

**(DRAFT)**  
**DECISION NOTICE**  
**AND**  
**FINDING OF NO SIGNIFICANT IMPACT**

**Lower Broad Analysis Area**

**USDA Forest Service – Region 8**  
**Sumter National Forest**  
**Enoree Ranger District**

Fairfield, Union, Chester and Newberry Counties, South Carolina

## **Decision**

I have decided to implement alternative 2. This alternative including design criteria best meets the Purpose and Need as stated in the *Lower Broad Analysis Area Environmental Assessment (EA)*.

Alternative 2 is described below (maps are included in Appendix A).

### **Commercial Thinning**

Commercial thinning will be implemented on 6,355 acres of loblolly pine stands. First thinnings will occur in younger pole timber stands (less than 30 years old). Intermediate thinnings will occur in older stands (30+ years old). The desired basal area will average from 60 to 80 square feet of basal area per acre for both first and intermediate thinnings.

### **Regeneration Clearcut with Reserves**

Regeneration clearcut with reserves is will be implemented on 2,083 acres of loblolly pine stands. Healthy shortleaf pine and desirable hard mast species (oaks, hickories, etc.) that are eight inches or greater in diameter will be retained.

An herbicide site preparation treatment will be used prior to planting of loblolly pine seedlings to control sprouting and to release desirable oaks, hickories and loblolly/shortleaf pine trees.

Planting of 600 – 650 trees per acre of loblolly pine seedlings will take place during the dormant season (December-March). Approximately 3-5 years after planting loblolly pine, an herbicide release treatment may be prescribed if there is competition from undesirable tree species.

### **Shortleaf Pine Restoration - Regeneration Clearcut with Reserves**

All or portions of stand 12 (29 acres) in compartment 156 and stands 2 and 8 (13 and 20 acres, respectively) in compartment 55 will be targeted for shortleaf restoration totaling 62 acres. Healthy shortleaf pine and desirable hard mast species (oaks, hickories, etc.) that are eight inches or greater in diameter will be retained.

A herbicide site preparation treatment will be used prior to planting of shortleaf pine seedlings to control sprouting and to release desirable oaks, hickories, and shortleaf pine trees.

Planting of 600 – 650 trees per acre of shortleaf pine seedlings will take place during the dormant season (December-March). Approximately 3-5 years after planting shortleaf pine, a herbicide release treatment may be prescribed if there is competition from undesirable tree species. If after 5 years, shortleaf pine cannot be

restored for ecological or management reasons, the area will be considered for regeneration to loblolly pine as described above under regeneration clearcut with reserves.

### **Shelterwood with Reserves**

Shelterwood with reserves will be implemented on 208 acres of loblolly pine stands. Shelterwood harvests will leave approximately 30 square feet per acre of basal area of trees to provide a seed source for natural regeneration, shade to favor shortleaf pine and oak over loblolly pine, and woody fuel to carry a fire in these stands. Merchantable pine and certain hardwood species will be harvested to achieve the basal area objective. Desirable hard mast species (oaks, hickories) and shortleaf pine that are eight inches or greater DBH will be retained. Herbicide site preparation treatments will be used to control undesirable woody sprouting and to release desirable oaks, hickories, and shortleaf pine trees. The overstory loblolly pine trees will be removed when the stands are stocked.

An herbicide release treatment will be prescribed after final removal of the loblolly overstory approximately 3-5 years after initial harvest.

A manual pre-commercial thinning will be completed after the loblolly pine trees have been removed. Herbicide treatments and pre-commercial thinning are described below.

### **Site Preparation**

Site preparation is scheduled after the initial regeneration harvest and before tree planting. Site preparation will occur only in the stands identified for regeneration harvest (clearcut with reserves, shortleaf pine restoration and shelterwood with reserves) and the purpose of site preparation is to reduce competition from less desired species, such as sweetgum, red maple, winged elm, and yellow-poplar. In the shelterwood stands, only chemical site preparation will be used to encourage both natural loblolly and hard mast regeneration. In clearcut stands, site preparation will utilize herbicides (chemical site preparation) during the growing season (June through September) to control less desired species. Site preparation in clearcut stands differ from shelterwood stands in the desire to eliminate natural loblolly pine regeneration. The control of loblolly pine regeneration will utilize chemical site preparation followed by burning (March-June). Prescribed burning is covered under an existing Decision Notice (2/4/2008). Natural loblolly pine regeneration is difficult to control, and utilizing chemical, burning, and mechanical methods may be needed. The clear-cut areas would be planted to either loblolly or shortleaf pine once woody vegetation has been controlled through chemical, burning and or manual treatments.

#### *Chemical Site Preparation*

Chemical site preparation consists of the use of herbicides containing the active ingredients: Imazapyr (such as Arsenal AC or equivalent) and Triclopyr (Garlon 3A or Garlon 4 or equivalents). The herbicides will be applied to control sprouting of tree species, such as sweetgum and maple. The objective of the herbicide treatment is to promote the growth of selected species by limiting competition from non-preferred species. Preferred species, including shortleaf pine, oak, and hickory, will be selectively released from competition from undesirable species such as sweetgum, naturally regenerating loblolly pine, yellow-poplar, red maple, sourwood, winged elm, blackgum, and other undesirable species. Herbicide treatments will occur between July and October.

Foliar spray herbicides will be applied using a backpack sprayer to spray the foliage of targeted plants. A mixture containing 0.5 ounce of Arsenal AC (active ingredient Imazapyr), 0.5 ounce of Milestone (active ingredient aminopyralid), 5 ounces Accord XRT II (active ingredient Glyphosate), 2 ounces of Bullseye spray pattern indicator (water soluble dye), and 1-2 ounces of Cidekick adjuvant (limonene)

per gallon of water will be used. Herbicides will be applied to targeted vegetation by speckling the leaf surface during the period of July through October of the second or third growing season. The anticipated application rate is 10 gallons of mix, 5 ounces of Arsenal AC (0.16 pound of Imazapyr) and 5 ounces of aminopyralid per acre.

In hack-n-squirt applications, a hatchet is used to cut into the tree surface of larger (greater than 6 feet tall) targeted vegetation and Imazapyr (Arsenal AC or equivalent) and triclopyr (Garlon 3A) herbicide are sprayed/injected into the cut area. A cutting tool, such as a hatchet, machete, or sandvik, will make the cuts. A mixture of 50 percent Garlon 3A and 50 percent water, plus 6 ounces of Arsenal AC per gallon of water will be used. All treated areas will be monitored for further follow-up treatments after the initial treatment. All downed vegetation will be left on-site to decompose.

Commercial herbicides/ adjuvant/dyes referenced in this decision (Garlon 3A, Arsenal AC, Cidekick, and Bullseye) represent those formulations that are commonly used for the proposed forestry treatments. However, other equivalent formulations may be used for implementation of the proposed treatments. Equivalent formulations will include any other brand name herbicides that have an equivalent proportion of the specified active ingredient.

### *Mechanical Site Preparation*

Mechanical site preparation consists of a one-time pass with a shear and roller drum chopper used to control unwanted natural loblolly pine regeneration in clearcut stands and shortleaf restorations sites. A bulldozer with a shearer attached to the blade and a roller drum chopper attached to the rear pass over the regeneration area and chop up un-merchantable materials left on site. Hand tool site preparation (use of chainsaws or brush saws) may also be used in conjunction with the mechanical site preparation treatments.

### **Tree Planting (Regeneration Clearcut with Reserves)**

It is anticipated that not enough trees will be left to restock the stand, so planting loblolly pine seedlings will be needed except for compartment 156 stand 12 and Compartment 55 Stands 2 and 8 which will be planted to shortleaf pine. Planting will be implemented immediately after site preparation. Tree seedlings for both loblolly and shortleaf pine will be planted on 7ft x10ft spacing.

### **Chemical Release (Regeneration sites)**

Herbicide will be used to release crop trees from competing vegetation. Under management prescriptions, an average of 500 seedlings of pine, oaks, and hickories per acre is the desired stocking level. Stands will be treated for release approximately 3-5 years after initial regeneration harvest and when the survival and stocking checks indicate more than one hundred stems per acre of undesirable species such as sweetgum, maple, and yellow-poplar are found in the stands. The herbicides and the applications used will be similar to the chemical site preparation treatments described under *Site Preparation*.

### **Pre-commercial Thinning (Regeneration sites)**

Pre-commercial thinning consists of felling and/or deadening pre-merchantable trees to reduce tree stocking in overstocked stands (overstocked is defined as 700 stems per acre or greater). The objective of pre-commercial thinning is to accelerate diameter increment on remaining stems, maintain stand density range, and to improve the vigor and quality of remaining trees. Pre-commercial thinning will take place in shelterwood stands after seed tree removal (3-5 years after initial harvest). In clearcut with reserves, pre-commercial thinning may be

used to control unwanted natural loblolly pine regeneration when stocking is over 700 stems per acre. Pre-commercial thinning will be accomplished using hand tools such as chainsaws, brush saws, and other manual tools to reduce stocking levels to 500 stems per acre. Healthy shortleaf pine, oaks and hickories will be favored for release over loblolly pine.

**Road Decommissioning and Road Relocation**

Approximately four miles of Forest Service system roads will be decommissioned and includes roads 406B (compartment 55 map), 411A (compartment 108 map), 412F and 412G (compartment 112 map), E110-2 (compartment 110 map), E116-2(compartment 116 map), E156-2 (compartment 156 map), E-54-1 and E54-2 (compartment 54 map). The same road numbers (E-54-1 and E54-2) will be used to establish new roads to provide long term access (see next paragraph). Decommissioning work may include but is not limited to removing culverts, restoring normal drainage function, removing road ditching, blocking the road from further access, out-sloping to improve drainage and water-barring and reseeding with native and desired non-native vegetation.

Forest Service system roads E54-1 and E54-2 (totaling 0.63 miles) will be constructed to continue to provide access to a privately owned cemetery and to provide access for the maintenance of two wildlife openings, respectively.

**Table 1 Prescription Treatments by Compartment and Stand<sup>1</sup>**

Compartment	Stand	Treatment	Acres
0054	1	Intermediate Thin	27
0054	2	First Thin	33
0054	5	Intermediate Thin	26
0054	8	Intermediate Thin	11
0054	9	First Thin	32
0054	11	Intermediate Thin	35
0054	13	Shelterwood	14
0054	15	First Thin	49
0055	2	Shortleaf Pine Restore	13
0055	5	Intermediate Thin	29
0055	6	Intermediate Thin	24
0055	8	Shortleaf Pine Restore	20
0055	11	Intermediate Thin	16
0055	12	First Thin	49
0055	13	Clearcut with Reserves	17
0055	14	Intermediate Thin	30
0056	1	Shelterwood	70
0056	2	Intermediate Thin	53
0056	3	Clearcut with Reserves	73
0056	4	First Thin	33
0056	5	Intermediate Thin	37
0056	6	Intermediate Thin	33
0056	7	First Thin	16
0056	9	Intermediate Thin	77

<sup>1</sup> Appendix A contains maps of each of the harvest units.

Compartment	Stand	Treatment	Acres
0056	10	Clearcut with Reserves	64
0056	11	Intermediate Thin	63
0056	12	Clearcut with Reserves	26
0056	13	Intermediate Thin	51
0056	17	First Thin	11
0056	18	Clearcut with Reserves	16
0057	1	Intermediate Thin	42
0057	2	Intermediate Thin	4
0057	3	First Thin	30
0057	4	Intermediate Thin	40
0057	5	Clearcut with Reserves	39
0057	6	Intermediate Thin	63
0057	7	First Thin	41
0057	8	Intermediate Thin	40
0057	9	Clearcut with Reserves	45
0057	10	First Thin	15
0057	11	Intermediate Thin	52
0057	12	Intermediate Thin	15
0057	13	Intermediate Thin	45
0057	15	Intermediate Thin	72
0057	16	Intermediate Thin	56
0057	18	Shelterwood	31
0057	21	Clearcut with Reserves	73
0057	23	Intermediate Thin	66
0057	24	Intermediate Thin	47
0057	26	First Thin	38
0058	1	Intermediate Thin	78
0058	2	Intermediate Thin	33
0058	3	Clearcut with Reserves	28
0058	4	Intermediate Thin	122
0058	5	Intermediate Thin	97
0058	6	Intermediate Thin	36
0058	7	Shelterwood	85
0058	8	Intermediate Thin	49
0058	9	First Thin	65
0058	10	Shelterwood	57
0058	11	Intermediate Thin	59
0058	13	First Thin	70
0058	14	Intermediate Thin	95
0062	1	Intermediate Thin	47
0062	2	First Thin	70
0062	3	Intermediate Thin	22
0062	4	Clearcut with Reserves	41

Compartment	Stand	Treatment	Acres
0062	5	First Thin	55
0062	6	Intermediate Thin	40
0062	10	Clearcut with Reserves	27
0062	12	Intermediate Thin	38
0062	15	Intermediate Thin	2
0062	16	Intermediate Thin	40
0062	17	Clearcut with Reserves	75
0062	21	Clearcut with Reserves	32
0108	2	Intermediate Thin	38
0108	3	Intermediate Thin	12
0108	4	Intermediate Thin	8
0108	5	Intermediate Thin	27
0108	7	First Thin	45
0108	8	Intermediate Thin	62
0108	14	Intermediate Thin	30
0108	17	Clearcut with Reserves	30
0109	1	First Thin	26
0109	3	Clearcut with Reserves	30
0109	4	Intermediate Thin	32
0109	5	Intermediate Thin	31
0109	6	Intermediate Thin	28
0109	7	Intermediate Thin	35
0109	8	First Thin	76
0109	10	Intermediate Thin	25
0109	11	Intermediate Thin	25
0109	13	First Thin	35
0109	14	Clearcut with Reserves	65
0109	15	First Thin	34
0109	17	Clearcut with Reserves	21
0109	19	Intermediate Thin	68
0110	1	Intermediate Thin	91
0110	2	Clearcut with Reserves	78
0110	3	Intermediate Thin	83
0110	8	First Thin	68
0110	9	First Thin	42
0110	10	First Thin	32
0110	11	First Thin	21
0111	2	Intermediate Thin	33
0111	3	First Thin	34
0111	4	Clearcut with Reserves	53
0111	5	First Thin	60
0111	6	Intermediate Thin	197
0111	9	Intermediate Thin	35

Compartment	Stand	Treatment	Acres
0111	10	Clearcut with Reserves	39
0111	11	Clearcut with Reserves	68
0111	12	First Thin	45
0111	14	Intermediate Thin	69
0112	3	Clearcut with Reserves	20
0112	4	Clearcut with Reserves	12
0112	5	Clearcut with Reserves	33
0112	6	Intermediate Thin	17
0112	7	Clearcut with Reserves	42
0112	8	Intermediate Thin	28
0112	9	First Thin	33
0112	10	Intermediate Thin	37
0112	11	First Thin	27
0112	12	Intermediate Thin	28
0112	13	Intermediate Thin	17
0112	14	Intermediate Thin	18
0112	16	First Thin	34
0112	18	Intermediate Thin	14
0112	19	Intermediate Thin	66
0112	22	Intermediate Thin	21
0112	23	First Thin	22
0112	27	First Thin	25
0112	28	Clearcut with Reserves	40
0112	29	First Thin	49
0112	30	Intermediate Thin	32
0112	31	Clearcut with Reserves	54
0112	32	First Thin	27
0112	33	Clearcut with Reserves	21
0113	1	First Thin	64
0113	3	Intermediate Thin	100
0113	6	Intermediate Thin	51
0113	7	Clearcut with Reserves	77
0113	8	First Thin	43
0113	9	First Thin	43
0113	10	Intermediate Thin	54
0113	11	Clearcut with Reserves	67
0113	12	Intermediate Thin	55
0113	13	Intermediate Thin	56
0113	14	Intermediate Thin	42
0113	15	Intermediate Thin	64
0113	16	Intermediate Thin	43
0113	17	First Thin	15
0115	2	First Thin	50

