Project Atlas

Ararat-Pilot Mountain Local Watershed Plan
Surry and Stokes County, North Carolina

Yadkin River Basin
HUC 03040101

Prepared for:

NC Department of Environment and Natural Resources
Ecosystem Enhancement Program
1652 Mail Service Center
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Contents

Introduction

Wildlands Engineering, Inc. and the North Carolina Ecosystem Enhancement Program (EEP) are developing a local watershed plan (LWP) within the Ararat River watershed within the Upper Yadkin River Basin (HUC 03040101). EEP planners chose the Toms Creek watershed (HUC 030401011110030) and the adjacent Pilot Creek watershed (a portion of the lower Ararat River HUC 0304010111050) as the focus area of the planning effort. The 50-square mile Ararat-Pilot Mountain LWP focus area also includes Heatherly Creek and Chinquapin Creek, tributaries to Toms Creek, and the Town of Pilot Mountain. Phase II of the LWP (detailed assessment of watershed conditions) was completed in late 2012. A key part of Phase III of the LWP effort has been to identify and prioritize potential projects that can be pursued for mitigation by EEP or implementation by other stakeholders. The prioritization work was performed on potential stream, wetland, and stormwater best management practice (BMP) projects and included a GIS-based analysis (Wildlands Engineering, 2012) and field review of the most promising sites. GIS-based project screening criteria for streams included reach length, upstream drainage area, riparian buffer quality, landowner density, livestock access, evidence of channelization, location within Toms Creek water supply watershed and presence of adjacent wetland restoration/enhancement sites. Wetlands screening criteria included hydric soils, vegetative cover, evidence of drainage or other hydrologic alteration, project size (acres) and presence of adjacent stream restoration opportunity. Stormwater BMP screening/rating criteria included drainage area, percent impervious cover within contributing catchment, implementation feasibility (site access, utility constraints, project constructability) and land ownership category (public, private). A computer model was also used to simulate pollutant removal performance of the BMPs (see Appendix 1). A team consisting of staff from EEP, NC DWQ and Surry County Soil & Water Conservation District (SWCD) conducted field assessments of the most promising stream and wetland project sites (based on landowner willingness, site accessibility and overall project feasibility) in January 2013. After the stream and wetland field assessments were complete, the final project rankings were developed. The most highly prioritized projects (herein referred to as "priority projects") are described in this document, referred to as the Project Atlas. Appendix 2 includes all the potential project sites – stream, wetland and stormwater BMP – identified during the initial GIS screening exercise.

This Project Atlas includes the top five priority stream restoration/enhancement sites, the top three wetland priority restoration sites, and the top four priority stormwater best management practice (BMP) sites. One of the priority stream sites has adjacent wetland restoration potential and all three wetland sites have adjacent stream restoration/enhancement potential. One additional BMP site that offers an excellent opportunity for public education has also been included in this Project Atlas. Other sites may be suitable for stream, wetland, and/or BMP projects in this study area. Additional information about the LWP watershed assessment and project screening results is available in the Wildlands Engineering Technical Memorandum #1 (2012) and the EEP Watershed Assessment Report (EEP, 2013), both of which are available on EEP's web portal (http://portal.ncdenr.org/web/eep/rbrps/yadkin).

Section 1 – Priority Stream Projects

Stream Site P5

This potentially large stream mitigation project includes up to 17,951 feet of stream and is located in the Toms Creek watershed in the north-central portion of the focus area on both sides of Cleo Cain Road. The site is located primarily in portions of two subwatersheds – TC-1 and TC-3. The priority project is comprised of portions of five streams (Toms Creek and four unnamed tributaries to Toms Creek) and a potential wetland mitigation site (W18) adjacent to an unnamed tributary east of Cleo Cain Road. The site is located on several parcels used for agricultural purposes and major stressors include removal of vegetation from buffer zones and wetlands, livestock access to streams, and erosion on the channel banks and floodplain.

Project Name	Toms Creek I
Project ID	P5
Subwatershed Identification Number	TC-1 & TC-3
14-Digit HUC Number	3040101110030
Existing Stream Length	17,951 LF
Adjacent Wetland Area	W18
Drainage Area	6,942 ac (10.84 sq. mi.)
Major Stressors	Buffer impacts, livestock access, erosion

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
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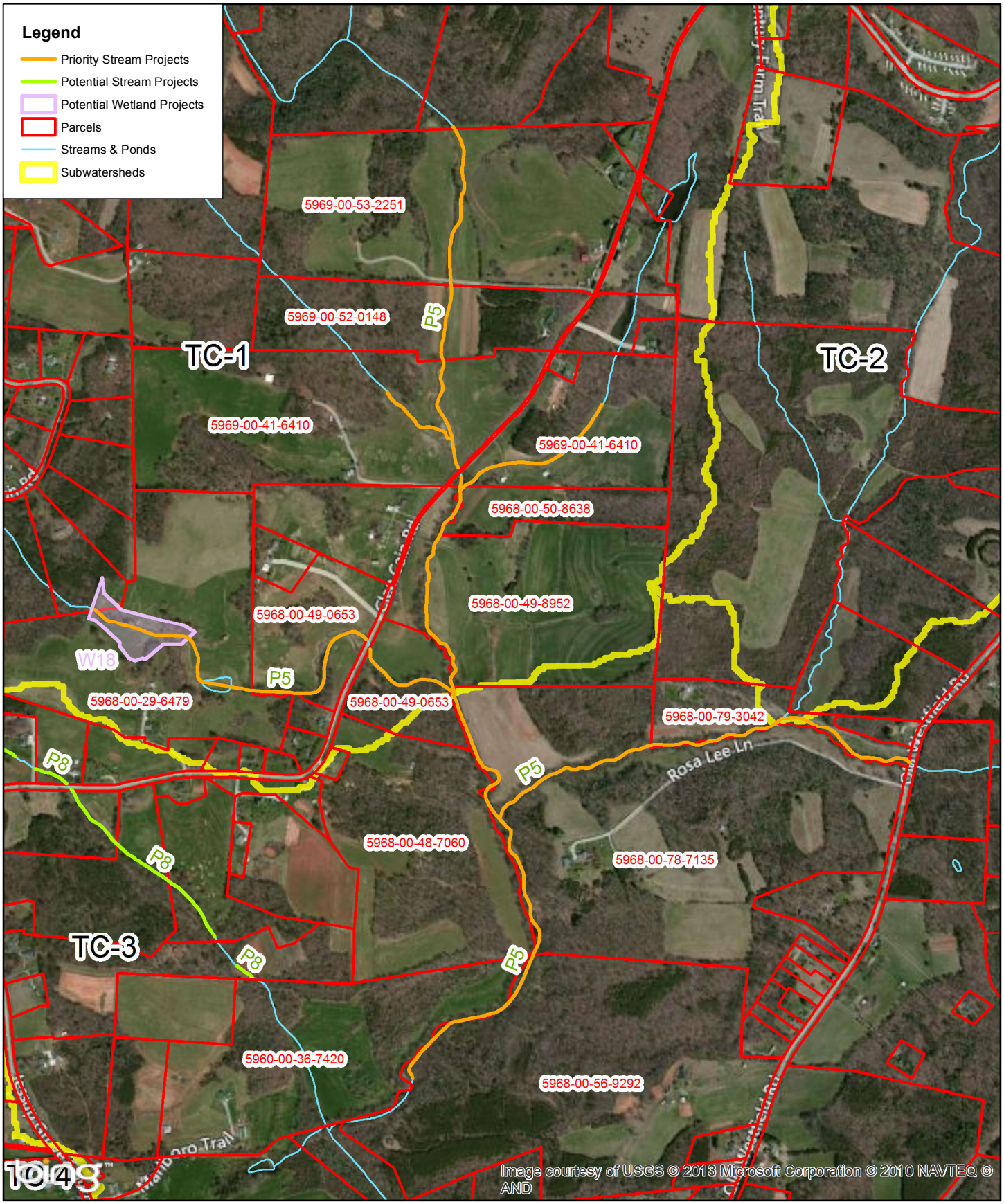
*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.



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Site Map P5
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Stream Site P5. Bank erosion and lack of riparian buffer along UT to Toms Creek (looking upstream-north).

Stream Site P5. Bank erosion and lack of buffer along UT to Toms Creek.

Stream Site P32

This stream mitigation project includes up to 4,684 feet of stream and is located in the Chinquapin Creek watershed (CH-2 subwatershed) in the southeastern portion of the focus area in Stokes County. The site is located on both sides of Sechrist Loop Road south of Groundhog Trail Road and includes a portion of a single unnamed stream. The site includes multiple parcels used for agricultural purposes, and major stressors include removal of vegetation from buffer zones, livestock access to streams, channelization of the stream, and erosion on the channel banks and floodplain. An invasive species, Chinese privet (*Ligustrum sinense*), is also growing in some locations adjacent to the stream.

Project Name	UT to Chinquapin Creek I
Project ID	P32
Subwatershed Identification Number	CH-2
14-Digit HUC Number	03040101110030
Existing Stream Length	4,684 LF
Adjacent Wetland Area	None
Drainage Area	305 ac (0.48 sq. mi.)
Major Stressors	Buffer impacts, livestock access, channelization, invasive species

