

Lineberger Property Preliminary Evaluation of Compensatory Mitigation Potential

The information presented here is based on an initial site visit and a review of existing resource maps, including USGS topographic maps, National Wetland Inventory mapping, and aerial photography. LiDAR data was also reviewed. These existing conditions are shown on the accompanying Figure 1.

In North Carolina, compensatory mitigation is provided based on the watershed in which the permitted impacts are located. The subject site is located in the South Fork Catawba River watershed (HUC 03050102) as shown on Figure 2.

On-site Streams

Three primary stream channels are located on site (Figure 1). These are tributaries to Duharts Creek, which is located south of Interstate 85, which is just south of the property. UT 1 and UT 2 are shown on the USGS topographic map (Figure 3). UT 3 was not mapped but is a perennial channel that forms much of the eastern property boundary. A preliminary evaluation of compensatory mitigation credit potential is shown in Table 1 below.

On-site Wetlands

Wetlands do not appear to be extensive within the site. Hydric soils are mapped in the existing stream channels (Figure 4). Field observations indicate that wetlands do not appear to be extensive within the riparian corridors. Prior to site development for either traditional or mitigation purposes, a wetland delineation should be completed and a jurisdictional determination obtained. Preliminary assessments indicate that wetland mitigation potential from the site is not significant.

Table 1. Preliminary Evaluation of Stream Mitigation Potential.

Stream	Type	Length (linear feet)	Mitigation Approach	Estimated Credit Amount	Notes
UT 1	perennial	2,648	enhancement	1,324	A mitigation ratio of 2 feet per credit has been applied. Some areas of this stream may warrant restoration. Others would be preservation. Field verification is needed.
UT 2	perennial	2,378	enhancement	1,585	This stream appears to warrant more extensive enhancement. A mitigation ration of 1.5 feet per credit has been applied. Field verification is needed.
HW 1 to UT 2	intermittent	459	restoration	459	Field verification needed.
HW 2 to UT 2	intermittent	525	restoration	525	Field verification needed.
UT 3	perennial	1,740	enhancement	870	Much of this stream has the far side bank as the property line. Both sides of the stream and a 50-foot buffer would be necessary for mitigation credit. As with UT 1, a ratio of 2 feet per credit was used. Field verification needed.
HW to UT 3	intermittent	972	enhancement	648	Field verification needed.
Estimated Total Credits				5,411	

Preliminary Mitigation Valuation

Compensatory wetland and stream mitigation may be provided through three methods – mitigation bank credits, in-lieu fee payment, or permittee responsible mitigation. There is a preference for mitigation bank credits at both the federal and state level in North Carolina. North Carolina, however, also has a large in-lieu fee program through the Division of Mitigation Services.

Because of the size of the DMS program, the fee structure that they set often becomes a basis for market pricing of mitigation bank credits. The current fee for stream credits is \$507.32. This fee is what a permit applicant pays for mitigation when bank credits are not available within a given watershed. Bank credit pricing is determined by market demand, but the DMS fee is a good proxy. Thus, a preliminary estimate of the value of mitigation that may be produced from the site is approximately \$2.7 million.

This would be the gross value of mitigation. It is difficult to provide a full cost assessment to produce the mitigation at this preliminary stage. In general, the costs included in developing mitigation are the land (all mitigation property would be covered by a conservation easement), project design and documentation, construction and planting, monitoring (for a minimum of 7 years), and financial assurances (both long-term and short-term). The mitigation project development process can be lengthy and complicated. Construction costs are usually the largest portion of project costs. A full site assessment by a stream restoration engineer would be needed for an estimate of project costs.

Currently, there are no mitigation banks established in the site's resident watershed. The watershed is experiencing significant development, including transportation projects. Based upon preliminary evaluation, this site and location have significant potential for stream mitigation.