Compartment	Stand	Treatment	Acres
0115	3	Clearcut with Reserves	54
0115	4	Intermediate Thin	75
0115	6	Clearcut with Reserves	34
0115	7	First Thin	41
0115	8	Clearcut with Reserves	47
0115	9	First Thin	48
0115	10	Clearcut with Reserves	50
0115	11	Clearcut with Reserves	14
0115	12	First Thin	34
0115	13	Clearcut with Reserves	25
0115	15	First Thin	24
0115	16	Clearcut with Reserves	25
0115	18	Clearcut with Reserves	45
0116	1	Intermediate Thin	46
0116	5	First Thin	53
0116	6	Intermediate Thin	68
0116	7	Intermediate Thin	37
0116	8	First Thin	25
0116	10	Clearcut with Reserves	36
0116	11	Clearcut with Reserves	64
0116	12	First Thin	23
0117	1	Intermediate Thin	47
0117	4	Intermediate Thin	29
0117	6	Intermediate Thin	17
0117	7	Intermediate Thin	32
0117	10	First Thin	28
0117	11	Clearcut with Reserves	73
0117	12	Intermediate Thin	22
0117	13	Intermediate Thin	84
0117	14	First Thin	28
0118	1	First Thin	47
0118	3	Clearcut with Reserves	49
0118	6	First Thin	30
0118	7	Intermediate Thin	19
0118	8	Clearcut with Reserves	17
0118	9	Clearcut with Reserves	24
0118	10	Intermediate Thin	40
0118	11	Clearcut with Reserves	55
0118	13	Intermediate Thin	34
0155	12	Intermediate Thin	77
0156	1	Intermediate Thin	14
0156	3	First Thin	36
0156	4	Clearcut with Reserves	13

Compartment	Stand	Treatment	Acres
0156	5	Clearcut with Reserves	45
0156	6	Intermediate Thin	65
0156	7	Clearcut with Reserves	32
0156	8	First Thin	55
0156	9	First Thin	39
0156	10	Intermediate Thin	7
0156	11	Intermediate Thin	21
0156	12	Shortleaf Pine Restore	29
0156	14	First Thin	24
0156	16	Clearcut with Reserves	43
0156	17	First Thin	3
0156	19	Clearcut with Reserves	9

## **Connected Actions**

The following connected actions are associated with project activities.

### *Road Work*

Approximately 1.6 miles of system roads will be needed to provide access for present and future timber management as well as for other resource management activities.

System road reconstruction/reconditioning and maintenance work (estimated at about 43.4 miles) will also be needed to support timber removal and other management activities.

Reconstruction/reconditioning work will consist of, but not be limited to, gravelling road surfaces, replacing culverts, ditch cleaning, removing brush and trees along road rights-of-way, installing or replacing gates and correcting road safety hazards. Maintenance will consist of spot gravel, road grading, cleaning culverts, light brushing and mowing. Specific information on roads is contained in the project file. Temporary roads will be needed for access (less than 1 mile). Temporary roads will be closed after use, water-barred as needed and revegetated to reduce soil erosion.

### *Erosion Control*

Log decks, skid trails and temporary roads at risk for erosion will be vegetated or covered with logging slash to act as a mulch to reduce soil erosion. As a general rule, this disturbed area averages three percent of the harvested area. If planting is utilized for erosion control, native and desired non-native vegetation will be used. Native vegetation may include a mix consisting of fall panicum, little bluestem, deer tongue grass, purple top, side oats grama, bird's foot trefoil, black-eyed Susan, partridge pea, showy tickseed, false sunflower and Illinois bundleflower (spring mix). Native vegetation for fall planting may include a mix of Virginia wild rye, gray goldenrod and hairy mountain mint. Desirable non-native vegetation may include a mix consisting of bahia grass, brown top millet, kobe lespedeza, and common Bermuda (spring mix) or a mix consisting of perennial rye grass, clover, wheat, and kobe lespedeza (fall mix).

### Rights-of-way acquisition

Four rights-of-way (approximately 1.3 miles) will be acquired to improve/establish access to national forest system lands for resource management. These rights-of-way are located in compartment 62 stand 1, compartment 108 stand 4, compartment 109 stand 19 and compartment 110 stand 2. The roads will be constructed to provide sustainable access.

### Skidding, Decking and Hauling of Logs

Logs will be skidded with heavy equipment to landings where they will be stacked for later removal by logging trucks. Existing and new skid trails will be used during skidding operations.

### **Design Criteria**

Forest wide standards found in the *Revised Land and Resource Management Plan Sumter National Forest* (Forest Plan); *South Carolina's Best Management Practices for Forestry* (BMPs) (SCFC, 2003) and National Best Management Practices for Water Quality Management on National Forest System Lands (2012); and *Soil and Water Conservation Practices Guide, Southern Region*, (U.S. Department of Agriculture 2002) will be followed in implementation of this project. In addition, the following site-specific design criteria will be included with the action alternative in order to reduce adverse resource impacts.

The following design criteria are also included.

1. Identified heritage sites will be avoided during site disturbing activities associated with logging and follow-up treatments.
2. Skid trails will be located in a manner as to minimize concentration of water flow.
3. Gully crossings will be avoided and water from roads will not be directed into gullies.
4. Log decks will be ripped, disked, seeded, limed, fertilized and mulched at the time each harvest area is closed. Seed mixtures will include native grasses and legumes or other desired non-native species.
5. Trees will not be harvested within gullies or on steep slopes adjacent to gullies unless needed to promote stabilization or recovery efforts.
6. Streams will be identified on sale area maps and protective measures will be specified in the timber sale contract.
7. Desirable oaks and hickories will be retained within treatment stands.
8. Hardwood inclusions, to be protected within and adjacent to harvest units, will be identified on-the-ground and on the sale area map of the timber sale contract.
9. Skid trails that cross ephemeral streams will be recontoured to the natural terrain as much as possible to avoid discharging sediment directly into stream channels. These areas will be seeded, limed, fertilized and mulched after the area is recontoured to the natural terrain.
10. Erosion control devices such as diversions and temporary rock sediment dams will be installed prior to road construction, reconstruction and maintenance activities where needed to deter soil runoff into

streams. Erosion control devices will be maintained in working order throughout project activities until plant growth is established and stable enough to control runoff and erosion. Road ditch lines will not be routed toward stream crossings, but instead into vegetative buffers.

11. No logging operations will occur in or around the perimeter of Rocky Branch Seasonal Camp, during fall and April hunting seasons. Coordinate with other project work to reduce the direct impacts to recreational users. There will be no hauling of timber through the seasonal campground.
12. Flowering and other visually attractive trees and understory shrubs will be favored when leaving vegetation during timber marking.
13. If temporary roads, skid trails and landings are necessary, they will be located outside the immediate foreground viewshed of roads, trails, Broad River corridor or other recreation facilities, when possible. If these features must be located in the immediate foreground view shed of roads, trails or other recreation facilities, disturbed soil will be re-vegetated with native species or covered with woody material as soon as possible following the completion of logging activities.
14. Protection zones shall be delineated and maintained around all bald eagle nests and communal roost sites, until they are determined to be no longer suitable through coordination with the US Fish and Wildlife Service. The protection zone shall extend a minimum of 1,500 feet from the nest or roost. Activities that modify the forest canopy within this zone are prohibited. All management activities not associated with bald eagle management and monitoring are prohibited within this zone during the periods of use (nesting season is October 1 to June 15; roost use periods are determined through site-specific monitoring). Where controlled by the Forest Service, public access routes into or through this zone will be closed during the seasons of use, unless they are major arterial roads. (Forest Plan Standard FW-28)
15. Drainage dips and lead-outs will be incorporated into construction of temporary roads.
16. Temporary roads will be closed, ripped, disked, rolling-dips installed if needed, limed, fertilized, mulched and seeded with native and desirable non-native vegetation.

## **Decision Rationale**

In making my decision, I considered how well alternative 2 will meet the Purpose and Need to establish early-successional habitat, favor preferred tree species, reduce potential for insect and disease damage, produce high quality, valuable sawtimber and decommission and relocate roads to reduce long term resource impacts on national forest system land.

My other reasons for selecting alternative 2 are:

- ✓ It will promote better distribution of early successional stage/age classes to benefit wildlife habitat and improve vegetative diversity.
- ✓ It will maintain or restore vegetative composition, structure, function and productivity over time of forest ecosystems and associated communities.
- ✓ It will increase biodiversity by opening closed canopy stands and allow establishment of a variety of understory grasses and forbs. This will benefit a variety of wildlife species that prefer this type of habitat.

- ✓ It will provide a sustainable supply of wood products and produce high quality sawtimber.
- ✓ It will decommission roads as well as relocate roads that are causing resource damage.

## **Other Alternatives Considered**

The following alternatives were developed and analyzed in the EA.

### **Alternative 1: No Action**

Under the no-action alternative, current management activities would continue in the project area. Ongoing management actions include: previous timber harvest decisions, road maintenance, southern pine beetle suppression, non-native species control, prescribed burning and wildlife opening maintenance.

### **Alternative 3**

This alternative would use the seedtree method of regeneration in place of clearcut with reserves with the exception of the areas proposed for shortleaf pine regeneration. Timber harvest would occur from existing system roads.

There would be no new road construction (including temporary) which would reduce thinning down from 6,355 acres to 5,881 acres. This alternative would also reduce regeneration from 2,353 acres to 2,223. The other difference is the use of seedtree regeneration (Alternative 3) instead of clearcutting (the decision).

I did not choose the above alternatives, because they did not meet or was not as effective in meeting the purpose and need nor the desired condition for the prescription as outlined in the Forest Plan. The alternatives would have either fostered persistent slow growing stand conditions that would be at high risk to southern pine beetle attack and mortality or reduced the effectiveness the decision would have on the Lower Broad Analysis Area. These alternatives would have resulted in less biodiversity.

### **Other Alternatives Considered but Not Developed**

Several other alternatives were considered by the ID team during the planning process, but were eliminated from further analysis. These actions are listed below with a short rationale for their exclusion.

**Non-commercial treatments** – The use of “cut and leave” non-commercial methods (whereby trees are harvested, chopped up, and left on site) were discussed as a replacement for thinning and regeneration harvests.

This alternative was not considered in detail because the slash and downed trees would increase hazardous fuel loading on the site, and thereby increase the risk of catastrophic fire occurrence in the area. Additionally, under this method of vegetation management, no revenues are generated to offset treatment costs.

**Prescribed fire to develop desired stand conditions** – This alternative would use prescribed fire to thin stands and to regenerate areas. This type of prescribed burning would require the use of high intensity fires that would kill standing trees, create canopy gaps for regeneration and reduce live basal areas.

This alternative was not considered further because these high intensity fires would be uncontrollable and could also impact firefighter safety, private property and cause significant resource impacts.

## Public Involvement

The proposal is listed in the Planning, Appeals and Litigation (PALS) database project number 44366. The proposal was provided to the public and other agencies for comment during the scoping process. Scoping began March 20, 2015 and ended on April 10, 2015. Two comments were received during the scoping period. The 30-day notice and comment period began on November 9, 2015 and one letter was received from the public. Responses to these comments are located in the project file.

## Findings Required by Other Laws and Regulations

### Forest Plan Consistency

The actions are consistent with the *Revised Land and Resource Management Plan Sumter National Forest* (EA pages 9-10).

### Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act (16 U.S.C. 1604)

The actions for this project comply with the requirements of 16 U.S.C. 1604 (g)(3)(E) and 16 U.S.C. 1604 (g)(3)(F)(1-5). A Responsible Official may authorize site-specific projects and activities on NFS lands to harvest timber only where:

16 U.S.C. 1604 (g)(3)(E)(items i – iv)

- Soil, slope, or other watershed conditions will not be irreversibly damaged (EA pgs. 25-63);
- There is assurance that such lands can be adequately restocked within five years after harvest (EA pgs. 65-77);
- Protection is provided for streams, stream-banks, shorelines, lakes, wetlands and other bodies of water from detrimental changes in water temperatures, blockages of water courses and deposits of sediment where harvests are likely to seriously and adversely affect water conditions or fish habitat (EA design criteria in Chapter 2 and Chapter 3 Environmental Consequences); and
- The harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest output of timber (EA pgs. 5-8 and Chapter 3 of the EA).

16 U.S.C. 1604 (g)(3)(F)( items i – v)

- The interdisciplinary review has been completed and the potential environmental, biological, aesthetic, engineering and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area;
- For clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan;

#### *Clearcutting as the Optimum Method*

Clearcutting with reserves is the optimum regeneration method and will result in a two-aged stand. Leaving healthy shortleaf pine and desirable hard mast as the reserve overstory trees will add structural and compositional diversity to the stand. It will result in better spacing on planted trees when compared to natural regeneration under the seedtree method. There would be no damage to tree seedlings and no additional soil compaction as compared to the seedtree method.

Seedtree removal in three to five years will result in some damage to understory trees, additional soil disturbance during logging, understocked areas and visual impacts.

The use of clearcutting with reserves is the optimum method for regeneration of shortleaf pine in designated units. This silvicultural method will limit the growth of loblolly pine regeneration that could directly impact shortleaf pine survival and establishment. Loblolly pine occupies a growing site quicker and initially grows faster than shortleaf pine. Therefore, the clearcutting with reserves method will ensure that the site is dominated by native shortleaf pine in the short and long term. Clearcut with reserves method is consistent with the Forest Plan (Appendix H) and will meet the objectives and requirements of the Forest Plan.

- Cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain (EA page 22, Design Criteria; Recreation and Visual Resource pages 109-116). Units along the Broad River were specifically designed to minimize impacts to the viewshed along the river corridor.
- These cuts are carried out according to the maximum size limits for areas to be cut in one harvest operation as required by 16 U.S.C. 1604 (g)(3)(F)(iv);
- Timber cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources and the regeneration of the timber resource (Chapter 2, pages 22-24 and Chapter 3, Affected Environment and Environmental Consequences).

### **Biological Assessment/Biological Evaluation (BA/BE)**

A BA/BE was completed for this environmental assessment (9/30/2015). Since all threatened and endangered species were eliminated from consideration due to lack of habitat in the project area, ESA Section 7 consultation with the United States Fish and Wildlife Service is not necessary. The proposed action will have “NO IMPACTS” to sensitive species, namely, Bald eagle, Bachman’s sparrow and migrant loggerhead shrike.