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
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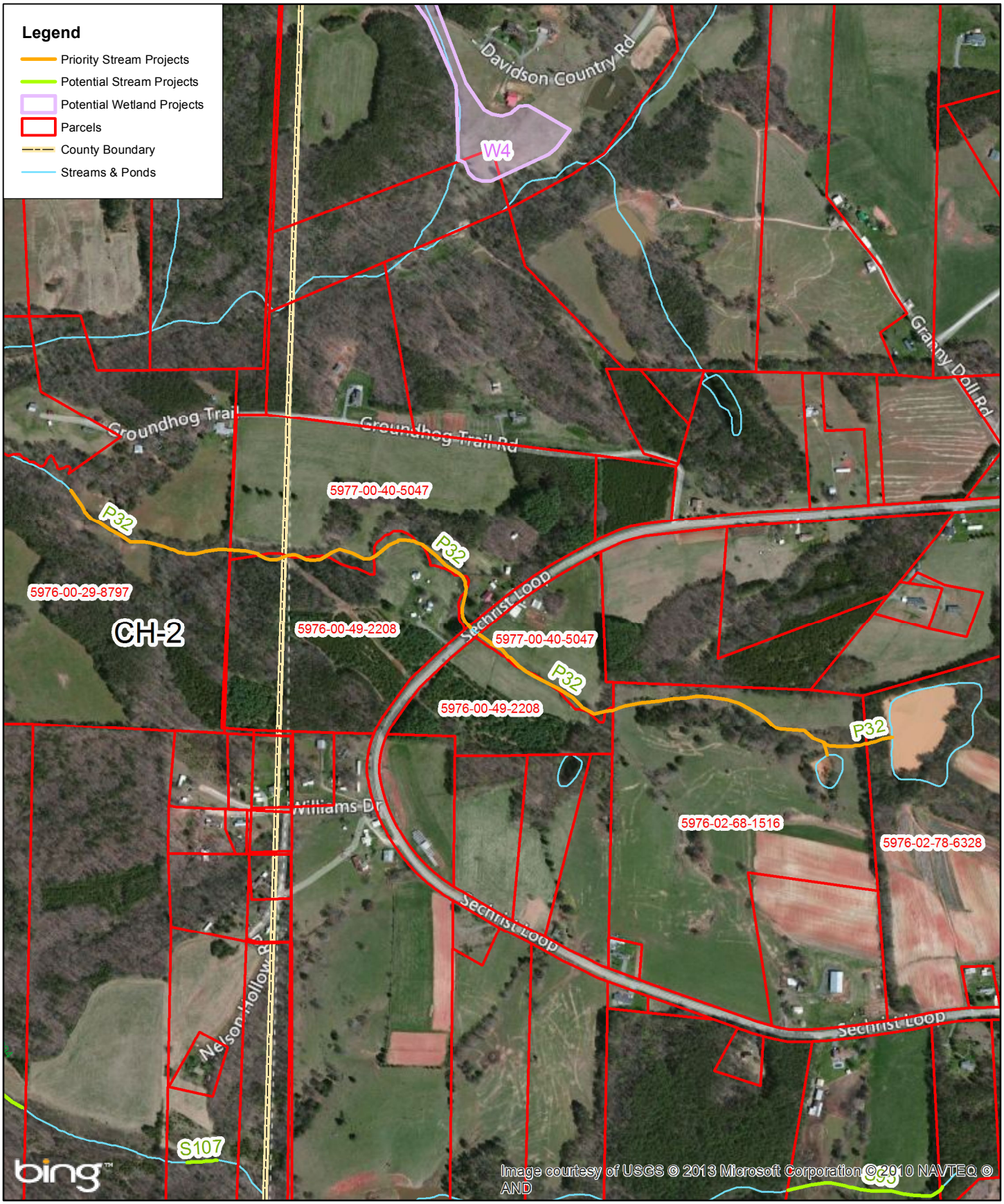
*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.



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Site Map P32
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Stream Site P32. Chinese privet along UT to Chinquapin Creek (looking upstream-east).

Stream Site P32. Stream banks in poor condition along UT to Chinquapin Creek due to livestock access.

Stream Site P30

This stream mitigation project includes up to 4,390 feet of stream and is located in the Chinquapin Creek watershed in the southeastern portion of the focus area near the Town of Pilot Mountain, off of NC Highway 268 East. It is in the CH-2 subwatershed, just east of the Stokes County line. The priority project is comprised of portions of three unnamed streams (two of them are tributaries to the largest stream). The site is located on three parcels used for agricultural purposes and major stressors include removal of vegetation from buffer zones and erosion on the channel banks and floodplain. Timber on portions of the property adjacent to the mainstem has recently been cut.

Project Name	UT to Chinquapin Creek II
Project ID	P30
Subwatershed Identification Number	CH-2
14-Digit HUC Number	03040101110030
Existing Stream Length	4,390 LF
Adjacent Wetland Area	None
Drainage Area	583 ac (0.91 sq. mi.)
Major Stressors	Buffer impacts

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

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Site Map P30
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Stream Site P30. Recent logging activity along UT to Chinquapin Creek.

Stream Site P30. Bank erosion related to livestock access along UT to Chinquapin Creek.

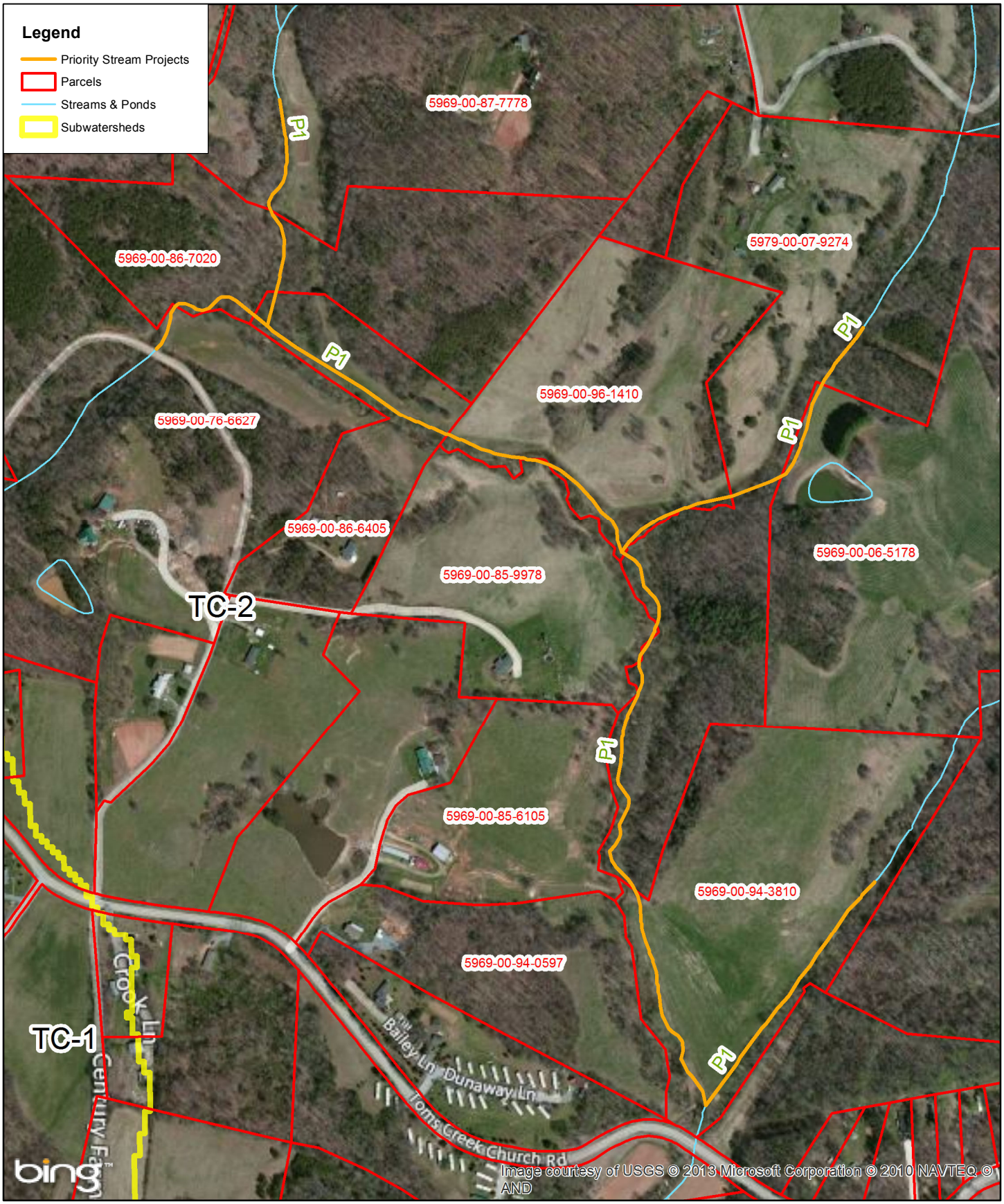
Stream Site P1

This priority stream mitigation project includes up to 7,443 feet of stream and is located in the Toms Creek watershed in the north-central portion of the focus area, just north of Toms Creek Church Road. The site is located in the TC-2 subwatershed. The priority project is comprised of portions of four streams (Toms Creek and three tributaries to Toms Creek). The site is located on several parcels used for agricultural purposes and major stressors include removal of vegetation from buffer zones, livestock access to streams, erosion on the channel banks, deposition of excess sediment in the streams, and invasive species.

Project Name	Toms Creek II
Project ID	P1
Subwatershed Identification Number	TC-2
14-Digit HUC Number	03040101110030
Existing Stream Length	7,443 LF
Adjacent Wetland Area	None
Drainage Area	2,107 ac (3.29 sq. mi.)
Major Stressors	Buffer impacts, livestock access, sedimentation, invasives

Landowners*	**Parcel Identification Number***

*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.



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Site Map P1
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Stream Site P1. Bank erosion and sediment deposition on Toms Creek.

Stream Site P1. Stream sedimentation and invasive plant species UT to Toms Creek.