FIGURES

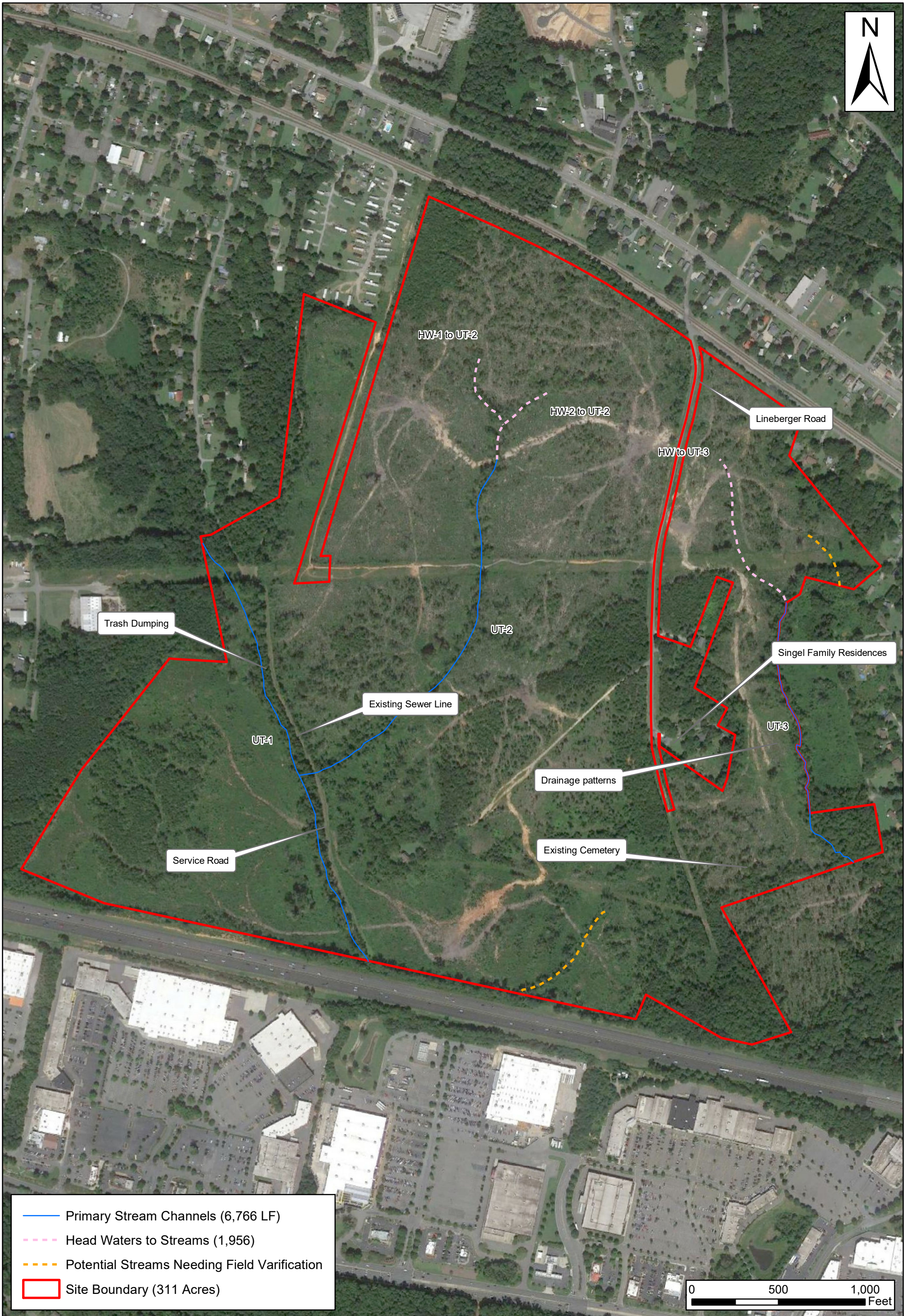