### **Heritage Resources**

Heritage resource surveys were conducted in the area of potential effects within the Lower Broad Analysis Areas and consultation was initiated with the South Carolina Archives and History Center, State Historic Preservation officer (SHPO). Known historic properties and unevaluated archeological sites will be avoided during site disturbing activities.

Concurrence letters were received on May 14, 2012 and August 16, 2012 from SHPO. SHPO concurred with the determination that “no properties eligible for listing in the National Register of Historic Places (Class 1) or unevaluated sites (Class 2) would be adversely affected by harvesting done within the Lower Broad Analysis Area if all operational restrictions (stipulations) outlined in letters from April 3 and July 11, 2012 are implemented for all Class 1 and Class 2 sites.” All documents are contained in the project record.

### **Transportation System Analysis**

The *Francis Marion and Sumter National Forests Transportation System Analysis Process (TAP) Report* was completed on September 11, 2014 and is consistent with Forest Service Manual 7712.4. The analysis completed in that report was used to inform decisions relative to roads under the jurisdiction of the US Forest Service.

## Finding of No Significant Impact (FONSI)

I have determined that alternative 2 of the *Lower Broad Analysis Area Environmental Assessment (EA)* is not a major federal action having a significant effect on the quality of the human environment based on the significance criteria of both context and intensity as defined by the National Environmental Policy Act (NEPA) 40 CFR 1508.27. Thus, an environmental impact statement will not be prepared. I base my findings on the following factors:

### A. CONTEXT

The physical, biological and social effects are limited to the project area and immediate adjacent areas that have been analyzed in the EA. All actions are consistent with the *Revised Land and Resource Management Plan, Sumter National Forest Plan (Forest Plan)*, and all environmental effects are within the range disclosed in the *Final Environmental Impact Statement for the Revised Land and Resource Management Plan, Sumter National Forest*.

### B. INTENSITY

Intensity is a measure of the severity, extent, or quantity of effects, and is based on information from the effects analysis of this EA and the references in the project record. The effects of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised by the public. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. My finding of no significant impact is based on the context of the project and intensity of effects using the ten factors identified in 40 CFR 1508.27(b).

1. Both adverse and beneficial impacts of the selected alternative are disclosed in the EA (EA pages 25 through 124).
2. Public health and safety will be minimally affected by the selected alternative (EA pages 119 thru 123 and Herbicide Risk Assessments).
3. The analysis identified no impacts to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas (EA pages 25 thru 124).
4. There are no highly controversial effects based on consultation with others, on past experiences with similar projects and on effects disclosed in the EA. The effects of the project are not likely to be a source of substantial scientific controversy (EA pages 25 thru 124).
5. This action is similar to many past actions, both in the treatment area and adjacent areas. Based on this past experience and the environmental analysis, there will not be any highly uncertain effects that involve unique or unknown risks (EA pages 25 thru 124).
6. This project does not set a precedent for future actions or represent a decision in principle about a future consideration. The decision made about activities within this project area does not commit me to actions on lands outside the project area (EA page 10).
7. There are no significant cumulative effects between this project area and other projects currently implemented or planned on the Enoree Ranger District or adjacent areas. All known activities which are likely to occur in the reasonably foreseeable future have been identified in the EA. Direct, indirect and cumulative effects are disclosed in the EA (EA pages 25-124).
8. No significant impacts are foreseen on any proposed or listed National Historic places or any loss or destruction of any scientific, cultural or historic places (EA pages 117 - 118).  
Concurrence letters were received on May 14, 2012 and August 16, 2012 from SHPO. SHPO concurred with the determination that "no properties eligible for listing in the National Register

of Historic Places (Class 1) or unevaluated sites (Class 2) would be adversely affected by harvesting done within the Lower Broad Analysis Area if all operational restrictions (stipulations) outlined in letters from April 3 and July 11, 2012 are implemented for all Class 1 and Class 2 sites.” All documents are contained in the project record.

9. A BA/BE was completed for this environmental assessment (9/30/2015). Since all threatened and endangered species were eliminated from consideration due to lack of habitat in the project area, ESA Section 7 consultation with the United States Fish and Wildlife Service is not necessary. The proposed action will have “NO IMPACTS” to sensitive species, namely, Bald eagle, Bachman’s sparrow and migrant loggerhead shrike. (EA – Appendix C).
10. The actions are consistent with the Forest Plan and thus do not violate Federal, State or local laws (EA pages 9 and 121-123 and (BA/BE).

## **Administrative Review or Objection Opportunities**

This project is subject to the pre-decisional objection process pursuant to 36 Code of Federal Regulation (CFR) §218 Subparts A and B. The opportunity to object ends 45 days following the date of publication of the legal notice in *Newberry Observer* newspaper, Newberry, South Carolina. The publication date of the legal notice in the newspaper of record is the exclusive means for calculating the time to file an objection, and that those wishing to object should not rely upon dates or timeframe information provided by another source.

Objections will be accepted only from those who have previously submitted specific written comments regarding the proposed project during scoping or other designated opportunity for public comment. Issues raised in objections must be based on previously submitted timely, specific written comments regarding the proposed project unless based on new information arising after designated comment opportunities §218.8(c).

The objection must contain the minimum content requirements specified in §218.8(d) and incorporation of documents by reference is permitted only as provided in §218.8(b). It is the objector’s responsibility to ensure timely filing of a written objection with the reviewing officer. All objections are available for public inspection during and after the objection process.

Written objections, including attachments, must be filed via mail, fax, email, hand-delivery, express delivery or messenger service (Monday through Friday, 8 a.m. to 4:30 p.m., excluding holidays) to:

Reviewing Officer  
Forest Supervisor  
Francis Marion and Sumter National Forests  
4931 Broad River Road  
Columbia, South Carolina 29212

Electronically filed objections may be submitted by email in word (.doc or .docx), rich text format (.rtf), text (.txt), and hypertext markup language (.html) to [objections-southern-francismarion-sumter@fs.fed.us](mailto:objections-southern-francismarion-sumter@fs.fed.us). Persons or organizations who meet the requirements of 36 CFR 218.5 may object to this decision. Objections must meet content requirements of 36 CFR 218.8.

Please state “Lower Broad Analysis Area” in the subject line when providing electronic objections, or on the envelope when replying by mail.

## **Implementation**

As per 36 CFR 218.12, if no objections is received within the legal objection period, this decision may be signed and implemented on, but not before, five business days from the close of the objection filing period. If an objection is filed, this decision cannot be signed or implemented until the reviewing officer has responded in writing to all pending objections.

## **Contact**

For further information on this decision, contact John Richardson, 20 Work Center Rd, Whitmire, South Carolina 29178; (803) 321-2981; fax (803) 637-5247.

**Elizabeth LeMaster**  
Enoree District Ranger

## **USDA's Nondiscrimination Statement**

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call

(866) 632-9992. Submit your completed form or letter to USDA by:

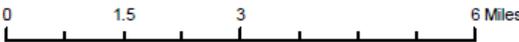
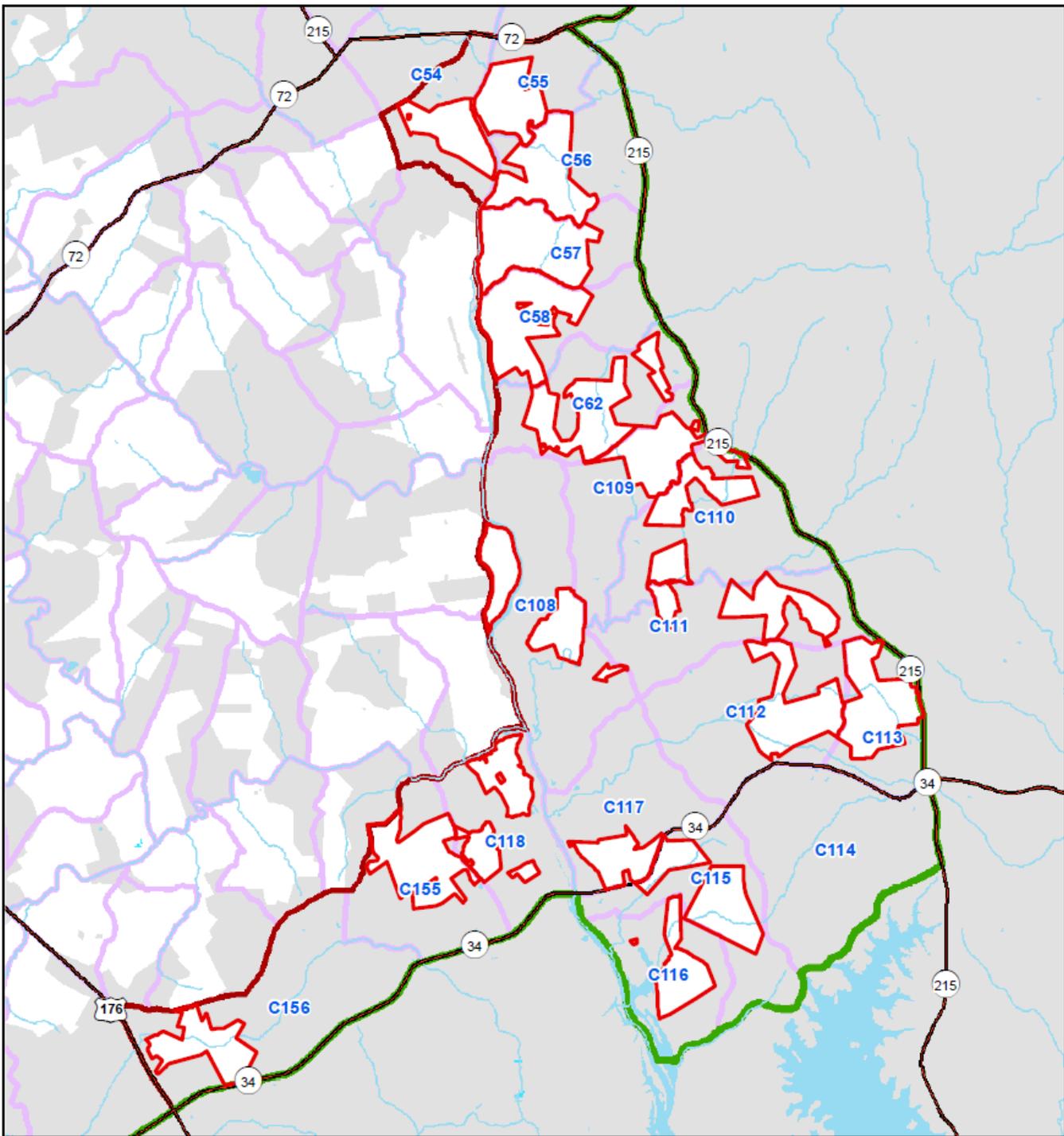
(1) mail: U.S. Department of Agriculture  
Office of the Assistant Secretary for Civil Rights  
1400 Independence Avenue, SW  
Washington, D.C. 20250-9410;

(2) fax: (202) 690-7442; or

(3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

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## Appendix A - Maps

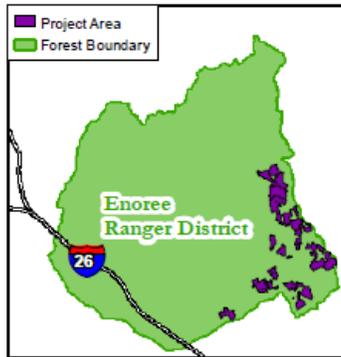


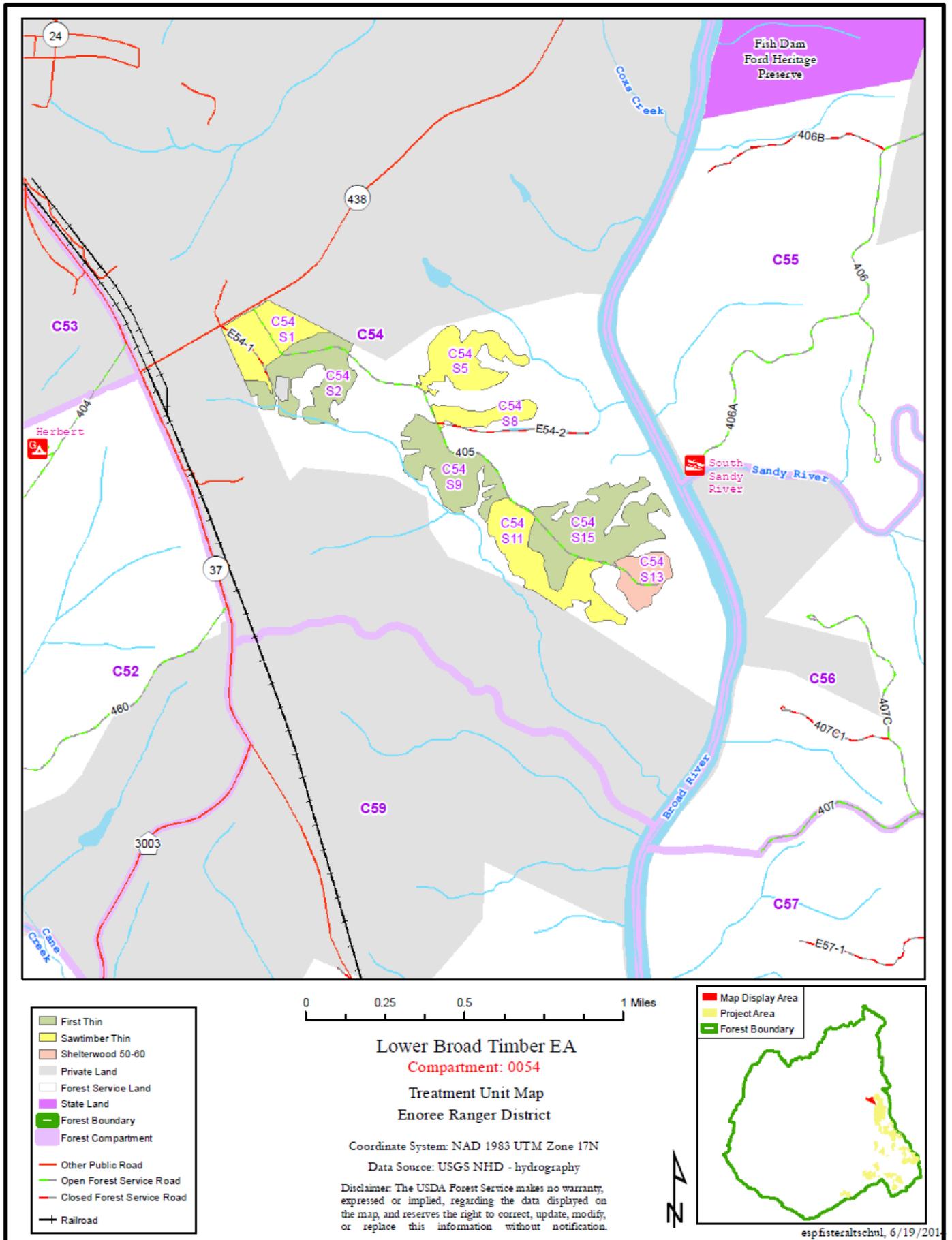
Lower Broad Timber EA  
 Overview  
 Treatment Unit Map  
 Enoree Ranger District