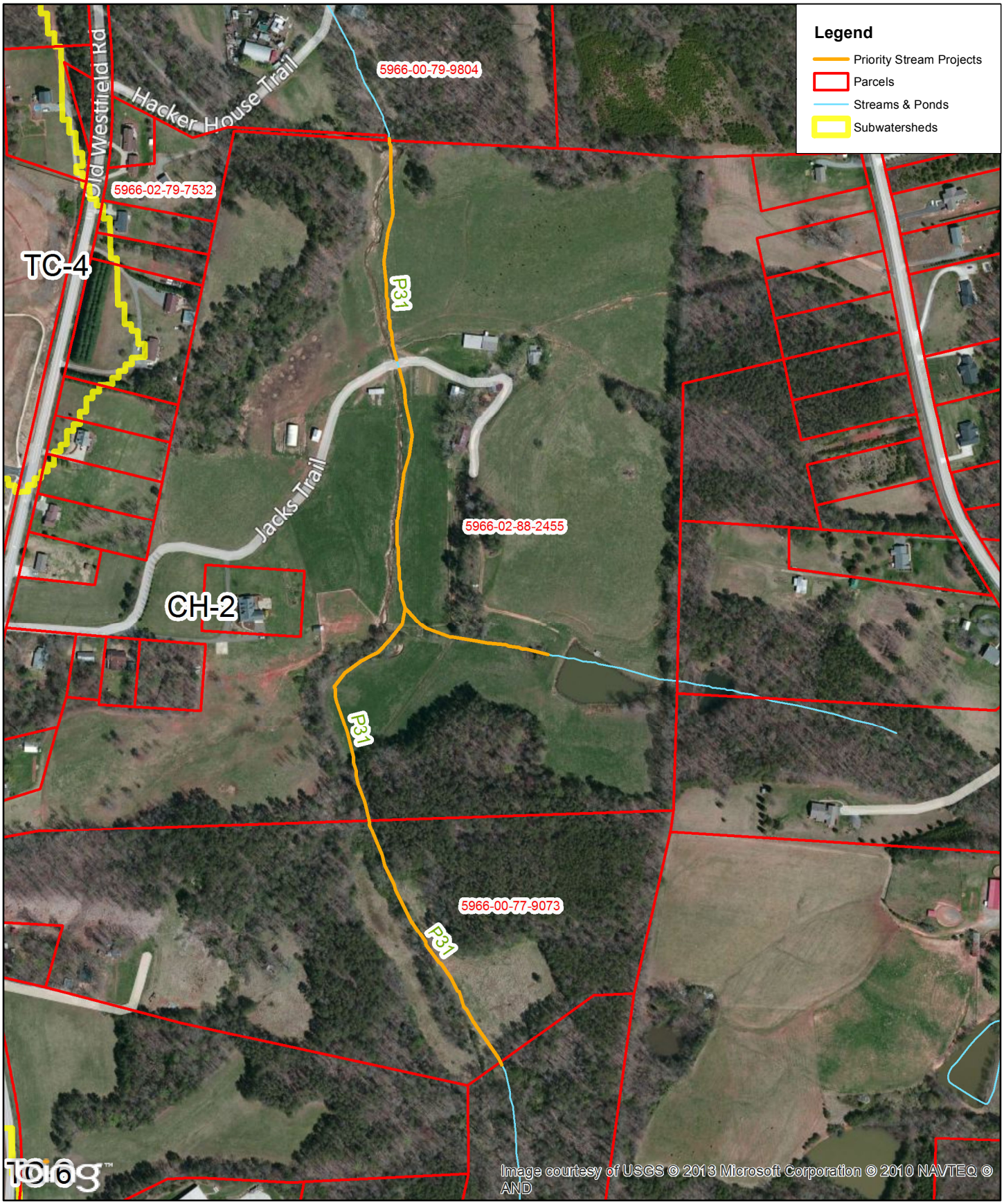
Stream Site P31

This priority stream mitigation project includes up to 3,487 feet of stream and is located in the Chinquapin Creek watershed (subwatershed CH-2) in the southeastern portion of the focus area, east of Old Westfield Road off of Jacks Trail. The priority project is comprised of portions of two unnamed streams, one of which is a tributary to the other (which flows northward to Chinquapin Creek). The site is located on multiple parcels (primarily on two parcels) used for agricultural purposes. Major stressors include removal of vegetation from buffer zones, livestock access to streams, severe erosion on the channel banks and floodplain, and deposition of sediment in the streams. The headwaters area for this project is within the Town of Pilot Mountain and includes a significant concentration of impervious cover – therefore, any mitigation project on this reach may need to be coupled with upstream stormwater BMPs (see Section 3 of Project Atlas) to help control/limit hydrologic inputs (significant stormwater flows).

Project Name	UT to Chinquapin Creek III
Project ID	P31
Subwatershed Identification Number	CH-2
14-Digit HUC Number	03040101110030
Existing Stream Length	3,487 LF
Adjacent Wetland Area	None
Drainage Area	626 ac (0.98 sq. mi.)
Major Stressors	Buffer impacts, livestock access, erosion, sedimentation

Landowners*	**Parcel Identification Number***
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.



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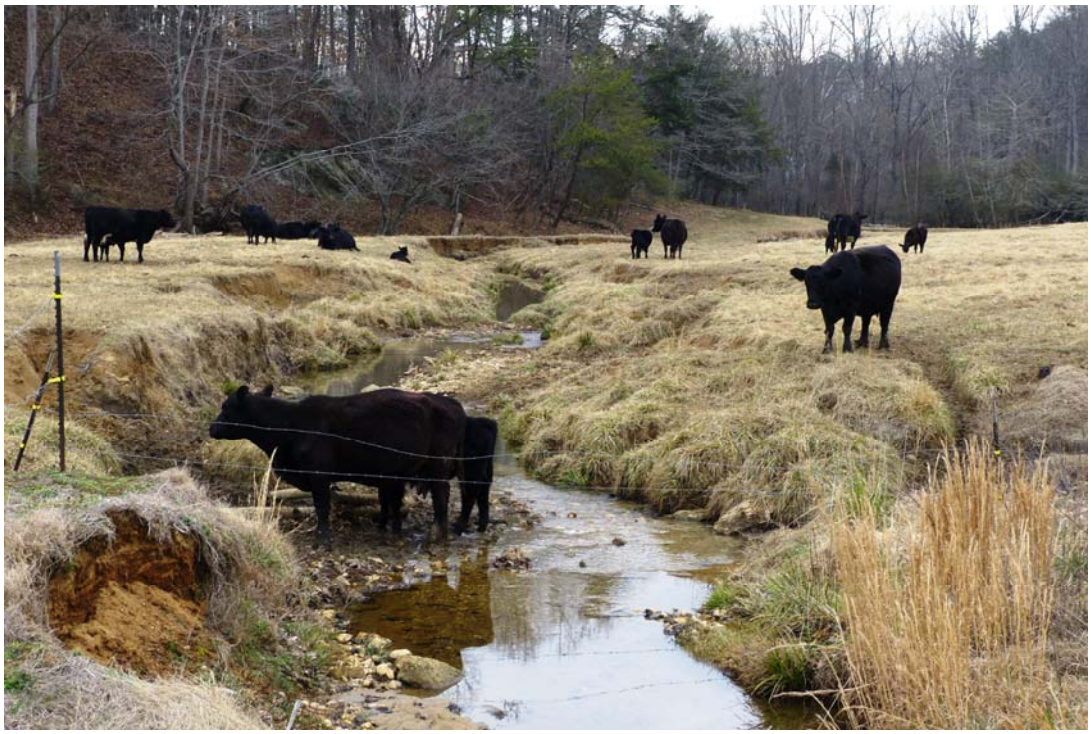
Site Map P31
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Stream Site P31. Bank erosion and lack of riparian buffer along UT to Chinquapin Creek (looking upstream-south).



Stream Site P31. Bank erosion related to livestock access along UT to Chinquapin Creek (looking downstream-north).

Section 2 – Priority Wetland Projects

Wetland Site W21

This priority wetland mitigation project includes up to 8.5 acres of wetland and is located in the upper Toms Creek subwatershed (TC-1) in the northwestern portion of the focus area, just south of Toms Creek Church Road. The priority project is comprised of two areas of hydric soils adjacent to Toms Creek. The site is located primarily on two parcels used for agricultural purposes. There is a potential stream mitigation project running through and adjacent to both wetland areas. The potential stream project (P3) includes a portion of Toms Creek and an unnamed tributary to Toms Creek. Major stressors to the priority wetland areas include removal of vegetation and artificial drainage.

Project Name	Toms Creek Wetland I
Project ID	W21
Subwatershed Identification Number	TC-1
14-Digit HUC Number	03040101110030
Existing Wetland Area	8.5 Ac
Adjacent Stream Length with Restoration Potential	P3 - 5,485 LF
Major Stressors	Vegetation removal, drainage

Landowners*	**Parcel Identification Number***
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

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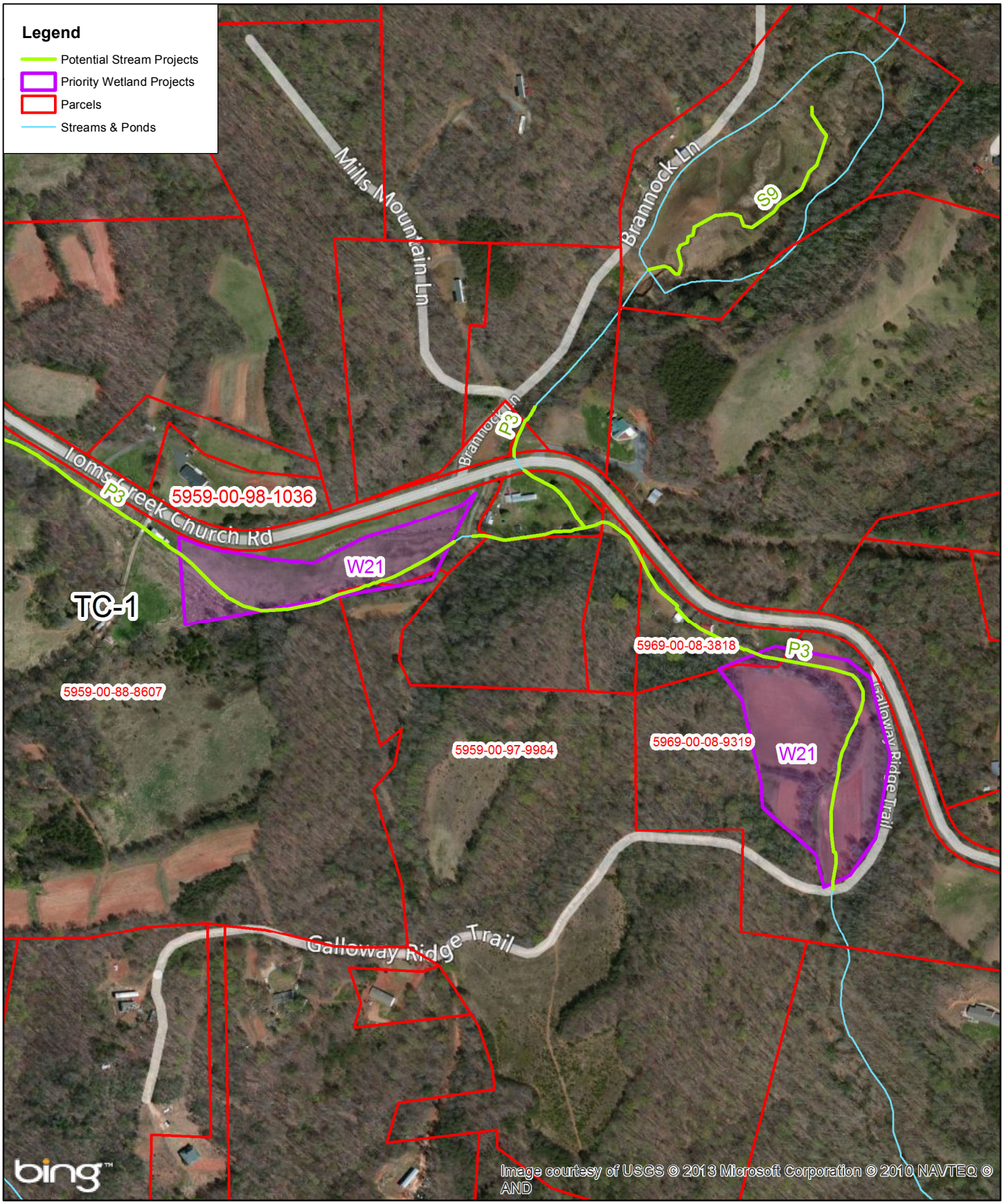

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Site Map W21
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Wetland Site W21. Existing wetland vegetation on site.

Wetland Site W21. Toms Creek adjacent to site (looking downstream-south).

Wetland Site W10

This priority wetland mitigation project includes up to 1.7 acres of wetland and is located in the Pilot Creek watershed (subwatershed PC-2) in the southern portion of the focus area, just to the east of Boyd Nelson Road. The priority project is comprised of an area of hydric soils adjacent to Pilot Creek. The site is located on a single parcel used for agricultural purposes. There is a potential stream mitigation project (P29) that runs immediately adjacent to the wetland area. The potential stream project includes a portion of Pilot Creek and an unnamed tributary to Pilot Creek. Major stressors to the priority wetland area include removal of vegetation and artificial drainage.