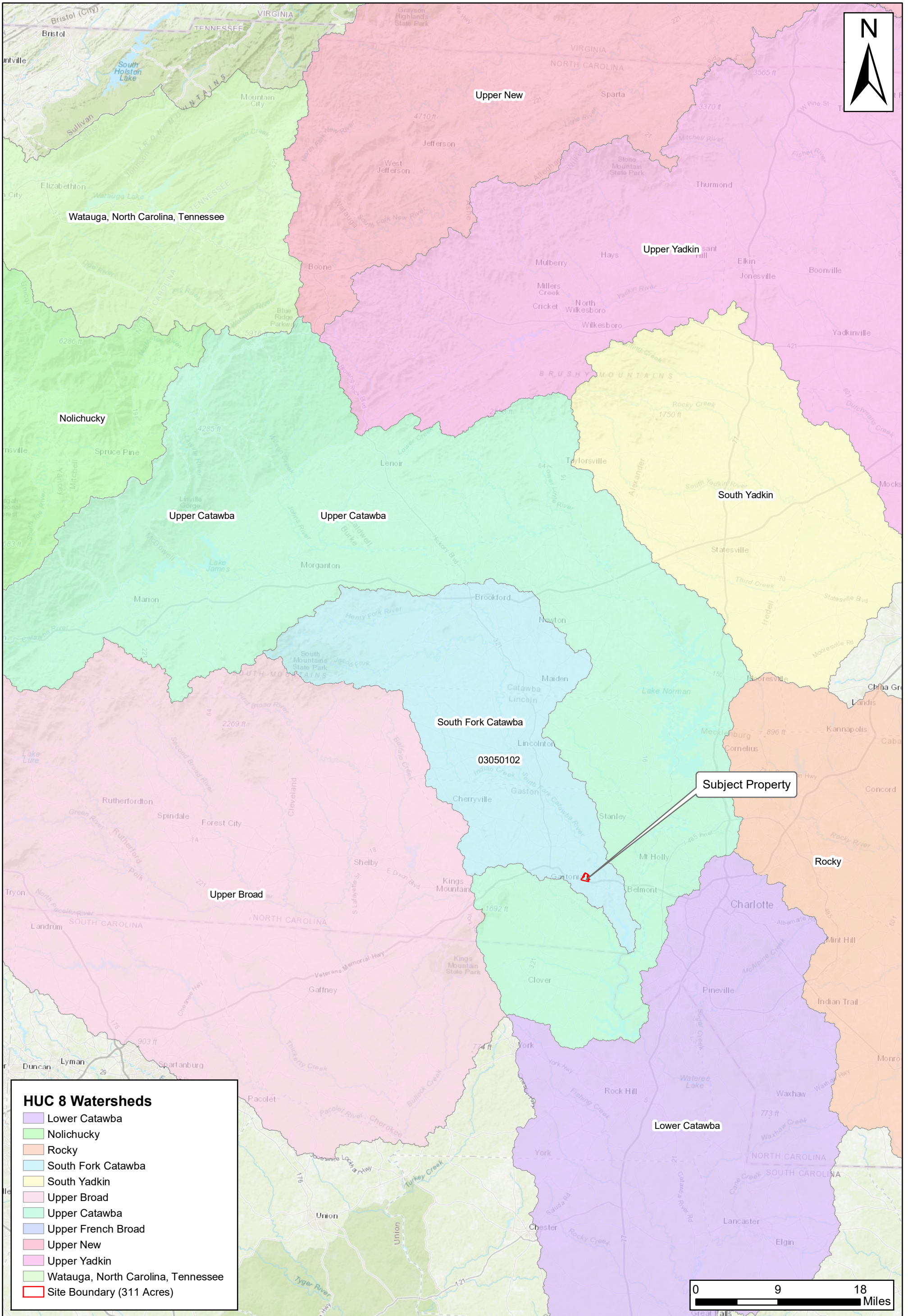


