitive tests to determine the source of elevated fecal coliforms.*

The former NC Division of Water Quality (DWQ) has conducted tests to identify the source of fecal contamination that is periodically observed in the raw drinking water of Tom's Creek. Unfortunately, the sampling results were not consistent and no definitive conclusions were derived. The fecal source is hypothesized to be from leaks in the waste water infrastructure.



However, agricultural and other animal activity may be major contributors. If leaking sewer lines are indeed the source, then Standard Operating Procedures (SOPs) should be reviewed, and a long term objective should include the leaking locations and eventual infrastructure improvement. Any other sources identified in the analysis (e.g., agriculture, animals, etc.) should also be subject to mitigation policies (as mentioned in recommendation #2, above). It is important to note that a state-approved SWP Plan will qualify Pilot Mountain for priority points on a Clean Water State Revolving Fund (CWSRF) application, a primary source to solve problems in Pilot Mountain's waste water infrastructure.

4. *Evaluate potential point source contamination in the protected and critical areas.*

The Public Water Supply Section of the Division of Water Resources has completed a detailed assessment of the Tom's Creek watershed ([http://www.ncwater.org/pws/SWAP\\_susceptibility\\_results.HTM](http://www.ncwater.org/pws/SWAP_susceptibility_results.HTM)). The current risk assessment indicates a "moderate" susceptibility rating, which is a measure of potential contamination risk. It is recommended that the Pilot Mountain SWAP Report be reviewed by local officials, and management strategies should be considered for potential point sources of contamination (e.g., Tier II sites, USTs, Old Landfill Site, etc.). Appropriate management strategies may include revisiting local controls, leveraging pressure on state inspectors that regulate activities at these sites, and education/outreach to enlist the owners of these sites as allies for local SWP efforts.

5. *Public education and awareness.*

Public education and awareness are important components of a long-term, sustained SWP effort. Any and all positive developments related to drinking water protection should be promoted in local media outlets. Assigning a responsible "point of contact" to communicate with the media is important to ensure consistent messaging. Some specific public awareness efforts may include the following:

- Signage on NC Highways 52, 268 and 89 to remind the public they are within a "drinking water protection area." Similar signage within the Town of Pilot Mountain may also be applicable.
- Stenciling on storm drains to emphasize the existence and transport of contamination, especially through stormwater runoff.
- Outward support of scouting projects that focus on SWP concerns. It is believed the Mayor and Town Manager would readily support this strategy.
- Encourage local organizations, schools and clubs to participate in SWP discussions and activities. Public participation allows a mechanism to attract volunteers for stream walks, rain garden construction, and other demonstration projects.

6. *Form a "Collaboration Team" to include representatives of Pilot Mountain and Surry County.*

This strategy has been used effectively in other communities where jurisdictional boundaries can impact the scope of SWP activities. Most of the drinking water for Pilot Mountain is under the jurisdiction of Surry County. A Collaboration Team would outline an official mechanism for cooperation to enforce ordinances and affect changes in developmental policy. A Collaboration Team may also be successful identifying and soliciting funding for SWP

projects. It is possible that Collaboration Team membership can be extended to local clubs and organizations that have political connections and influence over funding priorities.

7. *Prioritize buffer enhancements to sub watersheds in Tom's Creek.*

Detailed effort has been undertaken to characterize buffer conditions in the Tom's Creek watershed. Analysis shows that inadequate buffers are one of the most significant stressors for streams providing drinking water to Pilot Mountain (Watershed Assessment Report, NC Ecosystem Enhancement Program, 2013). Therefore, a top priority includes creation of a strategy to promote and support healthy vegetative buffers, especially in sub watersheds TC-1, TC-2, TC-3, CH-1 and CH-2. It is suggested that local land conservancies be enlisted to assist with outreach and promotion of programs that could lead to greater buffer conservation.

8. *Pursue stormwater projects in Tom's Creek.*

Stormwater BMPs should be pursued, especially in the TC-6 and CH-2 sub watersheds. When located in high population areas, stormwater BMPs not only mitigate contamination events, but they also serve as public demonstration sites. For example, a manufactured wetland at a school site could treat runoff from the parking areas while providing a "living laboratory" to observe biological/ecological processes. The Community Conservation Assistance Program (CCAP) program, used to fund urban stormwater projects, should be evaluated as applicable to Pilot Mountain concerns.