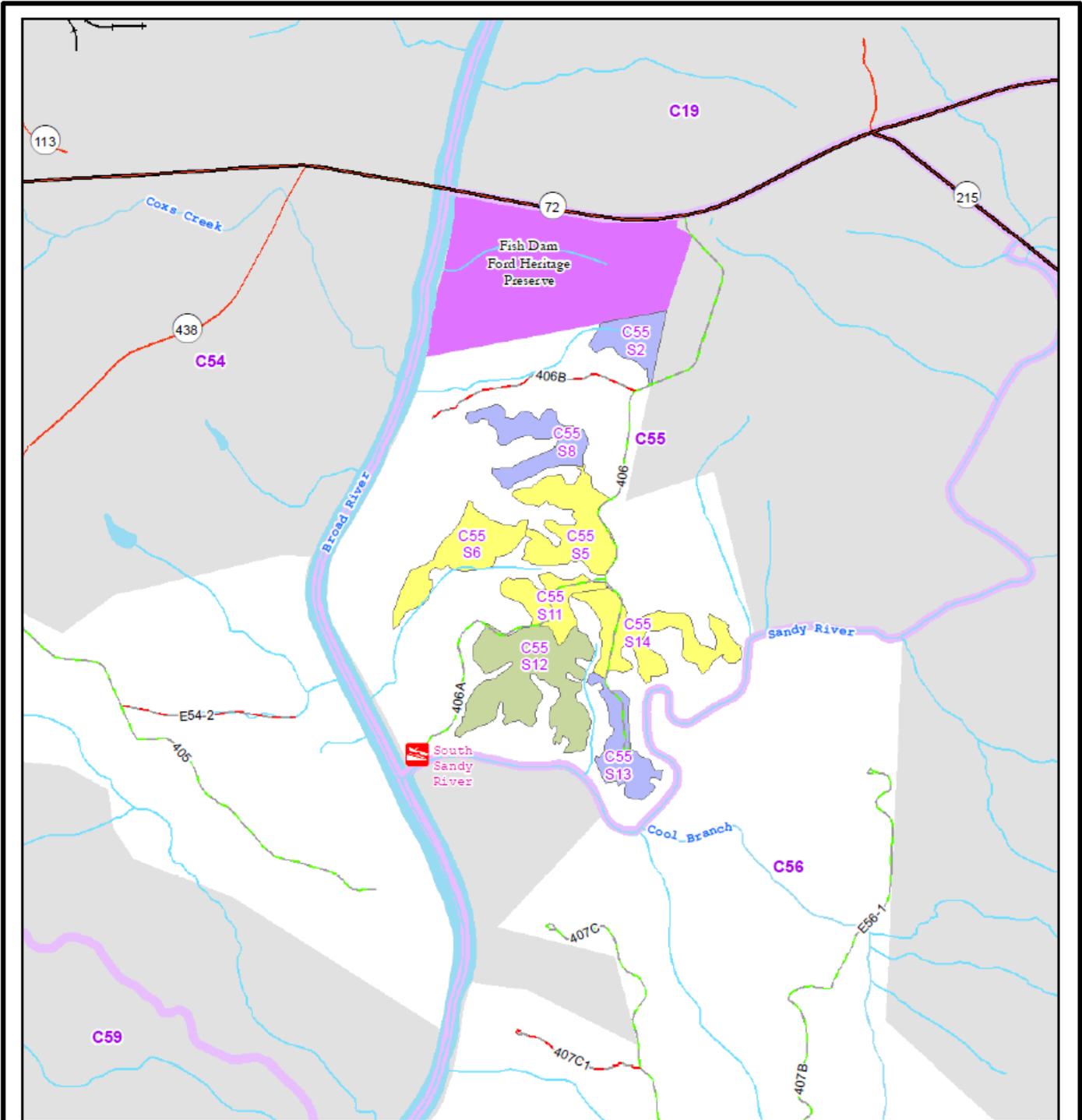
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Disclaimer: The USDA Forest Service makes no warranty, expressed or implied, regarding the data displayed on the map, and reserves the right to correct, update, modify, or replace this information without notification.

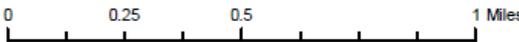
- Treatment Areas
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway







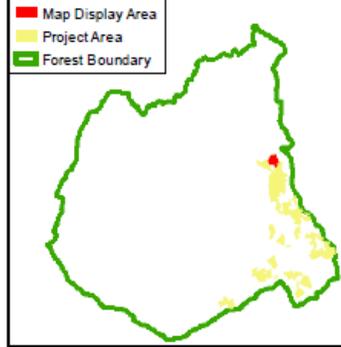
- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- State Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road
- Railroad

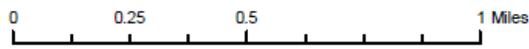
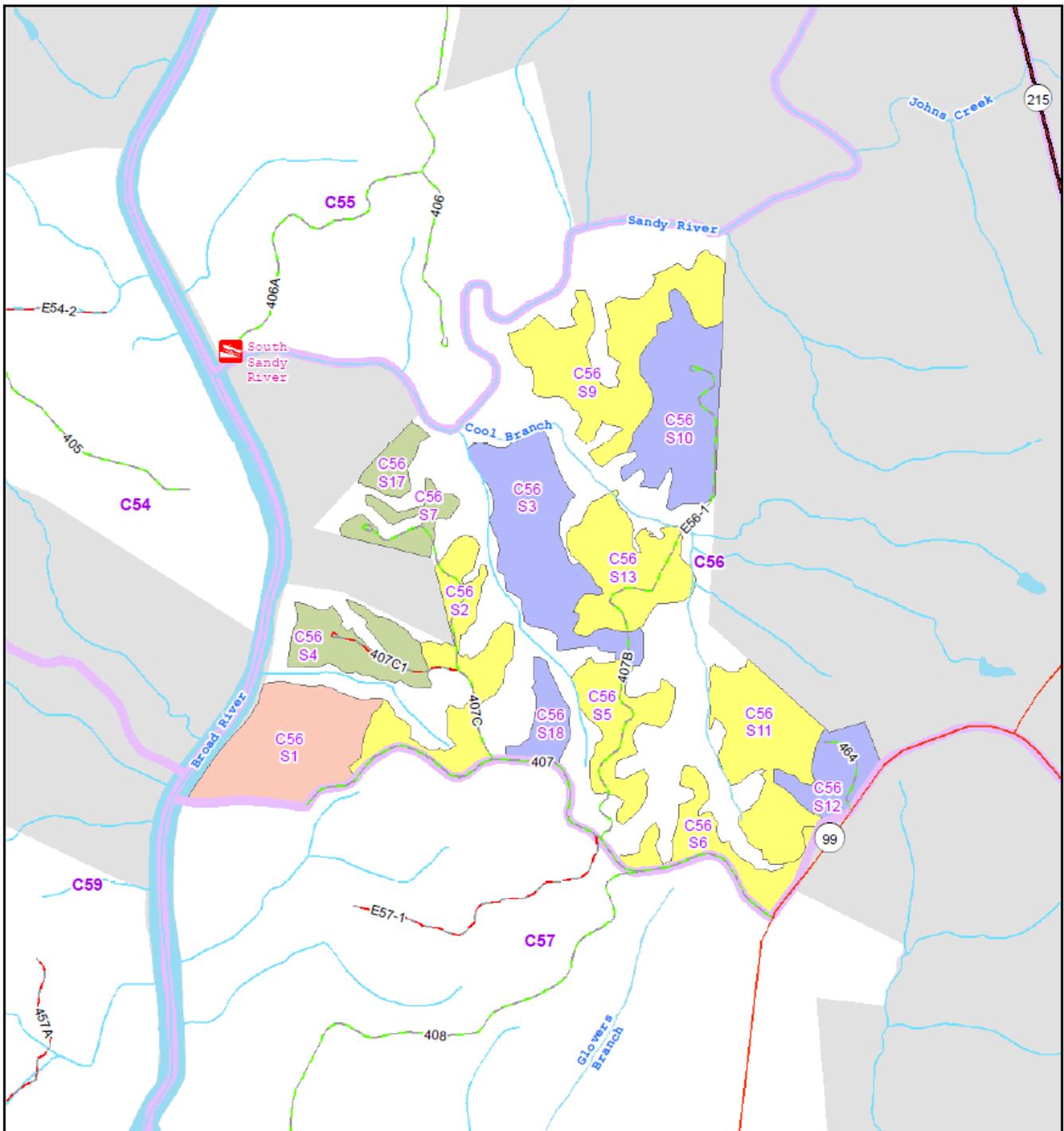


**Lower Broad Timber EA**  
**Compartment: 0055**  
**Treatment Unit Map**  
**Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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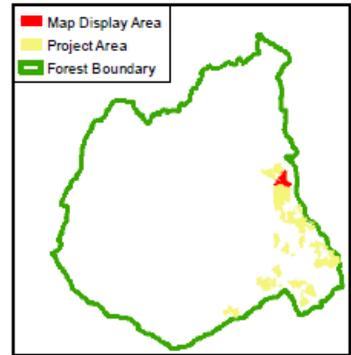
Lower Broad Timber EA  
 Compartment: 0056  
 Treatment Unit Map  
 Enoree Ranger District

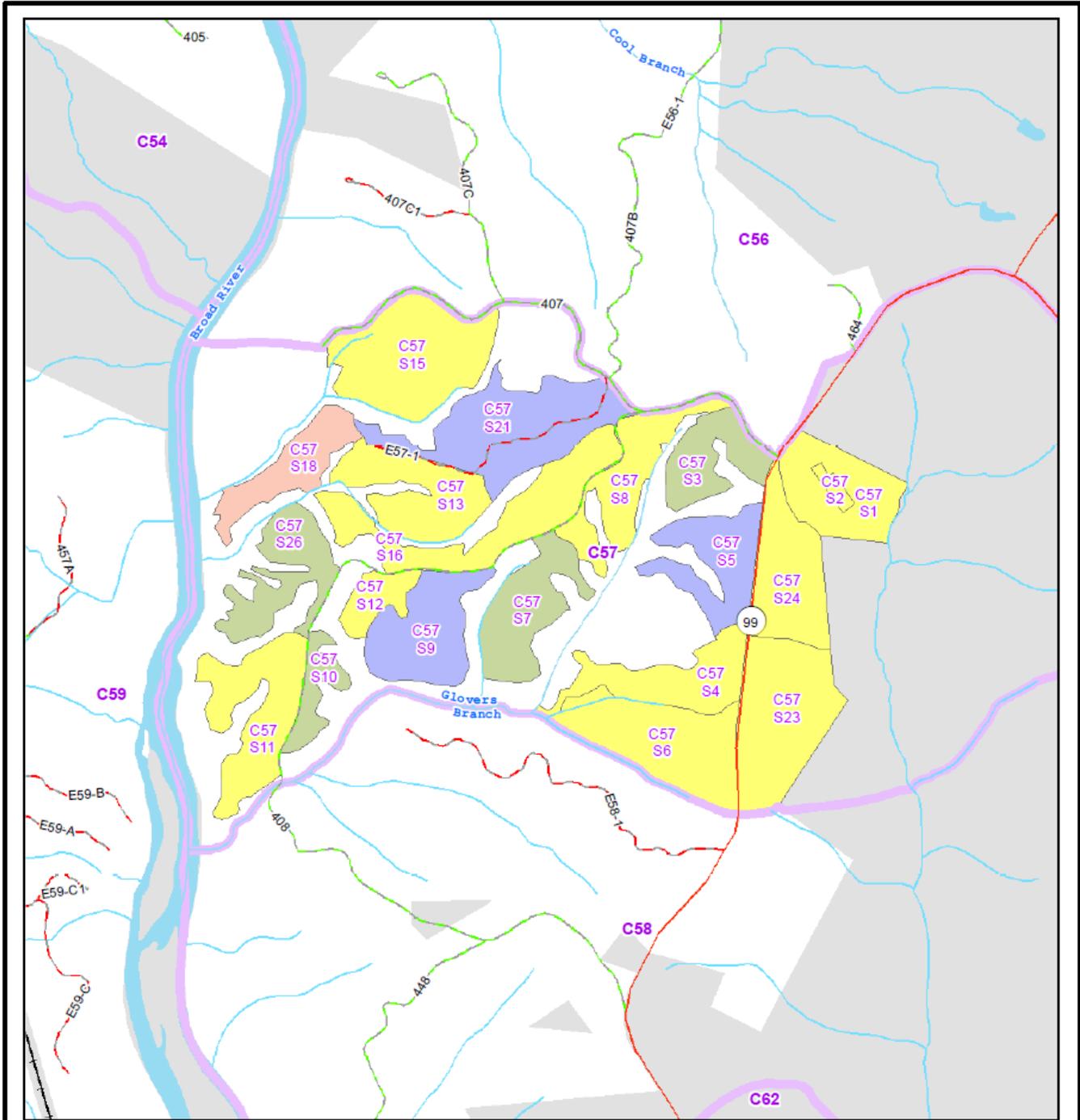
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Data Source: USGS NHD - hydrography

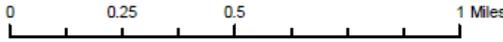
Disclaimer: The USDA Forest Service makes no warranty, expressed or implied, regarding the data displayed on the map, and reserves the right to correct, update, modify, or replace this information without notification.

