TREE STAND SURVEY AND MAPPING

– Phase I –

Rivian Social Circle Campus

Prepared for:

RIVIAN

Prepared by:

res

February 25, 2022

Table of Contents

1.0 BACKGROUND

This report presents the findings of the tree stand survey and mapping for Phase I of the Rivian Social Circle Campus project area. RES ecologists performed a survey of the tree cover to appropriate into species groups and approximate broad size classes (e.g., young deciduous, young coniferous, mid age, and older large trees).

As presented in Section 2.0 below, each encountered tree stand includes a description that indicates tree/forest health and the presence of invasive species. Associated mapping and photographs are provided which highlight the category of floristics for each of the tree stand locations. Potential uses for wood resources are also summarized. In addition, forest types were identified with a NatureServe Community Element Global (CEGL) Code, which consists of a 10-character structure based on species classification (i.e., CEGL # # # # # #)

2.0 EXISTING SITE CONDITIONS

Land use within and adjacent to the proposed project area is mostly comprised of agricultural row crop, open fields, and forested areas. Existing tree stands on the Rivian site include pine, mixed deciduous hardwoods, and stands of regenerative mixed species. Five (5) forest types were identified as indicated in Figure 1:

- **Location 1:** American Beech - White Oak - Sweetgum / Southern Magnolia / Sarsaparilla-vine Forest (CEGL007210)
    - Mesotrophic Mesic Forest
- **Location 2:** Sweetgum - (Tulip tree) Ruderal Wet Forest (CEGL007330)
    - Ruderal Sweetgum Wet Forest
- **Location 3:** Sweetgum - White Oak - Northern Red Oak - Mockernut Hickory / Deerberry / Piedmont Forest (CEGL008475); Black Willow - (Red Maple, Silver Maple) / Hazel Alder - Common Buttonbush Swamp Forest (CEGL007703)
    - Piedmont Dry-Mesic Oak-Hickory Forest
    - Upper Coastal Plain/Interior Plateau Black Willow Pond Forest
- **Location 4:** Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Piedmont Forest (CEGL004232)
    - Southern Piedmont Dry Oak (Pine) Forest and Woodland
- **Location 5:** White Oak - Northern Red Oak - Mockernut Hickory / Deerberry / Piedmont Forest (CEGL008475)
    - Piedmont Acidic Oak Hickory Forest
- **Location 6:** Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Piedmont Forest (CEGL004232)
    - Southern Piedmont Dry Oak (Pine) Forest and Woodland

Descriptions of forest and stand types are presented below:

Location 1

Forest Type:
American Beech - White Oak - Sweetgum / Southern Magnolia / Sarsaparilla-vine Forest (CEGL007210)

Brief Description: Mature Forest with open understory containing mostly American Beech, White Oak, Tulip poplar, Chinquapin Oak, and Sweetgum. The pasture edge is upland in nature lying on a slope which descends into a riparian area adjacent to a creek. There is excellent diversity with 17 desirable tree species noted. Chinese Privet Japanese honeysuckle, and Chinaberry were invasive species noted.

Table 1. Location 1 Tree Stand Information

Location 2

Forest Type:

Sweetgum - (Tulip tree) Ruderal Wet Forest (CEGL007330)

Brief Description: This ruderal wetland area with a braided system is dominated by boxelder, sweetgum, red maple and hackberry. Other portions exhibit species shifts towards water oak and tulip poplar dominated systems. Western portion of the stand has some loblolly pine, though the quality (not the DBH) prevents this from being sawtimber worthy.

Table 2. Location 2 Tree Stand Information.

Location 3

Forest Types:
Sweetgum - White Oak - Northern Red Oak - Mockernut Hickory / Deerberry / Piedmont Forest (CEGL008475)
Black Willow - (Red Maple, Silver Maple) / Hazel Alder - Common Buttonbush Swamp Forest (CEGL007703)

Brief Description: Hilltops are mature Northern and Southern Red Oak, Water Oak, Sweetgum, Tulip Poplar, and White Oak, with very little understory. American beech, Loblolly and shortleaf pine can be seen on the hilltop and slopes, though not prevalent. Sporadic Chinese Holly is an invasive noted within the area. The bottomland appears to have pocket wetlands on the floodplain. The stream is highly eroded; however, a native rivercane patch was noted to exist. Dominant species here are: Black Willow, Hazel Alder, Red Maple, and Black Tupelo.

Table 3. Location 3 Tree Stand Information

Location 4

Forest Type: Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Piedmont Forest (CEGL004232)

Brief Description:
This is a small area wrapping around several ponds. Most of the native trees are mature and include Water Oak, Southern Red Oak, and Sweetgum. American Elm and Loblolly Pine can be found in lower densities. Invasive species noted were Chinaberry, Chinese Holly, Chinese Privet, and Bradford Pear. However, most of these invasives are concentrated towards the road edge. The lower elevations directly adjacent to the ponds are dominated by Tag Alder and Black Willow.

Table 4. Location 4 Tree Stand Information.

Location 5

Forest Type: White Oak - Northern Red Oak - Mockernut Hickory / Deerberry / Piedmont Forest (CEGL008475)

Brief Description:
The steep slope leading to the creek causes a striking shift in species along the gradient. The bottom is dominated by Water Oak, while the meso and upper slopes are primarily comprised of White Oak, American Elm, Tulip Poplar and Sweetgum with a sparse understory. The forest edge has significant amounts of Bradford pear lining it.

The cutover area is still fallow with slash wind-rows remaining. Adjacent to the cutover is an area likely harvested in recent years as it has developed into a thicket of small diameter, immature trees. It contains Hackberry, Sweetgum, Chinaberry, Water Oak, and also has an abundance of the invasive Japanese honeysuckle.

Table 5. Location 5 Tree Stand Information.

Location 5 Mockernu	

Location 6

Forest Type:

Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Piedmont Forest (CEGL004232)

Brief Description:

Like much of the other area that contains this type of forest, this is primarily composed of Tulip Poplar and Sweetgum with Black Cherry, White Oak, American Beech, and Water Oak with smaller patches of Loblolly Pine. Towards the southeastern portion of this forest type, there is a pocket dominated by Loblolly pine.

Table 6. Location 6 Tree Stand Information.

Stand	Scientific Name	Common Name	Invasive	DBH Range	Potential Reuse	Forest Health / Signs of Disease
Location 6: Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Piedmont Forest (CEGL004232)	*Quercus rubra*	Northern Red Oak	No	12 -20"	Sawtimber / Palletwood / Pulpwood	N/A - Healthy
	Liquidambar styraciflua	Sweetgum	No	12 -14"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipfera	Tulip Poplar	No	12 -20"	Sawtimber / Palletwood / Pulpwood	
	Quercus nigra	Water Oak	No	12 -14"	Palletwood / Pulpwood / Fuelwood	
	Fagus grandifolia	American Beech	No	8 -15"	Palletwood / Pulpwood / Fuelwood	
	Pinus taeda	Loblolly Pine	No	8 -12"	Palletwood / Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Yes	N/A	Fuelwood / Mulching	

3.0 ADDITIONAL CONSIDERATIONS

General Assumptions for tree reuse:

Due to the timing of activities within the first 500-acre phase, the most reasonable efforts to repurpose cleared trees would be to utilize as much of the biomass as possible as merchantable timber. There are different classifications of merchantable timber that carry varying values. These values are often times based on a price per tonnage basis and can fluctuate in the supply/demand marketplace. Mills can also issue quotas to harvesters (loggers) which ultimately affects volumes allowed at each mill. As such, this can also affect pricing.

Below is a generic description of various merchantable timber categories, however it should be noted that these are only generalizations. Size and species requirements by category can vary from mill to mill and can also be categorized/sorted differently by different harvesters. The purpose of these descriptions is to simply provide some general context of what one might expect to be produced out of the various tree stands in terms of merchantable timber. These are discussed in descending value.

- Sawtimber:
  - This is the most valuable class of merchantable timber. DBH normally exceeds 12". Most commonly used species include Oak, Pine, Ash, Hickory. Less desirable species (Birch, Gums, etc.) may be used to create railroad cross ties.
- Chip-n-saw / Pallet Wood:
  - Chip-n-saw is primarily derived from a Pine species whereas Pallet wood refers to similarly sized trees that are other species (typically deciduous). DBH normally exceeds 9" but does not meet the standards for Sawtimber.
- Pulpwood:
  - Most species can be utilized for pulpwood production, so long as the dimensions are suitable. However, pine is preferred pulp material utilized at paper mills, while deciduous pulpwood can be utilized at other mills to produce items materials used for cereal boxes (can take high gloss). Differences in fiber densities by species determine the potential uses of the harvested tree. This category typically requires wood to have a minimum of a 3" diameter tree-top to satisfy the necessary volume requirements, but again this can vary per mill.
- Fuelwood:
  - Most species that are too small to be considered Pulpwood can be utilized for fuelwood. In general, a tree must be approximately 10' tall in order for the harvester's grapple to be able to gather these smaller trees into bundles that can be fed into a chipping unit.