Project Name	Pilot Creek Wetland
Project ID	W10
Subwatershed Identification Number	PC-2
14-Digit HUC Number	03040101110050
Existing Wetland Area	1.7 Ac
Adjacent Stream Length with Restoration Potential	P29 - 5,328 LF
Major Stressors	Vegetation removal, drainage

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]

*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.

WILDLANDS ENGINEERING

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Site Map W10
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Wetland Site W10. Existing conditions on site.

Wetland Site W10. Pilot Creek adjacent to site.

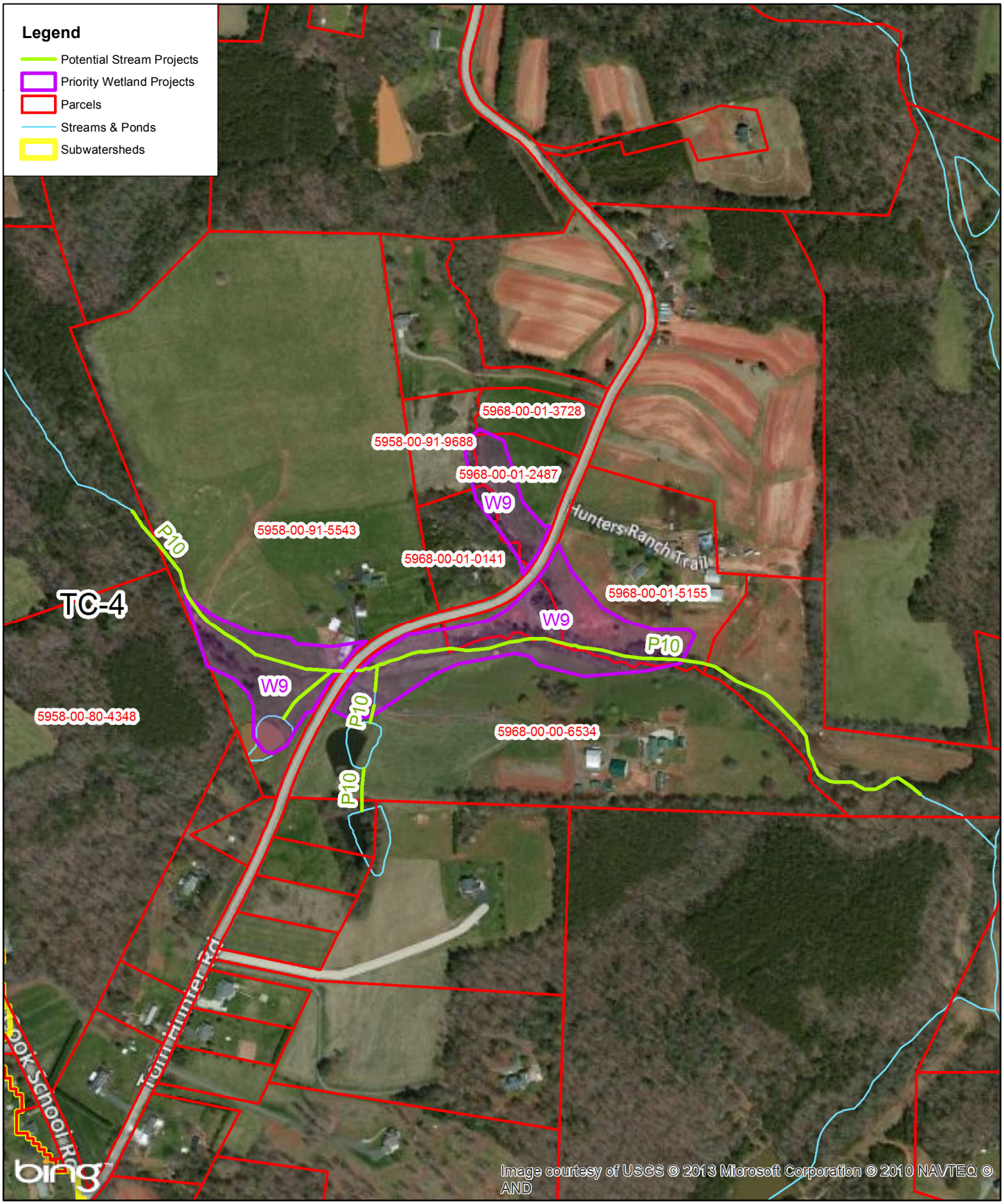
Wetland Site W9

This priority wetland mitigation project includes up to 10.75 acres of wetland and is located in the Toms Creek watershed (subwatershed TC-4) in the eastern portion of the focus area, and includes areas on both sides of Tom Hunter Road, just north of Cook School Road. The priority project is comprised of an area of hydric soils adjacent to a tributary to Toms Creek. The site is located on multiple parcels used for agricultural purposes. There is a potential stream mitigation project (P10) that runs through the wetland area. The potential stream project includes a portion of three unnamed tributaries to Toms Creek. Major stressors to the priority wetland area include removal of vegetation and invasives.

Project Name	Toms Creek Wetland II
Project ID	W9
Subwatershed Identification Number	TC-4
14-Digit HUC Number	03040101110030
Existing Wetland Area	10.75 Ac
Adjacent Stream Length with Restoration Potential	P10 - 3,902 LF
Major Stressors	Vegetation removal, invasives

Landowners*	**Parcel Identification Number***

*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.



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Site Map W9
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Wetland Site W9. Existing conditions at wetland site and unnamed tributary to Toms Creek.

Wetland Site W9. Bank erosion related to livestock access along UT to Toms Creek.

Section 3 – Priority Stormwater BMP Projects

BMP Site 2

This priority BMP site is in an open field adjacent to a vacant industrial facility. Its drainage area is 8.2 acres and includes a section of the East 52 Bypass, portions of the roof and parking lot of the industrial facility, as well as a portion of the parking lot of another commercial building. The outlet piping and potentially much of the inflow conveyance is already in place as a part of the drainage system of the industrial facility. This location would be suitable for a stormwater wetland.

Project Name	52 Bypass BMP
Project ID	BMP2 – Stormwater Wetland
Subwatershed Identification Number	CH-2
14-Digit HUC Number	03040101110030
Drainage Area	8.2 Ac
Percent Impervious	35.7%
Nitrogen Reduction	35.2 lbs/yr
Phosphorous Reduction	6.2 lbs/yr
Sediment Reduction	3.3 tons/yr

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]

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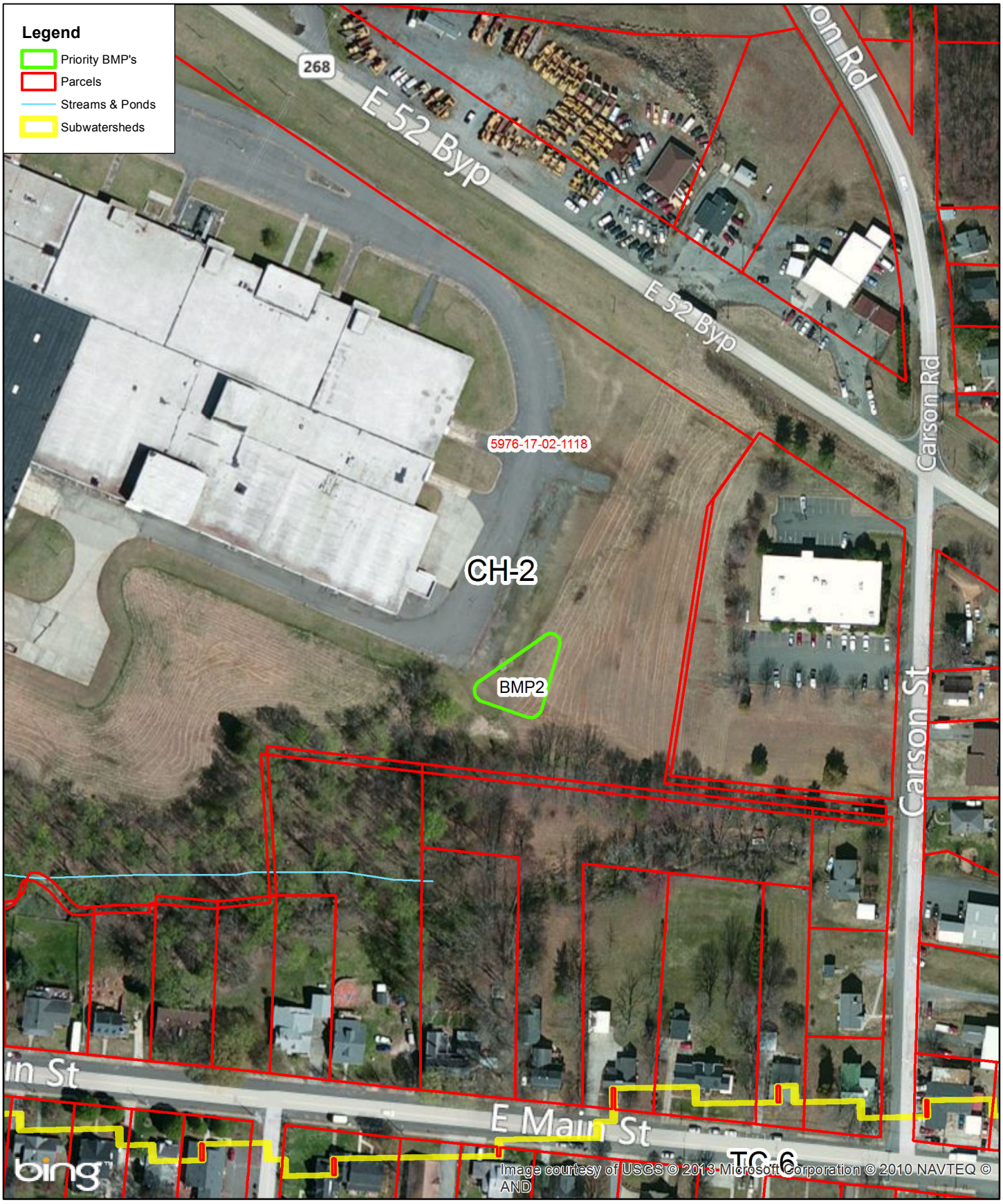

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Site Map BMP2
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

BMP Site 2. Existing site and outlet structure.

BMP Site 11

This priority BMP site has a 15.3 acre catchment that drains a portion of downtown Pilot Mountain including parking lots and buildings along Pine Street, Depot Street, and Marion Street. The site is situated on a vacant lot behind an older industrial site. The BMP would be an in-line BMP constructed on an ephemeral to intermittent channel. The site is suitable for construction of a stormwater wetland or detention pond. Construction of the facility would require removing existing trees from the site. The site has the highest potential for removal of both nitrogen and phosphorous of all of the BMP sites included in the modeling study.