- First Thin
- Regeneration
- Sawtimber Thin
- Shelterwood 50-80
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road





- First Thin
- Regeneration
- Sawtimber Thin
- Shelterwood 50-60
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road
- Railroad

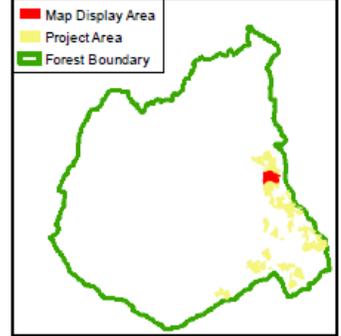


**Lower Broad Timber EA**  
**Compartment: 0057**  
**Treatment Unit Map**  
**Enoree Ranger District**

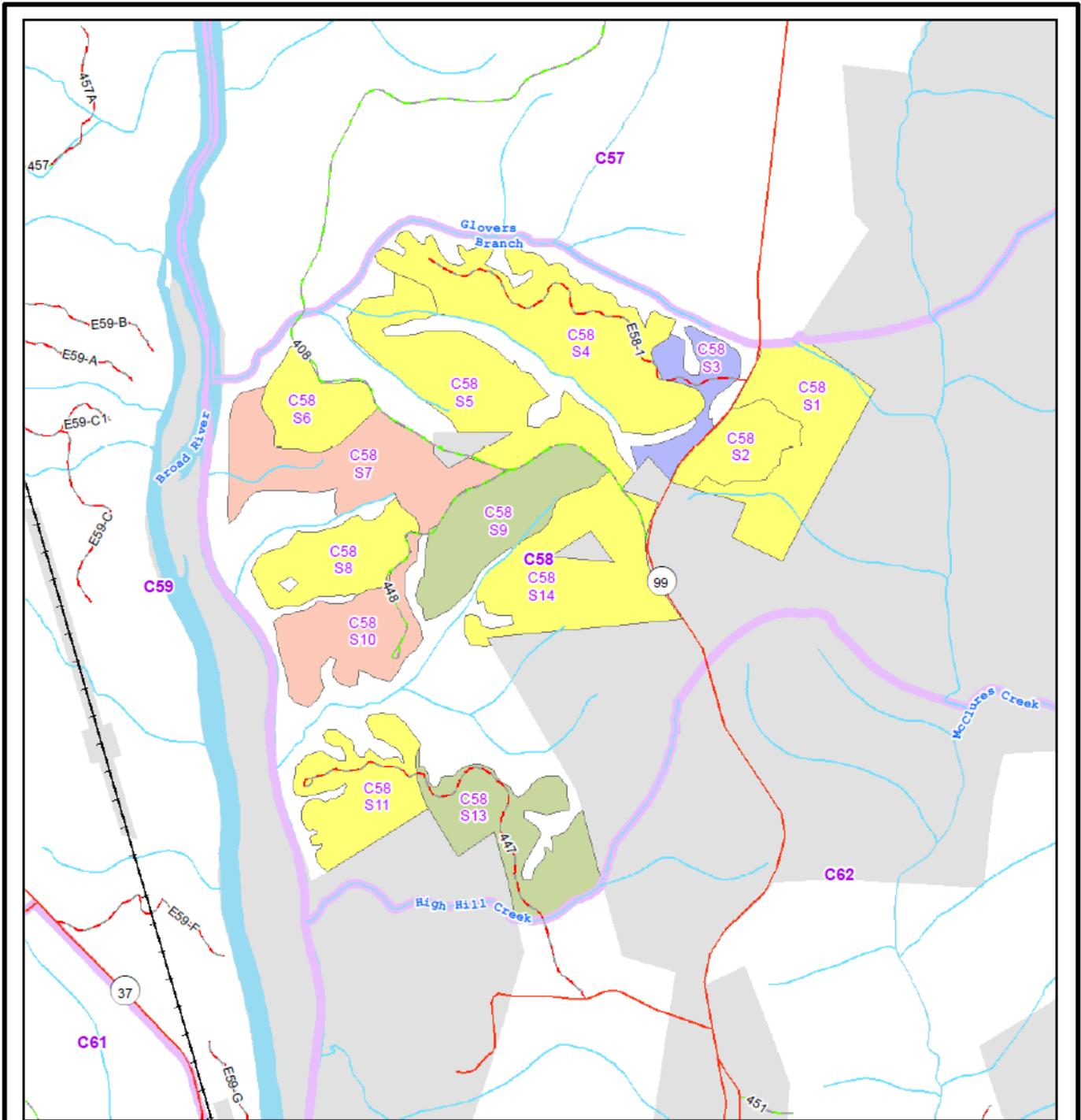
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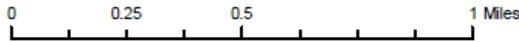
Disclaimer: The USDA Forest Service makes no warranty, expressed or implied, regarding the data displayed on the map, and reserves the right to correct, update, modify, or replace this information without notification.



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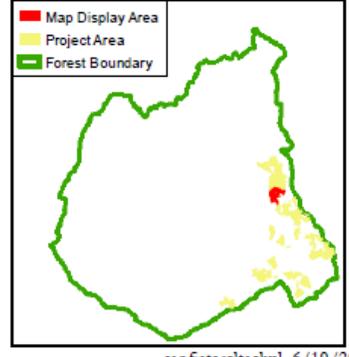
- First Thin
- Regeneration
- Sawtimber Thin
- Shelterwood 50-60
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road
- Railroad

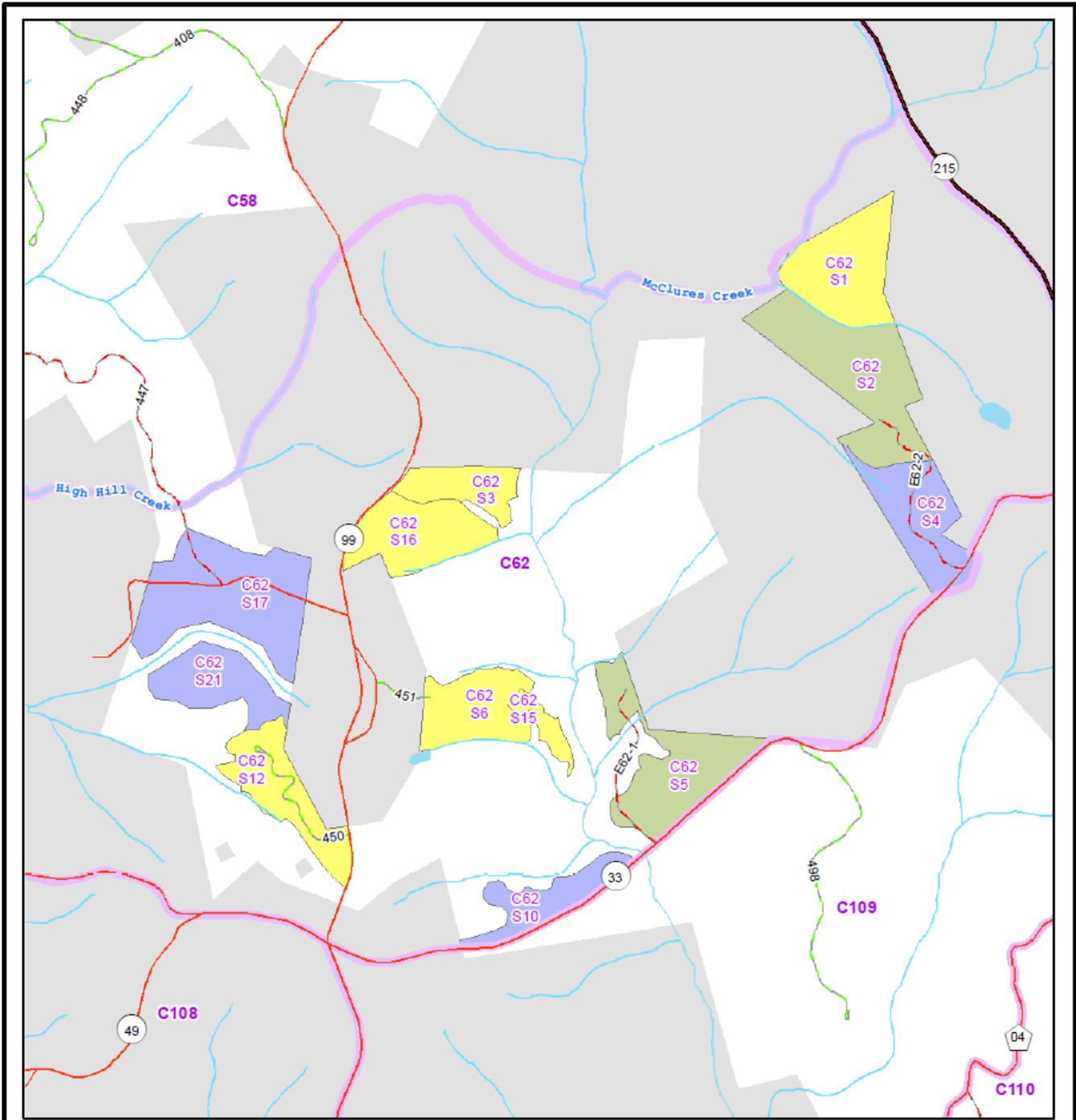


**Lower Broad Timber EA**  
**Compartment: 0058**  
**Treatment Unit Map**  
**Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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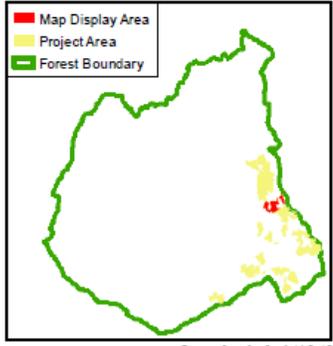


**Lower Broad Timber EA**  
**Compartment: 0062**  
**Treatment Unit Map**  
**Enoree Ranger District**

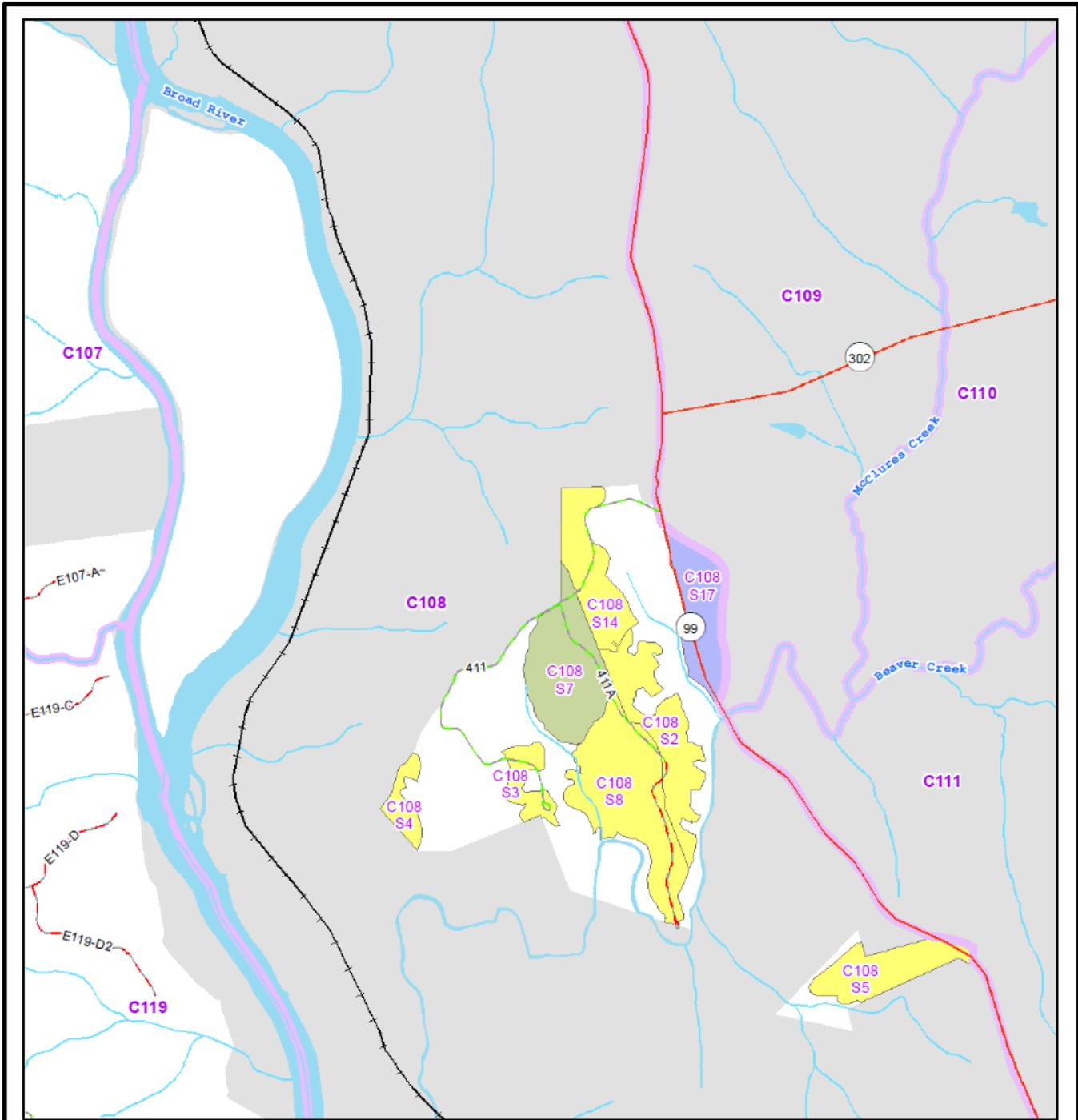
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Disclaimer: The USDA Forest Service makes no warranty, expressed or implied, regarding the data displayed on the map, and reserves the right to correct, update, modify, or replace this information without notification.

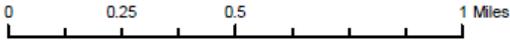
- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road



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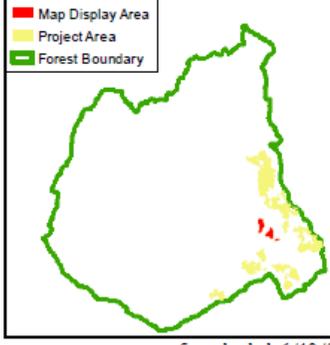
- First Thin
- Regeneration
- Sawtimber Thin
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- Forest Service Land
- Forest Boundary
- Forest Compartment
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road
- Railroad



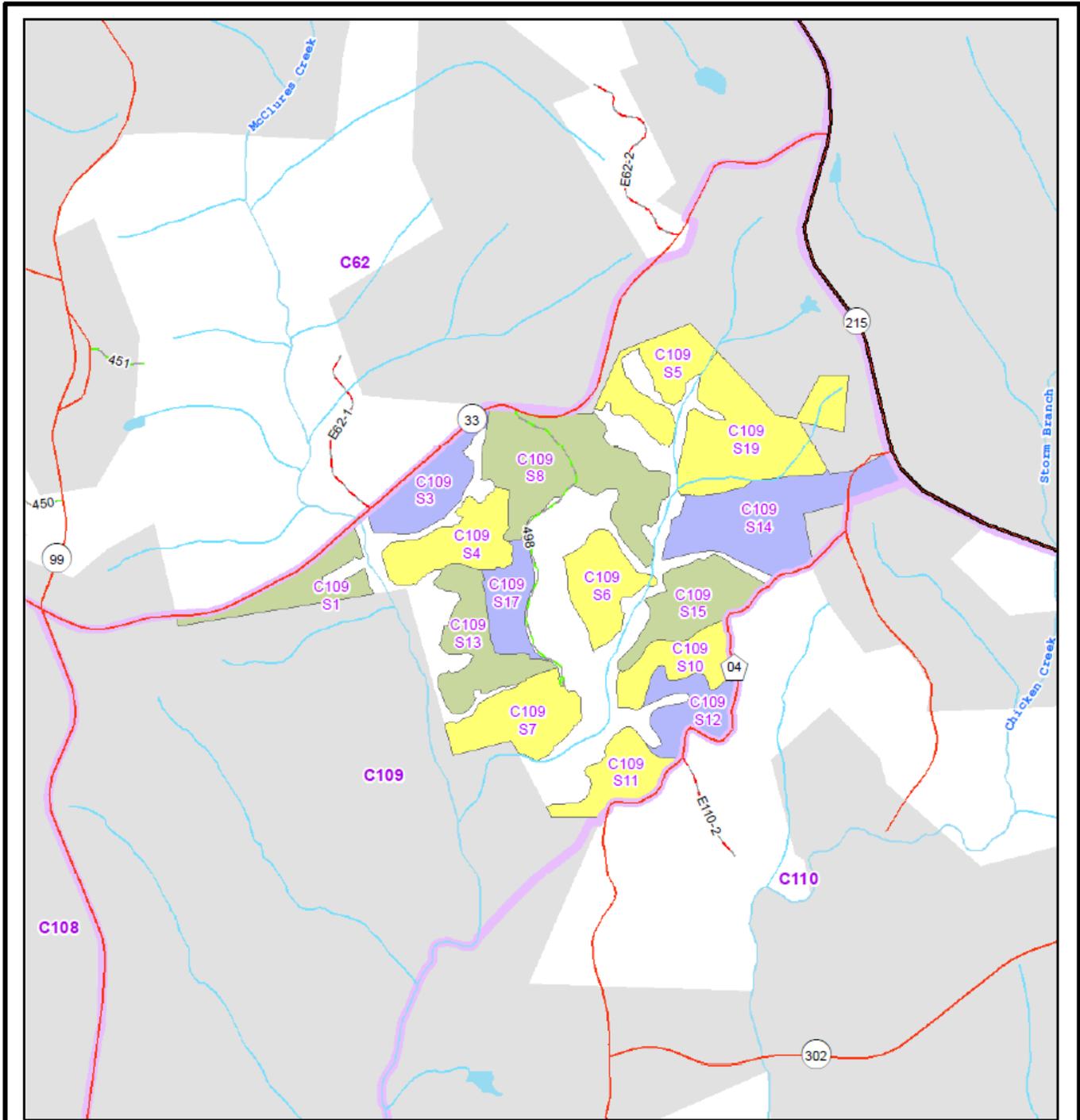
**Lower Broad Timber EA**  
**Compartment: 0108**  
**Treatment Unit Map**  
**Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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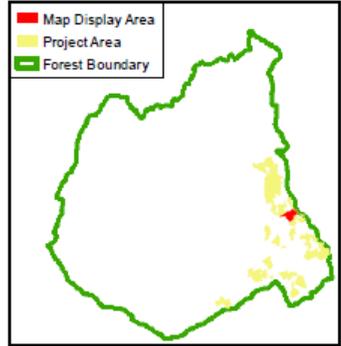