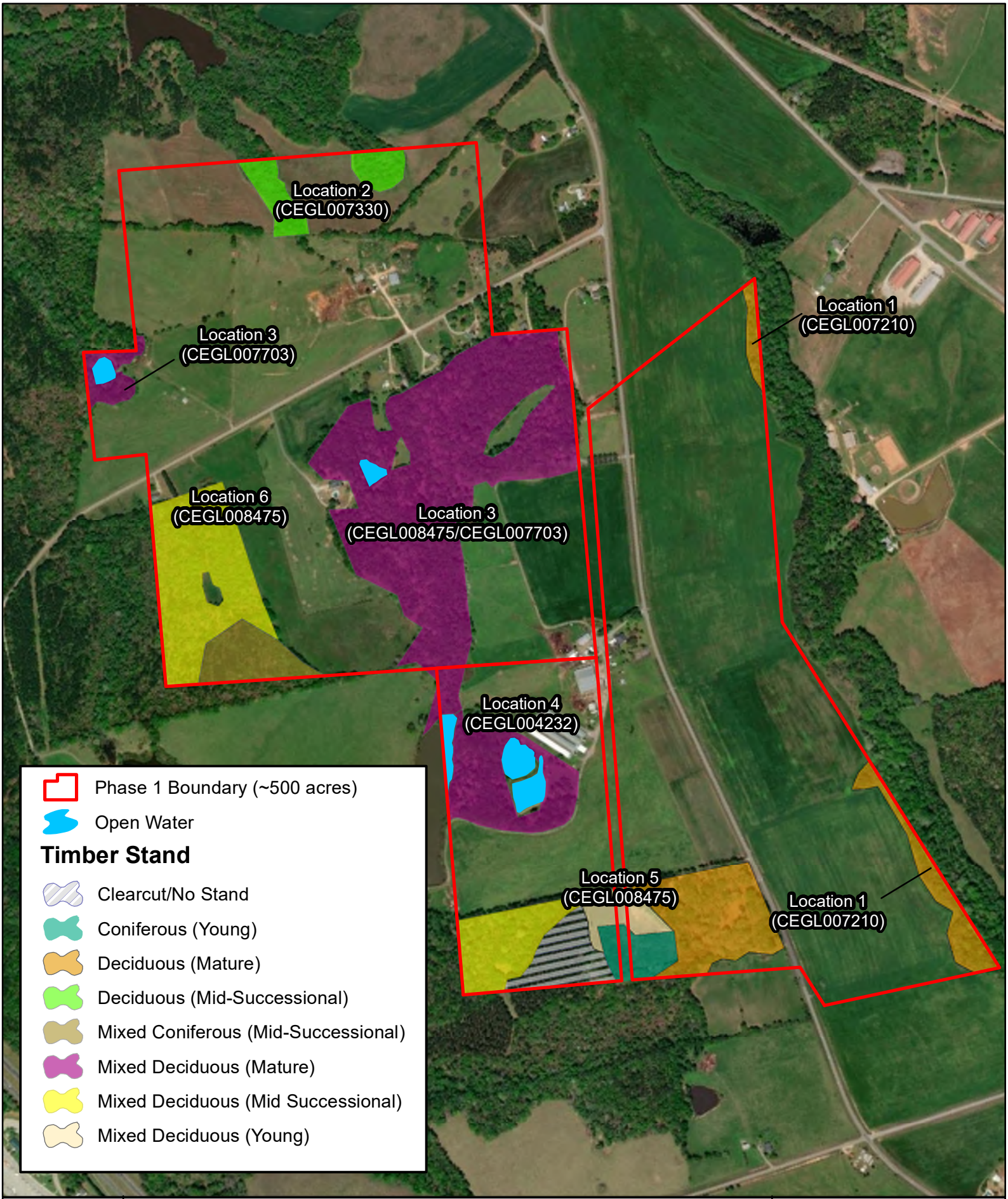
Materials that are not suitable for any of these uses should be considered for the potential to commercially mulch / grind into moderately fine material that can be incorporated into the soil to begin the decomposition process (adding organics to the soil). This may be achieved through the use of tracked mulching equipment or even tub grinders. Additional thoughts regarding the sequencing of these events are discussed below.

Sequencing of Tree Harvest:

In general, a logging operation will begin clearing all merchantable timber out of an area. During this process, they will sort the trees into the appropriate categories as it is harvested. Fuelwood is typically the last category to be harvested and is often a separate operation. Commercial timber operations often consider the gathering of fuelwood to be a way of cleaning up a property prior to replanting efforts. Following the harvesting of fuelwood from all suitable areas, a mulching / grinding effort should be accomplished next. This activity would occur to further break down the biomass remaining on site that was not suitable for merchantable timber harvest. This biomass could then be worked into the topsoil as it is being removed and stockpiled to further incorporate additional organics into the soils.