Project Name	South Depot Street BMP
Project ID	BMP11 – Stormwater Wetland or Detention Pond
Subwatershed Identification Number	TC-6
14-Digit HUC Number	03040101110030
Drainage Area	15.3 Ac
Percent Impervious	49.8%
Nitrogen Reduction	66.4 lbs/yr
Phosphorous Reduction	9.4 lbs/yr
Sediment Reduction	3.2 tons/yr

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]

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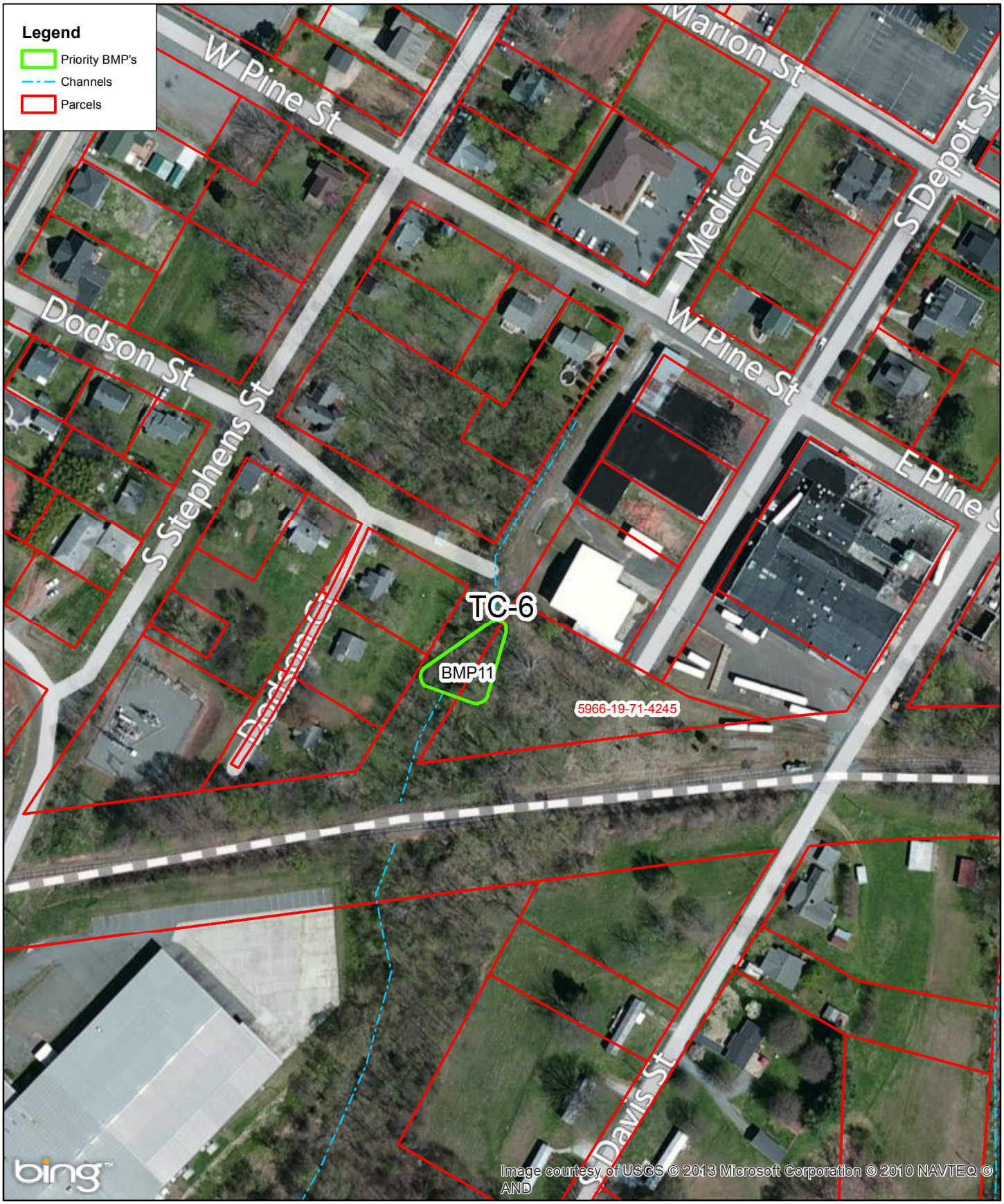

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Site Map BMP11
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

BMP Site 11. Existing site conditions.

BMP Site 18

This priority BMP site was not one of the highest priority sites based on the results of the BMP modeling. It is included in this Project Atlas because the site offers an exceptional opportunity for community education related to stormwater issues. It is located in a publicly-owned, undeveloped field adjacent to Pilot Mountain Elementary School and is in close proximity to both the middle school and the high school as well. The catchment for the site is approximately one acre and drains a portion of the roof and parking lot for the elementary school. The drainage infrastructure that would be needed for a BMP in this location is in place, so no additional conveyance piping would be necessary. The site is suitable for a small BMP facility such as a biorention cell or "rain garden."

Project Name	Elementary School BMP
Project ID	BMP18 – Bioretention Cell ("rain garden")
Subwatershed Identification Number	CH-2
14-Digit HUC Number	03040101110030
Drainage Area	0.98 Ac
Percent Impervious	71.2%
Nitrogen Reduction	4.6 lbs/yr
Phosphorous Reduction	1.0 lbs/yr
Sediment Reduction	0.3 tons/yr

Landowners*	**Parcel Identification Numbers***

*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.

WILDLANDS ENGINEERING

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Site Map BMP18
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

BMP 18. Existing site conditions and stormwater outfall.

BMP Site 20

Priority BMP Site 20 is located in a commercial/industrial park on the north side of pilot Mountain. The drainage area is 9.2 acres and includes portions of multiple roofs, parking lots, and streets within the industrial park. The drainage infrastructure to the location of the possible BMP is in place so no additional conveyance piping would be necessary. A small impoundment exists in the location of the proposed BMP. It is unknown if this impoundment is providing adequate detention for the catchment or if it was constructed to serve this purpose, but the site may offer a good opportunity for a BMP retrofit. There is vegetation around the site that would need to be removed if the impoundment were to be rehabilitated into a stormwater wetland. This site offers the best opportunity for sediment removal (of all eight BMP sites evaluated) based on the modeling results.

Project Name	Shelley Brook Drive BMP
Project ID	BMP20 – Stormwater Wetland
Subwatershed Identification Number	CH-2
14-Digit HUC Number	03040101110030
Drainage Area	9.2 Ac
Percent Impervious	27.4%
Nitrogen Reduction	38.8 lbs/yr
Phosphorous Reduction	8.0 lbs/yr
Sediment Reduction	4.8 tons/yr

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]

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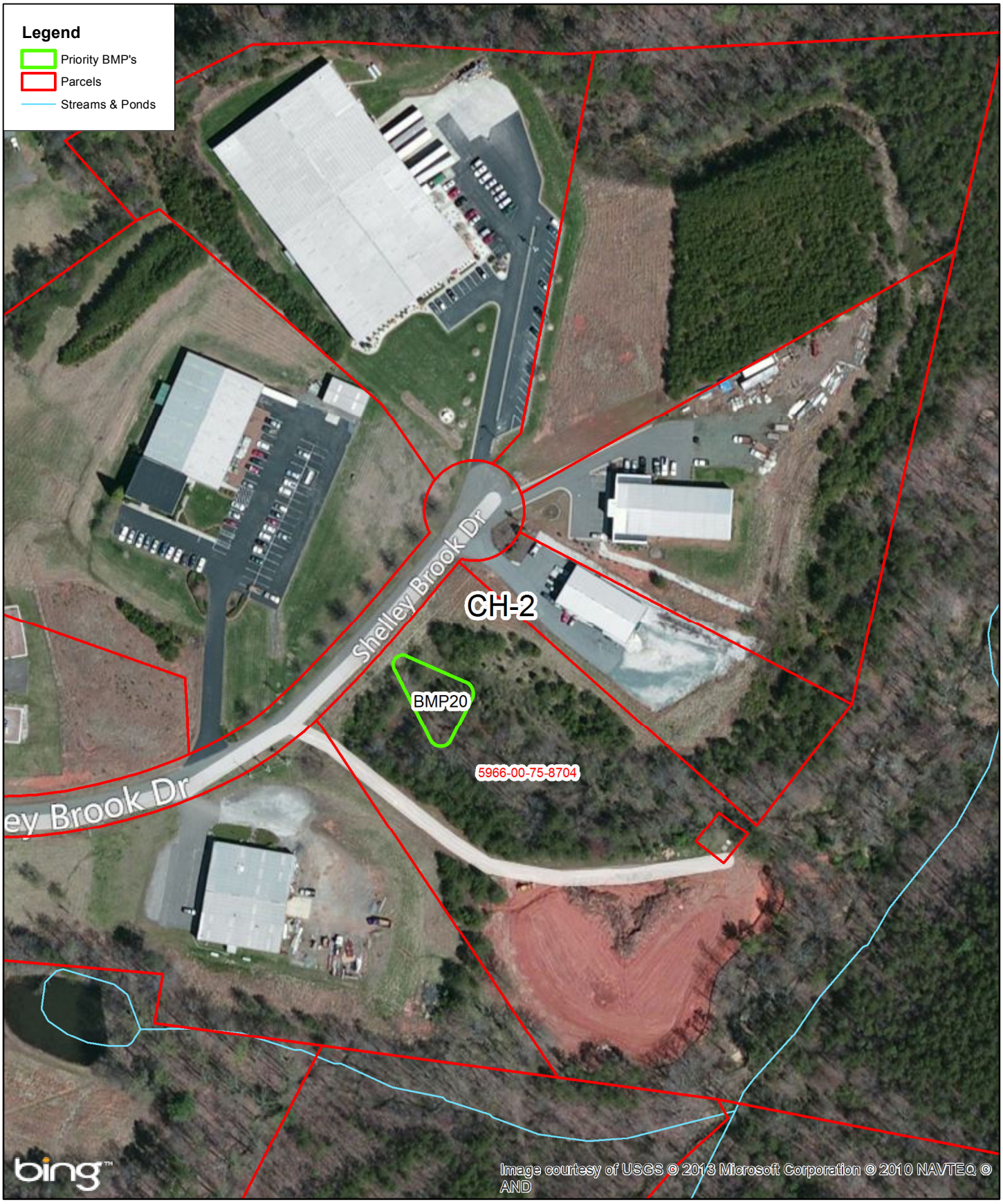

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Site Map BMP20
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

BMP Site 20. Existing impoundment.