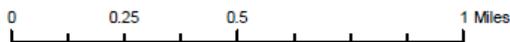
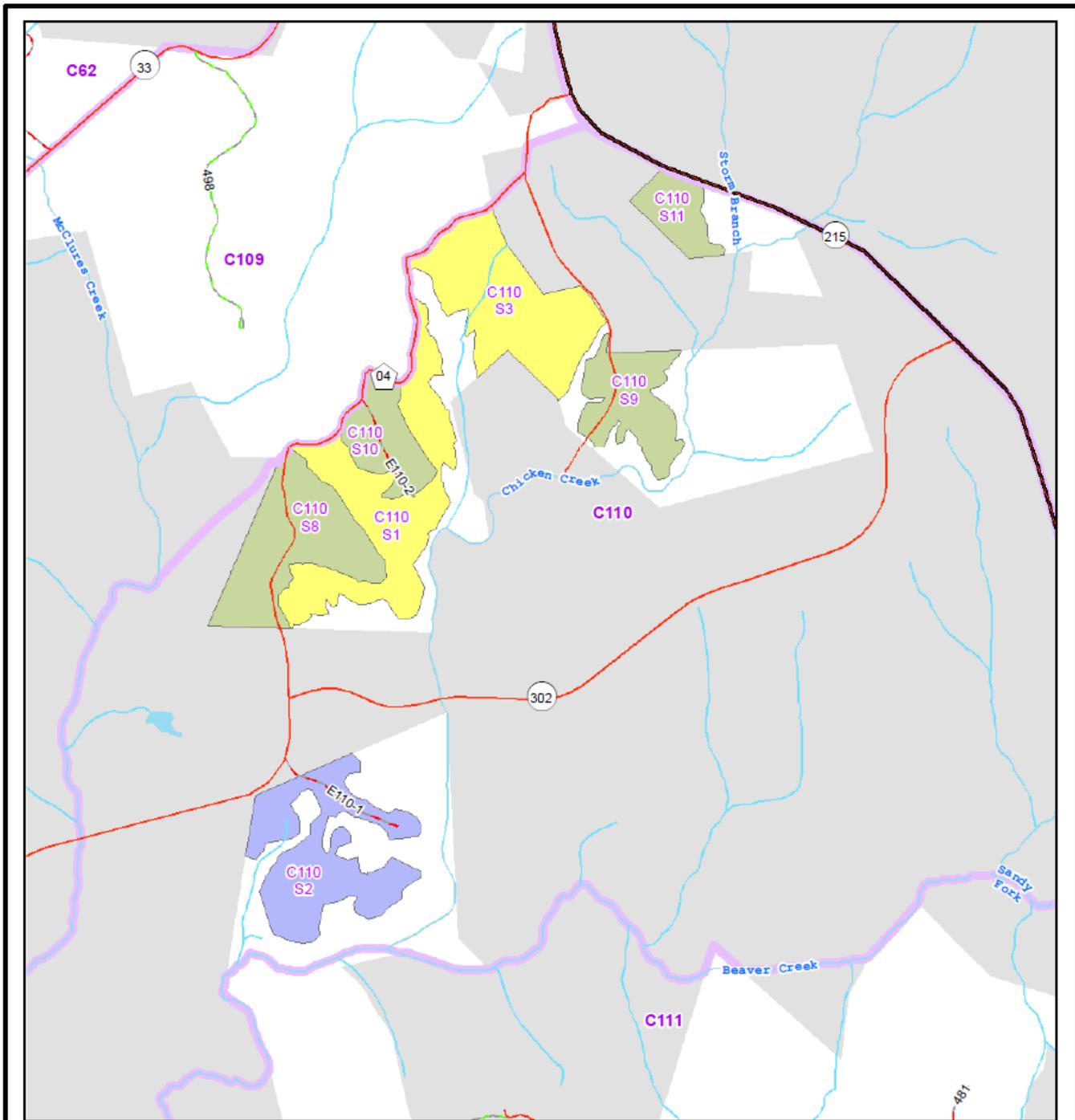
- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road

**Lower Broad Timber EA**  
**Compartment: 0109**  
**Treatment Unit Map**  
**Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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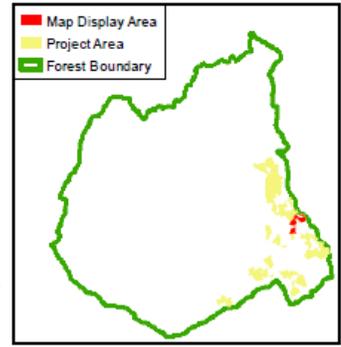


- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road

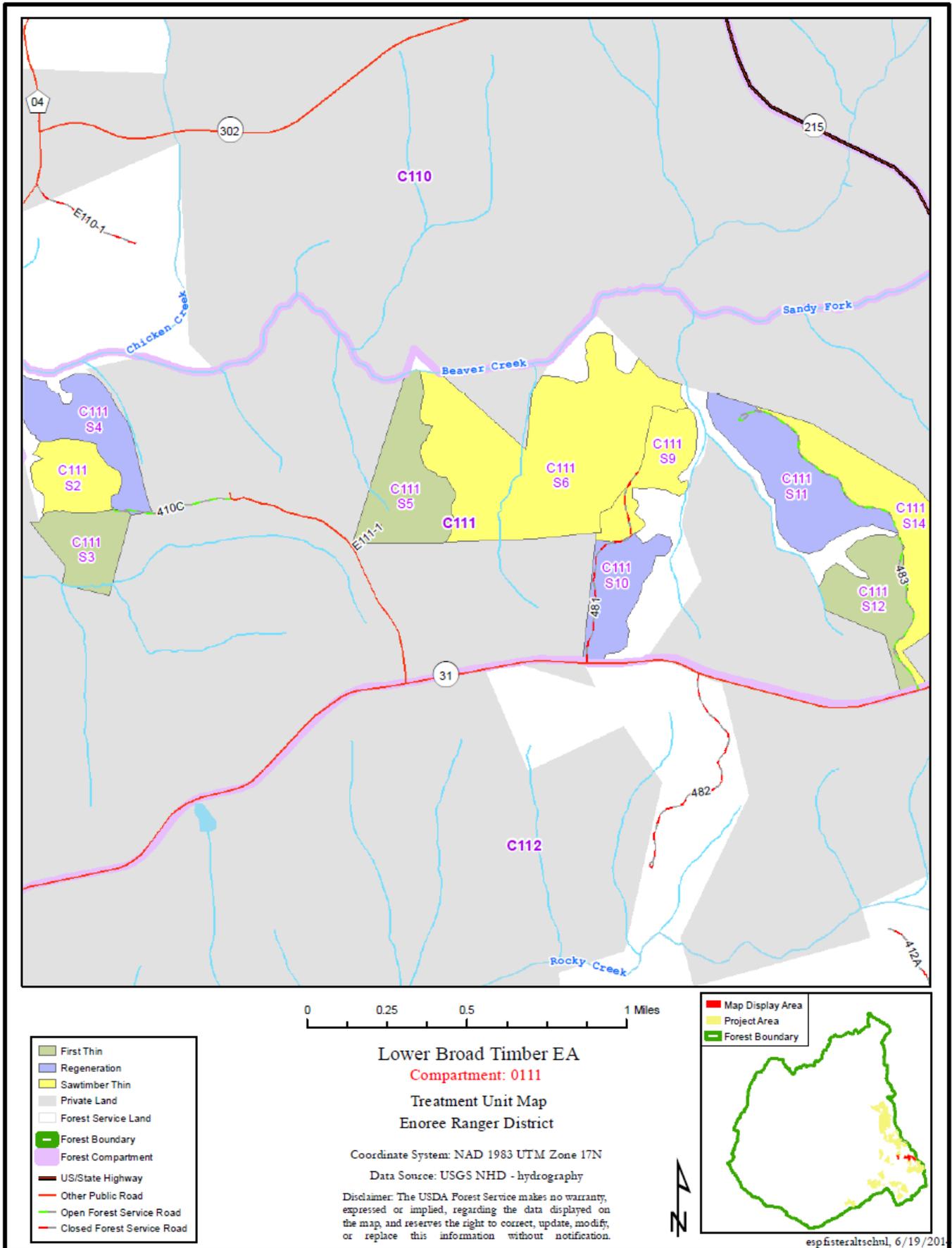
**Lower Broad Timber EA**  
**Compartment: 0110**  
 Treatment Unit Map  
 Enoree Ranger District

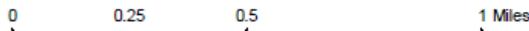
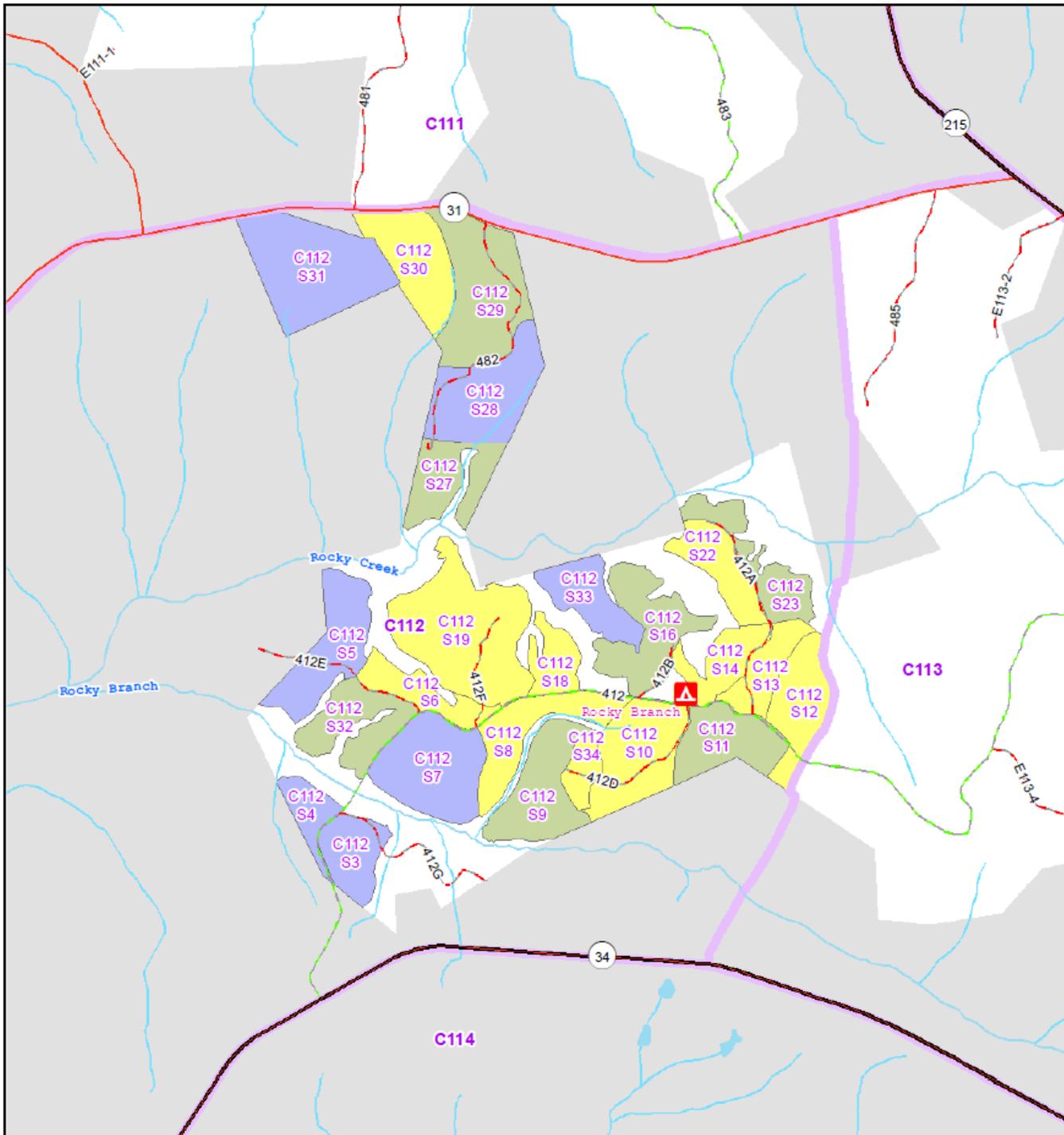
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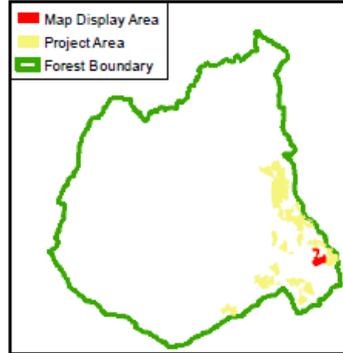
Lower Broad Timber EA  
 Compartment: 0112  
 Treatment Unit Map  
 Enoree Ranger District