ATTACHMENT A

Tree Stand Map



TREE STAND SURVEY MAP

Rivian Social Circle Campus - Phase I

0 300 600 1,200 Feet

ATTACHMENT B

Tree Stand Location Summary

Stand	Scientific Name	Common Name	Invasive	DBH Range	Potential Reuse	Forest Health / Signs of Disease
Location 1: American Beech - White Oak - Sweetgum/Southern Magnolia/Sarsaparilla-vine Forest (CEGL007210)	*Acer rubrum*	Red Maple	No	6 -11"	Pulpwood / Fuelwood	No indications of significant disease were identified during this preliminary mapping effort
	Carpinus caroliniana	Ironwood	No	6"	Pulpwood / Fuelwood	
	Carya glabra	Pignut Hickory	No	15"	Sawtimber	
	Celtis laevigata	Hackberry	No	2-8"	Pulpwood / Fuelwood	
	Diospyros virginiana	Persimmon	No	6 -8"	Pulpwood / Fuelwood	
	Fagus grandifolia	American Beech	No	10 - 20"	Sawtimber / Pallet Wood / Pulpwood	
	Gleditsia triacanthos	Honey Locust	No	4 - 8"	Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	No	15 - 22"	Sawtimber	
	Liriodendron tulipfera	Tulip Poplar	No	10 -21"	Sawtimber / Palletwood / Pulpwood	
	Pinus echinata	Shortleaf Pine	No	5 - 9"	Pulpwood / Fuelwood	
	Prunus serotina	Black Cherry	No	5 -8"	Pulpwood / Fuelwood	
	Quercus alba	White Oak	No	19 - 36"	Sawtimber	
	Quercus muehlenbergii	Chinquapin Oak	No	44"	Sawtimber	
	Quercus nigra	Water Oak	No	2 -5"	Fuelwood / Mulching	
	Quercus rubra	Northern Red Oak	No	18 - 24"	Sawtimber	
	Quercus stellata	Post Oak	No	9 -12"	Palletwood / Pulpwood / Fuelwood	
	Tilia americana	Basswood	No	9 - 12"	Palletwood / Pulpwood / Fuelwood	
Location 2: Sweetgum - (Tuliptree) Ruderal Wet Forest (CEGL007330)	*Gleditsia triacanthos*	Honey Locust	No	4 - 8"	Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	No	8 - 12"	Palletwood / Pulpwood / Fuelwood	
	Acer negundo	Box Elder	No	12 -15"	Palletwood / Pulpwood / Fuelwood	
	Acer rubrum	Red Maple	No	12 -15"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	No	8 -12"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipfera	Tulip Poplar	No	8 -12"	Palletwood / Pulpwood / Fuelwood	
	Prunus serotina	Black Cherry	No	5 -8"	Pulpwood / Fuelwood	
	Pinus taeda	Loblolly Pine	No	12 -15"	Chip-n-saw / Pulpwood / Fuelwood	Poor quality from edge affects
	Ligustrum sinense	Chinese Privet	Yes	N/A	Fuelwood / Mulching	
	Pyrus calleryana	Bradford Pear	Yes	N/A	Fuelwood / Mulching	
Location 3: Sweetgum - White Oak - Northern Red Oak - Mockernut Hickory / Deerberry / Piedmont Forest (CEGL008475) Black Willow - (Red Maple, Silver Maple) / Hazel Alder - Common Buttonbush Swamp Forest (CEGL007703)	*Quercus alba*	White Oak	No	15 -20"	Sawtimber	N/A -Healthy
	Quercus rubra	Northern Red Oak	No	12- 15"	Palletwood / Pulpwood / Fuelwood	
	Quercus falcata	Southern Red Oak	No	12- 15"	Palletwood / Pulpwood / Fuelwood	
	Fagus grandifolia	American Beech	No	8 - 12"	Palletwood / Pulpwood / Fuelwood	
	Carya glabra	Pignut Hickory	No	12 -15"	Palletwood / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	No	15 -18"	Sawtimber / Pallet Wood / Pulpwood	
	Acer rubrum	Red Maple	No	8 -15"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	No	15 -20"	Sawtimber	
	Liriodendron tulipfera	Tulip Poplar	No	15 -18"	Sawtimber / Pallet Wood	
	Prunus serotina	Black Cherry	No	5- 8"	Pulpwood / Fuelwood	
	Pinus taeda	Loblolly Pine	No	12 - 15"	Chip-n-saw / Pulpwood	
	Pinus echinata	Shortleaf Pine	No	12- 15"	Chip-n-saw / Pulpwood	
	Salix nigra	Black Willow	No	6 -10"	Pulpwood / Fuelwood	
	Alnus serralata	Hazel Alder	No	8 -15"	Pulpwood / Fuelwood	
	Nyssa sylvatica	Black Tupelo	No	8 -15"	Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Yes	N/A	Fuelwood / Mulching	
	Ilex cornuta	Chinese Holly	Yes	N/A	Fuelwood / Mulching	
Location 4: Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Piedmont Forest (CEGL004232)	*Quercus falcata*	Southern Red Oak	No	8-20"	Sawtimber / Palletwood / Pulpwood	N/A -Healthy
	Liquidambar styraciflua	Sweetgum	No	8-20"	Sawtimber / Palletwood / Pulpwood	
	Quercus nigra	Water Oak	No	8-20"	Sawtimber / Palletwood / Pulpwood	
	Ulmus americana	American Elm	No	8-20"	Sawtimber / Palletwood / Pulpwood	
	Juniperus virginiana	Eastern Red Cedar	No	8-10"	Pulpwood / Fuelwood / Fence post	
	Alnus serralata	Hazel Alder	No	8-15"	Pulpwood / Fuelwood	
	Salix nigra	Black Willow	No	8-15"	Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Yes	N/A	Fuelwood / Mulching	
	Ilex cornuta	Chinese Holly	Yes	N/A	Fuelwood / Mulching	
	Pyrus calleryana	Bradford Pear	Yes	N/A	Fuelwood / Mulching	
	Melia azedarach	Chinaberry	Yes	N/A	Fuelwood / Mulching	
Location 5: White Oak - Northern Red Oak - Mockernut Hickory / Deerberry / Piedmont Forest (CEGL008475)	*Quercus falcata*	Southern Red Oak	No	15 -18"	Sawtimber / Palletwood	This area is located in a "High Hazard Index Area" for fusiform rust (fungus Cronartiium quercuum); however; no fusiform rust encountered
	Quercus rubra	Northern Red Oak	No	16 -18"	Sawtimber / Palletwood	
	Liquidambar styraciflua	Sweetgum	No	10 -15"	Sawtimber / Palletwood / Pulpwood	
	Quercus nigra	Water Oak	No	8 -12"	Palletwood / Pulpwood / Fuelwood	
	Fagus grandifolia	American Beech	No	8- 15"	Palletwood / Pulpwood / Fuelwood	
	Carya ovata	Shagbark Hickory	No	8 -10"	Pulpwood/Fuelwood	
	Pinus taeda	Loblolly Pine	No	15 -18"	Chip-n-saw / Pulpwood / Fuelwood	
	Pinus echinata	Shortleaf Pine	No	8 -15"	Chip-n-saw / Pulpwood / Fuelwood	
	Celtis laevigata	Hackberry	No	8 -15"	Palletwood / Pulpwood / Fuelwood	
	Melia azedarach	Chinaberry	Yes	N/A	Fuelwood / Mulching	
	Pyrus calleryana	Bradford Pear	Yes	6-8 "	Fuelwood / Mulching	
Location 6: Pinus taeda - Quercus (alba, falcata, stellata) Piedmont Forest (CEGL004232)	*Quercus rubra*	Northern Red Oak	No	12 -20"	Sawtimber / Palletwood / Pulpwood	N/A - Healthy
	Liquidambar styraciflua	Sweetgum	No	12 -14"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipfera	Tulip Poplar	No	12 -20"	Sawtimber / Palletwood / Pulpwood	
	Quercus nigra	Water Oak	No	12 -14"	Palletwood / Pulpwood / Fuelwood	
	Fagus grandifolia	American Beech	No	8 -15"	Palletwood / Pulpwood / Fuelwood	
	Pinus taeda	Loblolly Pine	No	8 -12"	Palletwood / Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Yes	N/A	Fuelwood / Mulching	

TREE STAND SURVEY AND MAPPING

– Phase II –

Rivian Social Circle Campus

Prepared for:

RIVIAN

Prepared by:

res

April 4, 2022

Table of Contents

1.0 BACKGROUND

This report presents the findings of the tree stand survey and mapping for Phase II of the Rivian Social Circle Campus project area. RES ecologists performed a survey of the tree cover to appropriate into species groups and approximate broad size classes (e.g., young deciduous, young coniferous, mid age, and older large trees). Multiple plots were sampled across the property to establish an understanding of tree size and health.

A brief description of the main forest types is presented in Section 2.0 below, each encountered tree stand includes a description that indicates tree/forest health and the presence of invasive species.

2.0 EXISTING SITE CONDITIONS

Land use within and adjacent to the proposed project area is mostly comprised of agricultural row crop, open fields, and forested areas which can be seen in Figure 1. Existing tree stands on the Rivian site include pine, mixed deciduous hardwoods, and stands of regenerative mixed species. Nine (9) forest types were identified as indicated in Figure 2 and in Attachment A Phase II tree survey summary of forest types, tree metrics, and potential reuse options are presented. Table 1. Below has a Summary of land coverage acreage for each encountered forest type. A photo summary of representative vegetation will be included in Attachment C

Table 1. Land Coverage Acreage

Land Coverage	Total Area in acres
Bradford Pear Thicket	1
Clearcut	839
Coniferous (Mid-Successional)	23
Coniferous (Young)	4
Deciduous (Mature)	99
Deciduous (Mid-Successional)	160
Deciduous (Young)	38
Deciduous (Problematic Invasive Area)	11
Deciduous Riparian (Mature)	141
Mixed Coniferous (Mid-Successional)	411
Mixed Deciduous (Mature)	67
Mixed Deciduous (Mid-Successional)	103
Open Water	23

Forest Type 1

Coniferous (Mid-Successional)- Planted Pine Plantation (CST007179)

Brief Description: These areas are comprised almost entirely out of planted loblolly pine. The trees are relatively young with a DBH ranging from 3-11 inches and stand at an average of about 55 feet. The primary use of these areas would be Pulpwood and Chip-n-saw.

Table 2. Forest Type 1 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 1: Coniferous (Mid-Successional)- Planted Pine Plantation (CST007179)	*Pinus taeda*	Loblolly Pine	Native	3"	11"	Chip-n-saw / Pulpwood / Fuelwood	Healthy
	Liquidambar styraciflua	Sweetgum	Native	1"	5"	Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	1"	5"	Pulpwood / Fuelwood	

Forest Type 2

Deciduous (Mature)- American Beech - White Oak - Northern Red Oak - Mockernut Hickory / Deerberry (CEGL008475)

Brief Description: These areas contain the largest healthiest trees on the project area. Trees in these stands can reach a DBH of up to 42 inches and can grow up to approximately 120 feet tall. These areas are very healthy and contain many trees that can be utilized as sawtimber. These areas can be considered preservation worthy as they are filled with healthy native trees.