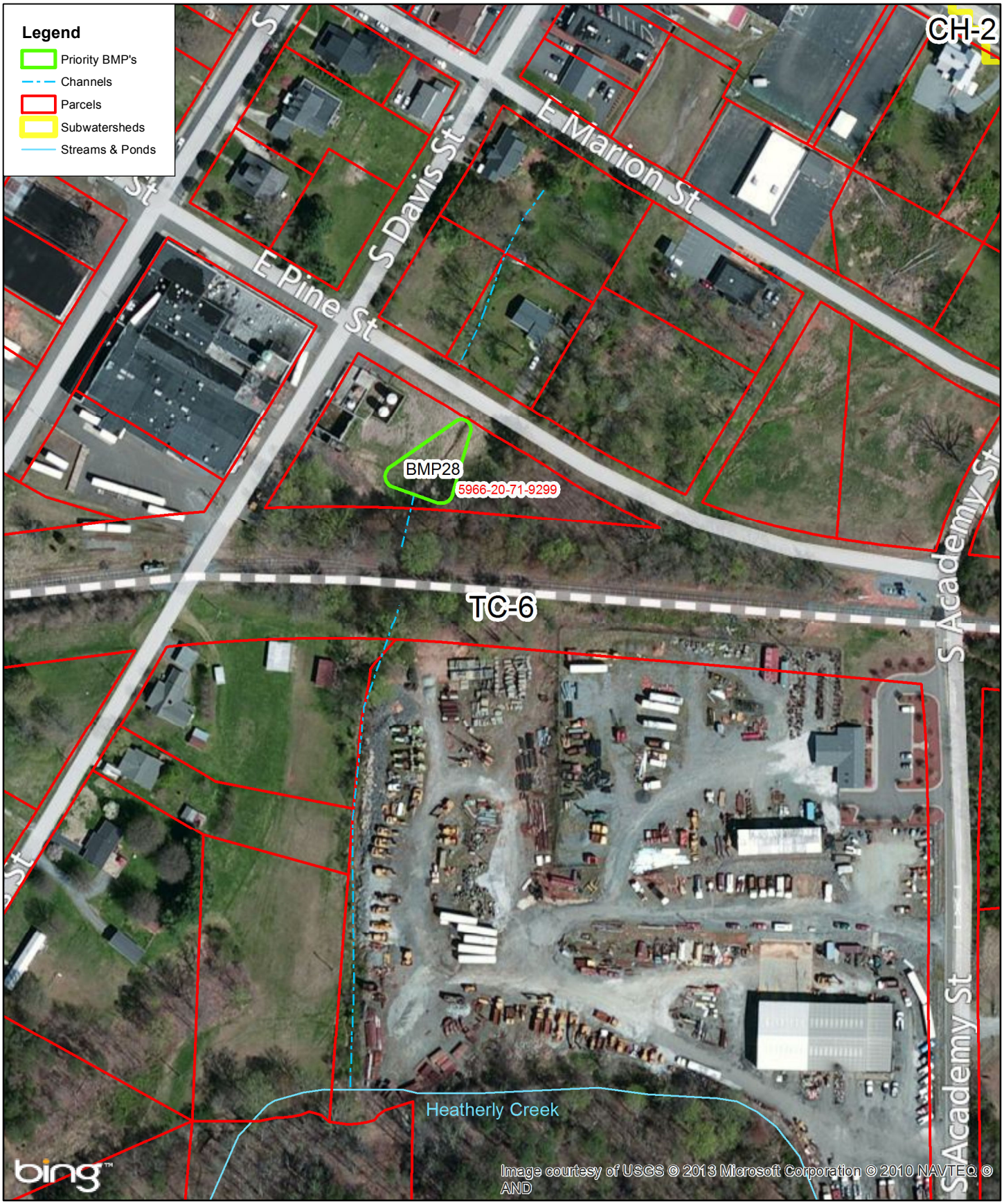
BMP Site 28

This potential BMP site is located in a vacant field adjacent to an industrial site. The BMP would be constructed on an existing channel that is likely intermittent (and potentially perennial). However, the condition and habitat quality of the channel are extremely poor and the catchment for the site includes a large portion of downtown Pilot Mountain. The catchment is 9.5 acres and is 63% impervious. It includes streets, parking lots, and roofs of buildings along Davis, Pine, Marion, and Main Streets. There is little or no vegetation that would need to be removed at the site and it is an excellent opportunity for a constructed stormwater wetland, which would treat runoff flowing into upper Heatherly Creek. Its location in downtown Pilot Mountain is easily accessible and would also provide an opportunity for public education related to stormwater issues.

Project Name	East Pine Street BMP
Project ID	BMP28 – Stormwater Wetland
Subwatershed Identification Number	TC-6
14-Digit HUC Number	03040101110030
Drainage Area	9.5 Ac
Percent Impervious	62.9%
Nitrogen Reduction	40.9 lbs/yr
Phosphorous Reduction	5.9 lbs/yr
Sediment Reduction	2.0 tons/yr

Landowners*	**Parcel Identification Numbers***
[redacted]	[redacted]

*Landowner names and parcel ID numbers are on file at EEP's Asheville Field Office.



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Site Map BMP28
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

BMP 28. Existing site and channel.

References

North Carolina Ecosystem Enhancement Program (EEP), 2013. Watershed Assessment Report, Ararat-Pilot Mountain Local Watershed Plan (Surry and Stokes County). February 2013.

Wildlands Engineering, Inc., 2012. Technical Memorandum 1: Review of Existing Data Sets, GIS-Based Riparian Buffer Assessments, and GIS-Based Project Prioritization. Ararat-Pilot Mountain Local Watershed Plan (Surry and Stokes County). August 2012

Appendix A: Stormwater BMP Modeling Procedures and Results

The modeling was implemented using the Spreadsheet Tool for the Estimation of Pollutant Load (**STEPL**) model, developed for the EPA (see http://it.tetratech-ffx.com/stepl/ As the name implies, this model is a spreadsheet-based model that is relatively user-friendly and whose inputs are relatively simple. It calculates nutrient and sediment loading and the reductions in those loadings that occur as various best management practices (BMPs) are implemented.

STEPL is initially set up with an appropriate number of **drainage areas**, which in this case was one for each individual BMP. On the initial input tab, the state (NC) and county (Surry) of the site are selected from dropdown boxes, and the nearest weather station (Greensboro/High Point/Winston-Salem) is selected. These choices drive such parameters as rainfall amounts and correction factors, soil groups, and soil loss.

It should be noted that if a particular input variable is not discussed here, then it was either not used or was not altered from the default values. This was either due to certain aspects of the model being unnecessary for this particular study, or due to lack of sufficient data to warrant deviation from the default.

The next input group is the **land use area**. For each drainage area, land use was computed using GIS data. Given the relatively small size of each BMP drainage area, the 30-meter resolution of the National Land Cover Database data was found to be far too coarse for this study. Instead, each BMP drainage area was overlaid onto aerial photography gathered in 2012 (one dataset from Spring 2012, another from August 2012) and using area measurement tools within GIS, the total area of each land cover type was computed.

In general, land cover was either classified as an urban land use, as pasture, or as forest. Urban land uses were further sub-classified into such categories as commercial, industrial, single-family residential, transportation, and open space. These land uses were input into the model as areas in acres. Additionally, the urban land uses were broken up by percentages of total urban cover, and input into the model. This completed the input data required for the input tab of the model.

For each BMP, the size of the BMP was assumed to be adequate to fully treat the runoff expected from its respective drainage area and was assumed to be able to operate at full efficiency. This assumption was based on the fact that the eight BMPs included in this study were identified as high-priority sites, with each described in the August 2012 Ararat-Pilot Mountain Local Watershed Plan Technical Memorandum 1 as receiving the maximum score of 3 for Implementation Feasibility and further described as:

> ***Highly feasible*** – No apparent major issues with access or constructability, stormwater infrastructure in place, limited utility conflicts, suitable topography, and no other foreseeable drawbacks (high priority)

The various types of BMPs used by the model are available from a series of dropdown boxes on both the BMP tab and the urban BMP tab. The data file from which the model draws these BMPs and their associated removal efficiency data is customizable, and for this model, BMPs were inserted into this data file to represent the two types of BMPs utilized in this study. These BMPs included bioretention areas and constructed wetlands. The removal efficiency data for each BMP type was taken from the NC Division of Water Quality (DWQ) Stormwater BMP Manual, dated July 2007 (revised 12/2012). The **removal efficiencies used** are summarized in the table below.

BMP Type	Nitrogen Removal (%)	Phosphorous Removal (%)	Total Suspended Solids Removal (%)
Bioretention	35%	45%	85%
Constructed Wetland	40%	40%	85%

The NC DWQ manual does not list BOD removal efficiencies for these BMPs, thus a zero BOD removal was assumed for the above BMPs.

These BMP data were then input into the model, beginning with the BMP tab. For non-urban drainage areas, which in the case of the study were limited to the Forested and Pasture land cover types, the appropriate BMP type was chosen.

Utilizing the **Urban BMP Tool button**, a new tab was created to represent BMPs in urban land uses. Within this tab, each drainage area is represented by each urban land use category, and for each land use category found within each drainage area, the appropriate BMP type was specified.

This completed the inputs into the model, and the computed removal efficiency results are presented below. [The three highest reduction levels for each pollutant type are highlighted in red.]

BMP Site ID	BMP Type	Drainage Area (ac)	Percent Impervious	Nitrogen Reduction (lb/yr)	Phosphorous Reduction (lb/yr)	Sediment Reduction (tons/yr)
BMP 2	Stormwater Wetland	8.24	35.7%	32.5	6.2	3.3
BMP 11	Stormwater Wetland	15.30	49.8%	66.4	9.4	3.2
BMP 12	Stormwater Wetland	11.20	33.1%	34.4	5.5	1.7
BMP 18	Bioretention	0.98	71.2%	4.6	1.0	0.3
BMP 20	Stormwater Wetland	9.16	27.4%	38.8	8.0	4.8
BMP 21	Stormwater Wetland	8.49	31.6%	25.0	4.2	1.3
BMP 28	Stormwater Wetland	9.48	62.9%	40.9	5.9	2.0
BMP 29	Stormwater Wetland	8.10	44.2%	25.5	4.4	1.2

The following table summarizes the land use categories found within each BMP watershed, as entered into the STEPL model. Units are in acres, with Comm representing Commercial, Ind representing Industrial, Inst representing Institutional, and Trans representing Transportation.