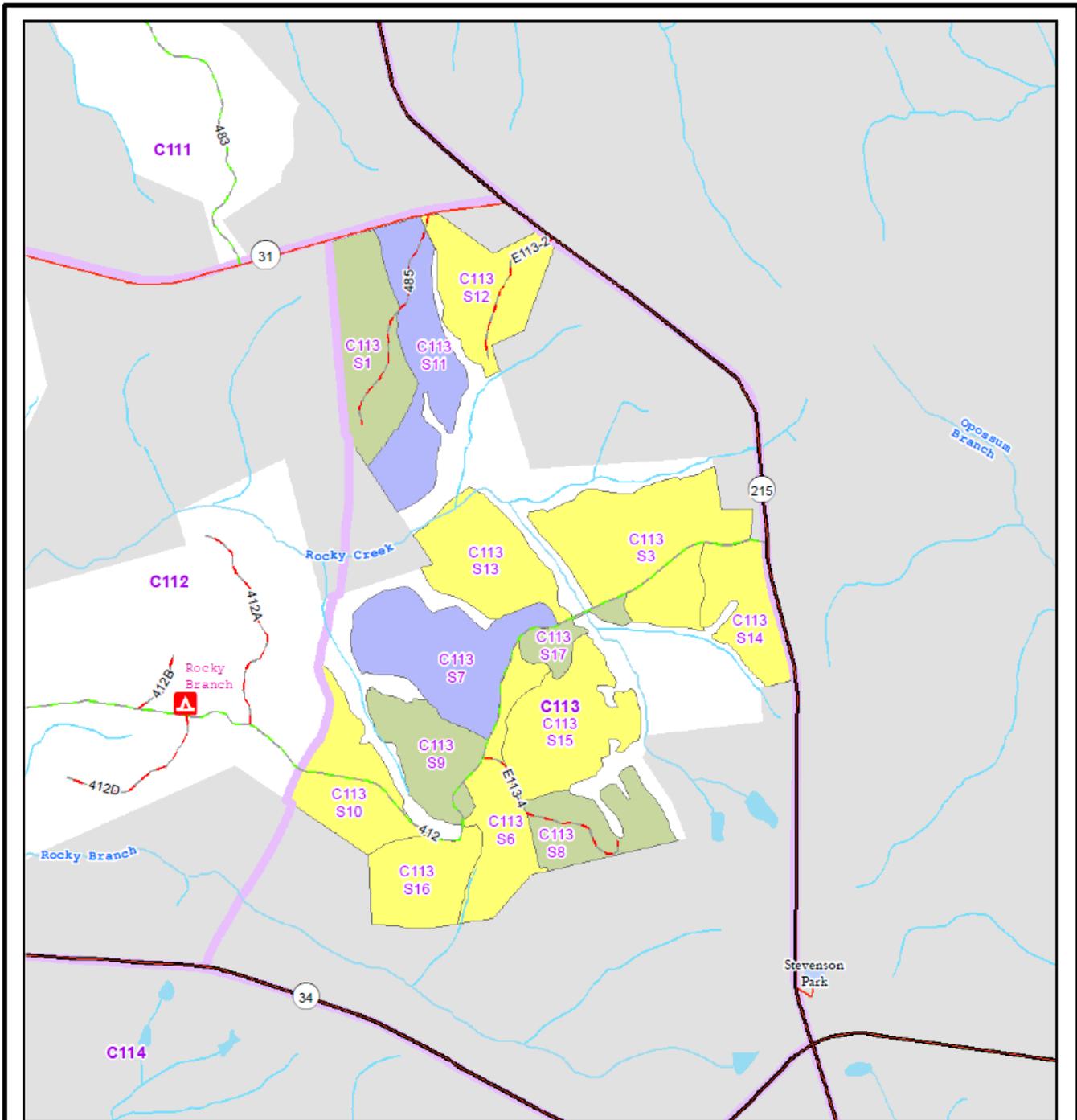
Coordinate System: NAD 1983 UTM Zone 17N

Data Source: USGS NHD - hydrography

Disclaimer: The USDA Forest Service makes no warranty, expressed or implied, regarding the data displayed on the map, and reserves the right to correct, update, modify, or replace this information without notification.

- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road





0 0.25 0.5 1 Miles

**Lower Broad Timber EA**

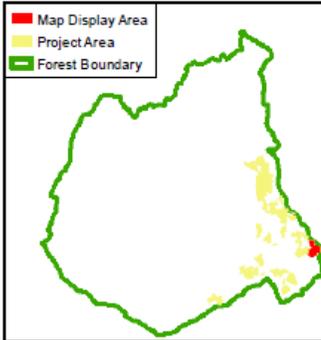
**Compartment: 0113**

**Treatment Unit Map  
Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N

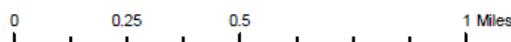
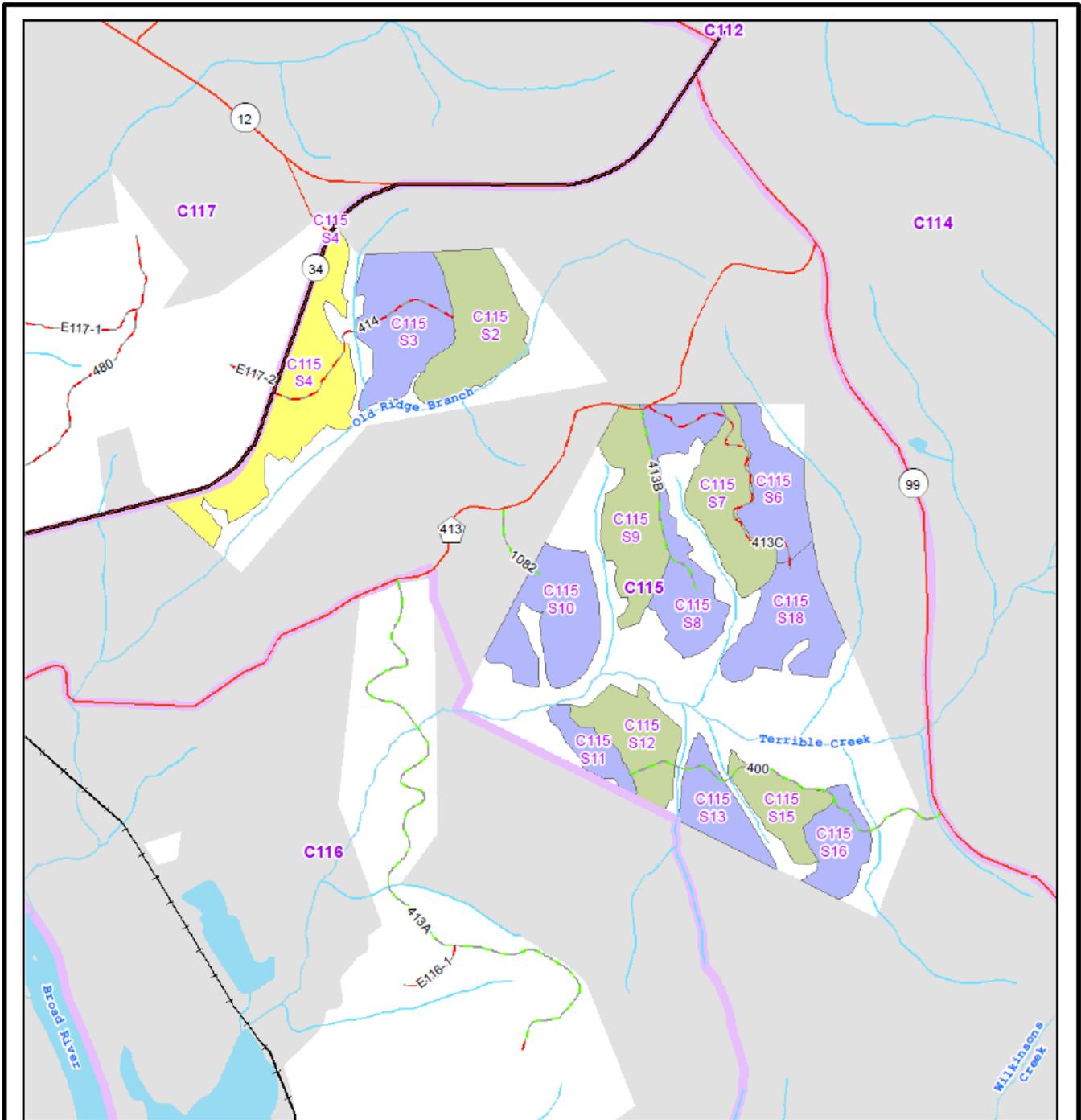
Data Source: USGS NHD - hydrography

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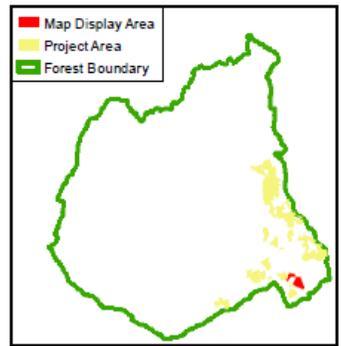
- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- County/Municipal Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road



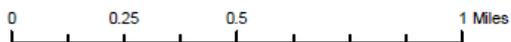
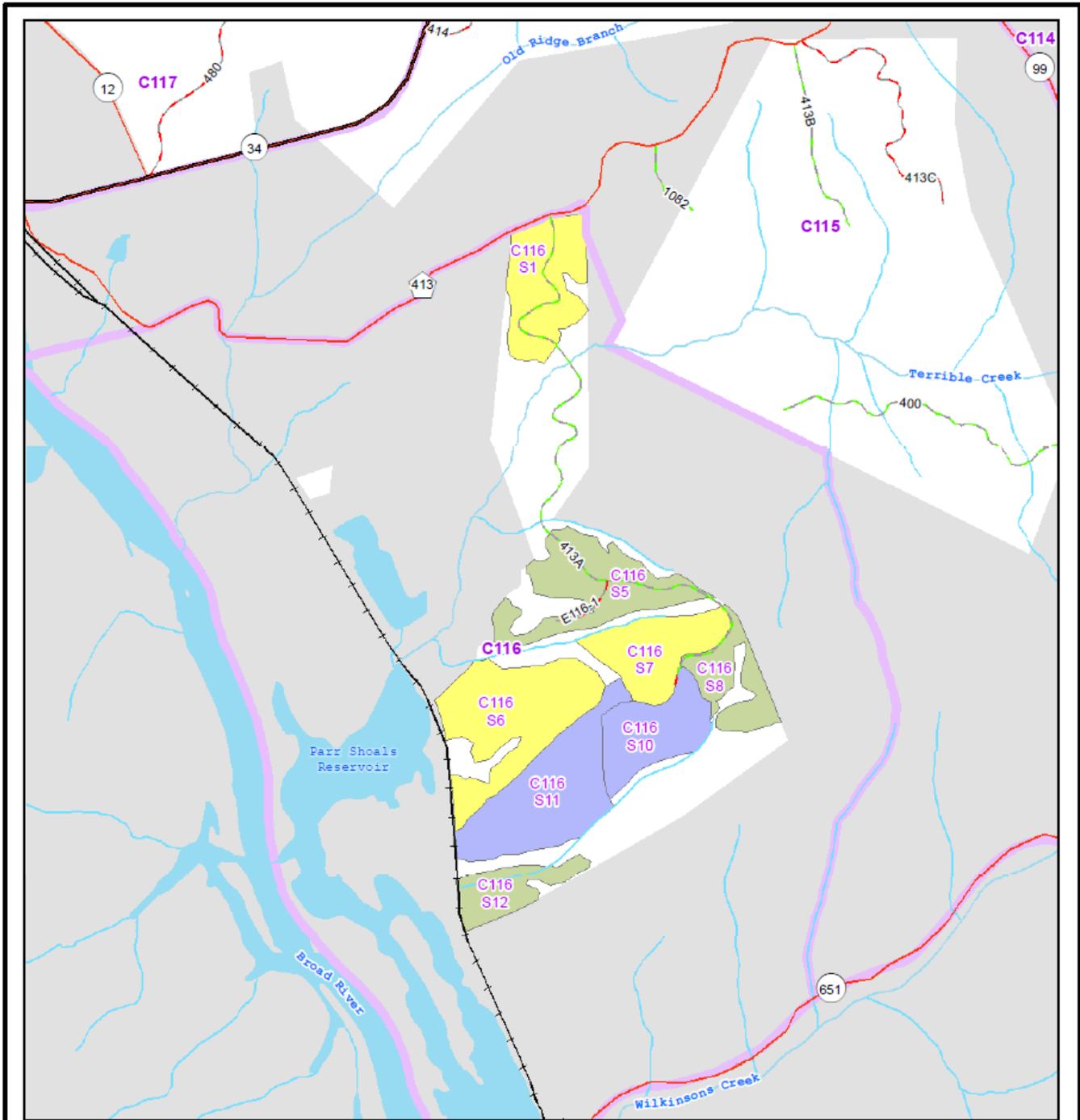
Lower Broad Timber EA  
 Compartment: 0115  
 Treatment Unit Map  
 Enoree Ranger District

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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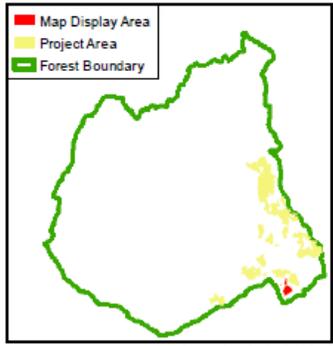


**Lower Broad Timber EA**  
**Compartment: 0116**  
**Treatment Unit Map**  
**Enoree Ranger District**

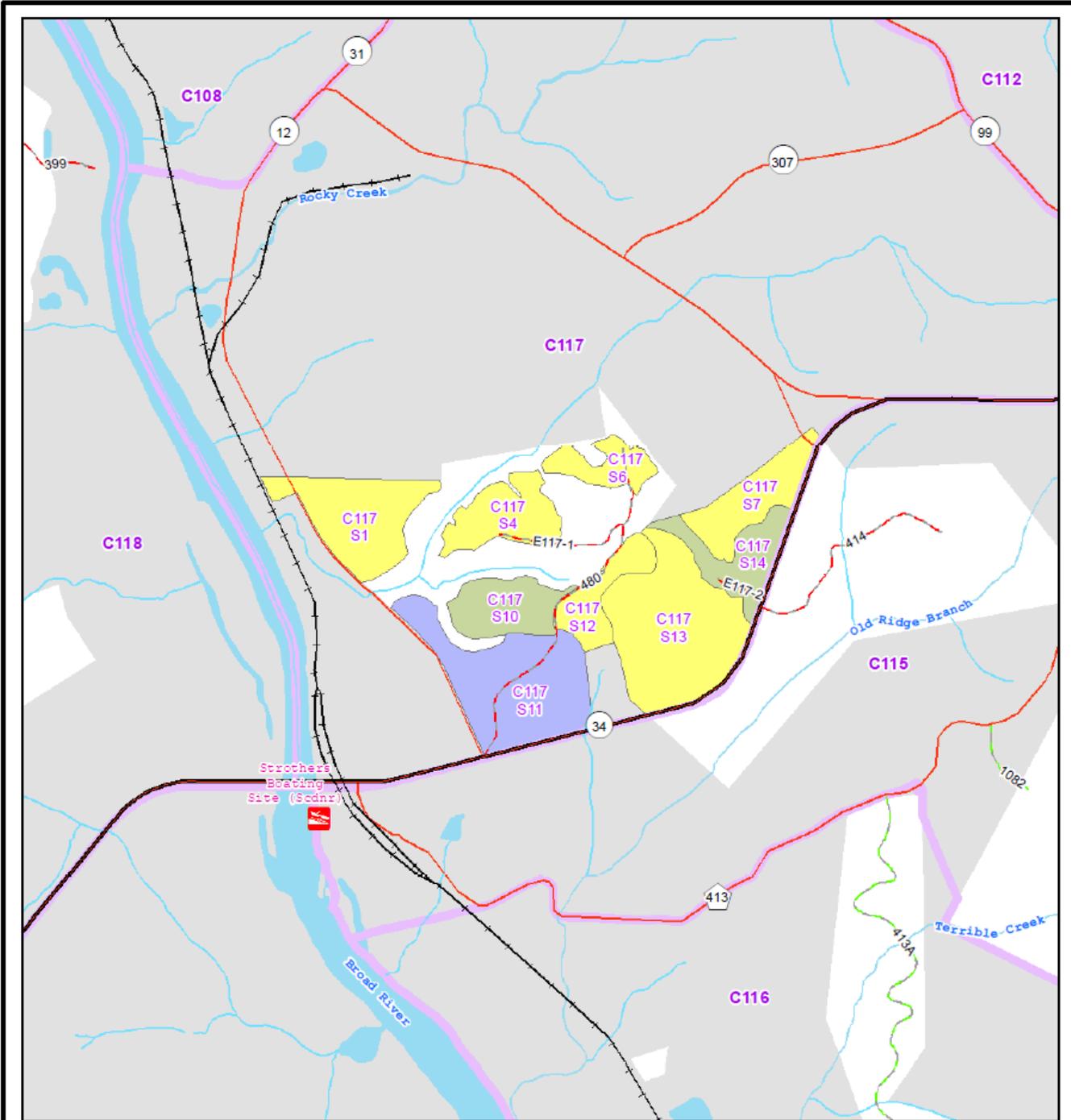
Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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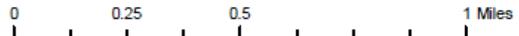
- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road
- Railroad