Table 3. Forest Type 2 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 2: Deciduous (Mature)- American Beech - White Oak - Northern Red Oak - Mockernut Hickory / Deerberry (CEGL008475)	*Fagus grandifolia*	American beech	Native	9"	42"	Sawtimber / Palletwood / Pulpwood	Healthy
	Prunus serotina	Black Cherry	Native	1"	8"	Pulpwood / Fuelwood	
	Aesculus pavia	Buckeye	Native	N/A	N/A	None	
	Carya tomentosa	Mockernut Hickory	Native	9"	25"	Sawtimber / Palletwood	
	Quercus rubra	Northern Red Oak	Native	9"	42"	Sawtimber / Palletwood	
	Acer rubrum	Red Maple	Native	9"	25"	Palletwood / Pulpwood / Fuelwood	
	Carya ovata	Shagbark Hickory	Native	9"	30"	Sawtimber / Palletwood	
	Liquidambar styraciflua	Sweetgum	Native	3"	30"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	15"	42"	Sawtimber / Palletwood	
	Quercus nigra	Water Oak	Native	9"	42"	Sawtimber / Palletwood / Pulpwood	
	Fraxinus americana	White Ash	Native	13"	30"	Sawtimber / Palletwood	
	Quercus alba	White Oak	Native	9"	42"	Sawtimber / Palletwood	
	Quercus phellos	Willow Oak	Native	13"	42"	Sawtimber / Palletwood	

Forest Type 3

Deciduous (Mid-Successional)- Sweetgum - (White Oak, Southern Red Oak) Ruderal Forest (CEGL007217)

Brief Description: These stands are primarily composed of smaller oaks and sweetgums ranging from 1-23 inch DBH range but are dominated by 5 inch DBH trees. Uses for the wood in these areas are mostly pulpwood with some chip-n-saw and a slight potential for sawtimber.

Table 4. Forest Type 3 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 3: Deciduous (Mid-Successional)- Sweetgum - (White Oak, Southern Red Oak) Ruderal Forest (CEGL007217)	*Fagus grandifolia*	American beech	Native	4"	21"	Sawtimber / Palletwood / Pulpwood	Healthy
	Ulmus americana	American Elm	Native	1"	15"	Palletwood / Pulpwood / Fuelwood	
	Prunus serotina	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	
	Pyrus calleryana	Bradford Pear	Invasive	2"	6"	Fuelwood / Mulching	
	Melia azedarach	china berry	Invasive	1"	8"	Fuelwood / Mulching	
	Ligustrum sinense	Chinese Privet	Invasive	1"	4"	Fuelwood / Mulching	
	Carya tomentosa	Mockernut Hickory	Native	5"	23"	Sawtimber / Palletwood / Pulpwood	
	Quercus rubra	Northern Red Oak	Native	4"	19"	Sawtimber / Palletwood / Pulpwood	
	Acer rubrum	Red Maple	Native	4"	21"	Palletwood / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	23"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	3"	23"	Sawtimber / Palletwood / Pulpwood	
	Quercus nigra	Water Oak	Native	4"	23"	Sawtimber / Palletwood / Pulpwood	
	Quercus alba	White Oak	Native	3"	21"	Sawtimber / Palletwood / Pulpwood	
	Quercus phellos	Willow Oak	Native	4"	15"	Palletwood / Pulpwood / Fuelwood	

Forest Type 4

Deciduous (Young)- Sweetgum - (White Oak, Southern Red Oak) Ruderal Forest (CEGL007217)

Brief Description: These areas are very young ranging from 1-10 inch DBH and have very little reuse besides pulpwood and fuelwood.

Table 5. Forest Type 4 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 4: Deciduous (Young)- Sweetgum - (White Oak, Southern Red Oak) Ruderal Forest (CEGL007217)	*Fagus grandifolia*	American beech	Native	1"	6"	Pulpwood / Fuelwood	Healthy
	Prunus serotina	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Invasive	1"	4"	Fuelwood / Mulching	
	Quercus rubra	Northern Red Oak	Native	1"	17"	Palletwood / Pulpwood / Fuelwood	
	Oxydendrum arboreum	Sour Wood	Native	1"	6"	Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	10"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipifera	Tulip Tree	Native	1"	10"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	1"	10"	Palletwood / Pulpwood / Fuelwood	
	Quercus alba	White Oak	Native	1"	17"	Palletwood / Pulpwood / Fuelwood	
	Quercus phellos	Willow Oak	Native	1"	8"	Pulpwood / Fuelwood	

Forest Type 5

Deciduous Riparian (Mature)- Sweetgum - (Tuliptree) Ruderal Wet Forest (CEGL007330)

Brief Description: These areas border the streams on site. The trees are of large DBH (up to 34 inches or more) and have a potential for sawtimber. It should be noted these riparian areas are essential for stream health and should be avoided if possible. Also trees that grow in wet frequently flooded soils tend to develop growth patterns that make sawtimber harvest problematic.

Table 6. Forest Type 5 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 5: Deciduous Riparian (Mature)- Sweetgum - (Tuliptree) Ruderal Wet Forest (CEGL007330)	*Fagus grandifolia*	American beech	Native	10"	34"	Sawtimber / Palletwood	Many of these forest types on site have an invasive chinese privet problem
	Ulmus americana	American Elm	Native	6"	25"	Sawtimber / Palletwood / Pulpwood	
	Ilex opaca	American Holly	Native	2"	9"	Pulpwood / Fuelwood	
	Carpinus caroliniana	American Hornbeam	Native	2"	8"	Pulpwood / Fuelwood	
	Prunus serotina	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Invasive	1"	4"	Fuelwood / Mulching	
	Cercis canadensis	Eastern Redbud	Native	1"	3"	Fuelwood / Mulching	
	Cornus florida	Flowering Dogwood	Native	3"	5"	Fuelwood / Mulching	
	Carya tomentosa	Mockernut Hickory	Native	10"	25"	Sawtimber / Palletwood	
	Quercus rubra	Northern Red Oak	Native	9"	34"	Sawtimber / Palletwood	
	Acer rubrum	Red Maple	Native	6"	34"	Sawtimber / Palletwood / Pulpwood	
	Arundinaria gigantea	River Cane	Native	N/A	N/A	None	
	Carya ovata	Shagbark Hickory	Native	10"	16"	Sawtimber / Palletwood	
	Nyssa biflora	Swamp Tupelo	Native	5"	7"	Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	34"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	9"	30"	Sawtimber / Palletwood	
	Quercus nigra	Water Oak	Native	9"	25"	Sawtimber / Palletwood	
	Quercus alba	White Oak	Native	9"	25"	Sawtimber / Palletwood	
	Quercus phellos	Willow Oak	Native	6"	16"	Palletwood / Pulpwood / Fuelwood	

Forest Type 6

Mixed Coniferous (Mid-Successional)- Loblolly Pine - Sweetgum Ruderal Forest (CEGL008462)

Brief Description: These areas are dominated by loblolly pine but are mixed in with many different hardwoods. The average DBH of these areas is around 8 inches. This forest type takes up a large majority of the forested portions of the site. There is potential for softwood sawtimber, but most of the trees in these stands are chip-n-saw and pulpwood.

Table 7. Forest Type 6 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 6: Mixed Coniferous (Mid-Successional)- Loblolly Pine - Sweetgum Ruderal Forest (CEGL008462)	*Prunus serotina*	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	Healthy
	Pinus taeda	Loblolly Pine	Native	1"	14"	Chip-n-saw / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	13"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipifera	Tulip Tree	Native	1"	5"	Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	1"	13"	Palletwood / Pulpwood / Fuelwood	
	Quercus alba	White Oak	Native	1"	13"	Palletwood / Pulpwood / Fuelwood	
	Quercus phellos	Willow Oak	Native	1"	12"	Palletwood / Pulpwood / Fuelwood	

Forest Type 7

Mixed Deciduous (Mature)- White Oak - Northern Red Oak - Shagbark Hickory (CEGL007232)

Brief Description: These areas harbor large sawtimber trees reaching DBH measurements up to 32 inches and reach heights of up to 120 feet. They are mainly comprised of hardwood but also contain large loblolly pines scattered throughout. These stands are beautiful areas worthy of preservation.

Table 8. Forest Type 7 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 7: Mixed Deciduous (Mature)- White Oak - Northern Red Oak - Shagbark Hickory (CEGL007232)	*Fagus grandifolia*	American beech	Native	8"	32"	Sawtimber / Palletwood	Healthy
	Ilex opaca	American Holly	Native	N/A	N/A	None	
	Prunus serotina	Black Cherry	Native	2"	8"	Pulpwood / Fuelwood	
	Melia azedarach	china berry	Invasive	3"	12"	Fuelwood / Mulching	
	Pinus taeda	Loblolly Pine	Native	12"	32"	Sawtimber / Chip-n-saw	
	Carya tomentosa	Mockernut Hickory	Native	8"	25"	Sawtimber / Palletwood / Pulpwood	
	Quercus rubra	Northern Red Oak	Native	12"	32"	Sawtimber / Palletwood	
	Acer rubrum	Red Maple	Native	3"	25"	Sawtimber / Palletwood / Pulpwood	
	Carya ovata	Shagbark Hickory	Native	14"	25"	Sawtimber / Palletwood	
	Liquidambar styraciflua	Sweetgum	Native	6"	32"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	14"	25"	Sawtimber / Palletwood	
	Quercus nigra	Water Oak	Native	8"	32"	Sawtimber / Palletwood	
	Quercus alba	White Oak	Native	10"	25"	Sawtimber / Palletwood	

Forest Type 8

Mixed Deciduous (Mid-Successional)- Loblolly Pine - Sweetgum - Oak Ruderal Forest (CEGL008462)

Brief Description: These stands are dominated by hardwoods with an average DBH of 7 inches. Pines are scattered throughout. These areas have a good potential for sawtimber trees, but the majority would only be suitable for pulpwood and chip-n-saw.