BMP Site ID	Comm	Ind	Inst	Trans	Single-Family	Vacant	Open Space	Pasture	Forest	Total
BMP 2	1.00	2.75		0.60	0.63		1.96	1.30		8.24
BMP 11	7.48			3.60	3.35				0.87	15.30
BMP 12			0.73	2.18	4.76	2.11	1.42			11.20
BMP 18			0.39	0.45			0.14			0.98
BMP 20	1.91	0.72	0.87	0.41	1.23	1.28	0.42		2.32	9.16
BMP 21			0.95	1.52	4.95		1.07			8.49
BMP 28	3.80			2.37	3.31					9.48
BMP 29			2.10	1.41	4.59					8.10

Appendix 2: Database of Potential Project Sites

Potential Stream Project Database
Ararat-Pilot Mountain Local Watershed Plan

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Project_32	CH-2	4528.9	No	2	3	3	1	3	2	3		Y	22	High
Project_11	TC-4	5982.0	No	2	3	3	1	3	1	1	Y	Y	22	High
Project_5	TC-1	10444.4	No	2	2	3	1	3	1	2	Y	Y	21	High
Project_10	TC-4	3902.1	No	2	3	2	1	3	2	1	Y	Y	21	High
Project_34	CH-1	4318.3	No	2	3	3	1	1	2	3	Y	Y	19	High
Project_31	CH-2	3355.9	No	2	3	2	3	2	1	3		Y	19	High
Project_24	PC-2	3363.9	No	2	3	2	3	2	2	1			19	High
Project_1	TC-2	5973.6	No	2	2	3	1	2	1	1	Y	Y	19	High
Project_6	TC-3	2794.1	No	2	3	2	1	3	1	2		Y	19	High
Project_33	CH-1	4928.6	No	2	3	3	1	1	1	3	Y	Y	18	High
Project_3	TC-1	5485.1	No	2	2	3	1	1	2	2	Y	Y	18	High
Project_15	TC-5	2906.9	No	2	3	2	1	2	2	1		Y	18	High
Project_21	TC-6	2124.2	No	2	3	2	3	1	2	3		Y	18	High
Small_118	TC-3	936.7	Yes	3	1	1	3	2	2	2		Y	18	High
Small_95	CH-2	775.4	Yes	2	3	1	1	3	1	3		Y	17	High
Small_66	PC-2	880.7	Yes	2	3	1	3	2	2	1			17	High
Small_8	TC-1	592.8	Yes	2	3	1	1	3	1	2		Y	17	High
Project_8	TC-3	2271.6	No	2	3	2	1	2	1	2		Y	17	High
Small_46	TC-6	1605.8	Yes	2	3	1	3	2	1	3		Y	17	High
Project_27	PC-1	9677.6	No	2	3	3	1	1	2	2			17	High
Small_90	CH-2	107.7	Yes	3	3	1	3	1	1	3		Y	17	High

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Small_91	CH-2	147.9	Yes	3	3	1	3	1	1	3		Y	17	High
Small_82	PC-1	140.0	Yes	3	3	1	3	1	2	2			17	High
Small_52	TC-6	229.2	Yes	3	3	1	3	1	1	1		Y	17	High
Small_9	TC-1	950.1	Yes	3	3	1	3	1	1	2		Y	17	High
Project_36	CH-1	2010.6	No	2	2	2	3	1	1	3		Y	16	High
Small_101	CH-2	1199.9	Yes	2	3	1	3	1	2	3		Y	16	High
Project_30	CH-2	3780.4	No	2	3	2	2	1	1	3		Y	16	High
Project_29	PC-1	5328.5	No	2	2	3	1	1	1	2	Y		16	High
Project_4	TC-1	2868.1	No	2	2	2	1	1	2	2	Y	Y	16	High
Project_9	TC-3	5564.1	No	2	2	3	1	1	1	2		Y	16	High
Project_12	TC-4	3733.6	No	2	2	2	1	2	1	1		Y	16	High
Small_60	TC-6	311.4	Yes	2	3	1	3	1	2	3		Y	16	High
Small_68	PC-2	318.2	Yes	1	3	1	3	2	2	1			16	High
Small_115	CH-1	896.6	Yes	2	3	1	3	1	1	3		Y	15	High
Small_107	CH-2	149.2	Yes	2	3	1	3	1	1	3		Y	15	High
Small_93	CH-2	460.1	Yes	2	3	1	3	1	1	3		Y	15	High
Small_94	CH-2	811.2	Yes	2	3	1	3	1	1	3		Y	15	High
Small_64	PC-2	830.4	Yes	2	3	1	3	1	2	1			15	High
Small_63	PC-2	315.8	Yes	2	3	1	1	2	2	1			15	High
Small_67	PC-2	910.6	Yes	2	3	1	1	2	2	1			15	High
Small_1	TC-2	1047.1	Yes	2	3	1	3	1	1	1		Y	15	High
Small_4	TC-2	934.7	Yes	2	3	1	3	1	1	1		Y	15	High
Small_11	TC-3	396.6	Yes	2	3	1	3	1	1	2		Y	15	High
Project_7	TC-3	7197.4	No	2	1	3	1	1	1	2		Y	15	High
Small_29	TC-5	1947.3	Yes	2	3	1	2	1	2	1		Y	15	High
Small_37	TC-5	1159.4	Yes	2	3	1	3	1	1	1		Y	15	High

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Small_39	TC-5	487.1	Yes	2	3	1	3	1	1	1		Y	15	High
Small_40	TC-5	403.7	Yes	2	3	1	3	1	1	1		Y	15	High
Small_32	TC-5	853.3	Yes	2	3	1	1	2	1	1		Y	15	High
Project_16	TC-5	3543.9	No	2	1	2	1	2	1	1		Y	15	High
Project_23	TC-6	2500.4	No	2	3	2	1	1	1	3		Y	15	High
Small_99	CH-2	912.0	Yes	1	3	1	3	1	2	3		Y	15	High
Project_28	PC-1	3147.5	No	3	2	2	1	1	1	2			15	High
Small_51	TC-6	205.1	Yes	1	3	1	3	1	2	3		Y	15	High
Small_119	TC-2	446.7	Yes	2	3	1	1	2	1	1		Y	15	High
Small_111	CH-1	1356.5	Yes	2	3	1	1	1	2	3		Y	14	Medium
Project_35	CH-1	3228.1	No	2	2	2	1	1	1	3		Y	14	Medium
Project_37	CH-1	3046.8	No	2	2	2	1	1	1	3		Y	14	Medium
Small_103	CH-2	345.8	Yes	2	3	1	1	1	2	3		Y	14	Medium
Small_104	CH-2	142.9	Yes	2	3	1	1	1	2	3		Y	14	Medium
Small_105	CH-2	651.5	Yes	2	2	1	3	1	1	3		Y	14	Medium
Small_106	CH-2	365.5	Yes	2	3	1	1	1	2	3		Y	14	Medium
Small_108	CH-2	144.8	Yes	2	3	1	1	1	2	3		Y	14	Medium
Small_96	CH-2	1771.7	Yes	2	3	1	1	1	1	3	Y	Y	14	Medium
Small_98	CH-2	1012.7	Yes	2	2	1	3	1	1	3		Y	14	Medium
Small_84	PC-1	458.7	Yes	2	3	1	3	1	1	2			14	Medium
Small_85	PC-1	171.5	Yes	2	3	1	3	1	1	2			14	Medium
Small_88	PC-1	499.5	Yes	2	3	1	3	1	1	2			14	Medium

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Small_62	PC-2	646.5	Yes	2	3	1	3	1	1	1			14	Medium
Small_70	PC-2	759.5	Yes	2	3	1	3	1	1	1			14	Medium
Small_75	PC-2	460.1	Yes	2	3	1	3	1	1	1			14	Medium
Project_25	PC-2	7052.9	No	2	1	3	1	1	1	1			14	Medium
Small_7	TC-1	1107.4	Yes	2	3	1	1	1	1	2	Y	Y	14	Medium
Project_2	TC-2	3571.1	No	2	2	2	1	1	1	1		Y	14	Medium
Small_10	TC-3	1255.4	Yes	2	3	1	1	1	1	2	Y	Y	14	Medium
Small_17	TC-3	809.8	Yes	2	1	1	1	2	1	2	Y	Y	14	Medium
Small_19	TC-4	746.1	Yes	2	3	1	1	1	2	1		Y	14	Medium
Small_21	TC-4	499.0	Yes	2	3	1	1	1	2	1		Y	14	Medium
Small_28	TC-5	526.1	Yes	2	3	1	1	1	2	1		Y	14	Medium
Small_33	TC-5	369.7	Yes	2	3	1	1	1	2	1		Y	14	Medium
Small_54	TC-6	475.2	Yes	2	3	1	1	1	2	3		Y	14	Medium
Small_59	TC-6	308.3	Yes	2	3	1	1	1	1	3	Y	Y	14	Medium
Project_13	TC-6	2632.0	No	2	1	2	2	1	1	3		Y	14	Medium
Small_110	CH-1	640.4	Yes	1	3	1	3	1	1	3		Y	14	Medium
Small_35	TC-5	445.4	Yes	1	3	1	3	1	1	1		Y	14	Medium
Small_36	TC-5	1353.3	Yes	1	3	1	3	1	1	1		Y	14	Medium
Project_22	TC-6	2783.3	No	1	3	2	1	1	1	3		Y	14	Medium
Small_120	TC-3	307.5	Yes	2	1	1	3	1	2	2		Y	14	Medium
Small_113	CH-1	785.2	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_116	CH-1	412.5	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_117	CH-1	165.6	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_109	CH-1	1101.1	Yes	2	3	1	1	1	1	3		Y	13	Medium

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Small_102	CH-2	821.2	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_89	CH-2	1251.6	Yes	2	2	1	1	1	2	3		Y	13	Medium
Small_92	CH-2	1057.4	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_79	PC-1	473.8	Yes	2	2	1	3	1	1	2			13	Medium
Small_83	PC-1	232.5	Yes	2	3	1	1	1	2	2			13	Medium
Small_65	PC-2	625.1	Yes	2	3	1	1	1	2	1			13	Medium
Small_6	TC-1	1512.2	Yes	2	3	1	1	1	1	2		Y	13	Medium
Small_2	TC-2	794.0	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_3	TC-2	1382.7	Yes	2	3	1	1	1	1	1		Y	13	Medium
Project_14	TC-3	2852.8	No	2	1	2	1	1	1	2		Y	13	Medium
Small_24	TC-4	513.2	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_25	TC-4	182.3	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_26	TC-4	684.8	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_30	TC-5	316.1	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_31	TC-5	1030.7	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_34	TC-5	1595.6	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_41	TC-5	500.9	Yes	2	3	1	1	1	1	1		Y	13	Medium
Small_42	TC-5	455.0	Yes	2	1	1	3	1	1	1		Y	13	Medium
Small_43	TC-5	662.0	Yes	2	1	1	3	1	1	1		Y	13	Medium
Project_17	TC-5	2625.7	No	2	1	2	1	1	1	1		Y	13	Medium
Project_19	TC-5	3440.9	No	2	1	2	1	1	1	1		Y	13	Medium
Project_20	TC-5	3456.0	No	2	1	2	1	1	1	1		Y	13	Medium
Small_44	TC-6	1540.8	Yes	2	1	1	3	1	1	3		Y	13	Medium
Small_47	TC-6	899.2	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_48	TC-6	577.6	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_49	TC-6	1344.2	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_50	TC-6	1233.9	Yes	2	3	1	1	1	1	3		Y	13	Medium