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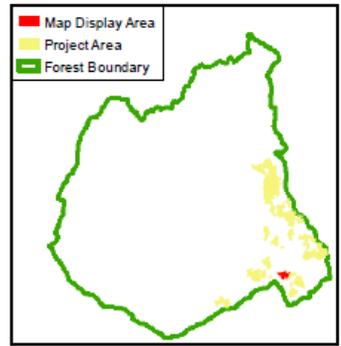
- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road
- Railroad

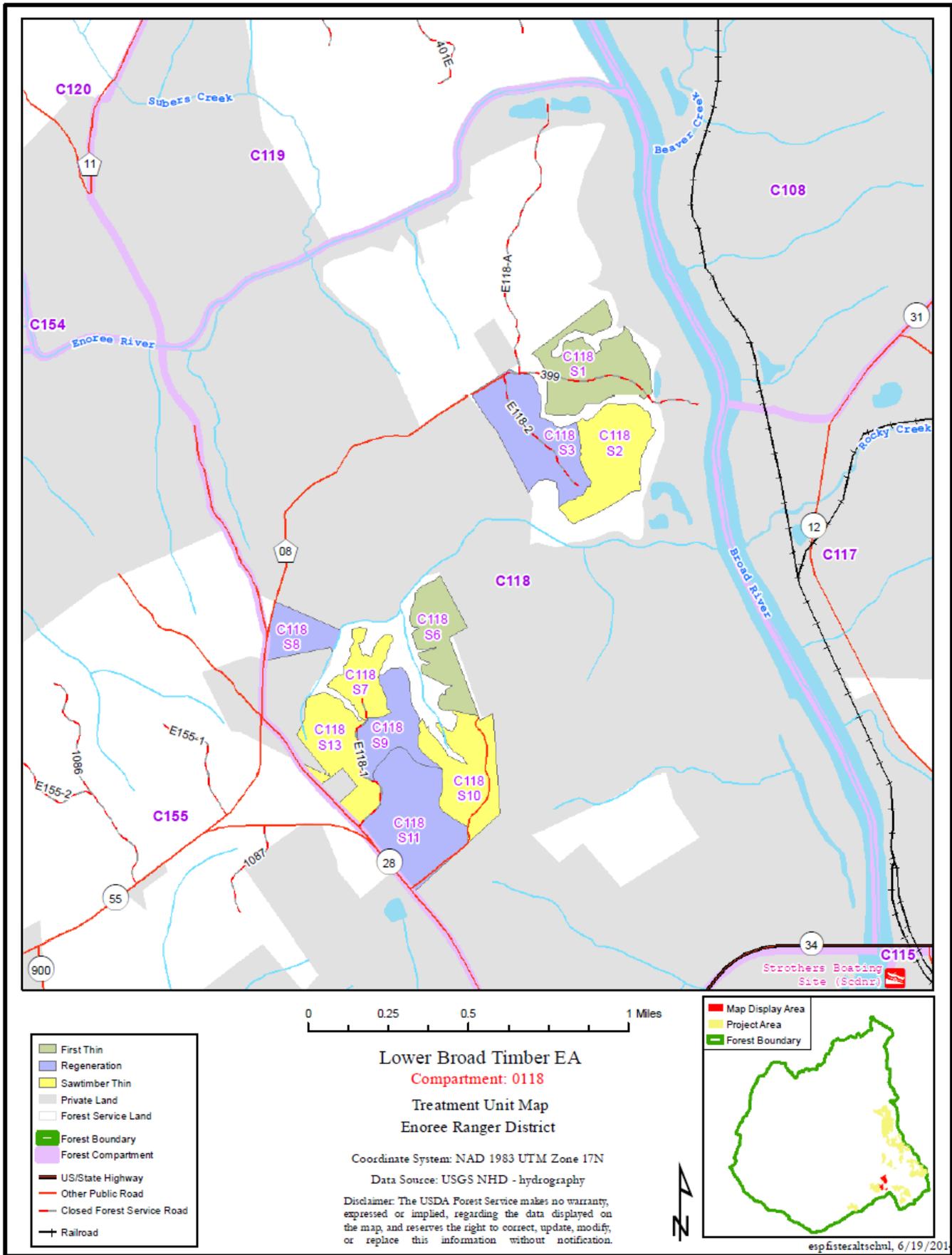


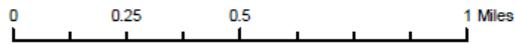
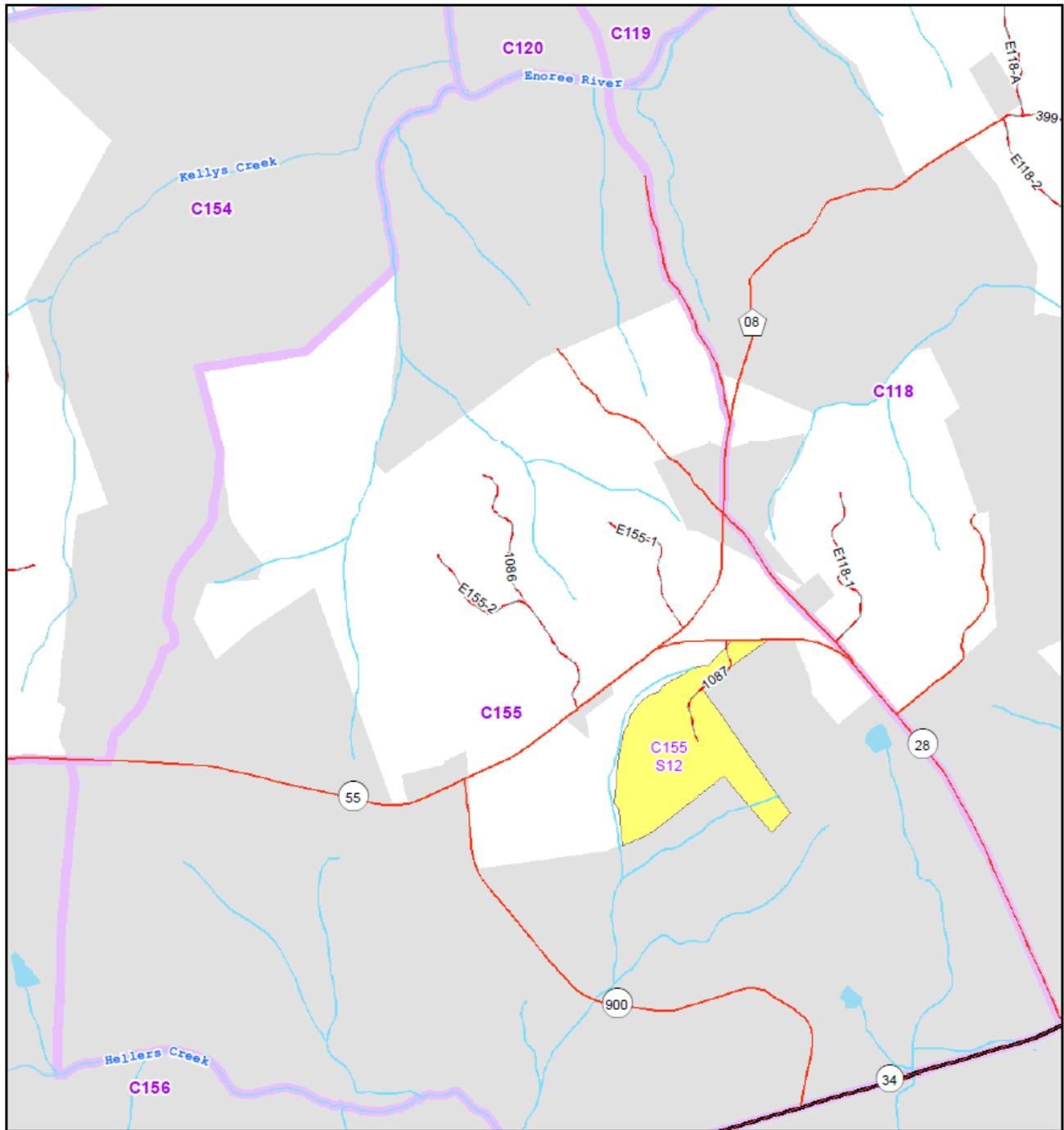
**Lower Broad Timber EA**  
**Compartment: 0117**  
**Treatment Unit Map**  
**Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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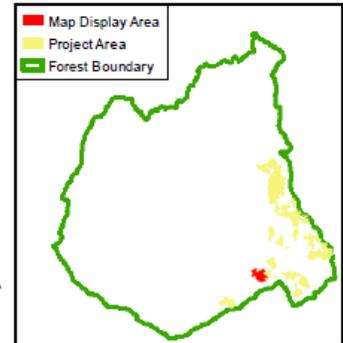
Lower Broad Timber EA  
 Compartment: 0155  
 Treatment Unit Map  
 Enoree Ranger District

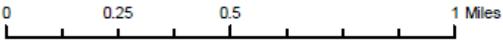
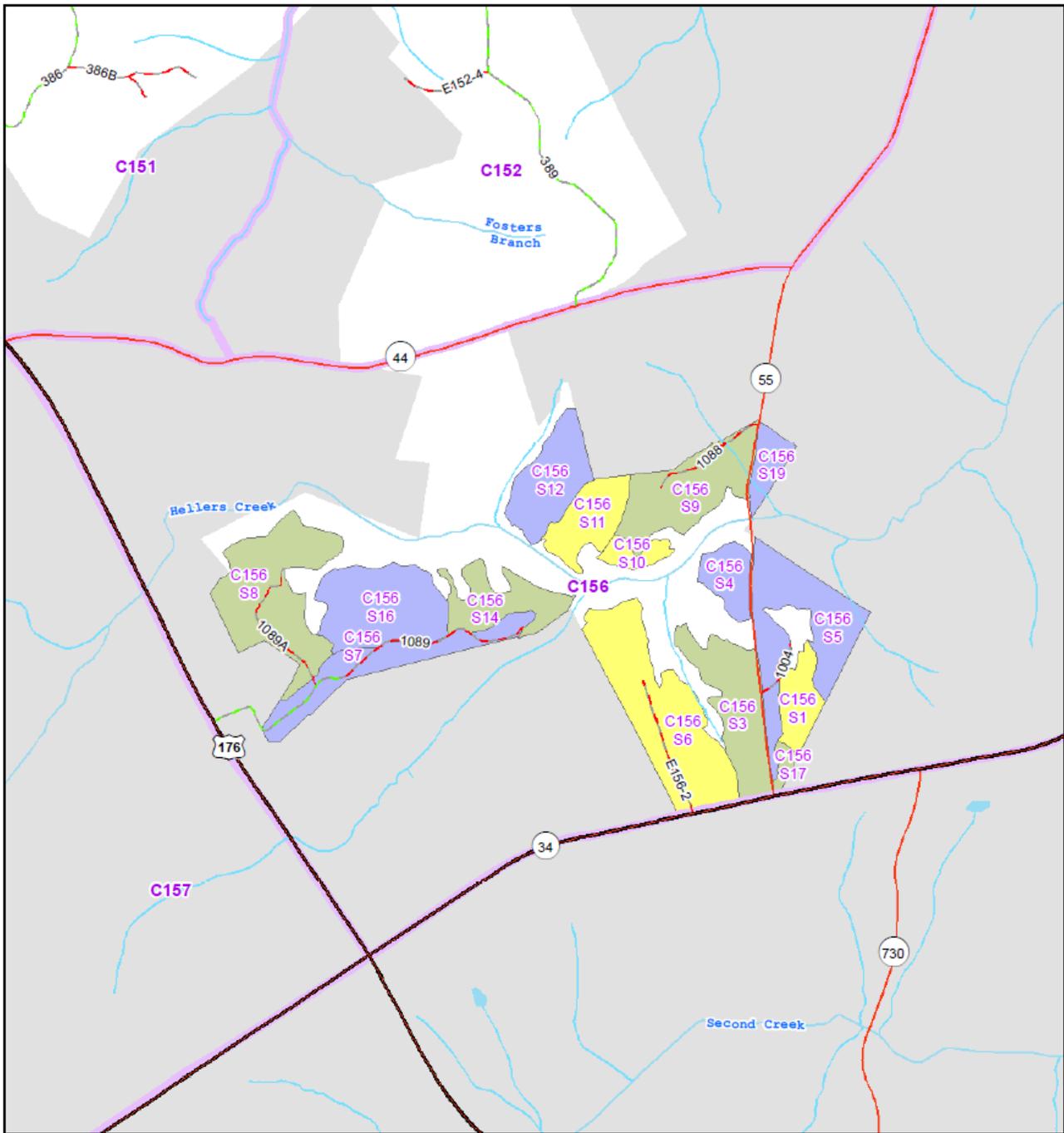
Coordinate System: NAD 1983 UTM Zone 17N

Data Source: USGS NHD - hydrography

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- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Closed Forest Service Road



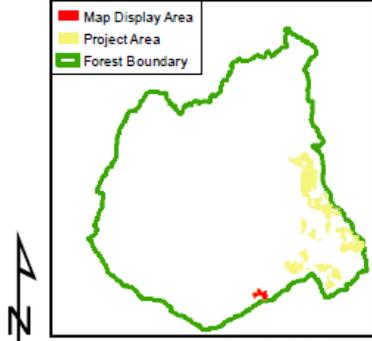


- First Thin
- Regeneration
- Sawtimber Thin
- Private Land
- Forest Service Land
- Forest Boundary
- Forest Compartment
- US/State Highway
- Other Public Road
- Open Forest Service Road
- Closed Forest Service Road

**Lower Broad Timber EA**  
**Compartment: 0156**  
**Treatment Unit Map**  
**Enoree Ranger District**

Coordinate System: NAD 1983 UTM Zone 17N  
 Data Source: USGS NHD - hydrography

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