Table 9. Forest Type 8 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 8: Mixed Deciduous (Mid-Successional) Loblolly Pine - Sweetgum - Oak Ruderal Forest (CEGL008462)	*Fagus grandifolia*	American beech	Native	6"	19"	Sawtimber / Palletwood / Pulpwood	Healthy
	Prunus serotina	Black Cherry	Native	1"	8"	Pulpwood / Fuelwood	
	Pinus taeda	Loblolly Pine	Native	1"	19"	Sawtimber / Chip-n-saw / Pulpwood	
	Quercus rubra	Northern Red Oak	Native	6"	19"	Sawtimber / Palletwood / Pulpwood	
	Acer rubrum	Red Maple	Native	3"	14"	Palletwood / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	3"	20"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	4"	12"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	3"	20"	Sawtimber / Palletwood / Pulpwood	
	Quercus alba	White Oak	Native	3"	20"	Sawtimber / Palletwood / Pulpwood	
	Quercus phellos	Willow Oak	Native	4"	18"	Sawtimber / Palletwood / Pulpwood	

Forest Type 9

Deciduous (Problematic Invasive Area)- Wisteria Vine takeover

Brief Description: This area is being degraded by wisteria vines which has greatly influences the quality of wood. Many trees in this area are struggling to survive.

Table 10. Forest Type 9 Tree Stand Information

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 9: Deciduous (Problematic Invasive Area)- Wisteria Vine takeover	*Liquidambar styraciflua*	Sweetgum	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	This area has a severe invasive vine problem
	Quercus alba	White Oak	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Quercus phellos	Willow Oak	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Fagus grandifolia	American beech	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Wisteria sinensis	Westeria Vine	Invasive	N/A	N/A	None	
	Carya glabra	pignut hickory	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Melia azedarach	china berry	Invasive	3"	10"	Fuelwood / Mulching	

3.0 ADDITIONAL CONSIDERATIONS

General Assumptions for tree reuse:

Due to the timing of activities within the project area the most reasonable efforts to repurpose cleared trees would be to utilize as much of the biomass as possible as merchantable timber. There are different classifications of merchantable timber that carry varying values. These values are often times based on a price per tonnage basis and can fluctuate in the supply/demand marketplace. Mills can also issue quotas to harvesters (loggers) which ultimately affects volumes allowed at each mill. As such, this can also affect pricing.

Below is a generic description of various merchantable timber categories, however it should be noted that these are only generalizations. Size and species requirements by category can vary from mill to mill and can also be categorized/sorted differently by different harvesters. The purpose of these descriptions is to simply provide some general context of what one might expect to be produced out of the various tree stands in terms of merchantable timber. These are discussed in descending value.

- Sawtimber:
  - This is the most valuable class of merchantable timber. DBH normally exceeds 12". Most commonly used species include Oak, Pine, Ash, Hickory. Less desirable species (Birch, Gums, etc.) may be used to create railroad cross ties. Many of these trees can be used as lumber for smaller structures such as gazebos, Archways, and a concert stage to put on shows. These can also be turned into benches, picknick tables, and totem poles.
- Chip-n-saw / Pallet Wood:
  - Chip-n-saw is primarily derived from a Pine species whereas Pallet wood refers to similarly sized trees that are other species (typically deciduous hardwoods). DBH normally exceeds 9" but does not meet the standards for Sawtimber. These trees can be used to create pallets, fence posts, and can be delimbed and stuck into the ground and left as bird nesting habitat. The wood could be utilized to create habitat for wildlife in the form of bird houses and bat boxes.
- Pulpwood:
  - Most species can be utilized for pulpwood production, so long as the dimensions are suitable. However, pine is preferred pulp material utilized at paper mills, while deciduous pulpwood can be utilized at other mills to produce items materials used for cereal boxes (can take high gloss). Differences in fiber densities by species determine the potential uses of the harvested tree. This category typically requires wood to have a minimum of a 3" diameter tree-top to satisfy the necessary volume requirements, but again this can vary per mill.
- Fuelwood:
  - Most species that are too small to be considered Pulpwood can be utilized for fuelwood. In general, a tree must be approximately 10' tall for the harvester's grapple to be able to gather these smaller trees into bundles that can be fed into a chipping unit. This wood can be used to generate biomass energy.

Materials that are not suitable for any of these uses should be considered for the potential to commercially mulch / grind into moderately fine material that can be incorporated into the soil to begin the decomposition process (adding organics to the soil). This may be achieved with tracked mulching equipment or even tub grinders.

Sequencing of Tree Harvest:

In general, a logging operation will begin clearing all merchantable timber out of an area. During this process, they will sort the trees into the appropriate categories as it is harvested. Fuelwood is typically the last category to be harvested and is often a separate operation. Commercial timber operations often consider the gathering of fuelwood to be a way of cleaning up a property prior to replanting efforts. Following the harvesting of fuelwood from all suitable areas, a mulching / grinding effort should be accomplished next. This activity would occur to further break down the biomass remaining on site that was not suitable for merchantable timber harvest. This biomass could then be worked into the topsoil as it is being removed and stockpiled to further incorporate additional organics into the soils.