Figure 1. Preliminary Stream Mitigation
 Lineberger Property
 Gaston County, NC
 July 2018



HUC 8 Watersheds

- Lower Catawba
- Nolichucky
- Rocky
- South Fork Catawba
- South Yadkin
- Upper Broad
- Upper Catawba
- Upper French Broad
- Upper New
- Upper Yadkin
- Watauga, North Carolina, Tennessee
- Site Boundary (311 Acres)

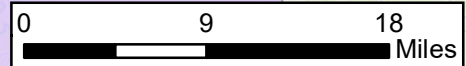
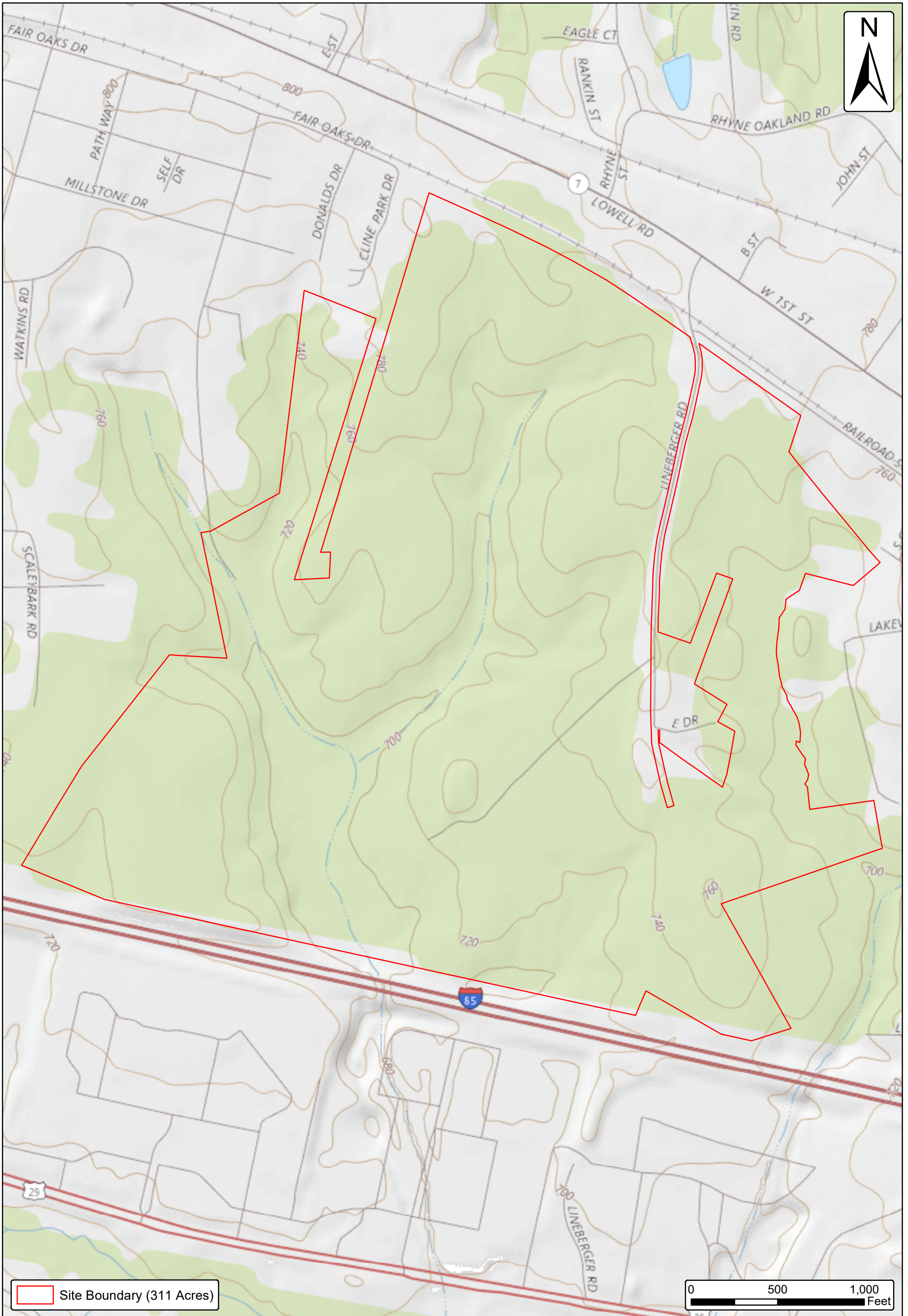


Figure 2. HUC 8 Watersheds
 Lineberger Property
 Gaston County, NC
 July 2018



Site Boundary (311 Acres)

0 500 1,000 Feet

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AmB	Alamance variant gravelly loam, 2 to 8 percent slopes	20.6	6.6%
AmD	Alamance variant gravelly loam, 8 to 15 percent slopes	8.0	2.6%
CfB	Cecil-Urban land complex, 2 to 8 percent slopes	0.5	0.2%
ChA	Chewacla loam, 0 to 2 percent slopes, frequently flooded	14.9	4.8%
LcE	Lloyd loam, 15 to 25 percent slopes	10.1	3.3%
LdB2	Lloyd sandy clay loam, 2 to 8 percent slopes, moderately eroded	23.2	7.5%
LdD2	Lloyd sandy clay loam, 8 to 15 percent slopes, moderately eroded	12.4	4.0%
LgB	Lignum silt loam, 1 to 6 percent slopes	19.9	6.4%
TaB	Tatum gravelly loam, 2 to 8 percent slopes	118.9	38.3%
TaD	Tatum gravelly loam, 8 to 15 percent slopes	75.0	24.1%
WoA	Worsham loam, 0 to 2 percent slopes	7.2	2.3%
Totals for Area of Interest		310.8	100.0%



Hydric Rating

- Hydric
- Non-Hydric
- Site Boundary (311 Acres)