9. *Emergency response planning.*

Emergencies can occur as a result of many factors, including natural disasters, chemical spills, vandalism, etc. It is recommended that water utility officials adopt an emergency response protocol. The protocol should identify points of contact for emergency responders, and it should define a chain of communication should an emergency occur. A responsible party should be identified who is charged with keeping the information current and accessible.

10. *Establish an emergency connection with a nearby water system.*

It is recommended that the Town of Pilot Mountain establish an emergency connection with another water system as an emergency water supply.

**Table 5.** Schedule for Drinking Water Protection Implementation

<b>Element</b>	<b>Who</b>	<b>When</b>
<b>Short Term</b>		
Finalize a voluntary Source Water Protection Plan.	Town of Pilot Mountain, NCRWA	Completed
Form a “Collaboration Team” to include representatives of Pilot Mountain and Surry County.	Town of Pilot Mountain, Surry County	Within 90 days of SWPP Approval.
Pursue Agricultural BMPs, specifically regarding livestock and timber harvesting	Town of Pilot Mountain, Stokes and Surry County Soil and Water Conservation, NRCS, FSA, CCAP, NC Extension Service, NC Forestry Service	Begin immediately upon approval of SWPP
Emergency response planning.	Town of Pilot Mountain	Immediately – should be completed.
<b>Long Term</b>		
Conduct definitive tests to determine the source of elevated fecal coliforms	Town of Pilot Mountain, DWR	Begin within 90 days of SWPP approval
Evaluate potential point source contamination in the protected and critical areas.	Town of Pilot Mountain	Begin within 90 days of SWPP approval
Public education and awareness	Town of Pilot Mountain	Begin within 90 days of SWPP approval, ongoing.
Prioritize buffer enhancements to sub watersheds in Tom’s Creek	Town of Pilot Mountain and local land conservancies	Begin within 90 days of SWPP approval.
Pursue stormwater projects in Tom’s Creek	Town of Pilot Mountain, CCAP	Begin within 90 days of SWPP approval.
Establish an emergency connection with a nearby water system	Town of Pilot Mountain	Begin within 90 days of SWPP approval.

## **Emergency Contingency Plan**

The primary person responsible for implementing the emergency contingency plan is the Water Plant Operator. The back-up person responsible for implementation is the Public Works Superintendent.

Should a major oil or chemical spill occur within the Source Water Protection Area, appropriate emergency agencies would be notified. The first of these would include the Pilot Mountain Fire Department and the Surry County Emergency Coordinator.

### **Pilot Mountain Fire Department**

**911**

### **Surry County Emergency Coordinator**

**John Shelton, Director**  
**Surry County Human Services Center**  
**1218 State Street**  
**Mount Airy, NC 27030**  
**(336) 783-9000 (O)**  
**(336) 783-9010 (F)**  
[\*\*sheltonjo@co.surry.nc.us\*\*](mailto:sheltonjo@co.surry.nc.us)

If evidence exists that indicates that there is contamination in the system, it will immediately be taken off line and not returned to service until it is determined that water quality from the intake is in compliance with standards governing public water supplies. If it were determined that contaminants had entered the distribution system, residents would be notified by radio, television and newspaper not to drink the water until further notice. The regional office of the Public Water Supply Section would be notified immediately of the situation and asked for assistance. Sampling (i.e. bacteriological, VOCs, SOCs, etc.) would begin to determine the contaminant involved and the extent of contamination. A systematic flushing of the distribution system would begin with follow-up sampling conducted as needed until the system was determined to be free of contamination and in compliance with standards governing public water supplies. After consultation with the Public Water Supply Section, residents would be notified that the Town of Pilot Mountain's Water System's water was once again safe for consumption.

**Short and Long term contingency plan** – The Town of Pilot Mountain has the capacity to store two days worth of water in above ground and below ground storage or 0.800 million gallons. They also have the capacity to store 20 million gallons of water off stream as raw water supply. They do not have an interconnection with another system in the event of a long term loss of their water resource. The Town does have an emergency generator to provide power to the water treatment plant should they lose electricity. **Table 6** contains a list of emergency contacts and additional information.