ATTACHMENT A

Tree Stand Forest Type Summary

Tree Stand Survey and Mapping

Phase II – Rivian Social Circle Campus

Stand	Scientific Name	Common Name	Invasive	DBH Range		Potential Reuse	Forest Health / Signs of Disease
				Minimum	Maximum		
Forest Type 1: Coniferous (Mid-Successional)- Planted Pine Plantation (CST007179)	*Pinus taeda*	Loblolly Pine	Native	3"	11"	Chip-n-saw / Pulpwood / Fuelwood	Healthy
	Liquidambar styraciflua	Sweetgum	Native	1"	5"	Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	1"	5"	Pulpwood / Fuelwood	
Forest Type 2: Deciduous (Mature)- American Beech - White Oak - Northern Red Oak - Mockernut Hickory / Deerberry (CEGL008475)	*Fagus grandifolia*	American beech	Native	9"	42"	Sawtimber / Palletwood / Pulpwood	Healthy
	Prunus serotina	Black Cherry	Native	1"	8"	Pulpwood / Fuelwood	
	Aesculus pavia	Buckeye	Native	N/A	N/A	None	
	Carya tomentosa	Mockernut Hickory	Native	9"	25"	Sawtimber / Palletwood	
	Quercus rubra	Northern Red Oak	Native	9"	42"	Sawtimber / Palletwood	
	Acer rubrum	Red Maple	Native	9"	25"	Palletwood / Pulpwood / Fuelwood	
	Carya ovata	Shagbark Hickory	Native	9"	30"	Sawtimber / Palletwood	
	Liquidambar styraciflua	Sweetgum	Native	3"	30"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	15"	42"	Sawtimber / Palletwood	
	Quercus nigra	Water Oak	Native	9"	42"	Sawtimber / Palletwood / Pulpwood	
	Fraxinus americana	White Ash	Native	13"	30"	Sawtimber / Palletwood	
	Quercus alba	White Oak	Native	9"	42"	Sawtimber / Palletwood	
	Quercus phellos	Willow Oak	Native	13"	42"	Sawtimber / Palletwood	
Forest Type 3: Deciduous (Mid-Successional)- Sweetgum - (White Oak, Southern Red Oak) Ruderal Forest (CEGL007217)	*Fagus grandifolia*	American beech	Native	4"	21"	Sawtimber / Palletwood / Pulpwood	Healthy
	Ulmus americana	American Elm	Native	1"	15"	Palletwood / Pulpwood / Fuelwood	
	Prunus serotina	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	
	Pyrus calleryana	Bradford Pear	Invasive	2"	6"	Fuelwood / Mulching	
	Melia azedarach	china berry	Invasive	1"	8"	Fuelwood / Mulching	
	Ligustrum sinense	Chinese Privet	Invasive	1"	4"	Fuelwood / Mulching	
	Carya tomentosa	Mockernut Hickory	Native	5"	23"	Sawtimber / Palletwood / Pulpwood	
	Quercus rubra	Northern Red Oak	Native	4"	19"	Sawtimber / Palletwood / Pulpwood	
	Acer rubrum	Red Maple	Native	4"	21"	Palletwood / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	23"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	3"	23"	Sawtimber / Palletwood / Pulpwood	
	Quercus nigra	Water Oak	Native	4"	23"	Sawtimber / Palletwood / Pulpwood	
	Quercus alba	White Oak	Native	3"	21"	Sawtimber / Palletwood / Pulpwood	
	Quercus phellos	Willow Oak	Native	4"	15"	Palletwood / Pulpwood / Fuelwood	
Forest Type 4: Deciduous (Young)- Sweetgum - (White Oak, Southern Red Oak) Ruderal Forest (CEGL007217)	*Fagus grandifolia*	American beech	Native	1"	6"	Pulpwood / Fuelwood	Healthy
	Prunus serotina	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Invasive	1"	4"	Fuelwood / Mulching	
	Quercus rubra	Northern Red Oak	Native	1"	17"	Palletwood / Pulpwood / Fuelwood	
	Oxydendrum arboreum	Sour Wood	Native	1"	6"	Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	10"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipifera	Tulip Tree	Native	1"	10"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	1"	10"	Palletwood / Pulpwood / Fuelwood	
	Quercus alba	White Oak	Native	1"	17"	Palletwood / Pulpwood / Fuelwood	
	Quercus phellos	Willow Oak	Native	1"	8"	Pulpwood / Fuelwood	
Forest Type 5: Deciduous Riparian (Mature)- Sweetgum - (Tuliptree) Ruderal Wet Forest (CEGL007330)	*Fagus grandifolia*	American beech	Native	10"	34"	Sawtimber / Palletwood	Many of these forest types on site have an invasive chinese privet problem
	Ulmus americana	American Elm	Native	6"	25"	Sawtimber / Palletwood / Pulpwood	
	Ilex opaca	American Holly	Native	2"	9"	Pulpwood / Fuelwood	
	Carpinus caroliniana	American Hornbeam	Native	2"	8"	Pulpwood / Fuelwood	
	Prunus serotina	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	
	Ligustrum sinense	Chinese Privet	Invasive	1"	4"	Fuelwood / Mulching	
	Cercis canadensis	Eastern Redbud	Native	1"	3"	Fuelwood / Mulching	
	Cornus florida	Flowering Dogwood	Native	3"	5"	Fuelwood / Mulching	
	Carya tomentosa	Mockernut Hickory	Native	10"	25"	Sawtimber / Palletwood	
	Quercus rubra	Northern Red Oak	Native	9"	34"	Sawtimber / Palletwood	
	Acer rubrum	Red Maple	Native	6"	34"	Sawtimber / Palletwood / Pulpwood	
	Arundinaria gigantea	River Cane	Native	N/A	N/A	None	
	Carya ovata	Shagbark Hickory	Native	10"	16"	Sawtimber / Palletwood	
	Nyssa biflora	Swamp Tupelo	Native	5"	7"	Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	34"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	9"	30"	Sawtimber / Palletwood	
	Quercus nigra	Water Oak	Native	9"	25"	Sawtimber / Palletwood	
	Quercus alba	White Oak	Native	9"	25"	Sawtimber / Palletwood	
	Quercus phellos	Willow Oak	Native	6"	16"	Palletwood / Pulpwood / Fuelwood	
Forest Type 6: Mixed Coniferous (Mid-Successional)- Loblolly Pine - Sweetgum Ruderal Forest (CEGL008462)	*Prunus serotina*	Black Cherry	Native	1"	6"	Pulpwood / Fuelwood	Healthy
	Pinus taeda	Loblolly Pine	Native	1"	14"	Chip-n-saw / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	1"	13"	Palletwood / Pulpwood / Fuelwood	
	Liriodendron tulipifera	Tulip Tree	Native	1"	5"	Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	1"	13"	Palletwood / Pulpwood / Fuelwood	
	Quercus alba	White Oak	Native	1"	13"	Palletwood / Pulpwood / Fuelwood	
	Quercus phellos	Willow Oak	Native	1"	12"	Palletwood / Pulpwood / Fuelwood	
Forest Type 7: Mixed Deciduous (Mature)- White Oak - Northern Red Oak - Shagbark Hickory (CEGL007232)	*Fagus grandifolia*	American beech	Native	8"	32"	Sawtimber / Palletwood	Healthy
	Ilex opaca	American Holly	Native	N/A	N/A	None	
	Prunus serotina	Black Cherry	Native	2"	8"	Pulpwood / Fuelwood	
	Melia azedarach	china berry	Invasive	3"	12"	Fuelwood / Mulching	
	Pinus taeda	Loblolly Pine	Native	12"	32"	Sawtimber / Chip-n-saw	
	Carya tomentosa	Mockernut Hickory	Native	8"	25"	Sawtimber / Palletwood / Pulpwood	
	Quercus rubra	Northern Red Oak	Native	12"	32"	Sawtimber / Palletwood	
	Acer rubrum	Red Maple	Native	3"	25"	Sawtimber / Palletwood / Pulpwood	
	Carya ovata	Shagbark Hickory	Native	14"	25"	Sawtimber / Palletwood	
	Liquidambar styraciflua	Sweetgum	Native	6"	32"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	14"	25"	Sawtimber / Palletwood	
	Quercus nigra	Water Oak	Native	8"	32"	Sawtimber / Palletwood	
	Quercus alba	White Oak	Native	10"	25"	Sawtimber / Palletwood	
Forest Type 8: Mixed Deciduous (Mid-Successional)- Loblolly Pine - Sweetgum - Oak Ruderal Forest (CEGL008462)	*Fagus grandifolia*	American beech	Native	6"	19"	Sawtimber / Palletwood / Pulpwood	Healthy
	Prunus serotina	Black Cherry	Native	1"	8"	Pulpwood / Fuelwood	
	Pinus taeda	Loblolly Pine	Native	1"	19"	Sawtimber / Chip-n-saw / Pulpwood	
	Quercus rubra	Northern Red Oak	Native	6"	19"	Sawtimber / Palletwood / Pulpwood	
	Acer rubrum	Red Maple	Native	3"	14"	Palletwood / Pulpwood / Fuelwood	
	Liquidambar styraciflua	Sweetgum	Native	3"	20"	Sawtimber / Palletwood / Pulpwood	
	Liriodendron tulipifera	Tulip Tree	Native	4"	12"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	3"	20"	Sawtimber / Palletwood / Pulpwood	
	Quercus alba	White Oak	Native	3"	20"	Sawtimber / Palletwood / Pulpwood	
	Quercus phellos	Willow Oak	Native	4"	18"	Sawtimber / Palletwood / Pulpwood	
Forest Type 9: Deciduous (Problematic Invasive Area)- Wisteria Vine takeover	*Liquidambar styraciflua*	Sweetgum	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	This area has a severe invasive vine problem
	Quercus alba	White Oak	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Quercus nigra	Water Oak	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Quercus phellos	Willow Oak	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Fagus grandifolia	American beech	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Wisteria sinensis	Westeria Vine	Invasive	N/A	N/A	None	
	Carya glabra	pignut hickory	Native	3"	12"	Palletwood / Pulpwood / Fuelwood	
	Melia azedarach	china berry	Invasive	3"	10"	Fuelwood / Mulching	

ATTACHMENT B

Tree Stand Maps

Figure 1:

Imagery and Site Boundary

Legend

Rivian_Boundary

1 IN = 2,135 FT

*AREA OF INTEREST BASED ON PRELIMINARY DESKTOP ANALYSIS; A DETAILED SITE REVIEW WILL BE REQUIRED

0 1,000 2,000 4,000 6,000 8,000 10,000 12,000 14,000 Feet

res
https://res.us

Created by: bmeherg Date: 3/25/2022 2:18 PM

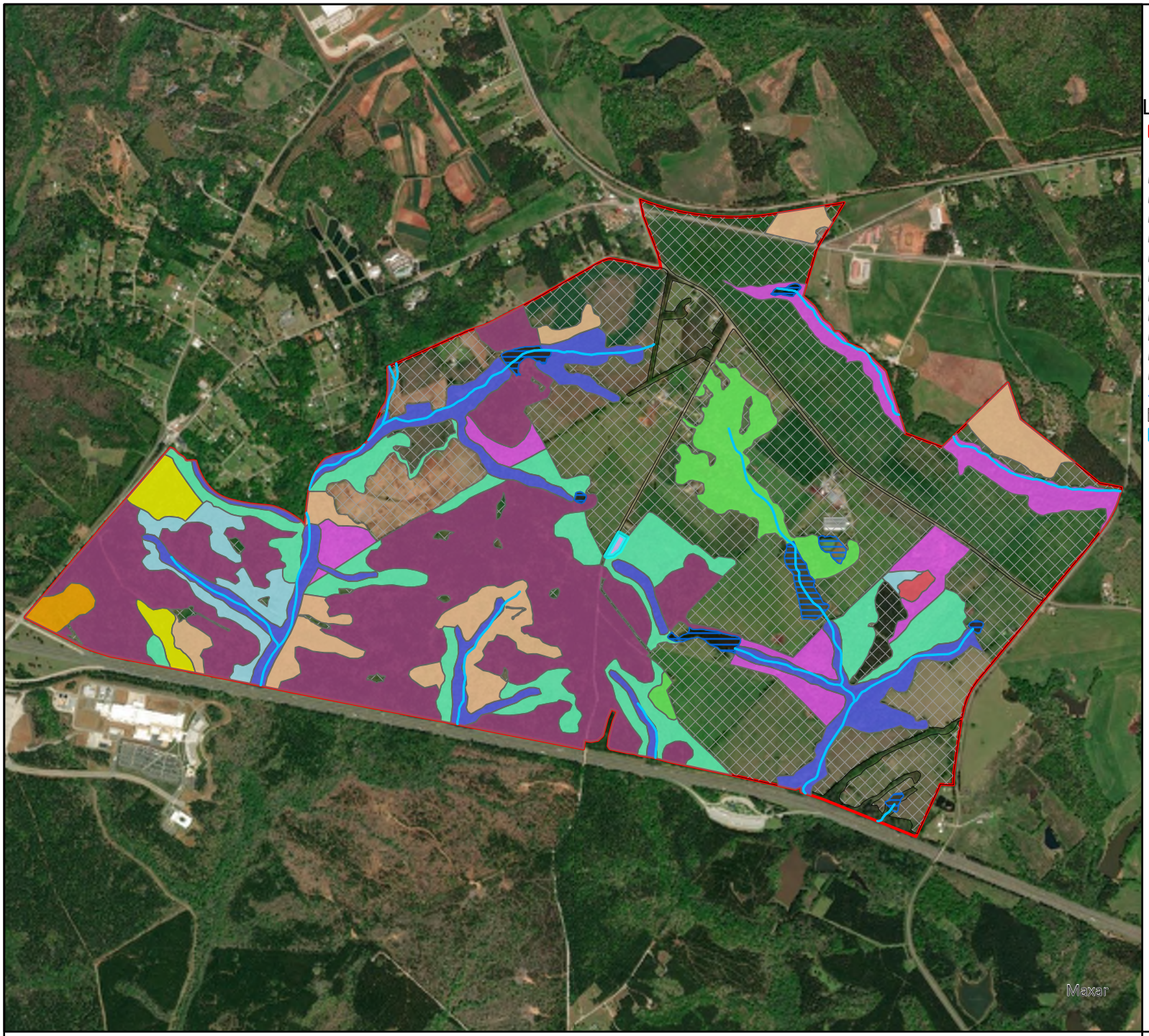


Figure 2:

Forest Types

Legend

Rivian_Boundary

Forest Types

- Forest Type 1: Coniferous (Mid-Successional)
- Forest Type 2: Deciduous (Mature)
- Forest Type 3: Deciduous (Mid-Successional)
- Forest Type 4: Deciduous (Young)
- Forest Type 5: Deciduous Riparian (Mature)
- Forest Type 6: Mixed Coniferous (Mid-Successional)
- Forest Type 7: Mixed Deciduous (Mature)
- Forest Type 8: Mixed Deciduous (Mid-Successional)
- Forest Type 9: Deciduous (Problematic Invasive Area)
- Coniferous (Young)
- Bradford Pear Thicket
- Open Water
- Trees Absent
- Streams

1 IN = 2,135 FT

*AREA OF INTEREST BASED ON PRELIMINARY DESKTOP ANALYSIS; A DETAILED SITE REVIEW WILL BE REQUIRED

0 1,000 2,000 4,000 6,000 8,000 10,000 12,000 14,000 Feet

res
https://res.us

Created by: bmeherg Date: 4/18/2022 4:45 PM

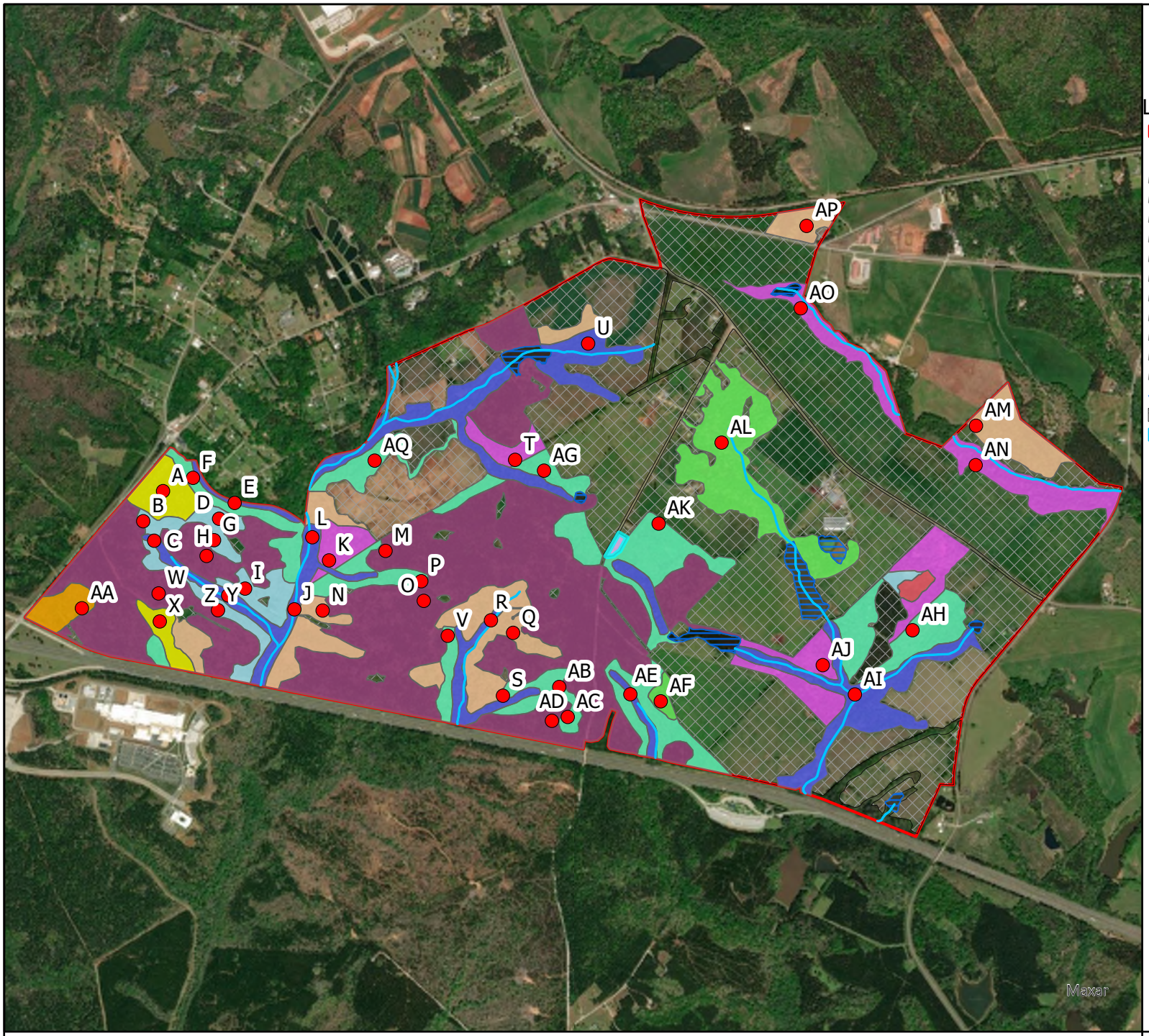


Figure 3:

Photo Point Locations

Legend

- Rivian_Boundary

Forest Types

- Forest Type 1: Coniferous (Mid-Successional)
- Forest Type 2: Deciduous (Mature)
- Forest Type 3: Deciduous (Mid-Successional)
- Forest Type 4: Deciduous (Young)
- Forest Type 5: Deciduous Riparian (Mature)
- Forest Type 6: Mixed Coniferous (Mid-Successional)
- Forest Type 7: Mixed Deciduous (Mature)
- Forest Type 8: Mixed Deciduous (Mid-Successional)
- Forest Type 9: Deciduous (Problematic Invasive Area)
- Coniferous (Young)
- Bradford Pear Thicket
- Open Water
- Trees Absent
- Streams
- Sample Plot Locations

1 IN = 2,135 FT

*AREA OF INTEREST BASED ON PRELIMINARY DESKTOP ANALYSIS; A DETAILED SITE REVIEW WILL BE REQUIRED

0 1,000 2,000 4,000 6,000 8,000 10,000 12,000 14,000 Feet

res
https://res.us

Created by: bmeherg Date: 4/18/2022 4:48 PM

ATTACHMENT C

Tree Stand Photo Report

Date: 03/07/2022	
Location (Lat/Long) 33.61527, -83.69217	
Comments: Plot A: Coniferous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61527, -83.69217	
Comments: Plot A: Coniferous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61434, -83.6922	
Comments: Plot B: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61435, -83.69218	
Comments: Plot B: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61392, -83.6919	
Comments: Plot C: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.61392, -83.69185	
Comments: Plot C: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.61464, -83.68837	
Comments: Plot D: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61463, -83.68836	
Comments: Plot D: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61538, -83.68756	
Comments: Plot E: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.61539, -83.68757	
Comments: Plot E: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.61643, -83.6897	
Comments: Plot F: Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61643, -83.68971	
Comments: Plot F: Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61377, -83.68867	
Comments: Plot G: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61377, -83.68867	
Comments: Plot G: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61345, -83.68892	
Comments: Plot H: Mixed Coniferous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61346, -83.68892	
Comments: Plot H: Mixed Coniferous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61171, -83.68688	
Comments: Plot I: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61171, -83.68688	
Comments: Plot I: Deciduous (Young)	

Date: 03/07/2022	
Location (Lat/Long) 33.61073, -83.68466	
Comments: Plot J: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.61073, -83.68465	
Comments: Plot J: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.6129, -83.68283	
Comments: Plot K: Deciduous (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.6129, -83.68284	
Comments: Plot K: Deciduous (Mature)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61389, -83.68363 **Comments:** Plot L: Deciduous Riparian (Mature)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61388, -83.68363 **Comments:** Plot L: Deciduous Riparian (Mature)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61333, -83.68003 **Comments:** Plot M: Mixed Coniferous (Mid-Successional)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61334, -83.68003 **Comments:** Plot M: Mixed Coniferous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.6108, -83.68316	
Comments: Plot N: Mixed Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.6108, -83.68315	
Comments: Plot N: Mixed Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61114, -83.67805	
Comments: Plot O: Mixed Coniferous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61114, -83.67806	
Comments: Plot O: Mixed Coniferous (Mid-Successional)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61202, -83.67814 **Comments:** Plot P: Deciduous (Mid-Successional)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61203, -83.67815 **Comments:** Plot P: Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.60978, -83.67349	
Comments: Plot Q: Mixed Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.60976, -83.67347	
Comments: Plot Q: Mixed Deciduous (Mid-Successional)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61031, -83.67456 **Comments:** Plot R: Deciduous Riparian (Mature)	

Date: 03/07/2022 **Location (Lat/Long)** 33.61031, -83.67456 **Comments:** Plot R: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.60717, -83.67387	
Comments: Plot S: Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.60717, -83.67387	
Comments: Plot S: Deciduous (Mid-Successional)	

Date: 03/07/2022	
Location (Lat/Long) 33.61714, -83.67335	
Comments: Plot T: Deciduous (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.61715, -83.67332	
Comments: Plot T: Deciduous (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.62208, -83.6696	
Comments: Plot U: Deciduous Riparian (Mature)	

Date: 03/07/2022	
Location (Lat/Long) 33.62208, -83.66958	
Comments: Plot U: Deciduous Riparian (Mature)	

Date: 03/07/2022 **Location (Lat/Long)** 33.60966, -83.67683 **Comments:** Plot V: Deciduous (Mid-Successional)	

Date: 03/07/2022 **Location (Lat/Long)** 33.60966, -83.67682 **Comments:** Plot V: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.61154, -83.69149	
Comments: Plot W: Mixed Coniferous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.61155, -83.69149	
Comments: Plot W: Mixed Coniferous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.61033, -83.69142	
Comments: Plot X: Coniferous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.61033, -83.69141	
Comments: Plot X: Coniferous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.6108, -83.68847	
Comments: Plot Y: Deciduous (Young)	

Date: 03/08/2022	
Location (Lat/Long) 33.6108, -83.68848	
Comments: Plot Y: Deciduous (Young)	

Date: 03/08/2022 **Location (Lat/Long)** 33.61091, -83.69536 **Comments:** Plot AA: Deciduous (Problematic Invasive Area)	

Date: 03/08/2022 **Location (Lat/Long)** 33.61091, -83.69535 **Comments:** Plot AA: Deciduous (Problematic Invasive Area)	

Date: 03/08/2022 **Location (Lat/Long)** 33.60754, -83.6712 **Comments:** Plot AB: Deciduous (Mid-Successional)	

Date: 03/08/2022 **Location (Lat/Long)** 33.60754, -83.67119 **Comments:** Plot AB: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.60621, -83.67074	
Comments: Plot AC: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.6062, -83.67073	
Comments: Plot AC: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.60603, -83.67155	
Comments: Plot AD: Mixed Coniferous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.60603, -83.67156	
Comments: Plot AD: Mixed Coniferous (Mid-Successional)	

Date: 03/08/2022 **Location (Lat/Long)** 33.60715, -83.66755 **Comments:** Plot AE: Deciduous Riparian (Mature)	

Date: 03/08/2022 **Location (Lat/Long)** 33.60713, -83.66753 **Comments:** Plot AE: Deciduous Riparian (Mature)	

Date: 03/08/2022	
Location (Lat/Long) 33.60686, -83.66601	
Comments: Plot AF: Mixed Deciduous (Mature)	

Date: 03/08/2022	
Location (Lat/Long) 33.60685, -83.66601	
Comments: Plot AF: Mixed Deciduous (Mature)	

Date: 03/08/2022 **Location (Lat/Long)** 33.61661, -83.67188 **Comments:** Plot AG: Deciduous (Mid-Successional)	

Date: 03/08/2022 **Location (Lat/Long)** 33.61661, -83.67189 **Comments:** Plot AG: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.60979, -83.65319	
Comments: Plot AH: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.60979, -83.65319	
Comments: Plot AH: Deciduous (Mid-Successional)	

Date: 03/08/2022	
Location (Lat/Long) 33.60822, -83.6575	
Comments: Plot AJ: Deciduous (Mature)	

Date: 03/08/2022	
Location (Lat/Long) 33.60824, -83.65753	
Comments: Plot AJ: Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.61374, -83.66542	
Comments: Plot AK: Deciduous (Mid-Successional)	

Date: 03/17/2022	
Location (Lat/Long) 33.61447, -83.66639	
Comments: Plot AK: Deciduous (Mid-Successional)	

Date: 03/17/2022	
Location (Lat/Long) 33.61791, -83.6625	
Comments: Plot AL: Mixed Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.61756, -83.66268	
Comments: Plot AL: Mixed Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.61836, -83.64953	
Comments: Plot AM: Mixed Deciduous (Mid-Successional)	

Date: 03/17/2022	
Location (Lat/Long) 33.61833, -83.64955	
Comments: Plot AM: Mixed Deciduous (Mid-Successional)	

Date: 03/17/2022	
Location (Lat/Long) 33.61683, -83.64987	
Comments: Plot AN: Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.61673, -83.6501	
Comments: Plot AN: Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.62314, -83.65873	
Comments: Plot AO: Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.62302, -83.65882	
Comments: Plot AO: Deciduous (Mature)	

Date: 03/17/2022	
Location (Lat/Long) 33.62694, -83.65857	
Comments: Plot AP: Mixed Deciduous (Mid-Successional)	

Date: 03/17/2022	
Location (Lat/Long) 33.62671, -83.65825	
Comments: Plot AP: Mixed Deciduous (Mid-Successional)	

Date: 03/16/2022	
Location (Lat/Long) 33.61702, -83.68067	
Comments: Plot AQ: Deciduous (Mid-Successional)	

Date: 03/16/2022	
Location (Lat/Long) 33.61697, -83.68077	
Comments: Plot AQ: Deciduous (Mid-Successional)	