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Small_55	TC-6	1220.8	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_56	TC-6	1975.5	Yes	2	2	1	1	1	2	3		Y	13	Medium
Small_57	TC-6	1186.3	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_58	TC-6	587.0	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_61	TC-6	281.9	Yes	2	3	1	1	1	1	3		Y	13	Medium
Small_112	CH-1	928.2	Yes	1	2	1	3	1	1	3		Y	13	Medium
Small_22	TC-4	321.1	Yes	3	1	1	1	1	1	1		Y	13	Medium
Small_78	PC-1	330.7	Yes	2	3	1	1	1	1	2			12	Low
Small_80	PC-1	212.6	Yes	2	3	1	1	1	1	2			12	Low
Small_81	PC-1	497.2	Yes	2	3	1	1	1	1	2			12	Low
Small_86	PC-1	78.4	Yes	2	3	1	1	1	1	2			12	Low
Small_87	PC-1	150.1	Yes	2	3	1	1	1	1	2			12	Low
Small_71	PC-2	1195.1	Yes	2	3	1	1	1	1	1			12	Low
Small_73	PC-2	383.7	Yes	2	3	1	1	1	1	1			12	Low
Small_74	PC-2	174.6	Yes	2	3	1	1	1	1	1			12	Low
Small_76	PC-2	901.2	Yes	2	3	1	1	1	1	1			12	Low
Project_26	PC-2	2890.1	No	2	1	2	1	1	1	1			12	Low
Small_13	TC-3	1409.9	Yes	2	1	1	1	1	1	2	Y	Y	12	Low
Small_20	TC-4	212.1	Yes	2	2	1	1	1	1	1		Y	12	Low
Small_114	CH-1	594.2	Yes	1	3	1	1	1	1	3		Y	12	Low
Small_100	CH-2	714.7	Yes	1	3	1	1	1	1	3		Y	12	Low
Small_97	CH-2	565.0	Yes	1	3	1	1	1	1	3		Y	12	Low
Small_5	TC-2	511.3	Yes	1	3	1	1	1	1	1		Y	12	Low
Small_12	TC-3	831.1	Yes	1	3	1	1	1	1	2		Y	12	Low
Project_18	TC-5	2752.2	No	1	1	2	1	1	1	1		Y	12	Low
Small_14	TC-3	763.7	Yes	2	1	1	1	1	1	2		Y	11	Low
Small_16	TC-3	717.1	Yes	2	1	1	1	1	1	2		Y	11	Low

Project Group	Sub-watershed	Project Group Length (LF)	Small Site?	Riparian Buffer Quality Rating	Drainage Area Rating	Length Rating	Landowner Density Rating	Livestock Access Rating	Qual. Channelization Assessment Rating	Subwatershed Functional Assess. Rating	Wetland Adjacent?	Upstream of Water Supply	Score	Rating
Small_23	TC-4	912.4	Yes	2	1	1	1	1	1	1		Y	11	Low
Small_27	TC-4	383.7	Yes	2	1	1	1	1	1	1		Y	11	Low
Small_38	TC-5	1204.6	Yes	2	1	1	1	1	1	1		Y	11	Low
Small_45	TC-6	376.6	Yes	2	1	1	1	1	1	3		Y	11	Low
Small_53	TC-6	927.0	Yes	2	1	1	1	1	1	3		Y	11	Low
Small_69	PC-2	880.6	Yes	2	1	1	1	1	1	1			10	Low
Small_72	PC-2	677.8	Yes	2	1	1	1	1	1	1			10	Low
Small_77	PC-2	727.2	Yes	2	1	1	1	1	1	1			10	Low
Small_15	TC-3	431.0	Yes	1	1	1	1	1	1	2		Y	10	Low
Small_18	TC-4	779.7	Yes	1	1	1	1	1	1	1		Y	10	Low

Potential Wetland Site Database
Ararat-Pilot Mountain Local Watershed Plan

Sub-watershed	ID	Area (Ac)	Unit Symbol	Hydric Soil Rating	Vegetation Rating	Drainage Rating	Size Classification	Sub-watershed Functional Assess. Rating	Adjacent Stream Project Group	Score	Rating
TC-3	8	5.1	ArA	3	3	3	3	2	Y	16	High
CH-1	3	7.2	CsA	3	2	2	3	3	Y	14	High
TC-4	7	11.8	ArA	3	2	2	3	1	Y	14	High
TC-4	9	11.5	ArA	3	3	1	3	1	Y	14	High
TC-1	20	7.5	ArA	3	2	2	3	2	Y	14	High
TC-1	21	5.6	ArA	3	2	2	3	2	Y	14	High
TC-2	16	2.6	ArA	3	3	2	2	1	Y	13	High
TC-1	18	4.6	ArA	3	3	2	2	2	Y	13	High
CH-1	1	7.3	BeA	2	2	2	3	3	Y	13	High
TC-5	12	2.0	ArA	3	3	1	2	1	Y	12	Medium
TC-4	13	2.3	ArA	3	3	1	2	1	Y	12	Medium
TC-2	17	3.0	ArA	3	3	1	2	1	Y	12	Medium
TC-1	19	2.9	BaC	2	3	2	2	2	Y	12	Medium
TC-1	23	3.7	BaC	2	3	2	2	2	Y	12	Medium
PC-1	10	1.7	ArA	3	3	2	1	2	Y	11	Medium
CH-1	2	3.6	BaB	2	3	1	2	3	Y	11	Medium
CH-2	4	4.3	BaB	2	3	1	2	3	Y	11	Medium
TC-3	6	2.1	ArA	3	2	1	2	2	Y	11	Medium
TC-3	14	3.4	ArA	3	2	1	2	2	Y	11	Medium
TC-1	22	2.5	BaC	2	3	1	2	2	Y	11	Medium
TC-6	11	0.8	ArA	3	3	1	1	3	Y	10	Low
TC-3	15	1.1	ArA	3	3	1	1	2	Y	10	Low
CH-2	5	1.4	BaB	2	3	1	1	3		8	Low

Potential Stormwater BMP Database
Ararat-Pilot Mountain Local Watershed Plan

BMP Site	BMP Type	Impervious Area (ac)	Drainage Area (ac)	% Impervious	Landowner	Watershed Characteristics	Feasibility Rating	Landowner Rating	Score	Rating
BMP 2	Stormwater Wetland	2.9	8.2	35.7%	Bank	3	3	2	8	High
BMP 11	Stormwater Wetland	7.6	15.3	49.8%	Industrial	3	3	2	8	High
BMP 12	Stormwater Wetland	3.7	11.2	33.1%	Industrial	3	3	2	8	High
BMP 18	Bioretnetion	0.7	1.0	71.2%	Public (County School)	2	3	3	8	High
BMP 20	Stormwater Wetland	2.5	9.2	27.4%	Ccommercial	3	3	2	8	High
BMP 21	Stormwater Wetland	2.7	8.5	31.6%	Commercial	3	3	2	8	High
BMP 28	Stormwater Wetland	6.0	9.5	62.9%	Industrial	3	3	2	8	High
BMP 29	Stormwater Wetland	3.6	8.1	44.2%	Private	3	3	2	8	High
BMP 30	Wet Pond/Stormwater Wetland	4.0	14.9	26.5%	Private	3	2	2	7	Medium
BMP 26	Bioretention	1.7	8.7	19.3%	Private	2	3	2	7	Medium
BMP 22	Bioretention/ Stormwater Wetland	0.6	13.0	4.6%	Public	1	3	3	7	Medium
BMP 1	Bioretention	0.2	0.6	36.1%	Private	2	3	2	7	Medium
BMP 25	Bioretention	1.1	1.3	82.7%	Commercial	2	3	2	7	Medium
BMP 8	Bioretention	0.3	0.5	65.4%	Private	2	3	2	7	Medium
BMP 9	Bioretention	1.0	2.6	38.7%	Private	2	3	2	7	Medium
BMP 13	Bioretention	1.2	3.5	33.3%	Industrial	2	3	2	7	Medium
BMP 15	Bioretention	0.4	0.4	91.1%	Commercial	2	3	2	7	Medium
BMP 16	Stormwater Wetland	5.9	12.2	47.9%	Private	3	2	2	7	Medium
BMP 19	Stormwater Wetland	3.0	4.1	73.8%	Public (County School)	2	2	3	7	Medium
BMP 23	Bioretention	0.9	1.4	66.2%	Church	2	3	2	7	Medium
BMP 24	Bioretention	2.7	5.7	48.5%	Private	2	3	2	7	Medium
BMP 25	Bioretention	1.1	1.5	74.8%	Commercial	2	3	2	7	Medium
BMP 27	Stormwater Wetland	3.3	11.0	30.1%	Private	3	2	2	7	Medium

BMP Site	BMP Type	Impervious Area (ac)	Drainage Area (ac)	% Impervious	Landowner	Watershed Characteristics	Feasibility Rating	Landowner Rating	Score	Rating
BMP 3	Bioretention	0.3	0.5	57.6%	Public (Town)	1	2	3	6	Low
BMP 4	Bioretention	0.8	4.6	17.6%	Private	1	3	2	6	Low
BMP 7	Bioretention	3.2	4.3	75.3%	Church	2	2	2	6	Low
BMP 10	Bioretention	0.6	0.7	84.1%	Industrial	2	2	2	6	Low
BMP 14	Bioretention	0.3	0.6	47.7%	Commercial	2	2	2	6	Low
BMP 17	Bioretention	0.4	0.7	59.6%	Private (Appt Buildings)	2	2	2	6	Low

Index Maps for Potential Stream, Wetland, and Stormwater BMP Project Sites

Legend

- High Priority Sites
- Priority Stream Projects
- Potential Stream Projects
- Priority Wetland Projects
- Potential Wetland Projects
- Parcels
- County Boundary
- Streams & Ponds
- Subwatersheds

P = Stream Project
S = Small Stream Project (< 2,000 feet)
W = Wetland Project

PC - Pilot Creek
TC - Toms Creek
CH - Chinquapin Creek

TC-1
TC-2
TC-3
TC-4
CH-1

SURRY CO.
STOKES CO.

Mount Airy
Study Area
Pilot Mountain

0 0.5 1 2 Miles

N

WILDLANDS ENGINEERING

Index Map North
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC

Legend

- High Priority Sites
- Priority Stream Projects
- Potential Stream Projects
- Priority Wetland Projects
- Potential Wetland Projects
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- Subwatersheds

P = Stream Project
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PC - Pilot Creek
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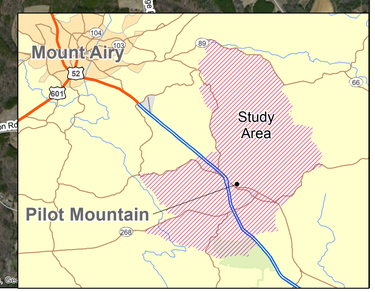

WILDLANDS ENGINEERING

0 0.5 1 2 Miles

N

Index Map South
Ararat - Pilot Mountain
Local Watershed Plan

Stokes & Surry Counties, NC