**Table 6 - Emergency Contact Numbers and Additional Resources:**

Name	Resource
Primary person responsible for implementing emergency contingency plan Water Plant Operator Brandon Stahley Cell 336-413-4428	Emergency Response
Secondary person Public Works Superintendent 336-775-5023	Emergency Response
Surry County Health Department 18 Hamby Rd Dobson, NC 27017 336-401-8400 <a href="http://www.surry.com/">http://www.surry.com/</a>	
Public Water Supply Section 1634 Mail Service Center Raleigh, NC 27699-1634 919-715-2853 <a href="http://www.ncwater.org/pws/">http://www.ncwater.org/pws/</a>	Technical Assistance Regulatory guidance
NC Department of Environment & Natural Resources, Washington Regional Office Winston-Salem Regional Office 585 Waughtown Street Winston-Salem, NC 27107-2241 Phone: 336-771-5000 FAX 336-771-4631 <a href="http://portal.ncdenr.org/web/wq/home/ro/wsro">http://portal.ncdenr.org/web/wq/home/ro/wsro</a>	Regional Water Quality Section, Public Water Supply Section, UST Section, Groundwater Section, Hazardous Waste Section, Spills, Regulatory information and technical assistance
Department of Transportation District Traffic Engineer Mr. Michael Poe 1561 Mail Service Center Raleigh, North Carolina 27699-1561 Local Office –828-265-5380	Emergency spill notification
NC Army National Guard 185 Patrol Station Rd Mt Airy, NC (336) 786-5657	Emergencies, as available: Generators, 400-gallon water trailers, bottled water, transportation
NC Rural Water Association Post Office Box 590 Welcome, NC 27374 336-731-6963 <a href="http://www.ncrwa.com">www.ncrwa.com</a>	Technical assistance Education
North Carolina Cooperative Extension Service Campus Box 7602 North Carolina State University Raleigh, NC 27695-7602 919-515-2811 <a href="http://www.ces.ncsu.edu/">http://www.ces.ncsu.edu/</a>	Educational brochures, publications

<a href="http://www.soil.ncsu.edu/assist/homeindx.html">http://www.soil.ncsu.edu/assist/homeindx.html</a>	HomeASyst Fact Sheets
US EPA Regional Office GW & UIC Section Region IV Atlanta Federal Center 61 Forsythe St. Atlanta, GA 30303-8960 <a href="http://www.epa.gov">www.epa.gov</a> <a href="http://www.epa.gov/owm/septic/pubs/septic_sticker.pdf">http://www.epa.gov/owm/septic/pubs/septic_sticker.pdf</a> <a href="http://www.epa.gov/epaoswer/osw/">http://www.epa.gov/epaoswer/osw/</a> <a href="http://www.epa.gov/nscep/ordering.htm">http://www.epa.gov/nscep/ordering.htm</a> <a href="http://www.epa.gov/watertrain/pdf/swpbmp.pdf">http://www.epa.gov/watertrain/pdf/swpbmp.pdf</a>	Educational brochures, publications
Division of Environmental Assistance and Customer Service (DEACS) 1639 Mail Service Center Raleigh, NC 27699-1639 1 877-623-6748 Emergency 1-800-858-0368 <a href="http://portal.ncdenr.org/web/deao">http://portal.ncdenr.org/web/deao</a>	Technical and non-regulatory assistance to reduce waste
National Small Flows Clearinghouse West Virginia University Post Office Box 6064 Morgantown, WV 26506-6064 800-624-8301 <a href="http://www.nesc.wvu.edu/nsfc/nsfc_index.htm">www.nesc.wvu.edu/nsfc/nsfc_index.htm</a>	Pamphlets, brochures, training aids
eCivis Grants Network <a href="http://www.ecivis.com/indexFlash.cfm">http://www.ecivis.com/indexFlash.cfm</a>	Fee based service that helps communities to apply for grants.

**Review SWPP Annually and Update every five years:**

Date Reviewed	Reviewed by	Changes or Comments

The Town of Pilot Mountain is aware that an effective Source Water Protection Plan is an ongoing process. Public water system officials or planning team members will review public records available at hazardous waste and waste disposal facilities and potential contamination source sites located within the drinking water protection area annually in order to ensure program compliance. Every five years, the SWPP will be updated using the same procedures used to develop the original SWPP.

# Appendix



## EPA Potential Contamination Activities

PCS identification includes those facilities or sites regulated under a state or federal regulatory program and are identified in electronic databases in the source water assessment and facilities or sites that fall into the following list of example categories supplied by the US EPA.

Abandoned Wells	Laboratories
Aboveground Storage Tank	Laundromat/Dry Cleaners
Airport	Lift Stations
Agricultural Facilities	Machine Shops
Animal Feedlot/Waste Storage	Major Highways
Asphalt Plant	Major Railroads
Auto Repair	Military Bases
Body Shop/Salvage	Mining
Car Washes	Nurseries
Cemetery	Oil/Gas Pipeline
Chemical Production	Oil Wells
Chemical Mixing/Storage	Photo Processor
Drainage Canal	Printer
Dumps	Power Lines
Electroplaters/Metal Finishers	Other Wells
Fertilizer/Pesticide Storage	Refineries
Fertilizer/Pesticide Production	Refinishing
Fertilizer/Pesticide Mixing	Road Salt
Funeral Homes	Septic Systems
Gas Stations	Substations
Golf Courses	Surface Water
Grain Storage Bin	Sewage Plant
Groundwater Remediation	Underground Storage Tanks
Holding Pond/Lagoon	Waste Piles
Inactive/Abandoned Hazardous Waste Sites	Wood Preserving
Injection Wells	

## References

North Carolina Department of Environment and Natural Resources, Division of Environmental Health, Public Water Supply Section, The North Carolina Source Water Protection Guidebook, Developing a Local Surface Water Protection Plan, 2006

North Carolina Department of Environment and Natural Resources, Division of Environmental Health, Public Water Supply Section, North Carolina's Source Water Assessment Program Plan, October 21, 1999

Ecosystem Enhancement Program website: <http://portal.ncdenr.org/web/eep>

North Carolina Division of Water Resources, Local Water Supply Plan, The Town of Pilot Mountain, 2012, [http://www.ncwater.org/Water\\_Supply\\_Planning/Local\\_Water\\_Supply\\_Plan/](http://www.ncwater.org/Water_Supply_Planning/Local_Water_Supply_Plan/)

Annual Drinking Water Quality Report, 2012, The Town of Pilot Mountain, <http://www.townofpilotmountain.com/>

Division of Energy, Mineral and Land Resources website, Water Supply Watershed Protection Program, <http://portal.ncdenr.org/web/lr/water-supply-watershed>

Water Quality Technical Memorandum for the Ararat Pilot Mountain Local Watershed Planning Area, Prepared by North Carolina Division of Water Quality Watershed Assessment Team August, 2012

## **Glossary of acronyms and abbreviations**

AST - Above ground Storage Tank  
BMP - Best Management Practice  
CU – Cataloging Unit  
CCAP – Community Conservation Assistance Program  
CWMTF – Clean Water Management Trust Fund  
CWSRF – Clean Water State Revolving Fund  
DWPP – Drinking Water Protection Plan  
EEP – Ecosystem Enhancement Program  
EPA - Environmental Protection Agency  
EPIP – Environment Quality Incentives Program  
HU – Hydrologic Unit  
HQW – High Quality Waters  
LWP – Local Watershed Plan  
MGD – Million Gallons per Day  
NRCS – Natural Resources Conservation Service  
PCS - Potential Contamination Source  
PWS - Public Water Supply  
SOC - Semi-volatile Organic Compound  
SOP – Standard Operating Procedures  
SWAP - Source Water Assessment Program  
SWCD – Soil and Water Conservation District  
SWP - Source Water Protection  
SWPA – Source Water Protection Area  
TLW – Targeted Local Watersheds  
USGS - United States Geographical Survey  
UST - Underground Storage Tank  
VOC - Volatile Organic Compound  
WRC – Wildlife Resources Commission  
WTP – Water Treatment Plant

## **Source Water Protection Educational Links**

### **NC Public Water Supply**

**Source Water Protection and Assessment Program – SWAP and SWP Guidelines**  
<http://www.ncwater.org/?page=63>

### **Land of Sky Regional Council**

**Stormwater Fact Sheets**

<http://www.cicacenter.org/pdf/NCStormWaterFSDev.pdf>

### **Environmental Protection Agency**

**Source Water Protection Best Management Practices and Other Measures for Protecting Drinking Water Supplies**

<http://cfpub.epa.gov/watertrain/pdf/swpbmp.pdf>